

UNDERDEVELOPMENT EDUCATIONAL POLICY AND PLANNING

KARTICK C. MUKHERJEE



ASIA PUBLISHING HOUSE
BOMBAY • CALCUTTA • NEW DELHI • MADRAS
LUCKNOW • BANGALORE

1967 K. C. MUKHERJEE

Kartick Chandra Mukherjee (1926)

PRINTED IN INDIA

BY G. C. RAY AT NAVANA PRINTING WORKS PRIVATE LIMITED,
47, GANESH CHUNDER AVENUE, CALCUTTA-13 AND PUBLISHED
BY P. S. JAYASINGHE, ASIA PUBLISHING HOUSE, BOMBAY

To
MY FATHER

CONTENTS

<i>Preface</i>	<i>ix</i>
<i>Introduction</i> by JOSEPH. A. LAUWERYS	<i>xiii</i>
I UNDERDEVELOPED COUNTRIES	1
II PROBLEMS OF EDUCATION	43
III THE END OF BRITISH RULE AND EDUCATION SINCE 1947	57
IV POLICY AND PROBLEMS	85
V A CRITICAL ANALYSIS OF EDUCATION POLICY IN INDIA TODAY	108
SECTION I	
Primary Education	108
SECTION II	
Basic Education	115
SECTION III	
Adult Education	135
SECTION IV	
Scientific and Technical Education in India	145
SECTION V	
Higher Education	167
VI LESSONS FROM GREAT BRITAIN	196
VII THE PROBLEMS OF ECONOMIC DEVELOPMENT	240
VIII SOME OTHER ASPECTS OF THE EDUCATION PROBLEM	320
IX EDUCATION PLANNING	332
X APPENDIX	364
<i>Bibliography</i>	<i>418</i>
<i>Index</i>	<i>425</i>

INTRODUCTION

MY COLLEAGUE and friend, Dr. Mukherjee, a patriotic Indian is deeply perturbed by the situation in the homeland he loves. All of us, as fellow human beings, share his concern and his anxiety. One of the greatest nations wages battle on two fronts at once and the outcome is uncertain. Our ideals, our faith, our hopes are being tested: India's defeat would be ours too.

First comes the war against poverty and misery, a war made all the harder by an excessively rapid increase in population. Every year nearly 12 million babies are born. Half die before reaching the age of 15, but even so the population increases each year by a figure equal to that of a small European state like Belgium or Holland. So food production, houses, clothing, services have to be continually increased in order simply to maintain present standards. The chances of progress are being washed away by a flood of babies.

The people of India are afflicted and weakened by malaria, dysentery, tuberculosis, cholera, smallpox and various other curses. More than 80% cultivate fields by methods at once wasteful and primitive. Millions are without work, living on the charity and kindness of their neighbours. Millions more work only a few hours a day because the area of arable land is too small to employ them. All this terrible poverty, ill-health and suffering could be diminished and perhaps removed if potential knowledge in science and technology could be harnessed to the modernisation of the economy.

Ever since Independence exceedingly intelligent and devoted men and women have done their utmost somehow to transform the actual misery into prosperity which seems ever to move farther away. The question to which Dr. Mukherjee addresses himself, in the first instance, is whether and, if so, how education could contribute to the needed economic improvement and progress.

On the second front India is endeavouring to build up a humane and free society as well as a system of parliamentary political institutions. Such a system depends for its defence and maintenance upon the lively activities of a citizen's body

capable of understanding the nature of the issues to be decided and loving freedom and brotherhood. Here, too, many of us will agree with Dr. Mukherjee that it is education which is best able to develop the social and political climate needed to fulfil democratic aspirations. As Madison put it "Popular democracy without popular education is the prelude to a farce or tragedy or both".

But let us be clear that education is powerful, but not all powerful. Take the economic aspect first. It is evident that agriculture in India could be made vastly more productive if the farmers and workers understood better the principles of scientific agriculture. Yet such knowledge by itself would not be enough. There are in people's minds habits and taboos which go against the proper utilisation of the land. If cows, for example, are allowed freely to trample across newly harvested fields, it is impossible to raise a second crop even where the climate would make this possible. If taboos about the sacredness of certain animals are accepted by all, then those animals will eat the food which the babies should have if they are to grow up into strong and healthy adults. In addition to all this, of course, remains the fact that wealth comes not only from the development of skills and from the growth of moral attitude towards production, but also from the availability of machines. Industrial equipment has to be purchased. It means an immense investment of capital which can be provided only by loans from foreign sources or by the accumulation of savings at home. Education can certainly help to eradicate harmful and obsolete attitudes. It can develop skills, it can communicate knowledge, but it does not provide the capital needed to build a fertiliser factory or to purchase farming implements.

Regarding the political problems, too, it is evident that what a teacher says in school as well as the way he handles the subjects he teaches will help to shape the attitudes of his pupils and will thus affect the political climate. But how effective can a wise teacher be if society itself is corrupted by the machinations of power-hungry politicians or profit-seeking business men?

Dr. Mukherjee considers questions of this sort and pays attention to the complexity of developing a wise and relevant educational policy. Such a policy has to take account of the

rich diversity of the Indian cultures and traditions. While these add much to the potent charm which India exercises on all her visitors, it remains true that a heavy price has to be paid for keeping them alive. Indians are without any doubt at all far too conservative in mind. They carry their traditions like an old man of the seas who will presently strangle them. Hinduism as a system of religious thought is awesome and tremendous. The grandeur of its concepts and the depth of its insight are marvellous. Unfortunately it is associated in people's minds with a passive outlook which makes them accept without complaint a fate which they could alter. It is associated, too, with taboos about food which condemn the population in many cases to miserable ill-health and under-nourishment. Thus, as some writers have asserted, Hinduism not only gives India strength by providing a skeleton of national unity, but it is also India's great handicap.

What is needed, clearly, is an educational policy adapted to the conditions of the sub-continent, which takes into account the existing religious and language situations but is yet inspired by a desire to modify, to alter, to change, to build anew.

India, from the snowy hills of Kashmir to the extreme south, is a land of great natural beauty. The soil in many parts is fertile; the climate, though often extreme, not unkind. The people are gentle and peace-loving, skilful and industrious, working right up to the limit of their physical capacity. Yet, in the middle of the massive Fourth Plan one reads alarming accounts of the nearness of economic and civil collapse. "A magnanimous monsoon with bumper harvests next autumn may retrieve the situation....." That such things should be said after nearly twenty years of planned economic development under a regime committed to the elimination of poverty and hunger, privilege and exploitation, is in reality terrifying. It seems as if India has been living on the edge of an economic precipice, frightened to fall but unable to draw back. She now faces the greatest challenge in her long history. Will the challenge evoke the response, the vigour, the strength needed to take and to implement policies that would lead to salvation and progress? Central to these policies is the role of education at all levels. Dr. Mukherjee's book is a valuable contribution to the elucidation and formulation of such a policy.

May it have the effect he hopes it will. It is a modest but genuine contribution, an offering to his brothers and sisters. And as for us, his colleagues, we can but offer our sympathy and support to our brothers and colleagues in the sub-continent. May success crown their efforts and struggles.

CHAPTER I

THE UNDERDEVELOPED COUNTRIES

THE CONTACT between developed and underdeveloped countries is no recent development. Countries, richer and stronger than others in military, economic or other fields of human endeavour, have generally been considered advanced and more developed than the others. The Indians of Vedic times belonged in the category of advanced peoples ; they left their mark on the pages of history as the founders in Asia of original systems of philosophical and political thought.

"In the intellectual world," wrote Percival Spear, "India not only made important progress in her own right, as did China, but also passed on her discoveries to the West via the Arab world. "Arabic" numerals, which replaced the clumsy Roman notation and made modern arithmetical calculations possible, were invented in India. So was the all-important zero, essential for the decimal system. This knowledge came to Europe via the Arab world in the early days of Islam. In philosophy the early story is again uncertain but it is certain that there was an exchange of ideas. Pythagoras and Plato both believed in the transmigration of souls. In modern times we can trace important currents of Western thought to Indian sources. After the discovery of Sanskrit literature by European scholars in the eighteenth century the monistic ideas of the Vedanta influenced a series of German thinkers from Fichte to Schopenhauer and Deussen. Albert Schweitzer, while himself critical of Indian thought, is perhaps indebted more than he suspects to the Indian principle of the oneness of all existence in his enunciation of the great doctrine of "reverence for all life". In England Carlyle found in the caste system a basis for his doctrine of superiority, which he idealised as hero worship. Friedrich Nietzsche went further and grew lyrical about the Laws of Manu, a legal treatise systematising the caste system. "The Laws of Manu," he wrote, "is a work which is spirited and superior beyond comparison." Thus India provided a basis for the doc-

trine of the superman. The study of Indian institutions provided much material for the ideas of the conservative English legal thinkers like Sir Henry Maine and James Stephenson. Finally, India provided the material and the stimulus for the development of the new sciences of philology and comparative religion. The discovery of the connection between Sanskrit and the European languages led to the development of comparative philology as a regular discipline, and studies of early Indian religion through the same medium laid the foundation of the comparative study of religion Not by wars and conquests has India influenced the outside world, but in the subtler and deeper realms of imagination and thought."

In Europe the centres of Hellenism were highly advanced. The influence of the great fourth-century movement in Athens that centres round the names of Socrates, Plato, and Aristotle was remarkable as was that of the Alexandrian period which begins with men like Euclid and Archimedes and ends with Ptolemy and Galen. It was a noble band and fruitful, and together with many other Greeks, made a company without parallel in the history of the world.

Imperial Rome, her successor the Byzantine Empire and the neighbouring flourishing city-states were also highly organised.

In the Middle Ages Western Europe was in the throes of the Hundred Years War ; "the Black Death was decimating every country it entered ; social unrest was showing itself in the English Peasants' Revolt ; the Papacy,¹ soon to be split in two, was already 'in captivity' at Avignon ; new ideas were beginning to emerge ; heresy was exerting its disintegrating influence ; the foredawn of the Renaissance was discernible ; and already the premonitory tremors of the cataclysm of the Reformation could be felt. Medieval Christendom was passing away, and modern nationalism was coming to painful birth".

It was in this restless unsettled age that Portugal, Spain, Holland, France and England continued the search for underdeveloped countries, pioneering settlements in Africa, the Far East and the New World. Following the industrial revolution and the socio-political changes Western Europe gradually established vast empires over the underdeveloped continents. Even the

¹ The Clouds of the Unknowing—Introduction. Edited by E. V. Rieu, pp. 9-10.

great empires of the ancient world of Assyria and Persia, of Alexander the Great and the Roman Caesars pale into insignificance before the widespread extension of empires by the Europeans in underdeveloped countries overseas and overland.

The conflict for empire in the underdeveloped areas was one of the major causes of the second World War, as it was in the 1914-1918. Again and again Hitler declared that it was his aim "to break the British Empire" and his was only a louder and less euphonious echo of the Kaiser's demand for "a place in the sun". Japan's aggression in the Far East and in the Pacific was stimulated by her desire to subjugate the underdeveloped zones displacing the Western Powers from that entire area. Mussolini also constantly announced that it was his intention to turn the Mediterranean into a "Roman Lake" by conquering underdeveloped Africa. "Whatever else emerges the second World War", said Professor Townsend, "also becomes, whether expressed in terms of totalitarianism against democracy, a social revolution against the established order, the demands of a 'master race' for world conquest, its fundamental issue remained, the struggle for colonial or overseas possessions of less developed or weak countries.¹

For colonial empires signify power, prestige, economic advantage, trade, markets, raw materials and wealth. And it is from competition over these underdeveloped areas that international rivalries have inevitably arisen and have as invariably led to war.

After the first World War, and especially in the thirties, the development of advanced countries, especially of the United States, has been outstanding. Since the end of World War II, political and social developments have brought about a marked increase of interest in the development of underdeveloped countries.

The years between 1945 to 1964 witnessed the independence of many underdeveloped countries in Asia and Africa. India, Pakistan, Ceylon, Burma, Indonesia, Cambodia and Laos in Asia emerged from their long colonial suppression and became independent states. In the Middle East, Syria and Lebanon became members of the international sovereign community after the

¹ M. E. Townsend, *European Colonial Expansion since 1871*, Columbia University.

expulsion of French authority from that area. Egypt, though technically an independent state before, was able to liquidate the British occupation in 1953 and only in 1956 succeeded in frustrating the "coming of imperialism through the back door" in the Suez Canal with the withdrawal of the British and French forces. Sudan became independent in 1955 and in the following year the French withdrew from Morocco and Tunisia. In 1957 the Gold Coast with the new name of Ghana achieved the status of a Dominion and in 1960 became a Republic in the Commonwealth. Later Cyprus and very recently Nigeria have become sovereign States. The Belgian Congo, Kenya, the Cameroons and many other countries have gained independence after colonial rule lasting for many years. Thus from South East Asia to the coast of the Atlantic a new community of nations who had in the 19th and the first half of the 20th century been under political authority of the West European nations have been liberated from their tutelage and become responsible for solving their own problems.

But unfortunately, their problems are many while their means are very limited. On a broad average the peoples of the underdeveloped countries have a life expectancy of only about half of that of the peoples of the highly advanced countries. Millions among them suffer much of the time from malaria, dysentery, tuberculosis and other ills. Cholera, small pox and various kinds of curable fever take their toll of thousands every year. About half the new born children die before they reach, say, fifteen, and thus a substantial part of the low national income has to be used for the children who never attain the productive years of adulthood.

In proportion to their populations the underdeveloped countries have the services of less than one-sixth as many doctors. Again measured in calories their food supply is about one-third less than that of the developed countries. When account is taken of the needs of the human body for the relatively essential nutritional foods, such as meat and milk, the extent of malnutrition is found to be very great.

Educational opportunities are extremely limited. The privilege of attending school is limited to a very small minority in most of these countries, even for the primary grades. Secondary schools, colleges and Universities are even less available. In India, for

example, only one person in five, knows how to read and write. The supply of cloth for clothing, home furnishing and other purposes is about one-fourth that per person in underdeveloped as in highly developed countries. Non-human energy to supplement the labour of human beings in industry, agriculture, transport and household tasks is less than one-twentieth as plentiful, measured in horsepower-hours per person. Incomes, on the average, are less than one-tenth as high.¹

Thus poverty and hunger, disease and lack of opportunity for self improvement have been the lot of the common people in the underdeveloped countries for centuries past. Since independence in most of the underdeveloped countries poverty has become a source of political discontent. In many countries political and economic power still rests in a small minority who are the ruling group. But although politics in these countries tends to be authoritarian, since the end of World War II, most of them have become aware of the difference between their own economic conditions and the standard of living prevailing in developed countries. Nationalism is wide-spread and often very strong, and seeing the material and intellectual prosperity of advanced countries, the leaders of underdeveloped countries have decided the gap must be narrowed by the development of their financial resources. But progress in economic development requires technological, scientific and capital goods which have to be obtained from the advanced countries and must be exchanged for exports of primary products. Thus development in the underdeveloped countries depends largely on the relation between the prices of their exports of primary products (tea, cotton, jute, etc.) and the prices of their imports which are mostly of heavy materials. Owing to underdevelopment and poverty these countries also suffer from acute shortage of foreign exchange. The need of foreign aid for these countries was most successfully summed up by the Hon. S. Prawairanegare when he said.²

...most of us underdeveloped countries have still no water to swim in, struggling as we are for a mere glass of water. I

¹ *Preliminary Report on the World Social Situation*, United Nations, Department of Social Affairs, New York.

² From the statement by the Hon. S. Prawiranegare, Governor of Indonesia.

hope not to be misunderstood. What I am pleading for on behalf of the underdeveloped countries is not a privilege from the Fund but a fair treatment, which is not always identical with equal treatment. Aid is good for those who can get it. Trade is good for those who are in a strong bargaining position. But the only thing which underdeveloped countries request is a fair treatment, a fair share of the world's income, based on a good understanding of our needs, not from the viewpoint of bare commercialism, but from that of human idealism. This may not be quite in line with the ideas of our founding fathers, something of which I am not quite sure, but certainly quite in line with the ideas of our Father who created us.

The Western nations have also come to realise that some kind of economic co-operation, help, and development for these countries is essential and that the failure to secure this might even imperil the values of democracy that they are most anxious to preserve and promote. It has come to be realised that to preserve the prestige of political freedom and individual dignity from totalitarianism, help is essential for economic development and social progress in the lands where archaic production and chronic poverty are still the rule. In the event, during the past decade, political and social developments have brought about a marked increase of interest in the development of underdeveloped countries.

THE MEANING OF "UNDERDEVELOPED"

The term "underdeveloped areas" has often been ill-defined and carelessly used. Some have used it as synonymous with 'undeveloped' areas although both types of areas having similarities as well as differences. An 'undeveloped' area may be underdeveloped and then again it may offer little in the way of development possibilities, its undeveloped condition being due to a lack of natural or human resources. An "underdeveloped" area may be relatively developed but capable of further development.

The concept of 'underdeveloped areas' should refer to the existing level of development in relation to the human and natural resources available. But this has not always been the

practice. Quite apart from the potentialities of an area, the term seems to refer to a low level of economic development. An area is characterised as underdeveloped when it may be classified as "developed but still impoverished". Lyle W. Shannon¹ stated that, "an area that is undeveloped may be referred to as underdeveloped when the facts of the case are that it is not capable of or amenable to development, it is undeveloped and impoverished and not much can be done about it. An area may be 'developed', i.e. industrialisation and mechanisation of agriculture may have resulted in a high level of living among the people, but remain 'underdeveloped' in the sense that its vast resources, natural and human, are still comparatively untapped". In supplying a table to clarify his contention he argues that at one time all areas were undeveloped and underdeveloped. "The Sudan might be given as an example of this type of area while India represents an area that is no longer undeveloped but remains underdeveloped. Great Britain is of the third type, neither underdeveloped nor undeveloped." Thus all areas are somewhere in transition between the first type and the third type unless they are in the fourth category undeveloped but not underdeveloped.² Greenland might be used as an example of the latter.

But scientific advances may in time reveal Greenland to be the

TABLE 1

TYPES OF UNDERDEVELOPED AND UNDERDEVELOPED AREAS*

	Underdeveloped	
	Yes	No
Undeveloped	Sudan ↓ India	←—— Greenland ————→ Great Britain

(The arrows indicate the successive classifications of a country as it changes from an undeveloped resourceless type to the highly developed category).

¹ Lyle W. Shannon, *Underdeveloped Areas*, New York, 1957, p. 2.

² Ibid., p. 2. Some excellent material on underdeveloped countries is presented in Lyle W. Shannon, *Underdeveloped Areas*. Professor Benjamin Higgins, *Economic Development* is also an analytic study of the economics of growth and development.

³ Lyle W. Shannon, *Underdeveloped Areas*, p. 2.

of consumption and material well-being—could be improved by means which are known and understood.”

Again Eugene Staley defined an underdeveloped country as, “A country characterised by man poverty which is chronic and not the results of some temporary misfortune, and by obsolete methods of production and social organisation, which means that the poverty is not entirely due to poor natural resources and hence could presumably be lessened by methods already proved in other countries.”¹

Another definition is presented by Jacob Viner² “...an underdeveloped country ... is a country which has good potential prospects for using more capital or more labour or more available natural resources, or all of these to support its present population on a higher level of living, or if its per capita income level is already fairly high, to support a larger population on a not lower level of living”.

As already noted, the definition of underdeveloped areas leaves much to be desired, because it is “not possible to divide the world into a dichotomy of developed and underdeveloped areas or into a number of categories according to various degrees of development”. Even today the necessary development and level of living data are unavailable to make the division on such a basis.

The term underdeveloped is admittedly not a very happy one. Nearly a decade ago, it was usual to refer to the underdeveloped areas as the ‘backward areas’ of the world, that is to say those areas which by Western standards, lagged behind in the standard of living of the people and the march of progress of the country. The usage was loose and conveyed both an unjust judgement and a reproach. Moreover, the word ‘backward’ involved a subjective judgement, whereas ‘underdeveloped’ is nothing but an objective statement.

Other expressions such as ‘pre-industrialised’ and ‘developing’; have been suggested. The word ‘developing’ seems to be a misnomer; the main problem is that in some of these countries development is negligible, and some few are not developing at

¹ Eugene Staley, *The Future of Underdeveloped Countries*, Harper Brothers, New York, 1954, p. 13.

² Jacob Viner, *International Trade and Economic Development*, Glencoe, The Freerun, 1952, p. 125.

all. Moreover, the disparities in living standards between underdeveloped and highly developed countries appear to have been growing wider rather than narrowing every year. According to the report of the statistical services of the United Nations, the highly developed countries are not only far ahead but are pulling further ahead. The rates of economic development of the developed countries continue to be more rapid than those of the underdeveloped countries. Thus taken literally the term 'developing' would apply more suitably to the United States, Canada, Australia and lately Soviet Russia than to most Asian and African countries. On the other hand, the term 'pre-industrialised' is not wholly correct. It should be remembered that industrialisation does not always lead to economic development. Considering all aspects it appears that the word 'underdeveloped' is more appropriate. Moreover, it is now in wide usage and has become a universally accepted technical term. Even leaders, economists, social scientists and politicians in the less developed countries themselves recognise this term. It is therefore proposed to use this term here in its technical sense, remembering that it means only that per capita incomes are less than one-quarter that of the U.S.A.

PROBLEMS OF MEASUREMENT

A professor of Economics¹ has criticised this measurement policy of the United Nations. In underlining the problems he observed that the choice of '25 per cent of the United States level' as the per capita income dividing developed countries from underdeveloped countries is arbitrary, and can only be justified in terms of policy and not in terms of pure analysis. From the United Nations statistical papers of 'per-capita National Product of Fifty-five countries it is known that the countries which in 1952-54 had per capita income above \$ 500, were, not generally recognised as countries with 'development problems'. They were for the most part not considered to be eligible for financial help from advanced countries having foreign aid programmes. According to this definition, Venezuela, for example, was not included among the underdeveloped countries, in spite of the

¹ Benjamin Higgins, *Economic Development*, W. W. Norton & Co. New York, 1959, pp. 8-9.

fact that it has a great deal of poverty and has development plans. But according to this yardstick Israel and Argentina would be regarded as underdeveloped ; it is therefore, not, possible to go much below \$ 500 in drawing the dividing line. Venezuela's per capita income is \$ 540 and Argentina's \$ 470 which demonstrates the arbitrariness of the dividing line.

More serious criticism can be made about the difficulty of translating per capita incomes into United States dollars. United Nations officials faced difficulties in making estimates of this kind. They recognised the "complex problem of evaluating in a common currency unit the total output of goods and services of different countries". They said "It is contended that approximately correct results can be obtained by this method only where there exists an equivalence between the prevailing exchange rates and the relationship of internal prices. This equivalence is unlikely to be achieved for most countries today in view of the prevalent use of exchange controls and quantitative restrictions on trade." Thus, the U.N. recognised that official rates of exchange are a poor measure of comparative purchasing power. In order to discover the estimates the U.N. sought to use other conversion rates whenever there were multiple exchange rates in comparison to rates in the United States.

To reduce the discrepancies in per capita income with the United States, the European countries adopt a more systematic method. Their attempt has improved national income figures for comparative purposes by the OEEC.¹ This method, "utilized for increasing comparability consists of using relative price weight for 'baskets' of commodities in various countries." It is hoped that for greater reduction of gaps among per capita incomes, a similar procedure for underdeveloped countries might, in future be adopted.

The United Nations has published estimates of the per capita Net National Product of 55 countries giving the figures in Tables. These figures have meaning for relative levels of income. "Thus it probably makes sense to say that average incomes in the Philippines are two and a half times as high as in India, or that incomes in the Argentina are a bit higher than in Ireland and that United States incomes are some 30 per cent

¹ Milton Gilbert and Associates, *Comparative National Products and Price Levels*, Paris ; OEEC, 1957.

(At factor cost)

Range in Dollars	AFRICA Country	AFRICA per Capita	AMERICA Country	AMERICA per Capita	ASIA Country	ASIA per Capita	EUROPE Country	EUROPE per Capita	OCEANIA Country	OCEANIA per Capita
Over 1,000			U.S.A.	1870			Switzer-land	1010	New Zealand	1,000
750-1,000			Canada	1310			Sweden	950	Australia	950
							Luxem-bourg	890		
500-749			Venezuela*	540			Belgium	800		
							United Kingdom	780		
							Iceland	670		
250-499	Union of S. Africa	300	Argentina	480	Israel	470	Denmark	750		
			Peurto Rico	430	Malaya*	310	France	740		
			Chile	360	Lebanon	260	Norway	670		
			Cuba	310			Finland	510		
			Colombia	250			Germany	500		
			Panama	230			Netherland	410		
			Brazil	220	Turkey	210	Ireland	370		
			Mexico	220	Japan	190	Austria	310		
			Jamaica†	180	Philippines	150	Italy			
			Dominion	160	Ceylon*	110	Greece	220		
Under 250	Egypt Rhodesia & Nyasaland	120	Repub. Guatemala	160	Thailand	80	Portugal	200		
	Congo	70	Ecuador	150	Korea	70				
	Kenya	60	Honduras	150	Pakistan	70				
	Uganda	50	Paraguay	140	INDIA	60				
			Peru	120	Burma	50				

* 1952 and 1953

† 1952

Source: United Nations, *Per-capita National Product of Fifty-five Countries: 1952-54*.
Statistical Paper Series E, No. 4, New York, 1957

higher than Canadian. On the other hand, to say that in the United States incomes are nearly forty-times as high as in Burma has little real meaning."¹

TABLE 3

Country	Populations (millions)	Income (equivalent U.S. dollars per annum) 1965	Net Food (calories per day)	Energy (coal equi- valent tons per annum)
1	2	3	4	5
U.S.A.	180.7	2,289	3,100	8.79
Canada	17.8	1,545	3,100	7.90
U. K.	52.5	1,084	3,200	5.12
Belgium	9.2	978	2,900	4.27
West Germany	53.4	967	2,900	4.02
Netherlands	11.5	803	3,000	3.04
Italy	49.4	509	2,700	1.57
Japan	93.2	341	2,200	1.42
India	450.	62	1,800	0.15
Nigeria	35.1	34	—	0.05
World	2995	—	—	1.53

If the two tables are compared it will be seen that since 1952 the gap has widened. India's population has increased but income per annum has almost remained stationary. "The technologically induced prosperity is increasing more rapidly than, at the other end of the scale, the less developed countries can cope with their pressing necessities. And this despite the new "social philosophy" by which, after the Second World War, Governments accepted a new responsibility, not only for their own people but for the well-being of people of other countries as well ; in spite of the 'bold new programme' of mutual aid and technical assistance by which the advanced countries were to make their skills and their means available to the less advanced ; and in spite of the fact that during the 1950's aid and investment from private sources, public grants and loans, and international loans amounted to the equivalent of \$ U.S. 30,000 million. In the 100 countries and territories which can be classed as "less developed" the increase in income per person per annum

¹ Benjamin Higgins, *Economic Development*, p. 9.

after ten years was about \$ U.S. 1. In terms of hunger, convert that dollar into bowls of rice, in terms of sickness, into phials of penicillin ; in terms of illiteracy into books ; and of farming into hoes and spades.

It is clear that the individual is not much better of.”¹

TWO-THIRDS OF THE WORLD'S POPULATION

Classifying the countries of the world as highly developed,² intermediate and underdeveloped on the basis of the available indexes of national income per person, it is realised that two-thirds of the world's population live in underdeveloped countries. The underdeveloped group includes all the countries of Asia except Japan, almost all the countries of Africa and most of Latin America, five countries in Europe are also classified in this group. The combined population of all the underdeveloped countries is roughly 1900,000,000.³

In the intermediate range there are seven in Europe, five in Latin America plus Japan in Asia, the Soviet Union, the Union of South Africa and Israel, with a total population of some 600,000,000. The countries in North West Europe, Australia, New Zealand, Canada and the United States comprise the highly developed group. Their population is about 500,000,000. Thus one-sixth of the world's population of 3000,000,000 live in highly developed countries, one fifth in countries of the intermediate range and the rest of about two-thirds live in underdeveloped countries. Dividing again the world's population into two main political blocks, it is found that none of the highly developed countries are included in the Communist block. In the intermediate range, however, there are several Communist countries with a total population of 250,000,000, five-sixth of whom live mainly in the U.S.S.R. In the underdeveloped group the Communist countries have approximately a total population of 600,000,000 mainly Chinese. Thus, out of a total population of 800,000,000 in the Communist world, just over two-thirds live

¹ *Science and Technology for Development*, “World & opportunity” United Nations, New York, 1963, p. 38.

² *Eugene Stalay*, *The Future of Underdeveloped Countries*, New York, 16.

³ Douglas F. Dowd, “*Two-thirds of the World*”, from *Underdeveloped Areas*, pp. 12-21.

in underdeveloped countries. In the non-Communist world also 1250,000,000 out of a total population of 1960,000,000, two-thirds are in underdeveloped countries. The highly developed countries of the free world include a population of 500,000,000. The total number of the people in the intermediate range is about 200,000,000.

One significant fact stands out, that is, the great disparity in income levels all over the world. On one end of the scale, is the United States with national income of more than \$ 2500 per person; on the other end, are the underdeveloped countries, comprising two-thirds of the world's population, with national incomes of less than \$ 150 per person. According to the United Nations' Statistical Office, the average per capita income of an Indian is less than \$ 65. Nearly half the people of the world live in countries that have per capita income of less than \$ 100. The United Nations Monthly Bulletin of Statistics shows that Asia, Africa and Latin America together with sixty-five per cent of the world's population produce only seventeen per cent of the world's total national income. The United States alone with six per cent of the world's population produces nearly forty per cent of the world total of national income. Europe generates another 38 per cent of the world total of national income with twenty-two per cent of the population.

The phenomenon known as the "population explosion" has become a formidable obstacle confronting all economic and social planners. Dr. Ralph W. Phillips visualised mankind eating their meals along a single table. To seat an estimated 3,115 million people in 1962 the table would have circled the globe over 23 times. By the year 2000, however, at the present rate of population growth, the same table would have to grow 43 miles longer each day. As for the food that goes on to it, a bare 8.35 per cent of the world's surface is the food-producing area on which man depends primarily for his existence. But actual production, even in this limited area, is unequal. Some nations produce ten times more rice per acre than others. As for wheat, production may be even 20 times greater in some countries. There is a similar disparity in the means at the farmer's disposal to help him improve his yield. While in Europe, for example, over 78 metric tons of chemical fertilizers are used in every 1,000 acres, the equivalent is about one ton in Africa.

As mentioned before the difference of average incomes is glaring. In the United States personal incomes average \$ 2,500 (1965) a year, while in Europe they amount to \$ 900 a year ; but in most Asian and African countries the figures are between \$ 50 and \$ 100 a year. A comparison of incomes gives a clear picture of how wealth is shared around the world.

TABLE 4

<i>Regions</i>	<i>Per cent of world income</i>	<i>Per cent of world population</i>
North America	39.8	6.7
Europe	37.7	22.2
Far East	12.3	52.3
Latin America	4.7	6.8
Africa	2.2	7.1

SOURCE: *Education and Training—Science and Technology for Development*, United Nations, pp. 11-12.

Population definitely is not the only cause or even the main factor in world power today but the vast numbers of people living in extreme poverty is in itself a political threat to Democracy. Totalitarianism exploits the poverty and ignorance of the people. If democracy is to survive in the fight against totalitarianism, it has to fight the conditions that cause it. These conditions can be found in the underdeveloped areas. These areas are mostly in Asia and Africa and the majority of the world's population live there. With respect to resources, climate and terrain, educational, economic conditions and cultural heritage, these areas differ considerably.

TABLE 5

COUNTRIES GROUPED BY LEVEL OF ECONOMIC DEVELOPMENT

	<i>A. Highly Developed</i>	
<i>Americas</i>	<i>Europe</i>	<i>Oceania</i>
Canada	Belgium	Australia
United States	Denmark	New Zealand
	France	
	Switzerland	
	Germany	
	Netherlands	
	Norway	
	Sweden	
	United Kingdom	

B. <i>Intermediate</i>			
<i>Africa</i>	<i>Europe</i>		<i>Eurasia</i>
Union of South Africa	Austria Finland Hungary Ireland	Czechoslovakia Italy Poland Portugal Spain	U.S.S.R. Japan
C. <i>Underdeveloped</i>			
<i>Africa</i>	<i>Asia</i>	<i>Americas</i>	<i>Europe</i>
Algeria	Afghanistan	Bolivia	Albania
Angola	Borneo	Brazil	Bulgaria
Congo	Burma	B. W. Indies	Greece
Cameroons	Ceylon	Colombia	Rumania
Egypt	China	Costa Rica	Yugoslavia
Ethiopia	Formosa	Dominican Republic	
French Africa	India		
Cold Coast	Indo-China	Ecuador	
Kenya	Indonesia	El-salvador	
Liberia	Iran-Iraq	Guatemala	
Madagascar	Jordan	Haiti	
Morocco	Korea	Honduras	
Mozambique	Lebanon	Mexico	
Nigeria	Nepal	Nicaragua	
Nyasaland	Malaya	Paraguay	
Rhodesia	N. Guinea	Peru	
Sudan	Pakistan		
Tanganyika	Philippines		
Tunisia	Saudi Arabia		
Uganda	Syria		
	Thailand		
	Turkey		
	Yemen		

CHARACTERISTICS OF THE UNDERDEVELOPED COUNTRIES

The roads leading to the development of the underdeveloped countries are paved with vicious circles and some circles are more vicious than others.¹ The task of the socio-economists is

¹ Benjamin Higgins, *Financing Economic Development*, International Conciliation and Albert C. Hirschman, *The Strategy of Economic Development*, New York.

to analyse the problem in order to discover which of these problems are basic causes of the others. Finding out the causes, however, does not always indicate policies to overcome them ; but it certainly helps to understand the nature and magnitude of the problems. For each of the characteristics has a hen-and-egg relation that makes it absolutely impossible to separate causes from effects.¹ For example, the lack of financial resources is a cause of underdevelopment, but it is also a result of low levels of income, and so naturally a result of underdevelopment. Similarly, the agricultural concentration for the output in cereals and raw materials shows low levels of technique and income which might also be regarded as a result rather than a cause of underdevelopment.

Poverty is always accompanied by many other characteristics. And by analysing those characteristics a clue to the causes of poverty is discovered. Professor Harvey Leibenstein² after a careful examination of statistics and information relating to underdeveloped countries has revealed the characteristics of them, showing that there is a correlation between national poverty and other features of a country's economic organisation. According to Leibenstein the characteristics of underdeveloped areas are :

I. *Economic (General)*

- (1) Generally 80 per cent of the population are engaged in agriculture.
- (2) This high percentage means an appalling waste of power in this field. The same result could be attained by a greatly reduced number.
- (3) "Disguised unemployment" and employment opportunities mainly limited to agriculture.
- (4) Insufficient capital per head of the population.
- (5) Incomes so low that living conditions are below subsistence level.
- (6) The common mass of the people saves very little.

¹ Benjamin Higgins, *Economic Development*, New York, p. 23.

² Harvey Leibenstein, *Economic Backwardness and Economic Growth*, New York.

- (7) Savings of the minority landlords are not helpful to investment for industrial and technological growth.
- (8) "The primary industries, that is forestry, agriculture and mining, are usually the residual employment categories."
- (9) Major expenditure on food and necessary commodities.
- (10) Agricultural output limited to primary raw materials mainly of cereals, with very low output of protein food.
- (11) "Low volume of trade per capita."
- (12) Housing condition very poor.
- (13) Poor credit facilities and poor marketing facilities.
- (14) Export of food stuff and raw materials.

BASIC CHARACTERISTICS IN AGRICULTURE¹

- (1) The plots and holdings are so small that in spite of the low capital required it is impossible to turn it to any economic advantage.
- (2) There is a woeful lack of the techniques required in agriculture accompanied by a similar lack of the necessary tools and equipment.
- (3) The difficulties of transport, and insufficient local demand, often prevent land, otherwise offering promise, being taken over and developed under modern conditions.

The local markets, as in many backward countries, seem slow to move, and fail to support the modernised farms, which are thus forced to seek foreign markets.

- (4) The fear of a crisis and his inability to deal with it cause the small landholder and peasant to overwork the soil, and soil depletion follows.
- (5) High assets and incomes are frequently off-set by the piling up of debts.
- (6) The home-market is only meagrely supplied from an inadequate surplus, which is the result of out-of-date methods of production. This failure to produce an economic surplus for the local market applies as much to the land-owner as to the tenant or the sharecropper.

¹ Harvey Leibenstein, *Economic Backwardness and Economic Growth*, New York 1957, pp. 40-41

- (7) There is a general feeling that there is insufficient land available for agricultural development along economic lines. The holdings and plots are far too small and even then they are frequently sub-divided as the population increases.

II. *Demographic*

- (1) Population explosion, high rate of growth.
- (2) Low expectation of life at birth and high death rates.
- (3) Inadequate nutrition and food deficiencies.
- (4) Rudimentary hygiene, public health, and sanitation.
- (5) Overcrowding in the rural areas.

CULTURAL AND POLITICAL

- (1) A bare elementary education with most of the people unable to read or write.
- (2) Many instances of child labour.
- (3) Lack of interest of the middle class.
- (4) The low status of women.
- (5) The weight given to tradition by the majority of the population.

III. *Technological and Miscellaneous*

- (1) Low yield per acre.
- (2) Little or no technological training owing to lack of facilities.
- (3) Out-of-date and completely inadequate means of communication and transport, especially in the rural areas.
- (4) Old-fashioned crude technology.

“Leibenstein’s characteristics are of three quite different kinds: statistical facts, general observations and conclusions from analysis.” There is room for differences of opinion on many items of Leibenstein’s characteristics. His observations and analysis will be left for the special case of India in later chapter. On the whole his characteristics are worth noting.

CATEGORIES OF UNDERDEVELOPED COUNTRIES

There are various categories of underdeveloped countries.¹

- (1) Firstly there are countries with unutilized known resources but whose very low per capita incomes have put them into the underdeveloped category. Countries of this category have recently undertaken industrialization and agricultural projects to increase their per capita income substantially. Italy in Europe, the Philippines and Ceylon in Asia and Brazil, Argentina, Peru, Colombia and Venezuela in Latin America seem to be in this category. These countries are said to have sufficient domestic savings and assured foreign aid to finance the projects for raising incomes. These countries still suffer however from shortage of skilled labour, managerial and technical experts which limit the rate of growth and make planning necessary accordingly.
- (2) The countries of the second category do not appear to have enough resources according to the size of their populations. But their per capita income seems to be gradually rising. Burma, China, Thailand and Pakistan are poor and stagnant (Under \$ 100 per year). Pakistan for example is poor in power and in minerals but rich in her fibres (Jute, wood and cotton). The rise in income in these countries must be accelerated, not just sustained.
- (3) Third, there are countries which are very poor and stagnant and which have almost no known resources with which the development planners can work. Their per capita income has not risen at all and there is no evidence of its growth in the near future. Instead of structural change these countries probably need improvement of existing economic undertakings. Libya, Yemen and Jordan are of this category. Libya's per capita income has been stationary and there is evidence that it may decline in future from the at present miserably low estimate of about \$ 30 per year. Here a complete transformation of the economy is perhaps needed.
- (4) Finally, there are countries which are relatively rich in

¹ Benjamin Higgins, *Problems of Economic Development*, p. 21.

resources but at present poor and stagnant due to unutilised materials. India, for example is in this category. Per capita income is about \$ 65 per year—but is not rising rapidly. Yet India is a country with a wide variety of resources. In such a country, if the rate of population growth can be held within bounds, there is hope that gradually per capita income will rise. Conditions in India or Indonesia are different from those in underdeveloped countries where per capita income is stationary or falling and where there is little hope that growth will be possible without a transformation of the economy.

In this study of underdeveloped India the above mentioned differences in the basic economic situation and the similarities in the problems confronting some other underdeveloped countries will be discussed.

INDIA AS AN UNDERDEVELOPED COUNTRY

India gigantic in area and population has problems as colossal as its size. Her problems of poverty, illiteracy and under-employment are overwhelming.

Before 1947, the Indians were more anxious for freedom and independence than for anything else ; since independence however, they have come to realise that there are major problems which independence does not solve. The common people wanted certain tangible economic improvement ; in particular, they expected the national government to release them from their extreme poverty. But independence has not brought economic prosperity. It has not made the illiterate literate, the hungry well fed nor the sick well.

Nor has the mere fact of independence ensured peace in the country. The government and the national leaders found themselves handicapped by the archaic socio-political conditions prevailing in the country. They came to realise that any real improvement must depend on the solving of a whole range of difficult problems social, political, agricultural and economic of which gaining independence was only one.

In recording her impressions on revisiting India for the first

time for seven years in 1961 Cecilie Leslie noted¹:

The cost of living has doubled in India since 1947. Foreign imports, when available, are prohibitive in price—for instance Edam cheese, costing 3s. a lb in England, here costs £1; English beer 10s. a bottle and whisky between £3.17.6d and £5 a bottle. Indian produce and productions are double the price of equivalents in England. Kalimpong cheese costs 12s. 6d a lb. The 'Baby Hindustan' car, an Indian-assembled version of the Morris Minor, costs twice as much as in Britain. The price of flats in good residential areas in Calcutta, Delhi and Bombay is probably higher than in London's West End. In Delhi a two bedroom flat in the Diplomatic Enclave costs Rs. 1,700 per month.

Charges in one of Calcutta's nursing homes are on a par with those of the London Clinic while the minimum consultation fee with a Calcutta doctor is £2.10s.

In cities like Calcutta dirt, congestion and confusion have intensified as the population has increased. In 1948 there were 3½ million people living there, today there are six million, of whom 800,000 are refugees living in the most appalling conditions. As Calcutta's rich become richer, and the poor poorer, the effect is to produce a contrast that is, as I was told, a 'shock'.

The 1960 Report of the World Bank Mission on the Third Five Year Plan stated about Calcutta that "housing and sanitary conditions in many of the larger towns are appalling, water supplies are frequently inadequate and the streets are hopelessly congested. In Calcutta there is overcrowding, degradation of housing, health hazards, primitive water supplies, lack of space for new industries, traffic bottlenecks, power-shortages, still unsolved refugee problems. These conditions nurture feelings of unrest and malaise in the population, which are likely to boil over from time to time in ways that are both destructive and inimical to unduly economic development."

In the same vein, the special correspondent of the *Economist* in an article 'India Revisited' declared: "Nothing less than the

¹ "India Revisited" by Cecilie Leslie. Daily Telegraph, Jan. 17, 1961.

third plan will do', one is told. It is only too true, for even if every target were fulfilled and every project emerged finished at the due date, the result would be an improvement of something over 4 per cent per annum in total consumption. But India's population is growing by 2 per cent a year and all that the average Indian consumer can expect in 1966 is to feel a bit less hungry, and to have a bit more clothing than now."

The fact is that as India is about to enter on her fourth five year plan, her internal and external finances are in worse shape than they were at the beginning of her third plan. Years roll by but India's crisis continues. Even in 1965 her condition has not changed. *The Sunday Times* correspondent declared:

The Prophets were right, or at any rate partially right, Since Nehru's death nothing has seemed to go straight in India. Food shortages, rising prices, a language dispute which caused the "Times of India" to write that "what is at stake is nothing less than the unity and stability of India"; and now a grave balance-of-payment crisis, necessitating an urgent appeal to the International Monetary Fund for a stand-by credit and the raising of the bank rate and customs duties. If India is to be regarded, in the eyes of the West, as a giant counterweight to the constant Chinese pressure in Asia, then she is at the moment a very sickly giant.

What she has achieved in the last three or four years is no more than a holding operation. Her budget deficit, import expenditure and the deficit on foreign payments have all been reduced.

The backwardness of the Indian economy today is reflected in the unbalanced occupational structure of the sub-continent. About 70 per cent of the adult population live directly from the soil and the cultivated area equals one acre for each rural dweller. The economically active population in commerce, transportation and other services combined is about 18 per cent. In the United States these three branches engage some 52 per cent of the employed population and in Japan, nearly 32 per cent. The percentage of population in the United States active in agriculture, forestry and fisheries is about 12.5 and about 43 in Japan.

The Table shows the differences in the economically active population in India, Pakistan and Ceylon :

TABLE 6
ECONOMICALLY ACTIVE POPULATION IN SOUTH ASIA

<i>Branch of Economic Activity</i>	<i>Ceylon</i>	<i>Pakistan</i>	<i>Union of India</i>
Agricultural, Forestry and Fisheries	52.9	76.6	70.6
Mining and Quarrying	0.3	0.5	0.6
Manufacturing ...	10.0	6.3	9.0
Construction ...	—	—	1.1
Electricity, Gas, etc. ...	—	0.9	0.5
Finance and Commerce ...	7.9	5.1	5.8
Transport and Communication ...	3.6	1.4	1.9
Services ...	14.7	5.9	10.6
Not Classifiable ...	10.7	3.8	—

SOURCE: United Nations, *Statistical Yearbook 1965*, Table 6. Data from Census of Pakistan and India ; Census of 1960 Ceylon.

Statistics provided by the United Nations Statistical Yearbook show that none of these three countries India, Pakistan and Ceylon has more than 10 per cent of its population employed in manufacturing industry. India it would appear is relatively more developed than Ceylon and has as high a percentage in manufacturing as Pakistan. In absolute terms, however, in the development of manufacture, India is far ahead of other parts of South Asia. But India has still a long way to go if she is to take her place among the industrial nations alongside Japan which has 18 per cent of its employed population in manufacturing, the U.S.A. which has 30 per cent, and the nations of Western Europe which have 30 to 40 per cent in manufacturing.¹

In mining, on the other hand, India is both relatively and absolutely more prosperous than Ceylon and Pakistan ; and it is hoped that the systematic exploration of her iron ore, coal and petroleum will gradually change the face of the country, for the sub-continent is self-sufficient in bituminous coal and high-grade iron ore. Although there is prospect of shortage in coal, the output of coal and iron can readily be increased to meet India's future requirements. In certain other resources, also, the country is rich ; India, for instance is the largest producer of

¹ Norton Ginsburg, *The Pattern of Asia*, pp. 500-504.

mica in the world while her manganese production is among the first two or three in the world. The beach sands of Travancore in South India contain the world's largest and richest reserves of monazite, the principal ore of thorium; and she has recently started to exploit her huge reserves of bauxite. Her supplies of copper, lead and zinc are at present not enough to support demands but her known supply and production of petroleum is gradually increasing to meet the increasing demand. In these respects, India's resources are superior to those of Japan and she is better endowed in minerals than most of the advanced and industrial countries of Europe.

Nevertheless, in spite of India's known mineral resources, the pattern of employment is still mainly agricultural. Moreover, the structure of employment, output, income, and amount of capital per head, per capita income, literacy, yields per acre are extremely inadequate. The vast majority of the people are still poor, underfed, uneducated and either underemployed or unemployed. Despite the village landlord's hoard of silver and gold and the reputed wealth of her princes and Maharajas, the annual average per capita national income of India is insufficient even to obtain the minimum essentials of life. For generations the farmers have been in debt and the savings of the merchant classes are very limited. The rate of capital formation is inadequate for the proper investing in agriculture and agricultural production has not kept pace with population growth. There is a very high inverse correlation between per capita income and the proportion of the population in agriculture. High-income countries like Canada, Australia and New Zealand, sometimes thought of as agricultural countries, when compared with India or Indonesia are seen to be not really agricultural in terms of employment; the occupational structure of the people in these countries is, indeed, much the same as that of the United States, the most industrially and technologically advanced country in the world.

India, like many other underdeveloped countries, produces relatively large proportions of her national income through agriculture. But the share of her income in agriculture is less than

TABLE 7
INDUSTRIAL ORIGIN OF GROSS NATIONAL PRODUCT IN
VARIOUS COUNTRIES

Country and year		Per cent in Agriculture and forestry and fishing		Per cent in manufacturing
United States	1960	...	4.3	28.6
Canada	1960	...	9.9	28.6
New Zealand	1960	...	23.9	21.2
U. K.	1960	...	4.6	38.8
India	1960	...	48.7	16.8
Indonesia	1960	...	56.4	8.2
Japan	1960	...	21.8	20.3
Egypt	1961	...	35.8	10.7

SOURCE: United Nations, *Statistical Yearbook on Income and employment*, New York.

her share of employment in agriculture and reflects a low productivity per man—year in the agricultural section.¹

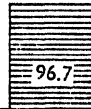
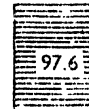
TABLE 8

Country	Percentage in Agriculture			
	1946-55		1961-63	
England and Wales	...	...	6	5
Canada	...	...	26	19
France	...	...	36	27
Italy	...	...	48	40
United States	...	...	19	12
India	...	...	66	71
Japan	...	...	48	47
Australia	...	...	19	16
New Zealand	...	...	23	18
Egypt	...	...	71	65

SOURCE: Food and Agricultural Organization, *Statistical Yearbook*, 1964.

¹ Population engaged in agricultural occupation in specified countries, (both sexes).

TABLE 9¹

INDIA 1952-53	U.S.A. 1952-53		INDIA 1962-63	U.S.A. 1962-63
		POPULATION millions		
		LIFE EXPECTANCY years		
52,000 13.8	218,000 136.2	Total number of doctors MEDICAL CARE per 100,000 people	73,500 16.1	246,000 129.5
approximately \$21.7		GROSS NATIONAL PRODUCT billions	approximately \$34.1	
\$62		PER CAPITA INCOME per year	\$66	
		LITERACY RATE per cent of pop.		

India's problems : As against the U. S. everything lags but population.

The most discouraging characteristic of India and a few among the other underdeveloped countries is that being predominantly agricultural they are far more backward and primitive in agriculture than the industrially advanced countries. "It is true" says Gunnar Myrdal, "that industrialization creates technology which can then be applied to agriculture but not vice versa."²

Even in the agricultural production of major crops underdeveloped India is less efficient than advanced countries for which the same commodity is a minor export. For example,

¹ *News Week*, June 29, 1964, Vol. LXIII. No. 26.

² Gunnar Myrdal, *Prospects for an International Economy*, New York, 1956, p. 464.

rice is the staple food of the majority of the people of India ; but the most distressing fact is that this most important agricultural product is produced at very high cost and cannot compete in the world market which imports from advanced countries. India, Burma, Thailand and Vietnam, often depend on rice exports for foreign exchange from Italy, Australia and the United States. Yields of rice in India per hectare are very low. The Indian farmer is very poor and the typical holding of an Indian peasant family is closer to one acre and that acre is meticulously irrigated and intensively cultivated.¹

TABLE 10

Country	1948-52	1960	1962
United States	25.6	28.2	34.3
Italy	48.7	48.8	51.0
Australia	48.6	61.8	45.9
India	11.1	12.2	12.6
Burma	14.1	14.1	14.8
Japan	40.0	37.5	48.1

SOURCE: Food and Agricultural Organisation, *Statistical Yearbook*.

Not only rice, but many other essential productions like soya beans, cassava and yams (sweet potatoes) foods which Asians choose when rice is not in sufficient supply give lower yields than in many advanced countries.

The proportion of national income derived from agriculture remained within a fraction of 49 per cent between 1950 and 1959 and was just under 48 per cent in 1955—56. Despite considerable industrial investment India derived only 16.8 per cent from manufacturing, mining and public utilities.²

Though industrialization is not new to India, for several decades its economy has suffered greatly from arrested growth in industry and technology. During the past century its real per capita income has not increased significantly. In considering the causes of stagnation in India's economy Norton Ginsburg says³

"Perhaps the masses of people in India and Pakistan are vaguely aware that their condition is in some way connected

¹ Rice Production (100 kilograms per hectare).

² Benjamin Higgins, *Economic Development*, pp. 16-17.

³ Norton Ginsburg, *The pattern of Asia*, 552.

with the rule of an alien industrial nation for whose own interests it seemed best to keep South Asia agrarian. They are probably unaware that during the past 80 to 100 years real per capita income has not increased significantly. They may not realize that, while they were provided with stable government . . . their economy was being exploited primarily for the benefit of foreigners. They do not have the information to permit them to compare their status with that of the Japanese people, whose careful husbanding of closely limited natural resources and development of domestic capital during the past 80 years stand in sharp contrast to the history of the Indian Empire."

Another approach is evident in the words of Academician E. K. Fedorov, of the Soviet Union who pointed out that "the gulf between the level of production in different countries, the chasm between the level of prosperity in different countries, has not opened overnight. Neither did it open up because some countries are poor in natural resources or because their peoples are somehow incapable of adapting themselves to science or technology. No, we know that many developing countries possess very rich natural resources and the achievements of their ancient civilisation still fire the imagination. It is clear to us that the peoples of these countries are poor because their natural wealth, and the very labour of their people, have for a very long time been used to serve the interests of other countries, which built up their prosperity on this basis."¹

Again, in his *Discovery of India* Nehru declared that while India was under an industrial-capitalist regime, her economy was largely that of the pre-capitalist period, minus many of the wealth-producing elements of that pre-capitalist economy. She became a passive agent of modern industrial capitalism suffering all its ills and with hardly any of its advantages.²

Against this background, even after independence, industry in modern India has not as yet become a significant source of income. Much has happened in India under her five year plans ; yet there is no real sign that the country is on its way to sus-

¹ *Education and Training—Science and Technology for Development*, United Nations, p. 11.

² Jawaharlal Nehru, *Discovery of India*, p. 278.

tained economic progress. If she is not actually stagnant, so far as the ratio of national income to total population is concerned, she is still very poor and while countries with a per capita income below \$ 500 per year are considered underdeveloped, India stands out with \$ 65 per year.

An American economist who made a study of India's development problems wrote pessimistically.¹

(India) has varied and rich natural resources, it has able and well-trained leaders and it has a skilled adaptable population. Yet with all these assets it has remained a poor country, and up to the present its efforts at economic development have not produced very impressive results. Although the total national income of India has hovered around 100 billion rupees, or more than 20 billion dollars, its per capita national income has been one of the lowest in Asia and has shown very little increase in the last decade. Per capita net real output has increased between 1948 and 1956 only 10.2 per cent, and this increase occurred for all practical purposes in two spurts in the period 1951 to 1954. Since 1954 per capita real output has grown only by 1.4 per cent and the recent discussions on the economic crisis in India, although the lack of foreign exchange and the consequent difficulty in fully implementing the Five Year Plan, have, in truth, a much more fundamental aspect—the general poor prospects of economic growth in India.

The American Journal *Newsweek*² wrote in 1964: "If Prime Minister Shastri can't lick the problem of India's economic development, then not only Shastri but India as well is endangered.

So said one of India's top diplomats and with ample justification. In its unavowed economic race with Red China, India currently seems to be lagging. Chinese statistics are at best treacherous, but between 1951 and 1958, say British experts, China's gross national product shot up 173.2 per year only 120.3 for India. And since then, despite the catastrophe of the

¹ Berthord F. Hoselitz, "The prospects for Indian Economic Growth", *University of Texas Conference on Economic Development*, April, 1958, p. 1.

² *News Week*, June 29, 1964, Vol. LXIII, No. 26.

Great Leap Forward, the Chinese have continued to outpace the Indians. Indian growth, moreover, is increasingly dependent on massive inoculations of foreign aid—up from \$84 million in 1951 to \$800 million in 1963,—while China, with Russian aid almost totally cut off, has achieved most of her growth out of her own resources.

Most Indians, however, are less interested in beating China than in seeing the living standards of the vast bulk of their countrymen raised above the level of mere subsistence. Here the problems are almost unimaginable. In Calcutta alone 25,000 people have no shelter of any kind and live their whole lives on the sidewalks. In the countryside most of India's 400 million peasants live in areas accessible only by footpath. Moreover, despite the efforts of three five-year plans, the only sectors of the Indian economy which are showing notable increases are prices and population.

India's population explosion is of hydrogen-bomb size. Each year India grows by 8 million people—the equivalent of the population of Sweden. In a desperate attempt to reduce the rate of increase (more than 2.2 per cent a year), the Indian Government has spent \$30 million to set up 9,090 family-planning clinics, passes out free contraceptives, and has sterilized (at their own request) 433,000 men and women.

But the explosion is nowhere near muffled and never will be unless the deeply ingrained adulation of children as a gift of God and the practice of having them as a form of social security are eradicated. New Delhi has big plans for recruiting a million workers to go into the village and preach family planning, but the birth rate is expected to increase before it falls.

Besides birth control, the five-year plans lay heavy stress on developing basic industries from textiles to steel. A debate is raging over how far to go down the socialist road to nationalisation; but for the time being, at least, India is doing her best to attract private investors from abroad. "We used to have an inferiority complex about private capital" says Finance Minister Tiravallur T. Krishnamachari, "But we no longer feel that it means foreign domination". However, Nehru, some say, paid too much attention to industry and too little to improving farm output, from which 80 per cent of the populace earns its living. In fact, agricultural production showed no gain; the result has

created one of Shastri's most pressing problems—rising food prices that will wipe out any income gains the average man makes.

India gets much free advice on what it should do to solve its problems: spend more on birth control, funnel greater effort into agricultural advances, devalue the rupee to make its exports more competitive. But more than anything else, what holds India back is the acceptance by her peasant masses of their lowly way of life. Centuries of struggling to keep from starving has fostered an accommodating religious belief that through poverty, a state of blessedness can be obtained. Because of this—and a suspiciousness born of centuries of exploitation—farmers are reluctant to use the chemical fertilizers and irrigation water that are available. ("If I use fertilizer," explains one farmer, "it will cost money and cut my profit.") Faced with this adamant rejection of progress, India's agricultural experts are losing some of their dedication and are beginning to wonder if their country is worth the effort.

Such are the economic and political problems of Lal Bahadur Shastri—easy to define, difficult to attack. Beside them, President Lyndon B. Johnson's war on poverty in the United States looks like a cricket match."

SOME ORDINARY PEOPLE OF INDIA¹

The Peasant

"I've never worked a full month in my whole life", says Kalu. Looking at him—his sunken cheeks, his ragged clothes, and his wretched children—one knows that this is true, and that it is the crippling curse of the Indian countryside. Four out of five Indians still live off the land, and many of them are worse off than Kalu.

Kalu at least owns the land he inherited from his father: about 560 square yards of barren, worked-out soil in the Punjabi village of Rajokri. With rain coming twice a year, he can grow two crops, one in the winter and another following the monsoon rains in July. On his small patch of earth, Kalu estimates he grows enough millet and barley to keep his family alive for three to four months at best. For the rest of the time, he is completely dependent on what he can earn as a casual laborer, either on public-works projects or as a hired hand to a big landowner.

When he is working, Kalu gets 2 rupees (about 40 cents) a day. But

¹ *Newsweek*, June 29, 1964, Vol. LXIII, No. 26.

he is often sick, and there is plenty of competition for whatever work is available. "If I can't get more money, I'll have to take my son out of school," he says. That, to him, would be the greatest tragedy; for he wants Hukamchand, now 14, to get something more out of life than the endless toil and terrible monotony he has known.

His other great worry is his 13-year old daughter, Maya. He has put off her marriage. (Indian village marriages are often arranged at the age of 5.) But he can't put it off much longer, and this means getting together a dowry. "I'll have to get a loan," he muses. More likely, he will have to sell a sliver of land to moneylender Kewal Singh whom the rest of Rajokri's 1,250 people regard as a rich man because he owns property worth \$ 8,000.

Kalu and his family live in a two-room, windowless house that Kalu built himself out of mud bricks and thatch, plastered over with a mixture of cow dung and water. But although Kalu's wife died last year and he is bringing up four children himself, his home is nowhere near as dirty as most of the other 400 houses in the village, mainly because he owns no livestock. His neighbours keep their cows, oxen, and water buffaloes in their homes with them.

Normally, June is a busy time for the people in Rajokri. It is the month of weddings, and also the month before the monsoon. Most of the town-folk, in fact, were out in the fields last week, scratching their plots with the crudest of plows—a metal prong attached to a stick drawn by a yoke of oxen or hump-backed cattle—desperately trying to stir life into their worn-out soil in time for the rains, which come too fast and last too short a time.

But Kalu was at home. He had nothing else to do. "I have plenty of time to prepare my small plot," he says, "and besides, there is no other work." So Kalu spent his time chatting with his brother (who is also jobless) and feeding the children—the youngest is 5—with bread and salt, a little mixed grain, and some vegetables. They never get meat, and "I can't afford to buy tea", Kalu confesses. He has a peasant's resignation about it all: "Somehow I manage."

The College Graduate

Maila S. Prabhakar is a short, dark man with the round face and ready smile that characterize people from South India. Offhand, it would seem that he should have a bright future ahead of him. He is young (25), intelligent, and has a master's degree in economics and statistics from Vikram University. But Prabhakar, who came to New Delhi three months ago to look for a job, is still unemployed. "I suppose I'll have to go back to my village and find what work I can," he says.

There are thousands of other young Indian university graduates just as disgruntled as Prabhakar. Having been herded through school in a crash national education program, they now find their country has no jobs to offer them.

Prabhakar's case seems stranger than most because India desperately

needs technically trained people. Only two weeks ago, the government appealed to Indian students abroad to return home, offering them as assured monthly income until they find the job they want. And yet Prabhakar has scoured the city for work. "I used to go over to the Employment Exchange because it is the only way of getting a government job. But the answer was always the same—no position open." As for private business," says Prabhakar, "only people with influence get jobs there."

Part of the reason for Prabhakar's dilemma is that the Indian economy simply isn't growing fast enough to absorb all of its university graduates. But Prabhakar himself thinks he is being discriminated against because he is an untouchable farm worker's son. "The caste problem here," he says bitterly, "is worse than the U.S. color problem. He claims the Communists have won over many Indian students, particularly among the lower castes. "The Communists," he says, "show sympathy where others look down upon

The Bourgeois

Jag Mohan Lal is a middle-aged, middle-class bureaucrat with an aquiline nose and slightly kinky graying hair. At 51 he has reached supervisory status in the mammoth (32.5 million employees) Indian civil service. This entitles him to a salary of 400 rupees (about \$80) a month and a three-room bungalow in a government-sponsored development in a residential area of New Delhi. The house has running water, electricity, a ceiling fan in the living room, and an outdoor privy. By Indian standards, Lal leads a life of luxury.

It sounds good until he tells you that a total of eleven people live in those rooms—he, his wife, his six bright, batten-eyed children, and his widowed sister with two of her four children. And although the six-year old bungalow costs Lal only \$8 a month, \$32 less than he would pay for comparable private housing, it is already deteriorating, its concrete walls crumbling, for lack of proper maintenance. But the few sticks of furniture—a couple of padded, chintz-covered sofas and an old radio—exude an air of genteel poverty.

Lal readily admits to money problems. "We can't save anything," he says. With typical middle-class self-sacrifice, he even became a teetotaler, a non-smoker, and a vegetarian in an effort to keep his two sons in private school—the real key to social and economic advancement in India today. Although Lal managed to cut family expenses \$20 a month this way, it wasn't enough, and now the boys go to state schools. But both his eldest daughters, 16-year-old Rama and 22-year-old Urmila, are in college; Urmila works days as a stenographer to pay for her night school. The rest of her salary is put aside for her dowry, which may total \$2,500.

Lal's own marriage was arranged when he was 5 years old and he never even saw his wife, an illiterate country woman, until his wedding night. Their marriage has been a contented one. Even so, he has no intention of picking his daughters' husbands. "Times are changing," he says.

Though Lal accepts the new ways, he still misses the "good old days"

of the British raj before his family was forced to flee from what is now Pakistan. His lifelong struggle with genteel penury has also somehow managed to make a giggling moralist out of him. He looks on movies as spreaders of all sorts of evil ideas: "Without them, India would flourish." He complains about prices: "Cobblers charge you 4 annas (less than 1 cent) just to put a couple of nails in your shoe." And as for today's youth, "all they do is sit around combing their hair."

Yet, all in all, old-fashioned, plodding, honest Lal is typical of the man at the heart of India's bureaucracy. He claims he has never taken a bribe in his life. "Without bad habits, a man with four children has enough with 400 rupees," he says. "Why take the chance?"

The Sweeper

His name is Kaloo. He thinks he is between 26 and 28 years old, but he isn't sure. He is one of India's 67 million untouchables or, as they are politely called nowadays, the Scheduled Castes.

Although the Indian constitution stipulates that Kaloo is as good as any other man, he is still rooted at the bottom of his country's carefully labeled social order. "I can sit anywhere I please on a bus," he says, "but I am still a street sweeper." For eight hours a day, beginning at 5 A.M., Kaloo waddles duck-fashion on his haunches along a 4,000-foot stretch of New Delhi's New Rajendra Street, sweeping a 4-foot swath with an oversized whisk broom.

For his labor, Kaloo is paid 109 rupees (about \$22) a month. His pretty, bangled wife, Chowlee, earns another 10 to 20 rupees a month cleaning lavatories. She can do this because she is able to leave her youngest child, a naked baby girl, with a government nursery on the edge of Bhangi Colony where the family lives. The colony is a festering huddle of tin-roofed shacks in the heart of New Delhi 2 miles from fashionable Connaught Circus. Kaloo's home, which he built himself, is one simple room, 6 feet by 12. His family eats off the spotlessly clean, earth-packed floor and sleeps on wooden bed frames strung with loose-woven rope. They share a water tap and a latrine with 500 other untouchables.

Besides the baby, Kaloo has three other children, two boys and a girl, all of whom go to school. This costs him 3 rupees (80 cents) a month, but he thinks it well worth the price. "I had no schooling and I cannot hope for a better job," he says. "But I hope my son will not be a scavenger like myself."

As befits a scavenger, Kaloo goes barefoot and owns one set of clothes: an undershirt and khaki wrap-around skirt. Yet it seems only natural to him that his wife, according to Indian custom, sports brass bangles on both arms, a gold ornament in her nose, and silver rings on her fingers and toes.

But although the traditions of old India are so much a part of Kaloo's life, he and his fellow untouchable know enough about modern Indian democracy to manipulate it successfully on occasion. When the municipal authorities began to demolish the Bhangi Colony slums to replace them with low-rent mass housing, the untouchables made it quite clear to their

local member of Parliament that they much preferred living in their fetid shacks. For one thing, they pay no rent in Bhangi Colony. For another, they would have to move while their homes were razed and new apartments built. The "Congress wallah" got the message, campaigned and won re-election on a platform to stop demolition of the slums.

Kaloo also knows the name of his new Prime Minister and the full "Lal Bahadur Shastri" rolls easily off his tongue. And he deeply felt the death of Jawaharlal Nehru. "He was the friend of the *balsnigi* (the local name for untouchables), "Kaloo says sorrowfully. "It was as if one of our family had died."

The Model Farmer

Mr. V. C. Rangaswamy, who is in his 30's has developed a farm where he employs improved agricultural practices and by achieving good results, is demonstrating the efficiency of these measures. He is indeed a true model farmer.

By dint of painstaking efforts, he has, in five years added four acres to his 10-acre farm in the village of Kurudampalayam in Perianaickenpalayam block of Coimbatore district. He is reclaiming these additions and bringing them to the standard of fertility he maintains in the rest of his holdings. The methods adopted by him are simple and easy to follow. By undivided attention to his paddy crop, (CO. 25 variety) he was able to get 8,248 lbs. of paddy from an acre last season. He narrowly missed the State award for the best crop as he did not register in time for the competition. The cost of cultivation, about which minute details are kept, works out to about Rs. 450 per acre and the yield from the one acre plot has given him a net return of Rs. 750.

The secret of his success in paddy, according to Mr. Rangaswamy, lies in the attention paid to seedlings at the nursery stage. Water supply to the nursery is suspended on the 15th and 30th days; this, he believes, increases the tillering capacity of the seedlings, resulting in greater number of earheads and therefore a higher yield. It is also to be noted that in the field where these seedlings were transplanted, not less than 50 tillers were observed for each hill. Sheep penning and intensive green-manuring was followed by application of 100 lbs. of Ammonium Sulphate, 200 lbs. of superphosphate and 30 lbs. of Potash. He believes in the Japanese method of planting and has got the high yield by adopting it.

Rangaswamy grows sugarcane in the main season and the *Adsal* (Adi Pattam) season. His yields of cane are over 50 tons, and he once got the village level award for the highest output of 56 tons. He has obtained CO. 658—an early maturing strain—45 pothis of jaggery in the ninth month itself. He is introducing the high sucrose varieties like CO. 997 and CO. 740 this year. By multiplying cane varieties with him in nurseries of six months' duration, he is able to supply good disease-free sets to other growers at rates lower than those charged by the Agricultural Department.

Cholam is another crop raised in his farm. He got a yield of 3175 lbs. per acre with the CO. 18 variety, and a net return of Rs. 497.50 per acre.

The new cholam hybrid evolved in the PIRRCOM Research, Centre (M.S.X.I.S. 3687) has been tried out in his plots and has given over 4,000 lbs. yield.

He has great faith in green manures and raises nearly 6,000 Glyricidia plants and a large number of Ipomea plants also.

Before starting cultivation in a new piece of land farmer Rangaswamy takes much pains to process it, so that the soil becomes responsive to cultural and nutritional treatments. Without any aid from soil science experts, he has amended his soil well, adding to it what it lacks. By adding an adequate quantity of good porous red soil to the heavy black clayey loam in his farm, he has converted it into a fine loam with high moisture retentive capacity.¹

The College Principal

My college is one of the many new colleges started in India after independence. It is an independent girls' college affiliated to our University and gets grant-in-aid by the Government.

It is a Degree College and teaches both Arts and Science up to the Degree level. The students range between 16 to 20 years of age. They join the college after passing the High School Examination which is now called Secondary School Examination.

The College did not have a building of its own till three years ago. It used to be housed in three rented buildings which happened to be adjacent to each other. The rooms were small and unsuitable for a class-rooms. There was no Assembly Hall, no Common Room for students and no play ground. For the first four years the class-rooms did not ever have electric fans, and the students and teachers had to carry on all their work in the humid heat of the city where temperatures sometimes rises to 112°F in summer.

The land on which the present college has been built was purchased after years effort on the part of the members of the governing body. The problem of putting up a suitable building was a very difficult one for the College was already running on deficit and had no money for building. It was an up-hill task to collect money. The women members of the Governing Body who, before, independence, would not have stepped out of their houses, went door to door collecting funds for the building, selling tickets for the several Varsity Shows performed by the students, selling flags and hand-made articles, for a cause dear to their heart. I am surprised to see in the wills published here how much money is left to educational institutions by wealthy people in the U.K. The majority of our rich people have not yet awakened to the need of spending money on anything which does not bring to them immediate profit.

Most of the students belong to the middle and the lower-middle classes. They usually come from large families of four or six brothers and sisters and have to spend about Rs. 15 per month on conveyance alone apart from the tuition fee of Rs. 12 per month. They buy their own books and

¹ *The Hindu*, Aug. 17, 1964.

stationary. Parents have to spend a minimum of approximately Rs. 35 to Rs. 40 per month for every school-going child. It is a large amount for an average middle-class parent earning between Rs. 300 to Rs. 500 per month.

There are some state scholarships available for meritorious students but the number is limited. The college allows freeships to 15 per cent of the students, but that too is inadequate.

The minimum qualification for a college lecturer is a second class master's degree in the respective subject. Since the cost of living is rising every day, the salaries are too low to attract brilliant persons. But as most of the other careers are not yet socially very popular one finds women taking up to teaching. This is gradually changing with more openings for women in other careers. So that it is sometimes very difficult to find in certain subjects.

Transport is inadequate and exacting. Public buses are crowded and infrequent, and taxis are expensive and not easily available. Housing is equally difficult and it is hard to get a comfortable living accommodation for less than Rs. 200 per month. This amount is far too much for a new lecturer earning Rs. 300 monthly and creates many social and psychological problems.

Public Library facilities are almost non-existent. The college has a small library of about 10,000 books, not enough even to meet the requirements of the students. Research work of teachers is greatly handicapped for lack of books and other materials.

There is no arrangement for subsidised needs for students or teachers. Institutions usually make arrangements with private bodies to run canteens, whose motives are usually commercial. My college plans to build a cafeteria and dining room but the plan has yet be materialised due to shortage of funds.

And yet every year more and more students rush in for admission. The number of students is rising every year. This college which started with 128 students in 1954 has about 800 students now. The encouraging feature is that in spite of all these hardships one finds a spirit of devotion and sacrifice both among teachers and students. They have to stand sometimes for hours in a queue in the blazing summer sun of India, waiting for buses to take them to their educational institutions.

Quite a large number of graduates from my college go up to the Training College or University for specialisation. Two science graduates from this college are already practising as physicians. Some are working in hospitals, research institutes and quite a few have found jobs in offices, firms and business concerns. All this is almost a social revolution in a country where women, by and large, occupied an inconspicuous position in the life and activities of the country.

Mrs. U. S. Zaman

The School Teacher

I have been working in a higher Secondary School in Calcutta for quite a few years. I enjoy and love teaching but I have not had my ambitions

and dreams realized in this field because I am dissatisfied with many of the aspects of the Indian Educational system.

First of all the building does not often meet the requirements of the school. The class rooms are very small and the number of students in each is great. As a result it is not possible for the teachers to pay attention to every individual needs and she runs short of time for intelligent original preparation of work and careful marking.

Schools lack Science laboratories, suitable equipment for practical work for Geography and Home Science. Stress is laid upon the theoretical side of the subjects and the students are little acquainted with the practical side.

There is curiously enough acute Staff Shortage. Curiously because every year thousands of well qualified teachers emerge from training Colleges and are absorbed into the profession. Yet, schools cannot employ extra staff to afford a little free time to the overworked permanent teachers because suitable conditions are not available. Hence, a permanent teacher during her free time is expected to take over the class of any absentee. There exists therefore great indignation amongst the teachers over the confiscation of their valuable "off" time.

There are comparatively very few teachers of specialised subjects in the Secondary Schools, especially in English, Economics and Science group, because they are attracted to other well paid jobs. Teachers who have little mastery over the English language are often required to conduct English lessons in the upper classes. Others with an inclination for Arts subject are asked to teach Science Subjects. The result is general dissatisfaction and a dropping of academic standards.

There is no provision for nourishing refreshment during play time for the pupils. Before the end of the day the young students feel tired and listless and lose concentration on their work. They are driven to despair over their poor performance and progress and this affects greatly the teacher-pupil relationship.

Many schools do not possess any play grounds and sometimes classes are held under a tilted roof in the heat of the tropical sun. Neither the teachers nor the pupils are in a mood for serious study and this leads to poor achievements on both sides.

The headmistress holds an enormously responsible post. She has besides administrative duties to keep an accurate school accounts ledger. She has often to meet and pacify demanding and sometimes belligerent parents. Above all these she is expected to take a few classes. In my opinion this is pointless since often it is noticed that some other teacher has to keep the heads' class occupied because either she has some visitors or she is out for some important work.

In order to supplement their poor income the teachers undertake private tuitions. They are over worked and find very little time for the following day's preparation.

The school library is not adequately furnished and is often not within the

reach of the standards. There is little material to feed the eager enquiring mind.

In order to eradicate many of the blemishes in the working of the schools, I feel there should be great understanding and co-operation amongst the various school head teachers, and the local authorities. There should also be an equal distribution of responsibilities amongst the various authoritative bodies and within the schools for the proper co-ordination and harmonious existence of one of the noblest of professions.

Arunima Pal

CHAPTER II

PROBLEMS OF EDUCATION

A LEADING feature of underdeveloped countries is their lack of education; in them a large proportion of children of school age are without any schooling whatsoever. Although the latest available statistics are somewhat out-of-date they show the magnitude of the problem. In India, eighteen years after independence (1965) less than 50 million children were enrolled in schools out of a population of over 450 million; in Brazil (1960) less than 8 million out of a population of 55 million; in Ethiopia (1960) only 72,000 out of a population approaching 18 million. In some countries, the proportion is higher than those cited, but as a whole only over half the children of primary school age are enrolled in primary schools. Again, the problem of wastage is serious in every underdeveloped country, i.e. many children give up attending school before they have stayed long enough to have gained some permanent benefit from their attendance. At the same time, the quality of the primary education provided is considerably lower than in Western countries. A primary school course may last only four or five years and for various reasons the numbers attending are well below the numbers enrolled.

"Each year" pointed out the United Nations, "the total number of persons living in poverty and distress increases rather than diminishes. Even in the field of education—in spite of considerable progress in many less developed countries during the last decade—achievements have not been enough to justify complacency. In spite of the effort to eradicate illiteracy, the number of people who cannot read and write still tends to go, simply as a result of the population explosion. In India, for example, the census figures for 1951 and 1961 disclose an increase between those years of more than 46 million of persons able to read and write; yet this splendid achievement was not enough to prevent the number of illiterates from increasing by more than 11 million in the age group of five years and over."

The United Nations further stated that out of the 1350 million people living in the less developed countries, more than half are illiterate, less than 10 per cent of the children of 14 to 18 are in secondary school; and only the thinnest layer is undergoing technical training or university study.

Unfortunately, the ideal of providing quickly a minimum of school education for every child is still far from being realised and provision for the education of girls still lags far behind that of boys. Moreover, in most of the underdeveloped countries of Africa only a small percentage of the primary school children go on to any kind of secondary education, and very few go on to universities. Furthermore, many countries try merely to copy the education of the advanced West which may be not only futile but positively harmful in underdeveloped areas. Some regions have great diversity of structure and a wide range of religious and linguistic characteristics. But, they have only one thing in common, which has complicated the problem further. Everywhere the leaders of the people have a desire to acquire the apparatus and the gadgets of a machine civilization. The Editor of *The Year Book of Education* remarked that everywhere people want television sets, motor-cars, and refrigerators.¹ But for the most part they have no desire for the patterns of thought and behaviour typical of those national groups which have created modern science and twentieth-century industrialism. People of many underdeveloped countries seem to have but small appetite for industrial discipline and Western modes. What they seek is the external result, the fruit without the preliminary preparation and labour.

"Natives born in Central African villages" said the Editor "can certainly learn the simple techniques and a few may qualify as engineers and scientists. Yet this does not take us far. To learn to drive a tractor is easy. To learn how to maintain its productive performance and how to repair it is another matter, for it is not a one-man skill. And to learn how to design, produce and finance the distribution of this tractor is a still more difficult problem. To make and to maintain large numbers of complicated machinery requires a deep change in a whole community."²

In parts of Europe and America unlimited resources of land and capital developed universities which favoured the growth of a

¹ *The Year Book of Education*, 1954, p. 2.

² *Ibid.*, p. 3.

positive science to exploit natural resources. With commercial and industrial initiative and several socio-political revolutions, the West strengthened a respect for individual liberty which gradually released a great fund of inventions and energy.

"Western Europe" continued the Editor of The Year Book of Education, "created industrial technology and, in the course of centuries, absorbed it into its social structures and way of life. It was a native growth; the problem faced was one of cultural development, not one of the assimilation of foreign elements At no stage was there anything like a challenge to fundamental values, nor was there a demand for radical changes in patterns of thought, attitude, and behaviour. And Europe had time for a gradual and evolutionary change. Modern under-developed nations are starting late, entering a highly competitive modern world when technology is far advanced and enormously more complex. Their very survival in fact depends upon a rapid, almost revolutionary adjustment to these new demands on society."

Thus while the problems of underdeveloped countries are complex and their prospects far from bright, education is felt to be the key to any future development. It is urgently needed both to help people to become more efficient producers of wealth and to fit them better for the task of governing themselves. If equal political rights are to be enjoyed by everyone, then every child ought to have at least an efficient primary school education. Nor can secondary and higher education be neglected. There is also the problem of illiteracy among adults as over half the adult population in most underdeveloped countries cannot read or write.

In this atomic age, when the world has grown more compact than ever and when the destinies of nations are closely linked together, the situation in India is indeed a danger the more so as with illiteracy go other ills, a low standard of living, poverty, a high birth rate and a high rate of disease.

Africa is very much in the news now. This year, it is said by politicians, will be the year of Africa. Illiteracy and lack of education is in fact responsible for many of the evils of the present political situation there. The cause of Africa's unsatis-

factoriness can be found in the tribal society where education and well-established customs would have given better guidance. If it is accepted as a desirable minimum six years of efficient primary education for every child, together with a full secondary course for one child in every ten, this might mean that about one fiftieth (or about 2 per cent) of the total population of Africa complete the sixth year of education in any one year,¹ and a further fivehundredth (or 0.2 per cent) annually complete their secondary school course in the twelfth year. A very high percentage of children leave school after only one, two or three years. For example, in Kenya in 1956 boys completing the fourth year of education were only a half and those completing the sixth year only a seventh, of the number of boys who completed the first year at school: while for girls the corresponding fractions were as low as two-fifths and one-eleventh. Allowance may be made for the fact that more children are entering school now than in 1956. To get a true picture of Africa comparison can be made with the Kenya figures for children in the lowest class in 1950 with those for children in the sixth year in 1956, i.e. for the same group six years later. It is then found that the enrolment of boys has dropped from nearly 90,000 to under 14,000, and of girls from nearly 58,000 to under 4,000. Wastage on such a big scale is alarming and it means that many hundreds of thousands of pounds are spent in Africa every year—out of inadequate resources—on children who spend at school far too short a time to gain any real benefit which may help them in future. It is undoubtedly one of the most difficult and most urgent of the problems of educational development in Africa.²

The situation in the region of South Asia where more than 600 million people, representing about one-fourth of the population of the globe, live, is also not encouraging. Most states in the region have secured their independence since the second world war, and they are anxious to consolidate their national existence and to reconstruct their national life. In the process

¹ *Problems of African Development*, Part II—Oxford University Press, p. 31.

² *Ibid*, p. 32.

of regeneration the role of education is vitally important. But the magnitude of the problem in their region is enormous. The birthrate is extremely high. This was partly checked in the past by a high mortality rate, particularly among children. To-day, the progress of modern medicine has considerably increased the chances of life for the young. At present, the ratio between the child and adult populations of the region is much higher than in most of the advanced countries. For example, the number of children between the ages of 6 and 12 in England represents little more than 8 per cent of the total population, whereas the corresponding figure for South Asia is at least 15 per cent.¹ Indeed, in countries like Malaya and the Philippines, this age group amounts to as much as 19 per cent of the total population. The educational and financial load which these countries will have to carry when they accept universal compulsory education is higher than that of most European states. The advanced states of Europe and America make the best possible use of their resources, push the frontiers of science and technology even further, improve social conditions and open educational opportunities to all its members. But in the South Asian region some societies are very poor; they live close to nature and wrest a bare living from the soil. The whole region is preponderantly agricultural. There is then, the double problem of the number of children and the meagre available sources. The extremely serious task calls for courage, knowledge and skilful planning on the part of the leaders of these countries.

It has been suggested that the lack of education must be remedied; and many have urged that underdeveloped countries should give absolute priority, in their planning, to education. An illiterate person it is argued cannot fulfil his duties properly as a citizen and education is essential to develop a child's talents and personality. There is no doubt that a child should learn something about the world he lives in and he should be trained to think. Many countries have made plans to increase their higher education, up to and including university level, to provide the competent leaders needed both in government and other walks of life. Some consider primary education the panacea to cure all the evils of underdeveloped countries, "My view on

¹ *Compulsory Education in South Asia and the Pacific*—UNESCO, p. 14.

educational priorities", declared Professor W. A. Lewis "that is to say immediate rather than ultimate objectives, is that all countries should aim at having universal primary education. Universal primary education should be an immediate objective."¹ Unfortunately, owing to their poverty, the leaders of these poor countries have to choose between spending more money on education and other social services, on the one hand, and on the other spending more money on promoting their economic development. They have not enough money nor enough real resources as yet to do all that needs to be done in both these fields; for unfortunately the more they spend on the social services, the less they have to spend on economic development, and conversely.

It should be noted that the social services other than education may equally claim absolute priority. The health services, for example. How can people work or think effectively if they suffer from chronic illness or disease? Poor health is still responsible for a great deal of inefficiency among adult workers in India and it has a very bad effect on school attendance and on children's ability to learn. The improvement of health is fundamental to the whole problem of development.

"African health problems" writes Batten "have tended to become more serious and urgent of recent years. There is still a vast amount of preventable suffering: and although detailed and reliable statistics are unfortunately lacking except in a few instances, those which are available indicate a very unsatisfactory situation. Large areas of East Africa are uninhabitable because of the tsetse fly which carries the infection of sleeping sickness. Helminthic diseases in some areas are thought to affect as much as 90 per cent of the entire population. Leprosy is widespread over all parts of Africa, and it has been estimated recently that there are more than 80,000 lepers in Uganda alone. When we note also the very high death-rate of mothers and babies in childbirth, the prevalence of diseases due to tick and lice infections together with the considerable toll taken by pneumonia, dysentery,

¹ *Financing the Economic Development of Underdeveloped Countries* by W. A. Lewis, p. 16.

smallpox, and other diseases, the health situation appears even more gloomy. Malaria is responsible for a high death-rate among very young children and much ill health among adults.”¹

On the other hand Malaria has been practically wiped out in the U.S.S.R. The press department of the Soviet Embassy in London² declared that last year there were only 350 cases of malaria in the Soviet Union, out of a population of 216 million. In four Soviet republics—Kirghizia, Latvia, Lithuania and Estonia—there was not a single case. Announcing this at a meeting of the Presidium of the U.S.S.R. Academy of Medical Sciences, Professor Pyotr Sergiev, Director of the Institute of Medical Parasitology and Tropical Medicines, said that as recently as 1940 there were over three million malaria cases in the country.

“The success” he added “in practically wiping out malaria in such a short time could be attributed to the planned measures against mosquitoes and the well-organised system of treatment. Medical preparations were distributed free, and thousands of specially trained volunteers helped the doctors by distributing medicines to the population and ensuring proper treatment.”

Like Soviet Russia the underdeveloped countries could also check the spread of diseases.

“Ceylon has shown”, writes Shonfield, “just how rapidly fatal diseases can be fought back by a vigorous national health programme, in which measures against malaria played a large part; the death rate per thousand people dropped by almost half in the six years from 1946 to 1952.”³

Other underdeveloped countries could follow these examples and improve health conditions. Many lives could be saved by proper medical attention or by more adequate public health measures to prevent diseases from arising and spreading. Pro-

¹ *Problems of African Development*—T. R. Batten. Chapter II, p. 9-11.

² Soviet News, February 23, 1961.

³ *The Attack on World Poverty*—Andrew Shonfield, London, p. 82.

gress of this sort depends on the discovery of better ways of preventing and curing disease. And this can be made possible by research and patient investigation into the causes and effects of disease on the human body. Only when the causes and the course of disease in the body is known, can new means of prevention be suggested. Study of the causes and the symptoms of disease in the human body has led to the discovery of better ways of curing cholera, small pox, malaria, beriberi when it occurs and spreads. Constant efforts should be made to control these diseases by preventing the causes of their growth and finding scientific ways of treating them.

Health problems cannot be solved merely by preventing the causes of disease and curing them.¹ The mere absence of disease is not a sign of a sound mind and sound body. A nation's health problems cannot be solved altogether by the prevention and cure of disease in hospitals and laboratories. Germs of disease attack their victims most successfully when the standard of general health is low and when the conditions under which they grow expose them to the constant danger of infection.

One major reason for a low standard of general health and susceptibility to disease is lack of sufficient good food. A good balanced diet is a positive source of fitness and energy which serves to arrest the growth and spread of disease in the human body. Lack of nutritional food causes beri-beri, pellagra and scurvy, diseases which are common in underdeveloped countries.

Thus against the powerful plea for compulsory education is the argument for giving priority to measures for health improvement and the improvement of food; measures to provide for an increased number of doctors, nurses, health-workers, hospitals, dispensaries as well as measures to raise the yields on land under cultivation or, where land is not fertile, to make it more fertile by irrigation and guarding against soil erosion and floods.

The argument to provide irrigation and agricultural improvement rests on the view that unless measures are taken to improve agricultural production there will never be any escape from the present low standards of living in underdeveloped areas. Actually the great majority of the people in these countries have never enough to eat. Their diets are often inadequate in food values consisting largely of starchy foods with far too

¹ For a detailed discussions on health problems, see chapter IV.

little protein, fats, vitamins and mineral salts. It has been shown that many of the prevailing health difficulties and alleged laziness or inefficiency, are fundamentally due to malnutrition. The major task, therefore, is to develop the economics of a country to enable the people to free themselves from poverty by increasing their output. When national output can be increased and put on a firm footing, a growing margin will become available to pay for the continued expansion of education and other social services.

It has been pointed out that "expenditure on education is the communal investment which in the end brings the best return. It does more than any other expenditure to make material progress both possible and worthwhile."¹

The problems of increasing wealth and improving health and education are interdependent. Existing health and education services can be improved to the extent that the people can produce more wealth to provide for an increased number of doctors, teachers, and build and maintain hospitals and schools. Thus in many of the underdeveloped countries there is a vicious circle. The people are badly in need of good health and education services to deal with the ill health and ignorance that keep them poor, but because they are poor they are unable to afford these services.

Fortunately, both national authorities and international bodies like U.N.O. and the Ford Foundation have become aware of this undesirable and dangerous situation in the underdeveloped countries. The Universal Declaration of Human Rights in Article 26 stated that everyone has a right to education, that education shall be free at least in the elementary and fundamental stages and that elementary education shall be compulsory. In 1951, UNESCO launched a programme by holding an international conference in Geneva in collaboration with the International Bureau of Education. This conference which was attended by representatives of the Ministries of Education from 49 states adopted a recommendation of free and compulsory education.²

Convinced that the effective method of eliminating ignorance lies in providing free and compulsory education for all children

¹ *Full Employment in a Free Society*—Lord Beveridge, p. 163.

² *XIVth International Conference on Public Education*, Geneva, 1951, Publication No. 135.

of school age, UNESCO has sent missions of experts to advise different states in various parts of the underdeveloped world on questions of compulsory education, teacher-training and school curricula. A number of fellowships and scholarships in these fields have been made available to educators. All such efforts are no doubt admirable. But the problem facing compulsory education in the underdeveloped areas are enormous. Compulsory education may be possible in a developed and advanced society like those of Britain, France and the United States, which have enough resources to provide comprehensive facilities for education and to make other important investments as well, but unfortunately they are not so in most underdeveloped countries.

"Their incomes are so low", said Benham, "that there is a very little margin for personal savings, and the sum-total of personal savings is extremely small. In some of them, the undistributed profits of companies are an important source of savings, but they are not available for public expenditure. The moderate amount of public saving and investment which takes place is done mainly by the Government, which raises money by taxation and spends it partly on developmental purposes including education. The British Government's revenue is well over £100 a year per head of population ; that of most underdeveloped countries is lower than £5 a year per head of population."¹

Moreover, if universal primary education (to say nothing of secondary, technical, University, and adult education) is adopted by an underdeveloped country, her costs would be staggeringly high. Thereafter, the annually recurrent costs would be considerably higher proportionately to national income from public revenue than in a country such as Britain, because their populations contain a much higher proportion of children.

"Their 5-14 year age-groups", a U.N. Report points out, "amount to 22-27 per cent of their population, instead of 13-19

¹ *Education in the Underdeveloped Countries*—by F. Benham, International Affairs—April, 1959.

per cent as in the countries of Europe, Northern America, Oceania and probably the U.S.S.R.”¹

Moreover, the individual nations of Europe and North America who have solved the problem of compulsory education, were in a different position during the past century. There the progress of compulsory education accompanied great advances in science and technology, the growth of democracy and rising prosperity and standards of life.

“It would, of course”, said UNESCO, “be false to regard the spread of education as the cause of progress on other fronts, but the two sets of factors are undoubtedly interrelated. While developments in science, technology, economics and politics create the necessary wealth and provided the ideological basis for extending schooling to all sections of the population, in its turn compulsory education has given the nations the human resources needed for further progress.”²

But in the various states and territories of the underdeveloped world the cost of universal primary education is beyond means, even if a great deal is sacrificed of alternative public expenditure in order to find the money. It is also quite possible that there would be quite a number of projects available as alternative investments of public revenue which would bring a quicker and also a greater return.

“For example, it might be possible”, said Benham, “greatly to increase yields in agriculture by training cultivators in better methods or by providing them with improved planting material. An irrigation scheme might permit two crops a year instead of one, a new road might open up markets to a large group of farmers, a hydro-electric scheme might supply cheap electric power to a large area, and so on. Hence if further expenditure on education were considered solely from the

¹ U. N. *Report on the World Social Situation* (New York), Chapter V, P. 69.

² *Compulsory Education in South Asia and the Pacific*, UNESCO, p. 13.

stand-point of its yield as an investment it might have to take rather a back seat, apart from a certain amount of technical and vocational training."¹

But still it must be admitted that the case for universal primary education in underdeveloped countries possibly cannot be judged on the grounds of its profitability. If education is regarded as an all round development of a man expanding his horizons and enriching the life of the community, as a means of moulding and building character and raising mental stature, as a training for life as well as for livelihood, rather than merely as one kind of investment, the necessity for suitable and comprehensive educational opportunities is undisputed.

The problem, then, is how far can education be provided in view of the limited resources of many underdeveloped countries and the numerous other claims upon them.

To devote a larger proportion of public expenditure to education may be a possibility. This, however, would mean cutting down on other public services. Some of these, such as expenditure on defence and the maintenance of internal law and order, are unavoidable, and on others such as social services and economic improvement, present levels of public expenditure are insufficient and should not be reduced, if possible they need to be increased.

One more possibility would be to raise more in taxation. In the underdeveloped countries the Government can increase capital by raising taxes or by borrowing more from the public. The tax system, in most underdeveloped countries, relies heavily on indirect taxes rather than on direct taxes, and to some extent, is regressive in character.² In a country like India where most people are poor and the need for the further development of the country is very urgent, it is unavoidable that the majority of the poor should bear most of the tax burden. Though there might be some scope for increasing direct taxation in a number of underdeveloped countries, the principal difficulty is to find effective measures to prevent widespread tax-evasion.

"There is also the danger" Lyle Shanon points out "that, after a point, taxation tends to discourage investment by private

¹ *International Affairs*, F. Benham, April, 1959, p. 184.

² *Underdeveloped Areas*—W. Shannon, New York, p. 210.

enterprises, so that the gain to capital formation in the government sector is offset by the loss in the private sector.¹

Taxation is the major method of mobilizing domestic savings in countries with a low national income and particularly in countries with no major raw materials to export.

“It is also the only really anti-inflationary instrument of financing at the disposal of the government. In countries where a large number of people are outside the money economy and where others are close to the subsistence level or even below the subsistence level, mass taxation is either anti-developmental or altogether impossible.”²

In most underdeveloped countries the numbers of relatively well-paid people are few and they are already fairly heavily taxed. In India, for example, income tax is higher than in Britain. Cecilie Leslie³ on a visit to India, found dissatisfaction among foreign Assistance working in India. An English Assistant working in a tea plantation explained that, out of “Rs. 2000 per month he had to pay almost Rs. 500 in tax. A senior executive confirmed this and added that from his salary of Rs. 6000 per month he was left with Rs. 2400 per month after taxes.”

In India there are many poor but there are also a few who are rich, even on American standards. Since independence, vigorous taxation prevents these few rich saving as they did in British India. The rich argue that the process of rapid accumulation of wealth in their hands, ought not to be disturbed by tax collectors acting too enthusiastically on behalf of the state. Some Indian industrialists and leaders are also very conscious of this bias in the system. They argue that it does not matter very much that some people get rich. The important thing is that the rich plough back most of their extra wealth into fresh investment, which builds up Indian industry and so enriches the country.

¹ *Underdeveloped Areas*, p. 210.

² *The Progress of Underdeveloped Areas*—Edited by Bert F. Hosality, p. 252, Chicago.

³ *India Today*: the Surge and the Shock—Cecilie Leslie. Daily Telegraph, January 17, 1961.

But the fear of communism has made intolerable the spectacle of extreme luxury side by side with hunger, of the poor growing poorer next door to the rich growing richer. So taxation of the rich has gone up. Immediately after independence, a thorough overhaul of the tax system in India was essential. The problem was to find men sufficiently expert and incorruptible to do it and ministers with enough power and courage to back a through-going project of tax reform all the way through. Some very rich industrialists with strong political backing claimed the privilege of not paying too heavy taxes. It took years for the Indian Government, to bring tax-evasionist under control. Gradually loopholes are being closed. But the rich can no longer be relied upon as a major source of savings. For her requirements for defence and order, India was unable to obtain a regular surplus of even as much as Rs. 50 crores (1 Crore=10 million. 1 Rupee 1/6d.) a year from taxation.¹ In most of the underdeveloped countries the tax revenue of the central government amounts to less than 16 per cent of the national income as compared with 20 per cent or more in most Western countries, and about 35 per cent in Britain.

In a poor country like India further taxation is impossible because it would inevitably fall mainly on the vast mass of the poor. In a democratic advanced country like Britain, the amount which a government can raise in taxation is limited by the amount which voters are willing to pay and in an underdeveloped country like India, although people want more public expenditure both on health and education, they seem unwilling or reluctant to pay more taxes. For example the Caribbean Education Conference not long ago, was very eager to increase public expenditure on education, but the proposal for more taxation to be levied for this purpose was rejected, and the conference declared that the rates of direct and indirect taxes were already high. They stated that any increase in taxation would only lead to an increase in the cost of living. Moreover, if more public expenditure did become possible there would be other claims to a share of the extra money.

¹ *India Quarterly*, Vol. VIII, No. 2, 1952, p. 132.

CHAPTER III

END OF BRITISH RULE AND EDUCATION SINCE 1947

IN THE India of the pre-British period such education as was provided was suited to the needs of the people. Education for the most part was a family affair in the Vedic period and every Brahmin father educated his son into the Vedic lore. Free education was well known and was available to poor students without any payment except that of personal service to the Guru. The system of domestic instruction continued into the middle of the nineteenth century. Adam in his investigations claimed that there were 1747 Centres of Domestic Instruction as against 373 schools proper in Bengal and Bihar. Munro found that this system was very common in Madras and that for every child reading in a school proper, there were five under domestic instruction. As late as the 17th century, Bernier wrote "Banaras is a kind of University, but it has no college or regular classes as in our universities. It resembles rather the schools of the ancient, the masters being spread over different parts of the town in private houses Some teachers have four and some six disciples; the most eminent may have 12 or 15 but this is the largest number."¹

The same tradition was found in existence in all parts of India prior to the advent of the British raj. Adam found that most of the existing schools were single-teacher institutions and he often remarked that "the number of teachers is the same as the number of schools".

The British system of education in India originated with the Charter Act of 1813 by which Parliament directed the East India Company to spend a sum of not less than Rs. 100,000 a year for educational purpose.

Macaulay's Minute of 1835 and the decisions of the Board of Directors of the East India Company established English as the

¹ Bernier : Travels in India, p. 341.

official language and medium of instruction in Indian schools.

The British were the heralds of the new big-machine industrial civilization and represented a new historic force that was about to change the world. Yet these forerunners and representatives of transformation and revolution have been criticised for trying to arrest the growth and development of Indian education. However,

“individual Englishmen, educationalists, orientalist, journalists, missionaries and others” wrote Nehru, “played an important part in bringing western culture to India, and in their attempts to do so often came into conflicts with their own Government. The Government feared that effects of the spread of modern education had put many obstacles in its way, and yet it was due to the pioneering efforts of able and earnest Englishmen, who gathered enthusiastic groups of Indian students around them, that English thought and literature and political tradition were introduced to India. Even the British Government, in spite of its dislike of education, was compelled by circumstances to arrange for the training and production of clerks for its growing establishment. It could not afford to bring out from England large numbers of people to serve in this subordinate capacity. So education grew slowly and, though it was a limited and perverted education, it opened the doors and windows of the mind to new ideas and dynamic thoughts.”¹

In the 19th century only a small group of Indians, however, was directly influenced by Western thought, because India clung to her own background.

Gradually, however, changes crept in and spread over wider areas in the agrarian, technical, educational and intellectual fields, before British rule ended in India.

English education has been frequently criticised and blamed for the many evils in the existing Indian situation. But it has to be remembered that it brought a widening of the Indian horizon, a revolt against certain customs and superstitions of Indian life, and widening of political consciousness. The new English edu-

¹ *The Discovery of India*—by J. Nehru, p. 291.

cated classes, influenced by Western thought, took the lead in political agitation. Tagore, the greatest poet of modern India on his eightieth birthday (May, 1941) in a moving message spoke in admiration of the English.¹

"As I look back", he said, "on the vast stretch of years that lie behind me and see in clear perspective the history of my early development, I am struck by the change that has taken place in my own attitude and in the psychology of my countrymen—a change that carries within it a cause of profound tragedy.

Our direct contact with the larger world of men was linked up with the contemporary history of the English people whom we come to know in those earlier days. It was mainly through their mighty literature that we formed our ideas with regard to these newcomers to our Indian shores. In those days the type of learning that was served out to us was neither plentiful nor diverse, nor was the spirit of scientific inquiry very much in evidence. Thus their scope being strictly limited the educated of those days had recourse to English language and literature. Their days and nights were eloquent with the stately declamations of Burke, with Macaulay's long-rolling sentences; discussions centred upon Shakespeare's drama and Byron's poetry and above all upon the large-hearted liberalism of nineteenth century English politics.

At the time though tentative attempts were being made to gain our national independence, at heart we had not lost faith in the generosity of the English race. This belief was so firmly rooted in the sentiments of our leaders as to lead them to hope that the victor would of his own grace pave the path to freedom for the vanquished. This belief was based upon the fact that England at the time provided a shelter to all those who had to flee from persecution in their own country. Political martyrs who have suffered for the honour of their people were accorded unreserved welcome at the hands of the English. I was impressed by this evidence of liberal humanity in the character of the English and thus I was led to set them on the pedestal of my highest respect. This generosity in their national character had not yet been vitiated by imperialist pride. About this time, as a boy in England, I had the opportunity of listening to the

¹ *The Discovery of India*—Nehru.

speeches of John Bright, both in and outside Parliament. The largehearted radical liberalism of those speeches, overflowing all narrow national bounds, had made so deep an impression on my mind that something of it lingers even today, even in these days of graceless disillusionment."

Tagore proceeded to refer to the narrow social conventions of India which 'gradually got the upper hand of free thought' and 'steadily degenerated into socialized tyranny' and how 'nurtured on English learning' he was charged with a feeling of revolt against these rigid regulations of society.... In place of these set codes of conduct we accepted the ideal of "civilization" as represented by the English term.

In our own family this change of spirit was welcomed for the sake of its sheer national and moral force and its influence was felt in every sphere of our life. Born in that atmosphere, which was moreover coloured by our intuitive bias of literature, I naturally set the English on the throne of my heart. Thus passed the first chapter of my life. Then came the parting of the ways, accompanied with a painful feeling of disillusion, when I began increasingly to discover how easily those who accepted, the highest truths of civilisation disowned them with impunity whenever questions of national self-interest were involved."

Tagore died in August 1941; had he lived a little longer he would have been delighted to see India get her independence and the English leave with grace, dignity and friendship.

The benefit to India of British rule cannot be ignored. Although India had in the past often been ruled by a single monarch such as Asoka, Chandragupta and Akbar, the consciousness of India and of being Indian is a British creation. The British provided the country with stable government, gave the country seaports, railways, roads, sanitation and irrigation and established the rule of law. The equality of all men, whether Brahmin or Untouchable before the courts was introduced and the rights of the individual ensured. The educated Indian through Western education was able to know not only the thought of Europe but also to rediscover India's own culture and civilisation. A knowledge of the pre-Islamic period in India

was little known; the research of British scholars rediscovered and glorified Asoka. In 1785 Charles Wilkins published a translation of the Bhagavad Gita and in 1790 Sir William Jones translated Kalidasa's *Shakuntala*, which the German poet Goethe hailed with delight. Max Muller the German and Emile Burnouf the Frenchman unearthed Sanskrit and Pali treasures of learning.¹ Through English the marvels of Western science and technology was unfolded to the Indians, and concepts like democracy, the rule of law, parliamentary government, Marxism and Communism came within their knowledge. Thus it has to be recognised that, in spite of many failings, British rule in India was based on positive qualities—on unity and strength, industrial enterprise, economic initiative, social conscience and discipline and above all many years of knowledge and experience.

2. INDIA'S INDEPENDENCE

"Long years ago we made a tryst with destiny, and now the time comes when we shall redeem our pledge, not wholly or in full measure, but very substantially. At the stroke of midnight hour, when the world sleeps, India will awake to life and freedom. A moment comes which comes but rarely in history, when we step out from the old to the new, when an age ends, and when the soul of a nation, long suppressed finds utterance. It is fitting that at this solemn moment we take the pledge of dedication to the service of India and her people and to the still larger cause of humanity".²

Prime Minister Nehru thus addressed the Constituent Assembly on independence day, reminding them that 'at the dawn of history India started on her unending quest and the trackless centuries filled with the grandeur of her success and failures' and on the stroke of midnight members of the Parliament dedicated themselves 'in all humility' to the service of India and her people to the end 'that this ancient land attain her rightful place in the world and make her full and willing contribution to the promotion of world peace and the welfare of mankind.' "India

¹ *The Discovery of India*—Nehru.

² India, Constituent Assembly Debate, Vol. 5, pp. 4-5.

gained independence" said Professor Mansergh of Cambridge "by the deathbed of the mighty British Empire. It was for them a time of high emotion."¹ In the midst of rejoicing and high emotion, Nehru reminded the members of Parliament of their great responsibility.

"The future" he said "is not of ease of resting but of incessant striving so that the members may fulfil the pledges they have so often taken. The service of India" said Nehru "means the service of the millions who suffer. It means the ending of poverty and ignorance and disease and inequality of opportunity And so we have to labour and to work and work hard, to give reality to our dreams".

After gaining independence, India elected to become a republic in 1948. The census of 1951 estimated that 72 million of a population of 380 million were in the age group 6 to 14 years; of these, only 12,777,000 boys and 4,617,000 girls were in school, that is, only one child in four was receiving any schooling. The numbers, however, varied in the various states. For the whole country illiteracy was estimated at about 80%.²

EDUCATIONAL POLICY AFTER 1947

After becoming independent India drew up her Constitution in which Article 45 read as follows:

The State shall endeavour to provide, within a period of ten years from the commencement of this constitution, for free and compulsory primary education for all children until they reach the age of 14 years.

The result so far has been, if not altogether disappointing, far from satisfactory. India's second-five year plan, launched with high hopes in 1956 was incomplete and involved some major changes of emphasis. In her third five-year plan, changes had

¹ *Survey of British Commonwealth Affairs (1939-1952)*—Nicholas Mansergh, p. 239.

² *Contemporary Education*—Edited by W. B. Spalding, New York, p. 513.

been introduced to some degree because five-year planning leaves scope for interim year to year changes. The major troubles arose from the increase in population, which exceeded the first estimate and by a check to agricultural production resulting from bad weather; these have revealed the narrow margin of security. Larger food imports were found necessary which imposed further strains on foreign exchange.

In the first general election, when 90 million Indians went to the poll, it was seen that a system of general education was badly needed; for among the voters many could neither read nor sign their names. Symbols and picturers had to be placed on the ballot papers and oral instructions given by polling officers. Indeed, the election showed that illiteracy could be a serious danger to the development of democracy in India. Only one Indian in six was literate and in the 550,000 villages of the sub-continent there were only 300,000 schools. Per capita income is today \$70 a year (compared with \$341 in Japan and \$2,500 in the U.S.). By 1966, however, if the third five year plan goes well, India hopes to give electricity to some 34,000 villages. Again, because of her exploding birthrate, there will be 60 million more children in need of education by the end of the plan, and the aim is to provide it free and to make it compulsory up to the age of 11. This is no easy task, for to plan for steel works is simple, but to plan for the schooling of 60 million children is monumental.

In education there are many problems which must be carefully dealt with. India means to provide education for all as provided in the constitution, to improve its quality so as to be in line with present demands and to do it all within the very limited funds available for this purpose for the present. The Government of India is fully aware of the magnitude of the problem. In a recent publication,¹ the Ministry of Education pointed out that:

The total number of children in the age-group 6-14 is more than 7.3 crores. Out of these, a little over 3 crores (1 crore=10 million) were actually at school at the end of the First Five-Year Plan, i.e. on 31st March, 1956. If we break up the age-

¹ *Schools for All*: Ministry of Education, 1958, India.

grouped 6-14 into two parts, 6-11 and 11-14, conditions for the latter age-group present a depressing state of affairs. Out of 4.8 crores children of the age-group 6-11, as many as 2.5 crores were at school on 1st April 1956, whereas out of 2.5 crores children of age-group 11-14, only 50 lakhs were receiving education. (1 lakh=100,000)

In other words, in order to extend educational facilities to all the children of age-group 6-11, India has to provide an additional school place for every place that exists today; whereas in the case of the age-group 11-14, four additional school-places have to be provided for every place in existence. What a stupendous problem!

In a country like India where not only the children of school-age but also the vast population of adults are untutored, educational plans have to be handled from both ends. The two ends have been termed "fundamental education", namely 'basic education' for children of the school age-group and adult education for the second category. A gradual change is under way for the expansion and introduction of compulsory education. Attempts have been made to bridge the large gulf between the needs and the levels of achievement in education in the five-year plans. Because of financial limitations, the Central Government could undertake only a limited responsibility but they co-operated with the State-Governments to work out schemes of intensive educational development in selected areas. Grants were made to State Governments to establish or develop various educational centres for improving the quality of primary, basic, and social education. In these plans of the State Governments, however, it has been possible to provide for only a small amount of expansion. The total development expenditure that had been provided for education in the first-five year plans of the States was Rs. 91 crores—Rs. 74 crores in Part 'A' states, Rs. 12 crores in Part 'B' states and Rs. 5 crores in Part 'C' states.¹ Expenditure on education in Part 'A' states more than doubled during the five years since independence. Immediately after independence, the Central Government in Delhi could accept only a limited obligation for the expansion of education in the states because the Central Government had undertaken many major development

¹ *The First Five Year Plan, Govt. of India, 1951, p. 219.*

projects. The national government felt that economic development and expansion on educational plans could go hand in hand. It was evident that the sum of Rs. 123 crores (1 crore=10 million 1 Rs=1/6d) of which New Delhi accounted for Rs. 32 crores, provided in the five-year plan was inadequate to meet the educational needs of the country. In this connection it has to be noted that according to the Committee on Ways and Means of Financing Educational Development in India, no less a sum than Rs. 872 crores is required every year for an all-India system of education to cater for each and every child in the age group 6 to 14. This vast sum is made up in the following way:

- (i) Maintenance of schools—Rs. 400 crores.
- (ii) The cost of training teachers for basic and high schools—Rs. 200 crores and
- (iii) The cost of construction of buildings—Rs. 272 crores.¹

The Committee remarked that the amount spent on education by the Centre is extremely small. This may be due partly to the fact that education in India is a provincial subject under the constitution, but whatever be the reason the position requires to be reviewed. The ideal may be to increase the resources allocated to the Provinces so that they may spend more on education. The Centre, nevertheless, should be prepared to spend a very much larger amount on education without disturbing the present constitutional responsibilities. After independence the amount of money being spent in India on education was about Rs. 100 crores annually, which roughly is a little over one-ninth of what the committee recommended. The insufficiency of this amount is all too obvious. The Committee recommended that the centre should spend about 10% of its budget on educational development both in the central areas and as grants-in-aid to Provinces. In respect of Provincial plans, the Committee recommended that 70% of the expenditure should be borne by the local bodies and the Provinces and the remaining 30% by the Centre.²

One member of the Committee was unable to agree with the educational plans of the Government and suggested that progress in education must keep pace with economic progress.³ Any

¹ *Future of Education in India*—Govt. of India, 1956, pp. 14-15.

² Report of the Committee on the ways and means of Financing Educational Development in India. Ministry of Education, India, p. 6.

³ *Ibid.*, pp. 7-8.

attempt to force the pace of education without regard to the state of India's economic progress must defeat itself. Under the conditions of poverty prevailing in the country and particularly under the present inflationary condition, it would ultimately be considered for the good of education itself if it could to a certain extent, yield priority to more directly productive expenditure. He pointed out that this should not be difficult, as in this context all aspects of education need not be given the same priority. The need for such adjustment and elasticity in India's national programme is in the economy of the country and essential to its functioning properly.

It is worth remembering", said the economic editor of The Observer after a recent tour of underdeveloped countries, "that the first industrial revolution in Britain during the late 18th and early 19th centuries—the original example of the power of modern technology to achieve the rapid accumulation of productive assets, which then make it easy for a society to go on and become steadily richer—was managed on an extremely narrow educational base. It is certainly not plausible to suggest that universal education and literacy are necessary for successful economic growth. No doubt they help a country to absorb new technology rapidly. But the British managed without effective universal education until the early 20th century. The relationship between cultural standards and economic success is a good deal more complex than the devotees of literacy usually imply. Indeed, concentration on the alphabet, above all else, as the key to the first stage of the economic revolution, may serve to direct attention and energy from more serious problems.¹

Nevertheless, the Government of India is determined to go ahead, although it realises that the rate of progress will have to be geared to the financial condition of the country.

Administrative machinery has been set up in the Education Department to handle the task. Responsible to the Indian Parliament, there is a Central Ministry of Education. Administratively it does not function directly except in the case of some of the

¹ *The Attack on World Poverty*—Andrew Shonfield, p. 3-4.

less developed States. The Main function of the Ministry is to collect and distribute information, to organise conferences to administer scholarships, to encourage technical education and to inform the Government on educational developments. There is a Director of Education in the States under the Minister, with an advisory and supervisory staff.

The States are the real administrative units in India. According to their population and financial strength different groups of States have different ways of organising education.

The Directive Principles of State Policy are regarded as 'fundamental in the governance of the country' though not enforceable through courts of law. These lay down that the State shall strive to "promote the welfare of the people by securing and protecting, as effectively as it may, a social order in which justice—social, economic and political—shall inform all the institutions of the national life".¹ The States are further required to direct their policy in such a manner as to secure the right of all citizens to an adequate means of livelihood, and equal pay for equal work. Within the limits of their economic capacity and development the States have to make effective provision for securing the right to work, education and public assistance in the event of unemployment, sickness, disablement and old age. The States are also required to secure to workers humane conditions of work, a decent standard of life, social and cultural opportunities and full enjoyment of leisure.

Besides the economic sphere the other directives of State policy are the organisation of agriculture and animal husbandry on modern and scientific lines, improvement of cottage industries in rural areas, the promotion of public health and improvement in the standard of living, the organisation of village panchayats, the promotion of educational and economic interests of the Scheduled Castes and Scheduled Tribes, and other weaker sections of the community and provision for free and compulsory education for all children up to the age of fourteen.²

Nine of the former provinces of British India constitute Group A, and Group B consists of eight States carved out of the former

¹ *Contemporary Education*—Edited by Willard B. Spalding, New York, p. 513.

² *Ibid.*

Indian States. These two groups have complete responsibility for providing the necessary educational facilities. Each State has a Minister of Education with administrative officials responsible to the State legislature. The majority of the Indian people live in these 17 States. There are 11 States in Groups C and D with a total of about 15 million people in all.

At the time of independence, 60% of the financial support of education came from State funds; the rural local units contributed 18%, municipal funds 13%, fees 3.5% and 5.5% came from various other sources.

Since 1947 the States have made a good deal of progress under the encouragement and guidance of the Ministry of Education from New Delhi. Though there has been no spectacular improvement in education there have been many Committees of Enquiry, Commissions, Surveys and excellent plans, some of which have been partially put into operation.

Thousands of new elementary schools in basic education have been opened, stressing the fundamental subjects with various practical crafts. For adult education, a number of social education centres have been opened in various States. Attempts are also being made to introduce much more variety, widening the choice of courses when teachers are available to handle the situation. Short in-service courses are conducted for teachers and training camps are held. The State governments have decided to re-orient the system of primary education and gradually introduce free Basic Education with the principles of 'learning through creative ability'. It has decided both to recondition the existing primary schools with a view to fitting them into the new system and to set up new Junior Basic schools at the same time, both processes being pushed through side by side in order that the objective of universal compulsory Basic education might be attained as early as the resources of the State permit.

A number of universities, colleges of Arts and Science have made reasonable progress since 1947. Technical and engineering schools and professional colleges are offering courses in a number of fields. Jointly the Central and State Ministries have been dealing with the various problems of expanding all educational services.

The Indian Constitution, it is true, laid down that universal

compulsory and free education must be provided for children up to the age of 14 within ten years of its promulgation; unfortunately, however, a series of difficulties have confronted India since independence. As a result of the partition of the country there was a vast movement of population numbering millions whose lives were naturally disrupted. In consequence, a major portion of the entire resources of the Indian Government in money and materials had to be diverted to the gigantic task of the rehabilitation of millions of displaced people. Immediately after independence, international economic forces compelled the Government to devalue the Indian currency the result being scarcity of goods and inflation. Again, the failure of the monsoon and great floods in different parts of the sub-continent denuded the resources of the country. Food had to be bought from other countries on a scale unknown in Indian history, UNESCO, describing the Indian crisis before and after independence wrote, "The failure of the rulers of India, both foreign and native, to take any measures to regulate the procurement and distribution of food during the years of growing scarcity, caused the terrible Bengal famine of 1946 in which hundreds of thousands of people died of starvation. It was at the height of this food crisis that political power was transferred to the provisional National Government. Before it was firmly in the saddle, the partition of the country made the food situation a great deal worse. India lost to Pakistan the provinces of Sind and Western Punjab, the richest granaries of the sub-continent. Besides the bloody riots in the Punjab seriously affected the crops in the Indian part of the province, further reducing the supply of food while the number of mouths to feed increased with the pouring in of millions of refugees.

Because of these unexpected difficulties, educational development fell short of the peoples expectations. In spite of all those obstacles, however, the Central and Provincial governments have made progress in all branches of education.

PROGRESS OF EDUCATION IN INDIA

Indian educational effort, since independence, has been directed mainly to two pivotal tasks: (a) to expand the system of education and provide free and compulsory education for all children

up to the age of 14, and correspondingly, to enhance the facilities for education at the secondary and university stages. (b) To make the system a worthy and effective instrument of social and economic reconstruction.

Elementary Education

The country has implemented three Five-Year Plans corresponding to the periods, 1951-52 to 1955-56 and 1956-57 to 1960-61 and 1961-62—1965-66. What has been achieved in the educational sphere so far, creditable as it is, only reinforces what a long way the country has still to travel to reach its minimum targets and also points to the need for constant re-thinking and revision of programmes in the light of changing conditions.

TABLE I
ENROLMENT IN ELEMENTARY EDUCATION

<i>Year</i>	<i>Total Enrolment in Classes I-V (in millions)</i>	<i>Percentage of Enrolment in Classes I-V to Total Popu- lation in the Age- Group 6-11</i>	<i>Total Enrolment in Classes VI-VIII (in millions)</i>	<i>Percentage of Enrolment in Classes VI-VIII to Total Popu- lation in the Age-Group 11-15</i>
1	2	3	4	5
1946-47 (Boys and Girls)	14.11	35.0	2.04	9.0
1950-51 (Boys and Girls)	19.15	42.6	3.12	12.7
1955-56 (Boys and Girls)	25.17	52.9	4.29	16.5
1960-61 (Boys and Girls)	34.34	61.1	6.29	22.8
1965-66 (Boys and Girls Expected)	49.64	76.4	9.75	28.6

It will be seen from the Table that there has been significant increase in the total enrolment in classes I-V both in the First Plan and Second Plan periods and during the Third Plan the increase over the enrolment of the Second Plan reached the figure of 15.3 million. Between 1946-47 and 1965-66, the total increase will be 250 per cent over the enrolment in 1945-47. In the middle stage, a similar increase is seen in proportion though not in absolute numbers. During the Third Plan, the enrolment in the middle stage rose by 3.46 millions. The total increase in enrolment at this stage will be about 378 per cent over the enrolment in 1946-47.

In this undertaking the co-operation of the various State Governments in India on the one hand and on the other the popular enthusiasm for free, compulsory and universal education, have been marked. Primary education is free in all the States. Several State Governments have made education free even up to the age of 14. Quite a few States have provided liberal concessions while a few others have made education up to the secondary stage free for all students whose parents' income falls below a minimum standard. There is also an instance of a State where education is free at all stages to all children.

Secondary Education

The development in the field of elementary education has inevitably necessitated the rapid expansion of education at the secondary stage, even at the possible risk of diluting quality.

TABLE 2

PROGRESS OF SECONDARY EDUCATION

	1949-50	1958-59	1960-61	1965-66
Number of Secondary Schools (Boys and Girls)	6,682	14,334	15,600	21,800
Enrolment at the Secondary Stage (Boys and Girls) (in millions)	1.083	2,478	2.91	4.54
Percentage of Enrolment at the Secondary Stage to the Total Population in the Age-Group 14-17 (Boys and Girls)	5.0	9.2	11.5	15.6

The total number of secondary schools in 1949-50 was 6,682. In 1960-61 this number increased to 15,600. By 1965-66 it is expected to rise further to 21,800. One notable feature of this expansion is that in the secondary schools in rural areas and those for girls there has been a large increase, which can be seen from the following table:

TABLE 3
SECONDARY SCHOOLS IN RURAL AREAS AND FOR GIRLS

	1949-50	1958-59	1960-61	1965-66 (Expected)
Secondary Schools in Rural Areas	2,764	6,757		10,500
Secondary Schools for Girls	997		2,500	3,800

As for enrolment, the total has increased from 1.083 millions in 1949-50 to 2.478 millions in 1958-59 and to 2.91 millions in 1960-61. It is expected to rise still further to 4.54 millions by the end of 1966.

An Indian Government report stated that the risk to quality in the face of quantitative expansion was quickly realised and while programmes of expansion proceeded apace, the need for primary emphasis on qualitative improvement in education both at the secondary and university stages and an adjustment of the content of education to individual and social needs were not lost sight of.

The Secondary Education Commission, which was set up by the Government of India in 1952, recommended that the total period of school education should be eleven years—eight years of elementary and three years of higher secondary. One year was to be added to the ten year secondary education in order to convert it into the higher secondary pattern. This recommendation was accepted by the Government of India and most State Governments. In the First Plan, 77 secondary schools were converted into the higher secondary. The number rose to 3,121 during the Second Plan. In the Third Plan about 50 per cent of the schools were proposed to be raised to the higher secondary status.

In order to diversify secondary education and to prepare children for different walks of life, the Commission recom-

mended the establishment of multipurpose schools. During the First Plan, 374 multipurpose schools were opened. This number increased to 2,115 at the end of the Second Plan. In the Third Plan, the emphasis was on consolidation and improvement rather than on expansion.

Higher Education

In 1947, the total number of universities was 19. Today the number is 63, within a few years the number will be 70. This increase in the number of universities is the result of the large expansion that has taken place in higher education in recent years. There are now 2,400 university students for every million of the population. Although this is low compared with what obtains in the more developed countries of the world, it is not without considerable local significance.

The landmark in the field of Indian university education of recent years is the University Education Commission appointed by the Government of India in 1948-49. One of the major recommendations made by this Commission in its report was the establishment of a University Grants Commission, which, since its inception in 1953, has made a valuable contribution to the development of university education in India. Its main aim is to improve the quality of university education and towards this end it has considerably assisted in the introduction of the three-year degree course, a reform which has been carried out by a very large number of universities. Another important development in university education in India since independence is the large increase in facilities for research and post-graduate study.

The most phenomenal development, however, has taken place in the field of technical and scientific education. The Council of Scientific and Industrial Research controls 26 national laboratories or regional training centres, institutions unknown before 1947. There are four higher technological institutions which provide ample facilities for advanced work. The field of study in these institutions and the several engineering colleges scattered all over India covers a very wide range and includes subjects such as power engineering, production engineering, advanced electronics, aeronautical engineering and so on. The facilities available for post-graduate studies and research in Indian universities both in the humanities and science have also

expanded very considerably. A large number of scholarships are allotted for post-graduate study and research in India and abroad both in scientific and technical subjects and in the humanities.

In addition to the scheme introduced by the University Grants Commission, the Government of India has set up a number of institutions for research. These institutions cover studies on a wide range of educational subjects and they have recently been combined to form a National Institute of Education which has been placed under an autonomous body called the National Council of Educational Research and Training. Simultaneously, facilities for higher education in the rural areas of the country have also grown.

Education of Girls and Women

The education of girls and women, has considerably lagged behind the education of boys. In 1958, the Government set up a National Council for Women's Education which examined the problem of girls' and women's education in the country in all its details and made a number of recommendations. Progress in this field, though slow, has not been altogether disappointing.

In the Fourth Plan it is proposed to expand girls' education further and it is hoped that the gap between the education of boys and that of girls will be materially reduced by 1970-71.

"India, 1964," (Publication Section, London) gave the following figures which are the estimates of development during the next 15 years presenting thus a picture of the immense tasks that lie ahead.

TABLE 4

Item	1960- 61	1965- 66	1970- 71	1975- 76	Annual rates of growth	
					1960- 65	1960- 75
Population (million)	439.0	492.0	555.0	625.0	2.4	2.4
National Income (Rs. in million)	141,400	180,000	260,000	373,000	5.0	6.6
Per capita income (Rs.)	301.0	313.0	379.0	480.0	0.8	3.2
Estimated Labour Force (million)	173.9	191.8	218.4	244.5		

The growing magnitude of the educational effort is reflected in the following figures relating to expenditure on education:

TABLE 5

<i>Year</i>	<i>National Income</i>	<i>Educational expenditure</i>	<i>(Rs. in million) Educational expenditure as percentage of National income</i>
1950-51	95,300	1,110	1.2
1960-61	141,400	3,320	2.3
1965-66	180,000	5,750	3.2
1970-71	260,000	12,160	4.7

By 1966 when the 3rd Five-Year Plan concluded, there were 70 million students in the nation's schools at all stages. In 1951 when the first five year plan was introduced, there were 24 million students: by 1976 when the Fifth Plan will conclude, the enrolment will have reached 144 million. Again by 1961, 35 million children in the age-group 6-11 were attending school. This number represents only 61 per cent of the total population in the age-group. By 1966, the enrolment will have reached 52 million children constituting 80 per cent of the age-group population. By 1971, the educational facilities will have been extended to the total age-group population. At the next stage, age-group 11-14, the total enrolment will have increased from 7 million in 1961 to 11 million in 1966. By 1971, 50 per cent of the total age-group population will be enrolled.

SUGGESTION FOR EDUCATIONAL REFORM—A REPORT

The Central Advisory Board of Education, which ended a two-day meeting in Bangalore on Monday, October 18, 1964 suggested legislation to prevent opening of educational institutions without permission.

The Union Education Minister, stated that the new legislation would apply to all levels of education, including technical and professional courses.

It was 'shocking', he said that while one could not drive a car without obtaining a licence, one could start an educational insti-

tute without any such safe-guard. All the States had agreed to introduce legislation to that effect, with a penal clause, and the Centre to prepare a model legislation for the guidance of the States. He indicated that the existing institutions would have to be regularised.

The Board recommended that in future all professional colleges should be started only by the Government.

The Board also recommended the abolition of special teachers' constituencies for upper houses. The Minister said that if they believed in eliminating politics from education, it was essential that teachers should not 'behave as politicians'. They were citizens of India having equal voting rights. He did not see any need for special provision for them in the shape of reserved constituencies for legislatures.

Loyalty Pledge by Children

The Board recommended that in order to promote emotional integration and a sense of loyalty to the country, a pledge should be taken by school children every day in the morning. The Minister said that agreement had been reached at the conference that by January 26, 1965, the suggestion would be enforced.

The Board had decided that by the end of the Fourth plan period there would be at least 1,000 model primary schools. At the secondary level, it had been recommended that there should be more central schools which would be as good as some of the best public schools. Such schools would not be "pockets of privilege" and would be open to the most talented students in the country and there would be adequate provision for scholarships for the benefit of the poor. Talent or genius, it was said, was not the monopoly of the rich.

Emphasis on Quality

Emphasis on the quality of education and the role of education as a vital unifying force is the keynote of the main recommendations of the Board.

While surveying the educational developments in the country since the Pachmarhi session in May, 1963, the Education Ministers from various States laid great emphasis on the need for improving the standards of education at all levels and noted that the key role of the teacher in that task was of special signi-

ficance. In fact, the ultimate success of any educational effort depended largely on the teacher. It was agreed that the main objective in the Fourth Plan should be consolidation and improvement of standards and quality of education.

The Board recommended several measures for improving the standard of education at all stages. To improve elementary education, it suggested a six-point plan including better qualified and better trained teachers, suitable text-books, improvement in teacher-pupil ratio and development of the school health programme.

It was said that a scheme had now been undertaken to clear the backlog of untrained teachers by starting correspondence and refresher courses to train them. The Board urged the States to recruit only trained teachers in future.

Teaching of Science

For the improvement of secondary education, the Board recommended that in addition to strengthening the existing schemes some other measures should be taken. These were improvement of science teaching, special training of science teachers, improvement and expansion of multi-purpose schools and strengthening of science laboratories. The board also recommended that selected schools at the rate of one in four blocks should be developed as model schools for talented children. It laid stress on the special training of science teachers. Science teachers who acquired higher qualifications through condensed or special courses should get a suitable increase in their salary scale. It also suggested that as science and technology were of greater importance in the economy of the country, teaching of science should begin in primary schools. To relieve the difficulty in repairing laboratory equipment due to the shortage of foreign exchange, the board suggested that each school should have a workshop of its own where equipment could be repaired.

The Board emphasised the need to improve the emoluments of teachers and to provide them with the necessary incentive to work efficiently.

The Board recommended that to relieve the pressure on universities and colleges, there should be a diversification of courses which should be terminal in character. This diversification,

which should be development-oriented, should begin at the end of the elementary stage. The expansion of these courses should be undertaken in accordance with opportunities for employment. However, to provide an opportunity for higher studies to those taking these courses the Board recommended that adjustment courses should be started to prepare them for higher studies. The Board also recommended that there should be vocational guidance at the secondary stage for the students to choose their further career. However, in view of the great increase in the number of students seeking admission to colleges, the Board suggested that more facilities for higher learning should be provided while at the same time taking all effective steps to improve the quality of education. The Board suggested that model colleges should be started at the rate of one in each State. It also suggested that more centres of advanced study should be started in different parts of the country.

Another recommendation made by the Board was that students getting the top ranks in any university should be given scholarships so that they may choose any other university in which to pursue their studies.

It also recommended that professional colleges in each State should take a certain percentage of students belonging to other States.

Cheap Text-Books

The Board also recommended that the scheme for the production of lowpriced text-books should be undertaken vigorously. It also suggested that universities should make provision for the teaching of foreign languages, besides English.

The Board expressed concern over the slow progress in the eradication of illiteracy and recommended that a central body be appointed for the purpose of proper planning and implementation of social education and literacy programmes.

It expressed the opinion that the responsibility for social education should be solely with the Union Ministry of Education and the Department of Education of State Governments and Union Territories. It recommended that a seven point programme outlined by the Committee on the concept of social education should form the basis for future planning of programmes on social education.

Speaking on the subject, a member stressed the importance of adult education from the point of view of development. He was of the view that our programmes of agriculture and allied industries, co-operation, panchayats and family planning had not gone forward primarily because of inadequate attention to adult education and the failure of the human factor. In the Fourth Plan, he said, the Planning Commission, was thinking of a very much bigger programme of adult education than ever before.

The Board felt that any future programme of expansion at the elementary stage consisted mostly of expansion of education among girls. It accepted the recommendations of the Bhaktavatsalam Committee regarding mobilisation of public co-operation for promoting girls' education. It recommended that special measures like construction of teachers' quarters in rural areas, hostels, school meals and supply of uniforms be taken up in the Fourth Plan period to encourage girls' education and that the Centre should provide hundred per cent assistance to States for this purpose. The Board recommended the setting up of a working group to suggest methods of putting up cheap buildings, and making use of indigenous materials. The Board stressed that special efforts should be made by every educationally backward State to reach the national average target of enrolment of girls at the end of the Fourth Plan.

Education Media

Inaugurating the meeting, the Union Education Minister, called for a full realisation of the implications of going ahead with the introduction of regional languages as ~~media~~ of instruction in the universities with, at the same time, providing a link language.

He told the Board he was asking the Kothari Commission on Education to consider that question ~~because~~ that was one of the most important problems they had ~~to decide~~ if they were to go ahead in the educational field.

If the graduates of the future were to be taught in 14 different languages, then no conference of the type being held now would be possible without employing 14 interpreters.

Dealing with the problem of languages at the various levels of education, the Education Minister said the problem posed more difficulties at the university stage although English still

continued to be the medium of instruction in many universities. But there had been a switch in favour of the regional languages as the medium. If they understood its implications, it would mean they would have 14 languages.

Whether it was Hindi or English, the necessity for one language as a great unifying force in India and in the world of scholarship, in the university and in the judiciary could not be over-emphasised. If they broke up into different regional languages without having taken action to have a unifying language, they would be running the great risk of India emerging into a sort of "linguistic chaos".

Russian Example

The Education Minister said he had been told that other countries had solved the problem and he would ask why it should not be possible for India to do so. In the U.S.S.R. there were 16 Republics and there were 50 languages. But while the different languages were fully supported, everybody learnt one common language, which was Russian, and which acted as a unifying factor. Even in certain African countries, English had come to be accepted, though for the time being, as a unifying language.

Therefore, he would appeal to the educationists in the country to bear in mind the two aspects of the language question, namely, the improvement and enrichment of the regional languages and at the same time having a language which would act as a unifying force. So far, English had played that role. Whether it would continue in future was another matter.

Language Problem not yet Solved

Language, the Minister said, was an explosive subject. He was not one of those who believed in the ostrich policy of trying to convince oneself that everything was all right. The problem remained to be faced and solved. It was no use pretending that the language question had been finally solved. The question had to be considered in its application, particularly to education. For instance, the three-language formula had been in force and it was said that it had been accepted and that everything was well. But it was being asked in the South whether the formula was truly being worked in the spirit in which it was conceived.

Referring to the importance of science education, the Education Minister spoke of the proposal to introduce science teaching in the primary schools and said that the science talent project had worked so successfully that it would now be extended throughout the country.

The Chief Minister of Mysore, referred to the problem of large-scale failures in educational institutions and said those and similar other problems were confronting the country which he said looked up to a body like the Central Board of Education for guidance and solution.

The Chief Minister of Madras, expressed the hope that the Bangalore session decisions would prove to be of far reaching importance.

The Union Education Minister said that State Governments should agree to the proposal to put education in the Concurrent list. He said the Centre would not interfere unless it was forced to.

He referred to the recommendation of the Sapru Committee in regard to placing education in the concurrent list, and said that if there were to be a national pattern of education and national etc. it was obvious that a national policy should be laid down by the Centre.

Allaying the fears of States about the consequences of acceptance of the proposal, he said that the concurrent list would not deprive States of their power to legislature in the field of education. It only meant that both the States and the Centre would have to legislate.

The Minister stressed the need for an all-India educational service and said that only four States had not given their consent to the proposal. He wanted to know what could be the prejudice against the proposal.

Referring to education and economy, he said economy was very much in the air meaning cutting down of expenditure. Now it had been suggested that expenditure on education should be cut by Rs. 20 crores. He wanted to emphasise that it was letting education be the 'first casualty' in the drive for economy. The slowing down of education either in quality or quantity, he warned, would be a national calamity.

Referring to the progress of free and compulsory primary education in terms of Article 45 of the Constitution and the

directive principles, he said they were still far from fulfilment so far as the schooling of children in the age group 6-14 was concerned. The compliance required was not merely a formal compliance of the directive. The compliance visualised by the framers of the Constitution was a substantial one. He would therefore appeal to the State Governments to realise that they would not be true to the spirit of the directive by merely submitting figures that so many children had been put in school and so many schools had been started. The object should be to provide real and quality education. The other aspect of the problem was the uneven spread of primary education and the disparity in the progress between State and State and also the leeway to be made up in the field of girls' education which was perhaps more important than the education of boys.

He pleaded for the provision of emphasis on the education of gifted and talented children and said that the poor but gifted children never reached the best institutions for lack of means. No country became really great unless it produced men of high calibre. Under these circumstances he said, he would appeal to the Education Ministers to see if certain schools could not be converted into model schools. At the secondary stage which was the most vital, he spoke of the contribution made by the chain of public schools in the country and said that he wanted more such Central Schools to serve as model institutions.

For the teaching of Science in the primary school itself, the Minister, told the members of the Central Advisory Board for scientific and technical terminology.

The Soviet, U.S. and other experts had recommended to the Government that science teaching should start from the beginning so that the child was steeped in science. This might create certain problems and involved certain changes in outlook he added.

As mother-tongue was the medium of instruction in primary and secondary schools, it was necessary to have text-books in those languages with proper terminology.

He emphasised the need to translate into the Indian languages, scientific books in English and other foreign languages.

He said the importance of the preparation of scientific and technical terminology could not be overemphasised. It was their intention to underline the importance of teaching science in the

educational institutions. Science had been neglected to a large extent. However, they were now beginning to awaken to the fact that if the country was to progress in the fields of industry and technology, it must place science in its proper place in the educational system.

GUIDE LINES ON EDUCATION—A REPORT

The Planning Commission has circulated to the States the guide lines for formulation of education programmes during the Fourth Plan period. These guide lines lay emphasis on the linking of education with economic development by giving the highest priority to training and developmental aspects at all stages of education.

Among specific suggestions made are provision of vocational education of a terminal character at the secondary stage, teaching of science from the primary stage onwards, beginning with nature study and raising of the quality of education by greater attention to teacher-training and linking betterment of their emoluments with qualifications, and by improving library and laboratory facilities.

The Commission has urged that no new universities should be established during the fourth Plan in view of the need to consolidate existing universities and secure effective utilisation of scarce resources. But the Commission has proposed as an alternative the setting up of university centres in areas having colleges with an enrolment of about 10,000, and where library, laboratory and teaching facilities of high academic standards are made available.

The Commission has called for a massive programme of loan scholarships in the fourth Plan to encourage meritorious students to go in for higher education. It however favours loan scholarships instead of outright grants, as it would facilitate in course of time the creation of a revolving fund.

On grounds of social justice the Commission has proposed an increase in the number of merit-cum-means scholarships and greater spread of educational facilities in rural areas, especially for girls and Scheduled classes and tribes.

The Commission has pointed out that emphasis on large sized institutions, part time and correspondance courses for both stu-

dents at the secondary stage and for training of teachers, cheaper buildings, and mobilisation of local resources for school improvement and mid-day meal schemes would help to increase return from investment in education. As a large majority of students would be entering life at the end of the secondary stage in the present stage of the economy, the Commission has emphasised that vocational courses, particularly agriculture, should be provided. Adult education programmes should also be extended and improved from the point of view of increasing agricultural production and helping panchayats (village councils) and co-operative to work effectively.

At the university stage the Commission has suggested that arts and commerce courses should be provided through evening colleges and correspondence courses, and the enrolment of science students should be raised from 40 to 50 per cent of total enrolment by the end of the fourth Plan.

Restrictive admission to higher education is favoured. For technical education the Commission has referred to the need to provide additional facilities to meet the estimated demand of technical personnel in the Fifth Plan and has suggested programmes of advance action, including creation of a central pool of engineering colleges. It has also proposed expansion of the size of technical institutions for an admission capacity of 500 a year.

CHAPTER IV

POLICY AND PROBLEMS

TO UNDERSTAND the educational systems developing in India since Independence, it is necessary to consider the plans and aspirations, the main and environmental influences, the problems which lie ahead and the achievements to-date. In 1950, three years after Independence, the Central Advisory Board of Education appointed the Kher Committee to suggest suitable measures of compulsory education for India. The Committee recommended the introduction of compulsory education by stages in two-five year plans and one six-year plan, the proposal to operate as follows:

1. The first five-year plan was to attempt to provide as much education as possible for the age group 6 to 11, and to lay the foundation for further expansion ;

2. The second five-year plan was to make education from 6 to 11 compulsory for all children, and

3. "The six-year plan would raise the compulsory school age to 14, so that at the end of 16 years the whole scheme of compulsory education for all children to the age of 14 would be realised.¹

The Central Advisory Board has kept clearly in view certain objectives, namely:

1. The early liquidation of illiteracy through the provision of universal, free and compulsory basic education for all children of school age. The interpretation of basic education is similar to that of the UNESCO concept of fundamental education, including health, vocational training, arts and crafts, as well as the basic school subjects.

2. The provision of fundamental social education for adults which will not only make them literate but also endeavour to raise their material and cultural standards and widen their interests and outlook.

¹ *Contemporary Education*, by Cramer and Browne, New York, p. 576.

3. The expansion and improvement of facilities for technical education so as to provide fully trained personnel for industrial and technological projects which are directed towards raising the productivity and national wealth of the country.

4. The reorganisation of university education in the light of new national needs and aspirations so as to provide the right type of leadership in various fields."

The cost of a reasonable beginning on a programme of this kind would be about \$ 500,000,000 a year in addition to the present expenditure of about \$ 65,000,000.¹ The Central and State Ministries have been dealing steadily with the problems of expanding educational services. They are also faced with numerous problems of developing rapidly systems of education which will facilitate industrialisation and the healthy development of economic life. Moreover, the racial composition, the religious and political difficulties, the social problems and geographic factors of India are as complex and involved as her language situation. "The chief cause of anxiety in India to-day", wrote Sir Percival Griffiths, "is the loss of the spirit of 'togetherness', which was so marked at the time of the transfer of power. Factions and dissensions have made their appearance everywhere. The establishment of linguistic States has intensified provincial jealousies, and many who, in the proud, exalted mood of 1947, thought of themselves as Indians, are to-day more conscious of being Assamese, or Bengalis, or Biharis or Sikhs. At the same time, the Congress party itself—the only effective party standing for both progress and stability—is distracted with struggle for personal power".

The language problem in India is highly complex. The two largest groups of languages are the Dravidian of South India which are unrelated to the Indo-European tongues of the North and which include Tamil, Telegu, Kananda and Malayalan, and the Indo-Aryan group, including 14 major languages with 200 dialects. The languages belonging to the Indo-Aryan speech family are the most important both culturally and numerically. They derive from the original Sanskrit which has been the natural source of new words and its script, in numerous

¹ *Contemporary Education*,—by Cramer and Browne, New York, p. 577.

modified forms, is widely used in India to-day. Within this Indo-Aryan language region, Hindi or its colloquial form Hindustani, has become the national language since Independence. The peripheral languages of Indo-Aryan origin show divergences in script, grammar, and vocabulary, and they have developed more or less independently as the regional cultural media—especially Bengali, Marathi and Gujarati.¹ So every school in the non-Hindi speaking areas will have to make special arrangements for teaching Hindi as the national language. Thus the administrative and financial implication of this multiplicity of languages complicates the problem of compulsory education in India. According to UNESCO because of this multiplicity of languages the problem of compulsory education in India is perhaps more difficult and more complex than in almost any other region in the world. Besides the linguistic minorities in almost every area, there are hill tribes who have only spoken languages and no written script. Dev Nagri, which is applicable to all Indian scripts with slight variations, is very difficult and complicated to learn. "In 50 letters (16 vowels and 34 consonants) in all their combinations," wrote Dr. S. K. Chatterje, "require at least 450 separate types in printing; the total number of ligatures is much greater. The shapes of the letters are complicated, and quick writing is not easy although the script has a sculptural beauty."² The difficulty and complexity of the scripts hamper literary campaigns which are essential to the all-round educational progress of India. The adoption of the Roman scripts would have been ideal for the general extension of elementary education. "But the national sentiment of India" said a specialist in Paris speaking on the use of Vernacular languages, "which had far more than a century to smart under the cultural domination of the West has become hyper-sensitive to anything it associates with that domination. A time may come when a proposal like this can be considered on its merits, but at present it arouses passions which are not amenable to reason."²

The Social and Religious obstacles must also be taken into account.

¹ *Languages and the Linguistic Problem*—S. K. Chatterje, p. 27.

² *Hindi as the National Language of India* by Abid Husain. (Regional Paper on Vernacular Languages No. 3), Paris, 1951.

To-day in India the Vedic religion is no longer a dynamic force but dead thought and ceremonial and a hindrance to the growth of the mind and the spirit. With all the good that Hinduism has done, it has also tried to imprison truth in set forms and dogmas, and has encouraged ceremonial practices which have now lost all their original meaning and become mere routine. Indeed the blind idolatry of the past and narrow orthodoxy determines even the day to day life of the Hindus. In India religion is a powerful determinant of social relationships ; it controls items of diet and dress and influences the choice of a livelihood. Indeed religion is as important a factor among Hindus to-day as it was in the Europe of the Reformation. It was the socio-economic conflicts associated with religious differences between Hindus and Muslims that brought about the birth of Pakistan on the eve of Britain's relinquishing her Indian Empire. There are still to-day about 40 million of Muslims in India whose beliefs and customs are essentially different from those of the Hindus. Among the Hindus the social institution of caste is the most distinctive aspect of life. Caste prevents the taking of marriage partners outside the caste and the eating of food cooked by persons of lower caste. In the villages the castes are ranked in a socio-religious hierarchy, with the Brahmins at the top. It is true that in big cities like Calcutta, Bombay or Delhi, the laws of appertaining to food and occupation have weakened and the exclusion of 'untouchables' from temples and schools has been outlawed ; but in the villages the people tend to organise themselves into religious and caste groups for caste retains its strength in social organisation in rural India.

Taya Zinkin in her vivid description of Indian villages wrote "in one street live only the potters of the village. They may not all make pots, but they all belong to the potter caste. The Brahmins have their streets ; the peasants, theirs. A bit of field separates the touchable village from the Harijan, or untouchable. ... The village is organised in accordance with the implicit but formidable tradition of caste. A Brahmin cannot eat with a lower caste ; a barber will not take water from a leather-worker ; and a barber will feel free of pollution, whether he is polluting or being polluted, only in the company of another barber."¹

¹ *India Changes*—Taya Zinkin, p. 9.

Indeed, caste still poses the most potent threat of division in India. "Its ramifications permeate Hindu society," wrote Frank Moraes. "They are wide and deep, constituting a criss-cross, horizontal-vertical pattern based on a complicated system of exclusiveness, segregation, taboo, and inequality . . . Here Nehru faces some formidable hurdles ; for untouchability, with its concomitant of caste is deep in Hindu society."¹

"Indian life becomes a sluggish stream" wrote Nehru himself, "living in the past, moving slowly through the accumulations of dead centuries. The heavy burden of the past crushes it and a kind of coma seizes it. It is not surprising that in this condition of mental stupor and physical weariness India should have deteriorated and remained rigid and immobile, while other parts of the world marched ahead."² The religious weakness of Hinduism has divided its people into four separate castes of Brahmins, Warriors, Merchants, Farmers and Workers with an additional army of Untouchables. Although these divisions have been weakened in post Independent India by legislation and the appellation 'untouchable' has been outlawed, the divisions and differences still exist on a vast scale in the villages and hamper reforms.

In addition to the divided Hindus, there are many other religious sects in India, for out of every hundred Indians it has been estimated that 85 are Hindus, 10 Muslims, 2 Christians and 1 or 2 Sikhs. There are also smaller groups of Buddhists, Jains, Parsees, animalists and others. Hindu-Muslim differences flared up into bloody riots in British India ; and to-day while Muslims, Hindus and Christians all favour general education, they all want it tied to their own religious beliefs. Again upper caste Hindus because of their 'fear of difilement' want separate schools from the Untouchables. "The outcasts were the only section of the population" wrote Arthur Koestler, "whose professional duties brought them into contact with slaughtered cows, dirty linen, and above all, excrement ; hence any direct or indirect contact—the use of the same well (or school) in some regions the mere sight of the outcast—was a source of pollution."³

¹ *India Today*—Frank Moraes. The Macmillan Company, New York, p. 6.

² *The Discovery of India*—Nehru, Meridian Books Ltd., London, p. 38.

³ *The Lotus and the Robot*—Koestler, p. 140.

Thus the whole complexity of Hindu society—compulsive ritual, taboos, indignities inflicted on the outcast, all reflect their evil influences on education. Moreover, separate schools for the 'untouchables' and for every different religious community would be a financial impossibility and would tend to defeat the aim of national unity through education.

The social and religious customs of India are still rigid enough to be serious obstacles in the way of public education, child marriage still practised in rural areas draws girls away from school; for although it was prohibited by law about a quarter of a century ago it is still practised to a considerable extent. The law does not make it a cognisable offence but takes note of it when a complaint is lodged by some relative of the boy or the girl or some member of the public. As there are not many public-spirited persons who would take the trouble to go to a court of law in order to prevent something which does not concern them personally, child marriage still continues with impunity retarding the education of the girls in the orthodox circles which need it most.¹ Again it has to be remembered that some orthodox persons object to the teaching of reading and writing to girls. Muslims particularly object to their girls going publicly to co-educational schools, but separate schools are not possible financially. "How can a poor country like India" it may be asked, "even think of making primary education universal if social prejudices compel it to provide two schools in each small unit?" Adult illiteracy is also a serious obstacle to the education of children. Living in an atmosphere of ignorance and superstition at home, children lack encouragement for study and many lapse again into illiteracy. Thus a campaign of adult education must accompany the education of children.

A still more serious obstacle to compulsory education in India is the geographical conditions. The population of India is distributed over so vast an area of the sub-continent and conditions are such that the establishment of schools is not easy. About 70% of Indians live in small villages, the majority of which have fewer than 800 people. Except in fertile areas and small industrial towns, the roads are bad. Villages need to be grouped for a school to be centrally located. It is very difficult for teachers

¹ *Compulsory Education in India*—UNESCO, p. 99.

and even more difficult for the children to walk over the muddy roads in the rainy season or under the scorching rays of the summer sun and government finances make it impossible for it to bear the cost of bus transportation. The construction of roads or bus transportation is also impossible in such places as the Himalayan slopes or the mountain tracts of the East and West slopes and Kashmir, where hamlets are miles apart and the mountain paths are blocked by snow in winter. Natural barriers like thick jungles and streams and rivulets without bridges are common features in many parts of India. Thus geographical obstacles have also to be overcome before the plan for universal education in India can be achieved.

Among other obstacles, even more serious are the political ones. The partition of India and the creation of Pakistan brought millions of refugees. The Government has yet to find for all of them food, shelter and employment. UNESCO points out that in 1947, a large number of expert administrators and educationalists, left India and have not in all cases been replaced by seasoned men.¹ Inexperienced juniors and new recruits in important posts made the bad situation critical and many political parties still look to their own interests rather than to the National interest. Unless the movement for compulsory education can find a response among political parties and public co-operation, no real interest in general education can be expected to develop.

The responsibility of education which devolved certain aspects as for instance, primary education on local boards, many of whom unfortunately, have proved inefficient and unresponsive to the needs of education. They suffer also from the lack of money. Another serious obstacle is the need to recruit and train an army of skilled teachers. Leaders and educators in India, as well as well-wishers outside, have long focused attention on the problem of teachers, who constitute the most vital factor in any educational system. Upon the teachers' sincerity and devotion, number and quality must depend the effective-

¹ *Compulsory Education in India*, p. 93. This view has been questioned and it has been pointed out the many distinguished Muslim educationalists, such as Maulana Azad, Sri Shifaat Ahmed Khan, Dr. Zakir Hussain, Prof. Humayun Kabir, Mr. K. G. Saiyidain remained in India and that most of the British educationalists had left India before 1947.

ness of all educational matters. Even to-day, however, the pay of the teachers is low and working conditions poor. An adequate supply of enthusiastic and well trained teachers is a big problem.

How can educated young Indians be attracted in suitable numbers to the teaching profession? What are the problems of the supply and training of teachers in India to-day? What suitable training can be given to applicants? How should selection be made? When should training commence and how long should it last? What are the sources of supply and how can the status of teachers in India be improved?

These and many other related questions are of major importance. The problems raised are difficult but they are also vital; for if India wants to progress from being a backward country they must be explored and answers found.

But all these obstacles in the way of universal primary education pale into insignificance when compared with the one great obstacle—the poverty of the people and the consequent poverty of the State.

India is one of the poorest countries in the world—perhaps in certain respects the poorest. At the 1951 census, India's population was 380 million with an average of Rs. 253.9 (a little under £20) per head per annum. India's population on March 1 of 1961 was 438 million—over 70 million more than the highest revised estimate had allowed for. According to the National Sample Survey,¹ a rural household in India consisted, on an average, of 5.21 persons. A little over a fourth of these (28.1 per cent) were earners, about a sixth (16.6 per cent) were earning dependents and more than half (53.3) non-earning dependents. The annual consumer expenditure in rural areas was, according to the sample survey, about Rs. 220 per person per year. As against this, the per capita income for the country as a whole was computed at Rs. 253.9 in the Final Report of the National Income Committee. The average consumer expenditure per person was highest in North-West India (Rs. 314) and lowest in Central India (Rs. 198). Two-thirds (66.3 per cent) of the expenditure of an average household in the rural areas, taking the country as a whole, was on food, about a tenth (9.7 per cent)

¹ *India*—1962, Publication Division, p. 162.

was on clothing and the remaining one-fourth (24.0 per cent) was distributed under other heads of expenditure. Expenditure on education, newspapers and books was Rs. 1.6 (about 1s.) per person per year (constituting 0.7 per cent of the per capita expenditure) and that on medical services and medicines Rs. 2.8 per person per year (1.27 per cent). Together, education and health services accounted for just over 2 per cent of the per capita expenditure. Even this extremely low income gives no idea of the plight of those peasants who live on a ridiculous pittance, seldom earning anything approaching the average of the total population. According to UNESCO there are very large sections of the population, e.g. landless labourers in the villages numbering 45 millions at the time of the 1951 census,¹ —who depend on land wholly or mainly unowned, numbering 31½ millions, aborigines living in jungles and outlying hilly districts, nomadic tribes wandering throughout the country whose income per head is far below the statistical average.

In the villages the poverty of the teachers is such that it might appear surprising that there are fairly educated persons willing to undertake such work. Not only do relatively few children attend school, but also attendance is irregular for almost all pupils, particularly for the children of persons in certain occupations. It seems in many areas that continuity in teaching is next to impossible. The most important causes for irregular and poor attendance can be related to the low level of living among the people in the villages and to the general lack of development. As pointed out before most of these poor people live in joint families with their wives and children and with a minimum of food and clothing of the poorest quality; for the number of unemployed in India is legion,² and they live on the verge of starvation. These half-starved families seldom send their ill-clad children to school being unable to bear the expense of their education. The children at the age of 7 or 8 become

¹ This has gone up to more than 50 million since the population was 438 million in 1961.

² According to Government Reports 'a precise estimate of the number of unemployed in the country as a whole is still to be made.' Even after 19 years of independence Government's estimate about unemployed is inconsistent. The Planning Commission estimated that there were roughly speaking, 53 lakhs of unemployed persons in the country, 25 lakhs in the

economic assets to their parents helping with manual labour ; “so that when they have to make a choice between two courses that of keeping their children half-starved by allowing them the luxury of education and making them earn two full meals and perhaps a little more for the family by sending them to work—can they be blamed if they choose the latter?” Thus the poor economic condition of the people makes it impossible for them to allow their children to receive the full of elementary schooling.

At present it is also impossible for the Government to bear the entire cost of education for the nation's children. India's four successive five year plans aim at no more than the most modest targets compatible with national survival ; actually it gives little enough away to consumptions; and if the fifth plan, succeeds, India will have made some progress towards laying the foundations of a cumulative growth based on her own efforts. Despite progress made during the four five year plans, success has so far eluded India. The menace of China on India's northern border lies not so much in the occupation of barren and inaccessible mountain tracts of territory as in the distractions it creates from the central task of social and economic integration and development. The success of the present plan demands patriotic devotion, sustained effort, skilful direction and a great deal of foreign help.

For the education budgets along the Government would have to provide firstly for the expenses of compulsory education, including building and maintenance of schools, salaries of teachers and supplies and equipment ; secondly, for the cost of books and educational materials for pupils and the cost of one free meal a day and thirdly, some form of compensation to parents for loss of their children's earnings, otherwise the boon of education would be counterbalanced in many cases by almost complete destitution. The government does not possess the resources to provide for all this. When the Central Advisory Board of Education under Sir John Sargent prepared 'The Post-War Educational Development Plan for India' in 1944, they put the total cost of providing compulsory education for all children

urban areas and 28 lakhs in the rural areas. Besides there are 55.4 lakhs under employed and 3.17 per cent 'severely under employed.'

belonging to the age-group 6-14 at Rs. 200 crores. This estimate would have to be considerably revised to-day for after twenty-two years the total population of India as well as price levels have changed considerably. The Central Advisory Board of Education estimated the population (in 1940)¹ to be 30 crores (300 million). According to the census of 1961, the population of India (excluding Pakistan) had become 438 million. Thus the budgetary estimate of the Central Advisory Board of Education (on the basis of a population of 30 crores) will have to be increased. Again the calculations of the Central Advisory Board of Education were based on pre-war price levels. Prices have since risen about four times from that level. But even under the best circumstances and according to the most optimistic estimate which can be made, it can be assumed that prices in 1966 will be three times the pre-war level, which implies the raising of the estimated cost of compulsory education in India to more than Rs. 1,000 crores (about \$ 1700,000,000). The total annual revenue of the Union Government and all the State governments in India amounts to about Rs. 1,000 crores ; thus it is clear that to expand the estimated sum on education is beyond the financial resources of the combined national and provincial governments.²

OTHER SOCIAL SERVICES

The entire cost of compulsory primary education in India cannot be met because of the Government's financial insolvency. The problem then to-day is how much money can be invested in education in view of the limited resources of the country and the many other claims upon the Government. India has to

¹ *Report by the Central Advisory Board of Education*, 1944, pp. 96-97.

² Budget Estimates (1960-61). The budget estimates for 1960-61, as presented in the Indian Parliament on February 29, 1960, placed expenditure at Rs. 980.35 crores as compared with Rs. 854.05 crores in 1959-60 ; and revenue (at the existing level of taxation) at Rs. 896.45 crores as compared to Rs. 838.66 crores in the previous year, leaving a deficit of Rs. 83.93 crores. New taxation proposals were expected to yield an additional revenue of Rs. 23.53 crores. So even in 1961, UNESCO's remarks that "it is absolutely impossible for the State to take up the financial responsibility for launching a scheme of universal compulsory education in the form contemplated by our educationists," remained valid.

choose on the one hand, between spending more money on education and on the other, spending more money on promoting health and medical facilities of the country.

It should be noted that in India, the question of the provision of health services is also urgent and has real claims to priority. Health programmes are the responsibility of the State Governments, but certain programmes relating to malaria control, filaria control, family planning, water supply and sanitation, control of communicable diseases and the expansion of training facilities for social workers, have been initiated and supported by the Central Government under the five year plans. The second five year plan aimed to expand existing health services, to bring medical benefit within the reach of all people and to promote a progressive improvement in the level of national health. Hundreds of thousands of people in India still suffer from malaria. For 21.41 crores (1 crore = 10 million) of people there are 386 malaria units which were functioning by January 31, 1960. According to the National Filaria Control Programme, a population of about 229 lakhs are within the administrative area of drugs in filarious communities and anti-mosquito measures. The number of people living in the filarious areas of the country are about 400 lakhs (1 lakh = 1 hundred thousand). Tuberculosis also takes heavy toll in India and every year half a million die of this disease and about two and a half million people suffer from it. About 90 to 100 crore man days are lost every year owing to the incidence of this disease. Though the number of TB hospitals has increased since independence, they are still far from enough.

The number of TB hospitals, sanatoria and clinics and of beds in them in the year 1950 and 1965 respectively is as shown below:

	1950	1959	1965 (estimated)
Sanatoria	49	71	85
TB Hospitals	35	70	90
Clinics	110	223	300
TB Wards	114	151	175
Beds	10,371	25,000	35,000

There were only 15 after-care colonies, in this vast country of 450 million people, for the rehabilitation of patients after cure.

The number of leprosy cases in India was estimated in 1963 at about one and a half million. Assam, Andhra Pradesh, Bihar, Madhya Pradesh, Madras, certain parts of Uttar Pradesh, Bombay and Kerala are areas of high incidence. Under the Leprosy Control Scheme, started during the first five year plan, only 4 treatment and study centres and 29 subsidiary centres in different states were established. During the second five year plan, 100 additional subsidiary centres were proposed to be established in the different states. There are only two hospitals—the Lady Willingdon Leprosy Sanatorium and the Silver Jubilee Children's Clinic at Saidapet where treatment for indoor and outdoor patients is provided.

The exact number of people suffering from venereal disease is not known but it is estimated that five to seven per cent of the entire population suffer from syphilis in the States of Bombay, Madras and West Bengal. From Kashmir to Assam, the hilly tracts also show a high incidence. In the second five year plan, a scheme was included which provided for the establishment of 8 VD clinics at State headquarters and 75 at district level for the training of medical and auxiliary personnel. These headquarters and 46 district clinics have been established where an average of about 675 patients report in each every month. Yaws is also prevalent in a few districts of Andhra Pradesh, Orissa, Madhya Pradesh and Madras. Anti-yaws teams tested 548,366 cases and treated 10,128 cases by the end of 1958. Influenza and Cancer are also common in India, and there is no reason to suppose that Indian health standards have changed very much since independence. Indeed a series of sweeping changes in Indian social and economic life have led to the rise of many new health problems. One common reason for the low standard of general health and well-being in India is the lack of sufficient food. Surveys conducted in India since 1935 have revealed quantitative as well as qualitative deficiency in the diet of the India people. Dr. Aykroyd, formerly the Director of the Nutrition Research Laboratories who made an inquiry into an average Indian diet, found that it contained only 1750 calories as against an estimated requirement of 2400 to 3000 calories for an adult person. The Indian diet also lacks essential food ele-

ments like proteins, fats, minerals, and vitamins. A badly balanced diet makes people much more open to attack by disease and the raising of dietary standards is essential. It is well known that one of the causes of the low attendance rate among Indian children is malnutrition.

Efforts made to get children to stay longer at schools, do not solve the problem for the physical presence of the child in the classroom does not necessarily mean that he is gaining the full benefit of attendance. Much depends on the child's state of health and whether or not he has eaten. In these respects the majority of Indian children are seriously handicapped for the general standard of children's health is low. For very many children the school is a great distance from home and such children may have to go to school without breakfast and with only some boiled rice for lunch at 10 o'clock before coming to school. It is estimated that about 90 per cent of Indian children bring no food with them, so that to tiredness is added hunger and weakness and in consequence any proper concentration on classwork is not to be expected, especially in the last hours of the school day. In the villages, many children have to walk long distances, 3 or 4 miles to attend post-primary classes and it is most important that the problem of the hunger of children should be solved by providing school meals, but almost no progress has been made in this respect in Indian schools and nowhere has any really large-scale scheme yet come into operation. New Delhi's revenues are at present inadequate to meet this national need and it would seem that for a long time to come India's revenues will not reach the level necessary to provide the school meals containing sufficient protein and fat foods which are expensive.

Perhaps the best plan, if something is to be done rather than wait indefinitely, would be to encourage the schools themselves to grow more food. School farms and gardens should concentrate on producing various kinds of vegetables. The problem is not so urgent for the public schools where children of the rich attend and are provided with a good, balanced and relatively expensive diet.

In all the schools, however, the authorities must see to it that every child in need has the minimum of food to keep him from hunger and help him to learn more easily.

The supply of good meals might do much to make the work of the existing schools more effective through encouraging better average attendances and preventing wastage. In referring on his inquiry undertaken in nine schools, situated in the area of Baipali, to collect factual data on educational conditions. Nityanda Patnaik¹ stated,

“Our enquiries have revealed that though sickness is not a serious cause of the low rate of attendance, it still is an obstacle to regular attendance. According to the parents the common sickness from which children suffer are headache, colic, fever and small-pox. To the obstacle caused by sickness, the problem of malnutrition, can also be added. When the school sits from 10 o'clock to 4 o'clock, the children eat their midday meal before coming to school and have nothing further to eat until they reach home. Although the children eat a little tiffin such as muri (puffed rice) at midday during the leisure hour, this only is for the few. In case of morning schools, the children hardly find any substantial food to eat before they come to school. Generally speaking the people of this area eat their chief meal round about midday. The housewife begins preparing the meal nearly one hour before meal-time. Therefore, school-going children who leave for school at 10 o'clock miss this meal. In the case of morning school, the child goes, so to say, unfed but gets two substantial meals daily. Thus they are accustomed to a very limited diet which tells upon their health, and this makes the children at school inattentive and sleepy.”

In 1960, thirteen years after independence the Indian death rate per 1,000 was 16.5—definitely a matter of under-registration—compared with 9.6 in the United States and 11.6 for England and Wales. In the same year in India the infant mortality rate per 1,000 live births was 92, as against 29 in the United States and 30 in England and Wales.

An Indian's expectation of life is among the lowest in the world. In India in 1961, the expectation of life at birth for males was 40 and 42.06 for females. In the United States, the 1960

¹ *Man in India*, Vol. No. 34, 1954, pp. 20-38.

figure for white females and males was 70 and 65.27 respectively; in England and Wales the figures were 71.15 and 66.39 respectively.¹ While the Indian figures since independence represent some improvements over those of 1901 in British India, when they were 23.31 and 33.59 respectively, the great difference between Indian life expectation on the one hand, and American and British, on the other, is glaring.

The death rate among children and women is very high. About forty per cent of total deaths are of children below ten years of age, and what is more distressing is the fact that nearly half of the deaths in this age group occur during the first year of life. In 1959, of the total deaths of all ages, 20.5 per cent occurred under one year, 15.8 per cent between one and five years, and 5.6 per cent between five and ten years. The total number of maternal deaths per year, again a matter of under-registration, is about 200,000. That is, maternal mortality is estimated at about twenty per 1,000 live births. The total morbidity resulting from what should be the normal physiological function of child bearing in women is more than twenty times greater than the number of maternal deaths or about four million.

Death rates especially of children is still high in India even in 1966 nineteen years after independence.

Many Indian lives could be saved by proper medical attention or by adequate public health measures to prevent disease arising and spreading. Not to save them is virtually murder—so health services must come first.

There are other conditions which also affect health standards. Some diseases, such as leprosy, are spread by the close and frequent contact of healthy persons with lepers. In the holy cities of Puri and Benaras hundreds of lepers contaminate the

¹*The Prospect for Planned Parenthood in India*—S. Chandrasekhar, Pacific Affairs, Vol. XXXVI, No. 4.

VITAL HEALTH STATISTICS

	1947	1956	1957	1964
General death rate per thousand of population	27.4	25.9	—	21.6
Infant mortality rate per thousand live births	190	161	—	143
Incidence of deaths per thousand of population on account of				
(a) Fevers	10.8	4.8	4.8	3.6
(b) Small-pox	0.1	0.06	0.16	0.31
(c) Plague	0.3	0.0	0.0	0.0
(d) Cholera	0.4	0.06	0.16	0.08
(e) Dysentery and diarrhoea	0.8	0.9	0.5	0.45
(f) Respiratory diseases	1.5	0.9	1.1	0.90

atmosphere and spread disease by wandering as beggars. People contract tuberculosis, by breathing in air laden with germs given out in the breath of those who have the disease. People overcrowd together in one small room are more likely to get diseases and the risk of infection is increased still more if door and window openings are small. Many Indian and foreign experts acquainted with the Indian housing situation, are firmly convinced that the first priority, above education and health, is low-cost housing. Neither bodies nor minds can develop properly, they say, when people are crowded together, both sexes and all ages, four to eight to a room.

Other kinds of disease are also spread by bad housing. Most houses in Indian villages are thatched mud huts surrounded with food scraps and other rubbish which provide an ideal home for rats, flies, fleas, mosquitoes and other similar carriers of disease. Moreover, beds made from mats, wooden planks or bamboos or Indian 'Charpai' provide hiding places for bedbugs. The spread of malaria, relapsing fever and typhus fever is helped by the existence of such conditions. It should also be pointed out that the spread of disease is due, not only to the existence of sources of infection, but also to the conditions under which people work and live. With better houses substituted for huts of the usual mud and wattle type, the commoner diseases would attack many fewer people because their insect carriers

would no longer enjoy ideal breeding places close to man. A pure water supply, sadly lacking in Indian villages, would greatly reduce the amount of water-borne diseases by keeping infection from the water people drink. In India, it has been estimated, that only about 25 per cent of the urban population is served by a protected water supply. In 1960 about 450 lakhs of people in towns lacked such supply and over 500 lakhs of people were without sewerage facilities.¹

Taya Zinkin, India's former correspondent of *The Guardian* and *The Economist* in her report on Indian villages wrote,

"In some villages, the houses have straw roofs, in others, the roofs are corrugated iron sheets, elsewhere again they are made of cool Mangalore tiles, raw mud bricks or bamboo tubes. Some houses are huts with only one room, others are a maze of structures with courtyard following courtyard and

¹The Health Ministry has urged the Planning Commission to make a provision of Rs. 600 crores for national water supply schemes in urban and rural areas during the Fourth Plan period.

The Ministry is reported to have pointed out that the proposed allocation to be divided equally between urban and rural schemes represented a compromise between what was necessary and what was possible.

In urban areas, only 34 per cent of the 78 million people in 2,551 towns have water supply facilities and 20 per cent are served by an adequate sewerage system according to official figures.

While an investment of the order of Rs. 1,000 crores is estimated to be necessary to clear the backlog and place the water supply programme in urban areas on a satisfactory footing, the Health Ministry has proposed that at least Rs. 300 crores should be allocated during the Fourth Plan. Out of this Rs. 100 crores would be for meeting the needs of the four major corporations of Bombay, Calcutta, Madras and Delhi.

In the rural water supply programme envisaged for the Fourth Plan, it is proposed to cover scarcity areas to some extent. However, it is pointed out, difficult and scarcity areas involve development of underground water sources for which alone resources of the order of Rs. 500 crores to Rs. 600 crores would be needed. Full coverage of all such areas would, therefore, have to be deferred to the subsequent plans.

In this context, the Health Ministry has impressed on the States the urgency of setting up statutory water and drainage boards to raise local finances to supplement the provisions to be made in the Fourth Plan.

The Health Ministry is also understood to have suggested that provision should be made for the training of more public health engineers and subordinate engineering staff and that public health engineers should be

roof over-lapping roof in unending succession. In Saurastia, animals get pride of place in the inner courtyard, in front of the living room, next to the kitchen. Elsewhere, animals are housed on the ground floor, below their owners, or even are kept on rafters over head. In some villages, the hearth is in the one room where people eat, sit, sleep and keep stores, in many others, the hearth is outside, in the open, by the stack of cow-dung cakes. The majority are nucleated villages, with the houses gathered close together, but dispersed villages are an exception dear to the hearts of individualistic aboriginals and the Indians of the coconut country in the far South West. The villages have no shape ; they are not picturesque like French villages, which cluster around a chateau or a church. They are not planned. They spread jaggedly into their own fields as the population grows. That is why their houses struggle down a long main street instead of circling around the well, which is the heart of the village. Indian villages are not beautiful, except for those on the West Coast and in Rajasthan. They have no shaded alleys. The houses encroach messily on each other and on the gutters which serve as streets. There are neither flowers nor public gardens ; at best, the lone blob of green of a papaya tree, sticking up in a corner next to a rubbish heap, relieves the monotony. There is no sewage system, not even a trench latrine, and refuse is often dumped on the path, right in front of the house. In Rajasthan, flayed carcasses sometimes rot in the village itself ; nobody seems to mind. In Northern India, even the sewage pits of individual houses may overflow into the street, vomiting their stench and germs to the delight of flies, pie dogs and rats. Many villages are in urgent need of repair. They are as messy and dirty as backward savoy villages. As a rule, there are no roads, drains, or lavatories (public or private) ; also there is normally no running water. No matter how prosperous it is, every household has to get its water from a well."¹ "In many Indian villages," she goes on to say "soap is new and not yet fully accepted, many people bathe with plain water, gram flour,

given a status equal to that of other engineering professions.—*The Hindu Weekly Review*, Aug. 17, 1964.

¹ *India Changes* !—Taya Zinkin, New York, pp. 4-7.

pumice stone, mud or soap nut ; they save soap for ceremonial occasions."

If the diseases at present rampant are to be controlled, villagers must have a plentiful water supply, soap and sufficient wealth to enable them to possess a change of clothes. These would promote habits of cleanliness and lessen diseases ; only when people can learn new skills and learn to apply skilful labour to their land and its products can these results be achieved. Until this happens doctors and hospitals can do little to eliminate disease and they are too few in numbers. India at present has one doctor for 7,000 people and one hospital for 25,000—too few to treat everyone who needs help.

Again medical and health policies in India should be framed up and judged from another angle. India is already over-populated and if modern scientific developments in controlling disease are adopted this will, in time, bring more problems. If villagers do not quickly learn better methods of using their land and labour, success in controlling disease will be substituted by famine.

While this is accepted by social scientists, and while the immediate necessity is to increase production, this itself cannot be accepted as a guarantee for better living. The main factor is not simply increased production but increased production, especially of staple food, per head of the population. With the aid of modern agricultural methods India's productive output might be raised during the next few decades ; but this output would have to keep pace with the growth of population. Unfortunately, India's population is growing much faster than the Government's economic planners have allowed for. This emerged from the census taken on March 1, 1961, the results of which were published in New Delhi. In round figures, says the official report, India's inhabitants today number 438 million.¹ This is seven million more than the highest previous planning estimate. At the outset of the second five year plan, in 1956, it was calculated that the population would have risen from 362 million in 1951 to 408 million by 1961. This was later revised upwards several times, but never enough.

¹ By the end of 1966, India's population will be nearly 480 million.

More alarming than the net increase is the acceleration in the increase. The 1951 census showed a 13.3 per cent population growth in the previous 10 years, the 1961 census shows an advance of 21.1 per cent of the last decade.

In the 50 years since the 1911 census, which put the population figure at 257 million, the rise has been 74 per cent. If the present rate of population increase is maintained, the Indian Government's Fourth Five Year Plan, will have to be revised. If a comparable acceleration continues, it is obvious that alterations in the Plan will have to be drastic. Mr. L. B. Shastri the late Prime Minister, admitted that the "increase does mean that additional burdens will be placed on the Government."

The Government of India is conscious of the alarming rate of population increase. The Planning Commission laid down the objectives of the family planning programme. They were (i) to obtain an accurate knowledge of factors contributing to the rapid increase of population in India, (ii) to discover suitable techniques of family planning and devise methods by which knowledge of these techniques can be widely disseminated, and (iii) to make advice on family planning an integral part of the service in Government hospitals and public health agencies. The Government of India's family planning policy aimed at reducing birth rates to stabilise the population at "a level consistent with the requirements of national economy."

A Family Planning Board has been constituted at New Delhi to formulate programmes. This Board has been functioning in all the States except Jammu and Kashmir. Full time officers trained in the technique of family planning have tried to educate public opinion with the help of pamphlets, posters, films, exhibitions, etc. Investigations on contraceptives are carried out and a demographic training and research centre has been established at Bombay.

But despite official backing, India's family planning programme has had little impact. Since a sterilisation campaign was launched in 1956, only 115,000 men and women have submitted to surgical treatment.

Sociologists point out that those who have volunteered for this drastic measure have mainly been from the middle and upper middle class, with all that is implied in the terms of the consequent dilution of inherited talent.

Recently various Indian cities have begun offering cash bonuses to persons willing to be sterilised. But no marked advance seems to have been recorded in the number of volunteers coming forward for treatment.

"If population increases beyond available resources", wrote Barbara Ward, "the outcome is the old fatal cycle of China in which peace encourages births and births press on the available land, the peasants fall into debt and starvation, banditry and civil war follow, peace vanishes, population falls and then after the restoration of new imperial leadership, the cycle begins again."¹ In the past the enormous growth of population had been limited by famine, war and premature death caused by preventable diseases. As these controls weakened populations have increased very rapidly. "Perhaps the greatest challenge to India's future" wrote Taya Zinkin, "is its population problem, which threatens the nation with slow strangulation."² Without going into the problem in any sort of detail, it would appear that if India is to rise from the low-income and prosper, she requires a definite combination of accelerated technological progress and retardation of population growth.

This is the background against which the proposal to devote a larger proportion of public expenditure to education must be considered. Investing more money in education would be like robbing Peter to pay Paul. It would mean cutting down on the Health Services or the Family Planning Programmes where present levels of expenditure are already inadequate.

It is thus clearly evident that the improvement and all round progress of India, however, can come only from adequate investment of capital. Hospitals and schools need to be built, more doctors and teachers trained, equipment perfected. Salaries of the teachers must be improved ; these in turn, make necessary the accumulation of vast amounts of capital.

Where is this capital come from ?

This question is of major importance. The problems are difficult but they are also vital. In dealing with the economic deve-

¹ *India and the West*—Barbara Ward, p. 16.

² *Indian changes*—Taya Zinkin, New York, 1958.

lopment in India, the many vital problems have to explored and their exploration must throw light on the problems.

CHAPTER V

A CRITICAL ANALYSIS OF EDUCATIONAL POLICY IN INDIA TODAY

I PRIMARY EDUCATION

The Ministry of Education

The Ministry of Education in New Delhi is divided into eight divisions, viz.,

- (1) The Administrative Division
- (2) The Elementary and Basic Education Division¹
- (3) The Secondary Education Division
- (4) The Higher Education and UNESCO Division
- (5) The Social Education and Social Welfare Division
- (6) The Scholarship Division
- (7) The Physical Education and Recreational Division and the Hindi Division.

Although the educational system in India is decentralised and education is the function of the States and Provinces, the Central

¹ The Government of India has set up an All-India Council for Elementary Education. This Council is an advisory body and is to consist of 23 members including 14 representatives from State Governments, one representative each of the Planning Commission Central Advisory Board of Education and the All-India Council for Secondary Education and the Ministry of Community Development. There will be one Principal of a Training College, and two educationists connected with the fields of Primary and Basic education, Girls' education and education of backward classes to be nominated by the Union Minister for Education. This Council advises the Central and State Governments on all matters relating to elementary education and prepares programmes for the early implementation of Article 45 of the Constitution. It also assists in organising research in the administrative financial and pedagogic problems of primary education. Furthermore, the Council helps in the production of literature suitable for teachers and educational administrators to improve the quality of primary education and to enforce compulsory education.

The Union Government helps the States in respect of higher education (through the University Grants Commission) and research and scientific and

Ministry co-operates in the work of the State Educational Development Schemes.

The Central Advisory Board of Education is also represented by the State Governments to see that educational plans are conducted on a national basis. Under the schemes of the second five-year plan, educational development programmes are received from the States and Union territories and examined every year. On the basis of the annual departmental reports any adjustments whether of excess or short payments from Central assistance to the State plan schemes are reported to the Ministry of Finance which co-ordinates the central grants. A working group on Education was constituted at the centre with the Educational Adviser as Chairman to report on education in the five year plan. It is hoped that the final plan will represent the results of serious thinking on the part of the Centre and the States within the resources available and the needs of the regions.

The System of Grant-in-Aid

Central grants were given in 1960-61 on a hundred per cent basis to the State Governments and the Union territories for the expansion of teacher training facilities, especially for the training of as many women as possible under the programme of universal free and compulsory education.

The grant-in-aid problem is generally discussed at three levels, namely the Federal, i.e. State Aid, State-local and State (or local) aid to private enterprise. There is no direct federal aid to primary education in India. The grant-in-aid system from the State Governments to the local bodies varies in practice in the different states.

In West Bengal and Madhya Pradesh the responsibility for financing primary education lies with the local bodies who receive block grants from the State governments for the purpose. In some States (the Punjab and Bombay) expenditure is divided between the State governments and the local bodies on a per-

technical education. The Central Government is also responsible for the running of four universities (Aligarh, Benaras, Delhi and Tagore's Viswa Bharati). They also administer the award of scholarships in pursuance of the policy of promoting cultural relations with other countries and co-operating with international organisations like UNESCO.

centage basis—the actual percentage, however, varies from one type of local body to another. In Bihar and Bombay, the proportion varies also according to whether compulsory education is or is not introduced. There are still many district boards or non-authorised municipalities which have a limited liability and contribute a special portion of their income for educational expenditure. The main burden of financial responsibility in India for the continuous increase in the cost of primary education, rests increasingly on the State-Government. In Uttar Pradesh the State government has opened primary schools under their direct control. In many other provinces, the State governments are coming more and more to spend large sums of money on primary education. Bombay has recently increased the rate of grant-in-aid to local bodies. There have been many cases (as in Bihar and Madhya Pradesh) where in order to carry out urgent reforms such as the raising of teachers' salaries, block or special grants have voluntarily been offered to local bodies over and above the statutory grant. To meet the total deficit in financing primary education, the State governments have also undertaken residual responsibilities. Where local bodies have no control over private schools, the State governments give direct grant-in-aid. Madras is an example of such a case. Where local bodies do exist, grants are sent by them to private schools in the first place and this expenditure is later admitted for grant by the State governments.

As already noted different systems of grant-in-aid have been adopted in the different provinces. Bombay, for example, gives grants on a capitation basis combined with special grants for specific purposes such as dearness allowances. Madras has adopted grants on the basis of salaries. There are also areas where grants are given as a specified percentage of total expenditure. In provinces like Bihar fixed stipends are given to teachers in charge of private schools. There is, indeed, great variety in the system of assessing and paying grant-in-aid in Indian private schools; for conditions differ so much from one area to another and there are great differences between, for instance, a good private town school which charges high fees and a private school in a poor village. On the whole, however, the amount of grant-in-aid to private primary schools in India is still inadequate.

Primary and compulsory education is free although pupils have to provide books and stationery for themselves. Article 45 of the Constitution provided for the introduction and full application of free compulsory education throughout the country by 1961. But even today the financial difficulties of the Government prevent their meeting the obligation of universal compulsory education. The Planning Commission panel of education considered breaking up into two periods in which the providing of free and compulsory education was to be realised; the first stage to be reached by 1965-66 at the latest and to cover provision for the age group 6-14.¹ When the Central Advisory Board of Education and the State Education Ministers endorsed the proposal, the States were asked to forward their estimates and programmes for the achievement of this objective. Following this a total expenditure of Rs. 300 crores in the third five-year plan was approved by the Central Working Group on Education and incorporated in the Education Plan for the country.

Compulsory Education

An experiment in compulsory education started in India in the State of Baroda in 1893. Some few states undertook the experiment in the decade following the transfer of power to Indian control under the Government of India Act, 1919. On the eve of independence the overall picture of compulsory education in India was far from satisfactory. Even to date, the relevant statistics to enable a study of these experiments are not available. In 1948, the areas where primary education was compulsory were 224 towns and 10,010 villages. The corresponding figures for 1956 were 1,093 towns and 39,276 villages. Bombay and

¹ Education for pupils in the age-group of 11-14 was also proposed to be expanded very considerably in the third five-year plan. The total enrolment of children in this age-group in 1950-51 was 31.20 lakhs or 12.9 per cent of the total population in the age-group. It increased to 42.93 lakhs (or 16.7 per cent of the total population in the age-group) in 1956, thus showing an increase of 11.73 lakhs. The Report of 1961 stated that during the Second Plan, the gains were greater; a total of about 19.00 lakhs of additional children enrolled and the enrolment in the age-group of 11-11 increased to 62.00 lakhs by the end of 1960-61. During the Third Plan, the target adopted was the enrolment of an additional number of 38.00 lakhs of children enrolled in the age-group of 11-14 was 100 by 1965-66.

Mysore have introduced compulsory primary education in a large part of their areas.¹ A few other States have agreed to initiate pilot schemes in selected centres. The duration of schooling is not uniform in all the States but plans are being worked out by the Ministry to introduce a definite period of compulsion. It is felt that the Ministry of Education should try to find out the effectiveness of compulsory measures. And this can be judged first, by comparing the total number of children of school age within the area of compulsion with those actually enrolled, and, secondly, by the percentage of average attendance in the primary schools of the compulsory area. But unfortunately these statistics are not available for India as a whole. The attendance authorities should hold a regular annual census of the children of school age in the areas under their control.

Moreover, reports on compulsory education should state the number of children not enrolled in schools and should compare the enrolment and attendance in compulsory areas with those in non-compulsory ones.²

Success of Compulsory Education in India

The Baroda experiment, the oldest experiment in India may have some valuable contribution to make to the study of the

¹ The scale of experiments in compulsory education can be measured if the number of towns and villages under compulsion or the number of pupils on rolls of primary schools in compulsory areas or the total population brought under compulsion, are available. But these statistics are neither reliable nor available. The Education Report of Delhi stated that free and compulsory education of all children of the age-group 6-11 to start with is to be provided by the end of the third five-year plan period. A scheme to train an adequate number of teachers for this purpose has been initiated.

² Although the Education Report stated that 1093 towns and 39,276 villages in India have adopted compulsory education, this does not help in finding out the scale of the experiment and the percentage of pupils, since the size of the city, town and village is seldom mentioned. The statements in the various reports are sometimes so contradictory that a definite judgement is impossible. It is stated that Bombay and Mysore have made good progress and have made compulsion applicable to more than half the pupils in attendance. Madras and Travancore come next. But the States of Bengal and Orissa stand lowest and have made very little headway. This applies also to Bihar, Rajasthan and Hyderabad.

problem. The experiment in Baroda was tried in 1893 by the Maharaja who took a personal interest in its success. In 1906, this experiment was tried on a very large scale being made applicable to the whole area of the State and the Maharaja entrusted the administration of it to the Education and Revenue Departments of the State, "so that the proverbial unwillingness of local bodies to take panel action did not interfere with its progress and finally, the State authorities held periodical reviews of the work done, conducted investigations into the working of the scheme, and amended the legal provisions in the light of the experience gained—a step which has hardly been taken in any other State."¹ It would thus appear that the Baroda experiment can help to throw light on the problem.

Several commissions² were appointed in Baroda to study the whole educational system of the State and to suggest recommendations.

In 1927 the Educational Department in Baroda carried out an intensive study to discover:

- (1) whether the lists of school-age children were complete and the reasons for non-attendance;
- (2) the number of enrolled in the various classes and a detailed analysis for the withdrawal of pupils before they have completed all the four classes;
- (3) how far literacy had increased among the different communities in the villages as the result of compulsory education and the manner in which the system was ordinarily worked, and
- (4) the extent of lapse into illiteracy of pupils who had been through the full compulsory course; and the extent of appreciation of the system by the parents and any change for the better noticed in recent years.³

¹In order to have an idea of the practical working of compulsion UNESCO was forced to rely on three indirect methods: the extent of coercive measures taken; the results of sample investigations, where available; and the opinions expressed by departmental officials. These methods were obviously far from satisfactory. *Compulsory Education in India*.

²After the introduction of compulsion throughout the State in 1906, the first commission was appointed in 1909, the second in 1916 and a third in 1926.

³The first Reports and results of the investigation were published in 1929 and the last in 1940.

The results of the intensive studies published annually in Baroda since 1929 make it clear that the progress so far attained in the State was in large measures owing to the periodic self-examination and to the prompt introduction of reforms suggested by experience.¹

In 1911, Baroda was behind Bombay in Literacy. But in 1921, it made up for the deficiency and began to make better contribution to the problem of compulsory education in India enabling India to learn from her partial failures and success.

Among the serious causes of failure was the absence of schools in all the small villages of Baroda for Baroda had a prejudice against single-teacher schools so that small villages unable to muster 75 children, were given no schools at all. Baroda's small village communities, therefore, remained backward. The Baroda experiment also showed that so long as socio-economic difficulties exist the law of compulsion cannot be enforced.²

In addition to socio-economic factors, purely economic difficulties also come in the way of full enrolment. In the rural areas

¹In spite of progress made the experiment in Baroda has not been altogether successful. It should be pointed out that the enforcement of compulsory education in Baroda and elsewhere in India clearly shows that no experiment in compulsory education has fully succeeded so far. "The results obtained naturally vary from area to area" wrote J. P. Naik "and there is a world of difference between a State like Bengal where compulsion exists only on paper and a State like Baroda where some remarkable results were obtained. But in no case was it possible to enrol 90 per cent of the children of school age to maintain a daily attendance of more than 85 per cent and to liquidate illiteracy in the rising generation. In fact, the results obtained on a voluntary basis in some areas like Travancore are even better than those obtained in any area where the compulsory system has been adopted. The conclusion is, therefore, justified that the experiments undertaken so far in compulsory education have failed to achieve their objectives and that it is essential to ascertain the causes of this failure with a view to preventing similar mistakes in future." (*Compulsory Education in India*—p. 81).

²(a) "Children of the backward classes do not reach the fifth class but remain absent for a very long time paying fines, evading the law under one pretext or another, leaving the school after the completion of the compulsory age." (The Report of the Educational Inspector, Baroda Division.)

(b) "The low percentage of backward class children can be explained by the fact that these poor people, being hard-pressed by economic depression prefer to avail themselves of the services of their children even

parents are often away from home from morning till late afternoon, working in the fields. If a small child is left at home, the older school child has to stay at home to look after the infant. In poor families the child of school age also has to go out to help his parents working in the fields or to earn something in order to help maintain the family. Moreover, in many cases, the cattle have to be sent out for grazing, the poor farmer does not have sufficient fodder close to his house. Some one, usually a child of school age, has to look after the cattle while they graze in selected fields or by the road-side.

Such cases will be found in almost every village in India, showing that mere compulsion does not necessarily help to bring all children of school age under enrolment. Compulsion will help in cases where the parent can afford to send the child to school. Where poor parents for economic reasons cannot send the child to school, compulsion cannot be the solution and school instruction, on a part time basis, or financial help to the parent, may be the only way out.¹

2 BASIC EDUCATION

The conventional method of teaching in India through uninteresting text books has been found to be unsatisfactory and outdated. The traditional method of examinations for promotion from one class to another has increased wastage immensely due

at the risk of being fined. In the case of Antyaj (i.e. untouchables) children, there is opposition of forward classes to allow Antyaj students in schools which are housed in private buildings and temples." (Report from the Educational Inspector, Patan Division.)

(c) "The fact that it is difficult to make a correct census list of the children (of compulsory age) of the backward classes affects the enrolment prejudicially." (Report of the Educational Inspector, Kadi Division.)—*Compulsory Education in India*, pp. 77-78.

¹ Mr. Littlehailes, Educational Commissioner of the Government of India, was invited to Baroda in 1934 to study the whole educational system of the State and to make recommendations. His recommendations on this subject were very interesting and can be accepted by the Government of India even to-day. "In some places" said Mr. Littlehailes, "children are required longer in the fields than in others, the time required for their assistance depending upon the time needed for reaping or sowing of crops. The exact duration of the main holidays need not, therefore, be fixed for the whole State.... We shall thus get rid of the more or less justifiable

to the dropping off of attendance as a result of retardation. Therefore, top priority has been given to a complete reshaping of the primary school curriculum. The Government of India has accepted the objective and aims of the Wardha Education Scheme, known as basic education. Basic education will 'centre on some form of manual and productive work, and all other activities to be developed'. Training to be given should, as far as possible, be integrally related to the central handcraft chosen, with due regard to the environment of the child. Basic education aims at the improvement of the health and the standard of living of the masses and the teachers are to be especially trained to take an active part in community development activities. In rural areas basic education teachers organise and lead the social activities of the villagers. So far as mass education is concerned, the Government of India has approved the pattern of basic education to be implemented. Mahatma Gandhi thought a child could learn through trade. He believed that this would serve a double purpose because while learning a child could earn as well. The ultimate aim of basic education, in the words of Mahatma Gandhi is "A just social order in which there is no unnatural dividing line between the 'have's' and 'have nots' and everybody is assured of a living wage and the right to freedom." He expected a 'silent social revolution' through basic education. It was to him 'an education for life, through life and by life'. Mahatma Gandhi was an idealist in his aims for education. He said, "What we need are educationalists with originality, filled with true zeal who will think out from day to day what they are going to teach to their pupils. The teacher cannot get this knowledge through dusty volumes. He has to use his own faculties of observation and thinking and impart his knowledge to the

complaint that children have to attend school when they are most needed by the parents to help them in the fields. The educational advisory bodies of the district and talukas might from year to year recommend the dates of vacation for each taluka or part of a taluka, the district inspectors being empowered to sanction them subject to the maximum number of days to be granted each year, which will be fixed by rule, not being exceeded. By altering the dates of holidays to suit local conditions, the average attendance of children at school should improve." (Educational Report—Baroda, 1943, pp. 39-40). From "*Compulsory Education in India*."

children through his lips with the help of a craft." Mahatma Gandhi wanted teachers to undertake teaching in a spirit of pure service and make it a life mission.

Although it would appear to be impossible to attract large numbers of scholars to take up teaching as their life's work, the Government of India has reorientated the teachers' training courses and basic training schools are being established for all stages. A number of new Basic Teachers' Training Institutions has been started and many ordinary Teachers' Training Institutions have been converted into Basic schools. The Government of India has also established a National Institute of Basic Education which gives advanced training and encourages research by Inspectors and Administrators.

Difficulties of Basic Education

Nevertheless, despite the considerable increase in numbers, basic education has so far not been very successful in India. The mere growth in numbers is not necessarily a sign of success. Travancore Cochin revealed the difficulties in experimenting with basic education. Mysore which introduced basic education on a small scale more than twenty years ago has since made very little progress. Bombay which started off on a bigger scale ultimately confined its activities to converting ordinary schools into craft schools which was regarded as a half-way house to basic education. Many of the small basic schools established in Bombay have remained more or less static. Only Madras has so far gone ahead in a planned manner. In Bihar and Orissa basic education is restricted to small areas. Uttar Pradesh and West Bengal presented a different problem. All elementary schools in Uttar Pradesh are called basic schools and their declared policy is to place no emphasis on productive work. West Bengal has rejected the idea of 'productivity' in favour of creativity. The result has been no production and little creation. Thus it seems that in spite of all the preaching about basic education, India today still lacks a clear and unambiguous declaration of policy concerning it. In their report the Assessment Committee on Basic Education in 1956 declared, "The situation in regard to Basic Education in the States made it very clear to us over and over again that the compact area method of developing Basic Education is no longer satisfactory by itself and that the great need

is to turn the whole of Elementary education towards Basic Education."¹

Fanciful interpretations of basic education are still rampant in many parts of India. In Calcutta, the Assessment Committee found a certain intellectual aversion to the idea of real productivity in basic schools. In Uttar Pradesh the basic schools are not only inefficiently organised but the educational authorities also attempted to show that the idea of earning something for the school through children's work would harm their education. The educational authorities of West Bengal reported to the Assessment Committee that productive work would be anti-education and creative work was suggested as an alternative.²

Even the explanation of what basic education should be, given by the Basic Education Standing Committee and approved by the Central Advisory Board of Education, has not been accepted without reservations in some states. In their Report the Assessment Committee agreed that the fundamental characteristics and values of Basic Education are yet unknown in many parts of India and should be repeatedly defined and elucidated. "We realised" said the Report,³ "more and more the value of the statement on Basic Education issued by the Basic Education Standing Committee as we went from State to State and became aware of the confusions and reservations which have gathered round the subject." The Assessment Committee "saw in some of the States in other regions, the Basic schools were full of confusion and without minimum equipment needed and the teachers were mostly ill-trained." The causes of this unsatisfactory situation in basic education can be summarised as follows.

(i) Basic schools are now conducted in small isolated units in the face of many difficulties. Poverty stricken ill-paid teachers get exhausted and discouraged.

(ii) There is nowhere a State Education Department (except for the Central Education Department) where there is a sense

¹ *Report of the Assessment Committee on Basic Education. Government of India*, p. 4.

² *Ibid*, p. 7.

³ *Ibid*, p. 8.

of urgency and a whole-hearted concern for basic education. It continues to be a minor issue with the provincial education departments.

(iii) The administration, personnel, policies and finances of basic education are conducted by persons who have little understanding, faith and training in basic education.

(iv) Basic school buildings are bad, old and have unhealthy surroundings. They lack enough space for craft work and storage. They are crowded and chaotic.

(v) No suitable arrangements have been made for the supply to rural areas of raw materials, craft equipment and repairing facilities.

(vi) There is everywhere a lack of technique of correlated teaching.

...(vii) There are not sufficient trained teachers. The majority of trained teachers received training in the older methods and for traditional schools. Even many basic training schools have 'truncated and mutilated craft'.

The situation generally is discouraging. In some states the elementary schools with all grades up to the 7th or 8th have only the first five grades converted to the basic pattern and the rest are non-basic. "If this is not caricaturing Basic Education, what else can it be?" asked the Assessment Committee. "This mutilation goes on in innumerable schools and may ultimately defeat the whole scheme of basic education."

Equipment and Premises of Basic Schools

Government reports say nothing about the supply of blackboards. Not even good teachers can work effectively without the necessary tools. Good textbooks are also essential for effective

¹ There were 337 basic schools in the State of Orissa of which only 15 were full basic schools. The average value of the goods produced in a year by each pupil was about Rs. 5/ or 4s. 9d. and the profit after deduction of the cost of raw materials was Rs. 1-5-9 (less than 1s.) per pupil a year. In Madras State out of 2,000 basic schools only 20 had full-fledged eight graded courses. The rest are basic schools in name only. The Bijapur District Educational Inspector stated that the average money value of the goods produced in a year by each pupil was Rs. 1/- (6d. only). The profit after deducting the cost of raw materials was Rs. 0-8-6 (3d. only) per pupil a year. (*Report of the Assessment Committee*, pp. 23, 46.)

tive teaching but they are sadly lacking in many schools. Most schools too, need money to build up a teachers' library. A recent education report on the training of teachers says "Administrative approval of the Central Government has been communicated to State governments for an expenditure of about Rs. 2.27 crores and Central assistance will continue to be given on a 100% basis." But no action is taken to improve the conditions of the schools. For example, blackboards can be cheaply made locally from wood or cement and can be used for many years, yet not even all senior primary or village secondary schools are provided with the necessary boards in every classroom. Poverty is often urged as an excuse. It is false economy to incur expenditure on the training of teachers and then to fail to provide them with the minimum equipment in the classroom which can help to make their teaching successful and their training more effective.

Equipment in the classrooms should be so arranged that it can be readily adapted to various forms of activity. Desks, chairs, tables even old ones are lacking in the primary schools in rural areas. The seats in the benches are often uncomfortable. Lacking any support for his back the child feels tired and it is inconvenient for practical work. Where possible, cupboards should be used for storage and every child should have a space where he can keep his books while he is at school. If possible some form of locker should be provided for the older pupils in schools.

A collection of supplementary books for general reading is important. Moreover, the primary schools should have a library with various kinds of books that specially appeal to young children. Adventure, exploration, books about aircraft, nature study, flowers, birds and animals make a strong appeal to pupils of primary age. It may not be possible to arrange a library in each class room but a general school library will help children to use their knowledge to greater advantage. Visual and auditory aids to teaching and pictorial illustrations should be regarded as essential in the primary school. In large schools a magic lantern should be provided which can be used without fuss and waste of time. In the primary schools of big towns ways of making use of films and of broadcasting should be seriously considered. In Europe and America both are recognised as

important educational forces, capable of exerting a cultural effect on children. Indian schools should where possible be provided with some sort of musical instrument, as, for instance, a harmonium, to assist with the music lesson.

The Government should also consider arranging transport so that teachers can take their pupils for short rambles in connection with study of nature, and can organise visits to industrial projects or places of geographical interest in the neighbourhood. In her five year plans, India has undertaken many industrial projects, these could be of great use in the education of young children. The Ministry of Education has so far said nothing about the use of school playing fields. The advantages of playing fields are probably greater for children in secondary schools. But primary school children can also benefit from the open air and the healthy surroundings of playing fields. Games are as important at the primary stage as they are for children in secondary schools. Organised games or small group games such as netball, rounders, stoolball, postball or some Indian games would help the children in their physical growth. Appropriate arrangements should be made for free play and authorities should be sure that the playing fields for primary children are near the school.

Available funds should be used to the best advantage for educational development. Besides the training of teachers the available money should be spent on building and equipping classrooms in schools, training centres, and on the salaries of training staffs. But the training and status of teachers is the central problem. It is a prerequisite to the opening of more schools that there should be sufficient teachers available for them. The reform of the school curriculum cannot succeed unless there are qualified and trained teachers capable of converting theories and ideals into classroom activities. Thus in her scheme for compulsory education, India should demand both qualitative and quantitative improvement in teacher training. Part of this problem is the status of the teacher-in-service. Working conditions, security of office, prospects of advancement, economic and social standing, are the factors which will decide the efficiency of teachers, for they determine how successfully

the teaching profession can attract suitably qualified persons and retain the services of the people it so badly needs.

With the introduction of compulsory free education there will be a shortage of teachers in India's rapidly expanding primary schools. The expansion of primary schools has been so rapid in many parts of India that various States have been obliged to engage teachers with inadequate qualifications. The number of these unqualified and untrained teachers has grown so alarming that provision of in-service training by various methods should be an essential part of the teacher training programme. The training of new teachers should at the same time serve several purposes. They should replace untrained teachers, provide staff for new schools and, at higher levels, should provide teachers for teachers. Rapid progress in the near future is unlikely if good teaching standards are not obtained. The prospect is even less bright in view of the small number of educated young men who wish to be trained as teachers. Young men of good education are expected to be absorbed in the rapidly growing industrial and technical concerns which are the product of India's five year plans. They are confronted with an ever increasing choice of jobs. Not only in commercial firms but also in the field of agriculture, in medicine, and in technology educated young Indians will be wanted. Moreover, every year many of the teachers already trained leave teaching for other work. What are the prospects of the coming generation in India if teachers are recruited from frustrated unemployed young men? It is, therefore, very important to understand why teaching is more unpopular than other work, for it is on the basis of this understanding that remedies must be found.

Criticism of Primary and Basic Education

One well-known reason for the unpopularity of teaching is that teachers are poorly paid and their prospects are less good than those of men with similar academic qualifications in other work. The Government of India seems to be of opinion that any considerable increase in the salaries of thousands of teachers would impose much too heavy a burden on the finances of the country. They are also reluctant to establish minimum standards for the length of a training course and for the academic level to

be reached. It is clear that the Government do not require high standards on these points. Insistence on standards they point out would delay unduly the carrying out of any scheme for compulsory training. The government seems to believe that universal compulsory education will act as a panacea for all the evils prevailing in India.

When the plan for compulsory education has been adopted the Government of India should consider the extension of facilities for teachers' training. The goal should be to produce ultimately enough teachers for the entire child population of the country. This requires a two phase scheme. The first stage must be an emergency plan to produce as many teachers as quickly as possible. The second must be a plan for the continual increase of permanent training facilities so that the supply of teachers may keep pace with the constantly growing school population.

The Government of India under a recent scheme has provided grants for upgrading the senior basic schools to post-basic schools. Madras, Kerala, Andhra Pradesh and Rajasthan under the scheme for educational development have decided to establish basic schools of higher secondary grade. But for the training of primary and basic school teachers so far, no satisfactory programme has been established. Concerning the training of basic school teachers the Ministry of Education reports that only the following programmes were completed.

- (i) A two-week workshop-cum-refresher course in the technique of correlation for Principals of under-graduate training institutions and lecturers in post-graduate basic training colleges;
- (ii) A one-week conference of headmasters and inspecting officers of eleven model basic schools of Delhi ;
- (iii) A symposium on 'Organising Basic Education in Urban Areas' ; and
- (iv) A national short-term training course for administrators in basic education lasting two weeks.

In addition, the government has published guide books for teachers of basic schools. It goes without saying that India must adopt the principle that teachers in three-year primary schools or basic training schools need at least a year of training. The rate

of educational development in India in the immediate future will depend largely on the willingness of pupils now in secondary and higher education to choose teaching as a career and on the provision for them by the Government of an adequate salary and regular training.

In the present condition of India Gandhian principles are appropriate. The total population of the country is now more than 450 millions and is increasing at the rate of 2 per cent a year, and the proportion of children to the total population is high. The total combined income of the Central and State governments and local bodies is far less than the estimated cost of universal primary education. Hence instead of imitating European educational systems, a system based on austere methods and techniques must be evolved if the goal of free compulsory education is to be reached. But a time must come when India will have to accept Western educational systems, if she wants to proceed side by side with the advanced and developed countries. Her ancient system of teaching through 'Gurus' is dead and out of date. So in future a structural change in primary education on the Western model is essential. Educationalists and leaders of India would like to consider the revision of curriculum and syllabuses to include new subjects, e.g. practical works of various kinds, science, important foreign languages, moral education, social studies, domestic science, physical education, art and drawing (practically non-existent in many Indian schools) and civics. Leaders should also consider which subjects should be given greater emphasis and which should be removed from the already overloaded curriculum. Particular consideration should be given to the curriculum for children between the ages of seven and eleven in primary and basic schools with special reference to the needs of children in rural areas. The pupils at the age of seven leave the infant school and in a few years they enter one type or another of secondary school. The problems of children at primary schools are numerous and urgent. The school to a child is his physical environment, a training ground of the mind and a spiritual society. The authorities in India have to be satisfied that every primary and basic school is the source of mental growth for the child. They have to ensure that the buildings and physical surroundings are as conducive to health and energy as may reasonably be expected.

The curriculum must be human and realistic, unencumbered by the dead wood of tradition. The curriculum should be enriched by enquiry and experiment, and inspired not by conventional philosophical orthodoxies but by a clear understanding of the needs and aptitudes of the children. Methods of school administration and the character of educational equipment should be well-planned and calculated to encourage individual work and to develop the personality of the children. Deficiencies which hamper school work must be removed and the initiative and originality of the teachers should foster both the body and spirit of the pupils. Narrow national sentiment should not hamper sound educational growth and the education of Indian children should be in a state of more than ordinarily rapid growth. The misty idealism of basic education may be true to-day but will be irrelevant tomorrow.¹ Thus while interim solutions must be adopted as a matter of urgency they must not be regarded as permanent. The long term development must be considered at this point if primary education is to make any real progress in the future. Another major condition is that the special function of the primary school should be clearly conceived, and that the vital importance of that function should be recognised. It should be easier to recognise it to-day, for India has the examples and experiments of many countries to draw on. The successful development of secondary education depends on treating the years of primary education as a definite phase in child life, with

¹ Dr. K. L. Shrimali, former Minister of Education was optimistic about the prospects of basic education. "With regards to Basic education", said Dr. Shrimali, "doubts regarding its utility continue to arise in the minds of people. Though the original conception has undergone considerable changes in the light of experience and experimentation, the unsympathetic or ill-informed critics continue to harp on those aspects which are no longer accepted as essential features of Basic education. The principle underlying the system, which combines education with productive work, is a sound one and has recently been re-asserted by one of the most advanced countries—Soviet Russia. If the system of Basic education has not given satisfactory results in some States, it is not due to faulty education principle but to lack of adequate preparation and skill on the part of teachers and proper guidance by the Education Departments of the States." (Proceedings of the 26th Meeting of the Central Advisory Board of Education, p. 11.)

special educational requirements and with problems of its own. The Board of Education in England rightly pointed out that the primary schools are not mere interludes between infant school and secondary education. It is continuous with both, because life is continuous, and it must be careful to preserve close contact with both. But primary schools also have their special opportunities, problems and difficulties which must be encountered by developing their own methods, perfecting techniques and establishing firmly standards of achievement and excellence. The final aim must ultimately be related to the requirements of the pupils, not to the exigencies of examinations or the demands of the secondary schools or the occupation which the children will eventually enter. "The primary school will best serve their future" wrote the Board of Education in England, "by a single-minded devotion to their needs in the present, and the question which most concerns it is not what children should be—a point on which unanimity has hardly yet perhaps been reached—but what, in actual fact, children are. Its primary aim must be to aid children, while they are children, to be healthy and, so far as possible, happy children, vigorous in body and lively in mind, in order that later, as with widening experience they grow towards maturity the knowledge which life demands may more easily be mastered and the necessary accomplishments more readily acquired.¹

SECTION II SECONDARY EDUCATION

India's primary education schemes aim at universal, free and compulsory education for the age-group 6-14,² but do not imply any under-rating of education at the upper secondary stage. If primary education provides for educational expansion, and a crusade against child illiteracy, at the secondary stage also education should be self-sufficient and effective. It should aim at the

Report of Consultative Committee on Primary Education.

¹ Board of Education. Primary School Report, London, p. xvi.

² Education for children in the age-group of 14-17 was also proposed to be expanded very considerably in the fourth five-year plan.

pupil's practical preparation for life. Although some change in the secondary curriculum may be initiated in the primary schools, since secondary schooling is selective where there is competition for admission, the primary schools become the victims of circumstance. Primary and, in the near future, basic schools in India will to some extent be compelled to teach what is necessary for the success of their pupils in the competitive selection examination for entry to secondary schools.

Secondary education for the nation is important for various reasons. First, it has been accepted by educationalists that the problem of teaching pupils is complicated and perplexing at puberty. Secondary, expansion at the primary stage due to the introduction of compulsory free education is bound to lead to rapid growth of numbers at the secondary stage which will create various difficulties, especially in the area of curriculum. Thirdly, as a result of her many five-year plans, India is in the process of technological and industrial change and scientific advancement which will leave an impact upon her current views regarding the duration and nature of the preparation needed at secondary schools to earn a living and to be successful in an industrial society.

Lastly, in assessing the significance of secondary education, it has to be remembered that it is a stepping-stone and preparation for higher specialised education. Women educationalists in India have pointed out that over-domination by University demands has so far been the bane of India's secondary education and an essential aspect of secondary education reform is to get rid of this domination. All the same, educationalists in India have to be watchful that the process of reform does not take the pendulum to the opposite extreme, because secondary education is the base on which standards of higher education are built.

It has been accepted in the advanced countries that one of the really difficult problems in education is concerned with the organisation of secondary education. The fundamental approach to the problem of secondary education must be flexible and exploratory. No matter how secondary education is organised in India the following three principles must be observed:

(i) The pupils should be inspired with a clear sense of purpose in their school life.

(ii) Pupils individually should be given opportunities for developing some special interest and achieving the highest possible level in every one of the secondary school subjects.

(iii) The sharp categories that have characterised post primary education in the past should be avoided.

Secondary Education in India since 1947

In India there has been persistent criticism of the existing system of secondary education. Critics have spoken of its excessively literary bias, its passive methods and its low standards. The Government of India appointed the Secondary Education Commission in 1952 to go into the whole question of secondary education in the country. The Commission submitted its findings in August, 1953 and the report was published in September, 1953. The Central Advisory Board of Education, at its annual meeting in November, 1953 undertook a general review of the recommendations and appointed a committee to examine the recommendations more minutely and draw up a list of priorities for the implementation of the recommendations. Fortunately, the Board accepted the report of the committee at its meeting in February, 1954 and some of the most important recommendations were implemented from March, 1954.

The Vice-Chancellors and Chairmen of the Boards of Secondary Education at a conference in January, 1955 agreed to remodel the system of secondary education. They came to an agreement that education at the secondary stage should be a self-contained and complete stage and provide instruction up to the age of 17 plus. They also agreed to eliminate the two-year degree course in many universities and to substitute a three-year degree course.

In order to fulfil the recommendations of the Secondary Education Commission the Government of India initiated a scheme for the establishment of 500 multipurpose schools. They further agreed to take measures to improve existing facilities for the teaching of science and social studies in 1500 schools and to introduce crafts into 2000 middle schools.

From 1954 educational schemes have been in operation to broaden the base of instruction at the secondary stage. Many high schools have been converted into higher secondary and multipurpose schools and a variety of courses is offered in order to give the curriculum a vocational bias.

The Central Advisory Board of Education and the Conference of Vice-Chancellors recommended a pattern of education which would comprise (a) 8 years of elementary (basic) education (b) 3 years of higher secondary education which would be both a terminal point to enter life and a preparation for further studies and (c) 3 years of University education leading to the B.A. degree. It also recommended the inclusion of languages, social studies, general science and a compulsory craft in the higher-secondary curriculum. Furthermore, a pupil at the higher secondary stage would be able to opt for one of the following courses to be provided in the reorganised multipurpose schools: (a) Humanities (b) *Science* (c) *Technical* (d) *Commerce* (e) *Agriculture* (f) *Fine Arts* and (g) *Home Science*.¹

The results of the multipurpose schools have so far not been encouraging. Of West Bengal, the Amrita Bazar Patrika (6th July, 1961) wrote:

There has been a massacre in the humanities group this year. While the percentage of passes in the science group is near about 73 per cent, in the humanities group, the percentage is only 47. In the latter group only 35 students (out of 9,545) have passed in the First Division as against 632 in the Science.

The total number of students appearing in the humanities group was 9,545 and that in science 5,692. In the technical group the number is 540, in Commerce 1,024 and in Agriculture 287 only.

The percentage of successful candidates in Technical Group is 67 per cent, and in Commerce 60 per cent. In Fine Arts and Home Science, no-one has been able to secure First Division.

The establishment of multipurpose schools is expensive be-

¹ Proceedings of the 26th Meeting of the Central Advisory Board of Education, p. 91.

cause it requires expensive equipment and extensive additions to the school building. The recruitment of teachers for practical subjects is also not easy. But the upgrading of High schools to the higher secondary stage is easier and requires less expensive materials. It is, therefore, surprising that the number of multipurpose schools at the end of the second five-year plan increased considerably whereas the pace of conversion of high schools into higher secondary was very slow.

Slow Progress of Secondary Schools

There are various reasons for the slow progress of higher secondary schools in India. In the first place, provincial governments are more impressed by the multipurpose schools. The traditional type of school with purely academic courses has also not attracted parents who are keen to obtain a technical or vocational course for their children. Secondly, the state governments do not appear to have any feeling of urgency about the conversion of high schools to the higher secondary pattern. The large amount of central assistance available for the re-organisation of high schools into multipurpose ones, is another reason for the slow progress of higher secondary schools ; for the popularity of multipurpose schools, has meant that state governments have spent a considerable amount of the funds provided for the re-organisation of secondary education on such schools.¹

Again, the financial assistance from New Delhi for the upgraded schools is at present only for the plan period, after which the State governments will have to meet the entire expenditure on these schools. Thus the State governments have been reluctant to increase their liability for the future by converting a large number of high schools into higher secondary ones.

Other factors have also contributed to the slow progress of higher secondary schools. First, a major obstacle to re-organisation is the lack of suitable textbooks for higher secondary courses.

¹The Report of 1961 stated that during the first plan, 374 multipurpose schools were established and their number is increased to 1,800 by the end of the second plan. Progress in this field has been slow for the lack of trained teachers, especially in practical subjects. In the third Plan, therefore, it was proposed to consolidate the scheme. Four regional training colleges were proposed to be established to train these teachers.

The textbooks used in Indian high schools and higher schools are very unsatisfactory. There is for instance, a serious lack of planning in the printing, publication and writing. Again, the number of higher schools is still small and the proposed nationalisation of textbooks has made publishers unwilling to come forward with good textbooks suitable for only a limited number of schools. Lack of trust and understanding among publishers does not encourage authors to write books. The Government is said to be acutely aware of the defects of existing books and to be seriously considering taking the entire responsibility for the production of textbooks. A Committee of the Central Bureau of Textbook Research was established in 1954 which has been engaged¹ in the preparation of a new syllabus combining the

¹ About the textbook selection procedure, the Ministry of Education stated that the question of the selection of text-books does not arise when text-books are nationalised but, here too, where manuscripts are invited from the open market, the process of selection is involved.

When the textbooks are submitted by the authors and publishers for consideration, the Secretaries of the different Text-book Committee or other Selection Agencies as the case may be, or the Executive Heads of the Departments of Education, where such bodies do not exist, forward these books in different subjects to a set of reviewers specially appointed for review purposes. Usually the same set of reviewers review different books in the same subject. However, a few States make provision for appointing different sets of reviewers if the number of books to be reviewed is large. In some of the States, however, no separate reviewers in different subjects are appointed but the members of the different sub-committees or Text-book Committees act as reviewers. The Text-book Committees are commonly guided by the majority decisions of different Sub-Committee in the matter of selection of their text-books. But if they are not satisfied of the suitability of the text-books recommended, they may send back the recommendations for consideration, often there is no difference of opinion between the two. One State, however, prescribes that if the recommendations of the Sub-Committee, seem to be unreasonable and unsound to the General Text-book Committee they can ignore it by giving 'Cogent Reasons'.

The recommendations of the Text-book Committee in different States are placed before the Director of Public Instruction or Director of Education or to the Government of State as the case may be for final approval. In some of the States the Director of Public Instruction or the Director of Education, as the case may be, enjoy special powers in the selection and prescription of text-books. In exceptional cases they may prescribe the book directly, without any reference to the Text-book Committees. Text-books in different States are often prescribed and approved for a period of three

present basic and non-basic syllabuses in English, Hindi, mathematics, social studies and science. The Bureau is reported to have helped some States in the formation of syllabuses and in the examination of the contents of text-books. Secondly, though most of the universities in India have accepted the plan for the 3-year degree course, there are some universities which have still to take this decision. Thirdly, in some States the Boards of Secondary Education feel that the syllabus for classes IX and X in high schools should be similar to that in the higher secondary schools so that after completing the high school at the end of ten years, the students may proceed to higher secondary school in their 11th year. But in some other States the Boards are anxious that the courses for class XI should be the same as those for the pre-university classes of the university in the area. Thus diversity of opinion in the different States affects the more rapid conversion of high schools into higher secondary ones.

The course of studies at the higher secondary school should be an integrated one. It is at present divided into two parts—one, conforming to the high school pattern and the other, to the pre-university one. It is non-integrated and does not help the improvement of standards which is the ultimate aim of re-organi-

years. The maximum period of approval is five years. Text-book prices have gone up by as much as 100 per cent in many parts of India during the last 17 years, according to information available with the Central Bureau of Text-book Research. Hindi text-books have registered the highest increase in price.

Enquiries reveal that more and more States are now printing text-books, but very few sell at cost price. In fact, the profit margin is said to be very wide in the case of a few States, almost 80 to 100 per cent. Punjab is one such example. Private publishers say that this partly explains why it is profitable for 'spurious' publishers to bring out editions.

A survey conducted by the Bureau in 1963 revealed that the prices of Government produced text-books varied from State to State. For instance, arithmetic text-books used by fifth class students in Andhra Pradesh cost Rs. 1.25, in Bihar Rs. 1.47, in Jammu and Kashmir Rs. 0.75, in Punjab Rs. 1.12 and in Rajasthan Rs. 0.92. No profits are supposed to be charged on books for students up to the fifth class.

A pilot survey in Delhi has been started by the Central Bureau to study the price trends of text-books in Delhi and the causes for the disparity of prices from State to State. Later the study will be extended to other States. The study, it is hoped, will provide some answers on the question of nationalisation of text-books—*The Hindu Weekly Review*, Aug. 17, 1964.

sation. The pre-university classes should be organised to serve as a preparation for the three-year degree course, so that high school students after the completion of their course may proceed to the university without much difficulty. But the higher secondary school curriculum is organised primarily to provide a more or less complete and compact course of education for school leavers. Lastly, there is an acute shortage of suitably qualified teachers for higher secondary schools. India needs qualified teachers for the principal subjects and also for other subjects under humanities and science. Few good graduates enter teaching because of the poor salary. Most of the Indian high schools contain ordinary graduates who are not always trained. Moreover, it is difficult for certain specialist teachers to obtain training at all because most of the training colleges provide training facilities only in the traditional subjects (English, History, Geography, etc.) Few of the training colleges in India have yet taken note of the practical subjects, the fine arts or home science. Some of the training colleges have not even recognised the necessity of giving training in the teaching of subjects like general science and social studies which form the main subjects of the higher secondary schools. The Central Advisory Board of Education in its 26th report recommended that ;

(i) Indian universities should organise vacation courses for the new important subjects (like General Science and Social Studies) to enable teachers to get some training in these subjects.

(ii) Universities should experiment with courses for the training of graduate teachers to help them acquire a master's degree in their respective subjects. The universities have not shown much enthusiasm for proposals which have been put forward on this matter.

(iii) The economic conditions of the teachers must be improved. The problem of the supply of qualified teachers is obviously tied up with the question of teachers' salaries. Here again the Government of India will have to take the lead in the matter and help the State Governments.

The Secondary Education Commission proposed the establishment of a very large number of schools of the higher secondary type which would be able to offer a variety of subjects including some practical courses. But so far less than ten per cent of the existing schools have been converted into multipurpose institu-

tions and during the third five-year plan period (1961-66), India expected to establish another thousand. The Government of India contributes 60% of the recurring and non-recurring expenditure on schools, so finance should not be a difficulty.¹ New Delhi blames the State Governments in its report and said, "In spite of this substantial assistance, the States seem to be reluctant to embark enthusiastically on the phased programme largely because of the fear that their burden will become greater in the coming years when Central assistance may be withdrawn".² In India secondary education is a State responsibility but remembering the vital role it plays in the whole educational programme, the Centre should take permanent financial responsibility for the growth and strength of this stage of education. The Centre should assure the State Governments of its financial assistance and co-operation permanently. First the Government of India should regard the upgrading of high schools into secondary ones as an essential feature of the whole system of education and major priority should be given to it. Secondly, the reluctant State Governments should be helped and persuaded by all means to convert their high schools into higher secondary ones. Thirdly, the Central Government should assure State Governments that at least 60 per cent of the recurring and non-recurring expenditure on such schools would be met for the coming years.

The Question of Control

A further important question is that of control. It would appear that at present State autonomy in the field of secondary education is too great. Older forms of secondary education were designed to produce an elite who were trained for the governing class. But post-independence national education in its popular form must produce an elite which will emerge from the whole range of society. Modern education will train the governing class, prepare clerks for offices, ministers for the sacred offices, equip the professions, recruit for the administration and furnish industry, technology, commerce and business with men of leadership and authority. Admission to these schools for creating an elite must not be fenced in by barriers of caste, class, birth and

¹ Proceedings of the 26th Meeting of the Central Advisory Board of Education. New Delhi, p. 94.

² *Ibid*, p. 92.

wealth. Thus for the growth of free education a decrease of State control is essential. State supervision and help may be allowed, but State control, if it curtails the freedom of educational experiment and growth, will be mischievous. Schools must be free from interference from the State for there is an element of danger in such control. Political opinion, as in Kerala (South India) in the days of the Communist Government, may compel the school authorities to limit the educational freedom of its future citizens. National education is too important to be subjected to influences of this kind. Therefore, it must not be entrusted to governmental control alone. Some new synthesis between State help and supervision and educational freedom in the spheres of primary, secondary and higher education must be found. The ruling party in India claims to be democratic. Mr. Nehru wanted to set an example of positive democracy in Asia. So the real strength of the Congress Party (who control the Central and State Governments) will be tested by its ability to tolerate great varieties of educational principles within the sub-continent. "If the principle of nationality is firmly based in a country", said Sir Michael Sadler, "it can rely upon a great common measure of loyalty among those who control and teach in a great variety of schools."¹ Moreover national education is not a mechanical product. It is not an affair of legislative codes and good buildings and liberal curriculum. Although it comprises many material things—buildings, laboratories, equipment, books, works of art, playgrounds and involves much systematic organisation—rules for the order of studies, for the training of teachers, for the conduct of inspection, yet it is not in its essence a mechanical fabric. It is a spiritual and intellectual atmosphere.

SECTION III—ADULT EDUCATION

"Universal primary education", said a UNESCO chief at Oxford, "is a feather in any politician's cap, but it doesn't take into account the fact that a vast number of those so educated revert to illiteracy. We must strike a balance between expenditure on schools and on adult education."

Before the war certain departments were already interested in

¹ *The Outlook in Secondary Education*—Sir Michael Sadler, p. 22.

certain aspects of adult education. Health departments, for instance, were teaching people ways of safeguarding and agricultural departments were interested in telling farmers to try out new crops and new methods of cultivation.

In the decades preceding the first World War a beginning had been made in India in providing adult education. Night schools conducted by teachers of day schools were working in Bombay and Bengal. Most were attended by both children and adults. There existed also some continuation schools entirely for adults ; in 1917 these numbered 107 with an enrolment of 2,739. In village areas, co-operative societies had been in existence since 1905 and already some had begun to take an interest in the education of their members. A popular library movement started in Baroda as far back as 1910 and a few years later that State had its travelling libraries. Cheap newspapers were another medium of adult education which had become popular by 1920, and almost the entire political education of the middle classes was carried on through newspapers.

The Ministry of Education in India has divided the later history of adult education in India into five periods.¹ The first period (1918-27) was a period of some progress ; the second (1927-37) was one of decline ; the third (1937-42) was again a period of progress followed by the fourth which was again one of decline (1942-47). Lastly, in 1947, the independent Government of India started an adult movement which still continues.

After independence the concepts of social education that the Indian Government adopted "were embodied in a five-point programme, which included literacy ; a knowledge of the rules of health and hygiene ; training for the improvement of the adults' economic status ; a sense of citizenship with an adequate consciousness of rights and duties, and healthy forms of recreation suited to the needs of the community and the individuals."²

The function of the Ministry of Education in the field of social education is limited mainly to guidance and financial assistance. The actual burden of implementing the various schemes is borne by the State Governments although the Centre acts as a clearing house and assists in the broadening of programmes. In 1948, the Central Advisory Board of Education set up a Committee to

¹ *Social Education*, p. 4. Ministry of Education, Government of India.

² *Ten Years of Freedom*. Ministry of Education, New Delhi, p. 24.

frame a scheme of adult education which could be adjusted to regional needs. The report of the Committee, known as the "Saksena Report", was adopted by the Board at its 15th Meeting in January, 1949 and a target of 50 per cent literacy in the next five years was recommended. The report of the Committee brought a change of policy by the Indian Government with regard to the content and material of adult education. The aim was no longer confined to literacy, but included also education in citizenship, health, agriculture and handicrafts.¹

The Government report stated that "in giving adult education to the masses, greater use should be made of audio-visual material like charts, posters, filmstrips, films and broadcasts."² On the basis of this scheme the Ministry of Education drew up a guide-plan for the promotion of "Social Education" in the country. The plan was discussed and approved at a Conference of Provincial Ministers of Education on 19-20th February 1949, and the State Governments were requested to submit their Social Education plans to the Government of India to enable it to give grants to the provinces for executing their plans."

The policies of the Central and States' departments provide the content for department programmes of informal adult education. The aim is that the different departments should not see the problem of educating adults solely in relation to their own departmental programme, but should consider it as a part of a general programme. Adult education officers and their assistants should tour the villages to explain and demonstrate. Usually they try to enlist the support of the traditional authorities, although quite often they tend to concentrate on the few 'progressives'. Only on a few occasions have they succeeded in persuading the people to accept the whole of a comprehensive and balanced policy. While people may accept a new tool, such as the tractor, or a new source of income, such as double cropping in some places, they have not as yet been prepared to accept new

¹ Previously each department had seen the problem of educating adults solely in relation to its own departmental programme, and not as part of a general programme. Adult education officers and their assistants toured the areas, explaining and demonstrating a particular policy. Although, their educational programmes were sometimes successful, the results were often uneven and unsatisfactory.

² *Social Education*, p. 16. Ministry of Education, New Delhi.

methods of farming. More especially, they are unwilling to change their existing methods where these are linked to religious beliefs or social taboos or based on traditional patterns of caste relationships.¹ Difficulties also arise if, as sometimes happens, the policy of one department runs counter to that of another, so that, for example, people are urged, on the one hand, to grow cash-crops, and, on the other, by an officer of a different department, not to clear the bush or step hillsides or the banks of streams.

There must be more co-ordination and co-operation among departments, both in work in the actual field and in the framing of policies. Moreover, people in Indian villages should not be approached as collections of individuals. They should be treated as members of communities. Mere change is not enough, an uneven, unbalanced and unsatisfactory change creates new and difficult problems. Social education officers "offered an instructive example" in the Delhi State. Educational caravans were used which, according to the Government report, "are a revolutionary development in recent years". These caravans are units of three or four jeeps with trailers, consisting of a mobile stage, a small travelling library, an exhibition van and a projector. "The method adopted", stated the Government Report, "is for the caravan to go to a centrally situated village and to organise a

¹ Social scientists can help to find a solution to the problem of religious beliefs which are barrier to economic or educational development in India. The following incident is recorded by an American writer. "In India one of our Point IV agricultural experts reports that farmers were recently troubled by thousands of wild antelopes. As the common name for these antelopes was 'neilgai (literally 'blue cows'), and as cows are scared to Hindus, orthodox Hindus would not kill them, and they became a serious pest. They were not cows, however, and a Government decree was promulgated changing their name from 'neilgai' to neilghora (literally 'blue horses'). Hindus then felt free to shoot them, and their numbers have been greatly reduced." Here was an instance where religious beliefs could be disentangled fairly easily from an objective economic problem needing solution. Of course, there remains the problem of the cow itself, an animal that sometimes outnumbers the people in Indian villages and everywhere eats much that could otherwise feed the people. Is there not a good deal, however, that can be done to increase the milk production of these cows and thus convert them from economic liabilities into economic assets without any offence to an old and venerated religion? (*The Progress of Underdeveloped Areas*, Edited by B. F. Hoselitz, Chicago, p. 213).

combined exhibition of health and hygiene as well as agricultural and industrial products. Physical feats and athletic contests for both children and adults help to attract local interest. Dramas are produced with the help of local talent. They generally deal with local problems and highlight the need for education. After the educational caravan and contests have excited local interests in the social education programme, a squad of 20 to 30 teachers, men and women, moves into the area for four to six weeks. They organise as large a number of social education classes as possible for both men and women, so that a breach in the citadel of illiteracy can be made. When these squads move away, local teachers take up the work and continue the programme. Certificates of literacy are generally given at the end of three to six months.”¹

Although the social welfare officers have done valuable work with their ‘educational caravans’, much more preparatory work should be done before launching a campaign. A careful survey of the area and a complete census of the people as well as studying farming methods are necessary. Armed with this information and with more besides the officers could then choose sites for new villages, plan their lay-outs and individual houses. The aim, however, should be to do much more. They should plan also for economic development; distribute fruit and shade trees, introduce new crops, try to improve the quality and number of livestock and stress the importance of the people manuring their farms. They could also mark out areas of village forest and of forest reserve, and carry out mosquito clearing programmes. All this amounts to much more than planning through educational caravans. There should be an attempt to solve many problems at once—to unite together many different and difficult programmes into one comprehensive programme of balance, planned and co-ordinated change. Thus the way to much future development would become possible.

Under the five-year plan there was a scheme for the setting up of community centres, in a small compact area, selected for intensive educational development. Some primary schools were selected to be used as community centres after school hours. A National Centre for Fundamental Education was established in

¹ *Social Education*—Ministry of Education, Delhi, pp. 18-19.

New Delhi to train higher grade personnel for social education work. The Library Institute, set up at Delhi University, worked in the field of libraries. The Government of India also runs the Delhi Public Library as a pilot public library project.¹

The Ministry of Education has also been trying to produce literature for the various types of readers, mainly the neo-literates.²

UNESCO has been co-operating with the Ministry of Education in the project to produce reading materials for several years past. The Ministry drew up proposals under the UNESCO project and forwarded them to UNESCO for approval. These proposals include:

(1) guidance and help to the literate-producing agencies in India to better their production and output through training and discussion, and

(2) the assignment of books to private publishers for publication in Indian languages.

The project undertaken by the Government of India in guiding the process of community education have done some valuable work in India and have contributed to the promotion of social education in the country.

But if the improvement of the life of the community is the ultimate aim in India, social education should aspire to the training of the community as a whole and more systematic measures must be taken for the education of the mass of the community,

¹ A recent educational Report stated that most of the States in India have already established State Central Libraries and a good many district libraries have also been set up. The Government of Canada, UNESCO and the Ford Foundation are helping the Indian Adult Education Association in the development of adult education.

² The literature the Government of India is trying to produce falls into two main categories (a) literature for neo-literates and (b) literature for the new reading public. A competition for books for neo-literates in all Indian languages has been organised annually since 1954.

Some foreign experts severely criticised the Community Development Projects of India. Professor Rene Dumont, a member of the U.N. Commission set up to evaluate Development Schemes in India found many examples of failure of the Community Development Projects in India "The Community Development scheme is supposed to ask all members of a community", he wrote, "to make an end of such cases (share-cropping, usury, high interest rates, etc.) But what sense of community is possible between such labourers and sharecroppers, debased, exploited and

and more enterprising than those at present contemplated in the five-year plans.

The Government must take the lead in guiding the process of community education and not rely solely on departmental specialists. Active measures should be taken to enlist the participation of the community itself. Real co-operation by the people can best be secured through leadership from among the people themselves. In addition to library facilities, drama societies and adult schools, all other kinds of activities which help to promote the development of the common people should be initiated. These activities should not be limited only to securing improvements in health and agriculture and rural economics ; but should also aim at building up strong units of local government and sound family life. The recreational and leisure time activities of rural people should be encouraged but the programmes cannot be carried out by voluntary workers and social welfare officers alone. The programme should secure the active co-operation of such agencies as teachers' associations, parent-teacher associations, co-operative societies and trade unions. Industrial and commercial concerns, Boy Scouts and Girl Guide Associations, the Red Cross and other powerful forces should also participate in promoting community welfare.

The making of adult literature should not be seen as an end in itself. Its importance lies in using it as a means of enabling people to understand and solve the major problems which face them in their rural life—such problems as ignorance of irrigation or agricultural technique, bad health due to disease or malnutrition, a high infantile mortality rate, juvenile delinquency and ignorance of the value and use of money. In spite of the efforts of the Education Departments in India, a large proportion of the adult population (between 80-85%) is still illiterate and require, in addition to literacy, a knowledge of agriculture, cottage industries, housecraft and social responsibilities. Moreover, the programme of educational expansion in India demands

despised, and their landlords, money-lenders and Brahmins ?" When Dumont approached the officials in the Development Blocks to help the exploited farmers, "they looked the other way: "We haven't the power to intervene in such matters", they replied. (New Statesman, December 19, 1959).

the willing support of parents.¹

In an international survey on parent education, H. H. Stern of the University of Hull stated that any form of parent education for family life or sex instruction has many problems to cope with in India. These include not only illiteracy, but also superstition, strong family traditions, the lack of contact among women with the outside world, and the refusal to discuss sex in public. Although hygiene is taught in primary and secondary schools, sex education or preparation for marriage is forbidden to be given to boys or girls. Because marriage is considered a matter purely for religious guidance and a family problem, subjects dealing with these questions are excluded from the school. "The colossal ignorance", writes Stern, "and sexual malpractices have caused concern to educationalists (in India) who feel that 'the conspiracy of silence prevents boys and girls from knowing even the most elementary facts about sex life.'"

Considerable efforts should be made to bring information on infant care to the attention of mothers, doctors, health visitors, nurses, teachers, social workers, family planning officers and midwives.² The aim of community education should be to secure willing participation rather than to stimulate initiative. The

¹ "What is needed in India is more than a somewhat restricted programme of adult or parent education; it is "social education" in the widest sense. Attempts to influence parents have taken place very largely within the context of social education and, since 1952, through Community Development Projects and National Extension Services." (*"Studies in Education"*—The University of Hull. October 1960, p. 148).

² In Travancore-Cochin Indian mothers are receiving instruction on child care in the maternity welfare centres. In certain centres "Baby Weeks" are held by the Red Cross where lectures on infant care are given. Use is also made of free film shows. Radio is too costly for Indian households and newspapers are not effective means of propagating these ideas in the villages. The international survey on parent education in 1960 pointed out that educationalists in India have made little of the current situation in the absence of an understanding of psychological factors in interpreting the behaviour or adjustment of children. Parents in their treatment of children are often well-meaning but misguided. The middle class homes in India 'often suffer from the tragic dualism of educated manhood and ignorant womanhood.' The training of women should be given priority. The dissemination of ideas on child development and a better understanding of the psychological needs of children are needed. In each local area a panel consisting of two-three teachers, two doctors, two psychological and

success of the doctors, educators, planners and social workers should be measured according to the willingness of the people to accept the programme and co-operate in carrying it out.

The aim should be to get people interested in expressing their wants, and they need to be encouraged to take action to satisfy their wants. Planning is not a function of the specialist departments alone, it is more a function of the people, and departments should seek to serve and promote community plans rather than persuade people to accept detailed plans already prepared. Success thus should be measured in terms of community initiative, the development of rural leadership, effective community co-operation and an increased capacity for united community action. Often a community must learn in its own interests to change some of its customs and to do so quickly.

Batten's statement on Africa applies with equal force to India¹ "Where there is widespread erosion destroying the land", he wrote, "on which the people depend; where easily preventable disease hampers every effort to encourage people to improve their living standards; or where over-population makes resettlement of some part of the population inevitable in the interests of all: the people may have to be educated as quickly and directly as possible to adopt a predetermined and specific course of action, planned and organised for them outside the community. On the other hand, from the point of view of the long-term development of the community, people must equally be encouraged to think and act for themselves, to formulate the wants they are most conscious of and to learn that they can often satisfy them for themselves—that they need not always passively wait for some outside agency to tell them what to do and how to do it. Both kinds of scheme are needed if, on the one hand, the people are not to come to rely too much on external agencies and, on the other, are not to fail through ignorance to use wisely their resources of local leadership and their capacity to act co-operatively together for the common good." The purposes of community education must be clear; with adults there can be no external compulsions

a social worker would be helpful. The function of such panels would be to assess the mental health needs in the area and to advise families. (*Studies in Education*, p. 150).

¹ *Problems of African Development*—T. R. Batten, p. 70.

for education as there are for children. The first purpose of adult education is the acquiring of skills. It is very important to introduce the skill to the learner so that he can overcome mistakes. The second purpose is acquiring knowledge. Third is the development of understanding and fourth, organising for co-operative action.¹ To obtain these purposes community educators can work in many different ways and choose from many different techniques. Adult education institutions can be diverse in character and all may be regarded as organs of adult education using the term in the broadest sense.

First, there is the group of institutions in which social and political education can be carried out. It includes :

- (a) Village High Schools—evening classes can be arranged by the Workers' Educational Association and other educational centres.
- (b) Community Centres.
- (c) Independent civic associations.
- (d) Political parties and the party press in their educative aspects.
- (e) Military and semi-military police associations.

The Second group can comprise institutions which involve, as a secondary factor, some social and political education. The trade unions, refugee associations and charitable organisations can carry on these works.

Thirdly, there should be institutions which can further social and political education indirectly through sports, music, travel, the cinema and folk-theatre.

To be effective in promoting social and political responsibilities, adult educational institutions must fulfil certain conditions;² viz :

- (a) The principle of the "open door" is important. Everyone should have free access to the institution.
- (b) There must be complete freedom for discussion and of

¹ *Adult Education—Current Trends and Practices*, p. 78-79. UNESCO.

² *Adult Education towards Social and Political Responsibility*—UNESCO, pp. 65-66 and *Problems of African Development*—T. R. Batten, p. 77.

expression of opinion between teacher and taught.

(c) Tolerance and understanding is essential to understand the prejudice and superstition of the villagers.

(d) It must provide the knowledge needed to assist the people to control their own future with benefit to themselves.

SECTION IV

"Education is fundamental to everything else"...said Dr. W. T. R. Flemington of Canada. You may recall the famous definition of Lord Elgin, who said that education fits you for nothing, but prepares you for everything. I think that is still so fundamental: education fits you for nothing, but prepares you for everything. Professor C. R. Cavalli, of Italy, had mentioned the importance of preserving the concept of beauty in the field of education, and he cited William Wordsworth's definition of education in the lines written on "Tintern Abbey",

.... When thy mind
shall be a mansion for all lovely forms
The memory be as a dwelling place
For all sweet sounds and harmonies....."

But in this atomic age, more emphasis must be placed upon science, from the earliest years. I think our schools are often teaching on a level that does not challenge the student. We under-estimate the student. A story is told that comes from south of our border, of two youngsters in kindergarten, who were playing during recess. An aeroplane passed overhead, and one said to the other: "Oh, B55" the other replied: "No you can tell a B55 by the angle of the wings", then the other said: "It is not coming very fast," and the other: "No, only 600 miles an hour, it has not broken the sound barrier yet". Just then, the school bell rang and one youngster turned to the other and exclaimed: "Well, let's go in and count those damned beads".¹

SCIENTIFIC AND TECHNICAL EDUCATION IN INDIA

The Government of India is committed to a policy of increasing the output of scientists and technologists. This expansion must

¹ From: *Education and Training*—Published by the United Nations.

be matched by a corresponding increase in the number of skilled technicians and craftsmen who will be necessary if India wants to industrialise and keep its place in the competitive markets of the world. This is a challenge which calls for an adjustment of the curriculum in Indian schools, colleges and universities. Even in primary schools¹ the Indian Government intends to include simple lessons in science. In the third five-year plan the Government of India had proposed to emphasize the teaching of general science in all secondary schools and of elective science in at least 25 per cent of them.² There was great inadequacy in the fields of scientific and technical education before 1947. In 1947 India had 28 engineering colleges and 41 polytechnics which could provide, in a year, training facilities for 2,520 and 3,150 students, respectively. By the end of the first plan, that is in the year 1956,

¹ A scheme for the improvement of the teaching of science in primary schools was approved by the Government of India in 1959. It provided for the appointment of science consultants with the object of making expert guidance in the teaching of science available to primary teachers so as to enable them to make their students familiar not only with abstract scientific principles but also with many of the practical applications of principles. Under this scheme, the Government of India bears the entire cost up to a ceiling of Rs. 4000 non-recurring, and Rs. 11,580 per year recurring per consultant unit. This assistance was available up to the end of the second five-year plan only and then the projects are supposed to be continued by the State Governments from their own finances.

² The Education Report of 1960-61 stated that the Government of India have taken steps to improve the teaching of science in secondary schools through the Directorate of Extension Programmes for Secondary Education. The Council for Secondary Education had launched a programme to organise science clubs in secondary schools and 350 clubs had been organised during 1955-58. No new science clubs were sanctioned in 1960, but during this year (1961) grants-in-aid were sanctioned to the State Governments for the establishment of 115 science clubs and five central science clubs. The Report does not make any mention of the functions and activities of these science clubs. However, during 1961-62, the Central Government had proposed to take a number of steps to strengthen the programme of science education including (a) a survey of science teaching, (b) preparation of handbooks for the guidance of general science teachers, (c) in-service training for teachers of science, (d) establishment of a Central Science Unit to conduct the teaching of science in secondary schools.

The Report says nothing about when the proposed Central organisation for the improvement of science will be established. Concrete steps should be taken without delay to increase the output of science teachers.

there were 47 engineering colleges and 88 polytechnics providing technical education to 4,900 and 9,400 students, respectively.

By the close of the second plan period (1961) the country had 91 engineering colleges and 193 polytechnics with an annual capacity of over 13,000 students at the degree level and 25,000 students at the diploma level.¹

¹ New Delhi's different educational reports and statements are confusing and contradictory. For example, the Institute of Applied Manpower, which has made a survey of the future demand and supply stated that there will be a surplus of 30,000 engineers in the Fourth Plan if the revised targets for expansion of colleges and polytechnics are implemented during the current Plan.

The Institute suggests the cancellation of the revised targets for 1965 and "a pause in the process of expansion of engineering education" in the next year.

"This, the Institute says, will help reduce the probable excess of supply over demand in the Fourth Plan to "a mild surplus, which can be conveniently carried forward as a buffer stock of engineering manpower".

According to the Institute's survey, the supply of engineers will increase from 246,000 to 443,000 that is, by 197,000 during the Fourth Plan period. The demand will grow by only 167,000—65,000 graduates and 162,000 engineering technicians—during the same period. Thus, there will be a sizable excess of supply over demand of 30,000 persons.

The Institute has pointed out that this excess would not have been there if the original targets of the Third Plan had been adhered to and "merely accelerated" in response to the Emergency, without being also raised.

In that event, the supply would have increased from 246,000 to 414,000 that is, by 168,000 during the Fourth Plan period. This would have sufficed to cover the forecast growth of demand", says the Institute.

But again according to the Planning Commission of India's latest estimates, the total additional requirement of graduate engineers during the Fourth Plan will be 1.06 lakhs against which the availability is expected to be 86,000. In addition to this, ten per cent of this requirement is expected to be filled by promotion from diploma level. After taking all these into account the gap between requirement and supply will range from 8,000 to 9,000.

The Planning Commission which discussed manpower requirements in the next two Plan periods on August 7, 1964 felt that the gap could be covered by better personnel and by expanding facilities for three-year engineering degree course for science graduates.

The requirement of diploma-holders during the Fourth Plan is estimated at 1.9 lakhs against which the availability is expected to be 1.6 lakhs, leaving a gap of 30,000. The Planning Commission felt that this gap could be covered by reducing wastage in polytechnics and developing diversified courses in collaboration with industries at diploma level. The wastage

Scientific research under State auspices in India is carried out mainly through the Council of Scientific and Industrial Research and the various national laboratories or research institutes set up under its control. The Council keeps a National Register of Scientific and Technical Personnel in the country "for temporary placement of well-qualified Indian scientists and technologists returning from abroad." The work of the Council is financed mainly by the Central Government. The Council provides a close liaison between the national laboratories and industries through chambers of commerce, and industrialists.

Different Research Activities

India had made significant progress since independence in the world today. India's ability to harness nuclear energy is gradually growing and she has already started to produce instruments for the nuclear industry. Her scientists use instruments used in the fabrication of fuel elements and in nuclear physics, as well as in work on radio-active isotopes.

The Atomic Energy Commission is responsible for formulating and implementing policies in all matters concerning atomic energy. The scientific and technical work of the Commission is carried out by the Atomic Minerals Division and the Atomic Energy Establishments. The industrial aspects of its work are conducted by the Indian Rare Earths Ltd. and Travancore Minerals Ltd.

To further the development of nuclear science, the Indian Atomic Energy Commission provides grants-in-aid to various

in polytechnics, it is stated, works out to nearly 50 per cent.

The requirement of graduates engineers and diploma-holders during the Fifth Plan is estimated at 1.6 lakhs respectively. It has been worked out that if during the Fourth Plan, provision is made for 16,000 additional seats in the degree course, the total outturn in the Fifth Plan will be of the order of 1.4 lakhs.

The position in respect of the availability of medical personnel was also considered by the Planning Commission and it was felt that the shortage of doctors would continue in the Fourth Plan as at present.

It is estimated that the requirement of doctors by the end of the Fifth Plan will be 1.75 lakhs and to meet this demand the annual intake in medical institutions will have to be increased from 11,000 at the end of the Third Plan to 20,000 at the end of the Fourth Plan—*The Hindu Weekly Review*, August 17, 1964.

universities, laboratories and research institutes.

Post-independence India has also a large-scale nuclear power programme and aims at the development of reactors which will utilise the country's vast thorium reserves. The first atomic power station was completed in 1965 and a few other stations are also expected to be set up in India.

INDIA'S DEVELOPMENT OF ATOMIC ENERGY

India had made significant progress since independence in the harnessing of atomic energy.

In its programme for the planned economic development and improvement of the standard of living of its people, the Government of India has given due attention to the potentialities of energy from the atom. A modest beginning was made as early as 1948 when an Atomic Energy Commission was set up for the promotion of nuclear research, the surveying, prospecting and processing of raw materials and training scientific and technical personnel.

The progress made in these fields encouraged the Government to embark upon a full-scale programme for the development of atomic energy. The objectives of this programme were, on the one hand, to develop the multifarious uses of atomic energy in agriculture, biology, industry, medicine and research, and, on the other hand, to develop atomic energy as a source of electricity. In order to implement this programme a new Ministry was created in 1954, called the Department of Atomic Energy, under the direct charge of the Prime Minister.

The national centre for research in the development of atomic energy in India is the Atomic Energy Establishment at Trombay, located about 15 miles from Bombay. Employing a staff of over 7000, the Establishment is today by far the largest scientific centre in India.

There are three research reactors at Trombay. India's first reactor, Apsara, is of the pool type and became operative on August 4, 1956. It was designed, engineered and built entirely by Indian scientists and engineers; and only the fuel elements of enriched uranium were obtained from the United Kingdom Atomic Energy Authority. The reactor has given trouble-free service throughout, and has proved to be a valuable source for

research, training and isotope production.

Zerlina, a zero energy reactor for lattice investigations and new assemblies, was also designed, engineered and built by Indian personnel. This reactor has been in operation since January 1961 and has provided a flexible facility for the study of characteristics of heavy water moderated and natural uranium fuelled reactor cores.

India's biggest research reactor is C. I. R., a high flux 40 mW. engineering test reactor, which was built in co-operation with Canada under the Colombo Plan, and became operative for the first time in July 1960. C. I. R. is one of the most powerful research reactors in the world as well as potentially one of the largest radioisotope producers.

Although Canada was responsible for designing and commissioning this reactor, the group actually working on the project consisted of both Canadian and Indian personnel. Moreover, half the first fuel charge of 190 rods for the reactor was fabricated at Trombay. Today the reactor is fuelled entirely with Indian fuel rods.¹

Fabrication of fuel elements for reactors, it may be pointed out, is a highly skilled and complex job. Indeed this is one of the trickiest aspects of building a reactor. In order to achieve

¹The 'Daily Telegraph' of London wrote that India can now make an atomic bomb. Should the Indian Government ever wish to do so they have enough plutonium, one of the essential materials.

A new plutonium plant has been in operation since last June at Trombay, near Bombay, and its output should now be sufficient if it is ever needed.

Building a chemical factory to extract highly-dangerous plutonium from the used fuel rods of uranium coming out of India's atomic reactors is a first class chemical engineering achievement.

The maximum dosage of plutonium that a man can safely absorb in a life-time is one millionth of a gram.

Pure plutonium has another dangerous property. It is fissionable, and if enough accumulates in one part of the factory the resulting chain reaction would lead to an atomic explosion.

Any plutonium plant must therefore operate almost entirely by remote control and automatically, behind thick concrete shields. India's achievement in constructing and operating such a plant, without any foreign technical assistance, is truly great.

(March 5, 1965)

'The Guardian' of London also remarked that the substantial production of plutonium now under way at the Indian Atomic Energy Establishment

self-sufficiency in the nuclear field, therefore, it was decided in 1956 to set up a plant for producing reactor grade uranium metal as well as a fuel element fabrication facility. The design and layout for the Uranium Metal Plant were completed during 1957, and the Plant was commissioned by the middle of December 1958. The first nuclear pure ingot of uranium metal was produced on January 30, 1959 from the uranium fluoride obtained from the Thorium Plant at Trombay which had been built in 1955, for processing thorium cake obtained from the monazite sands in Kerala.

On the basis of development work carried out at Trombay, the preliminary flow sheet for the Fuel Element Fabrication Plant was finalised in November 1957, and it was completed in less than twenty months after this, engineered and built entirely by Indian metallurgists and engineers. The first prototype fuel element for C. I. R. was produced on June 15, 1959, and the first lot of ten fuel elements was ready on February 15, 1960—about five months before C. I. R. became critical. It may be interesting to note that Indian fuel elements have come of the finest grained uranium metal in the world, some five to six times finer than the grain in most other fuel elements.

Trombay scientists and engineers have also successfully designed, built and commissioned a Fuel Elements Reprocessing Plant (Plutonium Plant) for processing irradiated uranium rods to extract plutonium and other fissionable materials. Plutonium

at Trombay makes India a member of an exclusive "club" at present limited to half a dozen countries. Plutonium is the essential ingredient for an atomic bomb.

The photographs and printed matter which have just reached London appear to be the first public revelation—at least in the West—that India has succeeded in building a plutonium factory. Canada, Sweden, West Germany, and several other countries which have possessed atomic reactors for some years have not tackled the very sophisticated nuclear physics and chemical engineering involved in such a task.

Politically it puts India at the very portals of the nuclear club—though she chooses not to enter it as a matter of deliberate policy—and means that the Indians now join the British, French, Russians, Americans, and Chinese as members of the "Fuel Elements Club."

Alone of the nations in this list, India has chosen to manufacture plutonium solely for peaceful purposes and to forgo the possible gains in diplomatic prestige to be realised from exploding a bomb.

(March 11, 1965)

is an extremely valuable fissile material and atomic fuel for future reactors. It is of great importance to the long-term power programme of the country as plutonium reactors can be used to breed uranium 233, also a fissile material, from the thorium. India having the largest reserves of thorium in the world, her long-term atomic power programme is based on its use in future reactors.

As atomic radiations cannot be perceived by the sense electronic instruments and radiation detectors are needed not only to detect the dangerous levels of radiation but also to carry out research in various fields. A small electronics group was formed in 1955 to design, fabricate and install reactor control instrumentation as well as produce other instruments required for the reactors at Trombay. After completing this task in 1960, this group was expanded and diversified in order to fruitfully utilise the experience gained in this field. Today the Establishment produces most of the electronic instruments needed not only for its own work but also by other institutions employing radioisotopes and radiation sources. Electronic computers and test instruments are also being developed and produced.

High vacuum equipment constitutes one of the essential requirements of nuclear work. The Trombay Establishment has developed and fabricated a number of high vacuum instruments, thereby saving a considerable amount of foreign exchange. Technicians developed here have also been employed for uses other than in the field of atomic energy. For instance, at the time of the Chinese invasion in October 1962, there was a sudden increase in the demand for blood plasma. The only two existing plants in the country for freeze-drying this life-saver were not adequate to meet the demands. The Establishment designed and fabricated a plant for this purpose, capable of freeze-drying 600 bottles or 180 litres of plasma per month. This was the first unit of its kind to be built in India.

The Establishment has also successfully developed an induction plasma torch, a source of high temperature. Even in the highly industrialised countries of the world this is a recent addition to the family of high temperature generators.

Radioisotopes and radiation sources are perhaps the most versatile tools of atomic energy. The production of radioisotopes and labelled compounds at Trombay has steadily increased over

the years and today more than 250 different types of radioactive products including many special preparations are readily available for users. Radioisotopes have also been exported to other countries.

A Radiation Medicine Centre was set up in Bombay last year to promote the use of radioisotopes in the diagnoses and treatment of diseases. Good progress has already been made in investigations related to thyroid disorders including thyroid cancer, study of the problem of sporadic goitres and the establishment of methods for radioisotopic applications.

Labelled vitamins and fats have also been used to study tropical malabsorption syndrome, and the knowledge thus gained has made a rational treatment of these diseases possible.

In the field of life sciences, fundamental aspects of biological actions of ionising radiations are being investigated. Work is also being done in the fields of induction of mutations in plants of economic importance such as rice and groundnut. Some of the mutations induced at the experimental field station at Trombay have resulted in new strains of rice with such favourable features as higher yields, finer grains, early flowering and whiter kernels. Experiments are also carried out for developing radiation methods for preservation of food. It has been found that treatment of fruits like mango, apple, banana, guava and sapota with low doses of gamma radiations appreciably extends their storage life at room temperatures. The technological aspects of radiation sterilisation and pasteurisation of canned mango slices and orange juice have been explored to some extent. Attention is also being given to the use of ionising radiations for the disinfection of grain.

As mentioned earlier, one of the objectives of India's atomic energy programme is the generation of cheap electrical power. In August 1958 it was decided to set up an atomic power station on the west coast of India and supply the power generated to the industrial regions of Maharashtra and Gujarat States which are far removed from sources of conventional fuels. After a comprehensive survey a site was selected at Tarapur, 60 miles north of Bombay.

It was decided to invite global tenders for building a complete atomic power station because it was felt that advantage should be taken of the developments made elsewhere in this field

thereby meeting the growing demand for power as early as possible. Although Indian scientists and engineers could have undertaken the design and construction of this station without foreign collaboration, this would necessarily have taken a much longer time. For one thing, it would have involved the lengthy process of setting up a prototype station first, as no country has fully developed the technology of nuclear power without having gone through the prototype stage. Moreover, it was considered desirable to get incontrovertible data about costs, etc. for setting up a commercial power station.

Out of the seven tenders that were received, the proposal submitted by a United States company for an enriched uranium station was found to be the most suitable. The cost of power generated from this station will be 3.01 paise (6.32 mills) per k.w.h. as against 3.69 (7.75 mills) per k.w.h. for thermal power in this region. It will thus be cheaper than conventional power in this region.

Work is also progressing on a second nuclear power station, with an electrical generating capacity of 200 mW. in one reactor, at Rana Pratap Sagar in the State of Rajasthan. An offer of assistance was received from Canada for this project, and a joint Indo-Canadian team was set up to study in detail the cost and feasibility of building a nuclear power station of the Canada type at this location. The detailed study indicated that the cost of electricity from this station will be as low as 2.6 paise (5.4 mills) per k.w.h. which is decidedly more economical than all the conventional thermal alternatives available.

Recently the Planning Commission has also accepted the proposal of the Atomic Energy Commission to set up a second unit at the station in Rajasthan and to construct a similar station of 400 mW.e. at Kalpakkam in Madras State. Tarapur is expected to be ready by the end of 1969 and the other two stations during the Fourth Plan period, so that by the end of the Fourth Plan (1971-72) India will be generating 1.2 million kilowatts of electricity from atomic energy.¹

¹ SOURCE:—*India News*, London, 1965. In India the main centres of nuclear and cosmic ray research include the Bose Institute, Calcutta, the Indian Institute of Science, Bangalore, the Physical Research Laboratory, Ahmedabad, and the Saha Institute of Nuclear Physics, Calcutta. In making its grants-in-aid, the Commission is assisted by a Board of

Other Scientific Activities

In addition to atomic research, Indian technological colleges offer subjects covering a wide range, among which are, for instance, naval architecture and marine engineering, fuel and combustion engineering, production technology, geophysics, electrical communication engineering. These courses are designed to meet the special requirements of industrial and other developmental projects for high-grade technical personnel. The Indian Government Report noted that the existing engineering colleges in different parts of the country are also being upgraded for post-graduate studies and research. Over 30 subjects have been selected by the All-India Council for Technical Education spread over 15 institutions. The development of facilities in special fields such as printing technology, town and country planning etc. non-existent in British India has been spectacular. Concerning the prevailing technical and professional education facilities the Education Report wrote, "Perhaps the most heartening advance during the ten years of our freedom has been in the twin fields of technical education and scientific research. Quantitative shortage apart, there was a great qualitative inadequacy in these fields before 1947. In fact, facilities for advanced training and research at the post-graduate level in technology were meagre and in engineering almost none.....The Central Government, therefore, adopted a constructive and purposeful policy which was to develop technical education facilities on the widest scale possible. This is reflected both in the rapid increase in the student enrolment for different courses that has taken place in recent years and in the improved standard of instructional facilities that has been provided."

At its 9th meeting held on 30th October, 1954, the All-India Council for Technical Education appointed a special committee to formulate detailed proposals for the development of technical education in India. The Council suggested that the following aspects should receive special consideration:

- (a) Part-time technical education facilities for adult workers.

Research in Nuclear Science and Advisory Committees for Physics, Chemistry, Cosmic Rays, Biology and Medicine, and Food and Agriculture.

- (b) Provision of "sandwich courses" of the degree standard at least at one centre in each important industrial centre.
- (c) Provision of schemes of industrial apprenticeship and technical education for boys in the age group 14-17 to train as skilled workers and for those in the age group 16-20 to train them for supervising positions in industry.
- (d) Establishment of the Western type of Higher Technical Institute.
- (e) Development of post-graduate centres for advanced work and research.
- (f) Appropriate measures to attract and retain the right type of teachers in institutions.
- (g) Provision of summer schools for technical teachers and short-time refresher courses.
- (h) Provision of facilities, on a regional basis, for the training of technical teachers.
- (i) Institution of scholarships and free places in partnership with the State Governments.

The Council further recommended that facilities for training in ore dressing may be provided in technological institutions offering courses in Mining, Metallurgy, Chemical Engineering and Chemical Technology.

It seems that in spite of the suggestions of the Council several years ago, the Ministry of Education in Delhi has not taken the necessary steps to implement all the proposals. Indeed, if India wants to progress industrially and technologically, the role of the colleges in the next few decades is to do for industry and technology what they have done for nearly a century in other fields—to produce an elite. The colleges and especially the universities, with their intellectual standards can make a contribution to the education of those who are to take responsibility in industry which cannot be made elsewhere. The universities should face this demand with the same readiness with which they receive veteran students for arts subject. Every university engineering department should be involved in the expansion and try to double the output of science graduates with additional support from industry.

Lessons from Great Britain

Indian universities were established on the heritage of British universities. It is a fact that Great Britain, with its scientific and technological knowledge, has guided much of the world into a state of progressive civilisation. The Indian technical colleges and university engineering departments by learning from the successes and failings of Great Britain can ensure a continuation of the expansion.¹ The progress of the Cambridge University Engineering Department provides an example for India. The Educational Report of New Delhi spoke of the 'spectacular progress' of technical and professional education in India and stated that "admission has more than doubled" since independence. There is no reason to be contented with this progress nor is it spectacular, for the expansion of lecturers, professors, teaching staff, laboratories, etc. should also increase with the increase in the admission of students.

In Cambridge, on the other hand, since the war the teaching and graduate research staff has increased from 23 to 74; there are now four Professors and seven Readers where before there were only two Professors. For the support of the graduate staff the number of laboratory assistants, craftsmen and clerks has increased from 50 to 157. The courses offered to undergraduates have increased to more than 300 since the war. The whole range of engineering science has expanded and there are now three distinct full-time courses leading to a B.A. degree with a further five options for candidates who read for Part 2 of the Mechanical

¹ Since the publication of the recommendations of the Barlow Committee after the Second World War, most British universities have worked to double their output of science graduates. The foundations were laid in the 1947-52 quinquennium when the University Grants Commission provided facilities for the establishment of 18 full-time specialised post-graduate courses of instruction. The first result of this plan was the establishment of the Imperial College of Science and Technology. In 1953, the British Government gave special grants for major developments at Glasgow University and the Royal College of Science and Technology at the Universities of Birmingham, Bristol, Cambridge, Leeds and Sheffield. In June 1956, the Chancellor of the Exchequer announced further support for technology so that every British University engineering department is now involved in expansion. (*Scientific and Technical Education and Careers*—Edited by Edward W. Battey, p. 10. London.

Sciences Tripos.¹

The example of Cambridge is given to show that the task of educating the great number of engineers required in India should be carried through by the Universities. Meanwhile other grave problems should also be considered. The most pressing is the provision of staff of the highest quality in sufficient numbers. No real solution to this problem will be possible unless industry in India collaborates in some way so that too great a financial sacrifice is not demanded of the teachers. New buildings, equipment and staff will be needed but they will be useless, if the Government and industrialists and the public as a whole do not realise, before it is too late, that applied science poses intellectual problems and offers scope second to no other activity and that a pupil cannot serve India better today than by entering this field. Only in this way will engineers in the quality and numbers required be forthcoming.

An under-developed country like India developing through successive five-year plans will require technologists, experts in instrumentation and computer techniques in larger numbers or be in danger of seeing her many technical departments idle for lack of adequate personnel. In fact, one aim of her five-year plan should be to popularize Control Engineering as a new primary technology. Her educational system is still far from geared to this conception. Before India reaches a stage when higher secondary masters can advise a major proportion of gifted young pupils about the future possibilities of careers in instrumentation, the Central Government will have to tackle the educational problem in four ways.

First, the Education Department of the Central and State Governments should organise open lectures in the major colleges, in the town halls of major cities and through the radio and cinema on the human and sociological implications of modern automated techniques. These lectures should be given by

¹ For undergraduates, Cambridge has widespread research activity in almost every branch of engineering from aerodynamics to the design of steel framed structures, from gas turbines to electron microscopes. Laboratories and equipment in Cambridge have been expanded. The floor area of the laboratories was increased from 82,000 sq. ft. to 145,500 sq. ft. by 1952. Since then further buildings have been added. (*Scientific and Technical Education and Careers*—p. 11.)

eminent scientists, distinguished foreign experts, famous industrialists and national leaders who are well known and responsible for productivity.

Secondly, those who were qualified before in any branch of engineering need to be reoriented. For the younger engineer part-time courses might be arranged.

The colleges and universities should organise a comprehensive series of advanced lecture and laboratory courses for candidates who satisfy the conditions relating to a programme of part-time study. Evening courses for engineers and young scientists will be of immense help.

Thirdly, sandwich courses should be open to students sponsored by well-known instrumentation firms. This arrangement will cement good relationships with industry in the most acceptable ways. Entry to the sandwich courses should require from a candidate academic attainments equivalent to those required for a University degree course, coupled with personal qualities which will encourage a forward-looking firm to invest money in abilities and leadership potential that will mature after four years. Finally, the colleges should organise summer schools in specific fields for those technicians or engineers who have achieved some standing in industry and who are required to keep abreast of rapidly advancing science and the latest techniques. For example, attendance on one day a week for about 16 weeks would be suitable for an executive who carries senior responsibilities and who cannot spare a full week.

It is generally accepted that India, even after twenty years of independence, is short of scientists and technologists. The existence of such a shortage is evident from India's dependence on foreign experts: its visible signs are long and attractive advertisements in newspapers. It is not only private industry which is suffering from shortage; the Central and State Public Service Commissions are in need of technicians and engineers. Schools are severely affected by the shortage of science teachers and even the universities cannot retain enough men for research.

In spite of thousands of unemployed, the shortage of trained technicians, engineers and scientists is great, and can be an important hindrance to the industrial progress of the country. In addition to the shortage of scientific manpower, there are of course other hindrances to development, such as the shortage

or absence of machines or materials of an appropriate quality, which again may be due to lack of scientists or engineers in supplying firms. Rapid industrial growth in India will create the necessity for more scientists. Many modern industries will suffer from shortage of engineers or designers and draughtsmen.

There should be an Inquiry Committee on Scientific Manpower (similar to the Committee on Scientific Manpower of the Advisory Council on Scientific Policy in England) in Indian industry. The demand for trained men will gradually rise with the increase in the general level of industrial activity and the increased awareness of firms of their need for trained technologists. The gap between supply and demand will be bound to grow unless major steps now being taken to increase the volume and quality of engineering education become even more vigorous than they already are. In the whole industrial field, there are also deficiencies of designers and draughtsmen, metallurgists, mechanical and electrical engineers, chemical engineers, chemists and certain types of physicists. The deficiencies are at both graduate and non-graduate levels. (In 1957-58 out of 798,908 students on the rolls for higher education only about 10,000 were for Degrees in Engineering and Technology). The expected development of 'modern' industries during the Fourth Five Year plan period and after and the gradual increase in the scale of production will require greater numbers of trained people in the future.

It is very important, therefore, to consider how an adequate flow of scientific and technical manpower can be obtained.

This question at once suggests the pattern of education to be given to intending students. In addition to mathematical ability, a draughtsman or an engineer if he is to advance beyond routine work must combine with neatness and accuracy a strong practical sense. Scientists or technologists if they want to excel in their profession must possess an understanding of men and the qualities of leadership. A firm in the metallurgical industry wrote to the Committee on Scientific Manpower in England: "We need scientists and engineers and other technologists as urgently as anybody in the industry but we also want, as most other firms must do, men with real qualities of leadership. Without sound human leadership scientific progress is obviously not going to get on very far. Yet the thing which impresses us about the

undergraduates and graduates whom we interview each year is the very great proportion who lack any real leadership qualities."¹

So success for a scientist depends to some extent on his personality. These considerations are important for India. The educational authorities in India for the development of scientific ability should also provide for the basic training of personality. For a successful career in science today requires not only a sound preliminary education and human understanding but also a lively and continuing interest in what is going on in industrial laboratories in universities and in all parts of the world. It is also important to obtain a large increase in the number of students of a slightly lower, but still high, quality. The Indian youth who Matriculates at 16 or takes Higher Secondary Certificate at 17 and can then, if not suitable for a university course, be encouraged into apprenticeship for engineering work. It seems probable that industry would welcome some such plan, which would also tend to diminish the number of unsuitable candidates who embark on university courses. Talent could thus be usefully recruited at one level and wastage prevented at another. There are at present, indeed, many adolescents capable of taking two advanced level mathematics and science subjects who either leave study too early or select an unsuitable course. Now that India is in need of students of science and technology, the time has come when Youth Guidance Officers and Employment officers should be appointed. We should ask whether the scarcity is due to wastage or misdirection in the educational system. This is a subject which should be investigated by the Educational Department in India. Many young people's suitability for a scientific career can be determined at an early age. The schools should have some provision for advice to school leavers on the choice of careers. This crucial decision is seldom made on the basis of an adequate examination of alternative careers master or mistress. Nowhere in India is there any system to scientific and technological work, either through their mischoice of career in which their talents have insufficient scope or through a failure to develop their talents. This loss can be

¹ *Industry and Technical Progress*—C. F. Carter and B. R. Williams, p. 90.

avoided and the wastage of scientific talent in the schools can be prevented. Next, further education should be considered. Many of the students after Matriculation or the Higher Secondary Education Certificate take commercial courses or study in the technical schools. The contribution of these colleges to the education of technologists and scientists is considerable. There should be provision for technical school students who probably act as junior technicians, to attend a technical college on a day-release basis. For student apprentices "sandwich courses" in which periods of full-time technical education are alternated with periods of work, would be valuable.

To obtain more scientists and technologists it is essential to offer high salaries. The attraction of a profession does not depend only on the starting salary; it is also necessary to ensure that the long-term prospects are good.

The most harmful loss in scientific manpower is the starving of the schools. Most of the schools lack efficient well-educated science teachers. The majority of technically trained graduates, and a high proportion of non-graduates go initially to the large firms—thus science teaching in most of the schools is done by those who have little knowledge of science. The shortage of science teachers in India is serious enough to prevent any large increase in the intake of the technical colleges.¹ Lastly, while the shortage of trained men and women to act as technicians, engineers or scientists is a ground for concern, especially in a developing country, an even more serious ground for concern is the lack of any lively impulse for the necessary corrective action. India needs Youth Welfare Officers who can guide and help pupils in the choice of their career.

The choice of subjects at school and the choice of a career in India are too much a matter of chance. Further no real provision is made to increase the number of science teachers in schools. Moreover, the wastage of able boys and girls who leave school too early and go to unsuitable jobs still continues. If these evils

¹ Even in the educationally advanced countries where teachers' salaries are fairly good, secondary schools suffer from lack of science teachers. In an article, the *Guardian* wrote: "Of 482 men who graduated in science in Oxford in 1953 only 17 became school masters. In a school not far from Manchester a senior physics master and a senior history master were appointed simultaneously in 1938. There were about 140 applicants for

continue to exist they will threaten the whole future expansion of scientific manpower. These problems cannot be solved by changing the methods of education prevailing in the country. A larger amount of money has to be invested ; there must be provision for basic research ; apprentices will have to be taught and the difficult problem of attracting more teachers will have to be faced. To avoid wastage through a wrong choice of specialization at school, there must be a considerable change in methods of giving careers advice in school curricula and in the requirements of examinations. If a considerable proportion of the post-matriculation students are to follow the route from higher secondary school to university, the admission requirements of the technical and scientific departments of the universities will have to be modified. The whole conception of a technical degree might have to be altered. Such changes have to be planned to meet, not only the current difficulties prevailing but also the greater problems of the future. The examples of the scientifically advanced countries could provide guidance for India.¹

Indians today face a unique challenge. They are gradually coming within a civilisation that has developed jets and computers, that is investigating space, probing the chemistry of life and moving towards an automated industrial complex. The demands of education are now changing. Not only has the teacher to fulfil his traditional role of freeing the mind from the clichés of his time. He has also to stimulate an appreciation of an evolving environment. He must equip his charges to live creatively in the contemporary world. He must remedy the social inequalities that are the heir-looms of Indian tradition.

each vacancy, all of whom were reasonably well qualified. The same two vacancies were filled again last year. There were then 160 applications from historians but only four from physicists, three of whom had no adequate qualifications ; the man who was appointed would never have been considered before the war.....The teaching profession in the United States has already been almost denuded of science teachers because of the greater attraction of industry. The number of students who are presenting themselves for courses in science and engineering in American Universities is beginning to fall, for young Americans are not being exposed to the stimulus of adequate teaching in schools (Manchester Guardian, 31st January, 1956).

¹ *Science and Technology for Development*, United Nations, p. 36. Reproduced by permission.

It is a hard task. In the industrialised countries, these demands are made more acute by the growing awareness of the value of education, of its importance to the individual and to society. In industrially under-developed India, the sheer need of education to combat the problems of vast uncontrolled population expansions, of hunger and of health, demands radical solutions.

Education, far from being a luxury reserved for the few, has become a necessity for all. In such a situation, we cannot afford, nor dare we allow, the teacher to work unaided and alone.¹ Devotion and techniques of Abelard's day are not enough. Yet of all the sectors of human endeavour, education stands along in lacking an adequate technology. It is urgent enough to modernise the content of education. It is equally important to modernise its methods and to provide an efficient arsenal of tools and strategies for the educator to use.

A technology, above all, an educational technology, is not a collection of hardware. It is a social activity, involving people and ideas, methods and machines, philosophies and values. But always people. Its objective is to increase the sphere of influence of the human teacher, not to restrict it; to free the educator from the bonds of drudgery and make the process of education more creative.

We have today many of the means to develop such a modern technology of education. The emerging sciences of communications, cybernetics and management, the increasing insights of psychologists, the growing field of learning theory; all are at our disposal. We will have an expanding number of technical aids, ranging from powerful tools like computers, and complicated systems such as closed-circuit television, to new techniques such as programmed learning and electronic devices like-language laboratories, as well as the more traditional visual aids.

Individually, these weapons in the war against ignorance, illiteracy and unreason give promise of hope. But for the hope to be realised, they must be combined into a single system. This will only be done if those immediately concerned, the teachers—whether in primary schools or in industry, in colleges or in secondary schools—are given the time and the opportunity to explore their potential. A start has already been made. But more is needed.

¹ New Education, London E.C.4. 1st issue.

Science, explained the United Nations, is something more than a producer of spectacular discoveries. It is a mental discipline, and a system of orderly thinking which seeks to form evaluations on the basis of exact observation and information, instead of through intuition, prejudice, or gusts of emotion. Its methods can be applied not only to natural phenomena but to human behaviour and to social processes. As a training it does not necessarily qualify the scientists to be men of affairs, but men of affairs in the modern world must know something about science and how to use it. Scientists urged that those who administer must acquire the spirit of science. Similarly, it was urged that scientists should "abandon their ivory towers" and take some responsibility for the use, misuse or abuse of their discoveries, instead of leaving them like foundlings on the doorstep of society.

In the leisurely past, before the urgencies of the Industrial Revolution science progressed as a result of the unhurried and persistent work of individual scientists—talented people who did scientific work in small laboratories with the help of a small number of assistants. Today, science is being mainly developed by large scientific institutions embracing hundreds of thousands of people. The flask, the Bunsen burner and the microscope, the modest tools of individual science, have given way to high-energy accelerators, atom-splitters costing as much as a battleship, to computers each costing as much as a whole university would a century ago, and to million-dollar space vehicles, which are laboratory benches in orbit.

All these, in turn, are the products of industrial development, which science, through technology, helped to promote. Industrial wealth produced the social-subsidies of education; education produced research; research produced industrial wealth, which in turn produced more research. Science, therefore, is a "built-in" part of modern social and economic prosperity; it is no longer an intellectual luxury.

"Scientific inquiry" Professor Bernards Houssayan of Argentina pointed out, is carried out in a number of stages:

"(a) Pure or disinterested fundamental (or basic) research which seeks new knowledge about man and the universe without being concerned with whether the knowledge will be applied or not.

"(b) Directed fundamental or basic research, which is systematically carried out in certain special fields, is a variation of the foregoing.

"(c) Applied research, which seeks to meet immediate needs or to devise useful or essential products, e.g. agricultural, health and medical, or industrial research.

"(d) Development or technical implementation, involving applied research and empirical knowledge in the use or improvement of new methods or materials in industry, agriculture or medicine."

In the words of Dr. V. A. Kovda, Director of the Department of Natural Sciences of UNESCO.

"The natural sciences (e.g. mathematics, physics, chemistry, biology and geology) and their application are of great importance to the newly independent countries for at least two reasons. One is that the economic

development of a country is impossible without them. A developing country can begin to meet those immediate needs by importing scientists from abroad, but it will never be really independent until it has created its own national pool of highly trained scientists and engineers and its own scientific institutions, acting in the field of natural science. The second reason is that science has become the most dynamic cultural force in the modern world. The impact of science has revolutionised habits of dress, of speech, travel and communications, cities and villages. At a deeper level, it has affected philosophy, and, by making human want technologically obsolete, has brought into relief the moral responsibility for constructive rather than destructive ends. A country without science and engineers cannot be in the mainstream of modern life."

Another pertinent point regarding science was made by Mr. Abba Eban :

"It might seem that all we have to do is to "export" science and technology from countries in which it is abundant to countries in which it is scarce. Such an easy formulation would distort the truth. Science is a plant which can only grow in certain conditions of social climate and economic soil. It cannot be transferred fully grown. Science is not a monopoly of any social system. It has flourished both in capitalist and in socialist economies. It has prospered in big states, but some of its most eminent representatives and institutions have arisen in small communities. Nevertheless, it is a tree which will only grow in a society which possesses a vision of development, which allows freedom for the creative imagination, and in which education and the pursuit of scientific truth are held in profound respect."

Inevitably, an educational technology, however, well formulated, will not of itself decide the broader aims of education. But just as aims, however worthy, will remain unrealised until the means have been provided, so the development of a tried technology will throw up new visions and fresh goals to inspire those who see education as one of the noblest pursuits.

The first dawn of such an educational awaking is already in India. It is possible to envisage new hope and promise for the coming generations undreamt-of in past worlds. To assist to the utmost in achieving that hope and fulfilling that promise should be the aim of NEW INDIA.

SECTION V—HIGHER EDUCATION

The modern universities in India are about a hundred years old. They were founded upon the traditions of Indian society and the heritage of British universities.

¹ Science and Technology for Development, United Nations, p. 36. Printed by permission.

Since independence the demand for secondary education has led to an increased demand for university education. The Sadler Commission in 1919 pointed out that the demand of the middle classes for university education would become a revolutionary fact ; but the Indians are only just awakening to the fact that not only the privileged few but also people of all sorts wish to send their children to university. The number of universities has increased since independence and is increasing every year.

Since 1947, the Indian universities have been in a period of transition. The problem the university authorities face today is whether they should give emphasis to a high standard of education for a limited number of students or attempt to provide university education on a large scale. But the Government feels that all-round progress in every field in a developing society depends on the country's being able to draw on a large number of people educated and trained in universities. Industrial, technological and scientific developments and research cannot be neglected ; so the Government has agreed to find the resources necessary for financing higher education.

ORGANISATIONAL STRUCTURE OF UNIVERSITIES

The Committee on "Model Act for Universities", set up by the Union Ministry of Education has recommended that for the right development of a university two basic principles should be accepted, viz. (1) autonomy of universities from external control and (2) internally democratic administration and effective participation of the academic community in the formation and implementation of the university policy and programmes.

The Committee with Dr. D. S. Kothari as Chairman was asked by the Union Ministry of Education to consider broadly the organisational structure of the universities in India and to prepare the outline of a "model Act" suited to their role and functions in the present context of our fast-developing society.

The Committee is of the view that the importance of written constitution is less than the conventions that are needed for the right development of a university.

In its report, the Committee has recommended that the President of India in the case of Central universities and the Governor of the State concerned in the case of State universities should be

the visitors of the universities. They should not be included in the list of officers of the university but should have an independent position with well-defined powers.

There should be a Chancellor elected by the court. This should be an office of honour.

The court should be the policy-making body of the University with a lay element and should not be concerned with the details of academic matters or the day-to-day administration of the University ; it should consist of not more than 100 members, of whom approximately 50 per cent should be external ones. The court may consist of ex-officio members, representatives of alumni, donors, learned professors and nominees of the Executive Council.

The Executive Council should consist of 15 to 20 members with approximately equal number of internal and external members.

The Committee is unable to recommend any one pattern as the most suitable one for all the universities in India for the appointment of a Vice-Chancellor. The Committee, however, indicates preference for the following two modes, namely (1) that the Vice-Chancellor should be nominated by the visitor—Government in the early stages ; and (2) that he should ordinarily be elected by the court from among three persons, recommended by a majority of the members of the Executive Council. Whatever be the mode, the aim should be to secure the best person available. The Vice-Chancellor should be a distinguished educationist or scholar with administrative experience.

(A) The Vice-Chancellor should have a salary commensurate with his position and responsibility ; (B) the term of office of a Vice-Chancellor should be five years ; he should not normally be appointed for more than two terms in the same university, subject to any retiring age that may be fixed.

To relieve the Vice-Chancellor of some of his duties there should be a Pro-Vice-Chancellor or Rector chosen by the Vice-Chancellor.¹

¹ The University Grants Commission has accepted the suggestions that the Vice-Chancellor of a Central University may be paid a consolidated salary ranging from Rs. 2,000 to Rs. 2,500 p.m. and provided with a free furnished house. The Pro-Vice-Chancellor will be entitled to a consolidated salary of Rs. 1,750 p.m. and free unfurnished residence.

Except in special circumstances, the Registrar should be a permanent officer of the university.

The Committee is not in favour of honorary or paid Treasurers independently elected by the court. The Treasurer/Finance Officer should be a whole-time salaried officer of the university appointed by the Executive Council specially charged with the responsibility of looking after the finances of the university. Similarly, the Finance Committee also should not be independently constituted but be substantially a Sub-Committee of the Executive Council.

Universities with large building programmes should have an efficient and versatile engineer of their own.

The Academic Council should be the sole authority for determining the course of study and standards. Its decisions should not need approval by any other authority in the university.

There should be sound financial rules. There should be external audit and the audit reports should be placed before the court and also communicated to the Governments but it is not desirable to place them before Parliament/State legislature and their Public Accounts Committees.

(a) As the bulk of the students are in the affiliated colleges, due attention should be devoted to such colleges. The conditions for granting affiliation should be prescribed and enforced by universities notwithstanding pressure of numbers. The increasing demands of admission should not be met by expanding the size of existing colleges but by other measures such as evening and correspondence courses and other types of education besides arts and science courses.

(b) The gap between the conditions of service of teachers in the affiliated colleges and University Departments should be reduced. Teachers with similar qualifications, whether in colleges or University Departments should have similar conditions of service including salary scales.

(c) The grant-in-aid to colleges should be improved and, if possible, made uniform throughout the country. (d) There should be provision to enable colleges to try out new methods and courses.

In some States, University Grants Commission Committees have been established. If these are to make a useful and effective contribution to higher education the entire question would need

careful consideration by the competent authorities, perhaps in consultation with the University Grants Commission.

The power of appointing teachers and other employees and disciplinary control over them should vest in the university and not transferred to the Public Service Commission or other external body. Teaching appointments should be made by the Executive Council only on the recommendation of Selection Committees, consisting of the Vice-Chancellor, the Heads of Departments concerned and a certain number of experts. The number of experts may vary according to the class of teachers to be appointed.

Medium of Instruction

In spite of the increase in enrolment and expenditure, the universities in India have been the target of severe criticism. In particular, the question of the medium of instruction at universities was a subject of heated debate. There was a general desire on the part of many university authorities to adopt regional languages instead of English. By 1952, no major linguistic area of India was without its own university. The Government of India suggested that by stages regional languages should be adopted in order to avoid undue hardship for the professors and students. It seems in due course the fourteen regional languages will become the medium of instruction in Indian universities. Because of the neglect of English, the pre-eminence of Calcutta, Delhi, Bombay, and Madras universities as the intellectual centres of India is already fading.

For India the effect of this change will be profound. There is the danger that isolation from the most advanced countries of the West and the separation of States may breed a narrow outlook and provincialism. "With the decline of English there must inevitably follow", says George Bennett,¹ "a separation from the traditions which have formed present Indian life in many aspects, not least the political and the philosophic. Burke will cease to be a special subject in history papers and quotations from Milton and John Stuart Mill will disappear from speeches." The effects of linguistic divisions were, he goes on to say, strikingly presented when a student in his class at Madras University exclaimed "I

¹ *English in India*—George Bennet, Oxford, Universities Quarterly, Vol. 12, 1957-58, p. 373.

am not an Indian, I am a Tamillian!"

A Conference of Vice-Chancellors convened in May, 1948 to discuss the language problem made similar recommendations to those made by the Indian University Education Commission, namely that regional languages should be introduced by stages so as to avoid undue hardship to the teacher and the taught. But the practical difficulties in changing from English as the medium of university instruction are very great. Already some universities have made the attempt and failed. It added to their difficulties that they were often changing to an Indian language which was as remote from their pupils as was English. So too is Hindi, the national language of India for Bengalees, Madrasees, etc. Also from the point of view of vocabulary, it is still difficult to write technical books in the Indian languages. And students who understood only their native tongue will be denied access to the large amount of scholarly material published in the English language.

The University serves the needs of society, as no other institution can. Indians today are gradually discovering that the world includes vast regions and peoples about whom they have previously known little. Their awakening has accompanied the upsurge of independence and the socio-economic transformation of the country. In this awakening a knowledge of the English language and its literature is indispensable to their quest for growth and dignity. It will be a tragedy for India if English is banished to satisfy narrow national sentiment. Indeed in India, the standard of English needs to be raised, not lowered. "Yet sentiment is against it; pupils think of English as the language of the Imperialist oppressor, and university students can be found to laugh and sneer at any among them who seek to perfect their English accents."¹

The question of the replacement of English by an Indian language is bound up with the problem of displacing English from public and official life. Before the withdrawal of the British from India, the whole administration of the sub-continent, the profession and the teaching in colleges and universities was carried on in the English language which was understood by only one per cent of the population. Yet the teachers, politicians,

¹ *English in India*—University Quarterly, p. 375.

lawyers, journalists, professors and scientists were the products of English education. The principal obstacle after the transfer of power was the absence of an Indian language understood all over the country and capable of taking the place of English. The leaders of New Delhi have adopted Hindi, which is understood by 40 per cent of the people as the natural language, and there are fourteen other main regional languages. Bengali, one of the provincial languages, has more formative and informative value, and a better literature than Hindi, but is spoken in only one province of India. The Central Government suggested that each state should do its business in its own regional language and every effort should be made to develop Hindi into an all-India national language so that in the near future it could be used as the official language of the Union. The proposition of the Central Government is that non-Hindi provincial languages can be used as the medium of instruction in schools but Hindi should be substituted for English as the second language.

The effect of this proposition on higher education has been disastrous. Previously, a pupil by learning English at the primary and secondary schools usually acquired a sufficient working knowledge of it to understand lectures in English. Now this is no longer so. Lately, some universities have changed their attitude and have taken half-measures to cope with the situation. Some universities allow their professors to lecture either in English or in the regional language. Examinees are allowed to answer questions in the mother tongue, even when lectures are conducted in English. Some colleges have accepted the regional languages as the medium of instruction for all subjects except science. It is unlikely that within the next decade sufficient scientific and technical books will be translated into Hindi. Hundreds of new words will have to be created in Hindi.¹ Seeing that parochialism has increased immensely since

¹ The University Education Commission suggested that "a board consisting of scientists and linguists should be appointed to prepare a scientific vocabulary of words which are common to all the Indian languages. This board should have the assistance of paid scholars to carry out the policies laid down by them. The board should also arrange for the preparation of books in different sciences which should be rendered into all Indian languages. Government should provide adequate funds for these purposes." Report, Vol. 1, p. 324.

independence, there has recently been a move in certain circles to keep English as a compulsory subsidiary language in secondary and higher education. The University Grants Commission and the All-India Secondary Education Board have recommended that English should be taught for six years at the higher secondary stage and should be a compulsory subject in the universities even after the change of medium. It is not clear what English would be taught at the universities after the establishment of the national language. The English language is rich in literature—humanistic, scientific and technical. Much of the benefit of learning the language will be lost if the compulsory courses aim only at giving a command of 'factual English' which will enable students to read simple books. Also small classes in English will be financially impracticable. The main hope must be that there will always be some students to learn the English language and acquire a knowledge of its literature so that the developing country may be enriched with Western ideas and thoughts.

Some eighteen years ago, two years after independence, the Radhakrishnan Commission warned the Universities that "If under sentimental urges we should give up English we would cut ourselves off from the living stream of ever-growing knowledge. Unable to have access to this knowledge, our standards of scholarship would fast deteriorate and our participation in the world movements of thought would become negligible.... A sense of oneness of the world is in the making and control over a medium of expression which is more widespread and has a larger reach than any of our languages today will be of immense benefit to us."¹

Limitations of Numbers

The problem of overcrowding is another major problem in Indian Universities. Since 1947 there has been a spectacular rise in the student population in the colleges and University departments. A year after independence, there were over four hundred thousand students in University classes and colleges. The universities have not been able to expand their physical facilities or to increase the number of lecturers and professors in proportion

¹ *The University Education Commission*, Vol. I, p. 325.

to the rise in the number of students. Several universities have proposed that the Central Government should limit the admission of students. The Banaras Hindu University in its Enquiry Committee Report suggested the limitation of admission.¹ The Committee adopted the observations of the Allahabad University Enquiry Committee of 1953 and pointed out "that the numbers of students to be admitted each year should not depend upon the ability of the Vice-Chancellor and heads of departments to resist the pressure which is put on them to increase the numbers of admissions, but that the maximum figure be resolutely fixed and rightly adhered to without any hindrance whatever, until such time as circumstances justify a reconsideration of that figure. In determining the maximum figure there are, in our opinion, the Committee went on to say, four considerations to be borne in mind :

- (a) limitation of space, equipment and financial resources ;
- (b) the burden in a unitary University on the administrative machinery and on the Vice-Chancellor if the number is very large ;
- (c) the danger of loss of personal contact between teacher and students ; and
- (d) in regard to those departments where education of a professional nature is imparted, the problem of unemployment."

The Allahabad University Enquiry Committee further stated that on no account should the fixed maximum figure for admission be exceeded. The University Grants Commission agreed with the Banaras Hindu University and Allahabad University Enquiry Committee's suggestion and considered the adoption of appropriate measures for the promotion and co-ordination of university education and for the determination and maintenance of standards of teaching, examination and research.

There is, indeed, a great deal of overcrowding in many colleges in larger cities like Calcutta and Bombay. The great growth of numbers has a direct bearing on the standards of

¹ *Proceedings of the 26th Meeting of the Central Advisory Board of Education*, pp. 109-10.

education. Many of the additional candidates are of very poor quality. In fact, only 50 per cent of the candidates qualify for the award of the B.A. or B.Sc. degree. It is becoming increasingly clear that the Indian Universities should impose a more searching test of fitness before admitting students to the colleges. Unless this is done, there is a real danger of gradual increase in the number of inefficient candidates, who waste their own time and the time of the University examiners by sitting for the examinations for which they are hopelessly ill-prepared. This could lead to a complete breakdown in the standard of education in the country, in the examination system of the universities and damage the reputation of the degrees. Undoubtedly, the present rate of increase of about 50,000 students annually will need to be controlled in some measure if standards are to be improved and India is to be saved from thousands of unemployed graduates.¹

Examinations

The limitation of student numbers at the universities would not, in itself, solve the whole problem of Indian universities. Another problem is the examination system and the organisation of education in Indian universities. For nearly 60 years the examination system has been the target of severe criticism and

¹ "The Increase in Numbers" wrote Rhona Gbate, "is also bad in so far as many colleges, entrants, from whatever social class, are intellectually quite unsuited to, and uninterested in, university work. A measure of this is the appalling wastage that takes place in almost every university, in the percentage of failures at the first examination, low though the standard is. The University Education Commission noted that failures in the Intermediate examination vary between 40 per cent and 60 per cent. Many of these students seek admission only because their parents take it for granted that every boy should go to college who possibly can. A. B. A., or nowadays more often a B.Sc. still spells prestige as in any other country. And with some reason, since the possession of a degree is usually the condition for a worth-while job in almost any career, whether it be social service, architecture, or even nursing. The colleges for their part are too often unwilling to limit admissions for fear of losing income from fees. The time has certainly come for a change of attitude on the part of colleges and would-be students, coupled with wider facilities for vocational education of every kind and the relaxation of the demand for a degree for jobs where it is irrelevant.

(*Indian Universities in Transition—Overseas Quarterly*, June, 1960.)

it is recognised as the worst feature of Indian education. Teachers, students, journalists and educationalists alike have complained that examinations have become the sole aim of education. All instruction is subordinated to examination, extinguishing all initiative in the student. Exams, it has been said, are 'capricious, invalid, unreliable and inadequate' and "tend to corrupt the moral standards of university life."¹

The students' sole aim has been to pass the examination and to get the stamp of success from the universities. Indeed, Indian markets and book-shops are flooded with 'note-books' 'question and answer books'. Even the names given to the note books e.g. 'Short Cut to Success', 'Sure Pass', 'Made Easy', 'Touch and Pass' explain the corrupt standards of examinations. "Since the war the disparity between the monetary rewards of teaching, on one hand, "wrote Rhona Ghate, "and of Government service or business on the other, has become so great that it is hardly unfair to say that the average college is staffed about equally by the very young who hope soon to go on elsewhere and the rather old who have given up hope of going elsewhere. Though devoted and conscientious, neither group make ideal teachers; and few consider it their business to undertake research. Indeed, summer vacations are usually spent correcting examination papers in order to supplement meagre incomes. Lectures are all too often confined to the economics of thirty years ago or the word by word 'explanation' of a Shelley poem, varied by occasional note-dictating. It is understandable that the student's response, apart from 'indiscipline', is often recourse to 'question and answer' books which can be obtained for a few annas in the bazar, to an Indian edition of, say, Silas Marner with 'important sentences' picked out in black type."

The Radhakrishnan Commission was convinced that the most urgent single reform in university education in India should be the examination system. The deficiencies and harmful consequences of this evil in Indian education have been clearly understood for a long time. As far back as 1902 the University Commission criticised the examination system in India. Since then a Government Resolution of 1904 and the Committee of the Central Advisory Board of Education in recent years have pointed

¹ *University Education Commission*, p. 327. '

out the patent defects and dangers of this system. Unfortunately, the character of the examination in India has remained unchanged for the last 40 years although the numbers have gone up increasingly. For example, in 1904, for India as a whole, only 23,800 candidates sat for the matriculation examination. In 1944, 36,742 candidates presented themselves for the same examination at Calcutta University alone. Bombay University had in that year 32,056 candidates, Madras 30,588 and Allahabad 22,000. In the year of India's independence the numbers had increased to 60,841 at Calcutta, 41,092 at Bombay, 43,823 at Madras and 33,923 at Allahabad. The University Commission of 1949 reported that the total number of candidates for the Interexamination and B.A. examinations in Arts and Science all over India was under 11,000 in 1904; in 1916 it had risen to just under 25,000; in 1925 the number of candidates for the Intermediate examination alone was a little over 30,000, in 1937 a little over 35,000 and in the year of independence over 80,000 in India excluding East Punjab. The number of candidates for the Bachelor's examination has also gone up almost every year. In 1927 the number was 12,500, in 1932 it shot up to 17,000 and rose to 32,400 in 1947. It is indeed tragic that an unsound examination system still continues to dominate instruction to the detriment of a gradually expanding system of education. The table below shows the ever-increasing number of examinees in India in the period from 1950 to 1955.¹

Examinations rightly designed and intelligently used can be a useful factor in the educational process. But in India, where reform is most urgent, the system has remained unchanged for many years. Nor is there much evidence of that willingness to undertake reform which is exhibited in other countries where the

Year	Matriculation	Intermediate in Arts and Science	B.A. & B.Sc.	M.A. & M.Sc.
1950-51	243,843	72,023	32,615	7,133
1951-52	264,912	75,257	35,746	7,955
1952-53	334,760	89,021	40,017	7,862
1953-54	397,005	104,851	50,178	9,821
1954-55	400,014	126,476	57,149	11,103

¹ Source—Statistical Abstract, India, 1955-56, New Delhi 1957, p. 139.

defects of the system are less great.

Fortunately there has been a wealth of research on testing, measurement and evaluation done in Western countries especially in the United States. The West's objective of testing intelligence and aptitude could be modified and adapted to reform the age-old system of examinations in India. The Radhakrishnan Commission made detailed suggestions of conditions of a good examination. Among these are various kinds of tests: intelligence and achievement tests; 'aids in selection and counselling of students, tests as aids to the teacher and as checks on equality of work', 'hallmark attainment', 'recommendations regarding objective examinations' and for the correction of evils now existing in the examination system with warning that 'without these there is danger that India's higher education will fall into chaos.'

Three-Year Degree Course

There is also the need to raise the age and maturity of university entrants. This will involve changes in the traditional pattern of education. Almost all the Indian universities with very few exceptions such as the Visva Bharati at Shantiniketan of Tagore or the Jamia Millia Islamia founded on Gandhi's ideas, follow the same courses and the same pattern of teaching. They are all non-residential collegiate universities in which colleges prepare students for the first degree. The course lasts 4 years (two years for Intermediate and two for the B.A. or B.Sc.). The school final examination is the local matriculation, success in which qualifies the candidates to enter college. There has never been any lower age limit for entry for the matriculation and parents not infrequently boast that their son or daughter passed matric at 14 and the B.A. at 18.¹ Undoubtedly such teen-agers, however bright, are not mature enough to tackle university work successfully. These entrants do not get any training in their schools in using libraries or organising their own time and work. Many of these young students, when they go to college, are lost in a crowd of often 150 actively unwilling listeners. In 1917, the Calcutta University Commission recommended that the standard of admission to universities should be

¹The average university entrant was generally 16.

the possession of the Intermediate Certificate. But only a few universities adopted this scheme. Allahabad, Lucknow and Agra did so and their standards are now high. The University Commission also recommended a three-year course for the Bachelor's degree for a pass as well as for honours. In 1941, Delhi University took the lead and changed over to a three-year degree course preceded by an 11-year (instead of 10-year) higher secondary course. Delhi University thus abolished the Intermediate and demanded a considerably higher entrance qualification than the old Matriculation Certificate. In practice this meant an extra year's work of a higher standard at school. The Central Advisory Board of Education in its Report on Post-War Educational Development in 1944 recommended that the Intermediate course should be abolished and that the minimum length of the university degree course should be three years. In 1949, the University Education Commission recommended the institution of a three-year degree course following 12 years of schooling. The three-year degree course was also recommended by the Secondary Education Commission, the Survey Committee appointed at the instance of the Central Advisory Board of Education for the implementation of the recommendations of the University Education Commission and by the Inter-University Board and the Central Advisory Board of Education. On 2nd-3rd September, 1956, a Conference of Education Ministers gave further impetus to the reform by recommending the appointment of a Committee to work out the estimates of expenditure to be incurred on introducing this reform. The Government of India also appointed a committee "to work out the estimates of expenditure connected with the introduction of a three-year degree course in the Universities and affiliated colleges and to consider such other problems as may be ancillary to it. This Committee submitted its Report to the Government on May, 1, 1957."

The Educational Report of 1960 stated that Delhi University had then introduced the three-year degree course, twenty-one universities had adopted the idea in principle, seven had decided to implement it from a definite academic term and two had agreed to introduce it, but had yet to decide on the year of introduction. The Uttar Pradesh Government has notified New Delhi that it wishes to introduce the three-year course in the State Universities of Agra, Allahabad, Gorakpur and Lucknow with-

out disturbing the existing pattern of secondary education in that State. "The Ministry of Education", it is stated in the Report "in consultation with the University Grants Commission, have agreed to the proposal of the State Government and have requested the State Government to go ahead with the implementation of the Scheme." The University Grants Commission in order to experiment also with another possible method of reorganisation has agreed to allow the Bombay University to introduce a three-year honours course after Intermediate while retaining the present two years' pass course after Intermediate. Almost all the universities, some with minor modifications, have thus recently agreed to adopt the three-year degree course pattern.

Committees appointed by the University Grants Commission to examine the syllabuses prescribed by the Universities in various areas of discipline have recently completed their work. Now the University Grants Commission proposes to convene a meeting of the representatives of various universities to discuss the nature and scope of integrated pass and honours courses under the three-year degree scheme so as to ensure that the syllabuses in various universities are based on a common concept. According to the Education Department of New Delhi, the academic aim of the 3-year degree course scheme is "to make sure that certain uniform basic standards of education at the University level are laid down, achieved and maintained". When most of the other Indian universities have completed their arrangements to follow Delhi's example, they will certainly benefit.

Rhona Ghate pointed out that while it is arguable that the Indian universities have stagnated and failed to meet the challenge of new conditions, they are growing fast. Much of the trouble, she considers, is in the nature of growing pains inevitable at a time of rapid expansion and social change. The sheer increase in numbers of candidates for admission has been enormous. In six years from its foundation a Bombay college grew to an enrolment of over 3,000. This sudden inflation is, in a sense, a healthy sign because it reflects the increasing numbers wanting university education and able to pay for it. It is also a healthy sign that students are coming from a wider social range than ever before. Some of shopkeepers, middle class villagers, even con-

siderable numbers from the lowest castes mix in the colleges on equal terms with the more privileged. Fortunately, generous Government scholarships are now available for the backward classes and lowest castes. But for these students the difficulties are great, for their parents are often illiterate and take little interest in their education.

Need of Libraries

Indian students lack good libraries where they can sit down and read. In most colleges and universities the library facilities are poor. The annual grants for the purchase of books are insufficient and the hours of opening are not long enough. The calibre of the library staffs is very poor. Placing and cataloguing of books on shelves is often bad because most library staffs have no training. The person in charge of the library should be a man of prestige, preferably a teacher. "The tragedy remains", wrote George Bennett, "that too often the library is not treated, either by college and university authorities or by students, with the respect due to the central and most important unit in the place".

Good libraries cost money. Our Universities are increasing almost every year in number but they are financially starved. Professors, lecturers, tutors and staffs are underpaid, library staffs are poorly paid. Because of the enormous influx of students, library workers, teachers, examiners and other staff are seriously overworked. Libraries and laboratories are insufficient and ill-equipped and offer little scope for individual research. Compared with Western universities, up-to-date books and journals are sadly lacking and teachers cannot keep pace with the advance of knowledge. Research can only be done in special institutions where alone the specialised books are to be found. Yet the foundations for research work must be laid in the ordinary university. "A University", wrote Newman, "is not a birth-place of poets or immortal authors, of founders of schools, leaders of colonies or conquerors of nations."¹ The purpose of a university will be limited if it seeks only to train professional men, though this is a part of its function. "A University education", Newman pointed out, "gives a man a clear conscious view

¹ Quoted from a *Preface* written by Professor Zangwill of Cambridge University. (*The Idea of the University*—by Karl Jaspers, London, p. 9).

of his own opinions and judgments, a truth in developing them, and eloquence in expressing them and a force in urging them." "Liberal education," he concluded, "makes not the Christian, not the Catholic, but the gentleman." It gives him, too, a certain *savoir-faire*, enabling him to find common ground with his fellows in every class and to conduct his social life with skill and grace.

Students and their Welfare

Social life in Indian universities is far from satisfactory. The most precious part of a university is its students. Buildings, books, furniture, equipment are necessary, but these are all means. The main purpose is to equip the student to take his legitimate place in a democratic society. Educated citizens, wrote Edmund Burke, are greater defences to a democratic society than a standing army. The Radhakrishnan Commission of 1949 reminded the Indian Universities that the emancipation of young minds, the awakening of the consciousness of personal dignity and the consecration of fresh recruits to the cause of human progress and service—is the greatest task of the university. There was, it held, no more solemn duty on earth than the training and development of the human soul.

Education in a university should be a source of interest and enjoyment for the student and enable him to develop good intellectual habits and social behaviour. A true university must have three things—academic teaching, scientific and scholarly research, and creative cultural life. These three are closely related to one another; none will develop and prosper if separated from the other. While the standards of academic teaching in Indian universities are low and scientific research facilities are inadequate, scope for creative and cultural life is practically non-existent. Social and welfare facilities for the students are almost totally lacking.

The health condition of university students is indeed poor. Educational growth and mental vigour is conditioned by the student's state of physical health.

It has been stated in the fourth chapter that millions of Indians suffer from malaria, endemic diseases, infectious diseases like cholera, smallpox and plague every year. Students come to college and universities from a cross-section of the

population and diseased students are permitted to mix in close contact with their fellows in college life. In our colleges the necessary steps should be taken to promote health and check the spread of contagious diseases. The medical check-up exists largely on paper only and, in fact, medical examination in Indian colleges and universities is non-existent.

The Government of India must give top priority to providing facilities for a thorough and free medical examination at the time of the student's entering college and regularly afterwards. Each University must have a staff of doctors and nurses to conduct a student health service. Rural colleges and universities could use the facilities of the District Health Centres. Rajkumari Amrit Kaur, former Minister of Health, declared that a full-time doctor for every Indian University was indispensable. The Radhakrishnan Commission pointed out that a statement of the medical history of the student should be required previous to the physical examination and clearance by the physical examination should be a requirement for matriculation. There should be special arrangements for the treatment of students with infectious diseases. All students should be vaccinated against smallpox and inoculated against cholera, typhoid and plague.

Vaccinations and inoculations must be compulsory because in many Indian families prejudice and superstition against vaccinations still exist. All staff members should also be examined and measures should be provided for the treatment of emotional instability.

In many universities the canteens and tea-rooms are dingy and the water-supply for students and staffs has not been purified. There should be regular inspection and sanitary regulations should be enforced on the campus and in the hostels, and building—which are breeding places of mosquitoes and other disease-carrying insects. Approximately, 80 per cent of the students suffer from malnutrition in some form or another. The Nutrition Advisory Committee organised by the Indian Research Fund Association should extend its work to the universities. The Health Survey and Development Committee in its Report said: "Malnutrition produces states of ill-health and lowered physical efficiency, short of actual disease, which are perhaps more important because more widespread than disease itself. Numerous investigations among school children in India have

shown that a large percentage of children are in a poor state of nutrition, with consequent impairment of physical and mental growth. Again, in the adult population the ill-effects of malnutrition are widely evident in the shape of a low level of general health and reduced capacity for work.... The positive aspects of the campaign for improved nutrition must be strongly emphasized. Freedom from disease is one thing; abundant health is another. The goal to be aimed at is the creation of a healthy and vigorous population."¹

Trained dieticians should be appointed for the dining halls of the universities for the correction of dietary difficulties. The principal dietary deficiencies of Indian students are proteins, mineral salts and vitamins. Mental and physical growth of the students is impossible when they suffer from under-nourishment and malnutrition. The Radhakrishnan Commission declared: "We visited kitchens which were insanitary and unfit for the preparation of wholesome food. Likewise there is a lack of convenient lavatories in some places where the food-handlers can keep themselves clean". The lodgings, dining rooms and kitchens should all be regularly inspected. Quite a large percentage of Indian students suffer from poverty in an extreme form. The Provincial and Central Governments should seriously consider supplying good meals at reasonable costs for poor students. The Government of Mysore has set an example by establishing free canteens at the University. Other universities can follow this example and, if necessary, charge a reasonable sum for food in the student canteens.

There are practically no facilities for recreation and physical education in some universities. Hardly any attention has been paid in the Indian universities to fine arts, drama, music, games and sports. The Report of the Co-ordinating Committee of Allahabad, Lucknow and Agra Universities stated that "arrangements for physical training are inadequate, arrangements as exist are not efficiently worked and no attention appears to have been paid to the question of nutrition and the provision of a balanced diet." The Committee suggested that a Physical Culture Institute should be set up at once of the university centres, and stressed the need for better financial provision for

¹ *Report of the Health Survey and Development Committee*, Vol. II, p. 69.

organising physical training. The Radhakrishnan Commission suggested that degree courses in Physical Education should be set up in certain universities and each university should appoint a properly qualified Director of Physical Education who should have the same status and pay as other heads of departments. The Committee further stated that the Director of Physical Education should hold a post-graduate degree.¹ There is no

Directors of Physical Education

1	2	3	4
Course in Physical Education	Gymnastics, Boxing and Wrestling Indian Exercises	Inter-University and Team Courses	Intra-Mural Games

doubt that there should be provision for adequate gymnasia, playgrounds and physical amenities for university students.

In a slowly developing country like India, freed only a decade ago after about two centuries of foreign domination, the value of Cadet Corps is immense. The Cadet Corps in the United Kingdom and the United States has been very successful in accomplishing the objects and aims postulated for it.² Youths trained in the Cadet Corps of the colleges and universities of the United Kingdom were of immense help in the war effort and in the defence of the nation. India is trying to build a free nation. The country has so often been invaded before because it was unprepared for self-defence. Only recently the Chinese Communists invaded the northern borders of India meeting almost no opposition of any sort. India has never been an aggressor but for the defence of her freedom she needs disciplined and well-trained citizens. Apart from any war emergency, training in the Cadet Corps would bring a sense of responsibility

¹ The Radhakrishnan Commission suggested the organisation of a Department of Physical Education—

² The aims of the National Cadet Corps, as set out by the Corps Directorate, are:—

(a) The development of leadership, character, comradeship and the ideal of service.

(b) The stimulation of interest in the defence of the country to the widest possible extent.

and arouse a co-operative spirit among educated youth. The frustrated undisciplined youths of India have in the past been a source of discontent and disorder. Military training in the universities and colleges might be of great help in inculcating a spirit of discipline and comradeship in Indian youth. The introduction of national service for university and college students as a measure of educational reform and as a means of improving the quality of manpower which India needs for her social and economic development is strongly urged by many.

National service, it is argued, will rouse the students from their idleness and solve, to some extent, the problem of discipline among them.

Political cliques and anarchial groups exploit Indian students to such an extent that riots and strikes involving bloodshed and lawlessness are often seen in the country.

FOREIGN OBSERVER'S COMMENT

The Times¹ of London has written of the repeated troubles in the universities and colleges in Uttar Pradesh, and of one of them, Allahabad, which already was closed indefinitely. Student mobs compelled shops to close, damaged buses and attacked public buildings, fought against the police and replied to their teargas with brickbats. They threatened university officers and blockaded the house of a vice-chancellor.

The Times goes on to say that in Allahabad, the seat of the trouble, senior students went to shameful lengths in their initiation of freshmen. The university authorities imposed heavy penalties, though not to the point of expulsion; the students, under their union, declared a strike and became violent; the vice-chancellor closed the university, and the strike spread throughout the eastern part of the State, students in other institutions agitating in sympathy.

The pattern is well-known. The most trivial incident can put the match to the flame. Often it is connected with examinations, the students loudly complaining that questions are too difficult, so also are admissions. The rejected work up a ready support among those already admitted; when as soon happens the

¹ *The Times*—London, Nov.-12, 1963.

student union steps in, the police have to be summoned to quell the disorders with lathis and teargas. The unions are so largely responsible that it is often urged that they all should be disbanded and declared illegal.

Usually each outbreak of lawlessness brings forth expressions of alarm and both the public and the newspapers come forward with suggestions to restore law and order. The Uttar Pradesh disturbances were largely ignored. It was only three years since the last trouble there when Allahabad University was closed for months. It seemed there was nothing more to be said.

One of the primary causes of all the troubles appears to be the gross overcrowding of Indian universities. Some of those in U. P. affected by the disorders mentioned above had 2,000 students at the time of independence and now had 8,000 while there staff equipment and facilities had been added to only slightly. The demand for admission grows and the universities are unable to refuse because State politicians regard the awarding of university places as under their patronage. This results in the students having two or three lectures a day at the most, their classes being huge, and libraries, gymnasia, and sports fields, if any, remaining insufficient for the numbers wishing to use them.

The high priority given to the degree, plus the overcrowding, lower the standard of the teaching. Lecturing too frequently takes the form of reading, at dictation speed, from a text book, or the giving out of set answers to set questions—and frequently when students sitting for the examination find the answers they learned by rote do not tally with the questions of the paper they walk out en masse, declaring that the paper is “too stiff”.

It is easy to lose patience with the Indian university students, but for the majority their condition is tragic. The greater number after buying their books have hardly enough money to subsist upon. Many university students now come from poorer classes than previously totally debarred from educating their sons (usually only the middle-classes send their daughters for higher education); surveys have revealed that many are undernourished. With the passing of English the students are forced to struggle not only with their subjects but also with an unfamiliar language—and in those States where a change has been made to the regional language, it is the teachers who have to

struggle.

This degeneration in India's universities presents a gloomy outlook for the country's development, both economic and social. "Where", asks "The Times", "from among the ill-educated, soured and resentful graduates of universities like these is to be found a new generation of administrators?" "What will be the political attitude of men who have been taught by politicians to believe that all their troubles are the fault of others, semi-literates who find that society has no use for their credentials and who must spend years in search of work of despairingly make do without?" "Education" has been presented in India as a cure for all ills while the kind of education and its aims have received little attention.

Describing the Sense of Insecurity of Indian Students "The Times" of London in another issue wrote that "students go up to university after obtaining their school-leaving certificates, usually at 15 or 16, which makes them a good deal less mature than those in Britain. Most of those now up at university have no memories of British rule, and they are the first such generation." To try to find out something of their attitudes and the future this might foreshadow for India—"The Times" correspondent talked to professors in three universities teaching undergraduates and two others that concentrated on post-graduate students, the latter therefore with an age-group of the British university level.

It seemed to the correspondent that though free from direct memories Indian students are not free from the influence of the past. "They feel nondescript after their fathers' experiences in the independence struggle", said one professor, and in discussing student discipline and the readiness to strike as a way of protest often even over trifling slights to individuals, another suggested: "The trouble is there has been no revolution in India since the British left; we have not begun anew in any way at all; after independence everything went on just as before. So students have no guide to behaviour; strikes and mass demonstrations were honoured gestures of protest in the old days; now they have become accepted and the students know no other way of expressing their feelings." Strikes were not frequent before the War in a university; nevertheless the sense of uncertainty came out in recurring phrases; "They have no faith in their future";

"There is a general sense of frustration"; "They have a sense of insecurity".

Besides the Indian problems of religious, social and cultural adjustment—something much more profound than five-year plans and to be measured by half a century or so—there is one simple reason for this uncertainty—jobs. The best students would always be found in the faculties of medicine and engineering where discipline was better, students worked harder, they matured quicker, their relations with teachers were closer; and the reason was that they were the only students who were almost certain of getting jobs when they went down. Even science students, which came next in popular choice, found difficulty in getting employment and usually ended up dealing in something other than their subject of study, or even accepting some humble clerical job.

Even with agricultural students this was true too, but that was because they shrank from life in the countryside and if they could not be bureaucrats of agriculture chose to be clerks in any town rather than leaders in the villages. The art students were the worst of all, when males, usually those rejected by other faculties, otherwise more than half were women. The Planning Commission in Delhi was an attraction for Economics but for the man, unemployment was the most likely prospect after they had finished their University course.

A tiny portion of Indian students take foreign languages and literatures, and foreign countries generally were low in the scale of their interests. When the question of students going abroad, comes the United States was by now overtaking Britain for choice. Russia was well up in the scientific world and Germany had some attraction. France had none at all, the rest were nowhere.

Many Indian professors expressed the sense of frustration at the lack of idealism and students' little interest in politics. Seventy per cent of those with no political interest whatsoever and 10 per cent the highest of those politically active, usually in the extremist parties. On the left this means the Communists, on the right it would be the Jan Sangh in the north, the D.M.K. in Madras, and other parties that tended to represent lower-middle-class interests and cultivated youth movements. Congress has no following as such. Its rule is accepted in a grudging way,

though corruption is deplored ; for the moment, for lack of an alternative, Congress is still the national party.

Concerning the modern educated women of India the journalist stated that the outlook of the younger generation is transforming towards the freedom in marriage and the obliteration of caste. This will take time, of course, for all the freedom in the mixing of the sexes in university life ; it is still not possible to see an unmarried woman out in public with a man, except in the most sophisticated world of Bombay or Calcutta, and most marriages are still arranged by the parents. "My daughter's a Communist," said one professor to "The Times" man. "She leads her own life entirely, but she came to me not long ago and said it was about time she got married, could I fix something up?"

The misgivings about the state of affairs within universities is explained by the rapid expansion from the 19 universities of British India to the 62 of today, sometimes the admitted failure of close contact between teachers and students. What makes this worse is the student agitator, associated with a political party, and remaining a student for maybe up to 10 years or more, switching from one course to another. Such students have their contacts outside the university and it has often been said that strikes and similar acts of indiscipline were started or at least supported by outside politicians vying for student's support.

It is seldom that the Indian academic takes part in public life or is held in any high esteem. The co-ordination that there should be—and is in Britain—between universities and all forms of government or of public debate hardly exists in India. It must, however, be added that no visitor could form a higher impression of India than by entering into conversation with these intellectually alert, sincere and learned men, many of them only too ready to attribute the cause of much of the weakness in the university to their own failings.

The question has here been asked what can we deduce from this overall picture of the Indian university student? To the straight question "do you expect this generation to do better when it exercises power in India than the generation now in power?" there was generally a pause for thought before the answer "Yes" was given with some reservation. "Realists, practical, open minded, tolerant, capable of hard work, not extremists," were the comments. The example set by men now in public

life was largely blamed for the cynicism and the political apathy. Corruption is the common charge, especially in connection with state politics and in all its blatant and subtle manifestations it forms a topic of conversation that frequently engages the visitor.

Plainly the student seeks to identify himself with the modern world and whenever attainable, international standards; "But only three out of a thousand have any hope of really attaining those standards," said one, "and of those three, two will be women." For jobs it is generally acknowledged that Government service has universal priority. The Indian Administrative Service is the plum and any clerical work in Government, however humble, has more status than manual work. Indian bureaucracy, a subject of study in itself, never lacks candidates. Rating almost as high as the I.A.S. in the regard of the undergraduate, however, is employment in the big foreign firms, though the prospect of such employment, and maybe the kind of sophisticated society that makes such employment seem desirable is practically non-existent outside Bombay, Calcutta. Delhi and Madras.

The University Education Commission suggested that Indian universities should be divorced from party politics. "The Indian situation," wrote the Commission, "calls for firm but judicious action on the part of the college authorities. Further deterioration in morals should be prevented." After the exciting student movements and strikes in the period of struggle for national independence, it is now being said by many Indian leaders that students should stay out of politics. But opportunities must be given in university unions for serious discussions of national and international political issues. University students of today are expected to become the leaders and architects of tomorrow and they should not be barred from political discussions and debates. "As of old, Indian students," wrote George Bennett, "remain intensely politically conscious but now, at any rate, in my experience, much of their activity, through the disapproval of their elders, seems unfortunately and, I believe, unhealthily driven underground. It might be better if there were flourishing political clubs in colleges to bring the students into touch with the political parties."

The causes of indiscipline among Indian students are varied, but much of their political activities arises from disillusion and

frustration.¹ University unions on the lines of London or Oxford or Cambridge are necessary in India. Membership of the union should be made compulsory so that in the debating societies, dramatic performances, refreshment rooms, swimming pools, students can meet together to exchange ideas and make social contacts. Because they have nothing to do after college and university lectures, Indian students are easily exploited by anarchical elements. Students must learn the importance of discipline in a friendly atmosphere and should be allowed to organise the constitution of their own union. It has been seen in advanced countries that student government can function well. The Radhakrishnan Committee pointed out that the true sanction of discipline lies in the development of the social conscience of the students as a whole rather than in punitive measures or precautionary vigilance. As in society so in the college laws are obeyed because they are approved by reason rather than because they are imposed by force. Discipline comes if the good sense of the students is evoked.

Limiting numbers, raising the entrance age, establishing a national language as the medium of instruction, improving health and discipline among the students—these are urgent tasks confronting our universities. Another matter for reform in the universities is the standards of teaching and the status of the university teacher. Many have expressed the opinion that the standards of our university teaching and examinations are low and it is a fact that an average Indian graduate of an Indian university is not superior to a G. C. E. holders of a British university. The average percentage of failures of university students, the annual wastage at the school-certificate examination, the large percentage of third divisioners in B.A. and B.Sc.

¹ The World Brotherhood All-India Committee has summarized the causes of indiscipline for the following reasons :

(1) too much leisure time ; (2) political participation ; (3) sex problems ; (4) poor student-teacher relations ; (5) lack of facilities for representation of complaints ; (6) inadequately handled student misbehaviour ; (7) anxiety over examination ; (8) student frustration (anxieties, separations from friends or family, unsatisfied ambitions, financial difficulties) ; (9) emotional immaturity.

Indiscipline usually takes the form of man demonstrations, (*International Review of Education*, Vol. IX, 1963-64, No. 4., p. 472).

underline the weakness in our educational machinery.¹

George Bennett points out that the Indian universities still continue in the old ways condemned by many Commissions nearly fifty years ago. They are not the beacon-lights of the new world but are waiting rather to see how they might fit into the world transformed. "If there are sometimes moments of pessimism in surveying the Indian University scene", he says, "it would not be right to leave India there. It is more in visiting villages and towns that the transformation of the last ten years appears striking." But in the period of transformation the necessity for an expansion in university education will be denied by no one. India today needs all the skilled and professional people she can get.² She needs doctors, engineers, technologists and teachers. But the specialists she needs should be truly educated men, able to understand something of history and literature, able to lead their private lives with dignity, intelligence and grace, able to achieve national and informed political decisions. Indian universities must see to it that we create them. That, after all, is the Idea of the University.

In addition to its traditional functions and obligations, to teach and to advance knowledge through research, the role of higher education in the social, cultural and economic development of India must be :

1. To maintain adherence and loyalty to world academic standards ;

Third Division in B.A. and B.Sc.

¹ (Agra—67.9 ; Bombay—78.8 ; Calcutta—78 ; Andhra—80 ; Madras—80 ; Punjab—70, according to Radhakrishnan Report). While the percentage of success at the Intermediate examination was low, the average pass percentage in B.Sc. and B.A. was also unsatisfactory, Radhakrishnan Commission pointed out that the average failure in the Lucknow and Allahabad Universities was 50%. At Gauhati the annual percentage of failures at the B.A. and B.Sc. stage was 62 per cent ; at Banaras, 29 per cent ; at Patna, 48 per cent ; at Agra 35 per cent and at Bombay 28 per cent. "This annual wastage of 28-62 per cent at the first degree stage" said the Report, "is as bad, if not worse than, at the intermediate examination." Indeed, the time has come when we should ask "Why is this percentage of failure every year so large?"

² *The Idea of the University*—Karl Jaspers. Peter Owen, London, pp. 13-14 and 54.

2. To ensure the unification of India ;
3. To encourage elucidation of and appreciation for Indian culture and heritage and to dispel misconceptions of India, through research and teaching of Indian studies ;
4. To develop completely the human resources for meeting manpower needs ;
5. To train the 'whole man' for nation building ;
6. To evolve over the years a truly Indian pattern of higher learning dedicated to India and its people yet promoting a bond of kinship to the larger human society.¹

In short, three things are required at our universities: professional training, education of the whole man, and research. For the university is simultaneously a professional school, a cultural centre and a research institute. In the idea of the university these three are indissolubly united. One cannot be cut off from the others without destroying the intellectual substance of the university, and without at the same time crippling itself. All three are factors of a living whole. By separating them, the spirit of the university perishes.

¹ *The Development of Higher Education in Africa*—UNESCO, p. 19.

CHAPTER VI

LESSONS FROM GREAT BRITAIN

THE ENGLISH educate their children in rather a specialised manner. The writer has had teaching experience in London schools for eight years and he has seen that a bright child of fourteen in England may often be some three years ahead of a contemporary in India. The English education is singularly specialised but can provide a useful example of a national system from which India can learn.

One reason for this is that, Britain's relation with India has extended over two centuries. The impact of English education is apparent. Today, Britain's cultural, trading and political relations with India are still very strong and the Indians still look to her with most friendly regard.

Two very important educational reports were published in England in 1963, which were considered great state papers. The summary of these two reports are given below, and should be considered very carefully by Indian educationalists who face somewhat similar problems.

Universities are growing in numbers every year in India. The report of the Robbins Committee on Higher Education is particularly important, it shows how universities may best be developed. British higher education is exceptional in its methods of selecting university students, in its low rate of wastage, its very favourable ratio of staff to students, its high proportion of residence and the scale of financial support for students of university.

-

(1) THE NEWSOM REPORT

The Newsom Committee recommend, in their report published in England on October 17, 1963, that the school leaving age should be raised to 16 and that it should be announced immediately that the new leaving date will come into operation in 1969-70.

Measures to improve the education of children who live in

slums are among the 16 principal recommendations put forward by the committee and these measures include the setting up of an interdepartmental working party to investigate social and educational issues in slum areas.

In the introduction to the 300-page report the Central Advisory Council for Education (England) call for more of the money which the nation devotes to education to be spent on these pupils. They constitute about half of all children in secondary schools and the title of the report "Half Our Future" is chosen partly for that reason. "They will eventually become half the citizens of this country, half the workers, half the mothers and fathers, and half the consumers", the committee say.

The report recommends that the Senior School day should be lengthened, that all 16-year-old leavers should receive an internal leaving certificate from their schools and that schools should not use public examinations for pupils for whom they are not appropriate. Positive guidance to adolescent boys and girls on sexual behaviour is, the report says, essential. Recommendations addressed to the Ministry include starting up a programme of research in teaching techniques to help pupils with environmental and linguistic handicaps. The programme should include an experimental school run in cooperation with a teachers' training college.

The Central Advisory Council was asked in March, 1961, by Lord Eccles to advise him on the education of 13 to 16-year-old children of average and less than average ability.

According to their terms of reference the Newsom Committee considered the education of 13 to 16-year-old pupils of average and less than average ability who were or would be following courses either at schools or further education establishments. Extra-curricular activities were included.

Principal Recommendations

1. (a) An immediate announcement should be made that the school-leaving age will be raised to 16 for all pupils entering the secondary schools from 1965 onwards. The year in which the new leaving age first becomes operative will then be 1969-70, when the

- numbers of 15-year-olds involved are relatively low.
- (b) Full-time education to the age of 16 should be school-based. This is not to preclude some part of the school course in the final year being followed off the school premises, e.g., in a college of further education.
 2. A programme of research in teaching techniques designed, particularly, to help pupils whose abilities are artificially depressed by environmental and linguistic handicaps should be instituted by the Ministry. The programme should include an experimental school run in cooperation with a teachers' training college whose staff is specially strengthened for the purpose.
 3. An interdepartmental working party should be set up to deal with the general social problems, including education, in slum areas. Particular attention in education should be paid to the need for stability of staffing; the size of schools; and to the design and function of school buildings in these areas as part of the general community provision.
 4. (a) All schools should provide a choice of programme, including a range of courses broadly related to occupational interests, for pupils in the fourth and fifth years of a five-year course, and should be adequately equipped to do so.
 - (b) Equally, attention should be paid both to the imaginative experience through the arts, and to the personal and social development of the pupils.
 - (c) Excessively fine grading of ability groups should be avoided; more than three broad groupings is probably unnecessary and groupings in the final years at school should be largely based on subject or course choices.
 - (d) Every effort should be made to emphasize the status of the older pupils, both through school organisation and in the design of school buildings.
 5. (a) The hours spent in educational activities, including the "extracurricular," should be extended for pupils aged fourteen to sixteen. Some experiments by local education authorities and schools in different types of

extension of the school day should be encouraged by the Ministry.

- (b) The implications for the staffing establishment of schools and the conditions of service, including the financial, should be examined ; as also should be the demands which would be made by an extended use of school buildings.
- 6. The Ministry and the local education authorities should undertake a joint survey to establish accurately the scale on which provision for residential courses of all types is available, how far it is meeting demand, and the estimated cost of providing some residential experience for all pupils in the course of their school life, especially for a substantial number of pupils during their final two years at school.
- 7. The local education authorities should consider a revision of the Agreed Syllabuses for religious instruction to determine whether adequate provision is made for the needs of the older boys and girls, and whether they leave sufficient scope for teachers to develop methods which start with the actual problems which the pupils have to face.
- 8. Positive guidance to adolescent boys and girls on sexual behaviour is essential. This should include the biological, moral, social and personal aspects. Advice to parents on the physical and emotional problems of adolescents should be easily available. Schools of whatever type should contrive to provide opportunities for boys and girls to mix socially in a helpful and educative environment.
- 9. (a) The school programme in the final year ought to be deliberately outgoing—an initiation into the adult world of work and leisure.
(b) All links with, and knowledge about, the youth employment service, further education, the youth service and adult organisations need strengthening.
- 10. (a) The schools should provide all 16-year-old leavers with some form of internal leaving certificate, combining an internal assessment with a general school

record, irrespective of any external examinations, they may take.

- (b) They should resist external pressures to extend public examinations to pupils for whom they are inappropriate, or even an excessively large part of the programme for any pupils. They have a special responsibility to offer the non-examination pupils educational experience which is worth while.
 - (c) No pupils should be entered for an external examination before the fifth year; schools should look ahead to a situation in which all pupils will be in full-time education to sixteen.
11. The Ministry in conjunction with local education authorities should arrange an experimental building programme, to try out different forms of school organisation and teaching methods in buildings designed for the purpose; at least one such experiment might be run in conjunction with a teachers' training college.
 12. Meanwhile, action should be continued and, indeed, accelerated to remedy the existing functional deficiencies of schools, especially in relation to provision for practical subjects, science and libraries, by:
 - (a) relieving otherwise good modern buildings of the effects of overcrowding;
 - (b) replacing buildings which are totally inadequate to modern educational needs.
 13. (a) Provision for all practical subjects should be re-appraised, and extended workshop and technical facilities provided, whether wholly within the schools themselves or jointly with further education institutions.
 - (b) All secondary schools should be adequately provided with modern audio-visual aids, with facilities for using them; in particular the planning of secondary schools should take account of the use of television as a permanent teaching aid of great potential value, and of equipment for foreign language teaching by modern methods.
 14. The policies on which the teachers' training programme

- is based should be reconsidered to ensure that a substantial proportion of teachers in the secondary schools receive a training of the "concurrent" type.
15. The training colleges should be staffed and equipped to enable students to teach pupils of secondary age in one main subject and in at least one, and preferably two, other subjects, with the possibility of a choice of subjects which cuts across the conventional divisions of "practical" and "academic" subjects.
16. (a) The training of teachers should include preparations now for the new demands which will be made on them by the raising of the school-leaving age.
- (b) A training requirement for graduates should be introduced at the earliest practicable moment, and the date announced in advance.
- (c) As an interim measure there should be an emergency programme of in-service courses to help graduates and other teachers who have attained qualified status without training to deal with the problems they encounter in the schools. The content and conditions of the training course for graduates should be reviewed in order to make voluntary training more attractive.

PART ONE

FINDINGS

EDUCATION FOR ALL

Despite some splendid achievements in the schools, there is much unrealised talent, especially among boys and girls, whose potential is masked by inadequate powers of speech and the limitations of home background. Unsuitable programmes and teaching methods may aggravate their difficulties, and frustration express itself in apathy or rebelliousness. The country cannot afford this wastage, humanly or economically speaking. If it is to be avoided, several things will be necessary. The pupils will need to have a longer period of full-time education than most of them now receive. The schools will need to present that education in terms more acceptable to the pupils and to their parents, by relating school more directly to adult life, and

especially by taking a proper account of vocational interests. Possible lines of development can be found in many good schools now, but experiment is required, both in the content of the school programme and in teaching methods. Finally, the schools will need strong support in their task, not least from parents, and they will need the tools for the job, in the provision of adequate staff and buildings and equipment.

The report (says the Council) deals with the boys and girls who form the majority of pupils in secondary modern schools, those who are in the middle and lower forms of comprehensive schools: and those of comparable ability wherever they are. But the word "average" used in the terms of reference has caused pitfalls:

The standard indicated by "average" is rising all the time, and perhaps never more rapidly than in the last 25 years. As the life of our society becomes more complex, new demands are continually made on all of us; and this is true in relation to our personal lives as it is in relation to the changing economic life of the country as a whole.

This is not often apparent, because we are seldom in a position to compare directly the achievements of pupils of one generation with those of another. In a later part of this report, in which the results are described of a series of tests designed to show the pupils' capacity to read with understanding, there is a clear record of improvement, a test score which even 14 years ago would have been good enough to put boys or girls well into the above-average group. Over the intervening years the general level of performance has risen. One of the reasons why there is a quite proper anxiety over the general standards of literacy today is not that fewer people can read and write, but that more and more people need to do so with greater competence.

The economic argument for investment in these children is that the future pattern of employment in this country will require a much larger pool of talent than is at present available: and that at least a substantial proportion of the "average" and "below average" pupils are sufficiently educable to supply that additional talent. The need is not only for more skilled workers to fill existing jobs, but also for a generally better educated and intelligently adaptable labour force to meet new

demands. This was recognised in the 1962 White Paper on industrial training; and what is true of industry is true also of service trades. Though these developments are still at an early stage the trend is clear and should be setting the vocational pattern to which our educational system is geared.

Our terms of reference imply, and the whole argument of our report assumes, a school-leaving age of 16 for everyone. We have again considered the position with great care, and we have unhesitatingly come to the same conclusion as the Council reached in 1959: "This is a duty which society owes all its young citizens".

Already, more children are voluntarily staying on beyond 15; but the decision should not on that account be deferred and progress left to follow its voluntary course, since it is just those who stand to gain a great deal who are most tempted by the pay-pocket.

The French procedure of naming the date on which the higher leaving age will become operative well in advance strongly commends itself to us. In this country we cannot now afford to wait another 10 years until boys and girls who have not yet entered the primary schools become 15. But, if the decision were taken quickly, a leaving age of 16 could be made operative for all pupils who enter the secondary schools in or after 1965: that is, the first year of full-time compulsory education up to the age of 16 would be 1969-70. The Crowther report urged the claims of the years 1966-69, when the secondary schools will experience a relative easing in the pressure of numbers, as the most apt for introducing the higher leaving age. The chance of using that spell is virtually gone, but in 1970 at least the actual numbers of boys and girls who will reach the age of 15, and who would be the first to be affected by the new provision, are relatively low—655,000 compared with 663,000 in 1969 and 738,000 in 1973.

There is one other point about terms of reference which we must make straightaway: they appear to leave open the possibility that when the school-leaving age is raised, some pupils below the age of 16 may be following full-time courses in colleges of further education. We are ourselves convinced, and have found almost unanimous agreement among those who have contributed evidence, that the schools should be respon-

sible for boys and girls up to this age. This does not rule out the transitional use of the colleges for the full-time education of 15 to 16-year-olds, in the period before all secondary schools have the buildings, staffing and equipment to provide a fifth year for all their pupils. Interim arrangements, however, ought not to involve the creation or enlargement of further education establishments so that the temporary expedient becomes a permanency.

THE PUPILS, THE SCHOOLS, THE PROBLEMS

The collective likeness of these pupils is set out in great detail in the survey in part three of the report, and here it is noted merely that these, the less able of the children, tend also to be smaller, to weigh less, and to be more often away from school. Mostly they are co-operative and behave well; under five per cent, in the fourth year at school, present serious problems of discipline.

Schools vary enormously; there has been a massive building programme, which accentuates the contrast between new secondary school buildings and pre-war or even pre-twentieth century elementary school buildings. Other changes, just as notable, have been happening inside the buildings. The secondary modern school was a new creation with no tradition to support it; the schools are growing up very varied in character. They are, at best, lighter and brighter, with new subjects on the curriculum and new teaching methods, local expeditions and trips abroad. Criticisms and anxieties "are to be read against this background of substantial success".

Why, then, not let well alone? Because very far from all the schools are as happily placed as the one in our generalised and somewhat rosy description. Of the schools in our own sample, only a quarter in 1961 had an adequate library room which they were able to keep for its proper use, and more than another quarter had no library room at all. A third of the schools had no proper science laboratories. Half had no special room for teaching music, and these included many schools in which the single hall had to serve for assembly, gymnasium and dining.

There are, too, great differences in the provision for children of varying abilities. "Most of the distinctive secondary modern courses which have proved so successful have been designed

'for understandable historical reasons' for the abler pupils. It would be idle to pretend that the rest of the pupils are satisfied or satisfactory customers."

Too many at present seem to sit through lessons with information and exhortation washing over them and leaving very little deposit. Too many appear to be bored and apathetic in school, as some will be in their jobs also. Others are openly impatient. These girls and boys must somehow be made much more active partners in their own education. Whatever their natural endowments they all need to attain self-respect and a reason for wanting to work well. Unless they do, no one can honestly justify extending the educational process by another year for them.

EDUCATION IN THE SLUMS

"The girls accept drunkenness as part of the normal pattern. They are amused by it: regard it as the normal way in which to celebrate. Even in good homes the parents will provide cases of beer for a 15-year-old's birthday party. The first form will give detailed accounts in essays of the quite revolting scenes when father comes home drunk.

At home washing is a real difficulty. The girls have what may seem to the outsider a foolish modesty in these matters. I have learnt to see that in some cases they are wise not to undress to wash properly in front of brothers and fathers."—report from a headmistress in a slum area of Yorkshire.

There are other handicaps of environment beside the linguistic ones. Chapter three of the report gives a horrifying set of description, by head teachers, of the physical conditions, population and social habits of the areas in which they work.

Slum neighbourhoods also tend to have more than their share of poor buildings. Forty per cent of modern schools in the sample tested had seriously inadequate buildings; the corresponding figure for the slums was 79 per cent. Staff turnover

was very much higher. Inevitably, very few boys want to extend their school life by even one or two terms.¹

Schools in problem areas generally—neighbourhoods of bad housing with bad social problems—have similar problems to those in slums, though not so acute. And the strictly educational problems of the less able pupils are no different in slum schools and others. But schools in slums do require special consideration: a specially favourable staffing ratio, and even more measures to help in securing a stable staff.

Perhaps this can be secured simply by making it clear that professionally it is an asset to have served successfully in a difficult area, that work there can be intellectually exciting and spiritually rewarding, that these are schools in which able teachers may want to serve and make their career as so many of their gifted predecessors have done.

Educational decisions will have reactions in other social fields and vice versa; there may be a case for an interdepartmental working party to plan the strategy of a grand assault on the slums.

But the adequate education in slum areas will always be expensive, more expensive than average. It looks to us as if it has often been less expensive than average, and therefore pitifully inadequate. It is time for a change.

FINDING APPROACHES

The Hadow Committee, 1926, recommended practical work related to living interests; the Newsom Committee concurs, but points out that unimaginative exercises in woodwork can be as fully repetitive as unimaginative exercises in English. The last years at school need a unifying theme to give them coherence and purpose at a stage when the pupils themselves are growing

¹ STAFF TURNOVER				Men		Women	
				All Schools	Schools in slums	All schools	Schools in slums
1958 staff still there in 1961	...			64	52	50	33
Teachers who came since and have stayed	...			50	42	61	68
Teachers who came and went	...			27	82	44	65

restive ; such as the idea of preparation for adult life.

One way of marking approaching adult status is to allow the pupils themselves some choice in the subject they study.

We suggest that for by far the majority of our pupils, courses will need to have a substantial craft or practical element, with an emphasis on real tasks undertaken with adult equipment: this will have important consequences for teachers and for buildings.

However, this course should not be introduced before the fourth year of a five-year secondary course: when it is introduced, a substantial amount of time should be devoted to it (possibly at a technical college): and the less the child's ability, the more broadly based the course should be.

THE SCHOOLDAY, HOMEWORK AND EXTRA-CURRICULAR ACTIVITIES

A major innovation recommended in the report is the deliberate lengthening of the working day by the provision of homework and of extra-curricular activities incorporated into the total educational programme and planned together with it. This will mean extending the regular school day beyond nine till four limits, taking account of the new needs in the design and equipment of buildings, and in staffing, and introducing some element of compulsion into what are now voluntary activities ; or those pupils who need them most will have least to do with them.

School activities are not merely devices for keeping adolescents off the street, although in some streets it may be very desirable that they should. There are many positive reasons why "extra-curricular" provision is important. For the individual boy and girl it can mean the discovery of new interests.

It is often a chance for the odd-man-out to come into his own, among the staff as well as the pupils, revealing an unsuspected talent ; and for some of our pupils, especially, there may be a gain in confidence from being a member of a much smaller social and working group than is normally possible in class.

THE COMMITTEE ADD A WORD OF WARNING ABOUT COMPULSION

At the same time, if the school day is to be lengthened at all, the schools must face an even more urgent responsibility to see that what goes on both in lessons and after them is genuinely

rewarding ; there is no point in merely extending the period of boredom.

The committee also have a special word of praise for a particular kind of extra-curricular activity ; the residential kind, which includes school journeys, residential courses, and the Duke of Edinburgh's Award. What is needed, they say, is a joint survey by the Ministry of Education and local authorities to establish just what provision is available for this, and what it would cost to extend.

SPIRITUAL AND MORAL DEVELOPMENT

Those teachers who try to foster the spiritual and moral development of their pupils, says the report, are not fulfilling a statutory obligation, or discharging a social responsibility. They are also meeting a felt personal need. The problems are in the divisions of religious opinion among the teachers ; the questioning spirit of adolescence itself and the gulf between the standards of school and those of the home. On sexual morality the committee say :

For our part we are agreed that boys and girls should be offered firm guidance on sexual morality based on chastity before marriage and fidelity within it. We believe, too, that this is predominantly the standpoint of the schools. It is also important that boys and girls should realise that "going off the rails" does not involve for Christians losing the fellowship of the church, and still less, of forfeiting the love of God. There are other, and often graver, sins than those against chastity.

The agreed syllabus for religious instruction is a remarkable resolution of differences, but less satisfactory from a teaching point of view. Children should be given the plain answers of the Christian faith to their personal problems.

The children themselves feel most irritation at "trivial" rules ; but have an equal dislike of disorder. They agreed completely with the heads in feeling that discontent arose from a combination of young and inexperienced teachers, too large classes, and too frequent changes of teacher. The personal touch counted in both teaching and welfare. With the growth of very large schools, there was more need to ensure that the individual pupil was not lost sight of.

One principal need is to recognise the status of older pupils ;

LESSONS FROM GREAT BRITAIN

most schools see value in the prefect system ; some heads feel something less authoritarian was required. One way might be through community service projects. Present buildings make it difficult ; another factor is the wide age range in secondary schools.

Corporal punishment is likely to delay, rather than promote, the growth of self-discipline, and is especially deplored for adolescent girls. Very difficult pupils might be transferred—possibly to a boarding school, or classes for the maladjusted. Positive guidance on sexual morals is essential ; but advice to the parents on dealing with their children's problems may be equally needed. It is important that boys and girls should have the opportunity to meet members of the opposite sex socially.

GOING OUT INTO THE WORLD

Apart from any special innovations in the programme, the more any lessons can be given a realistic and adult reference the better. But they need lively presentation in terms of people and events, if they are not to seem arid abstractions to most boys and girls. Again, taking a close look at the immediate environment can be rewarding, in discovering how the world locally earns its living and enjoys its leisure. But some environments are the reverse of stimulating, except to the sociologist, and the important thing may sometimes be to lift pupils' eyes beyond the local horizon.

EXAMINATIONS AND ASSESSMENTS

Boys and girls who stay at school until they are 16 may reasonably look for some record of achievement when they leave. Some form of leaver's certificate which combined assessment with a record of the pupil's school career would be valued by parents, future employers and colleges of further education and should, we believe, be available to all pupils who complete a full secondary course.

An assessment of the pupil by the school is essentially what we have in mind.

The committee point out that the new Certificate in Secondary Education is not intended for all boys and girls ; for many of the pupils with whom they are concerned, it would be entirely inappropriate. Since, however, examinations are

undoubtedly here to stay, we must seek means to minimize the more adverse effects.

Course work should be included in the final assessment; oral work should be emphasized (and for examination purposes, possibly tape-recorded), and some means should be found to take account of the teacher's opinion of the candidate. Moreover, it is important that in a period when schools are busy devising courses for new examinations, a proper balance is kept with non-examined subjects; and that the non-examinees do not merely trail along a syllabus geared to examination requirements. In any case, external examinations should not be taken before the fifth year.

BUILDING FOR THE FUTURE

In our view, the nature of the new educational solutions that are needed will involve major alterations in current school design.

About four-fifths of the schools in the modern school sample fall short of the currently accepted standards, and these are the standards which we regard as inappropriate to the needs of the pupils with whom we are concerned.

Accordingly, we believe that a boldly experimental approach is needed not only to establish educational needs and the means of reflecting them in a new physical environment, but also as a basis for formulating future policy for school building. Nevertheless we do not think that generations of school children should be condemned to existing conditions until experiments have continued long enough to establish new standards.

Finally, we would emphasize that we are not urging the immediate raising of the cost limits per place for new school building generally. At the same time, we consider that there is urgent need both for a major rebuilding programme to improve the conditions under which many secondary schools now work, and for a series of experimental projects. We believe that the additional capital expenditure involved in both would be fully justified. In a rapidly changing educational situation, it is vital to keep ahead of events.

THE TEACHERS NEEDED

Whatever happens in the schools depends on the men and women who staff them.

This problem of finding teachers for the slums will not be solved merely by increasing the general supply of teachers.

We can at present see no alternative to some solution involving the recruitment of a special body of teachers who are ready to go where they are needed in return for financial compensation, whether under schemes centrally operated through the Ministry or by groups of local education authorities working on a consortium basis.

While we accept the form-teacher principle, we urge more widespread re-thinking of the basis on which form teachers are assigned.

The committee feel that teachers' training which includes a prolonged study of child development combined with a study of a wide range of subjects is far better for teachers of less able pupils than a degree course followed by a short period of professional training; and they view with extreme concern the prospect of an influx of untrained graduates. They urge that a training requirement for graduates should be instituted at the earliest practicable moment; meanwhile the conditions of training, including the financial inducements, should be reviewed. They also give warning of the increasing need schools will have for non-teaching ancillary staff, "to conserve the mental and physical energies of the teachers for the exacting job they have to do".

PART TWO

HALF OUR FUTURE

THE TEACHING SITUATION

In Part Two of the report the committee discuss the curriculum and organisation of schools and set out what they consider to be, in the words of the foreword to the section, "the most effective way to set about the education of the boys and girls with whom we are concerned." Here, under the title of "The Teaching Situation", the report makes suggestions for an "education that makes sense". The section emphasizes the

importance of the vocational and practical aspects of the curriculum and the need for schools to help children overcome their inarticulateness, particularly through the teaching of English. Changes in the time-table and in the teachers' role are also advocated.

After devoting most of the 70 pages of the section to recommendations for changing the curriculum the final chapter, which is addressed particularly to heads, discusses how best to organise a school and deploy the staff. The report outlines tactics to adopt to persuade as many children as possible to stay on to 16 and comes out against streaming by ability. A form of organisation which takes more account of pupils' wishes in the last two years of the five-year course than in the lower forms is, the report says, on balance more advantageous. "An organisation which relies in the senior years on streaming by attainments—by definition the weak point of our boys and girls—is not likely to encourage them voluntarily to complete a five-year course." If a school does stream, the committee's advice is strongly in favour of delaying pupils' signing on until the fourth year.

VARIETY IN CHOICE

Throughout the section the report emphasizes the need for courses to be flexible. The committee suggest that the system of options and sets which has long existed in grammar schools can give all pupils variety and choice. The unity of such a course is not easy to secure but it is easier to arrange for individual preferences and for unusual combinations of subjects.

The report says that all pupils up to the age of 16 in secondary schools should have to do some practical work, some mathematics and science and some work in the humanities. The share of each of these sectors in the time-table should be sizable. Up to this point the committee are rigorists, but beyond they are permissive and refuse to draw up a "fixed table of information, subject by subject, which all pupils should master". They strongly commend introducing rural studies, photography and film-making, which are found in the time-table of only a minority of schools.

Changes in the length of periods are advocated. A succession of 35 to 40-minute periods with an occasional double period for

practical subjects has up to now made up the school day. The committee think that boys and girls of 14 and over can concentrate for longer than an hour and a half on some kinds of work. This is often so, they say, in practical subjects. Short and frequent lessons, however, are needed for learning a foreign language.

Changes in the size of classes are also suggested. A small teaching group will sometimes be needed in English more than in practical subjects. Since staffing prospects for many years seem to make it impossible to teach even the majority of lessons in groups of 15 or 20 priorities for small classes should be considered more carefully.

CROSSING THE BAR

The committee suggest cross-reference between the humanities and mathematics and science. Hire purchase, for example, should be considered in both mathematics and the humanities. The report goes on to say that the two teachers should be aware of each other's plans, and in discussing several subjects the section recommends that teachers should co-ordinate their lessons.

Some topics which belong to many disciplines are important, and the report suggests health education is high on the list, but room would not be found for them unless a member of the staff was responsible for seeing it was.

The second section opens with the question "What should secondary imply?" The work in a secondary school becomes secondary in character, they say, whenever it is concerned with three factors: first, self-conscious thought and judgment, second, the relation of school and school work to the outside world, and third, the relation of school work to the future of the pupils in adult life. The degree to which most of the boys and girls with whom the committee were concerned can exercise self-conscious judgment is "strictly limited in precisely those areas of knowledge in which the most spectacular successes of the modern world have been made".

The report says that the transition from primary to secondary in most aspects of school work should be completed early in the period of three years from 13 to 16. For real secondary education the last of the three years is decisive, and the report says that only if pupils stay at school until they are 16 will they

be able "to bring their education and the adult world into a common focus".

Outlining a formula for "an education that makes sense", the report lays great emphasis on the practical side of the education of average and below-average children. Success could most surely be achieved and best recognised by contemporaries and parents in practical subjects; and practical subjects, which the committee define roughly as time spent away from the classroom, are especially valuable to the less able because bridging the gap between school and non-school is often easier in these subjects.

The committee give a broad meaning to the word vocational and emphasize that the school should help its pupils to face their working life. Pupils can be prepared in many ways, and in the chapter on science and mathematics the report suggests ways of relating mathematics to future jobs and the work of the colleges of further education. Examples of studies which are undisguisedly vocational are running savings schemes, designing and executing controlled experiments in rural studies, costing and catering.

SOCIAL COMPETENCE

The report emphasises the importance of educating the average and under-average to be socially competent. In order to make pupils more articulate speech should be emphasised in English teaching. Inability to speak fluently, the report comments, is a worse handicap than inability to read and write. Several times in the section the committee repeat their disquiet about the Certificate of Secondary Education; on English teaching this disquiet is very marked.

The committee think it wholly desirable that the situation in which most of the average and below-average children have no opportunities to learn a foreign language should change, as it is beginning to. The committee say that a third of the pupils in perhaps half of the modern schools in the whole country learn a foreign language. French is the usual language to start with but Spanish and Italian (which are easier in the early stages) have been taught successfully to the less-able pupils in some schools.

PART THREE

WHAT THE SURVEY SHOWS

Six symbolic 14-year-olds standing for 6,000 girls and boys whose scholastic performance was tested introduce the third section of the Newsom Report.

"John Brown"—representative of those boys in the "top quarter" of the secondary modern school—is probably above average height. His father is likely to be skilled manual worker. (One in five of his kind have "white collar" fathers). There are few Browns on the free dinner list. Browns congregate in the Home Counties and London and John may live in an area with a fair proportion of owner-occupied homes whose children go to secondary modern school. At 14 John may have done better in school work than a fifth of grammar school boys and if he gets the chance of staying on for a fifth year and sitting for an external examination, he will probably take it.

He will tend to have an out-of-school job—a paper round, perhaps—and belong to a youth club. "Mary Brown", John's counterpart, is a little less likely than he is to sit for an external examination in her fourth year at the secondary modern (but if she goes to a school with a fifth year she will probably stay for it) and her home duties will as like as not keep her from taking on an out-of-school job. She is not as likely as John Brown to play for a school team.

"John and Mary Jones" form the backbone of secondary modern classes. They represent the two middle quarters of ability. Below them in academic attainment come the Robinsons. Describing a real boy in this class the report speaks of his poor background. His parents left him and his brother at home in the evening. And they quarrelled regularly; when the boy himself was taken to task by neighbours who thought him a bad influence on their children, they would complain of his "filthy" language. His teachers thought him cheerful enough but suspected him to be a trouble-maker, as his brother before. He was extremely small and slight and he left school with a reading age of eight years and four months. But even the report moves on to discussing the statistical "John and Mary Robinson's", it can remark on the general co-operativeness of boys in this ability-range, though half of such boys will refuse to wear uni-

form in their fourth year, if it is required. Attendance is a problem. His twin "Mary Robinson" is liable to play truant and if she is set homework she may not do it.

<i>Schools whose Fourth Year Forms are wholly or partly based on</i>	<i>Size of School</i>				<i>Type of School</i>		
	<i>All Schools</i>	<i>Small</i>	<i>Medium</i>	<i>Large</i>	<i>Boys</i>	<i>Girls</i>	<i>Co-edu- cational</i>
	%	%	%	%	%	%	%
Ability and Attainments	76	81	77	64	93	54	78
Term of living	17	13	14	28	3	36	14
Type of course	21	12	21	43	7	39	20
No. of schools (=100%)	144	68	48	28	30	28	86

The statistics on which these portraits are based come from a survey which the Central Advisory Council for Education had carried out two years ago. The sample of secondary modern and comprehensive schools was representative and inquiries were made in three main directions. Head teachers were asked to write freely of their schools and their difficulties, their staff, their pupils' backgrounds, their methods and successes. Four questionnaires were concerned to find out about fourth year time-tables, about staffing, about school premises and about examination and non-examination candidates. And a questionnaire asking about individual pupils—every third boy and girl in their fourth year at schools in the sample—gave the council objective information about, for instance, attendance, records, height and weight, and whether or not school dinners were given free.

In general, the council can report, today's average children are better at their books than their predecessors half a generation ago. "It is a success story that we have to tell", says the report. "There are reasons to expect that their successors will be better still. One is the working out of the social handicaps which are so marked in their influence on present educational achievement." And they have found that lower occupational groups show a rather greater improvement than the higher ones. The report also points out the striking contrasts between school and school in the same area. "Nine points, equivalent to five and

a quarter years, separated the schools with the highest and the lowest reading test scores. Within each neighbourhood groups, the range was considerable."

Three "serious contenders for inclusion in the modern school curriculum"—they are rural studies, a foreign language and the commercial skills on the time-table of two-fifths of the girls' and co-educational schools in the sample—are largely responsible for the variation found by the council in the average time spent on the three "fields" of practical subjects, science and mathematics and the humanities, from school to school, and variation in the time spent on them from form to form in the same school. There is much variation in the time spent by boys and girls in their fourth year in modern schools in the three curriculum fields.

To some extent, says the report, variations are caused by a "differing diagnosis of the needs of pupils; but this is not the whole and probably not the major cause of variety." Since only fourth year time-tables were analysed the council found it hard to relate time given to a subject to the general adequacy of its coverage in a school. And anyway, as one head teacher put it in evidence. "Time-table analysis is chancy: I seldom finish the term with the time-table I started with". External examinations account for more variations in allotted time spent on subject fields.

How far can the pupil himself choose his assignment of subjects? Three sorts of school organisation are commented upon. The table reproduced below shows the basis of form organisation in the fourth year, as disclosed in the council's survey. The "type of course" category includes pupils preparing for particular examinations or careers and girls' schools tend to use this sort of organisation, more than boys". Percentages add up to more than 100 because some schools use different methods in marking up different forms.

An index of holding power—based on the proportion of teachers appointed to the staff after September 1958, who were still at the same school in September, 1961—was calculated for all schools in the survey. "On this basis the overall holding power of schools where men teachers are concerned was 65 per cent and for women teachers 58 per cent", says the report. This indicates, so the council thinks, an unhealthy state of affairs.

Schools would hope for a holding power of 85 to 90 per cent. Good buildings tended to step up holding power, though the report does not pretend to believe that architecture is the answer to staff losses.

The council points out that one school in eight had no art room. Two-fifths of co-educational and boys' schools were inadequately equipped for handicraft. Only about one in eight of these schools taught any gardening or rural science. (One which taught that subject spoke of "gardening in the library and kitchen" when rain stopped rural science.) Half of the schools in the sample had no gymnasium; just 30 per cent boasted playing fields up to prescribed standard. Though over four-fifths of boys' and co-educational schools taught technical drawing just a sixth had a special room for it. In the humanities' field too, the council reports, "One must expect to find a good deal of improvisation and a good deal of going without and so one does". The note of patient resignation in the face of great odds can hardly be missed.¹

THE ROBBINS REPORT

MORE THAN HALF A MILLION IN HIGHER EDUCATION

PRINCIPAL RECOMMENDATIONS

The target: an expansion from the present 216,000 to 560,000 places in higher education in 1980-81. Intermediate targets of 328,000 in 1967-68, and 392,000 in 1973-74.

The structure: 60 institutions of university status under an enlarged and transformed University Grants Committee, reporting, with the Research Councils, to a new Minister for Arts and Science. The Colleges of Advanced Technology, some teachers' training colleges, regional colleges, and Scottish Central Institutions to become universities. A new Council for National Academic Awards to administer degrees for students in non-university institutions. The cost: £ 742m. a year by 1980-81. Capital expenditure £ 1,420 m. in 17 years.

The axiom on which the Robbins Report is built is that there

¹ *The Times Educational Supplement* Friday, 18 October 1963.

should be a place in higher education for all young people who can satisfy the entrance requirements and wish to go. The bulk of the expansion should take place in universities, with more students taking broadly-based degrees or post-graduate study. Teachers' training colleges should be renamed Colleges of Education, have independent governing bodies, become members of University Schools of Education, and contain some students doing a four-year course for a degree; local education authorities would lose control of them but should not lose all links with them.

There should be five Special Institutions for scientific and technological education, comparable to the Massachusetts Institute of Technology or Delft, based on (i) Imperial College, (ii) the University of Strathclyde, (iii) Manchester College of Science and Technology, (iv) a new foundation, (v) a College of Advanced Technology. C.A.T.s should in general become universities; some Regional Colleges and the most advanced Scottish Central Institutions should develop into universities; for advanced work in non-university colleges, a Council for National Academic Awards should be created, on the lines of The National Council for Technological Awards, but with broader terms of reference, and the power to award degrees. But beside all this, five new universities should be founded—one of which, at least, should be in Scotland.

THE PRESENT EMERGENCY

Action should be taken immediately on one urgent problem, say the committee. In four years' time it looks as if there will be a shortage of 25,000 university places.

Although the committee's terms of reference concern the long-term development of higher education, if the emergency in the years 1965-66 to 1967-68 is not dealt with it may well frustrate all recommendations for the more distant future. "This imminent crisis has cast a sombre shadow on our deliberations", the committee say.

The committee's figures for demand for places take no account of the fact that an increasing number of school-leavers might apply for higher education during the period or for the increase in the number of qualified school-leavers who are admitted. The committee say that in the five-year period from 1962-63 to

1967-68 the number of university places will need to grow by nearly 50 per cent. In 1966-67 universities will be short of 19,000 places ; in 1967-68 of 25,000. If the swing towards science in the sixth forms—apparently halted in the last few years—is not resumed there will be a shortage of 14,000 places for arts students in 1966-67.

Although other institutions will have a vital part to play in this period, the crisis . . . is essentially an acute shortage of university places. Colleges of Advanced Technology will have to expand by 10 per cent more than their planned total of 168,000 places by 1966-67.

An immediate announcement should be made that a substantial increase will be made in the capital building programme for 1964 and succeeding years. More accommodation for teaching and especially for residence is a prime essential. More teachers will be needed. Whatever measures are taken to increase the teaching force the "emergency will impose extraordinary burdens on teachers in the way of additional duties and strains". The committee believe that these will be accepted as the additional strains and duties of the demobilization period were accepted after the war.

However, it must be understood that any inroads on present standards will be transitory, and the second condition which must be satisfied, recurrent grants must be adequate to, among other measures, provide supplementary pay for teachers with extraordinary additional duties.

The committee suggest two possible methods of improvisation. Evening courses might be set up for first degrees. Correspondence courses might, during the emergency, be run by universities.

RECOMMENDATIONS FOR THE PRESENT EMERGENCY

The Government should provide sufficient resources to enable the universities to offer in 1966-67 about 10 per cent more places than are at present planned for that year.

There should be an immediate announcement that the universities' capital building programme for 1964 and succeeding years will be substantially increased so that more accommodation for teaching, and especially for residence, can be provided.

Recurrent grants should be increased sufficiently to enable full use to be made of new buildings and to maintain the present student/staff ratios.

If the universities cannot recruit enough additional teachers to maintain the present student/staff ratios, these recurrent grants should be available for the provision of more technical and secretarial assistance to ease the burden on teachers and for the additional remuneration of teachers who undertake extraordinary additional duties.

Universities should consider the introduction of courses for first degrees combining study during the day with evening instruction, and also the introduction of correspondence courses.

The Council for National Academic Awards should be set up immediately so that degrees can be awarded to those taking degree level courses outside the universities.

CO-ORDINATION

The Government should take the initiative in coordinating the dissemination of information about opportunities in full-time higher education as a national information service, which should be established immediately.

The Minister of Arts and Science should be appointed forthwith to act in the first place as minister co-ordinating action by the ministries concerned, the Grants Commission and the Committee of Vice-Chancellors and Principals.

The Consultative Council should be established forthwith to appraise the adequacy of measures taken.

HIGHER EDUCATION

A Report of the Committee appointed by the Prime Minister under the Chairmanship of Lord Robbins

TERMS OF REFERENCE

To review the pattern of full-time higher education in Great Britain and in the light of national needs and resources to advise Her Majesty's Government on what principles its long-term development should be based. In particular, to advise, in the light of these principles, whether there should be any changes in that pattern, whether any new types of institution are desirable and whether any modifications should be made in the

present arrangements for planning and co-ordinating the development of the various types of institution.

I PROCEDURE AND OUTLINE

"When we first approached our task," say the Robbins Committee in the first chapter of their famous report, "we were at once struck by the paucity of information on higher education in general". The committee therefore initiated a number of surveys and statistical enquiries: and these have been, or will be, published in a series of appendices, which will cause the complete version of the report to run to seven volumes. The committee hope that the information will serve as the basis for further observation and analysis and the regular presentation of the relevant statistical series.

II. AIMS AND PRINCIPLES

Why has the instruction "consider the pattern of full-time higher education in Great Britain" never been given to any committee or commission in the past? Mainly because even today "it would be a misnomer to speak of a 'system' of higher education in this country. But the needs of the present, and still more of the future, demand that there should be a system; though the committee set great store on academic freedom. But where central decisions have to be taken they should be coherent and take account of the interests of all sectors of higher education: and decentralized initiative should be inspired by common principles.

There are four objectives for a higher education system: instruction in skills, promotion of the general powers of the mind, the advancement of learning, and the transmission of a common culture and common standards of citizenship. The report assumes as an axiom that courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and who wish to do so.

A second assumption is the principle of equal academic awards for equal performance; the grading of individuals should depend on their accomplishment rather than the status of the institutions where they studied. Designations or limitations which cause differentiation between institutions which are performing similar functions should be removed.

III THE GROWTH OF HIGHER EDUCATION IN GREAT BRITAIN

The report then deals with the past. In 60 years the number of full-time students has increased more than eight-fold; in 1962, 15 per cent of the age group began courses of higher education: over eight per cent began full-time courses. This expansion has not been accompanied by any lowering of standards. The percentage of the age group achieving minimum university entrance qualification has risen by over half since 1954. In fact, the university expansion has not even quite kept pace with the increase in the age group, let alone the increase in the number of people qualified.

IV INSTITUTIONS OF HIGHER EDUCATION IN GREAT BRITAIN

The report lists seven types of institution of further education: in England the 10 colleges of advanced technology, the 25 regional colleges, the area colleges, the local colleges, art schools, colleges of commerce, and the six national colleges together with one or two other special cases. In Scotland there are 15 central institutions.

In Great Britain as a whole about a third of the 43,000 full-time advanced students in 1962-63 were studying for degrees or the Diploma in Technology. In England the staff-student ratio was eight to one in C.A.T.s, and seven to one in the rest of further education; in Scottish central institutions it was nine to one.

V INTERNATIONAL COMPARISONS

The report makes a basic distinction between the comprehensive higher education of the United States and the smaller hierarchical systems of Western Europe. But it also distinguishes the British from the Continental systems, particularly in the treatment of technology and training for teaching, which, in Europe, are less closely associated with the university system. Students find it much easier to earn higher education in Europe and America than in this country or Russia, though in France and the United States there is fierce competition to get into certain institutions.

The proportion of students in residence is greater in Britain than elsewhere; and only Russia assists as many students from public funds. The staff-student ratio in Britain (eight to one) is

lower than elsewhere. Sweden and Russia come next with a figure of 12 to one, the United States with 13, Holland with 14 and France with 30 to one. Britain is the exception rather than the rule with its specialised sixth forms and honours degrees.

The committee were impressed by the fact that plans for expansion often far surpassed present British plans.

VI FUTURE DEMAND

One of the causes of present difficulties is the inadequacy of forecasts made in the past. The committee decided that to consider the demand for places in higher education presented a sounder basis for estimates than to consider the supply of highly educated people needed to meet the needs of the nation.

It is highly misleading to suppose that one can determine an upper limit to the number of people who would benefit from higher education, given favourable circumstances. In the discussion on the pool of ability and the effect of environment it is shown that in 1960-61, while the children of manual workers were generally much less successful than children of the same ability in other social groups, those children of manual workers who did continue their education were as successful as children of the same ability in other social groups.

In 1980, from figures of children already born, there will be 901,000 18-year-olds. The forecast for 1985 is 960,000. By 1980, it is assumed that the proportion of children obtaining the minimum university entrance qualification will have grown to 12.9 per cent in England, 11.6 per cent in Scotland. But there is no adequate information on which to estimate the future number of applications for higher education. The committee assume that the proportion of qualified school-leavers entering higher education will remain at the 1961 level until 1967 and then rise by 2 per cent every year until 1972 to 10 per cent above the present level; thereafter it will be constant.

The numbers of home students' requirements are given as follows: 1962-63, 195,000 places; 1965-66, 262,000; 1970-71, 312,000; 1975-76, 396,000; 1980-81, 507,000; 1985-86, 632,000. The estimate of 507,000 places for 1980 reflects the growth in the age group—50,000 more places; the growth in the proportion qualifying for entry—190,000 more places; the growth in

the proportion of qualified people applying—45,000 places ; and a modest increase in the average period of study, due to more degree and post-graduate work—25,000 places. But enough allowance may not have been made for increased demand for higher education for girls.

Lack of figures prevents the committee from doing more than guess that the proportion of overseas students will remain roughly constant at 10 per cent, though more of them may be post-graduates.

Of their figure in general the committee say that the risk still seems to be of too little higher education than too much.

RECOMMENDATIONS

Compared with the 216,000 students in full-time higher education in Great Britain in 1962-63, places should be available for about 390,000 in 1973-74, and, on present estimates, for about 560,000 in 1980-81.

VII HIGHER EDUCATION AND THE SCHOOLS

Good sense as well as Government action is called for, say the Robbins Committee, in their proposals for the relieving pressure on schools preparing pupils for university entrance.

More boys and girls now hold minimum university entrance qualifications than there are places. "It is not necessary", declare the committee in chapter seven of their report, "to enlarge at length on the unhappiness and frustration bred in the applicants by this state of affairs. The apprehension among the more gifted boys and girls as they approach 18 is coming to be as serious as the tension and anxieties caused by the 'eleven-plus' examination." Effects on school work are significant. Anxious to do their best for gifted pupils, many schools adapt their practice to what they believe brings the best chance of university places. "Among other undesirable effects, this has inhibited them from taking full advantage of the flexibility of the General Certificate of Education examination." In 1961-62 almost 30 per cent of undergraduates at English and Welsh universities (52 per cent at Oxbridge) had five or more passes at O level before 16, some before 15. An abbreviated general education may lie behind complaints that entrants cannot

clearly express themselves, are deficient in modern language and do not understand elementary mathematical principles. Sixth-formers specialize commonly in arts or science and many sit A level twice to step up their marks.

The Robbins Committee would like to see broader sixth form courses and the introduction of broader courses at universities also. And if degrees were more widely available the ambitions of young people would be less exclusively directed towards the university sector, think the committee.

Should Oxford and Cambridge become purely post-graduate institutions? The Robbins Committee have only horror for that suggestion. "It would force upon Oxford and Cambridge an artificial reconstruction utterly antipathetic to their main traditions and elsewhere it would limit or retard developments that are greatly to be desired." To combat Oxbridge's pull over the aspiring young, the committee suggest a deliberate development of other universities. Specialy generous capital grants both for the renewal and development of other existing universities and for those in process of establishment are strongly urged upon the Government.

Are present selection methods at Oxbridge socially just? "In 1961-62 some 39 per cent of all under-graduates at Oxford and 25 per cent at Cambridge were from schools maintained by local education authorities. At the remaining universities in England and Wales the proportion was 70 per cent." But the committee do not believe that state boys get a raw deal from Oxbridge. They feel that part of the remedy lies in the formation of closer relations between colleges and maintained schools. But they warn that this may lead to further concentration of the best brains at Oxbridge.

Discussing selection procedures in detail, the report recommends that more information on higher education of all kinds should be made available to pupils and parents. It hopes that Oxbridge and the C.A.T.s will join the Universities clearing house scheme and suggests that more attention should be paid by university selectors to school records. The committee also recommend that some of the predictive load should be shifted from examinations to "scholastic aptitude tests" on the American model. Finally in this section, they suggest that "the state of knowledge itself needs continuous reinterpretation by those

engaged in higher education for the benefit of those in the schools" and call for the cutting away of dead wood from school syllabuses.

VIII UNIVERSITY COURSES

Collaboration between universities is demanded in a section on university courses. "It is desirable that the universities should complement each other in the provision of new courses and that there should be a general equivalence in standard and some uniformity on the nomenclature of awards". The committee also state its conviction that universities should consult each other over doctorate requirements in humanities and social science, the scope of new types of post-graduate courses and means to promote mobility among post-graduate students.

The committee heard a great deal of criticism of first degree courses as they stand. Many informants complained of overloaded courses. "The essential aim of a first degree course should be to teach the student how to think. In so far as he is under such pressure to acquire detailed knowledge that this aim is not fulfilled, so far the course fails of its purpose," says the report. And it suggests that an extension of post-graduate work together with a thorough revision of syllabuses would help in this context. A radical review of courses as a whole is overdue.

More criticisms are levelled at first degree courses for being too narrow for many students. Some are happier covering a wide field in moderate depth than looking closely into a similar area of study. And for some walks of life wide learning is more useful than limited but deep study. (Teaching is a good example here). The committee believe that a higher proportion of students should receive a broader education for their first degrees. But they are careful to make clear that "we are not arguing for the creation of soft options. Specialised courses are not necessarily more difficult than courses with a wider coverage: indeed the contrary may easily be true".

The report welcomes attempts in some universities to postpone choice of special subjects till the end of students' first years. And it thinks that it is no accident that the Scottish system has often served as a model for higher education in the English-speaking world. It does not favour a general lengthening of first degree courses to four years.

Particular reasons why post-graduate numbers should be increased are detailed in this section. We need more teachers for a rapidly expanding system of higher education. We need more scientists, technologists and social scientists in a complicated modern world. And expansion in higher education in general will equip more students for further study. Post-graduate education is not only open to criticism on the grounds that there is not enough of it, says the report. "It is frequently too narrowly conceived." The committee commend more use of the seminar and the class for stimulus in fellowship. And it would like to see less time spent by young post-graduates on narrow research for a thesis. As a corollary to its plea for more post-graduates, the committee call for more funds to be made available to this sector of education. And it would like to see British students taking post-graduate degrees at other universities than where they sat for their first degrees, a custom common in the United States and on the Continent.

RECOMMENDATIONS

First degree courses should not in general be lengthened.

The emphasis on work for higher degrees and diplomas should in some cases be on advanced study rather than on the preparation of a thesis.

The proportion of graduates proceeding to post-graduate work should be increased from 20 per cent to 30 per cent by 1980.

IX COLLEGES FOR THE EDUCATION AND TRAINING OF TEACHERS

By the mid-1970s a substantial number of students training to be teachers will be taking four-year courses leading both to a university degree and to a professional qualification. Such is the expectation of the committee in the chapter of their report which considers the future of teachers' training colleges. The committee also hope that long before the mid-70s the English and Welsh colleges will have been federated in university schools of education and those in Scotland will have forged strong links with the universities. Both will be financed by the body responsible for university grants.

The health of the whole public system of education depends

on the efficiency of the colleges. But the problem is to define their place in terms of the two aspects of their work: that of giving a general higher education for increasing numbers of young people and of providing enough teachers prepared for the schools. Although the colleges have in recent years tried hard to improve the general education of their students they feel their standards of work are not publicly recognized.

In their general future development colleges should be allowed to lay on courses for entrants to various professions in the social services and some colleges might wish to lay on general courses in arts or science subjects. Scope for these will be restricted during the next 10 years or so but later on in the 1970s there will be opportunities for experiments with them. "For the next 10 years or so the great majority of the colleges, either of their own desire or through force of circumstances, will continue to be fully engaged in carrying out their primary function of training teachers."

Academic awards are "a particularly complex problem"; giving a degree to all students after a three-year concurrent course would either involve extending the concept of a degree well beyond the bounds that would be acceptable to most academic opinion, or it would mean distorting the courses taken by many students so that they would no longer equip them for many kinds of teaching.

The proposal to have a four-year degree course for all students is open to two powerful objections. Most students do not now, the committee believe, need a four-year course. Between now and 1975 the colleges will be stretched to the utmost to expand enough to meet the schools' needs.

RECOMMENDATIONS

The average size of Training Colleges should be increased and in the long run a college with less than 750 students should be the exception.

The three-year concurrent course leading to a professional qualification should continue to be available. Four-year courses leading both to a degree and to a professional qualification should be provided in Training Colleges for suitable students.

By the 1970s there should be a big increase in the number of

students taking four-year courses, and provision should be made for this in the further expansion of the colleges.

In suitable cases students should be able to transfer after a period at a college to a university to take a degree there in the subject of their choice.

For those who wish to start teaching on completion of profession training there should be opportunities at a later stage to complete their degree qualification by means of part-time study.

A B.Ed. degree of the university with which the college will be linked (see below) should be awarded at the conclusion of the four-year course.

The Training Colleges should be renamed Colleges of Education.

The colleges in each university's Institute of Education and the University Department of Education should be formed into a School of Education.

X TECHNOLOGICAL AND FURTHER EDUCATION

The committee make very detailed recommendations about the development of technological education.

The volume of post-graduate work in science and technology, they say, should be considerably increased and, in particular, this should allow for the growth of post-graduate courses of study. A major effort should be made to encourage an increase in technological as well as scientific research. Larger institutions and faculties should be built up to enable departments to use resources to the best advantage.

A number of university institutions devoted to high level teaching and research, chiefly in science and technology, should be selected for rapid development. They should be given financial support similar to that given to Imperial College in the last decade. They should each contain about 3,500 to 4,500 students, of whom half should be post-graduate students. There should be good staffing ratios and adequate provision of equipment and technical assistance.

Imperial College and the Colleges of Science and Technology at Manchester and Glasgow should provide the nuclei of three; another completely new institution should be planned immediately and a fifth should be developed from one of the

existing Colleges of Advanced Technology.

The Colleges of Advanced Technology should in general be designated as technological universities, with power to award both first and higher degrees. Responsibility for their finance should be transferred to the Grants Commission. As with the new universities, an Academic Advisory Committee attached to each college should supervise courses and examinations until the college is ready for complete independence. Their emphasis should be on teaching and research in technology and science, but the development of other subjects should be encouraged. They should each ultimately contain between 3,000 and 5,000 students.

The link between university institutions and Government research establishments and industry should be strengthened by freer movement of staff and more joint arrangements for research and the supervision of research; and the institutions should invite more part-time teaching assistance from the research establishments and from industry.

Education for management should be post-graduate; two post-graduate business schools should be developed, each in association with a university or special institution and close to a large business centre.

A number of regional colleges should continue to be maintained by local education authorities. There should be opportunities for others, in some cases after federation with another technical college or a training college, to become in due course parts of universities or universities in their own right.

Legislation should be introduced to prevent unauthorized bodies and to make action possible against those persons from awarding degrees and who falsely claim qualifications. The Royal College of Art should be treated administratively in the same way as Colleges of Advanced Technology and brought within the ambit of the Grants Commission.

Other colleges in England and Wales providing advanced courses in art should develop on the lines of Regional and Area Colleges. The Diploma in Art and Design and the Scottish diplomas, rather than degrees, should, in general, be the awards open to advanced students in art.

The National Council for Technological Awards should be replaced by a Council for National Academic Awards, covering

the whole of Great Britain. It might be established under the Royal Charter.

The Council should be made up of representatives of the universities (including technological universities), the Regional and Area Colleges and industry.

The Council should award honours and pass degrees to students in Regional and Area Colleges and their Scottish counterparts taking appropriate courses in science, technology and other subjects.

Courses should only be approved in colleges where there is a nucleus of full-time work.

If a system of higher degrees is needed, it should be confined to colleges developing a large volume of post-graduate work.

XI THE FUTURE PATTERN OF HIGHER EDUCATION

In this chapter the committee give themselves the task of harmonizing their recommendations about the future role of existing institutions. The committee say they would have liked to propose increasing the numbers of students entering colleges of education after 1968, enough to eliminate over-size classes well before 1980. But the rate of growth needed to achieve this and other reforms in primary and secondary schools is beyond the capacity of the colleges and of the system.

From the schools' point of view the sooner the colleges of education expand the better and they propose that the number of students should up to 1974 be expanded as rapidly as seemed practicable. In 1974 some 40,000 should enter colleges of education in England and Wales and the committee propose no further rise in entry.

The committee's plan will produce 111,000 students from the colleges by 1973-74 and 131,000 in the middle and later years of the decade. However, even with these plans and the rise in the proportion of graduates who become teachers some 15,000 extra teachers will still be needed if classes above the statutory maxima are to be abolished.

The committee say that they object to founding new institutions—some witnesses invoked the example of the American liberal arts college—fundamentally because the proposals would create too static a type of institution. They favour developing colleges of education and regional colleges in a way that might

make some of them equivalent to such proposals.

"But it is one thing to reach such a position as a result of progress and quite another to be created as an institution that is not allowed to develop".

In future detailed planning should be made for a period extending ten years ahead.

Enough places should be provided to allow the proportion of qualified school-leavers entering universities to be increased as soon as practicable. It should never be allowed to fall below its present level.

University places should provide about 350,000 of the total of 560,000 places needed in 1980-81.

Many existing universities should be expanded to 8,000 or 10,000 places each. Local authorities should recognize well in advance that universities need space to develop.

Six new universities should be established at once so that they can provide about 30,000 places by 1980-81.

A further 20,000 university places should be provided by giving university status to some 10 Regional Colleges, Central Institutions and Colleges of Education.

There should be about 145,000 places for intending teachers in Colleges of Education in 1980-81.

There should be about 65,000 places for full-time advanced students in further education 1980-81.

Those who wish to embark on or resume higher education later in life should be encouraged to do so.

Most of the expansion in Colleges of Education and further education should be achieved in existing institutions.

Where new foundations are needed there should be experiments in which further education and the education and training of teachers are combined in a single institution.

Of the 392,000 places needed in 1973-74, 219,000 should be in universities, 122,000 in Colleges of Education and 51,000 in further education.

The majority of new universities or institutions chosen for the granting of university status should be in or near large centres of population.

Provision should be made for a growth in the proportion of students taking science and, particularly, technology.

This can and should be achieved without reducing the pro-

portion taking arts subjects.

XII STAFFING

Is there likely to be an adequate supply of teachers of ability to staff the expansion of higher education which the report calls for? "In the universities and Colleges of Advanced Technology the numbers will have to rise from 16,750 to 45,000. In other institutions of higher education the total of graduate teachers will have to rise from some 5,750 to some 14,000." The committee believe this can be done, and without harming the upper forms of schools. But it notes that a recent deterioration in qualifications of graduates teaching in upper forms must be halted.

"The evidence that has been presented to us about the increasing difficulty of recruiting academic staff in certain subjects, and the accompanying evidence of the persistent emigration of first class talent overseas, has caused us much concern." The committee believe that periodic salary reviews are imperative, going on to point out that higher financial rewards at Oxbridge for appointments carrying slighter salaries in other universities are an anomaly. The tradition that a department should have a single professor is outmoded and more posts should be created at this level. But more important in the committee's view than salaries and prospects of promotion is the existence of "good facilities and enough money for research, the availability of technical and secretarial help and generous allowances for sabbatical leave at regular intervals". And it commends the idea of using part-time staff in higher education, on the Dutch model.

XIII TEACHERS AND STUDENTS

"We would not dispute that at times a university teacher is confronted with conflicting claims on his time and attention", say the committee. "But the remedy for this is to be sought in improved arrangements for teaching and these need not be made at the expense of research." The pursuit of work at post-graduate level gives vitality to work at all levels. There should be no borderline between teaching and research. The committee believe that in the making of appointments and in promotion a diversity of gifts should be "sufficiently honoured". The gifted

teacher, the skilled administrator and the research done all have their places within a department.

The committee call wastage the "crudest criterion of the effectiveness of teaching in an institution of higher education". They point out the striking differences in wastage rates between different universities and even faculties, concluding disapprovingly that in some faculties there is an approximate percentage of students whom it has become customary to fail. And they commend training colleges for a sense of purpose which helps to keep the student wastage rate low and encourages staff to help weaker students to qualify. And they hope that the higher wastage in technological institutions will fall as the academic standards of entrants go up. The ease of intercourse between Oxbridge staff and students outside working hours, the committee feel, may help them to keep wastage unusually low; they hope opportunities for them to meet readily should be created in newer foundations. And they are convinced of the need for a great and immediate expansion of university residence. Grants should be assessed on the assumption that students will be occupied with study for 10 months of a year.

The balance between teaching and research in the universities should in general be maintained.

In appointing and promoting staff more weight than at present should be given to qualities other than distinction in research, and in particular to ability as a teacher.

Any distinctions in status and salary scale between readers and senior lecturers should be removed.

Residential accommodation should be provided for a number equivalent to two-thirds of the additional students coming into all sectors of higher education. By 1980 over 225,000 additional residential places should be provided.

XIV FINANCIAL AND ECONOMIC ASPECTS

Assuming a constant overall price level (so that incomes in general rise only with increase in productivity) and an average increase in productivity of $3\frac{1}{4}$ per cent per annum, the committee estimate that total public expenditure on full-time higher education will increase from £ 206 m. in 1962-63 to £ 742 m. in 1980-81. Can the country afford such a sum? The committee think it must. There is no means of measuring the rate of return

on expenditure in this field.

"It is just not true that the total return on investment in education is measured adequately by the same yardstick as investment by coal or electricity". But on a broad view of history, the committee believe that "the communities that have paid most attention to higher studies have in general been the most obviously progressive in respect of income and wealth". And the committee feel it should be possible to spend more on higher studies without crippling the budget.

The committee make no recommendations on loans for buildings and equipment, believing this to be too technical a question for their consideration. And they find arguments in favour of and against loans to students so evenly matched that they can only suggest that immediate recourse to this method of financing students cannot be recommended. As for the finance of institutions, the committee regret the decline of fee (recommending that the level of fees be raised and revised to meet at least 20 per cent of current institutional expenditure) and have praise for private gifts and endowments. Concluding, the committee insist that the costs of their plans, though they may involve increases in taxation, can be met if we wish educational changes.

"Whether we have them or not is a question of choice. It is not a question of any technical or economic inability to achieve them."

The introduction of loans to students instead of grants would not be appropriate, at least for the immediate future.

Tuition fees should be revised so that in future they meet at least 20 per cent of current institutional expenditure.

XV THE INTERNAL GOVERNMENT OF INSTITUTIONS

"Academic autonomy", say the committee, "is more likely to be safeguarded where the public has a guarantee that there is independent lay advice and criticism within the universities." Teachers should be represented too. While there are some functions which must properly remain the responsibility of the professoriate, such as the day-to-day assignment of tasks and routine duties and matters of establishment such as appointment, promotions and recommendations to the ultimate governing body about individual salaries, "there are others where both

senior and junior non-professional staff can and should play an important part".

"No other enterprise", they point out, "would impose on its chairman the variety and burden of work that the modern university requires of its vice-chancellor." The vice-chancellor should have the services of a well-organized office and, they go on to suggest, in some cases both registry and finance departments would benefit from the advice of modern business consultants.

They also suggest that, in framing new provisions for the Scottish universities, Parliament may wish to consider whether it is any longer necessary to require ordinances or statutes of these and certain other universities to be submitted for its approval in addition to that of the Privy Council.

"It seems anomalous that proposals for constitutional changes in the universities of Oxford, Cambridge, Scotland and London should have to lie before Parliament for periods ranging from four to 12 weeks when no such provision affects other British universities."

It is also anomalous that the vice-chancellor of a newly-founded university at one has access to the University Grants Committee and the right of membership of the committee, while heads of long-established London colleges have not such rights. The committee, they believe, has two further weaknesses: it consists solely of vice-chancellors and principals; it threatens to become too large for effective action.

A reconstituted council could be, through its standing committee and sub-committees, a valuable instrument for the investigation of university problems, and also an effective agency for the discussion and resolution of problems referred to the universities by those concerned with other parts of the educational system.

The Committee of Vice-Chancellors and Principals should be reconstituted. Each university should be represented on the Committee by its chief administrator and by a member of the academic staff elected by the Senate.

XVI ACADEMIC FREEDOM AND ITS SCOPE

"What machinery of government is appropriate for a national system of higher education in this country?", the Robbins

Report asks at the head of their chapter on academic freedom and their scope. A committee of higher education every quarter of a century is not enough. Effective machinery can, they insist, only be achieved if a nice balance is kept between the necessity of freedom for academic institutions and the necessity that they should serve the nation's needs. They admit that their recommendations imply a greater degree of survey and co-ordination of higher education than has prevailed in the past.

Discussing the constituents of academic freedom, they are in no doubt that "any obligation to refer appointments of staff to outside bodies for confirmation is an unacceptable limitation on the freedom of autonomous institutions". The same applied to the content of curricula and the maintenance of standards. The admission of students is, however, a more complex question, but subject to the arrangements for the selection of students not only being fair but being seen to be fair, they believe that institutions should be free to choose those they teach. They should also be free to choose their own size, even if, in the face of all national policies and interests, they should choose not to expand. Subject, moreover, to the obligation to consult effectively with the schools, they should be free to stipulate their general entrance requirements. The same is true of the balance between teaching and research.

The methods evolved by the Government and the U. G. C., they maintain firmly, offer a basis for further development. There a committee of persons, selected for their knowledge and standing and not for their political affiliation, acts as a buffer between the Government and the institutions. Indeed, they regard the principle exemplified by the U.G.C. "as an essential ingredient of any future government machinery for higher education". They see no reason, moreover, why the needs of the future should infringe the fundamental freedom.

XVIII THE MACHINERY OF GOVERNMENT

The committee then recommend the creation of a single Grants Commission, larger and better staffed than the U.G.C., and capable, through its sub-committees, of doing the same job for the enlarged number of autonomous institutions. It would report to a Minister of Arts and Science, and not be accountable in detail to Parliament. Other institutions should remain with the Minister of Education or the Secretary of State for Scotland;

a consultative council would advise all three, as would the Council for National Academic Awards. An independent body would advise on academic salaries.

The committee consider four main possibilities in deciding which Ministers should be responsible for a Grants Committee. Although persons of high academic standing had pressed it they do not believe that the Chancellor of the Exchequer should continue to be responsible for university grants. The Chancellor will find it increasingly hard in the Cabinet to be both a guardian of and a claimant on the public purse. The committee had been "definitely informed in evidence" that the Treasury would not feel it appropriate to assume responsibility for institutions besides the present universities.

The committee reject the proposal that the Lord President of the Council or some other Minister without portfolio should be responsible for the universities. They also reject the "much more radical proposal" that a Secretary of State for Education should be responsible for the Grants Committee and the present Ministry of Education's sphere although there are "weighty arguments in favour of this solution". They conclude their argument: "If therefore the solution of the problem of responsibility is to turn on the existence of organic connection . . . it was the connection with research that was most suitably recognized in the allocation of ministerial responsibility".

A single Grants Commission should be responsible for advising the Government on the needs of all autonomous institutions of higher education in Great Britain and for distributing grants to them.

The present arrangements under which the University Grants Committee and the universities are not accountable in detail to Parliament should be applied to the Grants Commission and to all the institutions for which it becomes responsible.¹

¹ By permission from *The Times Educational Supplement*, October 25, 1963.

THE PROBLEMS OF ECONOMIC DEVELOPMENT

EDUCATION AND ECONOMIC GROWTH

Indians are living in a time when knowledge is exploding. To realise her industrial, social, technological and educational plans, more knowledge, new techniques and abilities have to be given to more and more people. This knowledge and technique will change the face of India. Education must change with it. This very expensive fact has to be faced by a very poor and educationally backward country. Article 45 of the Indian Constitution has committed the country to achieve by 1966 compulsory education for all children between the age of 5-11 ; this must make heavy demands on finance and other resources. At the same time, India is concerned to promote economic growth. In the result, her demands for capital investment and for a better standard of living for her people compete with the demands of education on her limited resources.

To meet her five-year plans, as her economy develops, the need for skilled workers, experts, technicians, engineers and generally educated people inevitably increases. Thus while education makes demands on the economy, the economy makes demands on education. This is the case not only in India but also in the world generally. For example, in West Germany it is estimated that expenditure on school education will rise from 2.4 per cent of the gross national product in 1960 to 4.4 per cent in 1970 ; in the British Isles total expenditure on education will probably rise at least two-thirds.¹ In West Germany the number of primary and secondary school teachers needed to meet the planned schemes may rise from 200,000 at present to 370,000 in 1970 ; in the United Kingdom a rise in the number of all teachers from 380,000 to 520,000 is estimated ; in France the number of secondary school teachers will double in eight years. Obviously even in rich and advanced countries this raises serious

¹ Some Economic Aspects of Educational Development in Europe—1961, p. 4. International Universities Bureau.

problems of finance. Even more serious is the need for many more teachers. If the problem of education in under-developed countries is considered in relation to the economic problems in industrial countries it is seen that the differences are due chiefly to the gap between demands and the very limited resources available. Recent studies by UNESCO have shown that out of 27 million children only 10 million go to school in tropical Africa. In Asia (excluding the mainland of China) the potential school population has increased from 64 million in 1960 to 90 million in 1965 and will be 220 million in 1980. Educational expenditure on primary education alone in these Asiatic countries will increase, it has been estimated, from 390 million dollars in 1960 to 3,250,000 dollars in 1980.

Although everywhere there is a growing demand for a structure of education to give to all children the equal opportunities promised, the available resources are extremely limited. Even according to optimistic forecasts, the national income per head of population in India will rise only very slightly at the end of the period of her four successive five-year plans. On the other hand, the budgetary expenditure on education in India is already high, and will be difficult to increase substantially further. For example, for public housing development in the Third Five Year Plan only £ 89 millions had been allocated. Expenditure on health, so badly needed in India, was £ 220 millions. But for education the amount of £ 426 millions had been allotted. The reason is not difficult to seek. Today education everywhere is regarded not merely as consumption but also as an investment. With the gradual industrial growth of a country, expenditure per capita has risen with incomes per capita. For example, in the United Kingdom expenditure on education rose from 1 per cent of the Gross National Product in 1900 to over 2 per cent in 1920, nearly 3 per cent in 1938 and 4 per cent in 1958. The same rise can be noted in almost every country for which figures are available. In the United States the investment on education has gradually increased which proves that as society grows richer or tries to develop, the proportion of income it spends on education rises. The growth of education is thus in part a response to the growing wealth of society. The production of a growing economy makes educational expansion possible by freeing resources for its use. But education is also

a major cause of the growth of output. India in her present stage of development is very short of trained men in the railways, in industry, roads, steel and power. In fact, the demand for educated men is very urgent for not a single sector of a modern economy can work efficiently without people educated in modern methods.

Historical evidence also goes to show that there can be no economic growth without an adequate education system. In the British case there was a well-established link between Non-Conformist academies and the business class. In Russia, Japan, Germany, France and America, the connection between education (especially technical) and the growth of productivity is well known. In Russia and America, education of the semi-skilled and the emergence of the working class ran together. There is, therefore, a relation existing between the classes which are educated and economic development, and the character of the education provided is highly relevant.

When India gained independence, she inherited a system of education mainly on the side of the arts and the classics. There was practically little scope for science and technical education. Thus not only the quantity of education but also the nature of the education to be provided has to be changed and improved. Not only has the education of a vast number of pupils to be changed but also the premises, equipment and, above all, the training of the teachers, of whom 400,000 more will be needed in the next five years alone. To this will be added the problems of university students whose numbers rose from 420,000 in 1951 to 900,000 in 1961. Thus more practical technical training and more science teaching at the secondary level and a wholly new emphasis on science, technology and specialised study in the colleges and universities is urgently needed. Today only 270,000 out of the 900,000 college students study science. The aim for the output of science students at the end of the Third Five Year Plan was about 460,000. Such a vast expansion requires new types of colleges and teachers. At present the trained staff in technical subjects is over 30 per cent below strength. The buying of costly educational aids in the shape of equipment, laboratories and libraries needs money. In addition, India requires the establishment of wholly new academic institutions. Only few technological institutes have so far been built. Many

more are provided for in the plan.

Inevitably, to fulfil the plans of such an educational expansion, money is needed ; but where is this money to be found ?

Some fifteen years ago UNESCO declared : "All other obstacles in the way of universal primary education which we have discussed in the preceding pages are nothing when compared with the one great obstacle, the poverty of the people and the consequent poverty of the State." "The prospect", it went on to say, "looks dark and bleak" and we must, then, face the unpleasant truth that with the best of intentions our Government could not, under the present circumstances, find the financial resources which are required to introduce universal compulsory education within 10 years as envisaged in the Constitution or even within 16 years as suggested by the Kher Committee.

Economic progress is thus essential to India ; a very poor country where about 80 per cent of the population live near the margin of subsistence and use up almost all they produce. In the event, their savings are inadequate to finance investment of more than 5 to 10 per cent, which is barely sufficient to keep the economy ticking over and to maintain incomes per head. Yet so long as incomes per head fail to increase, investment will remain low and the vicious circle of poverty continues.

In these circumstances the growth of population is a kind of national strangulation. With the growth of the labour force, the number of unemployed has increased by millions while primitive agricultural methods have retarded the growth of agricultural production. If only to reduce pressure on land, India must industrialise. Her instability of export trade and the slow growth of world demand for her major export is not encouraging.¹

¹ "The prospects for India's traditional exports are still poor," wrote The Economist Intelligence Unit of London, "Tea, the main standby faces increasing competition from East Africa and Ceylon ; jute textiles, already in difficulties because of the adoption of new methods of packaging, are also under pressure from Pakistan . . . ; cotton textiles cannot compete with Chinese and Japanese goods. India's exportable surplus of many products, notably vegetable oils and cotton textiles, is being reduced by the growth of domestic demand. The vagaries of export policy have damaged India's reputation as a supplier, as has the behaviour of the State Trading Corporation."—*The Commonwealth and Europe*, p. 354.

Western science and technology have not spread very far or made much progress. In 1951 the United Nations said: "In certain fields of production some of the under-developed countries made no improvement in technology for centuries. In some parts of the Middle East, for example, agricultural techniques are no better today than they were in the time of the Pharaohs. In fact, in the field of irrigation there has been definite retrogression."

While something of Western technology has reached India and other under-developed countries, it has only affected certain limited sectors of their economy, and has not spread through the social and economic structure. Unless a special effort is made, the process of technical and industrial progress is bound to be slow in India; for India, with a rapidly rising population, can no longer afford to stand still economically as it did before. It must move and move forward. The key to progress is production and more production. But India cannot move rapidly. For one thing, there are serious obstacles to any general technological and industrial advance in an under-developed country like India. The absorption of new technology is a particularly difficult and costly process. Even in the case of the handling of relatively simple technical instruments, it is necessary to have a basic minimum of education and literacy among the workers and producers. Thus outside the financial difficulties, the major obstacle to advance in technology in India is the lack of an educated and trained personnel; a whole process of education has to be developed at all levels and this must take considerable time.

PROSPECTS FOR AGRICULTURE

Since India is mainly an agricultural country, a rapid increase in productivity could come about by the use of simple and relatively inexpensive tractors, fertilizers and insecticides. "It should be possible," pointed out the group of experts appointed by the United Nations, "to increase the yield of many agricultural crops by 50 per cent within two decades or less by the use of fertilizers, insecticides, better seeds and better crop rotation.

¹ *Measures for the Economic Development of Under-developed Countries*—United Nations, p. 28.

Such higher yields have been achieved in the past in some under-developed countries of which Japan and Egypt are examples. Once such technological improvements are introduced and their higher productivity is proved in practice, their use is likely to spread rapidly by the force of example within any particular area, and even from one area to another. Such improvements are very significant for raising the per capita income of under-developed countries in most of which agriculture contributes a high proportion of the total national product."

Thus it would appear that India's success in solving her present financial problems will depend mainly on her progress in agriculture. The farmers, the peasants and the villagers must be able to provide for themselves and out of their own resources all the many social and economic services the country now desires. Agricultural progress is, indeed, a fundamental need, for only a very great increase in production can provide a lasting foundation on which a satisfactory social and political structure can be erected. Without such a structure, Indians cannot look forward to a bright future. The people need better food ; they must produce the means, either directly by increasing their production of food or indirectly by producing other commodities they can exchange for it.

India needs greatly extended health and medical services and a vast extension of education at all levels. This means that India must be able to support large numbers of people who are not directly engaged in productive work. Doctors, engineers, health workers, teachers, technicians and their families need food, housing, clothes and luxuries. These needs must be met by the people among whom they live and work, and this means that the people must produce extra wealth by learning how to use their resources more effectively. These resources are the land and the labour of the people who live in it.

THE FARMERS AND THE SOIL

To obtain economic and social development a realistic solution of the problems of the farmers is essential. The Indian economy is still geared predominantly to primary production. Except for the privileged few the majority of the peasants live in poverty.

As far as land and agriculture is concerned in India, there

are even more human obstacles than natural ones. For instance, the big landowners in Bengal created by Lord Cornwallis under the Permanent Settlement of 1793 did not invest in the land but became mere parasites; and after independence the first land reform introduced was the abolition of the feudal lords, the zamindars. To begin with, the operation of this law, which provided full compensation, proved very expensive. The money had to come out of funds which would otherwise have been available for productive investment. Moreover, even today, the zamindar is able to retain a large part of his lands.¹

"The land reform measures", wrote Professor Bauer of London University, "have transferred some income and property from landowners to tenants, or even to labourers; but they have not substantially affected agricultural poverty, or its causes which lie in rural overcrowding, backward methods of cultivation, and the adverse social environment. Some of these measures indeed affect adversely agricultural productivity, and thus aggravate rural poverty rather than relieve it. This applies, for instance, to the imposition of ceilings on the ownership of agricultural

¹ After touring Indian villages for six weeks, Kingsley Martin wrote: Every Indian reformer rejoiced when a ceiling was placed on the amount of land that the rich may possess. Legally there are now no great landowners in India, and the often arbitrary rule of the zamindari has been formally abolished. The real history, as I learned for myself, is different. The landlord may not possess more than a given number of acres, but that does not prevent him from dividing his holdings among members of his family, so that often, in fact, nothing is changed. Even when he openly breaks the law, it is uncommon for those he has cheated to attempt to assert their legal rights.

In some villages peasants would complain that they used to get 'more consideration from the zamindari than they now get from the Government'. I learned afterwards that the local moneylender was master of the village, though he only owned two acres of land and kept a tiny shop. The state offers credit facilities which would release the peasants from their bondage to moneylenders. But last year I was told that only two per cent of agricultural lending was done through credit banks..... Thus it comes about that those who are already well off can profit by the new facilities and buy the fertilizers which India now produces, while the poor remain as poor as they were under the British Raj One of my own conclusions was that with the best will in the world—and the goodwill in Delhi is abundant—the Government is unintentionally creating a new race of Kulaks. (India's Leap from Feudalism—Kingsley Martin. *New Statesman*. July, 1961.

holdings, which is bound to reduce investment in land, especially by the urban population. This effect is reinforced by several factors. These include the hostility to absentee landlords; the discrimination against them in the application of land reform measures generally (notably in the prescription of the maximum size of holdings landowners are allowed to retain, which is much smaller for absentee landlords than for cultivating landlords); the general uncertainty created by the partial expropriation of landowners; and the protracted argumentation about the meaning of cultivating (a distinct from absentee) ownership. All these retard investment in land, especially by enterprising people from outside rural society.¹

Usury is another great evil of Indian agriculture. The farmer's low income keeps him permanently indebted to a moneylender. Interest rates of 75 per cent are standard, with mortgages as security, but a poor man pays much more. His low level of output and perpetual need for money for rent, taxes, social and religious expenses—drive him deep into the hands of the moneylender. The peasant is, on the whole, a subsistence producer and is not always materially rewarded. As a tenant, half his crop goes to the landowner. When in debt, as he is always, the moneylender may seize a valuable portion of his crops at harvest time. Not only does he lack money but also he has no storage facilities. In the circumstances he is forced to sell at the price he can get and therefore, with rare exceptions, does so at a very low rate. Professor Rene Dumont, a member of the U. N. Commission set up to evaluate development schemes in India found many examples of poor farmers who pay high interest rates.²

¹ Indian Economic Policy and Development—P. T. Bauer. George Allen and Unwin Ltd. London, pp. 78-79.

² Dumont related that he came across an agricultural labourer, employed only for six months in the year on big projects near Allahabad who was getting four pounds of wheat per working day, instead of the local rate of five pounds—because seven years before he had borrowed the price of three maunds (245 lb.) of corn. In the event, Dumont pointed out that this labourer would have to pay this daily pound of flesh for the rest of his life, for he would never be able to pay back the capital. "When I was there," added Dumont, "he had already paid back the sum he borrowed five times over! When I brought such cases to the notice of the officials in charge of the Development Blocks they looked

Landowners and not the peasants are the privileged class. Laws passed provided that the tillers of land should get 60 per cent of the harvest; but in the majority of cases the regulations are a dead letter. For instance, there are farmers in West Bengal who receive only one-third of the harvest, although they have themselves to provide the seed, harness and implements and are entitled by law to 60 per cent. If a poor but active peasant working hard and paying for the manure used in the 'Japanese method' of paddy-growing produces more from the land, the landowner gets the surplus harvest for nothing. The peasant is poor and hungry. Hungry people are angry people. They cannot be expected to exert themselves wholeheartedly for the land.

Dumont also noted the below-average wages. Agricultural wages are often further reduced by the practices of the caste system. The higher castes sometimes keep poorly paid labourers.¹

Thus to the farmers poverty, poor health, inadequate shelter, low productivity, illiteracy, superstition, food habits and a short life all march together. Poverty and overcrowding combined are a potent force making for malnutrition and disease and increased susceptibility to further disease, sapping vitality and ultimately life itself.

INDIA'S DIFFICULTIES

India is trying to be an industrial country. But high interest rates have discouraged capital investment and therefore retarded development. They have prevented all manner of land improvement, such as clearing, drainage, irrigation, levelling, and even the purchase of chemical fertilizers. The virtual absence of a large rural middle class has also handicapped the advance of

the other way: 'We haven't the power to intervene in such matters.'"
(*The New Statesman*, December 19, 1959.)

¹ Dumont met two shepherds aged 45 and 25 respectively near Madras who were getting five rupees or 5s/- a month, without food. "How were they to live?" he asked. "The Community Development Scheme is supposed to ask all members of a community to make voluntary efforts to end such cases. But what sense of community is possible between such labourers and sharecroppers, debased, exploited and despised, and their landlords, money-lenders and Brahmins?" (India's Agricultural Defeat—Rene Dumont, *The New Statesman*.)

agriculture. The traditional contempt for the man who works with his hands has prevented the upper caste people from working in the fields. They do not often condescend to show any interest in such menial tasks.

As a result of the failure to utilize the human resources to the fullest extent, Indian production of corn declined slightly in the period from 1890 to 1945. The annual quantity available per capita fell gradually from 600 to 400 pounds. Even eleven years after independence in 1958, when the population was nearly 400 million, there was only an average of 410 pounds available at the end of a good year. On the other hand, India's neighbour, China produced during the same year 800 pounds, twice as much per capita. Failure to give production priority to agricultural commodities and to provide all classes with a direct motive to invest has darkened the bright prospect of the country's future. Indian agricultural production has failed to keep pace with the growth in population which reached two per cent in 1960 and is likely to increase even more rapidly in the future.

FIVE YEAR PLANS

To put her economy on a sounder footing, India will have to increase agricultural output more rapidly. But in the Second Five Year Plan agricultural development was given less importance than industrial development.¹ The chief emphasis of the First Five Year Plan was on agriculture which, including Community Development, got only 15 per cent. A further 28 per cent went to irrigation and power. India's 2nd Five Year Plan reduced the allocation to agriculture to 11.8 per cent, irrigation and power to 17.9 per cent, while 4.2 per cent went to village and small industries. Industries and minerals rose by 7.6 per cent to 18.4 per cent.²

The First Five Year Plan, which ran from 1951-1956, was a modest affair, yet on the agricultural sector it was far-reaching in its aims. The object of the plan was to balance and adjust the disruption caused by the war and millions of refugees coming from Pakistan after partition. Its aim was to initiate a process of all-round balanced development which would ensure

¹ *Economic Development*, Benjamin Higgins, pp. 37-50.

² *The Commonwealth and Europe*, p. 352.

a rising national income and give an impetus to economic development. As Mr. Nehru put it, "We had rather an easy time in the First Five Year Plan because really we had not stretched ourselves. We had not made any particular effort. We just took what was there and called it a plan." By Western standards, Indian plans were on a very modest scale. This is inevitable for a country whose annual revenue is less than that of General Motors or the budget of the City of New York. Even the Second Five Year Plan which provided for an outlay of 14.4 billion of rupees is worth "just 80 days' military expenditure of a great power", said Nehru.¹

The First Plan which extended from April 1, 1951 to April 1, 1956 envisaged a total outlay of 8 billion on the development programme. Of this total, about 90 per cent was met by India, the remainder came from foreign aid. The stress in the First Plan was on agriculture and about 45 per cent of the public investment was reserved for increasing agricultural output and extending the country's irrigation and power projects. The results were encouraging.² Foodgrain production went up by 26 per cent and the target of 61.6 million tons was exceeded by 3.2 million tons. National income rose by 18 per cent over the five-year period. Through irrigation and land reclamation the area under crops was increased by 26 million new acres. The per capita income increased over the five years from \$ 33 to \$ 56 per annum, the rate of investment doubled, the famine, a recurrent scourge in the previous century, was thought to be a thing of the past. All these improvements were achieved without undue strain on the economy.

An important feature of the plan was village development. Fifty-five community development projects were launched on October, 2, 1952, Gandhi's birthday. This was an attempt at rural self-help covering all aspects of village life, including the building of roads, schools and hospitals, the reclamation of waste and virgin lands, the encouragement of public health, education and the grow-more food campaigns.³ The Ford Foundation helped and other American funds enabled the

¹ *Yonder One World*—by Frank Moraes, p. 103.

² *Planning for Progress—India Today* by Frank Moraes, pp. 100-89.

³ *Ibid.*, pp. 111-39.

community development project to expand rapidly. By the end of the First Plan in 1956, development schemes covered some 123,000 villages with a total population of 80 million. At the same time an effort was made to reclaim forest and waste land, over 400,000 acres being reclaimed by June, 1955, and another 155,000 acres were cultivated with vegetables. In the same period, villagers constructed about 12,000 miles of road and 600 miles of drains.

PROBLEMS OF LAND REFORM

The problem of the landless villager was acute long before independence. At the Karachi session of the Congress in 1931, a proposal for land reform and the abolition of large estates was adopted. At Nehru's persuasion, the United Provinces Provincial Congress Committee in 1933 declared that the existing land system should go and that the big landowners or zamindars should be replaced by peasant proprietors. But when the Indian Communists raised the cry of "Land to the Tiller" in 1948,¹ and incited the peasants in Telingana to rebel, Nehru's Government guaranteed the right to property, thus creating an obstacle to its own long-proposed land reform. The amended Indian Constitution assured the landlord of compensation, and also guaranteed that no landlord would be deprived of his property except by process of law and on grounds of public interest.

Since the State Governments, influenced by the big landlords', are not enthusiastic for implementing land reform, progress during the last decade has been slow, though the old system of landlordism, whereby the hereditary tax collectors assumed ownership of the land itself, has been abolished. But compensation has had to be paid to them. Frank Moraes, the editor of a responsible daily newspaper in India, wrote in 1960 that Congress agrarian legislation in some respects created more problems than it set out to solve. The problem was not erased but fragmented. The abolition of landlordism led to the formation of smaller vested interests whereby co-operative societies tended to become the servants of the propertied rural classes, who, being economically and politically stronger than the small

¹ *Red Harvest—India Today* by Frank Moraes, pp. 112-39.

peasant proprietors, established a corner in seeds, fertilizers, pumps, and other farming equipment also. The land reforms of the Congress created social and institutional changes which did not strengthen the poor peasantry. The increase of population raised both the demand for, and pressure on land. About 75 per cent of India's people subsist on the land, but Indian yields per acre are still among the lowest in the world. They are about one-third of the yield in Japan, and half of that of China. When independence came in 1947, the landless labourers in India, drawn largely from the Harijans (untouchables), totalled some 48 millions, larger than the entire population of France.¹

Therefore the need for land reform is urgent and vitally important.

India's preoccupation with the development of modern industry in the Second Plan has led to the comparative neglect of agriculture. She had entered into the Fourth Plan with her finances in poorer shape than they were at the beginning of her Third Plan.

To avoid a more acute form of financial crisis, India must

¹In France agricultural production has been increasing more or less steadily every year, and faster than the needs of the domestic market and economic export outlets.

This gradual expansion in French agricultural production has not been due to any increase in the utilised agricultural area, which is rather lower than before the war. The cause is a great improvement in yields. The yield per acre of wheat is nearly double the pre-war average and those of barley and maize well over double; an astonishing tribute to better farming technology, the development of better types of seed, the use of pesticides and herbicides and, above all, a wider and heavier use of balanced artificial fertilisers.

Output and yields have risen for most other agricultural products. During the decade of the 'fifties milk production (in France as in Britain the most important contributor to farm incomes) rose by nearly 40 per cent. Production of beef, pig-meat, sugar beet and potatoes has also risen rapidly. The Fourth Plan (1962-1965) forecast that this expansion would continue.

This expansion has occurred in spite of a massive movement of people out of agriculture. At the end of the war there were some four million people employed full-time in agriculture; now there are only about two million. The agricultural population has been falling by over 100,000 a year. This is all the more striking when one considers that most of the people who moved out, rather than farm workers, were farmers who had to leave their property as well as their occupation.

develop agricultural output more rapidly. Thus she may be able again to put her economy on a sounder footing.

Agriculture is important not only in production but also for consumption, for the average Indian spends at least two-thirds of his income on food. This proportion, however, falls as income rises.¹ The other staple of consumption is clothing which generally takes between 6 and 8 per cent with little variation at different income levels. Thus, even those middle class Indians, who are twice as well off as the average man, spend little more than two-fifths of income on fuel, light, rent and miscellaneous household services. Cereals and pulses, which are the dominant food group, absorb between two-fifths and one-half of the total consumer spending in rural India, and in urban areas on an average about one-third. Expenditure on foodgrains appears

The movement continues. The Fifth Plan (now in operation) will probably forecast that it will go on at about the same rate until 1970. Associated with this has been a substitution of capital, particularly in the form of farm mechanisation. In 1948 there were about 68,000 tractors in France: there are now over a million. The general standard of French farm buildings is far below English but here also there have been great improvements.

Some improvement in farmers' returns should result from better marketing arrangements. It has long been recognised that French agriculture suffers from the very high costs between producer and consumer. Extensive Government assistance is now being directed towards providing more economic marketing of farm produce, involving better grading systems and the construction of modern markets to take the place of markets such as Les Halles, in Paris.

The post-war French agricultural revolution has proceeded at an amazing rate. No doubt, the process will continue, leaving little trace of traditional practices. But few people outside agriculture will be able to view the disappearance of farm horse and the stooking of sheaves of corn at harvest, and other such changes without some sense of loss. (*Daily Telegraph*, February 23, 1965.)

¹The Guardian wrote that foreign aid has saved India from a financial crisis. "Indians embarked on their Third Five Year Plan in April," wrote the paper in an editorial. "They now know that during the first two years at least they can be sure of most of the foreign loans needed to pay for it. The Aids for India Club has ended its meeting in Washington with commitments totalling \$ 2,225 million from its members. The United States has been most generous; it is lending \$ 545 millions for this year and \$500 millions for the next. (In addition it will sell Rupees \$ 1,300-millions worth of surplus farm produce over the five years.)

to be more sensitive to changes in income levels than does total food spending. When incomes reach twice the average level, spending on cereals and pulse goes down to between one quarter and one-third of total spending in villages and 15 to 20 per cent in towns. Thus, so long as India has a low average income level, demand for foodgrains will rise very nearly as fast as income, though demand for foodgrains will rise less rapidly than total food demands.

At the end of April 1959, 13 U.S. experts from the Ford Foundation team examined India's food crises and published a report, entitled "India's Food Crisis and Steps to Meet It." They estimated that India has to raise food output by 2 per cent a year simply to keep pace with her growing population. The population of India would increase by 50 million during the five years of the Third Plan; hence, by 1965-66, India would require 110 million tons of foodgrains a year, which is 50 per cent more than the record harvest of 1958-59. At the present rate of increase the total output would only be 82 million tons in 1965. Imports cannot meet the deficit of 28 million tons of grain annually in the mid-sixties—which is nearly a quarter of the minimum total consumption required. The experts, therefore, urged that the solution of the food problem should be treated as an operation of war and that top priority should once more be given to agriculture.

Besides the production of more foodgrains, it is necessary to increase other foods. There is also the need to raise production of raw cotton to supply the material to satisfy the growth of demand for clothing and of other cash crops to boost the volume of exports.

LESSON FROM JAPAN

The task is technically possible as the Ford Foundation team pointed out. Indian yields per acre are the lowest in Asia and she can learn from Japan how to raise her yield rapidly. Japan has further proceeded along the road to industrialization than any other country in Asia, and in some respects she is second to none in the world. For example, she attained the first place among the world's ship-building countries in 1960. Although she is highly advanced in industrialization, agriculture remains the chief occupation of her people and it is largely upon agri-

cultural output that her economic well-being depends. Nearly 41 per cent of her total labour force depend upon agriculture and forestry for their livelihood.

The most important fact about Japanese agriculture is its extreme localization and concentration.

Japan's agricultural areas are extremely limited. The total land surface in permanent cultivation is only 15 million acres or 16.4 per cent. The Japanese at the present time put emphasis on high production per unit of land. India certainly can learn from Japan's present agricultural system. More than half of Japan's cultivated area is under irrigation and she has little uncontrolled irrigation.¹

Unfortunately the condition in India is quite different and depressing. "The First Plan accomplished many major irrigation schemes," wrote Rene Dumont. "In Bengal, near Burdwan, I saw the last irrigation canals of the Damodar Valley Corporation: the water runs freely along the channels under the dykes throughout the rainy season. The peasants have not built a single side-canal to bring the water to their fields. The small dykes around each rice field are two to three inches high, compared with ten to twelve inches in China. Hence, only a small proportion of the heavy rains can be retained in the fields. The water stored at great cost behind the dams is distributed in a wasteful manner during the monsoon. The peasant pays by the surface, and not by the volume of water which he really uses; hence he has no interest in economy. And naturally, when a dry season comes, water is short; last winter the Damodar supplied only 2,000 hectares (against a calculation of 120,000 in a few years' time), compared with 17,000 and a target of 400,000 hectares altogether—in the rainy season." Mr. Dumont found a similar situation in the Mysore State, in the south of the Deccan where the irrigation system, installed some 12 to 30 years ago, supports only one rice crop although the water runs during seven and a half months.²

¹ *The Pattern of Asia*—Edited by Norton Ginsburg, p. 94.

² Intercropping is another device in Japan. The farmers plant a late crop between the rows of an earlier crop so that both can be harvested within a single growing season. In some cases where drainage conditions permit, the Japanese farmers intersow a winter crop of grain with soya-beans or vegetables, followed by a summer crop of rice or vegetables.

Multiple-cropping is a characteristic of Japanese agriculture. About one-third of the total cultivated area in Japan is double-cropped and the cropping index for the whole of Japan is about 133 per cent—the highest index of multiple-cropping for any country in Asia. The extension of double-cropping is advancing very fast in China too but it has hardly begun in India, even though the climate is more suitable. Hence the huge capital investment on irrigation is largely wasted. To quote from Rene Dumont again: “Last year, out of 6.4 million acres which the First Plan provided with irrigation facilities, less than 1.6 million were in fact irrigated ;—badly, too, and only for one season. Only in 1958 did India give priority to small-scale water-works, which cost four to five times less per hectare and can be used immediately. But those who benefit refuse to take part in such work, medium-sized peasants rarely work, and ‘kulaks’ almost never. There remains, therefore, only the poorest type of share-cropper—who pays rent in kind—and the labourer ; and why should they bother to improve somebody else’s land ?

The Japanese on the other hand work laboriously, Terracing is another characteristic of Japanese agriculture. Throughout Japan terracing is practised. They are expert in “bench terraces” marked along the steep lower slopes and drainage courses of hills and mountains. Double-cropping of paddy fields is common in Japan, but where the length of growing season does not permit the growth of a crop of irrigated rice and then of a second crop in the same field, the Japanese grow some winter crop or vegetables. Wheat, barely, millet and soyabeans are the most important of Japanese second crops.

Intensive fertilization is widely practised in Japanese agri-

Yet another time the practice in Japan is transplantation. The farmers plant the seed grain in small plots, known as seedbeds, very carefully. Then after a few weeks when the rice plants are almost a foot high, they uproot the seedlings from flooded seedbeds and transplant them to larger paddy fields. This transplanting process has many advantages. Most important is the fact where the growing season is especially limited for multiple cropping—the time during the seedlings grow in the seedbeds, it permits the maturation of the winter or second crop of grains in the paddy fields. Secondly, pest and water control during the critical early period of rice growth is made easier. There is also a saving of water. Thirdly it saves labour and finally, evidence shows that slight damage to the seedling roots during transplantation stimulates later plant growth.

culture. In India, on the other hand, fertilization is much less intensive and over large areas scarcely practised at all. But in Japan fertilizers account for one-third of the total production costs of rice.

The Japanese use organic and inorganic fertilizers. Their organic fertilizers consist of animal manures, straw, cut grass, leaves and human excrement. "In all, farm-originated fertilizers, all organic, accounted for 48 per cent of the nitrogen, 35 per cent of the phosphates and 75 per cent of the potash consumed before the war."¹ What differentiates Japan from China or India is the enormous use of commercial inorganic fertilizers. "To maintain high yields, Japan's requirements for commercial fertilizers take the form of 2.25 million metric tons of ammonium sulphate equivalents (20 per cent), 1,725 million metric tons of superphosphate (16 per cent), and 450,000 tons of potash equivalents (40 per cent)."² In addition, to improve soil qualities by neutralizing acidity, the hard-working efficient Japanese farmers use a million tons of limestone every year.

But in many parts of India (Northern Deccan, West Bihar etc.), scarcity of wood for fuel has produced the practice of burning the dung (mainly cow-dung) of animals as cooking and heating fuel. More than half the supply of animal manures is burned as fuel, thus the lands are deprived of their major source of fertilizer. Where the fuel shortage is severe, stubble and plant wastes are also used as fuel; as a result the land seldom gets any energy replacement. Current fertilizer needs exceed the total supply of animal manures more than four times. The fertilizer value of animal manures from the lean, thin and poorly fed Indian animals is relatively low. The farmer is too poor and debt-ridden to buy commercial fertilizers. Moreover, the variations in the monsoon are notorious. India's exhausted soils need humus and nitrogen to be productive. There must also be provision for water. Rene Dumont is of the opinion that much of India is well supplied with moisture and irrigation prospects are good. A permanent supply of water can make possible two or three harvests a year in India—an impossibility

¹ "*Agriculture and Food Supply in Japan*" from the *Pattern of Asia* by Norton Ginsburg, p. 95.

² *Ibid.* -

in some parts of China, which suffer from winter frosts. The chief obstacles, in fact, in India, are not natural but human. When much of the rest of the world including some Asian countries have adopted the use of commercial fertilizers to obtain increased yields, India is left behind in the race for crop production. The problem can be handled, but it calls for a major operation on a national basis organised by the Central and State Governments, for the problem has reached a stage where haphazard individual initiative will no longer suffice.

INDIA'S UNPRODUCTIVE CATTLE

India has a vast number of domesticated animals. Nearly 200,000,000 cattle and buffaloes, about 90,000,000 goats and sheep and perhaps 6,000,000 horses, donkeys, camels and elephants.¹ Still her draft energy is inadequate, the volume of dairy produce is far short of the country's needs. Oxen are used for cultivation in many areas. Milk production annually totals about 26,000,000 tons, from some 74,000,000 dairy animals. This production is roughly equal to that of the United States, but India has three times as many people. But today scant attention is paid to animal food crops and the majority of the domesticated animals are under-nourished and unproductive. Overgrazing in many parts of India has caused soil erosion and the spread of desert. Though very undernourished and suffering from lack of proteins, the majority of the Hindus and Buddhists do not use meat. Religious prejudice forbids the slaughter of animals and stands in the way of improving breeding.²

Food producing agriculture is mainly concentrated upon three grain crops; rice, wheat and millet which account for over two-thirds of the food producing lands. The introduction of more productive, more demanding plants is possible if soil fertility is improved. For each Indian today there is less than three-fourths of an acre of crop land from which he has to pro-

¹ *Asia, East by South*—J. E. Spencer, New York, p. 188.

² Professor Bauer noted that India's attitude towards animals has immediate and direct effects on food supply. This attitude also restricts the scope of animal husbandry, severely circumscribes agricultural operations and obstructs progress in agriculture. India is mainly a country of Hindus and a Hindu will not eat beef or veal or kill a cow, and will generally resent the killing of any cattle. Section 48 of the Indian Constitution laid

vide food and clothing, produce his exports, finance his imports and attempt to raise his living standard from one of the lowest in the world. It is a Herculean task but the solution of the food problem at least is technically possible as the Ford Foundation report pointed out. The introduction of better farming methods and improvements in the organisation of rural credit and marketing will ease the problems. But what needs to be done will take years to be achieved and will demand hard work, sincerity and seriousness of purpose. For example, merely to operate a guaranteed price system would require the creation of a network of controlled markets within bullock-cart distance of every peasant in the country. So far the Government has not undertaken this formidable task successfully. Development programmes in villages so far have been completely inadequate.

down as one of the directives of policy that the State will take steps for . . . prohibiting the slaughter of cows and calves and other milch or draft cattle.

Legislation has recently been introduced in a number of Indian States, including some of the largest (for instance, Uttar Pradesh—much the largest Indian State, with a population of about 70 million—Madhya Pradesh, Mysore and Rajasthan) prohibiting the killing of all cattle. The slaughter of cows is banned practically throughout the whole country, and that of other cattle probably in over half the country. Uttar Pradesh legislation prohibits the sale, or transport for sale, of all beef or beef products so that such meat slaughtered in neighbouring States cannot be imported and sold in that State. Uttar Pradesh legislation (Act, No. 1 of 1956) absolutely prohibits the slaughter, or the offer for slaughter of any cow, and 'cow includes a bull, bullock, heifer or calf'. The immunity of the cow from slaughter and the privileged position of cattle generally significantly affect agricultural production. India has the largest cattle population in the world, indeed, about one quarter of the estimated world total. The cattle are used as draught animals on a large scale. But their contribution to the meat supply is negligible, and the output of milk is also very small; indeed, only a small minority of cows yield any milk for human consumption. The attitude towards cattle ensures that their commercial contribution is small relatively to the cost of maintaining them. The refusal to slaughter cattle obviously reduces current food supply and also affects disastrously the prospect of improving the quality of livestock and agricultural methods, generally. Millions of half-starved unproductive cattle prevent improvement of grazing and often destroy it, besides damaging the primitive barrier which offer rudimentary protection against soil erosion. (*Indian Economic Policy and Development*—P. T. Bauer, pp. 23-25).

In a land where the harvest is normally dependent on the monsoon, water from major irrigation dams built in the past twenty years has not been used properly because the canals and irrigation ditches to carry it to the fields have not been built or have been neglected.

When the problem of production is solved, major consideration will have to be given to the problem of distribution. India's marketable grain surplus is probably less than one-third of output and the behaviour of food prices suggests that it is growing less rapidly than production. Agriculture prices in general have risen sharply. Between 1955-56 and 1958-59 wholesale prices of all agricultural commodities rose by 30 per cent, of food by 19 per cent but of manufacture by only 5 per cent. It is significant that in the summer of 1958, after a bumper harvest, there were food riots in Bengal.

With the best will in the world, the Government of India would find it very difficult to deal with this situation. Until recently, however, the will has been lacking. The improvement in food supplies during the First Plan created a false sense of security. Had greater attention been paid to agriculture India might well have absorbed most of the deficit financing undertaken in the last few years with no more than a modest rise in prices, its external finances would certainly have been in better shape and hungry millions would not have faced constant famines.

CRITICISM OF INDIA'S AGRICULTURAL POLICY AND METHOD BY BRITISH JOURNALS

The Daily Telegraph of London stated that there were not many politicians or economists of standing who had not offered solutions to their country's disastrous food crises. Many theories had been agreed upon, tried and discarded, during times of disaster, since independence.

Throughout the country the debates continued while in the markets the prices went on rising. These have been the two undeniable facts throughout the summer.

Though certain politicians have claimed there have been deaths from starvation in Bihar and Uttar Pradesh there has been no authoritative confirmation. On the whole, the average Indian who has amazing powers of endurance has probably

SOME TARGETS FOR AGRICULTURE IN THE THIRD PLAN

<i>Item</i> <i>Agricultural Production:</i>	<i>Unit</i>	1950-51	1955-56	1960-61 (estimates)	1965-66 (targets)	<i>Increase in 1960-61 over 1950-51 (per cent)</i>	<i>Increase in 1965-66 over 1960-61 (per cent)</i>
Foodgrains	... Mill. tons	52.2	8.59	75.0	100-105	1950-51 6	1960-61 33-40
Cotton	... Mill. tons	2.9	4.0	5.4	7.2	29	33
Sugarcane	... Mill. tons	5.6	6.0	7.2	9-9.2	25-28	25-28
Oilseeds	... Mill. tons	5.1	5.6	7.2	9.2-9.5	41	28-32
Jute	... Mill. bales	3.3	4.2	5.5	6.5	67	18
Tea	... Mill. lbs.	613	678	725	850	18	17
<i>Agricultural Services:</i>							
Area irrigated	... Mill. acres	51.5	56.2	70.0	90.0	36	29
<i>Consumption:</i>							
Nitrogenous fertilizers	... 000 tons of N	55	105	360	1000	555	178
Phosphate fertilizers	... 000 tons of P ₂ O ₅	7	13	67	400-500	857	497-646
<i>Community Development:</i>							
Blocks	... number	—	1064	3112	5217	—	68
Villages covered	... thousand	—	150	400	550	—	38
Population served	... millions	—	78	200	374	—	87

(Source: Government of India, Third Five Year Plan).

not been much less hungry through the unhappy season than usual.

But his debts have mounted, because when wages and prices have risen a little he has felt justified in spending that little more. If he is a farmer he may have earned a little extra money, by changing over from foodgrain crops, which produce only the smallest profit returns, to cash crops; so he feels able to borrow more when prices rise because he will have more with which to pay back.

Practically all these transactions are negotiated in what is called in India "black money"—that is, money which the income tax authorities are unlikely ever to track down. This is the money which also finances the grain hoarder and the smuggler of wheat or rice across State frontiers who then lends more money to farmers from his profits. This is not a game confined to mud cabins in villages. A grim lorry attempting to crash the Punjab-Uttar Pradesh border was involved in a gun battle with Customs men.

Foodgrain distribution in India is chaotic. State Governments tend to hold what they have in order to use their surplus to their own advantage, ignoring Central Government demands. A case in point is Gujarat which suddenly banned all exports of groundnuts and groundnut oils (essential cooking media over much of India).

Twenty years after Indian independence, the Minister of Food was discussing the reorganisation of Indian agriculture. A "crash" programme involving £ 170 million worth of American fertilisers had just been announced for land rehabilitation. At the end of India's next Five Year Plan, due to begin in 1965, the Minister expects India to be self-supporting in foodgrains.

The greatest goodwill for the Indian Government cannot prevent us from inclining to agree with Opposition members when they say—at least outside Parliament—that the Ministry of Food is not being truthful.

The Ministry calculated recently in public that the average Indian ate a pound of grain daily. With a national grain harvest now probably reaching 85 million tons annually, plus imports of six million tons, this figure would grow beyond computation.

This in no way takes into account the reckless spending in the cities, the wastages at the docks and in storage, and the urgent needs of the hordes of lower income groups with their inability to pay their way. At least half of India's population probably consumes less than half a pound, according to reliable sources, and it must be remembered that grain is every Indian's staple food.

For the last few years, wrote the Daily Telegraph, India had imported 16 million tons of wheat and one million tons of rice against rupee payment from the United States under that country's Public Law 480. For the next year alone the demand from Delhi grew to nine million tons of wheat and three million tons of rice. The Food Minister made a strong appeal in Parliament that this had to be met because no Government could accept the responsibility of allowing its people to starve, but the former Food Minister under Mr. Nehru regarded this food import policy as "national suicide".

In spite of a certain sympathy with the Minister, one critic may have had a better grasp of the situation. He supported the Opposition in that the Government has a "P L 480 complex" and cannot be relied upon to take much-needed measures to help agriculture while American dollars are coming in. In reality no one has any clear idea of what measures should be taken.

The Minister himself admitted that locally-produced grain was often selling in the market at two to three times the price of American imported grain. The purpose of imports is to provide emergency storage to be freed at fair prices at times of crisis by the shops run by the Government thus defeating hoarders and blackmarketers.

The Indian Government's reasonable annual system to relieve shortages is to procure grain wherever there is a surplus and re-sell to where there is a well-known deficit. Once again traders often get there first, and when officials arrive the surplus has gone.

The Ministry envisages a State foodgrain trading organisation while conceding that the necessary machinery is lacking. The organisation will buy and sell grain and, it is hoped, later issue loans to farmers, but as many Members of Parliament have observed, if it functions on the lines of the present State

Trade Corporation, "an import-export set-up notoriously frail both in morals and economics, its future is shudderingly easy to predict."

Indian agricultural problems, as in the world over, will be solved only in the country. This is easily seen in a mainly agricultural country whose legislators are as a rule lawyers. A detailed study of village wheat production in Punjab revealed that production cost at least £ 56 an acre. The most costly single item was watching for five months over crops that rightly suffer from animal or human raids. Both work and expenditure produced absurdly small returns.

The Indian farmer, as every other farmer wherever he may be, can neither demand a bonus, nor work to rule. But even Indian politicians representing rural areas often come from towns and they are extremely sensitive to the opinions of townsmen, however staunchly they speak on behalf of the peasants in Parliament.

Anti-Government riots do not occur in the Indian countryside, except over incidents that are usually esoteric. Riots can happen any day in an Indian town, especially when people are hungry. Hence, the politician watches the town warily.

The farmer is aware of this. He may of necessity vote for an educated townsman, but he can still grow what he chooses on his land. Following on this it must be admitted that village co-operatives are alas ! looked upon as the most corrupt of all agricultural institutions and as a natural corollary therefore it is most doubtful if the Indian Government possesses any reliable figures of what is being grown at all.

Because of his low pay the farmer either puts his money into producing or hoards it, sometimes in league with the traders. Though Indian land reforms have by no means completely dispossessed the landlords they have created some rich peasants. Though tenants, coming into their land on long-term credit, could invest sufficient to make them pay, there were some who could. These latter, and landlords with cash in hand, have kept the poorer peasants no better than they were before by lending them money. Land reforms have done no more than augment the membership of the agricultural society whose wealth enables them to hoard grain when it is their own advantage.

Again quoting the Daily Telegraph of London "what made the situation exceptional this summer was the apparently widespread conspiracy between well-to-do farmers and merchants to mulct town dwellers." It appears, however, in spite of some political agitation that the country suffers little from lack of food, as did Bihar for 12 years before. It was in towns all over India that prices rose and there was serious hardship.

From this it appears that those who claim that the crisis was one of distribution are probably right. At the height of the scarcity, a bold suggestion coming from foreign source was to divert the C-119 aircraft the United States has given India from the never-ending stores build-up on the China front to flying in wheat from Australia direct to the place where there was a serious shortage.

It was a scheme that held great prospects for defeating the hoarders but was doubtless beyond the ingenuity of any administration.

Commenting on the food crisis, the "New Statesman" of London also wrote: "Given the very narrow margins on which the Indian family operates—two-thirds of its budget goes on food, the element pushing up the entire index—the sheer human misery embodied in even a small rise in the cost of living does not need to be elaborated." During harvests from April to September the pressure was not great, but it was strong enough to reduce the industrial truce signed after the 1962 border clash to a mere scrap of paper and bring about general strikes in Bombay and Calcutta and to cause a widespread urban agitation on prices. Now the results are commensurately drastic—in a few places there were riots and mob attacks on grocers' shops, a threatened strike by rice millers and retailers against Government interference, agitations and demonstrations broke out and there was a threat of a national satyagraha and general strike.

Warning had preceded all this. Wholesale prices were always above seasonal average and in the year up to mid-July advanced 11 per cent, wheat prices being up 28 per cent. Certain essential commodities—for example, rice and mustard oil in Calcutta—all but disappeared from the market. The popular demand for drastic Government action grew steadily stronger; but in late June at the meeting of State Chief Ministers, they hesitated and

voted for a conciliatory attitude towards the trade for fear of losing what food there was in hand. The States themselves failed to work together, pursuing independent economic policies. Those that normally have a food surplus set up strict controls on exports, and all tried to make good the unfortunate results of a lack of foresight and decision.

But why the New Statesman asked, did the index rise "so irrepressibly?" Food production had to some degree stood still since 1960-61, while the population continued to climb unchecked (roughly 9 per cent); yet the last harvest was 4 million tons more than the one before. Though in some places production declined—the Uttar Pradesh harvest was down by up to half of India's total food imports—the overall statistical situation was much less serious than the index suggested. Accordingly the Government did not claim that the problem was only poor harvests; on the contrary, it accused profiteers of rigging the market and set afoot a series of measures to try and beat the racketeer. Everyday the police raided shops and warehouses and seized unauthorised food stock; in some cases the raids had virtually paralysed the trade. Through panic there was overbuying and hoarding, which only made matters worse, and the Government's 'fair' price shops (price controlled) have proved quite inadequate to stand up to the situation.

Certain States have started to either set up or strengthen price controls on key commodities, but often this merely hastens a local dearth in places adjoining uncontrolled areas of surfeit. It is doubtful whether the administration can exercise effective control over the thousands of small units involved. 'Black money' (come by illegally) supplies credit for hidden hoarding; big farmers allow credit to small ones to store foodgrains, and there are not enough officials to deal effectively with this kind of racketeering. "There is no Stalin and no ruthless cadres to move into India's Ukraine." Urban ration cards are checked against forgeries—140,000 cards were seized in Calcutta from just over 100,000 families. Looking ahead there is talk of a public corporation to begin very soon to establish better emergency stocks, which might help to ease the fluctuations; but this does not fill stomachs now. "After all", as one commentator noted, "where the law allows private enterprise, hoarding to catch tomorrow's higher prices constitutes normal commer-

cial practice.”

Not long ago the United States pushed forward an emergency programme to help India over the short term—half a million tons of PL 480 wheat a month for three months, and 4 million in seven months; an unspecified quantity of rice and even cargo-handling experts to try to hasten the food through “the long-jam” in India’s ports. Added to this, there was a promise of experts on food pricing, on insecticide spraying from the air (an estimate of the loss from food destruction put it at double the present food imports), and on legume growing, plus aid under the Fourth Plan to construct five fertiliser factories, which will double present output, seven agricultural universities and even 1,000 pedigree bulls to raise stock quality. This is a massive shot in the arm, both short and long term, but it means an even greater dependence on the United States. In the final analysis agricultural India cannot expect to develop an industrial structure while looking more and more to America for food, whatever may be the possible implications for India’s non-alignment. As the *New Statesman* observed “increased imports are a sad outcome for the massive investments made in Indian agriculture. More than this, too many outside stopgaps will allow the Government to ignore the underlying problem; for a decade Congress has been bounced from one good harvest to another without facing the lack of promising change in agriculture. It might now become easier to extract wheat from the U.S.A. than from Punjab.”

The ineptitude in dealing with food highlights the innumerable criticisms of the economic policy. One section maintains that the failure of the Government to execute its declared land reforms aims (still 1 per cent of landowners own a fifth of cultivated land and corner the lion’s share of development funds), or to filter through increased prices to the peasant so that production is stimulated, proves the domination of State Congress Parties by the wealthy landowning interests. Another criticism deals with defence expenditure which adds to the already heavy burden of development spending—monetary inflation, it is argued, can be curbed only by restricting the flow of money. The Finance Minister, under pressure by the pundits of sound finance, has made some recent token cuts in spending and asked the States to follow his example. The case

for "hard money" backs up those who agitate for less ambitious schemes in the Fourth Plan. The Third Plan was poor, it is said, so India must temper its hope with reality in the future. Some have advocated that if progress in agriculture advances as tardily in the last two years of the present plan, the next plan must be one of 'consolidation'. The new Government has recognised the urgent need for planning to a more immediate results and the prime importance of agriculture; there are plans for new and larger publicly-owned rice mills to redress the calculated 15 per cent wastage in India's present 80,000 outmoded mills, and for a speeding up of local public works and rural cooperatives. It has been suggested that the scaling down of the general targets may be just an excuse for doing less and thus postponing "the inevitable crisis until it is ungovernable."

The New Statesman concludes that "Either way, the Fourth Plan will remain terrifyingly vulnerable to factors outside its control. It was Galbraith who once said that India was one of the least planned and least plannable economies in the world."

FOURTH PLAN OUTLAY

According to a spokesman of the Planning Commission no firm figure for outlay has yet emerged from discussions. The figures under consideration now range between Rs. 21,500 crores and Rs. 22,500 crores, which are expected to yield a rate of growth of 6.5 per cent per annum. These figures are based on the 1963-64 prices.

The Commission's Secretary has informed the Prime Minister that the figures in it relating to overall outlay and inter-sectoral allocations are being looked into further. The document also contains the latest estimate of the likely achievements of the Third Plan, it is learnt. This indicates, as was already anticipated, that the Fourth Plan will start with a lower base.

On the strategy of the Fourth Plan, however, there are no points of dispute. Besides agriculture, agriculture-oriented industries, and mass consumption goods, an important feature of the Fourth Plan will be the built-in provision for stabilisation of prices. This is regarded as 'inescapable and inevitable' in the light of the current experience.

The spokesman indicated that the lessons drawn from the

poor performance in the first half of the Third Plan had been fully taken into account. Already, he pointed out, there had been some improvement in the third year when the rate of growth went up to four per cent. One of the important problems encountered in the current Plan was the long period that projects took to mature. He was optimistic that in the Fourth Plan the picture would be better in respect of growth. The infra-structure consisting of coal, transport and power is not likely to present the kind of problem it did in the early years of the Third Plan.

The sectoral breakdown in the Fourth Plan as now proposed envisages a sizable increase in the outlays on education and health (approximately Rs. 1,500 crores and Rs. 1,100 crores respectively) over the corresponding provisions in the Third Plan.

After the Cabinet takes a decision on the size and pattern of the Plan, the draft memorandum was sent to the State Chief Ministers for discussion by the National Development Council. Thereafter, details were worked out, covering the State Plans and the Union Ministries' programmes. These, together with several policy decisions were taken, incorporated and presented as the draft outline of the Fourth Plan in February-March 1966.

The outlay of Rs. 22,500 crores will be made up of roughly Rs. 15,600 crores in public and Rs. 6,900 crores in private sectors. The public sector outlay includes current expenditure of the order of Rs. 2,500 crores.

The Commission is reported to be satisfied that resources would be available of the order of Rs. 21,500 crores for financing the outlay of the Plan. External assistance for the Plan is estimated at Rs. 2,500 crores. Additional resource mobilisation mainly by way of taxation to the extent of Rs. 2,500 crores has been provided for.

The memorandum also emphasises that non-Plan expenditure should be cut down and revenues even at existing levels of taxation must be maximised to improve the resources position.

The major sectoral allocations in the Fourth Plan are approximately as follows: Agriculture Rs. 3,100 crores; Irrigation Rs. 1,000 crores; Power Rs. 2,000 crores; Industry (organised), Rs. 5,600 crores; Small Industry Rs. 680 crores; Transport and Communications Rs. 2,650 crores; Education Rs. 1,500 crores;

Scientific Research Rs. 195 crores ; Health Rs. 1,090 crores ; Housing and Construction Rs. 1,850 crores (of which only 400 crores would be in public sector).

Far East Trade and Development of London stated that the Fourth Plan would 'involve a higher degree of planning for agriculture than has been the case in the past', attention being paid at the same time to development of industry, 'be it consumer industry, small industry, or heavy industry'.

"In this first major official statement on economic policy in the House since the new Government came into being, the Finance Minister outlined the approach to the Fourth Plan and ruled out any shift of emphasis from Defence expenditure.

While admitting that pressure of demand on the economy had led to rising prices, he held it was wrong to think 'that the situation is one of runaway inflation, since shortage of supplies arising mainly from adverse weather conditions for the last few years has been a major factor aggravating the price situation."

The general idea was to 'further advance in the direction of a build-up of industry along the broad lines they had adopted in the Third Plan'.

The Minister spelt out the Government's thinking on overcoming foreign exchange difficulties as:

- (1) To complete programmes in hand and to secure as much output from each of them as possible ;
- (2) To utilize idle capacity by augmenting supplies of required components and materials to existing units, and giving preference to priority and essential industries wherever availabilities fall short of overall needs ;
- (3) To give preference to expansion of existing units over establishments of new units wherever conditions justify it, so as to secure additional capacity with minimum investment ;
- (4) In working out priority between schemes of equal importance, to give preference to fast-maturing schemes over these, like having longer gestation periods ;
- (5) Preference in the next Plan, expansion of electrical generation would have to be continued. Power is a vital factor to India.

The Planning Commission has made some progress in this field and action has already been taken in respect of certain power

schemes which would seem inevitable.

But if they were to have a properly integrated regional and national grid, with power being supplied at the lowest possible economic cost, "We will have to consider fairly soon the administrative implications and come to satisfactory arrangements", he said.

In transport, "concentration in the Fourth Plan must inevitably be on maximising the utility of the railways and road services.

In the field of employment, there has been an increase in the backlog from Plan to Plan.

"Obviously, in the Fourth Plan we must aim at provision of employment to new entrants to the labour force, which is assessed at 23m."

Commenting on the Fourth Plan, the Hindu Weekly Review stated that it is now clear that the Planning Commission has plumped for an outlay of the Fourth Plan around Rs. 22,000 crores, in spite of the opinion expressed in knowledgeable circles and even by some Government spokesmen that the limit should be pitched much lower. The Commission possibly feels that the momentum of the last three Plans cannot be maintained and a higher rate of growth achieved unless the rate of development expenditure in the next Plan is doubled. Apart, however, from the financial size of the Plan, the principal questions that have to be decided are whether the physical targets envisaged in the Plan are capable of achievement and whether with the limited foreign aid in prospect, a larger outlay can be sustained through the mobilisation of rupee resources alone. The foreign exchange content of the Plan has been conceived realistically for the simple reason that the aiding countries have made it known with some definiteness that it would not be possible to extend assistance on a larger scale than in the Third Plan.

There may even be some reluctance on the part of some members of the Consortium to continue their aid on the present scale because of vague fears about this country's ability to service its loan obligations.

Even with regard to rupee resources, it is doubtful whether the Commission's estimates can be realised. It has been assumed that as much as Rs. 2,500 crores will have to be raised from

additional taxation. Is this possible? A responsible member of the Planning Commission has stated that there is no scope for further heavy taxation. It is no secret that the steep increases in taxation in the past two years have come in for criticism from the public and there are expectations of some relief. That the State Governments, barring a few, have not made a serious effort to levy fresh taxation, especially on agricultural incomes, has been urged by several critics. If the State Governments want to double the outlay on their schemes in the next Plan, the tax burden on agricultural incomes will have to go up. But the question is whether the States will find it politically expedient to rely on this source. What seems more likely is that after committing themselves to a larger outlay, they will bring pressure on the Centre to provide them with the necessary funds.

In these circumstances, it will not be advisable to proceed on the assumption that the physical and financial resources can be mobilised to the anticipated extent. We must not forget that any major failure in the agricultural sector will have a serious upsetting effect on the whole Plan. It would be prudent, as we have urged before, to divide the next Plan into core and non-core sectors and provide for a basic Plan limited to an outlay of about Rs. 18,000 crores. There should be no undue hurry to impose additional taxation. If there is greater concentration on securing the maximum yield from the large capital expenditure already incurred and fresh investment is limited to the most productive spheres, the economy will have gained enough momentum by the middle of the Fourth Plan to reveal whether an enlargement of the Plan is feasible or not. As the targets have been conceived now, the physical problems that would be encountered in expanding power generating capacity, in more than doubling the output of cement and in increasing appreciably the yield of cash crops may be found insurmountable unless there is an integrated and co-ordinated development of the public and private sectors and there is significant increase in the flow of private foreign capital. The Planning Commission's estimates call for a realistic assessment.

Criticising the 4th Five Year Plan the Reuters also commented that India, already in the throes of a serious economic crisis,

may have to face even more difficult times in the next few years.

The government is working on a development plan designed to extricate the economy from industrial backwardness and the present galloping inflation. The plan will be the fourth in a series of five-year development programmes and will cover the period 1966-1971.

India is planning its hopes on this plan to inject new vigor into a stagnant economy.

In the five years ending March, 1971, about \$46 billion (215 billion rupees) will be invested in a variety of projects ranging from improved farming methods to big industrial complexes.

Total expenditure on the plan will be more than the combined investment of \$40 billion on the first three plans, covering the period 1951-1966.

Some critics have expressed fears of inflationary pressure on the economy as a result of this massive investment. The planners, however, insist that the outlay is essential to give the nation sufficient impetus towards the ultimate goal of a self-sustaining and self-generating economy.

To a large extent, the success of the plan will depend on the extent of foreign aid, estimated at about \$5.2 billion, to implement it.

With its foreign-exchange reserves at an all-time low and several foreign loans falling due for repayment, the 1966-1971 period is a particularly difficult time for India to meet foreign-exchange commitments.

Because of the anticipated tight economic situation, the planners are concentrating on projects which yield immediate benefits to the common man.

A change of approach to the role of foreign capital in India's development is also evident in official quarters. Finance Minister in New Delhi said he would prefer private foreign capital investment to foreign aid.

During a debate in the lower house of the Indian Parliament, the Minister explained that private capital investments do not carry any political strings, while foreign government loans are "dated".

A beginning already has been made in permitting foreign capital investment on a minority basis, even in state owned

ventures.

During the fourth plan, the government is expected to provide new incentives to foreign private-capital investment in India.

Some tax concessions already have been announced.

The main sectors which need immediate action, are agriculture, employment, and family planning.

Indian agriculture is still primitive, but the government is making plans to give the farmer modern equipment, water and fertilizers with which to extract more from his field.

The runaway population is considered by officials here as the most serious obstacle to the country's rapid economic progress.

Whatever progress has been made in food production and other sectors in the past years has been wiped out by the increase in population.

In 1951, when the first five-year plan was launched, there were 356 million Indians and the annual rate of increase was 1.2 per cent.

Today, there are about 500 million Indians and they are increasing every year by 2.4 per cent.

Family planning will therefore receive special attention under the fourth plan. In the five years, four times more will be spent on family planning than during the previous five years.

Planners are also concerned about the high rate of unemployment. When the fourth plan starts in April, 1966, there will be a backlog of at least 12 million unemployed.

And although the plan aims at creating about 20 million new jobs, officials expect that by 1971 there will be at least 14 million to 15 million unemployed in the country.¹

THE INDIAN PLAN FOR ECONOMIC GROWTH

The objectives of the third five year plan are to lay stress on heavy industry and agriculture, particularly steel production. Increased national production and income will make it possible to save larger amounts for investment in national development including education and at the same time living standards will

¹ *The Christian Science Monitor*, Friday, February 12, 1965.

rise. In order to achieve this, apart from the development of agriculture and irrigation, the plan also aims at the rapid development of industry, power (including atomic projects) and transport. Intensive development of basic industries is envisaged. A market of about 500 million people waits to be developed. India possesses in abundance the physical resources needed for industrialisation. The percentage of resources devoted to power generation is greater than ever before.¹ It is hoped that by the end of the third five year plan all Indian towns with more than 5,000 inhabitants will have electricity—all above 20,000 have already received it. Out of her half million villages only 29,458 will have electricity by 1968. The railways are to be modernised and improved so as to carry more freight and more passenger traffic and transport will be expanded through new roads and ports and harbours and shipping enlarged.

The basic conception of the third plan was admirable. It seems that the lesson of the importance of agricultural production was being learnt. But its success could be ensured only if the quality of execution matched that conception. Major attention must be given to increasing the domestic resources for investment and raising productivity. A target of 100 million to 105 million tons of food grains had been written into the draft of the third five year plan which was an encouraging sign that the previous plan had been revised. If the third plan was fulfilled, it would have given India sufficient food to feed herself, though it would not have any safety margin.² It is also essential for India to mobilise her rural under-employed and unemployed. The effort to achieve this has so far not been

¹ India's energy generated has risen from 6,575 R Wh in 1951 to 20,700 R. Wh in 1961 and it is expected to reach 42,250 R Wh by 1966.

² At a press conference held at India House, London, on 12 July, 1961, attended by Mrs. Pandit, India's High Commissioner and Mrs. Naidu, Governor of West Bengal, Dr. B. C. Roy, late Chief Minister of West Bengal said in answer to a question of the writer that there was less possibility of India being self-sufficient in the near future in agricultural food products. India's agricultural output, the Chief Minister pointed out, will not match with the growth of population.

The trend of real national income during the last few years shows how profoundly it is influenced by agricultural production. The biggest increases came in 1953-4, 1956-7 and 1958-9—all years of exceptionally good harvests.

successful. The community development movement will have to be expanded much more energetically. India has also to guarantee the stability of agricultural prices. In an atmosphere of uncertainty agricultural production cannot be expanded. American and British experience is conclusive in this respect; and price stability is especially essential in India, where smaller peasants and tenant cultivators are always hard pressed.

Discussing in detail the Indian five year plans, Barbara Ward summed up the strategy of the planning process as that of giving India a developed infrastructure, a big push in industry and the modernization of agriculture¹ without which no economy has ever achieved the momentum of sustained growth. "Without this broad strategy, the scale and endowment of the Indian economy dictates two central points of emphasis—a high degree of self-sufficiency both in heavy industry and in food." The broad aims of the third plan defined in the draft outline were:

- (a) to secure during the next five year period a rise in national income of over five per cent per annum, the pattern of in-

TABLE 5
INDIA—GROWTH AND STRUCTURE OF PRODUCTION

Rs. billion at constant 1958/9 prices

<i>Years April/ March</i>	<i>Agriculture and allied activities</i>	<i>Manufacturing, industries and mining</i>	<i>Trade and Transport</i>	<i>Other Services</i>	<i>Net domestic product</i>
1950/1	43.4	14.8	16.6	13.9	88.7
1951/2	44.4	15.2	17.3	— 14.3	91.2
1952/3	46.0	15.8	17.9	15.0	94.7
1953/4	49.8	16.5	18.3	15.7	100.3
1954/5	50.3	17.0	19.1	16.4	102.8
1955/6	50.2	17.6	19.7	17.3	104.8
1956/7	52.5	18.4	20.8	18.2	109.9
1957/8	49.3	18.4	21.0	19.2	108.3
1958/9	—	—	—	—	115.6*

* Described in source as 'quick' estimate.

ORIGINAL SOURCES: Estimates of National Income, Economic Survey 1959/60. The Commonwealth and Europe, p. 347.

¹ *The Indian Plans*—Barbara Ward, India and the West, p. 145.

vestment being designed to sustain this rate of growth during subsequent plan periods;

(b) to achieve self-sufficiency in food-grains, and increase agricultural production to meet the requirements of industry and exports;

(c) to expand basic industries like steel, fuel and power and establish machine-building capacity, so that the requirements of new industries and further industrialisation can be met within a period of about ten years mainly from the country's own resources;

(d) to utilise to the fullest extent possible the manpower resources of the country and to ensure a substantial expansion in employment opportunities and

(e) to bring about a reduction of inequalities in income and wealth and a more even distribution of economic power.¹

For nuclear power two plants are to be built. Oil fired stations have to wait upon larger discoveries of oil inside India. Production of petroleum products is going up. India hoped to reach a level of 3 million tons by 1963. The coal target for the second plan was 60 million tons, for 1966 it was 97 million tons.

CRITICISM OF THE PLAN

It seems that India will need many more plans before she can progress from 'the cow-dung stage' (Nehru's phrase) to the age of atomic energy.

¹ *Draft outline of the Third Plan—India, 1960.* (London, p. 21). For her Second Five Year Plan the Indian Government itemized four main objectives:

(a) a sizeable increase in national income so as to raise the level of living in the country;

(b) rapid industrialisation, with particular emphasis on the development of basic and heavy industries;

(c) a large expansion of employment opportunities; and

(d) reduction of inequalities in income and wealth and a more even distribution of economic power.

The Planning Commission added that a low standard of living, under-employment, and maldistribution of income are all symptoms of "the basic underdevelopment which characterizes an economy depending mainly on agriculture"...Rapid industrialisation was thus the core of the second plan. (Second Five Year Plan, p. 3).

India's calculations depend on a number of hypotheses being fulfilled. As it is a country of villagers, the fostering of small and hand industries is vital for India's balanced industrial growth. (The government now aims at a mixed economy combining the three elements of public enterprise, private enterprise and co-operative enterprise).

There remain the two major problems of population and employment. The Health Minister said in Nainital recently that the government of India considered the stabilisation of population and consequently family planning as essential elements in the strategy of development. The Minister said that the general census provisional figures indicated that the population of India now was about 500 million—an increase of about 21.49 per cent during the last ten years; an increase about equal to the population of Italy and France put together. Such rapid growth of population was mainly due to the reduction in death rates brought about by the control of communicable diseases and the improvement in public health. He said that while the birth rate had remained almost unchanged, the death rates had dropped from 31.2 per thousand in the decade 1931-41 to 21.6 in the years 1946-61. Expectation of life had risen to 37.6 years in 1951-56 and to 41.9 years in 1956-61. "I have no doubt that death rates will further decline and expectation of life at birth will further improve as it should. This will further accelerate the growth of population".

The solution to these problems is therefore twofold, to increase production and control population. The population problem has been discussed in detail in a previous chapter. The Indian government has encouraged birth control but control of the birth rate will only be successful when people begin to want smaller families. In fact, India's increase in population is not greater than that of America today. But America's population growth keeps pace with economic development. In India, on the contrary, the growth of population far exceeds industrial progress. "This is a dilemma which Westerners can easily misunderstand," pointed out Barbara Ward, "and as a result lay careless and wounding blame on Asian societies for incontinence and irresponsibility and worse." No democratic government, she pointed out, can force the people to rear fewer children. It is a free choice which the Indians will come to only when a cer-

tain degree of literacy and a certain experience of development have reshaped their wishes. "A lower birth-rate" she argued, "is thus as much a consequence as a condition of economic growth and the main hope at this stage must lie in the Plan's determined frontal attack on the problem of India's too meagre resources. Once the rhythm of expansion is fully established, there is no reason to suppose that Indians, like other modernising communities in the past—the Japanese, for instance—will not be content with smaller families."

PROBLEMS OF UNEMPLOYMENT

A further problem in modern India, is that of unemployment. It is India's tragedy that the talents of promising students are wasted by unemployment resulting in demoralization and unhappiness.

There are in the cities of India millions of persons unemployed and seeking work. On the land there is also large-scale underemployment, the farming family has more hands than it needs to till its small plot. In the cities there is far more widespread unemployment among workers seeking white-collar jobs than among labourers. The fairly educated middle-class in India are the worst sufferers from unemployment. It is therefore, a problem of the educated, for it is education which above all differentiates the middle class in India.

It is the curse of India that young persons trained in business management should be unemployed; that a graduate is unable to find work. Educated and trained young men are resources the country needs, but there is no current use for many of them in the places where they choose to live and in the jobs they choose to hold.

Being aware of this problem, the Government of India sought to create about nine million new jobs in the second five-year plan period to absorb the growing number of unemployed.¹

¹ The Central Committee on Employment in New Delhi stated that the Third Plan was likely to provide jobs to about 13 million. At the beginning of the present Plan there were about eight million unemployed, and 17 million more would be added by the end of the Fourth Plan period. About measures being taken to deal with the problem, it is said that the Planning Commission has been drawing up employment targets for

This ambitious goal required some redistribution of employment. Thousands of teachers are needed in the village schools, for example, while would-be-teachers are unemployed in the big cities. It is not difficult to understand why an educated young man does not want to live in a village far away from the towns with no roads and other facilities. Yet, to meet the challenge of the development plan, many must be persuaded to take posts in the villages.

Millions of unemployed are a great danger to India's internal peace, security and development. "The utter despair of lakhs and lakhs of parents," stated the Massachusetts Institute of Technology Report, "who saved and slaved a lifetime to give their children an education, only to see them in the end unem-

LEVEL OF URBAN UNEMPLOYMENT (MILLIONS OF PERSONS)

Unemployment open and disguised, takes an acute form in Indian cities and countryside.

		<i>Small cities</i>	<i>Large cities</i>	<i>Four largest</i>	<i>Total</i>
Population	...	34.8	24.1	12.6	71.5
Labour force	...	11.2	8.7	5.1	25.0
Gainfully occupied	...	10.26	8.05	4.21	22.5
Severely underemployed		.96	.79	1.06	2.8
Unemployed	...	.94	.65	.89	2.5
Unemployed/Labour force (ratio)	...	8.4%	7.5%	18.4%	10.0%
Un and underemployed/ Labour force (ratio)		17.0%	16.6%	36.5%	21.2%

SOURCE: *Urban Unemployment in India*—by Wilfred Mabubaum. M.I.T., C.I.S., January, 1957.

different sectors of the economy. Studies of manpower shortages are being made on a continuing basis. Steps are also being taken to carry out a recommendation made by the All-India Seminar on Employment Information and Manpower Utilisation. A pilot study of the Madras labour market area was made in 1963 and the Government were considering similar studies in more cities like Bombay, Delhi and Kanpur.

Referring to the unemployment in rural areas, it said the Government were trying to step up the work of the Employment Information and Assistance Bureau. The object is to integrate them with development programmes in these areas. A special seminar on unemployment of agricultural labour is to be held.

ployed, very often broken in body and spirit; the impotent wrath and the slow, sinking demoralization of promising young men, loaded with certificates and degrees, to whom society seems to be denying an opportunity to put to any use their gifts and their knowledge—such are the conditions today. Left unattended, these young men and women are excellent material for filling the ranks of those political groups who may only be too ready to smash the existing social structure. Down with the social system, they say, that provides them no place under the sun.”¹

In order to derive the full benefit from the utilization of human resources, attention to the rapidly increasing number of educated unemployed is urgently needed. To relieve future unemployment, whether what is needed is some basic reorientation of the educational system, a rise in the tempo of the development plans, an increase in the investment outlay or an alteration in the socio-economic framework, or all of these combined, plus other measures, one point is quite clear; immediate attention in this field is needed to fulfil future developmental plans of India.

The problem of the vast army of unemployed makes it clear

DISTRIBUTION OF UNEMPLOYMENT BY EDUCATIONAL STATUS

<i>Status</i>	<i>Employed Unemployed</i>		<i>Employed Unemployed</i>	
	<i>Large cities</i>		<i>Four largest cities</i>	
Illiterate	48.2	21.6	24.9	9.6
Literate below matric	43.1	60.2	53.6	62.5
Matric	5.7	13.1	11.2	18.1
Intermediate	1.5	3.2	4.5	5.8
Graduate and above	1.5	1.9	5.8	4.0
	100.0	100.0	100.0	100.0

SOURCE: Malubaum, *op. cit.*

¹ Unemployment among the University Educated: A Pilot Enquiry in India, The Centre for International studies, Massachusetts, 1957, p.2.

The number of educated unemployed in Uttar Pradesh is the second highest in India. 92,000 persons were registered at the Employment Exchanges in 1954, out of whom only about 6,000 got employment. These placements were less than half the number of those who found jobs through the Employment Exchange in 1953. Vacancies for the educated classes have thus been getting fewer. (Unemployment among the University Educated—p. 3).

that India has no hope of achieving high living standards through agricultural improvements alone. The present agricultural output is far below her potential and she can produce more by adopting the Japanese method. But the long-term prospects for Indian agriculture are less bright than the outlook for Industry. So long as 75 per cent of the active population are engaged in agriculture, increased agricultural output must be obtained to sustain increases in population and permit some labour to be shifted to industry. India, it is hoped, will in future, be able to finance her food imports from her industrial exports, but that stage has yet to come. India's lag in agriculture has acted as a drag on her industrial expansion! Benjamin Higgins pointed out that India's soil and climate are not suitable for a highly productive agriculture and an output in excess of 200 per capita (not per worker) in peasant agriculture is a technical impossibility so long as the present size of peasant holdings continues, no matter how much is done in the way of introducing fertilizers, seed selection and improved irrigation.¹ Professor Hoselitz pointed out that the very low Indian agricultural output compels the government to spend much of the "scarce foreign exchange for food imports, and this affects adversely imports of capital vitally needed for industrial development."

At present India's principal aim should be to secure a marked advance towards self-sustaining growth. Self-sustaining growth can only be achieved by balanced development both in agriculture and industry. Without industrialisation neither incomes nor employment can rise sufficiently. On the other hand, industrial progress cannot be achieved without a radical improvement in agricultural production.¹ An effort should be made both to enlarge the capital base and to raise the output of food and raw materials. According to the Planning Commission another

¹ *The Land Economics Institute* (Illinois—U.S.A.) discussed in detail the question of land reform in India. According to this authority, the problems of India's agricultural economy are (1) small holdings; (2) low income; (3) pressure on food; (4) fragmented holdings; (5) unprogressive land and crop management; (6) scarcity of suitable credit; (7) low population mobility; (8) slow industrial development; (9) lack of understanding by government; (10) lack of basic education and (11) a philosophy and social organisation resistant to change.

important objective of the plan is to devise means for reducing inequalities in income and wealth, the aim is to bring about "a socialist pattern of society", which means that the basic criterion in determining social policies and the lines of economic advance should be not private profit or the interest of a few, but the good of the community as a whole.

It will indeed be a good sign if Indian economy ceases to be an economy of the minority. The rate of new investment which ran below five per cent of the national income in 1950, had risen to 11 per cent at the end of the second plan and was to rise to 14 per cent by the end of the third. According to the plan, it will have trebled in 15 years, a most impressive performance. By Western standards even the fourth five year plan, the biggest of India's plans, is a very small affair and by the standards of the Western countries too, the results will be very modest for years to come. Even in the perspective of India's needs, however, it is still insufficient. The population has increased by some 20 per cent in the last ten years. Thus the advance from the abjectly low level at which the large mass of Indians traditionally live has been very small. The Planning Commission of India hoped that if Rs. 112.5 billion was spent on development during the period of 1961/2 to 1965/6, the annual rate of investment could be raised from 11 per cent of national income to 14 per cent; that national income could be raised by 5 per cent annually against the present 3.7 per cent. Perhaps this is a slightly over-optimistic estimate for the fourth plan. The Indian government hopes that India after this plan may be self-sufficient in food, and that her heavy engineering production can be developed to the point where she can begin to supply a substantial proportion of her own requirements of industrial equipment. But India's success depends on the weather, the administrative skill deployed in agricultural and industrial development, the

¹ No modern State geared to a modern economy can subsist solely on an agricultural basis. Nehru, while always making it clear that only on the basis of agricultural prosperity could India make industrial progress, has stressed that the growth of industry, big and small, is essential for the growth of any modern nation. "Indeed", he once remarked, "without industrial development, there cannot be any higher standard of living for our people or even enough strength in the nation for it to preserve its freedom."

—(Quoted by Frank Moraes—*Yonder One World*, New York, p. 103).

degree of financial self-control exercised by the government and the amount of foreign aid. To keep pace with her growth of population, India has to create four to five million new jobs annually. Her countryside is already over-populated and new jobs have to be provided in urban industrial or service employment. In spite of the declared principles of the Indian government, inequality will increase, so long as the agricultural population goes on increasing, and no relief from inequality due to unemployment can be expected. "This increase in inequality will continue not merely until 1971 but beyond", wrote the *New Statesman*, "By 1981, for instance, the rural population will have increased by the colossal figure of 80 million, and this estimate assumes a sharp fall in the birth rate after 1966, an assumption that seems to be based more on hope than on fact."

The journal warned that a gigantic effort would be required, if the continuous increase in population were not to result in aggravating the disparity in productivity and income between the already overpopulated rural and the gradually crowding urban India. Capital investment will have to be boosted to at least 20 per cent of the national income, about double the level recently attained and far above the level yet contemplated even in the fourth five year plan. Yet if this level of 20 per cent is not attained, commented the *New Statesman*, and with it a rate of production growth of at least seven to eight per cent annually, then poverty will continue indefinitely to overwhelm India. In sheer size India's task of lifting herself from poverty is daunting enough; but the nature of Indian policy and the character of her society multiply the difficulties. The Indian mass is unenthusiastic about the development plans. The mass vote is not yet swayed much, it seems, by economic considerations—perhaps out of disbelief that politicians can ameliorate their way of life. Provincialism and racialism also arrest the growth of economic development.¹ The great bulk of the population has little awareness of its stake in the advance of the economy. In many cases, their social attitudes and customs even make them resistant to the methods and actions prescribed by the planners.

Nevertheless, in spite of all handicaps and the narrowness of

¹ "If it is decided that, for example, an oil refinery" wrote *The Times*, "is to be built for state operation, considerations of supply and markets

popular enthusiasm for the success of the fourth plan, the Indian economy today, after 20 years of planned effort, is under way—if only just, and the momentum is there. In referring to the difficulties of the Indian economy, Prime Minister Nehru once said, "Our difficulties of internal and external finances, are the difficulties of a progressing economy. These are the difficulties of a country that is moving forward. They are good difficulties, difficulties or progress and not of stagnation and inaction."¹

In spite of the depressing features, the achievements of planning so far are encouraging. The failures are no more than a fraction of the successes. After many centuries Indian society is trying to pull itself out of age-old poverty by its own efforts and without the powerful mechanisms of a totalitarian government. Her efforts so far have been moderately successful. She is winning a little ground every year. The Times rightly said that if India fails it will lead to chaos and disintegration and perhaps

should decide its site. But here the Centre must always keep in mind the jealous demands of every part of this desperate federal union for the first fruits of development, and try to avoid the feeling of neglect or relegation that can be fanned by local politicians for their own ends. There have been instances in which efficiency has been sacrificed to political insistence, and more in which contradictory local claims have caused serious delays in implementing plans."

¹"It should not be thought that Indians are unresponsive to economic opportunity" wrote Professor Bauer of London University, "or unfit for material progress, and that the prospects of development are therefore hopeless. This is not the case. There are in India large reserves of latent talent and energy, the development of which is greatly impeded or even suppressed by the restrictive social environment, the effects of which are often reinforced rather than mitigated by official action. The presence of these latent reserves is suggested, for instance, by the rapid development of certain sectors of the economy, and by the energy, enterprise and resourcefulness displayed in these sectors by large numbers of Indian traders and industrialists. It is suggested also by the large numbers of Indian emigrants and by their performance in their country of adoption. Until their movement was barred by restrictions both abroad and in India, hundreds of thousands of Indians emigrated, especially from the poorest and most caste-ridden areas of South India, which shows that even ignorant and illiterate people were anxious to improve their lot, and especially to escape the bondage of caste. And the economic success of large numbers of these often penniless emigrants in Burma, Malaya, Ceylon and East, Central and Southern Africa is evidence of valuable economic qualities such as industry, thrift, endurance and perception of economic opportunity." (*Indian Economic Policy and Development*, p. 28).

to another attempt by the alternative and tried methods adopted by Red China. But her success can be had only at the cost of decades more of concentrated effort and self-denial and of assistance from the developed countries. Her concentration on the creation of a capital goods industry in the fourth plan can be justified because India has a vast internal market and abundant industrial raw materials which will gradually become profitable.¹ The Indian Government believes that heavy industry is the greatest multiplier in any economy. Ample steel fed into a growing engineering section expands the economy's range in many directions.

INDIA'S STEEL INDUSTRY

India along with Japan was one of the six nations who recorded a rise of 300 per cent or more in steel production during the

¹ According to the *Daily Times* of London, India since independence is progressing steadily, overcoming all difficulties. In the decade since the First Five Year Plan began in 1950-51 the production of finished steel has increased from just under 1 million tons a year to about 2,500,000—and there is capacity already installed for another 2m. tons. In the same time the production of bicycles has gone up from 100,000 a year to 1,050,000. Nitrogenous fertilizers (in terms of nitrogen) have increased from 9,000 tons to 150,000 tons a year; coal from 32 m. to 53 m. tons. In the decade national income has gone up by 40 per cent, but the population has increased by 82 million, and the income per head has therefore gone up by only 17 per cent—to £ 20 10s. a year.

The Times Supplement of India wrote that sewing machines, lamps, radio sets, typewriters are all manufactured in India and exported to many parts of the world. "Furniture of all kinds, readymade shirts, silk ties that can be compared with the best in the world, and sheets, blankets and towels that in quality and price would be the envy of English housewives."

Barbara Ward also was optimistic about India's Five Year Plans. Describing India's vast internal market and the abundant industrial raw materials, she wrote that "the only condition under which steel mills and machine tool plants do not represent the height of economic wisdom is when there are no local raw materials or power for a steel industry and no potential market. India has no such handicap. A market of a rising 500 million people waits to be developed. Inevitably the pattern will resemble that of the continental United States rather than the early stages of a smaller trading community such as Britain or Japan. And the Physical resources needed for industrialisation are abundant—the largest iron ore reserves in the world, manganese, bauxite, enough coal—though coking coal is deficient—a still very largely untapped reservoir of hydro-electric

period 1950 to 1963. This was achieved even though her production was just about one per cent of the world's total output between 1948 and 1960.¹

In 1951, the world consumption of steel passed, for the first time, the 200 million-tonne mark. In that year India used about a million tonnes. By 1957 world consumption had risen to about 300 million tonnes, and by 1962 to 375 million tonnes. Indian consumption, however at 3.6 million tonnes in 1957 and 7 million tonnes (approximate) in 1962 grew faster than world consumption as a whole.

To express it differently, the Indian crude steel consumption per capita which was 4.8 kilos in 1951 touched 9.2 kilos in 1957 and 15.6 kilos in 1962.

The growth in consumption is significant in itself, and reflects in a large measure the fruits of the process of development initiated in 1951. Significant as they are, the consumption figures, in absolute terms are considerably below the rates achieved elsewhere. For instance, in 1957 when India consumed about 9 kilos of steel per hand, U.S. consumption was 570 kilos. West German 393 and Japanese 139. Even Argentina used 71 kilos.

It is in this sense that the consumption of steel like that of power is said to be the watermark of modern industrial economy. If one looks forward to the creation of an industrial self-sustained economy, one has to provide the sinews for it. The sinews are steel as much as power.

Fortunately, the country has the material resources to secure a fairly rapid growth of steel making capacity. India's iron ore reserves are one of the largest and best. We have raw materials and their conditions necessary to produce the lowest-cost steel in the world. In view of these considerations and because steel works as a catalyst for accelerating industrial development and generating all-round economic well-being the planners gave importance to the development and expansion of the steel industry.

The first Plan set a capacity target of 1.55 million tonnes of saleable steel and a production target of 1.28 million tonnes.

power—perhaps 8 per cent has been developed and the materials for nuclear power. (*India, and the West*, p. 147).

² *India News*, February 19, 1965.

The additional production was to come mainly from the expansion of the Tata Iron and Steel Company and the Indian Iron and Steel Company.

Tata's expansion from 0.75 million tonnes to 0.93 million tonnes and the Indian Iron expansion from 0.4 million tonnes to 0.7 million tonnes were put through. Though the expansion did not yield full results by 1955, actual production of steel touched 1.26 million tonnes.

Towards the last years of the first Plan, acute scarcities in steel were felt. In 1955 imports touched 0.9 million tonnes. In the second Plan, therefore, there was greater emphasis on the rapid expansion of the steel industry. A target of six million ingot tonnes of steel (4.5 million tonnes of saleable steel) and 0.7 million tonnes of free iron for sale was therefore set.

This was to be achieved by the expansion of Tatas to two million ingot tonnes and the expansion of Indian Iron to one million ingot tonnes and by setting up three new one-million tonne steel works in the public sector at Rourkela, Bhilai and Durgapur. The expansion of the existing plants and the construction of the three new steelworks were, by and large, completed in 1960-61. Actual production of 1960-61 was 3.36 million ingot tonnes.

The Third Plan set targets of (1) 10.2 million ingot tonnes of steel, (2) 1.5 million tonnes of pig iron and (3) 0.2 million tonnes of alloy steels. These were to be attained by the expansion of Bhilai, Rourkela and Durgapur and the construction of a new steel works at Bokaro. Bhilai was to expand to 2.5 million tonnes; Rourkela to 1.8 million tonnes and Durgapur to 1.6 million tonnes. Bokaro was conceived as a million-tonne plant yielding also about 0.35 million tonnes of pig iron for sale. *

In regard to pig iron, it was expected that besides the availability of 0.35 million tonnes each from Bhilai and Durgapur, 0.35 million tonnes from Bokaro and 0.25 million tonnes from Indian Iron, output from relatively smaller projects licensed would be about 0.3 million tonnes.

In alloy steels, the major contribution was to come from a new plant to be built by Hindustan Steel Ltd., at Durgapur with a capacity of 100,000 ingot tonnes (60,000 tonnes of finished products). Projects in the private sector were also expected to

contribute significantly to the production of alloy steels.

All the Plan schemes, except Bokaro, are under way. Bhilai's expansion was expected to be completed in 1966, and Rourkela's and Durgapur's in 1967. The Alloy Steels Plant at Durgapur was also expected to be commissioned in full in 1967 although partial production is likely from 1965 onwards. A few alloy steel projects in the private sector have made good progress and are likely to be in production during the last year of the Third Plan or in the first year of the fourth Plan.

The public sector in 1963-64 attained a level of production equivalent to 99.4 per cent of the rated capacity in hot metal, 97 per cent of rated capacity in ingot steel and 94 per cent of rated capacity in saleable steel.

In the fourth Plan targets for the steel industry which are being finalised are likely to be about 16.5 million ingot tonnes (12.5 million tonnes of finished steel) of steel, four million tonnes of pig iron and 0.5 million tonnes of alloy steel. Besides the expansion of the existing steelworks and the setting up of a 1.5/4.0 million tonnes steel plant at Bokaro, the establishment of new plants is likely to be taken up in the fourth Plan to attain this steel target.

In regard to foundry iron, the integrated steelworks are expected to yield about two and a half million tonnes annually by the end of the fourth Plan and for the rest projects in the private sector are being progressed. The planning for alloy steels includes the expansion of the Alloy Steels Project at Durgapur and of the private sector projects which have made good progress in the current Plan.

If foreign aid could be given on a larger scale, India's progress would be faster.¹ But if she gets much less than what

¹ Barbara Ward pointed out that there is nothing strange or unnatural about India's present dependence upon foreign help. Indian economy is still caught fast in the typical dilemma of early development. "An economy first leaving the static must" she wrote, "by definition, be very short of all the capital goods needed for more rapid advance. The machines, the tools, the technical knowledge and expert man-power have to be procured abroad, but the economy is not yet productive enough to pay for them—one reason why in so many previous breakthrough to modernization, the development of materials for export or massive foreign lending has played a decisive part. The growth of cereals in North America and Russia, timber exports from Sweden, British investment in Czarist Russia, British

her plans require, then there will be no progress, and the ground so hardly won will be lost.

Generous foreign aid has so far been given. The greatest task therefore, before the Indian leaders today, is to inspire the people to dedicate themselves to the service of India and to give them the strength to fulfil this effectively. This means more education, and the right kind of education is essential. There is no doubt that the fate of the country will depend upon the education of the people. It is of major importance, therefore, for us to plan the right kind of education for our children.

SOVIET IDEAS AND INDIAN PLANNING

The Indian Five Year Plans have been much influenced by the Soviet State Plans. Nehru in his *Discovery of India* wrote, "An industrial proletariat was growing up in India; it was unorganised and helpless, and the terribly low standard of the peasantry, from which it came prevented wage increases and improvement. So far as unskilled labour was concerned, there were millions of unemployed persons who could be drawn upon and to strike could succeed in these conditions. The first Trade Union Congress was organised round about 1920. The numbers of this new proletariat were not sufficient to make any difference to the Indian political scene; they were a bucketful in a sea of peasants and workers on the land. In the 'twenties the voice of industrial labour began to be heard, but it was feeble. It might have been ignored but for the fact that the Russian Revolution had forced people to attach importance to the industrial proletariat. Some big and well-organised strikes also compelled attention."¹

India's President Dr. Radhakrishnan, in a special message for a anniversary, has paid a glowing tribute to the Soviet Union for their help in India's economic development. This help, he said "has played a vital and crucial role in the industrialisation of India." The President expressed the hope that Indo-Soviet

capital in Australia since 1945—all are examples of a crucial advantage gained by trading with and borrowing from abroad."—*India and the West*, p. 191.

¹ *Discovery of India*—Nehru, p. 331.

economic co-operation "will grow in the years to come and further strengthen the bonds of friendship between the two countries."

To quote Nehru, again "I have no doubt that the Soviet revolution had advanced human society by a great leap and had lit a bright flame which could not be smothered and that it had laid the foundations of a new civilisation towards which the world would advance." He often referred to the inspiration and strength that freedom fighters in India, as elsewhere, derived from the Russian revolution. The liaison between the freedom fighters on India and the early architects of modern Russia was frequent and intimate. Moscow gave shelter to many Indian revolutionaries and in its own way tried to help India's national movement.

India adopted socialism as her ultimate goal and it added another link binding the two nations. No doubt, India's idea of socialism differed from the Marxist-Leninist approach in Soviet Russia. But both countries, today, believe in co-existence and the concept of nations chalking out their own socio-political goals. And the larger faith in the doctrine of economic and social equality, shared by the two nations, has given rise to a great deal of understanding and co-operation between India and Soviet Russia.

The relationship between the two countries got off to a fine start when, soon after the attainment of independence, India established diplomatic ties with Soviet Russia with Jawaharlal Nehru's sister, Mrs. Vijayalakshmi Pandit, serving as India's first Ambassador at the Kremlin. She was succeeded in this office by Dr. Radhakrishnan, the present President of India.

The adoption by free India of planning as an instrument of economic policy was a tribute to Russia's pioneering role in this field, although the basic premises of planning are not identical in the two countries. Impressed by the size and earnestness of India's effort to modernise and develop her economy and to raise the living standard of her people many nations came forward with generous sympathy and support. Help and co-operation, in one form or another, came from all corners of the world. Countries that are separated by geography and different systems of economy and ideology were at one in their desire to help in India's planned development. The Soviet

Union's position is in the front rank of those who have played a helpful part, through aid as well as trade, in some basic sectors of India's economic development during the last decade.

Steel, the touchstone of a country's wealth and the foundation of its industry, is one of the major spheres of economic co-operation between India and the Soviet Union.

Though the plant proposed to be set up at Bokaro is expected to be a much bigger one, the steel plant at Bhilai is so far the biggest and the most impressive of the Soviet-aided projects in India. The work on this project was started in 1957 and completed in 1961. In 1959, the first lot of iron and steel was produced in Bhilai. Since 1962, the production of the Bhilai Steel Works has been above the rated capacity. The gross profits for 1963-64 earned by it exceeded Rs. 125 million.

Bhilai was only a beginning. Till now the Soviet Union has helped and is at present helping India in the construction of as many as 35 big projects for which it has granted long term credits amounting to nearly Rs. 38,000 million. These credits are granted for a period of 12 years and carry an interest of only 2½ per cent per annum. A redeeming feature of the Soviet credits is that the repayment is effected through rupees which are used by the Soviet Union's trade organisations to purchase goods and services from India. Thus the Soviet assistance does not result in imposing any strain on India's balance of payments. On the other hand, Soviet aid stimulates Indian trade.

The fruits of Soviet aid are not only spectacular but also substantial. Even a cursory list will include the following: 2.5 million tons of steel (excluding potential production from Bokaro), six million tons of petroleum products, 125,000 tons of modern coal mining, metallurgical and other heavy equipment, steel and power generating equipment and generators with a total capacity of 2.7 million kw., 145,000 tons of refractories, production and washing of 3 million tons of coal and an addition of 2,585 mw. of installed capacity. Impressive as these contributions are, what is even more significant is the latest Soviet offer to build the Bokaro Steel Plant and its acceptance by the Government of India.

According to Indian leaders her industrial progress is just not possible without a sound base of heavy engineering indus-

tries which, in the words of Nehru, "manufacture mother machines to manufacture machines". One of the principal objectives of planning in India is to reach the self-generating and self-reliant stage at the earliest possible date. This is just not possible without broad-based heavy engineering industries. Soviet Union is one of the first countries which came forward to render assistance in this field. It has helped India to lay a strong foundation for her heavy engineering industry through Mining Machinery Plant at Durgapur. The Soviet Union has also been supplying equipment and technical know-how for the construction of power stations in different parts of the country. The biggest of these is the Neyveli Thermal Project which, when completed, will have a capacity of 400 mw. The Heavy Electrical Equipment Plant being set up at Hardwar, the two oil refineries of 3 million tons capacity each, the machinery at Kathara with the capacity of 3 millions tons of coal per year, two coal mines with a total capacity of 1.7 million tons of coal and the coal quarry with a two million ton capacity, besides plants for the production of antibiotics, synthetic chemico-pharmaceutical preparations, surgical instruments, and lenses are some of the other significant projects now being implemented with Soviet assistance.

Soviet assistance in the development of India's soil resources is also spectacular. Until the arrival of Soviet help on this scene, the prevalent belief was that India had no oil resources. Soviet geologists proved that this theory was wrong and that India could develop its oil reserves to the point of achieving self-sufficiency. The Soviet Union helped in exploring and drilling oil wells and in building refineries. It also supplied crude oil.

Soviet help was not limited to the industrial field alone. In 1955, the Soviet Union generously offered to give all equipment necessary to set up in India a big agricultural farm. The flourishing 30,000 acre Suratgarh farm established with Soviet aid has demonstrated its superiority in such a way that Jawaharlal Nehru remarked "that a hundred more farms like the Suratgarh would solve India's food problem effectively". Another 30,000 acre farm has now been set up at Jetsar near Suratgarh on the same lines with Soviet assistance. Soviet contribution in the field of Indian agriculture heralds the beginning of a

massive effort to modernise Indian farming.

Soviet assistance in industrial and agricultural fields has brought a large number of Indian technicians and workers in close and useful contact with their Soviet counterparts. Dissemination of knowledge of new techniques and mastery over a variety of sophisticated equipment is no mean gain.

The Soviet Union has also co-operated in the expansion and modernisation of one of the biggest institutes of technical training in India, the Indian Institute of Technology at Powai in Bombay. A large number of Indian students also go to the Soviet Union every year for technical training in various fields, while Soviet scientists and specialists come to India annually to work at various institute of scientific and technical education.

The growing rise in Indo-Soviet trade bears ample testimony to the growing economic ties between the two. Conducted on the basis of a series of trade agreements signed between the two countries during the last ten years, the total trade has grown to Rs. 1,000 million in 1963 from Rs. 10 million in 1953. The third Five Year Trade Agreement between India and the Soviet Union, signed on June 10, 1963, was described by India's Minister of Commerce, as the speediest and the smoothest agreement of its magnitude he had ever negotiated. Under this, Indian trade with the Soviet Union is expected to go up to Rs. 1,050 million each way by 1966 placing the Soviet Union among the first five of India's trade partners. The relationship between India and the Soviet Union, on the political level, has been warm. On many international issues, in the United Nations and elsewhere, the two have expressed views which are identical. Much more than that, the decisive support Soviet Russia gave to India on such issues as Kashmir, Goa and the Chinese aggression has endeared that country to every Indian. Like India, Soviet Russia believes firmly in peaceful co-existence. Russian leaders have consistently been appreciative of India's firm adherence to the political non-alignment.

There is an obelisk at Bhilai, on which is inscribed Jawaharlal Nehru's remark that Bhilai is "the symbol and hope of the future of India", together with Soviet Premier's words: "Let our friendship be as strong as the steel melted at this plant."

The Indian and Foreign Review wrote: "The course of Indo-Soviet co-operation in its first decade has proved that both

these observations are prophetic. Indo-Soviet friendship is not only mutually beneficial but bids fair to become a shining model of true international co-operation, an ideal to which the current year has been specially dedicated by the nations of the world."

From the foregoing it is evident that Indian State Plans have been inspired by Soviet Russia. But there is a gulf of difference between the situation in India and that of the Soviet Union. Three important differences are significant. Firstly, there is the vast size of the Soviet Union, with its far greater abundance of land with much lesser population. Secondly, at the beginning of Soviet planning there was a mentionable agricultural surplus, and lastly, the Communist Government in Russia gave far greater emphasis to education than was given under Indian Planning. Moreover, when the Soviet Planning began, the rate of literacy in Russia was already higher than it was in India in 1947. The Russians, after two decades of planning, have now become a world power. So an attempt has been made here to state the Indian and the Soviet ideas of planning.

About Indian Planning Nehru said, "I am all for tractors and big machinery and I am convinced that the rapid industrialisation of India is essential to relieve the pressure on land, to combat poverty and raise standards of living, for defence and a variety of other purposes. But I am equally convinced that the most careful planning and adjustment are necessary if we are to reap the full benefit of industrialisation and avoid many of its dangers." "The original idea behind the Planning Committee had been to further industrialisation—the problems of poverty and unemployment of national defence and of economic regeneration in general cannot be solved without industrialisation. As a step towards such industrialisation, a comprehensive scheme of national planning should be formulated. This scheme should provide for the development of heavy key industries, medium scale industries and cottage industries'.....

Broadly speaking, there were two approaches, the socialist one aiming at the elimination of the profit motive and emphasising the importance of equitable distribution and the big business one striving to retain free enterprise and the profit motive as far as possible, and laying greater stress on produc-

tion.....Obviously we could not consider any problem, much less plan, without some definite aim and social objective. That aim as declared was to ensure an adequate standard of living for the masses, in other words, to get rid of the appalling poverty of the people..... The objective for the country as a whole was the attainment, as far as possible, of national self-sufficiency. International trade was certainly not excluded, but we were anxious to avoid being drawn into the whirlpool of economic imperialism. We neither wanted to be victims of an imperialist power nor to develop such tendencies ourselves. The first charge on the country's produce should be to meet the domestic needs of food, raw materials and manufactured goods. Surplus production would not be dumped abroad but used in exchange for such commodities as we might require. To base our national economy on export markets might lead to conflicts with other nations and to sudden upsets when these markets were closed to us. So, though we did not start with a well-defined social theory, our social objectives were clear enough and afforded a common basis for planning. The very essence of this planning was a large measure of regulation and co-ordination. Thus while free enterprise was not ruled out as such, its scope was severely restricted..... A certain latitude was allowed for various types to develop so that, with greater experience, particular types might be encouraged more than others.

We, or some of us, at any rate, hoped to evolve a socialised system of credit. If banks, insurance etc. were not to be nationalised they should at least be under the control of the state, thus leading to a state regulation of capital and credit. It was also desirable to control the export and import trade. By these various means a considerable measure of state control would be established in regard to land as well as in industry as a whole, though varying in particular instances, and allowing private initiative in a restricted sphere.

Thus, through the consideration of special problems, we gradually developed our social objectives and policy. There were gaps in them and occasional vagueness and even some contradiction, it was far from a perfect scheme in theory..... but in the larger field of India, we could not then plan for socialism as such. Yet it became clear to me that our plan, as

it developed, was inevitably leading us towards establishing some of the fundamentals of the socialist structure."

Thus impressed by the example of Russia's planned economy, Nehru persuaded the Indian National Congress in 1938 to establish its first National Planning Committee. After independence, Nehru at the helm of the Indian administration became the prime mover in setting up the Planning Commission in 1950, which today has won the admiration of those pioneers of socialist planning from the U.S.S.R.

COMMUNISM AND THE ROLE OF THE SOVIET PLAN

Serafim Pervushin, the prominent Soviet economist is director of the large Economic Literature Publishing House of the State Planning Committee of the U.S.S.R. (Gosplan). His works on economic problems connected with communist construction are well known both in the Soviet Union and abroad.

In an article on Communism and the Role of the Soviet Plan, he wrote: "The chief and decisive condition for building communism is economic development. At the end of the 20 years of the long-term plan, the volume of industrial production in the U.S.S.R. will be increased sixfold, and the production of agricultural goods, 3-3.5 times. This gigantic growth of the economy presupposes substantial changes in the system of economic management of the country, in the whole nature of the relations between people, in the process of production and distribution of material wealth."

Mr. Pervushin went on to say, that "the transition to communism will be accompanied by the gradual withering away of the institutions of state power, and the growth of the role of public organisations."

Won't this mean anarchy, lack of discipline, and a rejection of the method of centralised management of production? Of course not, on the contrary, the transition to communism implies better organisation and order in all fields of economic, social and cultural life. The significance and the role of planning and the planning organs as well as of the statistical bodies will continue to grow the nearer they approach communism.

Moreover, instead of governing people, management will be concentrated more and more on governing things, i.e. the

management of production and the distribution of material wealth. Observance of social norms of behaviour and production discipline will become a tradition, and less means will be required for the maintenance of public order.

Why is further strengthening of centralised economic management necessary? Because the scale of production is steadily growing, the degree of socialism of production is increasing. As science and technology develop, economic relations also develop and become more intricate.

The State Planning Committee of the U.S.S.R. has the task of ensuring proportional development of the national economy in the state plans, with accelerated development of the economically most progressive branches of industry and agriculture; correct distribution of productive forces throughout the territory of the country; the all-round growth of labour productivity, reduction of production costs, and improvement in the quality of goods, etc.

The reorganisation of the central planning bodies, now being carried out in the Soviet Union, is intended mainly to ensure that the national economic plans should become the plans of scientific forecasting. They must advance vital economic and political tasks, the accomplishment of which will ensure the creation of the material and technical basis of the new society and the achievement of high living standards as soon as possible. Moreover, the emphasis in planning is no longer paid on the fulfilment of the plan alone, but on the achievement of the best production results with the least expenditure in the interests of society.

The Soviet Party Programme states: "Communist construction presupposes the maximum development of democratic principles of management coupled with a strengthening and improvement of centralised economic management by the state. The economic independence and the rights of local organs and enterprises will continue to expand within the framework of the single national economic plan. Plans and recommendations made at lower levels, beginning with enterprises, must play an increasing role in planning."

Prior to 1957, the management of industry and construction in the Soviet Union was effected by the industrial Ministries and Boards. This system arose at a time when industry had a

relatively small number of enterprises, and it was possible and expedient to manage its work throughout the country from one centre. Subsequently, with the growth in the scale of production and the development of more complicated economic relations, efficient management of all these enterprises from one centre became more and more difficult. Departmental obstacles arose in the way of the establishment of co-operation between industries; the rights of the local Party and Government bodies in economic management were restricted. All problems, big and small, had to be settled with the consent of the central bodies, or in accordance with their instructions.

The management of industry and construction was reorganised. In 1957 the industrial Ministries were abolished. Economic-administrative areas headed by Economic-Councils were formed; within the framework of the single national-economic plan these Economic Councils enjoy greater independence in the management of enterprises. This made it possible to extend the rights of the enterprises and local organisations.

The role of public organisations in the management of production has also increased considerably. The Economic Councils include in their make-up scientific-technical councils, consisting of representatives of enterprises and scientists, which draw up proposals for improvement of economic planning and the introduction of new technology and equipment.

The Supreme Economic Council of the U.S.S.R. directly subordinated to the Government, has been formed. This Council has been entrusted with the management of the development of industry and construction, and coordination of the work of the central planning bodies. Thus, a system of planning and management of the national economy on a country-wide scale has been established.

On the other hand, the development of local initiative is being encouraged in every way. In the first place, the role of the Union Republics in the management and planning of their economics has become even greater.

Lenin, once wrote that "The Soviet Government by no means intends to belittle the importance of local authority, or to smother its independence and initiative." During the period of the Stalin's personality cult, the role of the Union Republics in drawing up the national economic plans was greatly depreciated

owing to excessive centralisation. Since the 20th Congress of the CPSU measures have been taken to eliminate these shortcomings.

At present the participation of the Republics in the management of production is growing. They are responsible for the elaboration and implementation of their own plans.

Additional measures are being taken to extend the rights of enterprises and Economic Councils. Under the draft law on the socialist enterprise, now being elaborated, the directors, of enterprises, and the managers of building organisations will be endowed with greater rights; it will ensure also more active participation of the working people in the management of production.

The necessity for the comprehensive development of the productive forces and the combined efforts of neighbouring economic administrative areas gives rise to a trend to their amalgamation and to the creation of a single body uniting the economies of a number of districts and republics. In the RSFSR, for example, 24 economic areas have been created in place of 37, in the Ukraine, seven in place of 14. The Central Asian Economic Council has been set up to guide the work of the industrial enterprises of Uzbekistan, Kirghizia, Turkmenia and Tajikistan. The amalgamated economic Councils have become powerful economic centres.

The amalgamation of the Economic Councils is based on the production principle with due consideration for the leading branches of industry.

In the Ukrainian SSR, for instance, the local coal industry of the Donbas, formerly subordinated to two Economic Councils, is now concentrated under the jurisdiction of the Donetsk Economic Council. The oil industry of the Northern Caucasus, formerly controlled by four Economic Councils, is now controlled by one—the North Caucasian Council, etc.

An important step towards the further democratisation of the whole of the social system is the reorganisation of control. The combination of Party and state control and the participation of the mass of people in the work of the control organs are effective measures towards the extension of the rights of the working people and the elimination of bureaucratic methods which still exist in a number of organisations.

At first glance this may seem a contradiction: on the one hand, centralised management is being strengthened, on the other, the rights of the local bodies are being extended. But on closed consideration this apparent contradiction disappears.

Gradually the achievements of economics, mathematics and cybernetics will make it possible in the next few years to entrust a great part of the planning calculations to electronic computers.

The organisation of automatic information, the rapid calculation and solution of various planning and economic problems will be strictly controlled by society. And this control will be all the more qualified, the more planning workers and economists are freed from the fatiguing computation of different versions of the plans, a task which is already growing beyond their powers.

The possibility of elaborating multiple versions of plans with the aid of machinery, in order to find the optimum solutions, and also the possibility of rapidly correcting the plans creates wider opportunities for initiative in planning. With the current system of information many days and even months are needed in order to take into account and estimate the results of changes in the plans of any given enterprise.

It would be impossible to keep pace with the growth in the volume of production by simply increasing the staff of the planning organisations. Scientists working on applying cybernetics in economic management have calculated that with a sixfold increase in the volume of production and the preservation of the present methods of managing and planning in 1980 it would be necessary to employ the whole of the adult population of the country in this work. With complete mechanisation of accounting and calculation processes, it will be possible in the course of a few hours to obtain all the necessary data, to adopt decisions, and send this information to the organisations concerned.

This purely technical measure has a direct bearing on the further growth of local initiative.

Indeed, the economy can be co-ordinated only with an accurately calculated inter-industry balance. These calculations serve as direct instructions for each collective: the production of which goods has to be enlarged; what measures have to be taken to improve production in order that it might not lag

behind the allied branches in the quantitative and qualitative indices, etc. Accuracy of targets provides greater freedom for local initiative.

About heavy industry Mr. Pervushin stated that it will continue to be the leading link in the development of the whole of the economy. But at this stage of economic development there is no longer any need to draw up a programme for the priority development of heavy industry at the expense of other industries. On the contrary, highly developed heavy industry is becoming the main source of accumulation and an arsenal of new technology promoting the rapid growth of agriculture, and the light and food industries.¹

The output of enterprises producing the means of production for heavy industry is to increase six times, while the production of equipment for light and food industry, agriculture, housing construction and public services will increase 13 times.

It does not follow from this, of course, that heavy industry is not given the necessary consideration in the economic development plans. This assumption would be wrong. At present, the development of heavy industry helps to an even greater extent directly to improve the people's living conditions.

¹The programme of rapid industrial development undertaken by India calls for not only the availability of high-quality machinery and skilled technicians, but also adequate supply of tools and instruments to check and control the quality of end products.

Domestic production of mechanical instruments is at present woefully inadequate.

Imports are made on an extremely restricted scale because of foreign-exchange difficulties. Demand prospects indicated by the study underline the scope for setting up industrial units for the manufacture of measuring devices of various types.

The study covers the following groups of instruments: Production gauges; Conventional measuring tools and gauges for rough checking; Verniers, micrometres, and dial gauges; Comparison standards; Comparators; Optical measuring instruments; Surface measuring and other special instruments.

(Governing Body of the Indian Investment Centre has decided that a detailed survey of the demand for the more commonly used types of measuring devices, such as tools, gauges, and instruments, should be undertaken. This work, entrusted to the Technological Consultancy Bureau of the National Industrial Development Corporation, is to be completed.)

Giving two or three examples, the writer said that the 20 year plan envisages a tremendous growth of the iron and steel and chemical industries, and also of the generation of electricity. By 1980, steel production is to reach 250 million tons. The proportion of electric power will increase 9 to 10 times, and is to reach the enormous figure of 2,700,000 million-3,000,000 million kWh.

Critics attempt to interpret these figures as a sign that in the forthcoming decade the accelerated industrial development will push the direct needs of man into the background. In reality, however, with such a high level of development, heavy industry will be able to use a growing part of its output to cater to man's needs.

Mentioning the housing problem in the Soviet Union the writer said that during the past ten years 108 million people, or almost half of the population of the U.S.S.R. have moved into new flats. But in order to solve the housing problem, the rate of housing construction must be trebled in the forthcoming 20-year period and 400 million square metres of housing, i.e. almost one-half of the area built from 1918 to 1960, supplied to tenants every year. Such a place only becomes possible with a high degree of industrialisation of housing construction. And the development of the building industry means a demand for huge quantities of metal and cement.

A still closer relationship exists between the rate of the development of power industry and the living conditions of the people. In the past, attention was primarily devoted to the electrification of industry, while electricity was used on a much smaller scale of domestic purposes. In the forthcoming 20-year period the rate of utilisation of electricity for domestic purposes particularly in the countryside, will considerably exceed the rate of electrification on industry.

Economic plans in the Soviet Union also envisage a steady increase in these benefits which the population receive from public funds. Soviet citizens derive approximately one-fourth of all their incomes from the public funds. Soviet society is interested that every individual, irrespective of his earnings may acquire knowledge and develop his abilities, that every member of society may enjoy free medical aid when needed, that every woman be provided normal conditions for child-

birth and the upbringing of a healthy child, etc. During the first four years of the Seven-Year Plan period, the payments and benefits received by the population from the public consumption funds, in addition to workers' wages and remuneration to collective farmers, increased from 21,000 million roubles in 1958 to 34.5 million roubles in 1963. In 1963 more than 9 million working people and their children received sanatorium, rest home or summer camps accommodation paid for completely or in part from the state or collective farms' social security funds.

The state pays from public funds two-thirds of the outlays for the maintenance of housing, for all types of education, including higher education, old-age and disablement pensions, maternity leave of 112 days, all types of medical services for the population, from 70 to 90 per cent of the cost of maintenance of children at nurseries and kindergartens, the upkeep of libraries, clubs, sanatoriums and holiday homes.

By 1980, it is expected that the share of public funds in the aggregate real income of the population will be one half. A decisive step will therefore have been taken towards the implementation of the principle of distribution according to needs.

So it is seen that from the point of view of both the planning principles and the methods of their implementation, man has always been the focus of attention of socialist production. And if people's need and the possibilities of catering to them are not always accurately allowed for in the plans owing to objective or subjective reasons, corrections are made in the course of the fulfilment of these plans. Thus, as a result of over-fulfilment of the targets for the first years of the Seven-Year Plan period, the country obtained additional material resources. These additional resources were used for the development of agriculture, and the light and food industries. In other words, corrections were made to the Seven-Year Plan with a view to accelerating the rate of growth of the people's material well-being.

Moreover, in the process of realisation of consumer goods, the relation of the plans to the real needs of the people is constantly checked. If the actual needs of the people are not accurately taken account of during the compilation of the plans,

life itself makes changes in the range, quantity and quality of the goods produced.

Those who criticise the planning system erroneously imagine that value commodity-money relations and the law of demand and supply do not exist in the socialist economy. Yet the law of demand and supply functions in socialist functions in socialist society through the market, and the higher the level of material security, the greater are the real opportunities of the consumers to influence production.

How does this show itself in practice? A shoe-making enterprise, for instance, may produce shoes of a certain style which find no buyers. In such a case, the trading organisations refuse to accept these goods from the enterprise, and the industry is forced to re-organise and produce other styles.

"Such facts are not rare in socialist reality. They fully refute the claim that the genuine interests of the consumers are ignored in planning."

IDEAS OF SOVIET PLANNING

Implementation of national economic planning, however, requires a number of social and economic prerequisites, one of the chief of which is unity of purpose. In other words, all society, or the majority of it, must strive to one and the same goal.

This can only be achieved, however, on the basis of the socialisation of the means of production. Further, the national economy must be managed by all the people through their elected representatives. Only by socialisation of the means of production and by making them the property of all the people can production be made to serve its chief purpose—the constant improvements of the people's standard of living. It is only on this condition that the level of consumption can be planned and the necessary measures for its attainment ensured.

Comprehensive planning of economic and cultural development lies with the scope of socialist society.

The Soviet national economy cannot develop normally without a definite correlation between its different branches, a correlation that must be established beforehand and strictly maintained, which is only possible if the actions of the state and its planning organisations are determined well in advance.

Many critics say that this involves arbitrariness, that economic developments depend on someone's whims or fancies. But that is far from the truth. No one may, of his own free will, change the existing proportions between the different branches of the national economy. They are established with consideration for the actual situation in the economy and the available resources, i.e. with a view to the demands, which if ignored, would lead to a disruption of the entire process of social production.

Imagine for a moment that society or its state bodies, promoted by the best intentions, want to sharply increase consumption, but fail to provide for a corresponding increase in population. Where would that lead? The existing supplies of goods would soon be used up.

Again if the relationship between consumption and the accumulation of means for the extension of production were arbitrarily upset, a reduction in the share of accumulation would inevitably lead to the delay and subsequent suspension of economic development, to the decline and disintegration of all economic life.

There are also many other spheres of production which cannot function normally without observing fixed proportions. Both the distribution of industry in the different economic areas and the specialisation and co-operation of production must be based on appropriate proportions. Nor can an economy be well co-ordinated if there is no balance between the needs of the national economy for skilled workers and their numbers trained.

Thus it is seen that there is a wide range of economic proportions which ensure steady and swift economic development. They are attained by Soviet planning methods, and that is why planning is one of the most important tasks of Soviet society.

In bourgeois countries, continued Mr. Pervushin, the necessary correlations in the economy occur spontaneously, by painful fluctuations and disproportions by slumps and booms. The proportionality required by the objective laws of the economy is reached blindly and haltingly at the expense of great losses.

In the Soviet Union, however, the fact that all the means of production are social property has enabled the people to concentrate in their own hands everything required for co-ordinating the national economy as best as possible. The course of production is planned and guided from one centre, and this creates

great opportunities for the utmost economy of material and labour, for high labour productivity. Moreover, the normal functioning of the entire economic system depends on the work of each factory, plant, each link in the huge production machinery of the state. That is why the role of every worker, irrespective of his job, is of great importance in the Soviet Union.

Although proportional economic growth is inherent in socialist society, it does not follow by any means that disproportions never occur under socialism. But their nature and causes are different to those in bourgeois society.

Disproportions may result from the general growth of the economy. These are difficulties of growth. On the other hand, disproportions may also arise from mistakes in planning, shortcomings in the functioning of various organisations or industries or, finally unfavourable natural conditions. But all of them are of a partial, temporary nature and are eliminated through planned guidance because they are alien to Soviet economy.

The fact is that the Soviet state controls the necessary material resources which it uses to eliminate incidental incongruities as swiftly as possible.

Correlation between the different branches of the economy can never be permanent. The stability of proportions in the Soviet economy would not be a sign of prosperity but a danger signal. It would mean that social production did not change, that it revolved in a circle without growing. New branches in fact appear, while some of the old ones lose their significance. The same holds true for other fields of economic life.

In a socialist country the planning system has the following tasks: to take changes into account in due time, to make the necessary corrections in economic plans, to prevent the appearance of disproportions or at least to eliminate them quickly. It is therefore obvious how complicated and highly responsible is the work of the Soviet planning bodies.

Thus in the Soviet Union planning is a process in which the elements of scientific research and economic organisation are closely interconnected. Correct planning requires a thorough knowledge of economics, the objective laws of economic development, the ability to look ahead. Efficient economic management is impossible without well-organised national-economic

accounting and statistics.

Soviet planners compile a single national-economic plan from the plans of the different enterprises and industries. Once this plan is drawn up, all its indices and targets must be strictly adhered to. In other words, the national economic plan is not a forecast, nor is it a disclosure of the trends of economic development, but a social order drawn up with due regard for economic potentialities, backed by the necessary material and labour resources, and bound to be fulfilled.

Plans in the Soviet Union are drawn up in accordance with the main tasks of the country's development by the official planning bodies functioning in the centre, in the administrative-economic areas, and at enterprises. Having carefully weighed all the existing resources and potentialities, and considered the tasks confronting society, the planning bodies work out current (annual) and also long-term plans for periods of five to seven and more years, which are approved by the highest body of state power.

Western economists do not agree with this conception of the essence of planned management and are against the necessity of subordinating individual interests to society's interests. They therefore cast aspersions on the principle of socialist planning. Their most popular thesis is, roughly, the following: "It is true that planning relieves mankind of many troubles, of anarchy and crises, it permits the optimum use of labour and material resources for the achievement of the desired economic results. But the plan crushes human initiative, enslaves the individual; in a planned economy the individual is lost in the social current".

Strict regimentation, they assert, stifles man's energy and enterprise.

The Italian newspaper *Ventiquattro Ore* wrote that the Soviet economy is a "paradox of a country which, in wishing to avoid undesirable results of the so-called hapazard nature of market economy, has permitted itself to be caught in the iron vice of universal planning; owing to its obvious inexpediency, such planning has deprived the country of freedom and turned its citizens into slaves of its economic system". Another remark was that "The Soviet economic plan leaves no room for individual initiative. Realistic planning can only be based on

possessive instincts”.

These statements show, business circles in the West do not object to planning as such, but no universal planning, i.e. to the planning of the economy, culture, and socio-economic services on the scale of the whole of the economy. They do not like “strict regimentation” i.e. the subordination of the interests of the individual and the activities of individual enterprises to a single, centralised planned management.

They assert that under the planned system man becomes a type of labour implement, that his work is planned, his knowledge dosed out, his thoughts standardised, his tastes dictated and his reactions registered. In the production process, man becomes part of the plan like a machine or raw material. And if man is treated like an inanimate object, he loses his whole being.

The attacks on the principles of Soviet economic planning show that the critics measure the new social system by its own yardstick, limited by the narrow horizon of capitalist private property.

According to this Soviet writer in bourgeois society, where private property disunites producers and gives rise to rivalry and antagonism between them the aims and interests of one producer clash with those of another, and, in the majority of cases, either failure is achieved at the expense of others.

If the struggle proceeds between big owners in their own private interests, ordinary people—even if they are skilled workers or engineers—are only used as a means to an end. Very frequently the factory and plant owners are forced by this rivalry to curtail production, or close down completely. And then all workers, engineers and even the privileged part of the workers are thrown overboard. Can an individual display any initiative in these conditions? Only within limits advantageous to the boss owning the capital.

Here is a paradox: the individual is prevented from showing initiative by the fact that each individual seeks to display his personal initiative, disregarding the interests of the whole of society and at the expense of other people.

Therefore the solution of the problem lies where it is not sought. Many honest, ordinary people sincerely believe that the only possible way to satisfy vital needs and to achieve the

ideals of freedom and independence lies in the development of personal, individual inclinations in the domain of private ownership.

The Soviet writer argued that the all-round satisfaction of personal needs, genuine freedom of the individual and personal initiative are only possible through collective effort, through joint work with reasonable consideration for the interests of everyone. To enable everybody to display initiative, this initiative must be co-ordinated with the interests of the collective, the whole of society. In other words, real conditions for personal initiative are not created by antagonism between people but by the joint efforts of a collective, of society striving for a single aim expressed in a clear-cut programme of action. The plan is such a concrete programme of action for a year, five years, or more.

All the world has heard of the Soviet Five-Year plans by which the backward, impoverished state was able to develop into an industrial power.

The planned management of socialist economy permits the economic development of the whole of the socialist system to proceed. All these vital facts have made planning popular. But, Mr. Pervushin claimed that it is only in conditions of socialised production and its subordination to the interests of the consumer that genuine economic planning can be carried out. Moreover, the process of drawing up plans and organising their fulfilment, far from crushing the individual, helps to develop his creative initiative.

The Soviet plan is mainly a combination of the principle of centralised leadership and development of personal initiative.

Centralism, in its genuinely democratic meaning, presupposes the full and unhindered development of personal abilities and personal initiative, a variety of ways and means of achieving a common aim. Unity in the most important and essential principle is not frustrated, but ensured by the variety of details, of methods of development and control.

One of the conditions for successful leadership of socialist production is one-man management, which means unflinching obedience to the will of the authorised representative of the state, the leader of an enterprise or other organisation and his personal responsibility for the work in hand.

The question may arise that why is one-man management necessary? A modern factory employs hundreds and thousands of people. Its work is, therefore, inconceivable without the subordination of all the workers to a single will directing the joint efforts for a common aim. One-man management ensures order and discipline in production, excludes the elimination or lack of personal responsibility. Each worker is responsible for the assignment given to him and is subordinate to a definite manager.

One-man management in socialist enterprises has a genuinely democratic nature. When settling production problems, the managers discuss them with the workers, engineers, and technicians, taking their experience into consideration, because one man's experience, no matter how extensive, cannot replace collective experience. That is why the combination of one-man management and the participation of the workers in administration creates the best conditions for the guidance of socialist production.

Another important principle of leadership is simplicity and economy in management. If practical production problems are to be settled swiftly and efficiently, the number of links in the management, and the managerial staff should be as small as possible.

The Party Programme points out that the selection, training and promotion of people who directly head enterprises, who organise and manage production are of decisive importance for effective economic management.

The Soviet economist says that every unbiased person must come to the conclusion that democratic centralism that always been adhered to, in the main, in managing the Soviet economy, and that as Soviet society progresses towards communism democratic principles are being developed and perfected.

This means that every enterprise, business organisation or department is allotted the necessary material and financial means for operation, and has the right to engage and dismiss personnel.

An enterprise has the right to decide independently how to make the best use of the means for the fulfilment of the plan. It organises production, enlists workers, determines the most efficient mode of utilising machines and other equipment, how best to distribute personnel. Further, the enterprise sells its

output at fixed prices, and the proceeds are used to pay wages, purchase raw and other materials and fuel, to pay bills, for electricity, transport, etc.

Each enterprise functioning on a cost accounting basis has its own current account in the State Bank where the funds at its disposal are deposited. Under this system the financial and economic position of an enterprise is directly dependent on the results of its economic activities.

If an enterprise works well, with good initiative, skilfully using the means of production and labour, increases output and lower costs of production, it will derive a profit and its financial position will be strengthened.

The leaders of an enterprise and all its workers enjoy considerable independence within the limits of the plan. Using that part of the profits which remains at their disposal under this mode of operation, the enterprise can enlarge its production capacities, modernise the equipment, organise the construction of housing, cultural and public-service establishment.

In organising economic development and all planning work, communists are guided by the doctrine that the foundations of communism can only be built with the help of the enthusiasm born of the revolution, with the help of material incentive and cost accounting, and not on enthusiasm alone.

In recent years, economists in the Soviet Union and other socialist countries have been striving to develop a system of material incentives which would make the collectives of enterprises interested in the fullest utilisation of the production potentialities when drawing up and fulfilling plans. In a number of socialist countries different systems are already being used to this end. In Poland for instance, a higher rate of profits is deducted to the fund of the enterprises.

The organisational structure of the management of an enterprise, Mr. Pervushin claims, is being carried out on democratic footing. Every department or service is supported in its activity by a large group of active workers. For instance, when drawing up annual or long-range plans of an enterprise, special teams, of engineers, technicians and the most highly skilled workers are formed to help the planning officials. These teams work out preliminary considerations for different parts of the technical and economic plans of the enterprise. Summarised in a

single plan, these considerations are discussed by the whole of the collective or their elected representatives.

Therefore the democratic system of management under which the collectives of enterprises enjoy great economic independence, and also the measures for material and moral incentives promote personal initiative in planning.

Mr. Pervushin then explains how democratic principles in planning are applied. He goes on to say that the starting point when drawing up annual or long-term plans is to determine the target. On the basis of a thorough study of the laws of social development and the concrete economic and political conditions the communist party advances the most important tasks for the development of the economy and culture in the immediate future and over a longer period.

This way of presenting targets to the enterprises may be regarded as anti-democratic, as tending to suppress individual and collective initiative. In reality, however, it represents the collective will of the whole of the people, crystallised in figures, terms and assignments. Without this concrete expression of the will of the people, all talk about building communism would be mere words, while communism itself would remain a beautiful dream, a Utopia.

In the Soviet Union a centralised task assigned to an enterprise is regarded as the command of society, as the given collective's part in fulfilling the general plan.

The centralised task is only the starting point for the enterprise, where it is turned into a concrete plan clearly showing what type of output is to be produced and in what quantities, what improvements are to be introduced in the technique, technology, organisation of labour, etc.

The entire collective of an enterprise takes part in elaborating the plan. In all cases the public organisations of the plant, the party, trade union and various committees—take an active part in drawing up plans and ensuring their fulfilment. An all-round discussion of the plan makes it possible to find out production reserves and to see to what extent the preliminary figures received from the central planning bodies, correspond to the actual potentialities of the enterprise.

Sometimes it frequently turns out that the original figures have been under-estimated, that the enterprise can produce

more. If this is in the interests of the whole of the economy and can be ensured by the existing material resources, the central planning bodies agree to the amendment made by the collective and raise the target.

If the figures on the other hand, set by the central planning bodies exceed the production capacities of the enterprise, a decision is taken either to lower the target or to enlarge production capacities. Thus, the final draft of the plan emerges as a result of joint discussion of the plan in every detail by representatives of the central bodies and the local planning organisations, and of the enterprise.

The production conferences are a very efficient form of comprehensive participation of the working people in the management of production.

In these conferences various activities are conducted. The members take part in the discussion of draft plans, hear reports by the leaders of enterprises and ships on the current work and on the results of work over a given period of time, consider questions pertaining to production, labour and wages, discuss organisational and technical measures, the installation of new equipment, new inventions, and nationalisation proposals. Many permanent production conferences achieve good results and are of great assistance in settling major production problems.

The creative initiative of the working people, however, originates new forms of their participation in production management. Public economic analysis, designing and technical information bureaus, and councils of innovators are being set up at enterprises. All these forms of participation in the management of production are shoots of the future self-government by the people.

When it is approved, the plan becomes a state task, which must be fulfilled. In the Soviet Union it is customary to say that the plan is the law of an enterprise. This implies the necessity of maintaining strict discipline in planning. If the plans are not stable and not fulfilled within the scheduled time, they lose all meaning. For instance, were an enterprise to produce other goods than those planned, it would not be able to fulfil its sub-contractor obligations and would prevent its contractors from fulfilling their plans. This would spread like a

chain reaction to many other enterprises, and in the end would affect the fulfilment of the general national-economic plan. This is easy to understand. But the opponents of planning draw an absolutely erroneous conclusion from this fact: they say that once the plan is law, this in itself excludes the possibility of displaying initiative.

The first step is the compilation of the plan. The decisive stage then begins with the plan's fulfilment. At this stage the role of the workers, those who actually carry out the plan, becomes particularly important. Here there are no limits for displaying personal initiative.

CRITICISM OF INDIA'S SOCIALIST DOGMAS

¹ An Indian professor severely criticised India's Five Year Plan and remarked that judged by the improvement in the standard of living of the masses and a narrowing of the gap between the incomes of the very rich and the very poor, there has been little growth during the past 12 years. He goes on to say that though there was an increase of 54 per cent in India's national income over that period, comparing well with many industrial countries, the living standards of the people by contrast have not greatly altered.

Income per head gives a truer picture of the progress of a country's prosperity as a whole than national income. During the census decade 1951 to 1961, India's population increased by 2.2 per cent annually. Income per head of the population rose by a tiny 1.3 per cent per annum.

But even this slight up-grading of income per head gives too rosy a picture of the real advance in popular well-being. For this 'income' covers much that is deceptive. Part of the increase is no more than an excess production of non-consumer goods. The greater portion of both domestic savings and foreign aid—"half in the First Five Year Plan, three fifths in the second and still more in the third"—goes to the public sector, which produces little else than non-consumer goods.

To quote the author from the London *Daily Telegraph* "So we are treated to the strange spectacle of a hungry and ill-clothed nation busily engaged in producing iron and steel,

¹ INDIA'S Wasted Resources—*Daily Telegraph*—March 5, 1964.

heavy chemicals and marvels of engineering, while in more need for more food and clothes, better storage and marketing facilities for their produce, more fertilisers and agricultural implements."

Again, part of the increase as shown in statistics does little more than throw light on the tendency to produce the means for over-production and add unduly to stocks. For example, only about 71 per cent of stock available for irrigation is being utilised. In some 40 industries production could be raised up to 40 or 50 per cent.

The average incomes of the mass of the people have suffered because of the overt trend of income towards the rich. This has been brought about by inflation, controls and unnecessary expansion of the public sector.

The author further stated that "the benefit of higher national income has gone almost wholly to the upper-income groups, while the mass of the people have not shared in the expansion at all."

The consumption of food and cloth seems to reinforce the view. Daily supplies of foodgrains per head in recent years have tended to decrease. In 1962 the supply was only 15.8 ounces, less than that allowed in prisons. The annual supply of cloth per head fell from 16 yards in 1956 to 15 yds. 1 ft. in 1960. Wage rates add further support of this. Real wages in industry rose by about 10 per cent in 10 years. But agricultural wages declined and the agricultural worker's debt has risen. Unemployment has become more wide-spread.

The Indian national income as estimated for the years 1962-63 revealed a decline in income per head, similar to the preceding year. This is the first incidence of this happening for two years in succession.

This unsatisfactory condition is brought about to some extent through investment resources, including foreign aid, being mis-directed on a vast scale, the result of unwise economic and social policies.

Economic policy in under-developed countries should aim at maintaining the higher national production if poverty, unemployment and glaring inequalities of income are to be abolished. Over taxation of top incomes be of little effect.

But such an aim has not been given priority by India's

planners. They have been more concerned with using greater part of investments in backing up what is regarded as basic industries. It is steel, heavy engineering, heavy chemicals, electricity, coal, cement and huge hydro-electric and irrigation projects that they have favoured. Indian economic and social progress has suffered greatly as a result.

He also said that foreign aid in India fails to reach its target and suggested that the planners' special policies have failed. New policies are called for if India's economic and social progress is to be speeded up. First, there must be end to the wholesale throwing away of resources which is the result of the planners' dogged pursuit of their false 'basic industries', and their indiscriminate industrialisation.¹

Secondly, the State must turn its attention to areas which are proper to its activity, leaving trade and industry to be guided by the great economical experience of competitive private enterprise. Over 70 per cent of domestic savings and foreign aid goes to the nationalised undertakings, which contribute only about four and a half per cent, of the national product. That would free resources for the development of agriculture, the country's major industry, badly in need of capital (private firm credit costs 80 to 90 per cent).

Thirdly, it is imperative that the national budget be balanced in order to stop inflation, a major obstacle to economic development. Finally, the rupee, over-valued by past inflation, has only recently been devalued.

These measures would constitute steps towards increasing the national product, so necessary in the overcoming of poverty and unemployment. Devaluation and the end of inflation would give a fillip to exports and bring back equilibrium to the balance of payments. In addition, larger exports would ease the restrictions on the imports of raw materials, equipment, and essential consumer goods.

Without these reforms foreign aid is misdirected. It fails to raise the Indian people's standard of living, as intended. Part of it has financed the creation of over-production. Part has created the industrial "white elephants" and committed India to their costly maintenance.

There are other instances of the misuse of foreign aid not

¹ *Daily Telegraph*—March 12, 1964.

perhaps so easily detected but nevertheless disturbing. It finances the illegal export of capital and the smuggling in of gold and consumer goods. It provides the foreign exchange counterpart of speculative accumulation of stocks; of the construction of less essential urban property (much of this is undertaken simply to protect the value of savings from inflation); and of the luxury living which is made possible by inflation and by illicit incomes resulting from controls.

The method of channeling foreign aid for these purposes is an oblique one. Smugglers obtain foreign exchange from the free market, where the supply flows in from exporters and others. The exporters get their foreign exchange by taking illicit advantage of the Reserve Bank by over-invoicing imports or by directly under-invoicing them, may even smuggle them out. A certain amount of some free foreign exchange also derives from Indians abroad and tourists.

This mis-direction of foreign exchange from the Reserve Bank to the free markets in the same degree adds to India's external deficit. The deficit, in like manner, continues to grow owing to the follow-up of stocks and extravagant living. The task of making good the deficit is thus raised on to the Reserve Bank and the Ministry of Finance. This deficit is covered by foreign aid, which means that foreign aid finances all these illicit activities encouraged by improving central planning and by controls.

It is interesting to consider how much foreign aid has in truth found its way into sound investments. In the Second Plan (1956-57 to 1960-61) foreign aid was responsible for about 30 per cent of all investments. Today this has probably grown to over 45 per cent. Yet it is important to note that India has been unable to cover even a portion of the external debt service from her own earnings. The amount put aside in the Third Year Plan for debt repayments—£ 385 million—all came from fresh borrowings. Statistics make plain that this actually happened during the first year of the plan.

There have been attempts to justify this failure to repay debt except through renewed borrowings by the thesis that this is unavoidable during the beginning period of new investments. But not even a modicum of competence to repay has been shown in spite of a decade of planning and the swallowing

up of a vast amount of foreign aid. Unfortunately while foreign aid has greatly increased the burden of India's debt, it has not at the same time helped India to pay the service of that debt. Current policies render leakages unavoidable.

But these policies will not be given up without pressure which would necessitate an outright attack on the Administration's *Socialist dogmas*. There would have to be a relinquishing of much power, patronage and easily won income handed to the administration as the result of planning and controls.

CHAPTER VIII

SOME OTHER ASPECTS OF THE EDUCATION PROBLEM

THERE ARE certain other aspects of the education problem in India which it was felt did not call for extended treatment in these pages, since a number of close studies have already been made of them. They are, however, important and significant in the context of the educational policy and economic development of the country. Therefore, some review of them has been added here. Among these aspects are the education of parents, the needs of physically and mentally handicapped children, the education of women and the problems of stagnation and wastage and educational planning.

NEED OF PARENT EDUCATION

The educational authorities had to solve the educational problem, not only by successfully extending education among the children, but also by educating the parents; parent education is, indeed, an urgent necessity for it has to be remembered that about four-fifths of Indian parents are illiterate. Moreover, since independence, the emancipation of women, the slow but gradual changing role of women in Indian society is going to make an impact on education. Social change, political emancipation, the spread of education and social welfare affect family life patterns and traditions of child upbringing. In India long established customs of family life will gradually come to be out of harmony with the changing pattern of society which points to the necessity for education for parenthood and family life.¹

¹ In principle, Indian women have won their emancipation since independence. In actual practice they have still a long way to go. Any form of parent education for family life or sex instruction has several obstacles to contend with in India. Not only illiteracy, but also superstitions, strong family traditions, the lack of contact of village women with the outside world and the refusal to discuss sex questions in public. Social customs and prejudices die hard, particularly so in India where

During the last decade occupational opportunities for women have widened and the number of women who have taken up careers has gradually increased. This changing role of women in society will give rise to several new problems closely related to questions of parenthood. Two in particular, are important. The first concerns the transition from training and occupation to motherhood. Unless a woman has the experience to work as a nurse, teacher, doctor, social worker, domestic servant or the like, she lacks knowledge of the care of children and often is cut off completely from anything remotely connected with maternal care. This situation gives rise to a substantial need for parent education which has not, as yet, been met in India in any adequate manner. The second is the question of the employment of married women with children.¹ When mothers of young children work outside their homes, the question arises as to the possible ill effects on the development of the children. The emancipation of women thus affects parental care. As women enter professions new problems of maternal care arise which can only be solved by the adoption of proper educational measures.

Parents will continue to be faced with new situations, new questions, new problems arising from changes in society. Increased motor traffic in the big cities pose problems of safety education, a material invention, such as television, raises the question of family leisure and how to make wise use of a new

the existence of many castes, creeds and races complicate the problem. Different kinds of social systems prevail in different parts of the country. Tentative efforts have to be made in the face of these difficulties and parent education should be regarded as important enterprises.

(Parent Education—H. H. Stern. Pp. 148-149).

¹Housecraft is included in the curriculum of schools in a few States. In Travancore-Cochin and Rajasthan it has been introduced in the State secondary schools. Hygiene is taught in primary and secondary schools, but neither inside or outside the school is sex education or preparation for marriage given to boys or girls. In the training colleges of Andhra, sex education is included in the course on health education for students taking the B.Ed. course. In Madras also doctors give lectures to student teachers on sex education. Some parent-teacher associations have lately developed in some parts of India (13 in West Bengal, 7 in Bombay, 9 in Madhya Pradesh and some in Travancore-Cochin) where enterprising teachers talk to parents about the upbringing of children. (Parent Education, H. H. Stern. Pp. 148-149).

source of entertainment; new educational opportunities offered by an expanding system of education bring problems of the most adequate forms of schooling. To these changes, the traditional modes of response and acting merely on precedent alone cannot offer satisfactory answers.

In industrially advanced countries there have come into existence widespread nurseries and nursery schools, maternity and infant welfare services, comprehensive systems of primary education, vocational and educational guidance, welfare departments to look after neglected children and juvenile courts and probation services especially for problem children. These and other institutions try to take over parental responsibilities. In cases of difficulty of subnormal children and maladjustments, psychologists and psychiatrists take care of children. In India, too, the services of professional workers, doctors, nurses, social welfare officers and psychologists will be needed to help both the children and their working parents. As India seeks to build up a comprehensive educational system she cannot overlook parent education, she must also make provision for public services (health, social welfare etc.) to make up for deficiencies in home life and domestic care.¹

¹ In some parts of India workers in the community projects try to bring information on infant care to the attention of mothers. Social workers should seek all over India to provide services in rural areas. The Community Development Projects should not simply be imposed by government departments alone. Central assistance and guidance should be given to arouse local initiative and enterprise. Indeed, the education of mothers in child care, health and hygiene should be established. Baby Health Centres can be organised by the Maternal and Infant Welfare Divisions of the State Health Departments. These centres can be set up through the co-operation of State and local government authorities and voluntary bodies and an extensive network of them can cover the remote rural areas. In areas far distant from the main centres of population the service can be carried to the people through travelling clinics maintained by the State authorities using the railways (a clinic can be permanently set up in a special van), and through voluntary health agencies of various kinds. These should have wider functions but they can all offer some preventive medical care in which educational work with the mother will be a feature; they also can offer a channel of dissemination of educational material prepared by State health services. "The colossal ignorance" wrote Mr. H. H. Stern on parent education "and sexual malpractices in India have caused concern to educationalists who feel that the conspiracy of

NEED OF SPECIAL EDUCATION

Very little also has been done so far for the education of special categories of children such as the blind, the partially sighted, the deaf, the partially deaf, the educationally subnormal, the epileptic, the maladjusted, physically handicapped pupils with speech defects and delicate children.¹ During the Second Plan

silence prevents boys and girls from knowing even the most elementary facts about sex life." The Family Planning Centres in India should arrange public lecture series dealing with various aspects of marriage and family life. India can learn from Australia where, for example, one course of six meetings was as follows.

1. "Some of the biological facts." (Speaker: a medical practitioner);
2. "A psychologist looks at marriage." (Speaker: a psychologist);
3. "What happens to marriage when children begin to arrive?" (Speaker: a social worker);

4. "Make marriage a partnership." (Speaker: a lawyer);

5. "Marriage can be a success if you want it to be." (Speaker: a clergyman);

6. Panel discussion. These subjects should not be excluded although marriage in India is considered a matter for religious guidance and a family problem. Marriage and sex problems should not be left solely on the advice of parents. (Parent Education—H. H. Stern. pp. 141 and 148-50).

¹ The Report of education admitted that one of the major difficulties in the planning of services for special case children has been the almost complete absence of statistical data. The Government of India during the third plan period carried out random sample surveys in select areas. The completed survey in Delhi revealed that nearly 4 per cent of families had a handicapped member. The National Association for the blind established eight years ago has undertaken valuable experimental work in this field. It receives grant-in-aid from the Government. An Agricultural Training Centre for the Adult Blind was recently established and started functioning in 1960. Here the adult blind are trained in simple agricultural occupations like sowings, weeding and so on. They are also taught simple rural crafts like basket-making and the like. The Indian government has established a National Centre for the Blind at Dehra Dun where Braille literature and appliances for blind adults are provided. This centre imparts training to adult blind men and women chiefly in crafts with a view to helping them towards economic independence. It had accommodation for 150 blind men and 35 blind women who are provided free board, lodging, clothes and tuition. Besides printing literature the Central Braille Press at Dehra Dun publishes a quarterly journal. There is at present no Braille lending library in India. It was proposed to establish during 1962 the National Braille Library at Dehra Dun. The

period (1951-56) only 185 blind, 246 deaf and 228 handicapped students were awarded scholarships. The number of scholars who completed their courses was only 207 in the whole of India. The Education Report stated that provision has been made for the payment of a special allowance to blind students for securing the services of readers and to handicapped students for meeting the extra expenditure on transport. The lack of information is one of the most serious impediments to progress in this field. Following a seminar on the Employment of the Blind held at Mussorie in September, 1956, the International Labour Organisation offered the services of an expert to assist in the development of a placement service for the handicapped. The first special employment office for the handicapped was established at Bombay in 1959 and to date 100 blind, deaf and physically handicapped persons have been placed in the public services.

Beyond giving some financial assistance, the Government of India has, so far, done very little for the training and education of handicapped children. Most of these children make better progress when they are taught apart from normal children and their particular needs are met by special classes under trained teachers. During the last decade there have been very important developments in the field of special education to which the advanced countries have given special attention. India also needs to give particular attention to the matter of the special education of these children.¹

Government of India expects to manufacture almost all appliances needed for the education of the blind. In 1959 a model school for blind children was established with accommodation for 50 children. The Indian Government is also trying to manufacture hearing aids for the deaf. A few years ago, at the request of the Ministry of Education, the National Physical Laboratory undertook experiments designed to develop indigenous group and individual hearing aids. This laboratory has succeeded in developing aids which have been found to be as effective as imported ones and can be manufactured at a much smaller cost.

¹The Education Report stated that, "during the Second Plan period (1956-61) the Government has been awarding scholarships to blind, deaf and orthopaedically handicapped children". But again the report admitted that "no reliable statistics are available, it is believed that the blind population in this country is in the neighbourhood of 2 million. The deaf population is estimated at roughly 7 to 8 lakhs. No estimate

THE EDUCATION OF WOMEN

Since independence, Indian women have not only participated in almost every field of national activity, they are also becoming well known in international affairs, occupying distinguished positions in the Government, as Ministers, Governors of States and foreign ambassadors.

Lower middle class women have started seeking jobs in mills, mines and factories. Middle class women have been working as telephone operators, shopkeepers and craftswomen side by side with men. Thus it can be seen that, "Indian women have won the right to work, the right to education and the right to economic independence."

Women's right to work with adequate wages and security of tenure, right of freedom of association, right to property, right to the franchise and right to leisure have been granted under the Indian Constitution since January 26, 1950.¹

of the orthopaedically and mentally handicapped is available." There are at present about 100 schools and other establishments for the blind in India run by voluntary agencies with some State aid. The number of schools for the deaf is at present 50. Most schools for the deaf impart elementary education and training in trades like tailoring, weaving, carpentry, printing, book-binding and so on. There are also about a dozen special institutions for the handicapped and about six schools for mentally deficient children. Almost all of these institutions are run by voluntary agencies. Although special educational and training institutions for the handicapped have existed in the country for over 70 years, no concentrated efforts appear to have been made to place them in suitable occupations. In September, 1955, the Government of India appointed a National Advisory Council for the Education of the Handicapped to advise them on all problems concerning the education, training, employment and the provision of cultural and social amenities for the physically and mentally handicapped. The Council, it is said, made valuable recommendations. The Report of 1961 stated, "It is proposed to have one special employment office for the physically handicapped in each State by the end of the Third Plan." (*Education Report—1960-61*. Pp. 69-76).

¹ Article 15 of the Indian Constitution has laid it down that the State shall not discriminate against any citizen on grounds of religion, race-caste, sex, place of birth or any combination of them. Under Article 16 of the Constitution, equality of opportunity in matters of public employment has been given to women. Article 19 has guaranteed the protection of certain rights regarding freedom of speech, etc. equally to men and women.

Although since 1947 the attitude of the Government and the public to the problem of women's education has undergone a significant change and social, economic and political equality has been given to women, progress in the education of girls and women leaves much to be desired. In particular when the fact is taken into account that girls and boys are more or less equal in numbers, the progress achieved can be seen to be far from satisfactory. While the total number of schools for girls showed an increase of some 2,360, those for boys in the same period increased by 86,765. It has, however, to be noted that the latter include a large number of primary and elementary schools which are generally co-educational.

In the field of higher education, the number of colleges for women increased by 47 whereas that for men increased by 227. Again, the number of secondary schools opened for girls was 761, as against 3,761 for boys between 1950-1957. The total number of middle schools opened in this period was 10,219 of which 9,192 were for boys and only the remaining 1,027 for girls. A consideration of enrolment figures shows that the increase in the number of girls attending various types of institutions during this period was 27,56,542, whereas the corresponding increase in the case of boys was 64,63,781—more than double that for girls. It is interesting to note that while the total number of girls under instruction during 1956-57 was 88 lakhs, in the case of boys the figure was 2.44 crores (1 crore = 100 lakhs). The break-up of these figures is still more interesting. While the increase in the enrolment of girls at Indian universities was 4,092, the corresponding increase in the case of boys was 26,199. Again, in the case of colleges of general education, while the increase in the enrolment of boys was 2,01,176, the corresponding increase in that of the girls was 43,467. At the secondary stage, the situation is similar; the increase in the enrolment of girls being 4,27,307 as against 15,29,224 for boys. In primary classes too, enrolment was about 80 lakhs for girls and 1.55 crores for boys.¹

¹ Report of the National Committee on Women's Education. p. 32.

STAGNATION AND WASTAGE

Among other serious problems that Educational Authorities have to tackle is that of wastage and stagnation in education in India. The National Committee on Women's Education in 1959 recommended that the Ministry of Education in India should undertake the scientific study of this problem and carry out special research in a few selected areas.¹

UNESCO some fifteen years ago also pointed out how serious was the problem of wastage in Indian education. An investigation into these problems is urgently necessary; the result would be valuable in helping to throw light not only on the exact extent of wastage but also upon the more important consideration of the causes of wastage and would enable India to deal more successfully with this problem than has been possible in the past.²

¹The two terms wastage and stagnation were used loosely in the educational system of India. The National Committee on Women's Education defined these two expressions and said that 'wastage' means the premature withdrawal of children from schools. A child is regarded as a case of wastage if he is withdrawn from a school at a time he has either not attained literacy or has attained it only imperfectly so that, in all probability, he will relapse into illiteracy within a few years. On this basis, a child who has entered the school but has been withdrawn before spending some time in class IV is considered to be a case of wastage. Some educationalists do not agree with this view. The National Committee on Women's Education, therefore, considered that the junior stage of primary education should consist of five years and that every child who has been withdrawn from school before completing this stage (Class V) should be considered a case of 'wastage'. UNESCO said that, 'It may now be taken as definitely established that a child who has passed the third class generally acquires a stable literacy. Consequently, every child who leaves school before completing this course is held to be a case of 'wastage' because he is not likely to receive any lasting benefit from such short schooling. (Compulsory Education in India, p. 55).

²Wastage is measured by comparing the number of children in Class I with those in Class V, five years later. The extent to which the enrolment in Class V falls short of that in class I five years earlier, is regarded as the measure of wastage. For example, the total enrolment in Class I of the primary schools in West Bengal in 1951-52 was 766,699 and that in Class V in 1955-56 was 173,829 or only 22.7 per cent of that in

According to the Report of the National Committee on Women's Education taking India as a whole, the total enrolment in Class I in primary schools was 70,27,201 in 1951-52 which dropped to 23,84,523 in 1955-56 giving a percentage of 33.9. The wastage at the primary stage, therefore, was 66.1% on an all-India basis for boys and girls taken together. When the figures of boys and girls are considered separately, it is seen that the extent of wastage in the education of boys in 1955-56 was 62.4% and that of girls, 74% on an all-India basis.¹

Class I in 1951-52. The wastage in West Bengal, therefore, was considered to be 77.3%.

Statistically, this method is not quite accurate because a pupil in West Bengal in Class I in 1951-52 will not be found in Class V in 1955-56 for reasons other than wastage in the technical sense. The pupil may be very intelligent and have received double promotion so that he was in Class VI in 1955-56; or he may have been retarded in some class for two years and will be reaching Class V in a subsequent year; or he may have migrated to another area; or he may have died. So the only scientific method of determining the measurement of wastage is to find out the number of children who were actually withdrawn from schools before completing the prescribed standard. In 1952, the Gokhale Institute of Politics and Economics, Poona, after a scientific investigation and applying vigorous methods estimated wastage at about 36% in India.

¹ Considerable variations are found in the percentage of wastage when the statistics of the individual States are compared. In the case of boys it is between 20 and 40—in Delhi (26.8) and Punjab (33.3). The wastage is less than 20% in Pepsu (4.8) and Coorg (17.5). The largest number of States have an extent of wastage which varies between 40 and 60—Kutch (44.0), Travancore-Cochin (44.8), Himachal Pradesh (48.4), Andaman and Nicobar Islands (50.0), Tripura (50.1), Madras (53.5), Rajasthan (54.4), Saurashtra (56.4), Bhopal (57.4), Bihar (58.9), Ajmir (59.3), Hyderabad (59.7). In 10 States the extent of wastage in the case of boys varies from 60 to 80 per cent. Bombay (63.7), Madhya Bharat (64.9), Vindhya Pradesh (66.7), Madhya Pradesh (67.6), West Bengal (74.2), Orissa (75.1), Assam (71.3), Manipur (76.7) and Uttar Pradesh (69.1).

In the case of girls the extent of wastage in four States varies between 20 and 40. Delhi (26.4), Pepsu (34.6), Coorg (36.7) and Tripura (26.8). The extent of wastage in these states is between 40 and 60. Travancore-Cochin (52.1), Kutch (40.4) and Himachal Pradesh (41.1). The largest number of States have an extent of wastage which varies from 60 to more than 80. Bombay-Mysore (82.5), Rajasthan (62.6), Ajmer (68.9), Madhya Bharat (69.1), Manipur (77.1), Uttar Pradesh (78.4), Andaman and Nicobar Islands (63.5), Saurashtra (64.0). (Report of the National Committee on Women's Education—p. 72).

Among the various causes of wastage the most important is economic. A pupil from a very poor family is withdrawn from school before he reaches Class V because his earnings are needed to supplement the family income. Other causes listed by the National Committee on Women's Education were, the migration of the family to a place where a primary school does not exist for the education of the child, the non-existence of the 4th or 5th classes in incomplete primary schools, the failure or repeated failures of the child to get promotion to a higher class which make the parent think that the child is not good at studies, the betrothal (in the case of girls) or marriage and truancy which the teacher or parents cannot control.

In order to reduce the evil of wastage to a minimum the National Committee on Women's Education suggested that special investigations into this problem should be carried out. For this purpose, the Committee thought that at least 10,000 cases of wastage (of children who have been withdrawn from schools before their completion of Class V) should be scientifically analysed. Each case should be specially and thoroughly enquired into to ascertain why the particular child was withdrawn from school. UNESCO regarded wastage as a major evil of the Indian system of primary education and suggested that reforms should be adopted in order to reduce this evil to a minimum.

The standard of living of the common people cannot be raised quickly or easily and there is no possibility of India becoming prosperous in the near future.¹ UNESCO in 1952 and the National Committee on Women's Education in 1959 suggested that part-time education was the only way. "When the economic conditions in the country are such" wrote the Women's Education Committee, "as to compel children to work for their families as soon as they are in a position to do so, the only way to give education to poor children is to provide for part-time education." Part-time instruction would have to be adjusted to vary according to locality and even in the same locality from one group to another. Part-time instruction would

¹ By 1966 the population was expected to go up to 54 million ; by 1971, 63 m ; and by 1976, 187 million. Even with the creation of 14 m. new jobs, there were still be 15 m. unemployed at the end of the Fourth Plan.

need to take into consideration the conditions of child labour and poor children who have to work to earn their bread will need to be given lessons during such hours and on such days in the different seasons as suit the kind of labour they are required to do.

Both the causes of and the remedial measures necessary to meet the problems of wastage have formed the subject of discussion since the publication of the Hartog Report in 1929; but as yet no definite experimental project has been undertaken by the Government of India.

Stagnation

Stagnation is another major evil of the education system in India.¹ Normally a child is required to stay a year in any one class and if he has to spend more than a year in any one class he is regarded as a case of stagnation. An analysis of available statistics shows that the percentage of cases of stagnation is large in every class and is especially staggering in the level of the first class. A report on Wastage and Stagnation in Primary Education based on an inquiry in Bombay² showed that out of a batch of 10,000 pupils in the first class only 4,542 passed in the first year of schooling; 2,121 in the second; 1,405 in the third or subsequent year; 8,068 in all passed through the infant class; and 1,932 leave school without passing through the first class. No accurate study of this problem for India, as a whole, has ever been undertaken. Every State in India needs to collect statistics and compile a stagnation index of every class. It is difficult to say to what extent the broad conclusions regarding the extent of stagnation based on the studies of Bombay are applicable to other States of India.

Stagnation leads to a waste of money, time and energy; it discourages the spirit of both pupil and parents. It is also a

¹ The National Committee on Women's Education in seeking to define precisely the term "stagnation", noted that it meant the retention of a pupil in a given class for a period of more than one year and is generally measured by the percentage of passes at the annual examination. For example, if the results of the annual examination of a given class were to be 45 per cent in 1959, the stagnation in that class is said to be of the order of 55 per cent in that year. (P. 67).

² Report on Wastage and Stagnation in Primary Education in Bombay —J. P. Naik.

major cause of wastage. Poor parents seeing the repeated failure of their child withdraw him from school and send him on any job to earn something for the family. The causes of stagnation are various. They include inefficient teaching, uncontrolled admissions late in the year, irregular attendance, unrestricted age of admission, overburdened or defective curricula, wrong methods of examination, failure to give separate and special guidance to backward or retarded children and the absence of individual attention in overcrowded classes.

Again the Government of India needs to give immediate attention to this defect in the education system and should plan a drive to reduce the high rate of stagnation ; this is all the more necessary in view of the rapid extension of compulsion which may tend to lower efficiency.

CHAPTER IX

EDUCATION PLANNING

THE REPORT of a Group of Experts of the United Nations on the Problems of Social Development Planning pointed out that education besides being the legitimate right of the peoples and a never-ending source of personal satisfaction on the individual citizen is also an important factor directly contributing to the economic development of the country. If education at all levels were systematically planned and fully integrated into national development programmes, it would hasten the actual rate of economic prosperity of the country—a growth rate so urgently needed in India by its multi-million peoples and which in turn will condition the extent to which India can expand her educational systems. India should move by gradual stages so that she within the near future can invest 4.5 per cent of her Gross National Product entirely in education by 1980, provided her rate of economic growth can afford it. The educational development programme must be extended to all branches of education from primary to university including adult education. A comprehensive educational planning of this kind must be integrated with the overall five-year plans and be completed in time.

Again for the proper extension and completion of the five-year plans we have to be conscious of the immense importance of adequately proved and tested planning techniques of education. The present status of educational planning varies in different countries of Asia but broadly they can be classified into three categories (1) Firstly, there are countries with fairly well-organised machinery for educational planning (2) secondly, there are a few countries which have a centralised authority for putting together educational plans drawn up by various ministers “without any attempt of integration in the form of a national perspective plan” and (3) thirdly, are those countries where a ministry of education draws up planning in an ad hoc manner but does not attempt to devise a national planning with long-term projections and definite targets. The difference is that in the first category the central planning authority is res-

possible to prepare the education plan in consultation with the ministry of education. But in the second category the ministry is asked to devise its own plan considering the national target and the third category has to devise the national plan according to the limits of the national budget. In the second and in the third categories the drawing up of the plan is a single continuing process. Most of the Asian countries are making a systematic effort to develop primary education in a planned manner and they have made some satisfactory progress. Some of them have even planned to have compulsory primary education of 8 or 9 years instead of 7.

However, in spite of the progress made so far when considering the social and economic development there is felt the need of an overall planning for education. The rate of educational growth has been inhibited in spite of the progress by various factors. Firstly, because of the population explosion, the high rate of population growth accelerating with a decline in mortality. There is today a higher proportion of persons under 20 years of age. Thus the planners in education face an increase in the school-age population which grows more rapidly than the general increase in population. Secondly, although India has made some economic progress it has not been sufficient to keep ahead of the population growth. Education is still included in the social section which has received for a long time a pattern of residual financing. The social sector is only considered after the claims of the economic sector have been satisfactorily met. The secondary treatment for education minimises its importance in the productive sector. Broadly, education is a factor of production in all Asian countries including India; the allocations for education in the plans have been far less than its needs. The Indian planners of education also face the acute problem of striking "the right kind of balance within the education-mix". The present education system has not necessarily matched the needs of economic and social development. There has been an over-abundance of Arts Graduates (thousands of unemployed B.A's and M.A's seeking poor clerical or menial jobs) whose educational qualifications do not always necessarily fit with the productive progress of the show-moving society. Moreover, economic structural changes and population mobility resulting in urbanisation have brought

a pressure on education which has been uneven. Undoubtedly, in India more attention should be given to planning a closer relationship between education and vocation. Efforts should be made to ensure that Indian education should institute procedures "within its total output, pre-vocational and vocational training in the form and at the level needed to provide the productive manpower required by the development programmes". This sort of undertaking will require "the identification of types and levels of education with the corresponding vocational skill". Studies without delay should be set in progress which will reveal the connecting links between vocation and education. Studies of these kinds will "facilitate more effective use of projections of manpower requirements in planning education".

Techniques of planning and programming education

A careful study of the Ministry of Education's books on education will reveal that there is a tendency to regard more educated Indians as an end in itself and the target of stipulated standards of education after a new five-year plan is among the stated goals of her planning programmes. These goals are not ambitious and are undoubtedly respected but the methods of approach require timing or phrasing. Decisions must be made on careful analysis of the costs of alternative timepaths for educational growth. The costs may primarily be expressed in terms of money but finally they should also consist in the gradual rate of movement towards other targets such as levels of health, housing and other social services. To facilitate further programme it is necessary to give a clear statement of all objectives of national development policy, which will establish the irreducible minimum targets to be achieved for education as an end in itself. A clear line of policy is a pre-requisite for objectives of better levels of per capital income, reduction of the unemployed, improvement of distribution of income among individuals and groups, on the maintenance of socio-cultural values that India so earnestly desires to continue and even for the improvement of the balance of payments.

A clear educational programme while competing with the allocations of fiscal and physical resources of the achievements of other goals will also make a significant contribution to the

furthering of these goals. Additional educational projects beyond the minimum programme must be considered for their net contribution to the other goals of the five-year plan's development policy. It is at this stage of planning that techniques of overall development programmes can rightly be applied to the education sector.

An analysis of India's educational planning techniques for integrating with economic and other social services reveal the crudeness and further research is urgently needed before scientific methods of programming education in a development context can be considered. The United Nations have discussed several formal approaches which are mentioned briefly in the following pages.

It should, however, be remembered that both the educational system and the method of planning should try to improve from the existing situations because it is practically impossible to start entirely fresh from a completely new angle. In the methods of approaching described here some assessment is essential for establishing even the basic necessities of projects within the education planning. Problems of assessment of the benefits of education are always rather difficult problems.

(a) The Cost-benefit Approach

Theoretically the cost-benefit approach should be to compare both the investment for education and its output "in the 'input-output matrix' of the economy as a whole". Education's value as an end in itself is substantial, although its contribution for increasing the output of other services should be treated as an additional benefit of the investment. Moreover, educational investments should be considered together with investments of labour, raw materials and capital equipment in the production of other goods. Some other goods like the textiles can be produced with "education-intensive" techniques. Better skill can be substituted for less raw materials or capital equipment. Again some products like the petro-chemicals are more "education-intensive" than products like rice. To determine the returns on investment in education, expenditure should be considered together with all other costs. Then the total size of the budget on education will be "established by expanding investment in education until returns on further investment in education falls

below the returns on other forms of investment."

It is unlikely that any serious problem will arise concerning the measure of costing education. The salaries of teachers, various kinds of supplies and equipment can be measured as actual costs of the total expenditure. Complications may arise regarding the cost of building throughout the life of the building but these difficulties are not complications of the educational sector alone, they exist in all other development sectors. The cost of keeping children in school rather than sending them to the labour force is a serious one but these difficulties and problems are not insoluble.

The most difficult problem would be with techniques and data available for measuring the returns to investment in education. Although conceptually there will be no difficulty in measuring the returns but they cannot be done with any precision.

The foregoing picture may be too close to perfection to be realisable; hence other plans have been substituted as close to it as seem feasible. One of these is to accept the proposition that differences in income and differences in contribution to the overall national output run closely parallel. A similar situation is also traced when we come to assess the connection between lifetime earnings and educational background. Combining these two premises a rough estimate can be made of the effect on the gross national product of an all-inclusive extension of the school-leaving age.

Here, however, it can readily be seen that there are factors open to question. National productivity and income do not always reflect one another, because of such problems as monopoly, special privileges and areas of little or no return. Again differences in educational background are not always to be held responsible for variations in income. Other elements enter such as inborn ability and privilege. There have been attempts to examine education as such apart from its effect on the national income and to assess the influence of intelligence and privilege on income. One method calculates that the connection between privilege and intelligence closely corresponds with the ratio of enrolment, age for age, and group by group, throughout all schools, to the total population, taking account of the number of pupils failing to stay the whole course. Those

who succeed in staying on are able to do so, it is assumed, because they are endowed with intelligence and privilege, or a combination of both. Here also is examined the ratio of income to productivity and a comparison made with that of privilege and intelligence. There is much still to be clarified on these lines and the data needed to express these ideas in practical form have not, so far, been collected. Further research into the right relationship between education and national well-being remains a challenge both to social scientists and to governments. It is imperative that this challenge be met. The Techniques: The preliminary approach known as the "Social Method" and which is the one most often used is in reality little more than a loose over-all survey of needs based on such factors as the prevailing demands for universal education at all levels and parents' and students' preferences. It is founded on such elements as growth in population, age groups, and national income. Education is regarded as a goal to be pursued for its own sake. It is to be the solid foundation for universal literacy, compulsory education and an expanding cultural and religious life.

This traditional approach is all very well for high income countries, though even there are to be found signs that demands for technology and productive efficiency are diverting attention to a new and highly competitive world in which the export market is destined to play an ever-increasing part in the country's economy.

Another traditional approach is through the impact of education on man-power. Educational planning can contribute both economically and socially by supplying skills and qualification both where and when called for. Through over-emphasis along these lines, however, those not included in the labour force are overlooked. Hence complete educational needs are not met. Nevertheless planning for man-power remains essential both short-term planning for vocational training, and planning well into the future to keep pace with rapidly developing techniques.

There are four major difficulties that stand in the way of long-term planning. Efficient long-term planning requires a period of from 15 to 20 years, but details relating to the future labour-force are difficult to assess beyond the short-term periods of from 5 to 8 years. Both advances in technology and higher

educational standards pose obvious difficulties to planning well ahead. Attention should not be concentrated wholly on the demands of economics. There remain cultural, political, and social goals, including women's education. Educational output must keep well abreast of demand thus fostering growth without raising problems of unemployment. There must always be flexibility to facilitate adjustments to social and economic changes, including such incidentals as the failure to come to fruition of certain plans, students changing from one course to another, parents' preferences, inequality of supply and demand in the various localities and the ever-changing technological scene.

The foregoing additions and adjustments, make this and the other methods of planning and setting down educational aims very much a matter of "hit and miss".

There are other points for criticism. The value of education as much is not considered irrespective of economic return. Furthermore, investment in education should be planned in relation to the varying needs of a composite community. It should not be regarded in isolation, but be related sector by sector to an over-all development programme where skills both in the production of goods and services make their demands.

The third method is to make projections based directly on the adult population plus the number of school-leavers and students at their varying stages and to correlate them with the national output of goods and services. In this way the relation between these various groups and their impact on the different sectors of the national product can be gauged. These calculations reveal the necessity for a flexible educational scheme to keep pace with the varying rates of expansion in the economy. It is not easy, when using this method to forecast sufficiently ahead the requisite number of teachers in relation to the various student groups. Conclusions lead to sound planning only when founded on accurate observations. This method, however, used judiciously, in conjunction with the other approaches can be of value.

Planning ahead for man-power and for investment and return shows a common difficulty when assessing the right amounts in education and training. These amounts, however, need not necessarily be rigidly adhered to because there is considerable

flexibility in replacing man-power with capital and cutting down working hours by extending the hours spent in education and training. The same productive goal can be reached with a reduced but highly trained labour-force as with a larger but less skilled one. Even less skilled workers may be used in smaller numbers under automation, all of which is a pointer to the importance of including technology in all educational planning and of striking a right balance between further education and training, and less employment, or less education and training and more employment, sector by sector.

A growing variety of output and a broadening interpretation of educational needs make the ratio between them less stable, as well as adding a greater range of choice. In some countries, under ECAFE all the given information from which conclusions could be based, skilled personnel in the sphere of mathematical statistics, together with modern methods of computing, failed when it came to correlating very many groups of output with correspondingly large numbers of educational schemes. Here a decision, based on policy more than on statistical analysis stepped in, and parameters were used.

The Aggregate Method

Through observation and experiments in countries at varying stages of advancement and a study of the different groups that constitute the society of each country investment is planned to satisfy the over-all demand for education as of value in itself. Much detailed information is collected such as the world distribution of grants, the proportion given to education, and how and where allocated. Trends in educational development are studied side by side with economic and social achievement and an over-all picture is thus obtained. Further data are added on the normal trend of movement from the lower to the higher occupational grades and their effect on the labour force, as more highly qualified man-power becomes available.

From the data collected and their interpretation, problems arise of potential inequality of burden. G.N.P. investment in education will be accorded in proportion to the average age of the population, thus bringing about an unjust distribution. Another unsatisfactory element is the calculation of each teacher's salary in relation to the capital income of the country

as there are vast differences between country and country and teachers' remunerations consume a major part of the educational cost.

Fifthly, available man-power, educational planning and human potentialities are viewed as a whole. This is carried through in a series of steps set out in "The Report on Social Development Planning", July, 1964, as follows:

In the first step the future population regarding age groups and size is projected.

Then follows a long-term projection of from 15 to 20 years in relation to the economy, and in step 3 the necessary adjustment of the economy to the demands of an expanding labour force, which in turn influences the various sectors to be established in education in order to comply with the man-power needs as revealed.

At the same time (step 5) further education allowances must be allotted to the wider demands (not catered for in step 4) of society as a whole, both cultural and political.

In step 6 added allowances must then be made to meet incidentals such as students changing their course, and their preferences, together with possible difficulties in relating the educational system to the economic and social structure of the locality.

Step 7 is an appraisal of what has gone before and of the existing educational structure in terms of the future development along specified lines, such as the practicability of developing certain sectors within certain time limits (i.e. time for teacher's training, etc.). The findings in this step are then referred back to previous steps and may modify the premises on which steps 2, 3, 4, and 5 are based.

In step 8 educational and occupational trends are assessed and calculation is made as to what improvements can be carried out to encourage these trends.

In the 9th and final step an estimate is arrived at and a comparison is made of the relative cost and efficiency of the various educational techniques. The results of these two last steps are again referred back.

Future plans and hopes are the source of educational demands. In certain areas, as depicted in steps 5 to 9, investments must be held in reserve, in order to be allocated when

the need arises.

Strategy of development of human resources

Though education is a major element in the development of human potentiality there are other important factors. General economic and social planning must cover the whole field of human endeavour. Only through such planning, can all the measures necessary for a fully integrated society be put in operation. Thus education, though a major priority, must be dealt with in close relation to other needs, vital to the well-being of the community as a whole. Among these needs to be considered are those related to health, employment, availability of labour, specialised, skilled, or unskilled, with reference also to the solution of unemployment. There are certain popular economic indicators that have been used with modified success, such as regional production targets, or inventory of production plans and projects, or in lieu of a plan, the projected trends of regional production.

Present means of long and short-term planning are not wholly successful. They can accomplish little more than acting as a starting point in the right direction. Control and direction must always be flexible and adaptable to changes in a developing society and furthermore be subject to regular revision. In an active society there is an ever-growing and varied demand on human resources calling for a correspondingly changing programme in vocational and technological as well as general education. All this must go hand in hand with economic and social reform.

Fiscal and physical limitations on education

The U.S.A. together with certain European countries has come under an intensive search for data connected with the phenomenal growth in the gross national product and its root causes. The findings have revealed that a broad-based education taking in all fields of development both sociological and economic and capable of keeping pace with rapid technological progress has been the basis of this success in establishing both a high rate in productivity and widespread improvement in living standards. This places education high on the list of rewarding investments and points to ambitious educational

are frequently made in India but what is more urgently required is detailed planning on a short-term basis. Secondly, must be considered what special method is to be adopted to train and supply qualified teachers for all types of vocational and technical trainings. Experiences of the advanced countries in this field will be of immense value in looking for further light on the issue.

As seventy per cent of the population of the sub-continent live in the rural areas, special care has to be given to meet the educational needs of the region. Research has to be made into the special needs of the rural areas and their major differentiation from the urban sections of the populations. Important lessons can be learnt from previous research on the problems of rural education but further enquiry is essential to find out if a different approach is required to cope with the changed and new conditions.

The problems of recruitment, supply and training of teachers for all kinds of schools have to be regarded as of major importance. For the teachers are the pillars of the educational structure of the country. But to make teacher-training effective a careful examination of the existing training conditions has to be made to determine whether or not they are effective for the present and the future needs of expanding programmes.

Both the general broad research and special research in important fields are required for the overall growth of the educational structure because the effectiveness of the educational planning will depend on the quality of the research on which it is based. Consultation with the State and Central Governments and with international organizations will bring new light to enrich the programmes.

Co-ordination with other development plans

When the preparation for the education programme goes on automatically a co-ordination with other social programmes is established. The programme for education becomes an integral part of the general development programme. Education planning cannot be carried out exclusively on its own as the overall development programme also becomes incomplete along with the education plan.

The educational planning exercises a strong influence on productivity both qualitatively and quantitatively. So priority

has to be given to the planning of education in order to raise the living standards of the people through economic development.

Finally, the educational department must keep contact in all stages of planning, programming and implementation by interchange of reports, information and views, discussion on mutual problems with other economic and social sectors and with the central planning authority.

EXPERT OPINION FROM OTHER SOURCES

The practical problems of educational planning have to be considered. The Indian Government must give serious attention to the basic points of economic and educational theory, and their implications in practical conditions. The operational problems involved in the planning situations will also have to be thoroughly examined.

One of the big problems which faces the Indian Government is the extent to which education should be treated as an investment for the future or as an item for consumption. Observers of the recent trend of Indian education have noticed that the costs of vocational and technical education have increased more than those of general education. Perhaps they are considered a better investment for rapidly turning out productive manpower than compulsory primary education, which is treated as a consumption item. This comparatively larger investment in technical education may create a serious state of imbalance which in the long run will be detrimental to the development of all forms of education and training. In his "The Strategy of Human Resource Development in Modernising Economics" Professor Harbison pointed out that "In the main, the essential function of formal education is to prepare people for training rather than train people for particular occupations." Major expenditure on general education must be regarded as an investment for the future growth and development of India.

Questions may be raised about the basis of educational planning. "If educational planning is to meet the needs of a community," wrote a UNESCO educational planning expert, "the positions of the economist and the educator must be brought together by the economist accepting the necessity of

full attention to social factors in planning a healthy education system and by the educator recognising that the manpower output of an education system is of great importance in determining the form that the system should take.¹ Again, if manpower supply is taken as the main determinant of educational growth, the points of imbalance which will arise and can have serious effect must be considered. When the size and composition of an educational system is planned a large number of factors associated with the manpower requirements must be added to it.² The need for a consistent "methodology" of educational planning must be carefully balanced between short-term and long-term plans and be a continuous effort. "Continuity does not," said Dr. J. Timar from Hungary, "only mean that plans must be worked out for new periods constantly, but also that the implementation of earlier plans must be continuously attended to and that these must be continuously corrected on the basis of experience acquired during their implementation and during the preparation of the new plan."

How the general principles of long-term planning can be applied to a country was summarised by Professor Alves Martins of Portugal, who said, "A general framework for educational planning has evolved in discussions among the national directors, members of the Secretariat and Expert Consultants, and, at the same time, it has been agreed that the minimum specific objectives of each of the national groups should be, first, to estimate for the fifteen-year period the required number of graduates expected each year from the various levels of the educational system. Second, to estimate the number of teachers required at the different levels of the educational system. Third, to estimate the number of teachers required at the different levels of the educational system. Fourth, to estimate the

¹ *Educational Planning and Economic Planning*—Colin D Ewers.

² C. D. Ewers exposes the pit-falls involved in calculating school enrolment based on man-power. He estimates that the result would be a response no higher than 60% of that required, and this, from the point of view of quantity alone, leaving for the moment the question, skates over a very important factor. All developing societies require leaders with specialised abilities and initiative. When too much attention is given to man-power estimates this aspect tends to be overlooked, as also do the educational needs and indeed demands of women and girls many of whom will not later on play any active part in their country's economy.

number of additional classrooms, laboratories, and school buildings and the amount of equipment required and to plan the optimum geographical distribution of such educational facilities in the light of anticipated population distribution Fifth, to assess the qualitative adequacy of existing educational programmes and make recommendations for needed improvements, including teaching methods and curriculum organization. Sixth, to assess the need for new or expanded educational and training programmes outside the traditional educational structure. Seventh, to estimate the total capital and current costs of the expansion and improvement in education implied by the results already indicated. Eighth, to establish a timetable for achieving the required expansion and improvements over the fifteen-year period and to suggest to the Government the best way of keeping a control of the results and of introducing alterations resulting from the experience being gained.”¹

It has also to be remembered that the direction of technological change in India makes it impossible to guess what the real requirements of man-power will be. Vocational mobility can only be successfully achieved by the system of effective general education. Moreover, educational progress cannot be achieved by legislating new rules and procedures. There must be planning for increased productivity. Here education should have a high sense of moral responsibility. The educational planner must also take into account the weight of tradition that resists change. Dr Phillips in his “Education and Development”² has suggested nine essential steps for overcoming operational problems arising in the planning situation. He assumed that man-power planning is the first consideration in educational planning.

Step 1. The educational planner should acquire correct information on the future size and demographic composition of the population. He needs yearly tabulations of populations for a period of fifteen to twenty years, relative to ages six to twenty-five, and need not emphasise the inadequacy of available statistics. Where the five-year scheme suffices, forecasting educational estimates is obviously a much simpler task, and

¹ *Science and Technology for Development*—United Nations (pages 42-43).

² *International Review of Education*—Vol. X, 1964, No. 2 (page 133).

less liable to inaccuracies than is the case where long-term planning is required.

Step 2. In long-term projection for a period of fifteen to twenty years the planner should not attempt exact projection. In a country like India the best that can be hoped for are broad targets. Moreover, flexibility being essential it is necessary to plan ahead for a general education in order that short-term adjustments arising from problems connected with such matters as social, technological and vocational requirements can be carried out.

Step 3. To give the general shape of the education system the planner requires man-power projections based on the economic projections. This can be done by man-power surveys adjusted to meet the likely changes of the economy, but at best these can be valid only about five or six years in advance. They will provide a basis for the development of specialised sections of the education system—industrial education, higher education in technological fields, etc.—which must be planned on a short-term basis within the framework of the general long-term plan. This, of course, will not do much to help the planning of the whole educational system. Mr Ewers² was convinced that the forms of collection, collation, presentation and projection of man-power statistics are of prime importance to the educational planner and require attention not only in particular situations but also in theoretical research which can have international implications.

Step 4. In a developing country like India in which economic and social structure and occupational standards are undergoing change exact long-term man-power estimates are not possible or are of doubtful value. Here the planners have to make estimates of desirable educational output by analogy with comparable situations elsewhere. Professor Harbison in his "The Strategy of Human Resource Development in Modernising Economics" suggested that the ratio of annual increase in high level man-power (university graduates, etc.) to annual increase in national income may need to be as high as three to one. Sub-professional personnel may need to increase six to nine times as fast as the increase in the labour force, scientists and

² "Educational Planning and Economic Planning"—Colin D—*International Review of Education*—Vol. X. 1964, No. 2.

engineers three times as fast as the labour force, and so on. Thus it appears that the educational planner should work on the best estimates of required educational attainment in broad categories.

Step 5. The educational planner needs to take into account other demands on education. Some of these demands are economic and social in character. Factors such as provision for the education of women and girls have strong social implications. They represent a sizeable proportion of the educational system, and the educational planner in co-operation with the sociologist will decide the rate at which change in social behaviour may alter the proportion of women in productive employment. The educator will have to ensure that there are facilities for the education of the elite and the leaders of the community. Provision must also be made for those forms of education which will ensure the development of a stable society.

Step 6. The five steps mentioned above were mainly concerned with establishing the demand for education. Dr Phillips now in the remaining three steps speaks about the means of supply. The important step now that the planner will have to adopt is to prepare a catalogue and take stock of the prevailing education facilities and their output. At this stage a difficulty will arise which must be taken into account. It will be easier to collect fairly accurate figures of existing enrolments in schools. But the planner will face difficulties in obtaining accurate information on the different stages at which children leave school and their subsequent whereabouts. He has to derive overall statistics of enrolment by grade and employment facts at the termination of the school career. On the basis of these collected facts and statistics, and remembering the social and economic changes the planner has then to decide the required changes in the course and the number of students affected by this change. Thus the necessary qualitative and quantitative will determine the structure and organisation of the education system. The educational planner should then examine realistically the efficiency of the education system. When considering enrolments he must take into account existing rates of dropout and wastage in the school system.

Step 7. So far the planner has been concerned with education as a whole. Now he must look within the system at the problem

of relationships between levels and types of education. Then he should decide on the shape of the educational structure, e.g. proportions of primary, secondary and higher education, and he must decide on the relative proportions of types of institution, courses of study, etc. He should also take into account the influence of community preference and educational tradition. If changes are inevitable, the planner has to persuade the community leaders that they are necessary. With the help of sociologists and professional experts the planner should now consider suitable curricula, selection criteria for various types of institution, facilities for selection of talent, and so on. He must seek guidance from experts on the proportion of total resources which should be used for research and servicing activities, and for all other activities which contribute towards an efficient education system. In a developing country like India the quality and quantity of the supply and training of teachers are of vital importance, and these problems need the urgent attention of educators and educational planners.

Step 8. Now the educational planner is required to ensure that his planned system will attract sufficient and suitable students at all levels. He should, where necessary, foresee the need for scholarships or other forms of help. In some cases a system of educational guidance linked with vocational guidance may be productive. Experience has shown that on the whole, and given time, economics exert a modifying influence on educational preferences, but in certain cases, where short-term policies are adopted, concessions have to be made. Every developing country needs its incentives and these must be incorporated into the education scheme.

Step 9. Now the comparative cost and efficiency of alternative methods and techniques of teaching should be examined. The planner has to make a deliberate choice with regard to such standard factors as the teacher-pupil ratio which determines the aims of teacher training programmes. When new techniques of teaching are to be considered the participation of teachers is required, and in this area provision should be made for in-service training programmes and publicity campaigns encouraging the use of efficient materials and better methods. Again the planner has to use his discretion when introducing new techniques to estimate the rate at which efficiency can be introduced.¹

¹ *Educational Planning and Economic Planning*—Colin D. Ewers.

CONCLUSION

While the discussion in the preceding chapter on educational problems and policy in India since independence has touched upon many problems in this underdeveloped country, it is clear that no matter from what angle the problems which hinder progress are viewed—the abnormally high birthrate, the mounting numbers of unemployed, the low production of the land, primitive agricultural processes, the inefficiency and cheapness of labour, poor marketing organisation and distribution, the prevalence of curable disease on the difficulty of promoting sound social and national consciousness—two main causes dominate—the extreme poverty of much of rural India and the lack of opportunity for proper education.¹ While this situation continues any sound national development is beset with difficulties. It is evident that any immediate solution of the defects which now prevail in Indian education is not to be found in compulsion. Although compulsion may be essential to the ultimate success of any scheme of mass education, it has to be realised that immediate and widespread application of compulsion would create other difficulties. The public in India have to be prepared to appreciate the value of education and would be prepared to pay for education in other ways as well as providing the finance. India has to learn the will to do this. The people, however poor, must curtail other expenditure and be prepared to pay more in taxes for education.

The Planning Commission, which considered the educational programme for the Fourth Five Year Plan period is understood to have emphasised the need to give education a vocational and production bias.

Mobilisation of community resources for development of education at the primary and secondary stages, a sizeable reduction of the percentage of failures at all stages of education and a

¹ Even today some Indian villagers are extremely backward. The Centre for International Studies (Massachusetts Institute of Technology) carried out an investigation into the communication of modern ideas and knowledge in seven villages near Poona (Bombay). It was found that thousands of villagers are still untouched by civilisation, while few are only gradually coming into contact with the agencies of progress and development. For example, 'Patan', a small village with a total population of 51

widespread adult literacy programme were among the steps advocated in the discussions.

The Education Division of the Commission has proposed a tentative outlay of Rs. 1,899 crores during the Fourth Plan for achieving the targets and quality improvement schemes. A contribution from the public of the order of Rs. 388 crores is envisaged taking the total Plan outlay to Rs. 2,287 crores covering both general and technical education, social education and cultural and other programmes. (The working group of general education had earlier proposed an outlay of Rs. 2,000 crores).

persons situated 72 miles north west of Poona city, is practically isolated from the rest of the world. "Patan is primarily a rice growing area and is famous for rice of good quality," says the study. "In spite of this the people suffer from starvation for a couple of months a year. . . . Only one of the villagers is literate, and he left the village more than a year ago and went to a suburb of Bombay to work as a labourer in a factory. Only four persons have seen a train. Only these four persons have had a ride in a motor bus, though the rest of the villagers have seen one as they have to go to Ambegaon every Wednesday to the weekly bazar to buy everything from salt and oil to clothes.

On further enquiry the centre for International Studies came to know that

1. these people know about independence though not about the partition of the country. Only old Patil (Headman) is paid Rs. 40 (about £ 2) a month by the Government for discharging functions like collecting land revenue, maintaining law and order in the village, and reporting to the Taluka authorities if anything serious happens in the village.
2. Only the Patil knew that Nehru ruled India. He did not know anything more about national policies.
3. Knowledge of world political structure and international policies and events: Nil.
4. Awareness of modern ideas on caste and religion: Nil.
5. Only the Patil has seen a mythological movie in Bombay. He has also heard a loudspeaker at a meeting. No impact whatsoever of any new ideas.
6. Some of them have attended election propaganda meetings. However, they have no faith in pre-election promises. Only during epidemics do they get medical aid from the Government. No agency of communication has reached the village. Patan thus presents the spectacle of tribal social structure devoid of any effective contact with the outside world. The structure is static. (*Communication of Modern Ideas and Knowledge in Indian Villages, Massachusetts*—pp. 1-8).

Although the Commission's discussions were based on the Education Division's paper, no decisions were taken on the size of the outlay for education.

The Fourth Plan targets proposed at present are: elementary education will cover 94 per cent of the age group 6-11 as against 78 per cent in 1955-66 and 47 per cent of the age group 11-14 as against 32 per cent in 1965-66: secondary education 22.5 per cent. of the age group 14-17 as against 18 per cent. in 1965-66.

With systematic plan India has to attack the educational problem, not only by successfully extending education among children but also by educating the adults; adult education is indeed an urgent necessity for it has to be remembered that about four-fifths of Indian adults are illiterate. This problem of providing education for her adults throws an additional strain on India's educational systems and this at a time when the Government's rather modest efforts for the development of education under the Five Year Plans can hardly be said to be the outcome of really keen interest. This statement can be substantiated by considering the expenditure allocated to education in contrast with that for other sectors. In a country where the level of literacy is low and education poor in quality the provision for education in the Third Five Year Plan amounted to £ 426 million compared with £ 694 million for power and £ 1,087 for transport and communications.

Again public expenditure on industry in the First and Second Five Year Plans exceeded Government expenditure on all forms of education. In contrast with education which received only 6.4 per cent of the total expenditure in the First Plan and 7 per cent in the Second Plan, in referring to heavy industry in the Second Five Year Plan the Government asserted that "the expansion of the iron and steel industry has obviously the highest priority since, more than any other industrial product, the levels of production in these materials determine the tempo of progress of the economy as a whole."¹

The enthusiastic passages on heavy industry quoted above are contrasted with the following reference to education:—

"As regards school buildings, it is inevitable that at the present stage austere standards should be adopted. Much of

¹ Addressing the third meeting of the Iron and Steel Advisory Council in New Delhi on September 26, 1961, Sardar Swaran Singh, then Minister

the work may be done out of doors, while the minimum covered accommodation needed is provided by the local community with some assistance from public authorities. Experiments in cheap designs for schools need to be carried out. The starting of a school in a village need not be contingent on certain prescribed standards being observed. A school could be started under whatever arrangements are immediately possible in a locality, and common buildings like village temples and 'panchayat ghars' could be used. Once a school is actually functioning, the provision of a building can be taken in hand as soon as circumstances are favourable and local contributions are forthcoming." (Second Five Year Plan, p. 394).

About the safety of school buildings in India, the Hindu Weekly Review on August 10, 1964, wrote—"A no less worrisome problem is that of the safety of the children in the schools. The tragic death of 34 girls as the result of the collapse of a school building in Madurai in April has opened the eyes of all educational authorities to the need for taking all possible precautionary measures.

Instances of collapse of school buildings are not rare in India, though, fortunately, not attended by such dire results as in Madurai. A responsible official of the Education Department said that fortunately such untoward happenings had mostly taken place outside school hours. Even recently, a school run by the Social Welfare Department near Trivandrum collapsed during the lunch interval, when the pupils were taking their mid-day meals outside. A girl, who was inside eating food sent from her house was killed."

It should be noted that the Indian Government leaves the pace of improvement in education partly to 'local contributions' and 'local community effort' and the educational authorities want to use crowded 'village temples' and 'panchayat ghars' as school buildings. About the prospects for education under the

of Steel, Mines and Fuel, said: "The Third Plan, as you know, is an industry-based Plan and, as in the Second Plan, pride of place has gone again to the iron and steel industry. Out of the total public sector investment of £ 975 million, more than £ 375 million is for steel industry. Considerable investment in the private sector for production of special steels and pig-iron is also envisaged." *India News*, p. 6, October 7, 1961.

Five Year Plan the planning authorities suggest what 'should be provided' instead of using the words 'has been' or "will be provided".¹ They want to make experiments "in cheap designs for schools".

India should give more importance to and place greater emphasis on education in her Five Year Plans.

The programming of education, when undertaken, should be carried out in a systematic way, and with the aid of methods which would obviate the planner from running into inconsistencies. The report on the techniques of programming economic development of Asia and the Far East prepared by a group of experts of the United Nations recommended that development plans should be the expression of what are considered the objective or aims of the country's economic policy.

¹ "One of the Directive Principles in the Constitution is that within a period of 10 years as from 1950-51, free and compulsory primary education for all children until the age of 14 should be provided. On the basis of the targets proposed in the plan by 1960-61, only 63 per cent of the children in the age group of 6 to 11 and 22.5 per cent of the children in the age group 11 to 14 would be provided for." Professor Bauer in commenting on this passage in the Second Five Year Plan, stressed that they are not intended as advocacy of an immediate massive drive for general literacy, nor as a suggestion that illiterate people cannot recognise economic opportunities or take advantage of them; nor were they intended to suggest that large-scale and sustained expansion of education is either possible or desirable without increase in the productivity of the economy, especially of agriculture. Uneducated populations have often made rapid economic progress. But in India educational advance is of special significance as it is necessary to break down social attitude which both restrict people's opportunities and retard material advance. In India the adverse effects of the neglect of education are clear: with other underdeveloped countries, India can have access to the vast fund of technological and administrative knowledge of the West. But the attitudes prevailing, especially in rural India, greatly reduce the ability of India to benefit from access to this potentially very valuable resources. The Indian five year plans have been much influenced by the Soviet five year plans. But the Indian situation is different from that of Soviet Russia. Three major differences should be noted: First there is the much greater abundance of land in the Soviet Union. Second, at the inception of Soviet planning there was a sizeable agricultural surplus, and thirdly, the Soviet Union gave much greater attention to education than under Indian Planning. Moreover, when Soviet planning began, the rate of literacy in Russia was already far higher than it is in India. (*Indian Economic Policy and Development*. P. T. Bauer, pp, 53-55).

The objectives that are most commonly accepted are the following:¹

- (a) A rapid increase in per capita income,
- (b) A high level of employment,
- (c) A relatively stable price level,
- (d) 'Equilibrium in the balance of payments,
- (e) A reduction of inequalities in income distribution,
- (f) The avoidance of marked disparities in the prosperity and growth of different regions within a country,
- (g) A diversified economy.

Although each and everyone of these objectives is important and desirable in itself, there is the likelihood of conflicts among them. It is, therefore, important to find out in the light of the special situations of India the objectives to which special emphasis should be given in planning. In the field of education in India, the need for planning and emphasis is just as great as in purely economic development. A certain level and content of education should be regarded as a precondition for development. Moreover, for an adequate and appropriate supply of manpower and to facilitate greater equality of income distribution, the role of education and training is important. Education and training not only increase a country's ability to meet its manpower targets, they also help indirectly to decrease inequality of opportunity and make income distribution less uneven. Since the highly uneven distribution in India is one of her weakest spots their indirect effect will be as important as their direct effect.

An adequate educational system both in extent and quality is fundamental to India's all-round development. There can be no material advance in India without far-reaching and effective Government action over a vast range. India's advancement requires development not only in industry and technology¹ but

¹ Programming Techniques for Economic Development—United Nations, p. 6.

¹ On his way to Washington, late Prime Minister Nehru said at a press conference held at 9 Kensington Palace Gardens, London, on 4th November, 1961, in answer to a question of the writer, that India's emphasis on heavy industry in the Five Year Plans is justified and correct. India

also in education which will widen the horizons and change the traditional attitudes obstructing economic advance. The Government, however poor, must curtail other expenditure and be prepared to pay more for education. For unless this happens, India will remain socially and economically under-developed.

India has to accept that while a generally literate, vigorous and skilled people may not be so spectacular or tangible a symbol of progress as a hydro-electric plant or steel mill their value is infinitely greater. The main reason of India's many and varied troubles is that education in the sub-continent is utterly insufficient and entirely out of date. The first need is for more and better adapted education. When devising the Five Year Plans, the Government should consider some scaling down or postponement of the extravagant investment plans in the public sector to release more money for education. A redirection of governmental activities towards educational progress will release the energies of millions of people of the sub-continent.

India and her leaders have to face the fact that the provision for the education of the nation from the primary school to the universities is altogether inadequate both in quality and duration. What as a country India cannot afford is to go on being under-developed and as a nation under-educated. Expenditure on education must be increased and be regarded as an absolutely indispensable investment for national efficiency.

cannot continue depending on other countries for long. For national prosperity and all-round progress, the late Prime Minister pointed out that India must be industrially strong and advanced.

APPENDIX I

FACTS ON EDUCATION IN INDIA AND OTHER ASIAN COUNTRIES¹

A. DEMOGRAPHIC DATA

Basic figures about the population are indispensable both for measuring the extent of present provisions for education and for projecting the number of children for whom schools must be provided in the future.

1. *Total Population*

The aggregate population in all the participating countries excepting Mongolia amount to approximately 897,000,000 in 1960. This is about 30% of the entire population of the world and represents an increase of more than 20% over the aggregate population in 1950.

The rate of increase in population from 1950 to 1960 was higher in Malaysia (Singapore) (60%, China (43%), Thailand (42%), Philippines (38%), and Malaysia (Malaya 35%), and was lower in Burma (12%), Japan (12%) and Afghanistan (15%).

The rate of increase from 1960 to 1970 is projected to be higher than that from 1950 to 1960 in most countries.

The ranking of countries in terms of increase rates from 1950 to 1960 and from 1960 to 1980 is shown below.

2. *Population Classified by Age Group*

The percentage distribution of population by age group is affected by the change in birth and death rates.

The percentage of the pre-school five-year group, 0-4 years of age, exceeds 18% in Pakistan, Cambodia, China, Malaysia (Singapore), and the Philippines. The percentage of this age group in Japan is the lowest among the 14 countries (only 8.2%).

The percentage of the ten-year age group, 5-14 years of age,

¹ The writer is grateful to the Ministry of Japan for this Appendix See "Education in Asia", Ministry of Japan, 1964.

which roughly covers compulsory school age ranges from 20% to 28%. The percentage of this age group has a close correlation with the birth-rate and the percentage of the pre-school

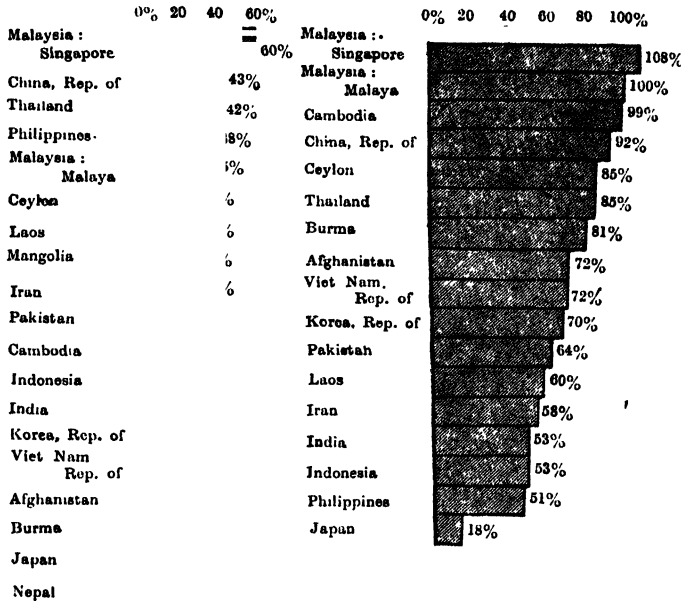


Fig. 1

age group. The percentage of the 5-14 age group is the highest in the Philippines where both the birth-rate and the percentage of the 0-4 age group are considerably high. It is the lowest in Japan where both the birth-rate and the percentage of the 0-4 age group are low.

The projected population by age group is reported from ten countries. The age group by 14, that is, the school age population, is estimated to increase from 1960 to 1970 in all reporting countries except Japan. The rate of increase will be particularly high in Malaysia (Singapore) (59.6%), China (50.8%) and Thailand (46.2%). During the decade the population aged 5-14 will increase by nearly 36 million in India, more than five million in Pakistan, and more than three million in Thailand. In these countries, i.e., China, India, Malaysia (Singapore), Pakistan and Thailand, it will be required to expand to a great extent facili-

TABLE 1
TOTAL POPULATION
a. Actual and Projected Population
(In thousands)

Country	Total population									
	1950	1955	1960	1965	1970	1975	1980	1985	1990	2000
Afghanistan	12,000	13,000 ¹	13,800	15,613	17,700	20,500	23,700			
Burma	18,480	19,658	20,662	25,000	28,000	32,500	37,500			
Cambodia	4,074	4,359 ¹	4,952	5,939	6,984	8,293	9,905			
Ceylon	7,678	3,723	9,896	11,445	13,274	15,543	18,327			
China, Rep. of	7,554	9,078	10,792	12,862	15,025	18,200 ²	20,703 ¹⁴			
India	358,293	393,826	432,567	491,500 ⁵	554,700 ⁶	625,100 ⁷	662,500 ¹¹			
Indonesia	76,000	31,700	92,600	103,900	115,300	128,000	142,000			
Iran	16,270	18,325	20,633	23,400	269,000	29,900 ⁷	32,700 ¹¹			
Japan	83,200	89,276	93,418	98,245	102,216	106,322	109,688			
Korea, Rep. of	10,513	21,526	24,665	28,818	32,928	37,219	41,930			
Laos	1,360 ¹⁰	1,550	1,760 ³	1,900	2,200	2,600	2,800			
Malaysia: Malaya	5,196	5,923	7,017	8,200	9,700	10,600	14,000			
Singapore	1,022	1,306	1,634	2,017 ²	2,384 ¹²	2,841 ¹³	3,407 ⁴			
Mongolia	732	831	937	10,086	11,312	12,796	...			
Nepal	...	3,555	9,180	103,480 ⁵	116,670 ⁶	132,520 ⁷	...			
Pakistan	75,010	83,331	92,578 ²	29,120	31,088	35,334	151,657 ¹¹			
Philippines	19,910	22,211	27,407	31,790	37,090	41,617	48,510			
Thailand	19,910	20,362	26,258	16,200	18,600	21,200	24,400			
Viet-Nam, Rep. of	18,488	12,000	14,100							

¹ 1956 ² 1959 ³ 1977 ⁴ 1982 ⁵ 1966 ⁶ 1971 ⁷ 1976 ⁸ 1967 ⁹ 1949 ¹⁰ 1951 ¹¹ 1981 ¹² 1972

Country	Total population										1950 = 100	
	1950	1955	1960	1963	1970	1975	1980					
Afghanistan	100	108 ¹	115	130	148	171	198					
Burma	100	106	112	135	152	176	203					
Cambodia	100	107 ¹	122	146	171	134	243					
Ceylon	100	117	129	149	173	202	239					
China, Rep. of	100	120	143	170	199	241 ³	274 ⁴					
India	100	110	121	137 ⁵	155 ⁶	174 ⁷	185 ¹¹					
Indonesia	100	108	122	137	152	139	187					
Iran	100	113	127	144	165 ¹²	128						
Japan	100	107	112	118	123	128						
Korea, Rep. of	100	105	120	140	161	181	204					
Laos	100 ¹⁰	114	129 ²	140	162	184	206					
Malaysia: Malaya	100	114	135	158	187	224	270					
Singapore	100	128	160	197 ⁸	233 ¹²	278 ³	333 ⁴					
Mongolia	100	114	128	...	...	...	...					
Nepal	...	100	107	118	132	150	...					
Pakistan	100	111	123 ²	138 ⁵	155 ⁶	177 ⁷	202 ¹¹					
Philippines	100	112	138	146	156	180	209					
Thailand	100	110	142	172	201	231	262					
Viet-Nam, Rep. of	...	100	118	135	155	177	203					

¹ 1956 ² 1959 ³ 1977 ⁴ 1982 ⁵ 1986 ⁶ 1971 ⁷ 1976 ⁸ 1967 ⁹ 1949 ¹⁰ 1951 ¹¹ 1981 ¹² 1972.

TABLE 2
POPULATION BY AGE GROUP
a. Actual Number
(In thousands)

Country	Survey year	Age Group				Unknown	All ages
		0-4	5-14	15-24	25 and over		
Afghanistan	1960	2,239	3,293	2,091	4,677	—	12,300
Burma	1961	3,547	5,470	4,002	9,761	—	22,780
Cambodia	1959	897	1,266	870	1,812	—	4,845
Ceylon	1961	1,647	2,489	1,868	4,164	—	10,168
China, Rep. of	1959	1,891	2,682	1,744	3,920	—	10,237
India	1961	71,300	104,700	77,100	184,900	—	...
Indonesia	...	...	...	...	...	...	95,178
Iran ¹	1962	3,532	5,780	3,515	8,583	—	21,410
Japan	1962	7,838	19,418	17,980	49,942	—	95,178
Korea, Rep. of	1962	4,238	6,897	4,680	10,462	—	26,277
Laos	...	...	...	...	...	...	...
Malaysia: Malaya	1957	1,119	1,634	1,133	2,393	2	6,281
Singapore	1957	265	354	255	572	—	1,446
Mongolia	...	...	...	...	...	...	...
Nepal	1954	1,089	2,077	1,571	3,736	—	8,473
Pakistan	1961	17,522	24,456	14,335	35,768	1,800	94,000
Philippines	1960	5,056	7,644	5,166	9,541	—	27,407
Thailand	1960	4,239	7,080	4,915	9,978	46	26,258
Viet-Nam, Rep. of	...	...	...	...	...	...	...

¹ Estimated population.

b. Percentage Distribution

APPENDIX

369

Country	Survey year	Age Group				Unknown	All ages
		0-4	5-14	15-24	25 and over		
Afghanistan	1960	18.2%	26.8%	17.0%	38.0%	—%	100.0%
Burma	1961	15.7	24.0	17.6	42.7	—	100.0
Cambodia	1959	18.5	26.1	18.0	37.4	—	100.0
Ceylon	1961	16.2	24.5	18.4	40.9	—	100.0
China Rep. of	1959	18.5	26.2	17.0	38.3	—	100.0
India	1961	16.3	23.9	17.6	42.2	—	100.0
Indonesia	...	...	...	...	...	...	...
Iran	1962	16.5	27.0	16.4	40.1	—	100.0
Japan	1962	8.2	20.4	18.9	52.5	—	100.0
Korea, Rep. of	1962	16.1	26.3	17.8	39.8	—	100.0
Laos	...	...	...	...	...	...	...
Malaysia: Malaya	1957	17.8	26.0	18.1	38.1	0.0	100.0
	1957	18.3	24.5	17.6	39.6	—	100.0
Mongolia	...	...	...	...	...	...	...
Nepal	1954	13.0	24.5	18.5	44.0	—	100.0
Pakistan	1961	18.7	26.0	15.2	38.5	1.6	100.0
Philippines	1960	18.4	27.9	18.7	34.8	—	100.0
Thailand	1960	16.1	27.0	18.9	38.0	0.2	100.0
Viet-Nam, Rep. of	...	...	...	...	...	...	...

ties for primary and lower secondary education during this decade.

In all the ten countries listed in the table, the total number in the age group 15-24, which corresponds roughly with the population of upper secondary and higher education is estimated to increase from 1960 to 1970 (between 12% in Japan and 60% in China).

Such increase will entail an increase in the number of applicants for secondary schools and higher educational institutions. Accordingly, in these countries large expansion of facilities for secondary and higher education will be needed during the decade.

Illiterate Population

Literacy of the population is a useful indicator of the relative development of a country. The illiteracy rate is one of important factors to be considered in planning adult education programmes. The elimination of illiterate people is needed if a nation is to grow into a modern society in its true sense. International comparison of illiteracy rates is very difficult because the definition of "illiteracy" varies among countries and data on illiteracy are often obsolete and incomplete. UNESCO recommended the following definition for the purpose of international comparison: "A person is illiterate who cannot with understanding both read and write a short simple statement on his everyday life."

According to *World Survey of Education II* issued by UNESCO, the illiterate population, 15 years old and over, was estimated to be approximately 300 million in the Asian region around 1950. This is 35-40% of the total population 15 years and over.

As is shown in the figure and table on the following pages, Ceylon, Korea, Philippines and Thailand show comparatively low illiteracy rates. In all the 12 countries where data on illiteracy rates are available, the illiteracy rates of the female population are higher than those of the male population. The difference between the male and the female in the Philippines is relatively small, while in such countries as Burma, Cambodia and Malaysia (Malaya), the difference is quite large.

Table 8 gives the illiteracy rates by age group in four countries. It suggests future change in illiteracy rate for the total population 15 years old and over in the respective countries.

Among the four countries listed in this table, Thailand shows the largest difference in the illiteracy rate between younger and older age groups. In this country the percentage of illiterate persons varies between 75.8% for the age group "65 and over" and 20.1% for the group 15-10.

On the other hand the difference in the rate of illiteracy among age groups is the greatest in Iran. The rate for the 15-19 age group is only 17% lower than that for the age group "65 and over".

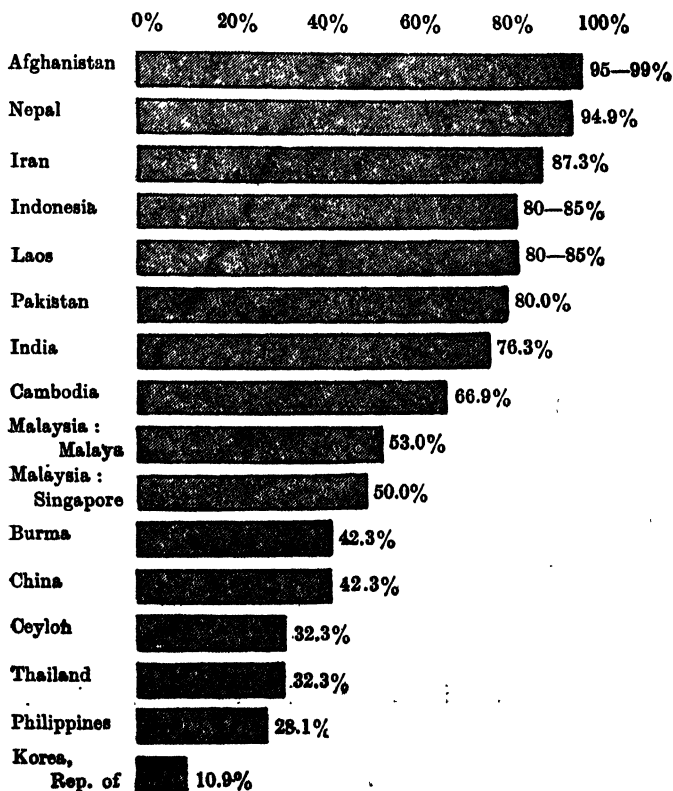


Fig. 2. Percentage of Illiterate Population.

Economically Active Population by Industry

The percentage distribution of the economically active population by-industry in 14 countries is shown in the table on the

TABLE 3
POPULATION BY AGE GROUP, 1960 AND 1970
a. Actual and Projected Population
(In thousands)

Country	Survey year	All ages	Age group				25 and over	Unknown
			0—4	5—14	15—24			
Afghanistan	...	12,300	2,239	3,293	2,091	4,677	—	—
	1970	14,632	2,692	3,995	2,853	5,092	—	—
Ceylon	...	10,168	1,647	2,489	1,868	4,164	—	—
	1970	13,274	2,217	3,348	2,512	5,197	—	—
China, Rep. of	...	10,237	1,891	2,682	1,744	3,920	—	—
	1969	14,580	2,426	4,044	2,765	5,345	—	—
India	...	438,000	71,300	104,700	77,100	184,900	—	—
	1971	554,700	89,900	140,500	99,900	224,400	—	—
Japan	...	95,178	7,838	19,418	17,980	49,942	—	—
	1970	102,216	7,687	15,510	19,982	59,047	—	—
Korea, Rep. of	...	26,277	4,238	6,897	4,680	10,462	—	—
	1970	32,928	5,107	8,995	6,088	12,738	—	—
Malaysia : Singapore	...	1,446	205	354	255	572	—	—
	1967	2,018	359	565	350	744	—	—
Pakistan	...	94,000	17,522	24,456	14,335	35,768	1,800	—
	1971	115,000	21,505	29,900	08,711	44,275	1,900	—
Philippines	...	17,098	3,232	4,675	3,971	5,940	—	—
	1972	21,841	4,191	6,191	3,251	7,488	—	—
Thailand	...	26,258	4,239	7,080	4,915	9,978	46	—
	1970	37,537	6,805	10,349	6,991	13,392	—	—

TABLE 3—(Contd.)
POPULATION BY AGE GROUP, 1960 AND 1970
b. Rate of Increase during the Decade

Country	All ages	Age group			Unknown
		0-4	5-14	15-24	
Afghanistan ...	19.0%	20.2%	21.3%	36.4%	8.9%
Ceylon ...	30.5	34.6	34.5	34.5	24.8
China, Rep. of ...	42.4	28.2	50.8	58.5	36.4
India ...	26.6	26.1	34.2	29.6	21.4
Japan ...	7.4	— 1.9	— 20.1	11.7	18.2
Korea, Rep. of ...	23.0	20.5	30.4	30.0	21.8
Malaysia: Singapore ...	39.6	35.5	59.6	37.3	30.1
Pakistan ...	22.3	22.7	22.3	21.9	23.8
Philippines ...	27.7	29.7	32.4	22.1	26.1
Thailand ...	43.0	60.5	46.2	42.2	34.2

(In thousands)

opposite page. In Afghanistan, India, Indonesia, Nepal and Thailand more than 70% of the working population is employed in primary industry, that is, agriculture, forestry, hunting and fishing. In this category Malaysia (Singapore) shows the lowest percentage (8%), followed by Japan (33%).

The proportion of the labour force engaged in secondary industry, that is, manufacturing, construction, electricity etc. is higher in Japan (30%), Malaysia (Singapore) (20%), and Iran (20%), while it is lower in Afghanistan (2%), Nepal (2%), Thailand (4%), and Indonesia (8%).

As to the proportion employed in tertiary industry, that is, transport, commerce and services etc., Malaysia (Singapore) shows the highest figure (69%), followed by Japan (35%), China (32%), Ceylon (28%) and Malaysia (Malaya) (27%). Nepal shows the lowest (4%), followed by Afghanistan (8%) and Thailand (12%).

A detailed breakdown of the economically active population by industry is given in Table 12 on pages 24 and 25.

A simple and far-reaching generalization is that as communities become more economically advanced, the numbers engaged in primary industry tend to decline relative to the numbers in secondary industry, and these in turn decline relative to the numbers engaged in tertiary industry. The historical trends in the industrial distribution of the labour force are shown in Fig. 5 for India, Japan and the United States.

In India primary industry continued to absorb more than 70% of the total labour force during the 60 years from 1901 to 1961. Similar trends can be found in most of the Asian countries which are predominantly agricultural.

On the other hand, Japan and the United States show the extraordinary rapidity of the fall in the proportion of the labour force engaged in the primary sector. In Japan the numbers engaged in the primary sector accounted for 70% of the total labour force in 1900 when this country was predominantly agricultural. As the community became industrialized, the numbers engaged in secondary and tertiary industries gradually grew. In 1960 primary industry absorbed only 33%, while secondary industry occupied 30% and tertiary industry 37%.

Taking the example of one of the most highly industrialized countries in the world, the United States showed a very high

proportion (62%) of the labour force engaged in secondary and tertiary industries even in 1900. The proportion continued to rise rapidly until it reached 9.1% in 1960.

TABLE 10

PERCENTAGE DISTRIBUTION OF ECONOMICALLY ACTIVE
POPULATION BY MAJOR CATEGORY OF INDUSTRY

<i>Country</i>	<i>Primary industry</i>	<i>Secondary industry</i>	<i>Tertiary industry</i>
Nepal	94%	2%	4
Afghanistan	90	2	8
Thailand	82	4	12
Indonesia	72	8	19
India	70	14	16
Pakistan	65	12	21
Korea, Rep. of	63	17	20
Philippines	61	14	25
Malaysia: Malaya	57	13	27
China, Rep. of	56	11	32
Iran	55	20	20
Ceylon	53	13	28
Japan	33	30	35
Malaysia: Singapore	8	21	69

TABLE 11
PERCENTAGE DISTRIBUTION OF ECONOMICALLY ACTIVE
POPULATION BY MAJOR CATEGORY OF INDUSTRY IN
INDIA, JAPAN AND UNITED STATES

	a. India		
	<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>
1901	72%	12%	16
1911	75	11	14
1921	76	10	14
1931	75	10	15
1951	72	11	17
1961	70	14	16

	b. Japan		
	<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>
1900	70%	12%	18
1910	63	15	22
1920	54	17	29
1930	50	17	33
1940	44	24	32
1950	52	22	26
1960	33	30	37

	c. United States		
	<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>
1900	38%	31%	81
1910	32	32	36
1920	27	35	38
1930	28	32	45
1940	18	33	49
1950	12	37	51
1960	6	35	59

N. EDUCATIONAL FINANCE

One of the most important phases in educational planning is the financing of the projected development, and detailed statistical information is therefore necessary about the historical trends and the present situation as to the place of educational expenditures in the national economy and as to the national pattern of the distribution of educational expenditures by type of school, by source, etc.

Percentage of National Income Spent on Education

The percentage of the national income spent on education can be regarded as an indicator of the educational development in a country. This percentage is to be studied in respect to the national income per capita. It is affected by the level of economic development of a country, and by the recognition of the importance of education by the general public.

The Meeting of the Ministers of Education of Asian Member States on the Development of Education in Asia, which was held in Tokyo in 1962, recommended that "Asian countries should move by stages to invest 4-5% of their gross national product in education by 1980, provided their rate of economic growth as individual countries can afford it."

The figure on the opposite page presents percentages of the national income spent on public education in 12 countries.

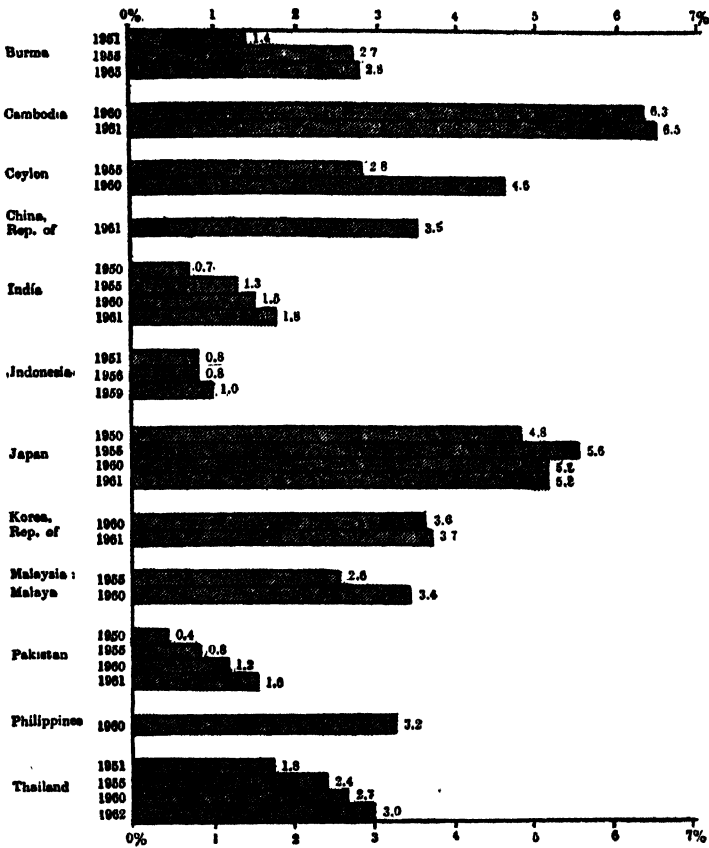


Fig. 3. Percentage of National Income Spent on Public Education.

Birth Rates and Death Rates

Birth rates and death rates are important factors affecting the age distribution of population. In educational planning, these factors, particularly trends in birth rates, should be taken into consideration.

Trends in birth rates and death rates during the decade 1950-1960 are presented for respective countries in the table shown on the opposite page. Birth rates in 1960 exceed 40% in Burma, Cambodia, Iran, Malaysia (Malaya) and Mongolia, and amount to nearly 40% in China, whereas the birth rate in India is less than 30%, and in Japan less than 20%. Historically, in most countries the birth rates show a trend of decrease from 1955 to 1960.

In almost all of the countries listed in the table, the death rates decreased during the decade. Korea and Malaysia (Singapore) show the lowest death rates in 1960.

Death rates should be examined in connection with infant mortality rates.

TABLE 4
BIRTH RATES AND DEATH RATES

a. Birth Rates
(Per 1,000 population)

<i>Country</i>	1950	1955	1960
Afghanistan	...	...	...
Burma	...	50.0	...
Cambodia	...	45.0	41.4 ¹
Ceylon	39.6	37.3	36.6
China, Rep. of	42.8	44.5	39.5
India	24.9	27.0	21.9 ¹
Indonesia	...	30.7	29.5 ¹
Iran	32.8	46.4	44.3 ¹
Japan	28.1	19.4	17.2
Korea, Rep. of	9.9 ³	10.9	14.9
Laos	...	...	...
Malaysia : Malaya	42.3	44.0	40.9
Singapore	45.4	44.3	37.8
Mongolia	...	32.4	39.2(2)
Nepal	45.0	...	...
Pakistan	19.0	...	...
Philippines	30.4	30.9	29.2
Thailand	28.6	35.0	34.8
Viet-Nam, Rep. of	38.0	35.7	31.0 ¹

(1) As of 1959 (2) As of 1958 (3) 1950-54 average

b. Death Rates

382 UNDERDEVELOPMENT, EDUCATIONAL POLICY AND PLANNING

(Per 1,000 population)

<i>Country</i>	<i>1950</i>	<i>1955</i>	<i>1960</i>
Afghanistan	...	...	...
Burma	...	21.1	...
Cambodia	30.0	30.0	19.7 ¹
Ceylon	12.6	11.0	8.6
China, Rep. of	11.3	8.4	7.0
India	16.1	11.7	9.2 ¹
Indonesia	12.7	...	11.9 ¹
Iran	9.5	11.1	8.5 ¹
Japan	10.9	7.8	7.6
Korea, Rep. of	...	4.1	5.3
Laos	...	...	...
Malaysia : Malaya	15.9	11.7	9.5
Singapore	12.0	8.1	6.2
Mongolia	...	14.2	11.2 ²
Nepal	30.0	...	...
Pakistan	12.2	...	...
Philippines	11.4	9.9	...
Thailand	10.0	9.2	...
Viet-Nam, Rep. of	10.6	7.1	6.6 ¹

(1) 1959 (2) 1958

B. LABOUR FORCE

Any demand for an increase in the number of trained persons is a demand for an increase in a specific branch of education. Thus an analysis of the distribution of the economically active population by industry and occupation is indispensable as a basis for intelligent planning of the balance of educational effort in accordance with the needs of the economy. Planning in education should be guided by the existing and future patterns of manpower requirements.

The following figures and tables present the existing patterns of the distribution of the economically active population by industry and occupation in respective countries. According to the *Yearbook of Labour Statistics* published by the I.L.O. the "economically active population" is defined as the total of employed persons (including employers, persons working on their own account, and unpaid family workers) and of persons unemployed.

Total Economically Active Population

The proportion of the economically active population exceeds 30% in all the countries for which data are available. Of these countries Thailand, Japan and Nepal show relatively high percentages: 52.7%, 44.6% and 49.0% respectively. In Thailand and Nepal the largest part of the economically active population is engaged in primary industry, while in Japan the largest part of the working population is employed in secondary and tertiary industries.

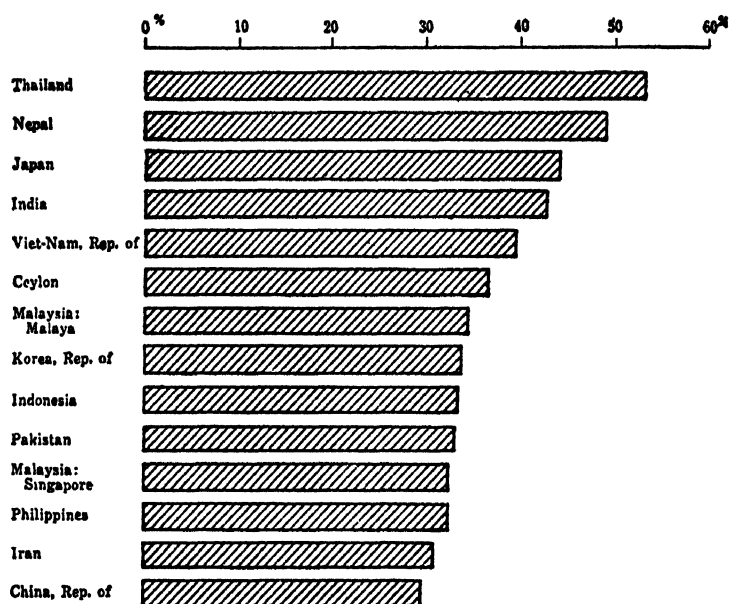


Fig. 4. Percentage of Economically Active Population.

TABLE 9
Total Population and Economically Active Population

(In thousands)				
Country	Survey year	Total population (A)	Economically active population (B)	Percentage of economically active population $\frac{B}{A} \times 100$
Afghanistan	...	...	...	...
Burma	...	...	...	...
Cambodia	...	...	...	...
Ceylon	1953	8,098	2,993	36.9%
China, Rep. of	1962	11,512	3,504	30.4
India	1961 ¹	439,235	188,317	42.9
Indonesia	1961	96,319	32,709	34.0
Iran	1956 ²	19,188	6,149	32.0
Japan	1963 ³	95,489	42,570	44.6
Korea, Rep. of	1962	26,278	9,058	34.4
Laos	...	...	...	...
Malaysia: Malaya	1957	6,279	2,165	34.5
Singapore	1957	1,446	480	33.1
Mongolia	...	...	...	...
Nepal	1952-1954	8,473 ⁴	4,153	49.0
Pakistan	1961 ⁵	90,283	30,206	33.5
Philippines	1962	29,239	9,680	33.1
Thailand	1960	26,258	13,837	52.7
Viet-Nam, Rep. of	1965 ⁶	12,067	4,750	39.4

¹ Excludes the unemployed and persons seeking their first job.

² Provisional.

³ Includes Amami islands and the Togara Archipelago, but excludes Okinawa and certain other Ryukyuan areas.

⁴ 1954.

⁵ Excludes certain frontier population of West Pakistan.

⁶ Official estimates.

E. EDUCATIONAL INSTITUTIONS

There are three categories of basic data in the field of education. These data relate to: (a) places where the educational programme is carried on; (b) persons who are receiving the education; and (c) persons who are responsible for dispensing the education. Among the first category of data, the number of educational institutions is the most fundamental. An increase in the number of educational institutions is generally associated with a growing population or a developing school system. A decrease in the number of educational institutions, however, may indicate either a reduction in the size of the school-age population or a consolidation of small schools into large units.

The educational institution as a statistical unit is of little use for international comparison, since there is no constancy in the size of the unit. However, the trend in the number of institutions in a country is worthy of analysing in relation to the trends in students and teachers.

According to the UNESCO recommendation concerning the international standardization of educational statistics, a school (educational institution) is defined as "a group of pupils (students) of one of more grades organized to receive instruction of a given type and level under one teacher, or under more than one teacher and with an immediate head".

In conformance with the UNESCO recommendations, the principal levels of education are classified into four in the present publication, as follows:

Pre-primary education, which provides education for children who are not old enough to enter a school providing primary education.

Primary education, of which main function is to provide basic instruction in the tools of learning (e.g., at primary school, elementary school).

Secondary education, based upon at least four years previous instruction at the primary level, and providing general or specialized instruction, or both (e.g., at middle school, secondary school, high school, vocational school, teacher training school at this level).

Higher education, which requires, as a minimum condition of admission, the successful completion of education at the

secondary level, or evidence of the attainment of an equivalent level of knowledge (e.g., at university, teachers' college, higher professional school).

1. Total Number of Schools, by School Level

The following tables present the number of schools at each school level as of the most recent school year for which figures are available.

TABLE 21
NUMBER OF SCHOOLS BY SCHOOL LEVEL

<i>Country</i>	<i>Survey year</i>	<i>Pre- primary</i>	<i>Primary</i>	<i>Secondary</i>	<i>Higher</i> 11 ¹
Afghanistan	1961	...	1,269	105	8 ²
Burma	1960	...	11,582	793	5 ³
Cambodia	1961	...	3,598 ⁵	47	3 ⁴
Ceylon	1962	...	2,216 ⁵	6,967	33
China, Rep. of	1962	613	1,948	437	2,198
India	1960	1,909	330,339	71,065	...
Indonesia	1960	1,814	37,673	2,401 ⁵	86
Iran	1962	254	10,582	1,184	593
Japan	1962	7,515	26,615	17,284	126
Korea, Rep. of	1962	336	5,292	1,785	...
Laos	1961	...	939	...	21
Malaysia: Malaya	1962	274	4,871	516	4
Singapore	1962	43	431	91	...
Mongolia					39
Nepal	1963		4,565	638	
Pakistan	1962		51,678	6,559	300
Philippines	1961	253	31,806	1,811	401
Thailand	1961	827	26,349	2,279	28
Viet-Nam, Rep. of	1962	24	6,219	495	13

¹ 1959

² 1962

⁵ Assisted and public schools only.

⁴ 1957

³ 1963

TABLE 22

NUMBER OF SECONDARY SCHOOLS BY TYPE OF SCHOOL

<i>Country</i>	<i>Survey year</i>	<i>General</i>	<i>Vocational</i>	<i>Teacher training</i>
Afghanistan	1959	35	30	...
Burma	1957	706	13	6
Cambodia		...	...	...
Ceylon	1962	6,398	...	19
China, Rep. of	1962	318	110	9
India	1960	65,589	4,007	1,469
Indonesia	1957	803	895	701
Iran	1957	963	67	52
Japan	1962	15,834	211	—
Korea, Rep. of	1962	1,482	285	18
Laos		...	...	...
Malaysia: Malaya	1963	481	321	16
Singapore	1962	84	7	...
Mongolia		...	...	...
Nepal	1963	621	9	8
Pakistan	1960	6,022	186	137
Philippines	1961	1,643	166	2
Thailand	1961	1,574	675	30
Viet-Nam, Rep. of	1957	495	16	5

' 1957.

TABLE 23

NUMBER OF INSTITUTIONS OF HIGHER EDUCATION,
BY TYPE

<i>Country</i>	<i>Survey year</i>	<i>Degree-grant- ing institu- tions other than teacher training</i>	<i>Non-degree granting ins- titutions other than teacher training</i>	<i>Teacher training</i>
Afghanistan	...	...	...	...
Burma	1963	4	3	1
Cambodia	1962	...	...	...
Ceylon	1962	3	2	...
China, Rep. of	1962	17	12	4
India	1960	1,635	72	147 ¹
Indonesia	1957	...	19	106
Iran	...	...	...	...
Japan	1962	260	324	9
Korea, Rep. of	1962	46	68	12
Laos	...	...	...	...
Malaysia: Malaya	1962	1	2	18
Singapore	1962	2	2	1
Mongolia	...	...	...	...
Nepal	1963	27	11	1
Pakistan	1960	240	...	16
Philippines	1961	224	...	8
Thailand	1957	5	6	17
Viet-Nam, Rep. of	1957	2	1	1

¹ Post-graduate institutions only.

2. *Number of Schools by Type of Establishing Body*

The table and figure on the following pages show the distribution of schools at each school level by type of establishing body. Table 24 presents the percentage of public schools. Countries are listed in descending order of percentage.

According to the definitions recommended by UNESCO, a *public school* is "a school operated by a public authority (national, federal, state or provincial, or local), whatever the origin of its financial resources, and a *private school* is a school not operated by a public authority, whether or not it receives financial support from such authorities. Private schools include the *aided* schools which derive financial support from public authorities.

At the pre-primary level, more than half of schools are privately operated in almost all of the 12 countries for which figures were available. Thailand is the only exception. In Afghanistan, Iran, Korea and Malaysia (Singapore) there is no public institution at the pre-primary level.

At the primary level, the overwhelming number of schools are established by public bodies in most of the countries; Burma and Korea report no private primary schools. As an exception, the majority of primary schools are privately run in Malaysia (Singapore) and Nepal.

As for secondary schools, all institutions are publicly operated in Burma, and the majority are so controlled in Ceylon, China, India, Indonesia, Iran, Korea and Malaysia (Malaya). But in India, Korea and Malaysia (Malaya) the number of private secondary institutions amount to a substantial percentage. In Nepal, Pakistan, Philippines, Malaysia (Singapore), Thailand and Viet-Nam the majority of secondary schools are privately maintained.

At the higher educational level, private institutions account for a comparatively high percentage of all institutions in most countries. But so far as teacher training institutions are concerned, they are predominantly public in all countries.

In brief, the following is the general pattern on the proportion of public and private institutions in Asian countries: Private institutions are predominant at the pre-primary education level, while public institutions are predominant at the primary education level. At the secondary and higher education levels, the

proportion of private schools is comparatively high. This pattern is found in its typical form in Japan, Korea and the Philippines.

Burma is the exception since all institutions at all levels are publicly controlled.

TABLE 24

PERCENTAGE OF NUMBER OF PUBLIC INSTITUTIONS

<i>a. Pre-primary schools</i>		<i>b. Primary schools</i>		<i>c. Secondary schools</i>	
Thailand	66%	Burma	100%	Burma	100%
China, Rep. of	44	Korea, Rep. of	100	Japan	90
Japan	37	Japan	99	Iran	87
India	29	China, Rep. of	97	Ceylon	84
Viet-Nam, Rep. of	25	Philippines	96	Indonesia	80
Philippines	4	Iran	94	China, Rep. of	75
Malaysia: Malaya	4	Malaysia: Malaya	92	Malaysia: Malaya	69
Indonesia	1	Thailand	91	Korea, Rep. of	60
Afghanistan	0	Pakistan	91	Cambodia	59
Iran	0	Indonesia	86	India	61
Korea, Rep. of	0	India	78	Pakistan	42
Malaysia:		Viet-Nam, Rep. of	60	Thailand	41
Singapore	0			Malaysia:	
		Ceylon	60	Singapore	35
		Cambodia	58		
		Malaysia:		Viet-Nam, Rep. of	20
		Singapore	40	Philippines	23
		Nepal	6	Nepal	10

d. Institutions of Higher Education

<i>Degree-granting</i>		<i>Non-degree granting</i>		<i>Teacher-training</i>	
Burma	100%	Afghanistan	100%	Burma	100%
Ceylon	100	Burma	100	China, Rep. of	100
Malaysia: Malaya	100	Ceylon	100	Japan	100
Thailand	100	Malaysia:		Malaysia: Malaya	100
Viet-Nam, Rep. of	100	Malaya	100	Singapore	100
Pakistan	44	Thailand	100	Nepal	100
China, Rep. of	41	Viet-Nam, Rep. of	100	Pakistan	100
Japan	41			Thailand	100
India	28	Indonesia	74	Viet-Nam, Rep. of	100
Korea, Rep. of	24	China, Rep. of	50	Korea, Rep. of	92
Nepal	22	Malaysia:		India	46
Philippines	17	Singapore	50		
Malaysia:		Pakistan	38		
Singapore	0	Japan	25		
		India	22		
		Korea, Rep. of	18		
		Nepal	9		

3. *Historical Trend in Number of Schools*

Historical trends in the number of schools should be examined in relation to those in the number of pupils enrolled.

The table on the opposite page gives rates of increase in schools at each level from 1950 to 1960 with the 1960 total expressed as percentage of the 1950 one.

A tremendous increase in pre-primary schools was recorded in China during the decade from 1950 to 1960. The figures indicate a great expansion of pre-primary education in China.

At the primary level, Afghanistan and Burma report the highest rates of increase in schools during the decade from 1950 to 1960. The highest rate of increase in secondary schools is found in Viet-Nam, followed by Burma, India and Iran. And Malaysia (Malaya) records the highest rate of increase in institutions of higher education, followed by China and Ceylon.

In Japan, secondary schools decreased during the decade owing to the consolidation of small-size schools.

Table 25 presents the average annual percentage rate of increase in schools during the decade from 1950 to 1960, and the rates of increase from 1960 to 1961 and from 1961 to 1962.

These rates of increase should be studied in connection with the absolute figures shown in Table 21-23.

Enrolments in Institutions of Higher Education by Branch of Study

The figure on the opposite page presents the percentage distribution of full-time students in institutions of higher education by branch of study. This figure indicates what fields of study have been emphasized at the level of higher education in respective countries. The branches of study are classified into four major categories: natural and technological sciences; medicine; agriculture; and "arts". "Arts" include humanities, education, fine arts, law and social science. The countries are listed in descending order for percentage of science students.

The proportion of students enrolled in each field differs greatly among the countries listed. The proportion of science students ranges from 41.9% in Malaysia (Malaya) to 9.5% in Thailand, and arts students from 81.3% in Thailand to 47.0% in Afghanistan. The majority of students at institutions of higher

education major in the arts in all countries excluding Burma, Afghanistan and Iran.

The data on the proportion of students majoring in each field should be studied in close connection with the aggregate number of students.

TABLE 25

RATE OF INCREASE IN NUMBER OF SCHOOLS FROM
1950 TO 1960

(1960) total as per cent of 1950)

<i>Country</i>	<i>Pre-primary</i>	<i>Primary</i>	<i>Secondary</i>	<i>Higher</i>
Afghanistan	...	429	123	100 ¹
Burma	...	470	551	200
Cambodia	...	184	...	250
Ceylon	...	208	113	300
China, Rep. of	2,411	150	170	386
India	630	158	306	259
Indonesia	593	152	...	...
Iran	477	172	283	...
Japan	343	104	96	118
Korea, Rep. of	187	128	254	155
Laos	...	183	...	...
Malaysia: Malaya	...	124	240	1,100
Singapore	...	89 ¹	155	200 ²
Pakistan	...	118	98	142
Philippines	148	138	156	137
Thailand	...	122	...	...
Viet-Nam, Rep. of	...	250	573	...

¹The reduction in the number of schools over the period 1959/1962 is due to the change in definition of "school". Each school, with very few exceptions, has one a.m. session and one p.m. session; in effect, two "schools" in one school building.

²Degree-granting institutions only.

APPENDIX II

CHAPTER I

INDIA AND THE OTHER COLOMBO PLAN COUNTRIES¹

As in earlier years there were wide disparities over the year (1963-64) in the rate of growth of real Gross National Product among the developing countries in the Colombo Plan Area. In India the volume of national output expanded by nearly 4½ per cent and in Pakistan the rise was about 7 per cent Thailand recorded an increase of 8 per cent, Korea some 6 per cent, and the Philippines almost 5 per cent. Some other countries, however, fared much less well. Moreover as the following paragraph indicates, the rate of increase in population remained rapid throughout the area. Consequently, the gain in real national income per capita was, in general, only about half that in total national income.

Table 1 below shows the annual rate of increase in population in the various countries in the area in the seven years from 1955 to 1962, and in 1962 and 1963. It will be seen that in 1955-62 only Burma had an increase of less than 2 per cent per annum; in three countries, Malaysia, the Philippines and Vietnam, the growth rate exceeded 3 per cent, which, if it continued, would mean a doubling of the population in under twenty-five years. Nor is there any sign, in the (admittedly provisional) figures for 1962 and 1963, of any significant slackening in this high rate of expansion which reflects, on the one hand, a drop in death rates as medical services improve and, on the other hand, continued high birth rates. However, as noted in last year's report, there is among the countries under review a growing realisation and understanding of the implications of rapid population growth for the possibilities of achiev-

¹ From the 13th Annual Report of the Consultative Committee of the Colombo Plan for Co-operative Economic Development in South and South-East Asia. Printed in the United Kingdom (both Government to the 16th meeting of the Consultative Committee) by Her Majesty's Stationery Office.

ing an early and more substantial improvement in living standards.

TABLE 1
POPULATION IN THE DEVELOPING COLOMBO PLAN COUNTRIES

	Total, million 1962	% increase 1955 to 1962 per annum	% increase 1962 on 1961	% increase 1963 on 1962
Afghanistan	14.9	*	*	*
Bhutan	0.7	N.A.	N.A.	N.A.
Burma	23.2	1.8	2.1	2.1
Ceylon	10.4	2.4	2.7	2.6
India	449.4	2.2	2.3	N.A.
Indonesia	97.8	2.2	2.2	2.3
Korea	26.5	2.8	2.9	2.9
Malaysia	10.4	3.2	3.2	3.1
Maldivé Islands	0.1	N.A.	N.A.	N.A.
Pakistan	96.6	2.1	2.1	2.1
Philippines	29.3	3.2	3.3	3.4
Thailand	26.3	2.9	3.0	3.0
Vietnam	14.9	3.2	3.0	2.6

* the average annual increase in Afghanistan's population has been estimated at 1.75 per cent.

SOURCES: U. N. Monthly Bulletin of Statistics I. L. O. Year Book

Agricultural Production

Agriculture is the dominant sector of the economies in the developing Colombo Plan area. In none is its contribution to gross domestic product less than one-third and in some it is over one-half. The indications are that total agricultural output in the area continued to rise only modestly in 1963-64; and there were occasional food shortages in some countries. Nevertheless, many of these countries secured significant increases in agricultural production for export and in export earnings.

Foodgrains:—Provisional figures suggest that *rice* production increased in most of the member countries for which information is available (Table 2). The increase was particularly marked in India and Pakistan, and also in Korea; in all these

countries the 1962-63 crop had been adversely affected by climatic conditions. The increase in the combined output of the countries listed in Table 2 was about 9 per cent for the agricultural year 1963-64 over a year earlier ; but the average increase over the past two years was only a little above 3 per cent, and thus only slightly above the increase in population. Output of *maize* continued to grow but rather more slowly than in the previous year. *Wheat* production fell in India after a substantial rise in 1962, but it continued to rise in Pakistan.

TABLE 2
OUTPUT OF RICE (PADDY)

	Metric Tons, '000		% Change	
	1962-63 season	1963-64 season	1963-64 on 1962-63	1963-64 on 1961-62
Burma	7,667	7,846	+ 2	+ 14
Ceylon	1,002	1,026	+ 2	+ 14
India	48,026	54,600	+ 14	+ 5
Indonesia	17,215	17,313	+ 1	+ 9
Korea	3,126	3,763	+ 20	+ 2
Malaysia*	863	897	+ 4	- 3
Nepal	1,250	N.A.	—	—
Pakistan	14,948	17,430	+ 17	+ 8
Philippines	3,967	3,830	- 3	- 2
Thailand	8,826	9,590	+ 9	+ 16
Vietnam	5,205	5,306	+ 2	+ 15
ESTIMATE * Malaya only.				

SOURCE 7: F.A.O. Monthly Bulletin of Agricultural Economics and Statistics, June, 1964.

Other Major Crops: Table 3 below shows the movement in the output of certain major cash crops in the area in recent years; the figures are based on data published by the United Nations Economic Commission for Asia and the Far East (ECAFE) and those for 1963 are subject to revision in the light of later information.

TABLE 3
OUTPUT OF CASH CROPS †
(Volume Indices 1959 = 100)

	1960	1961	1962	1963
Tea	99.2	107.7	109.3	108.1°
Rubber	97.9	102.6	103.5	99.2
Sugar	104.2	110.8	110.1	N.A.
Vegetable Oils	110.0	111.2	121.6	125.9

° Subject to amendment in light of upward revision of Ceylon's output in 1963.

† Comparable figures for cotton and jute not available.

SOURCE: ECAFE Economic Bulletin for Asia and the Far East, June, 1964.

Output of *tea* in India remained in 1963 at around the same level as in 1962 while in Ceylon it rose by 4 per cent.

Rubber production in the Colombo Plan countries is dominated by Indonesia and by Malaysia (in both countries rubber is the leading export commodity.) Output in Indonesia fell by 13 per cent in 1963 compared with the previous year, mainly because of a drop in smallholders' production. In Malaysia rubber output is rising slowly, while Thailand's output rose only slightly, though there are indications that 1964 may be a better year. As a result of these divergent trends rubber output in the area showed a 4 per cent fall in 1963. *Sugar* is another of the area's major cash crops, but a lack of up-to-date information makes it difficult to judge recent trends. In 1963 production was well down on 1962, largely because of a 17 per cent drop in India's output. However, stimulated by high prices,

the total output was to be considerably higher than in the previous season; in the Philippines—where sugar accounts for about 20 per cent of total exports—output has recently been expanding. Output of *vegetable oils* in the Colombo Plan countries as a whole continued to increase at an annual rate of about 4 per cent. India is the largest producer—though as in other countries these oils are not a major export. In Pakistan *jute* production (which provides around 40 per cent of export earnings) declined slightly, while in India there was an increase. *Cotton* production increased in both India and Pakistan, and in Afghanistan.

Minerals

Output of *tin* rose by 2 per cent, mainly owing to a 4 per cent increase in Malaysia, which is the largest producer accounting for nearly one-quarter of the area's export earnings from this commodity. *Iron ore* output rose by some 10 per cent in India, Malaysia, and the Philippines, which are the principal producing countries. Output of *coal*, too, was up 10 per cent on 1962; in India, for the largest producer in the area, output rose by nearly 9 per cent. As for *crude petroleum*, output—which is mainly concentrated in Indonesia—fell back in 1963, after rising steadily in the previous years to reach a high level in 1962. Some new producers of crude petroleum in the Colombo Plan area have been expanding output, but from a very small base. In Pakistan output of *natural gas* is beginning to contribute significantly to the economy.

TABLE 4
OUTPUT OF MINERALS
(Volume indices, 1959 = 100)

	1960	1961	1962	1963
Tin	163.7	170.0	176.2	179.8
Iron ore	135.0	156.8	164.1	179.6
Coal	111.8	119.1	132.3	145.2
Petroleum (Crude)	112.5	116.6	127.6	122.6

SOURCES: ECAFE Economic Bulletin for Asia and the Far East, June,

Industrial Production

Industrial production continued to expand in the region as a whole in 1963; and, in the manufacturing sector, output advanced appreciably in such countries as India, Pakistan, Korea, the Philippines and Thailand.

TABLE 5
MANUFACTURING OUTPUT
(Volume indices, 1958 = 100)

	1961	1962	1963
India	128	137	148
Pakistan	125	150	171
Korea	122	142	161
Philippines	119	126	134
Thailand	125	135	156

SOURCES: United Nations Monthly Bulletin of Statistics.
ECAFE Economic Bulletin for Asia and the Far East, June, 1964.

Output of *electricity* is increasing strongly in all the member countries for which figures are available. India—producing two-thirds of the total electricity supply of the area—generated nearly 15 per cent more last year and its output is now double what it was five years ago. *Cement* output grew by over 7 per cent in 1963 and particularly strongly in India (which, again, is much the largest producer) and Burma; Ceylon and the Philippines, however, did not register any increase in 1963. *Steel* production is continuing to grow rapidly—by 17 per cent over a year earlier. India (far the biggest producer in the area) is now turning out crude steel ingots at an annual rate of half a million tons, more than double the rate four years ago. Output of *petroleum* products, such as diesel oil and kerosene, rose by 16 per cent in India last year; on the other hand, Indonesia appears to have no more than maintained output in recent years. Production of cotton and jute manufactures increased significantly both in India and Pakistan.

TABLE 6
OUTPUT OF KEY INDUSTRIAL PRODUCTS

	(Volume indices, 1959 = 100)			
	1960	1961	1962	1963
Electricity	1110.9	128.6	146.3	165.6
Cement	112.0	123.4	132.2	141.6
Steel	131.4	164.8	209.0	243.8
Petroleum products	161.5	172.5	N.A.	N.A.

SOURCES: U.N. Monthly Bulletin of Statistics.

ECAFE Economic Bulletin for Asia and the Far East, June, 1964.

Internal Finance and Stability

During 1963 there was a substantial increase in development expenditures in many countries of the region; other expenditures also rose, particularly on account of increased defence spending. Despite the efforts made by some of the countries to mobilize resources, there was resort to deficit financing, which in turn led to an increase in money supply and in the domestic price level. While there was relatively little increase in money supply in *Thailand*, in *Burma*, the effects of deficit financing were countered by other policies which restrained the rise in the price level. Prices also rose only slightly in *Pakistan*, thanks partly to the Government's stabilizing policies. In *India*, supply shortages occurred following adverse weather conditions and, despite efforts to curtail non-essential Government expenditures, prices rose considerably during most of the 1963 and the first half of 1964. In *Ceylon*, unexpected increases in import prices, particularly of essential foodstuffs, were responsible for pushing up the price level. The price rise in the *Philippines* can partly be ascribed to shortages of foodstuffs, but also to an increase in budget expenditure, despite Government efforts at restraint.

Energetic monetary and budgetary measures were introduced in Korea with the object of stabilizing the internal financial situation. On the other hand the continued increase in the money supply in Indonesia gave rise to serious problems. While domestic savings in the region have been increasing, the increase has not been adequate to meet growing investment

requirements. This deficiency underlies the inflationary pressures in several countries of the region.

The External Balance

The rate of internal development that countries in the Colombo Plan area can achieve is heavily dependent upon the level of their export earnings, and this in turn is strongly influenced by the behaviour of the world prices of the area's main primary commodities, notably rubber, tin, jute and tea. During the review year, the price experience of the area as a whole was mixed (Table 7).

TABLE 7

EXPORT PRICE INDICES OF COMMODITIES PRODUCED IN THE COLOMBO PLAN AREA

(1958 = 100)

	1961	1962	1963	1963	1964		
				3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.
<i>Copra</i>							
Philippines	101	126	144	144	148	146	154
<i>Jute</i>							
Pakistan	161	113	108	103	109	107	98
<i>Rice</i>							
Burma	94	100	104	106	104	106	109
Thailand	87	97	92	93	92	91	87
<i>Rubber</i>							
Malaysia *	104	97	90	86	85	82	86
<i>Sugar</i>							
Philippines	138	175	235	200	274	235	187
<i>Tea</i>							
India	101	98	100	104	99	92	96
Ceylon	96	94	90	88	87	94	87
<i>Tin</i>							
Malaysia †	121	122	123	123	132	145	148

* Malaya only.

SOURCE: I.M.F. International Financial Statistics.

Rubber prices continued to fall steeply in 1963 from their peak in 1960, but increased somewhat in 1964; *tin* prices in 1964 soared to their highest level for seven years after several years of stability. No clear trend has been evident in *tea* prices: after changing little in 1963, Indian tea prices rose in the second quarter of 1964 whereas Ceylon tea prices fell. *Copra* and *rice* both rose in 1963; in the first half of 1964 copra continued to rise, but *jute* and *sugar* declined.

Export earnings and the trade balance

Thanks to increased production, and to more favourable prices for some products, the value of exports from the area as a whole rose vigorously in 1963—by 10 per cent over 1962 (Table 8). The Philippines and India recorded the largest increase in export earnings. In the first half of 1964 the value of exports from countries for which figures were available at the time of writing was about 4½ per cent higher than in the first half of 1963.

By contrast imports into the area in 1963 rose only moderately—by some 4 per cent compared with 1962. Moreover, in the first half of 1964 they were only 1 per cent up on the same period of 1963. These trends no doubt reflect partly the restrictions imposed by some member countries in 1962-63 in order to halt the steady deterioration in their external trade position; import prices also rose further but while for some countries the increase was sharp for most it was comparatively modest. Within the total, imports into Indonesia have fallen sharply; but in India there was an increase particularly in the first half of 1964.

As a result of these trends the area's visible trade deficit with the rest of the world narrowed appreciably, from \$ 1943 million in the second half of 1962 to \$ 1438 million (both annual rates) in the second half of 1963. A further narrowing of the deficit was evident in the first half of 1964.

Balance of Payments and Reserves

The improvement in the trade balance was reflected in the balance on current account of the area (Table 9). India, Vietnam and the Philippines improved their current balance substantially, while that of Malaysia worsened. The overall capital

balance of the area (as defined in Table 9) also improved. India and Pakistan benefited most from an increased flow of international aid; on the other hand the capital position of the Philippines deteriorated sharply, partly because of a heavy efflux of capital to settle outstanding foreign commitments.

The total official reserves of the main Colombo Plan countries (Tables 9 and 10) showed a rise of over \$ 100 million in 1963. There was also a recovery in the foreign exchange holding of the commercial banks. This, however, followed considerably larger falls in the two previous years and the level of the reserves must in some countries still be judged inadequate in relation to the large and increasing volume of trade of the area. The most notable gain was that of India. The Philippines also increased its reserves in 1963 through the improvement in her current balance, but a decline has set in since. Indonesia suffered a further fall in the first half of 1963; more up-to-date figures are not yet available.

External Assistance

The total aid provided by the main group of donor countries (comprising Australia, Canada, Japan, New Zealand, the United Kingdom and the United States) to countries in the Colombo Plan area as shown in the Contributions Chapters has been \$ 14,864 million including technical assistance, capital aid, and commodities. In addition an increasing amount is being provided by regional members to each other. The value of the aid contributed in 1963-64, which is included in the foregoing figure, was about \$ 2,165 million. There has also been substantial private investment in the countries within the Colombo Plan area from member countries outside the area.

During the fiscal year ended 30th June, 1964, the I.B.R.D. undertook loan commitments of \$ 124 million to countries in the Colombo Plan area. This brought the total of loans provided to countries of the area since the start of the Colombo Plan to \$ 1,702 million. The International Development Association had committed \$ 482 million at the end of June 1964, compared with \$ 346 million at the end of June 1963. The International Finance Corporation had allocated up to June 1964 a total of \$ 23 million in investment fund's private enterprises.

TABLE 8
TRADE BALANCES OF COLOMBO PLAN COUNTRIES
(U.S. \$ mn. Exports f.o.b. Imports c.i.f. annual rates)

	2nd half 1962			1st half 1963			2nd half 1963			1st half 1964		
	Ex- ports	Im- ports	Balance	Ex- ports	Im- ports	Balance	Ex- ports	Im- ports	Balance	Ex- ports	Im- ports	Balance
(Afghanistan)	31			24			38			29		
1. Burma	198	217	-	333	234	+	99	210	240	30	382	375 + 7
2. Cambodia	52	104	-	101	109	-	8	78	106	28 (	48	88 - 40)
3. Ceylon	395	360	+	364	286	+	78	364	344	20	1,704	2,270 - 566
4. India	1,521	2,410	-	899	1,533	2,486	-	953	1,778	1,995	N.A.	N.A.
5. Indonesia	764	622	+	142	623	434	+	189	770	595	106	399 - 293
6. Korea	62	461	-	399	77	522	-	445	97	569	472	N.A.
7. Laos	1	29	-	28	1	26	-	25	1	32	31	850 + 42
8. Malaysia	846	806	-	40	886	853	+	33	882	803	79	364 895 - 530
9. Pakistan	436	793	-	357	419	811	-	392	415	967	552	745 844 - 129
10. Philippines	563	647	-	84	694	624	+	70	760	750	10	601 655 - 54
11. Thailand	412	538	-	126	486	576	-	90	453	614	161 (	48 88 - 40)
12. Vietnam	67	273	-	206	70	258	-	188	84	315	231 (	45 285 - 340)
Total	5,317	7,260	-1,943	5,587	7,219	-1,632	5,892	7,330	-1,438	N.A.	N.A.	N.A.
Total Less 2, 5, 7 and 12	4,433	6,232	-1,799	4,792	6,392	-1,600	4,959	6,282	-1,323	5,004	6,453	-1,449

N.B. Figures in brackets based on 1st Quarter only.

Source: I.M.F. International Financial Statistics.

TABLE 9
BALANCE OF PAYMENTS
(\$ million)

	1961	1962	1963
Trade balance (imports c.i.f.—exports f.o.b.)	—1,644	—1,849	—1,646
Current balance	—1,345	—1,225	— 993
Capital balance	998	972	1,131
Monetary movements:—			
Commercial banks foreign assets	17	— 110	+ 33
Official reserves	— 374	— 144	+ 105
(— sign indicates decrease in reserves)			

This table is illustrative, not comprehensive: it relates to those Colombo Plan countries whose balance of payments figures are published regularly in the I.M.F.'s International Financial Statistics, namely: Burma, Ceylon, India, Indonesia, Korea, Malaysia (Malaya), Pakistan, Philippines, Thailand, Vietnam.

SOURCES: I.M.F. International Financial Statistics.

TABLE 10

TOTAL OFFICIAL RESERVES (GOLD, GOLD TRANCHE POSITIONS
AND FOREIGN EXCHANGE) OF COLOMBO PLAN COUNTRIES
(End of Period: Millions of United States Dollars)

	1962		1963		1964		Change from
	June	Dec.	June	Dec.	March	June	June 1963 to June 1964
1. Afghanistan	42	40	53	48	49	47	- 6
2. Burma	139	166	169	187	188	205	+ 36
4. Cambodia	110	104	103	98	N.A.	N.A.	N.A.
4. Ceylon	94	85	102	73	60	61	- 41
5. India	507	512	607	607	642	585	- 22
5. Indonesia	118	135	118	N.A.	N.A.	N.A.	N.A.
7. Korea	194	167	111	132	135	134	+ 23
8. Laos	24	26	23	16	16	N.A.	N.A.
9. Malaysia							
(Malaya)	860	909	914	920	914	918	+ 4
10. Pakistan	278	279	335	307	330	293	- 42
11. Philippines	81	75	88	110	100	N.A.	N.A.
12. Thailand	517	523	568	576	592	N.A.	N.A.
13. Vietnam	158	153	165	175	166	162	- 3
Total	3,122	3,174	3,356	N.A.	N.A.	N.A.	N.A.
Total Less							
3, 6, 8, 11							
and 12	2,272	2,311	2,456	2,451	2,484	2,405	- 51

SOURCE: I.M.F. International Financial Statistics.

TABLE 11

<i>Form of Assistance</i>	<i>1962/1963</i>	<i>U.S. \$ millions</i>	
		<i>1963/1964</i>	<i>1950/1964</i>
Training Places			
Expenditure	19.5	17.4	116.5
(No. of persons)	4,433	4,551	28,613
Experts :			
Expenditure	39.8	39.2	194.9
(No. of persons)	870	948	5,981
Equipment :	59.2	43.1	195.6
	118.5	99.8	505.1

TABLE 12

RETAIL PRICES IN COLOMBO PLAN COUNTRIES
(Consumer Price Index numbers 1956 = 100)

<i>Country</i>	<i>1964</i>								
	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>Jan.</i>	<i>Feb.</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
Burma									
(Rangoon)	103	101	99	100	100	101	...	101	...
Ceylon									
(Colombo)	100	101	104	106	106	106	107	107	107
Indonesia									
India	108	112	115	120	122	123	124	126	129
Indonesia									
(Djakarta)	209	582	1,254	1,947	2,366	2,568	2,112	N.A.	N.A.
Korea	121	129	156	182	195	199	203	212	203
Laos									
(1959=100)		134	256	401	445	473	N.A.	N.A.	N.A.
Malaysia									
(1960=100)	100	100	103	104	104	103	102	102	N.A.
Pakistan									
(Karachi)	105	104	105	107	109	109	109	108	108
Philippines									
(Manila)	105	111	116	123	123	123	123	123	124
Thailand									
(Bangkok)	101	105	105	103	105	105	104	105	106
Vietnam	108	111	119	119	120	119	121	121	121

SOURCE: United Nations Monthly Bulletin of Statistics.

The United Nations Special Fund had approved up to June 1964 an amount of \$ 92.95 million at the end of June 1963. Under the Expanded Programme of Technical Assistance for the biennium 1963/64 the average figure for assistance rendered was \$10.5 million per annum. Estimates for the biennium 1965/66 indicate an average figure of \$ 11.66 million per annum for countries in the Colombo Plan area.

The Colombo Plan continues to give high priority to technical assistance (training facilities, services of experts and equipment). The technical assistance provided by member countries during the 14 years of the Colombo Plan's existence up to 30th June, 1964 amounted to a total of \$505 million. Of this, 23 per cent has been spent on trainees, 39 per cent on experts and 38 per cent on technical equipment. The following table shows the figures and trends for the last two years.

Of the total training places in 1963/64 nearly 8 per cent has been provided by third country and intra-regional training programmes, which have been given more attention and greater importance.

Progress of Development Plans

Throughout the Colombo Plan area there is an increasing desire for an accelerated rise in real output and living standards, and this is reflected, inter alia, in the widespread adoption by governments of national development plans or programmes which, in varying degrees of detail, define both the priorities and objections for economic and social advance and the means to achieve them. It is not intended to deal here with the nature and progress of individual plans; the details, with a wealth of quantitative information, will be found in the Country Chapters. Instead this section presents a brief analysis of the level composition and trend of development spending by governments over the area as a whole.

Table 13 compares the *level* of government spending for development in the various Plan countries in the review year 1963-64. (It should be remembered that private development spending is also large in some countries). It shows that while the level per head varies quite widely, from Malaysia with \$ 23 to Nepal with \$ 2, the majority of countries are in the range \$ 5-10. The low absolute level of the figures is striking, and

affords a reminder, if one were needed, of the urgency of a further acceleration of development activities in the region, and of the importance of further measures to moderate the rapid rate of population growth.

Table 14 sets out the *composition* of total development spending in the different countries in the review year. A number of similarities emerge. In almost all countries the share of agriculture is less than that of industry, power and mining; this, of course, is scarcely surprising; given the less capital intensive nature of agricultural investment which is primarily undertaken by individual cultivators, the Government is in most cases providing overhead facilities such as irrigation and extension services. Since most countries are determinedly embarked on industrialisation, industry, power and mining takes the biggest slice of development funds in half the countries shown; transport and communications also takes a large slice everywhere, and in some countries overshadows industry, power and mining. In most countries, as is to be expected in the early stages of economic and social development, education and health make a comparatively small call on the development budget. There are at the same time some interesting dissimilarities. For example, some countries put great stress on building up industry, among them India and Pakistan where the share of industry, power and mining is about half the total, and spend relatively conservatively on health and education. At the opposite pole is the Philippines, which devotes comparatively modest resources to industry and a large amount to education.

In most countries development expenditures have been rising fast over the last year or so—both in money terms and, as far as is discernible, in real terms—and the increase in 1963 was greater than in the previous year for the majority of countries under consideration. This implies a substantial rise in the proportion of resources devoted to investment by most member countries in 1963.

TABLE 13

GOVERNMENT EXPENDITURES FOR DEVELOPMENT, 1963-64 *

	<i>Total</i> \$ million	<i>Per Head</i> \$
Afghanistan	140	9.4
Bhutan	6	8.6
Burma	139	5.8
Ceylon	135	12.8
India	3,666	8.2
Indonesia	N.A.†	N.A.†
Korea	182	6.7
Laos	6	3.4
Malaysia	240	23.0
Nepal	19	2.0
Pakistan	678	6.9
Philippines	460	15.2
Thailand	252	8.8
Vietnam	83	5.4

N.B. The figures above are only broadly comparable since the classification of Government spending on development varies between countries.

* i.e., fiscal year, which varies between countries. However, figures for Ceylon are a projection of 1964-65; those for Afghanistan are the average of 1962-67 Plan outlays; those for Korea, Malaysia and Vietnam are for calendar 1963.

† Figure in dollars not available; development spending in 1963-64 totalled rupiahs 66.7 billion.

SOURCE: Country Chapters.

TABLE 14

COMPOSITION OF DEVELOPMENT EXPENDITURES, 1961-64*

% share of total †

	<i>Agriculture</i>	<i>Industry Power and Mining</i>	<i>Transport and Communica- tion</i>	<i>Education</i>	<i>Health</i>
Afghanistan	25	36	27	12	
Bhutan	7	1	82	10	
Burma	9	28	51	12	
Ceylon	28	36	22	14	
Philippines	14	49	26	7	4
Vietnam	13	48	27	10	2
Thailand	25	35	34	5	1
Pakistan	4	1	22	58	15
India	10	38	22	19	11
Indonesia	11	48	12	18	11
Nepal	14	50	23	8	5
Korea	21	8	23	37	11
Laos	17	27	39	10	7
Malaysia	18	12	28	30	12

* Footnote * to Table 13 also applies

† Total is defined as the sum of the sectors listed in the table, i.e., it excludes the item 'Other' in the tables of development outlays in the Country Chapters.

SOURCE: Country Chapters.

CHAPTER II

THE TASK AHEAD

The dialogue between developed and developing countries is concerned, of course, not merely with development and aid, but also with trading relations between them, since these relations vitally affect financing of development. In this field, the United Nations Conference on Trade and Development at Geneva emphasized especially the need for improved access by the less developed countries to the markets of the world, and for international arrangements covering primary commodities, especially those exported by developing countries.

In the field of development a number of objectives were summarized in the Recommendation on Guide Lines for International Financial Co-operation which was adopted without dissent at the UNCTAD; they have been finding general acceptance. Among the more important are:

- (a) Adequate plans and policies at national and multi-national levels;
- (b) the maximum use of national resources for the achievement of balanced growth;
- (c) the promotion of regional development;
- (d) a greater measure of external aid, which should be sufficiently flexible to take account of any decline in external income arising from causes beyond the control of developing countries;
- (e) freedom, so far as practicable, in the use of aid, which should take account of the possible need to finance local costs;
- (f) the provision of aid on terms which take account of the capacity of recipients to service the debt;
- (g) the limitation of short and medium-term commercial credit to the capacity of the less developed countries to repay it;
- (h) attention to the problems which may be created for developing countries through the accumulation of external debt;

- (i) an increase in the inflow of private capital ;
- (j) an increase in the flow of technical assistance.

These measures, to be taken by developing and developed countries as appropriate, were recognised as necessary in order to achieve the higher rates of economic growth by developing countries.

Previous reports of the Consultative Committee have shown an awareness of most of these questions. This is not surprising: the problems of economic development do not change quickly, nor are they easily solved. The preceding survey of developments in the past year (Chapter I) show their importance in the Colombo Plan area.

The picture is far from uniform. The countries of the area differ in size, in resources, and economic structure (though in all of them agriculture is the most important sector). They differ also in their systems of government, and therefore in the manner in which their economic life is organised. They differ widely, indeed, in the degree to which they find it possible to formulate and implement ambitious and comprehensive economic plans. They differ, also, in the degree of financial stability which they currently enjoy. Nevertheless, certain general comments can be made.

There has been a significant growth in national income in most countries of the region, but the growth of population (though unevenly distributed) has remained rapid, so that the rise in national income per head has been very much smaller. In recent years there has been relatively little increase in agricultural production, and the problem remains of achieving higher yields in agriculture. The increase has, in general, been much larger in the nascent industrial sector. Reports from individual countries do not show, as yet, much evidence of plans for development on regional lines, which the development of one country complementing that of others.

Countries in the region have taken steps to increase Government revenue, mobilise domestic savings more effectively, and reduce inflationary financing. The extent and success of these efforts has varied, however, between different countries. Some, especially those with large development programmes, whose financial position may have been affected by natural disasters

or deterioration in the terms of trade, have found it difficult to maintain essential consumption and the rate of public investment without resort to deficit financing and a consequent increase in money supply and prices. In view of the diversity of experience in the region it must be recognized that, in spite of the efforts which have been made, there is no cause for complacency. The problem has been aggravated for a number of countries of the Colombo Plan area by heavy expenditure on defence. This not only diverts substantial amounts of scarce resources from economic and social development but it also tends to generate inflationary pressures which hamper development. Continued efforts will be necessary to pursue policies which will maintain financial stability while not inhibiting investment in essential development.

There has been some increase in the amount of aid available to countries of the area, both from fellow-members of the Colombo Plan and from elsewhere, though this has resulted more from rapid expenditure of aid previously committed than from an increase in commitments during the year. This, together with an increase in export prices for some of the products of the region (coming after a downward trend lasting several years), and the consequent increase in export earnings, has led to an improvement in the balance of payments position of most countries of the region. It remains true, however, that aid on a large scale will continue to be necessary to enable the region as a whole to finance its development programmes as well as some of its current imports. Some countries in the region have adopted measures to encourage an inflow of foreign private investment, and further efforts in this direction would be of help in supplementing resources available for development.

The International Bank is now studying the feasibility of a scheme, to be administered by I.D.A., of supplementary financial measures to help countries whose development plans may be endangered by a falling-off in export earnings. If, as a result, a successful scheme could be implemented a welcome increase in the flexibility of aid would be provided.

In view of the continuing need for external assistance on a large scale and the continuing problem of external debt servicing, it is recognised that external assistance should be made available to area members on liberal terms by Governments and

institutions. During the past year certain member countries—notably Canada and the United Kingdom—have taken steps to soften the terms of their lending. A large part of the initial contributions to the I.D.A. (which includes several members of the Colombo Plan among its major contributors) has been allocated to members of the Colombo Plan area for loans on very soft terms, and it is to be hoped that the recent replenishment of I.D.A. resources by \$ 750 million over a 3-year period will substantially benefit the countries of the region. While the greater part of aid continues to be tied to purchasers from the donor countries, during the past year there has been an increase in the proportion of aid not tied to specific projects, both by member countries and by multi-lateral institutions. Continued attention must, however, be paid to the questions of terms and conditions of aid and of debt, and further efforts must be sought through bilateral or multilateral programmes to provide aid on liberal terms and conditions.

Technical co-operation in the form of the provision of experts' services, training facilities and training and research equipment, continues to play an important role in the development of the region. While expenditure on technical assistance during 1963-64 decreased from the previous year's record figure the number of new training places provided for 1963-64 is the highest on record for any single year. As the pace of development increases, the need for technical assistance will grow further and it is hoped that this greater need will be met. A special feature is the attention which is now being given to intra-regional training programmes. Another development has been the increasing emphasis placed by member countries on co-ordinating their capital and technical assistance programmes. It is felt, however, that there may still be scope for the improved co-ordination in recipient countries of the technical assistance activities of the various donor countries and international agencies.

The achievement of stable growth of developing economies is dependent, among other things, on an increase in their trade with one another and with the industrially advanced countries. In this connection, stabilisation of the prices of primary commodities at reasonable levels and increased access for these, as also for manufactures in the world markets, are among the measures

to which attention will need to be given in the coming years.

These, then, are the major problems which confront the region. They will have to be dealt with partly through continuing co-operation within the Colombo Plan, which has been a pioneer in the field, and partly through international co-operation on a wider scale, including the new machinery which is to be set up within the United Nations framework for this purpose. While a number of steps have been taken to solve these problems, it remains true that progress in many directions is only in the early stages.

BIBLIOGRAPHY

Bibliography of Works consulted

- | | |
|-------------------------------|----------------------------|
| A. Published Works | B. Official Publications |
| C. Papers and Periodicals and | D. Reports, Statements and |
| | . Pamphlets. |
- A. *Published Works*
1. European Colonial Expansion since 1871, M.E. Townsend, New York.
 2. Underdeveloped Areas—Lyle W. Shannon, New York.
 3. Approaches to Economic Development, N. S. Buchanan and H. S. Ellis, New York, 1955.
 4. The Future of Underdeveloped Countries, Eugene Staley, Harper Brothers, New York, 1954.
 5. International Trade and Economic Development, Jacob Viner, 1952.
 6. Economic Development, Benjamin Higgins, W. W. Norton & Co., New York.
 7. Comparative National Product and Price Levels, Milton Gilbert & Associate, Paris, 1957.
 8. Economic Backwardness and Economic Growth, Harvey Leibenstein, 1957, New York.
 9. The Pattern of Asia, Norton Ginsberg.
 10. Prospects for an International Economy, Gunnar Myrdal, New York, 1956.
 11. Food and Agricultural Organisation, Statistical Year-book, 1957.
 12. Discovery of India, Jawaharlal Nehru.
 13. The Prospects for Indian Economic Growth, B.F. Hoselitz, 1958, Texas.
 14. The Year Book of Education, 1954.
 15. Education in New India, H. Kabir, George Allen and Unwin, London.
 16. Problems of African Development, T. R. Batten Oxford University Press, London.
 17. Financing the Economic Development of Underdeveloped Countries, W. A. Lewis, London, 1955.

18. The Attack on World Poverty, Andrew Shonfield, London.
19. Full Employment in a Free Society, Lord Beveridge.
20. The Progress of Underdeveloped Areas, Edited by B. F. Hoselitz, Chicago.
21. Travels in India, Bernier.
22. Contemporary Education—Cramer and Brownie.
23. International Year Book of Education, 1951 and 1956.
24. Languages and the Linguistic Problem, S. K. Chatterjee, Calcutta.
25. India Changes, Taya Zenkin.
26. India Today, Frank Moraes.
27. The Lotus and the Robet, Koestler.
28. India and the West, Barbara Ward, London.
29. The Outlook in Secondary Education, Sir Michael Sadler.
30. The Idea of the University, Karl Jaspers, London.
31. Industry and Technical Progress, C. F. Carter & B. R. Williams, London.
32. The Commonwealth and Europe, The Economist Intelligence Unit, London.
33. Indian Economic Policy and Development, P. T. Bauer, London.
34. Yonder One World, Frank Moraes.
35. Asia, East by South, J. E. Spencer, New York.
36. The Sterling Area, An American Analysis, London.
37. Urban Unemployment in India, Wilfred Mabulaum, M.I.T.C.I.S., January, 1957.
38. Unemployment among the University Educated, A Pilot Enquiry in India, The Centre for International Studies, Massachusetts, 1957.

B. Official Publications

1. Per-Capita National Product of 52 Countries, 1952-54, Statistical Papers Series, 1957. United Nations.
2. The Colombo Plan, 1957 (H.M.S.O.).
3. Constituent Assembly Debate. Vol. 5. Government of India.
4. The First Five-Year Plan. Government of India, 1951.
5. Ten Years of Freedom. Ministry of Education. India, 1957.
6. Social Education. Ministry of Education, Delhi.
7. The Education of Teachers in England, France and the