FROM THE ORCADES TO IND

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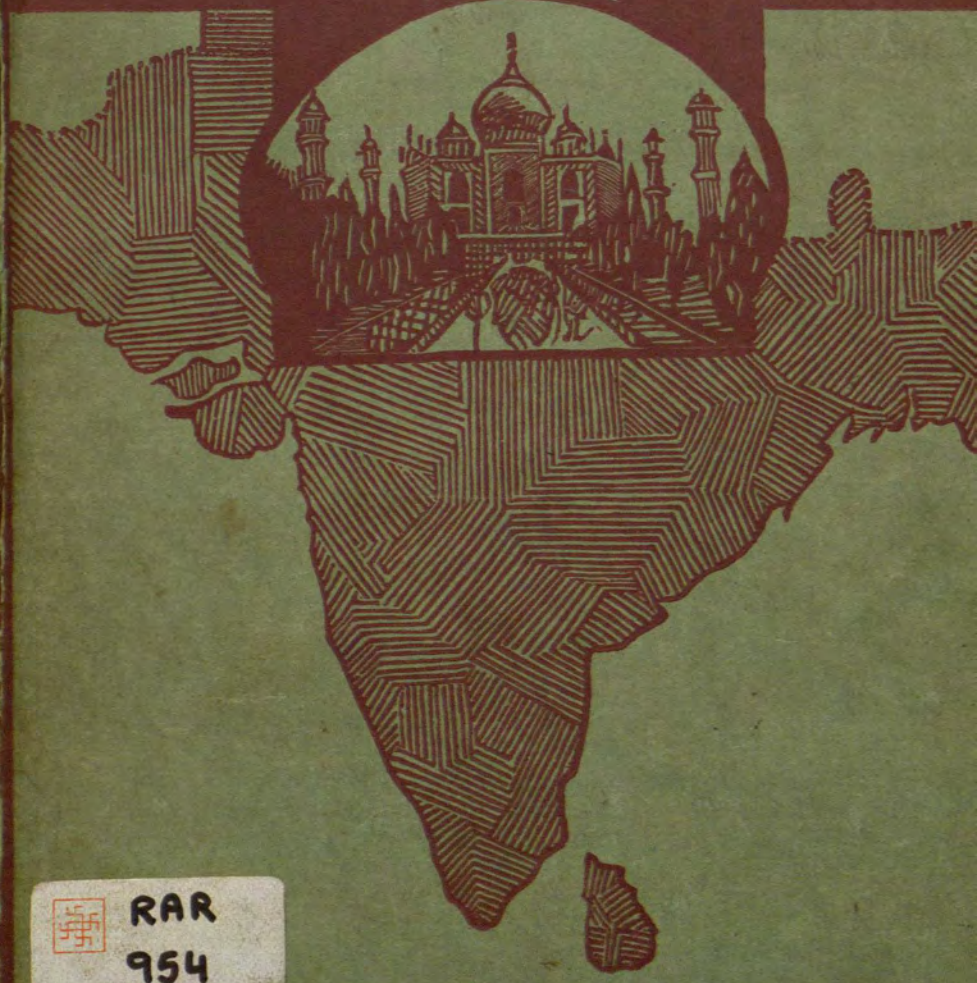

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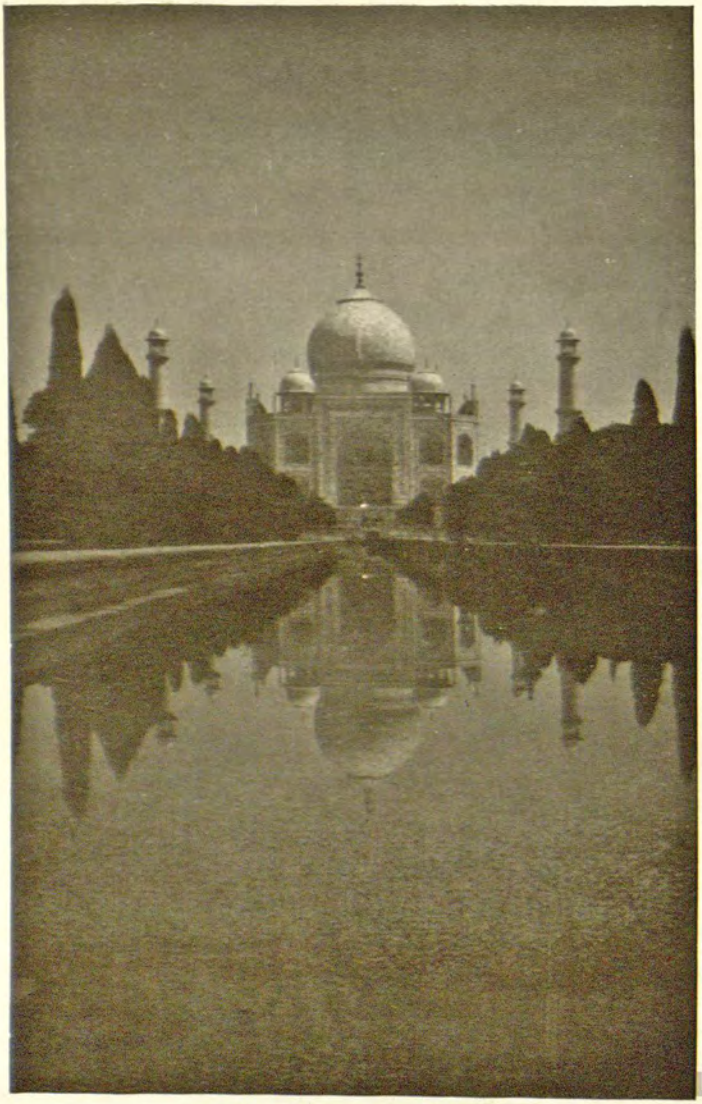

THE TAJ MAHAL BY MOONLIGHT

FROM THE ORCADES TO IND

BY

D. CLOUSTON

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WITH FIFTEEN ILLUSTRATIONS

OLIVER AND BOYD

EDINBURGH: TWEEDDALE COURT

LONDON: 33 PATERNOSTER ROW, E.C.

1936

PRINTED IN GREAT BRITAIN BY
OLIVER AND BOYD LTD., EDINBURGH

To WILLIAM DREVER, Esq., my brother-in-law, who, like myself, has spent long years in other lands, and made the acquaintance of men of many different races, I dedicate this book in remembrance of a life-long friendship, and of happy evenings spent together around the homely peat fires in the grey misty Isles of the North, recounting our experiences in distant parts.

PREFACE

THE writing of this book and the recounting of some of my experiences in India, where I spent the best years of my life, have given me real pleasure. It brought to me "a whisper of the East from far away." My hope is that my experiences and impressions will convey to the reader a little of the fascination of the country, and perhaps excite some feeling of sympathetic interest in a people I learned to like so well.

To know the simple, unsophisticated tiller of the soil is to love him. Despite his poverty and low standard of living he is wonderfully contented with his lot. Unaccustomed to luxuries, he does not miss them.

I have told in some detail the story of how the foundations of scientific agriculture were laid in the Central Provinces and Berar, and how, with the assistance of its leading landholders, an organisation was built up, by means of which the results of research and experiment were brought to the door of the village cultivator. The work was intensely interesting: it was of first-rate importance too, for the welfare of the agricultural population in every country, and in India in particular, is the true basis of national prosperity.

In addition, I have thrown on the screen, so to speak, word-pictures of the glamour of India's past; of its medley of races, castes and creeds; of its cultivators and artisans in the villages; of the simplicity, courage and sporting spirit of some of the aboriginal tribes; of its warlike races on the Frontier; of its physical features, scenery and climate; of my experiences as a big-game hunter; of the wild animals which take their toll of village crops and cattle; and of the heat, dust, mosquitoes and other sources of discomfort so characteristic of this part of the British Empire.

D. C.

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CHAPTER I

THE VOYAGE TO INDIA

Six years of my life were spent in training for the teaching profession. My five years at the University, comprising an Arts and a Science course, came later. The latter I completed in 1905. The Arts course was sandwiched in between periods of teaching.

In the early part of 1905 I was recommended for a post in the Indian Agricultural Service. That great and far-seeing Viceroy, the late Lord Curzon, was at that time building up a scientific department of agriculture in India. Though I had taken a course in "Indian and Colonial Agriculture" at the University, I did not profess to be an expert on Indian agriculture at that time. I had, on the other hand, a fairly thorough knowledge of practical farming; for I had been reared on a farm in the Orkneys and been trained in every farming operation. I had studied the theory of agriculture and the sciences allied thereto at Edinburgh University.

I was asked by the India Office to appear before a Selection Board in London, and was offered one of the two appointments to be filled at that time. After spending a brief holiday in the wind-swept Isles of the North, I sailed for Bombay in September 1905.

On the voyage to India two of the most interesting ports of call are Gibraltar and Port Said. The photographs of Gibraltar depict it as a barren-looking rock, and in our geography books we are told that it is an impregnable fortress which guards the entrance to the Mediterranean. The town of Gibraltar, which lies in the north-western corner of this very small British colony, is a medley of houses of the Spanish type, with balconies and shuttered windows. Many of the houses are painted in gaudy

colours. The gardens too are gay with plumbago, morning glory, red-hot-poker, bougainvillea, arum lilies and other flowering plants and shrubs. Far from being a barren rock, Gibraltar on closer inspection proves to be a veritable garden smiling with flowers of every shape and colour.

That it is an impregnable fortress, the ordinary passenger on a boat calling there has to take for granted. He has no time to examine the fortifications even if that were allowed. It was captured in 1704 from the Spaniards by Sir George Rooke. The Spanish and French made seven attempts to retake it. During the great siege of 1779 to 1783 huge tunnels were hewn out of the solid limestone and openings for big guns provided. In course of time it became the impregnable fortress which it is to-day, with its hundreds of guns commanding the Straits.

Port Said is one of the most cosmopolitan cities in the world. In its harbour may be seen ships from the seven seas. When it first comes into view it appears as a phantom city. Its domes, pinnacles, houses and palm trees seem to rise abruptly from the sea and to be floating as it were on the face of the waters. No land whatever can be seen, but as we get nearer the low coast-line unfolds itself.

North Africa had, in my mind, been associated with mirages, deserts, droughts and dust. But the vista which opened up in front of us as we entered the harbour was that of solid buildings in shining colours and solitary palms which lent enchantment to the view. If North Africa was mostly desert, here at least was a great city with a harbour teeming with ships.

On reaching our anchorage we were greeted effusively by strange peoples who jabbered noisily to each other in tongues unknown to us. When we looked down on them in their small row-boats, silk shawls, necklaces, cigarettes and other kinds of merchandise extracted from packs were held up for sale. Discarding their own vernaculars in which they had previously been gabbling, they addressed us in broken English. In some of these boats sat Italian minstrels who played guitars and other stringed instruments

and sang enchanting airs. There were jugglers too in this mongrel company, but they were not content to remain in their boats. After boarding the ship they entertained us by producing chickens from their sleeves and gold rings from nowhere. But the most noisy of this noisy crowd were the Arab divers who swam round the ship like ducks and dived for coins tossed into the sea by the passengers on deck. These swarthy sons of the desert dived after them like otters after a fish, and secured them long before they reached the bottom. When the flow of coins temporarily ceased they addressed us by such names as Meester Gladstone and Meester Macpheerson, and volunteered to dive right under the ship and come up at the other side of it. This was no empty boast, for again and again they did it.

The Arabs, Egyptians, Persians, Turks, Greeks and other races of this seaport town live largely on the tourist. He is their prey and they start hunting him before he sets foot on shore. They give him a noisy and effusive welcome, but no peace. As soon as he lands he is surrounded by would-be guides, beggars and traders in smutty postcards, trinkets, lace and other articles too numerous to mention.

Port Said is one of the most cosmopolitan of cities ; it is one of the most depraved too. Here the East meets the West and the depravity of the two makes a bad blend. We were detained there for ten days owing to some damage done to the Suez Canal just before our arrival. A ship loaded with dynamite had blown up when passing through it. It was closed to shipping while the wreckage was being removed and the damage done to the banks repaired. In company with some of my fellow-passengers I spent part of these ten days in visiting Cairo, the Pyramids and the Sphinx.

An ancient Greek writer said 2000 years ago that Egypt was the gift of the Nile. For thousands of years this great river has overflowed its banks and drenched the parched soil with deposits of fertile silt. Rain rarely falls, but this strip of country is nevertheless very rich,

as it is commanded by irrigation works. Even in biblical times Egypt produced much corn. When there was famine in the land of Canaan, Jacob sent his sons to Egypt to buy corn: "Behold I have heard that there is corn in Egypt; get you down thither and buy for us from thence, that we may live and not die."

Egypt is often mentioned in the Bible. Joseph, son of Jacob, was sold by his brothers to a band of Midianites who carried him to Egypt where he was sold to Potiphar, captain of Pharaoh's guard. Moses was born in Egypt and educated there, and from thence he led the Children of Israel to the "Land of Promise." To Egypt Christ was sent as a baby, because King Herod had ordered that all the male children born in Palestine in the year of His birth should be put to death.

Through this ancient and wonderful land we passed on our way to Cairo. From Cairo we visited the great stone pyramids—the tombs of the Pharaohs. These very ancient monuments were 3000 years old when Christ was born; they were relics of the past even when Moses sojourned in Egypt.

In height they vary from 200 to 500 ft., and for their construction millions of blocks of stone, each weighing about 2½ tons, were used. Over the inner passages and chambers there are still larger blocks, each weighing about 55 tons. How the Egyptians managed to quarry and dress these massive blocks, transport them long distances and raise them to the heights required, almost baffles the imagination. The guides who accompany visitors to the pyramids explain how this was done.

The blocks were taken from quarries on the other side of the Nile in barges or on rafts, and hauled by gangs of thousands of men along a causeway to the site of the pyramid under construction. Long sloping ramps of brick were constructed round the building; the blocks were hauled up these ramps on sledges of wood and placed in position by means of levers and scotches.

A pyramid was a Pharaoh's tomb and was built to protect the royal body. Before the corpse was put into

the tomb it was preserved as a mummy. In the earliest attempts to mummify the corpses they were treated with salt and soda, and then covered with linen soaked in a gummy resin obtained from trees.

This strange practice of mummifying corpses was based on superstition. The Egyptians believed that a man had two souls, one of which remained in the tomb while the other, which had wings like a bird and a human head, soared to the " world of souls " far beyond the sky. But this soul sometimes came back to the tomb to visit the body and its twin soul. It was therefore necessary, they thought, to preserve the body, so as to keep it in a fit state to await the return of the soul.

The Egyptians had noticed that corpses laid in the warm dry sand of their country, which is almost rainless, did not putrefy. When at a later date they began to line the graves with stone, the body quickly decayed. They thought that the stone ate the flesh. The Greeks also believed this, and to a stone coffin they gave the name " sarcophagus," which literally means an eater of flesh. In a hot and almost rainless country a body buried in sand is preserved for a long time, because air and moisture do not reach it ; but that they failed to understand.

When after ten days the Canal was again opened for shipping, there was a large fleet of steamers waiting to get through it. The Canal extends from Port Said to Suez and is nearly one hundred miles long. Like a great ditch it cuts through the sand of the desert from sea to sea. From the deck of the ship little could be seen but the yellow sand of the desert on both sides and the green water of the Canal. The sky was cloudless and there was not a breath of wind.

This great waterway which connects the Mediterranean with the Red Sea was opened in 1869, since when the Cape route to India and the Far East has been abandoned and the water distance between Europe and India reduced by 44 per cent.

After passing Port Suez we sailed down the 1300-mile length of the Red Sea, with the ashen rocky shores of

Arabia on one side of us and the equally barren shores of Africa on the other. The heat was most oppressive and the nights were little better than the days. The moist, sticky, clammy heat sapped the energy and left one limp. Nearly all the passengers slept on deck : in the cabins sleep was almost impossible. On the open deck the tepid breeze, the soft stillness of the night and the swish of the water on the sides of the ship made for peaceful slumber. At 6 o'clock every morning there was much bustle, when members of the crew appeared on the deck with hose and broom to wash it down. Mattresses and pillows were hurriedly carried back to the cabins and the ladies, modestly clad in dressing-gowns, went below to dress. The deck was given up to the men who, with bare feet, paraded in pyjamas, regardless of the flood of water which poured forth from the hose. Colonel, Commissioner and High Court Judge, in this *négligé*, did their morning mile.

Occasionally one's slumbers were disturbed when sleeping on deck by the hilarity of passengers who kept late nights. I was once wakened up in the Red Sea, when fast asleep on deck, by the skirl of the pibroch and the merry " hoochs ! " of stalwart dancers. The player, a lusty Scotsman, was standing within a few feet of me. Eight gay sparks had prevailed upon him to play reels and strathspeys while they, as lively as crickets, danced the eightsome reel. They were all in evening dress, but the men had discarded their coats.

Rising on my elbow, I eyed them in a resentful mood ; but when I realised the incongruity of the situation my surliness faded away. Oft have I " heard the chimes at midnight," but never before had I heard the bagpipes played on the high seas at this unearthly hour. The dancers, too, tickled my fancy as they hopped it on the light fantastic toe, despite the almost unbearable heat. One of them, a senior officer of the Forest Department, was the gayest of this gay party. " No excellent soul is exempt from a mixture of folly," said Aristotle.

There are some doubts as to why this sea was called the Red Sea. The water is distinctly blue—not red.

Once, however, when on the voyage home, we experienced a sand-storm when passing through it, and streaks of reddish sand blown in from the desert floated like spume upon the surface, giving the whole sea a reddish appearance. From one of these occasional happenings this sea probably got its name.

The remaining part of the voyage, though uneventful, was full of interest for those on board who were paying their first visit to the East. All day long there was something to see. There were flying-fish which seemed to take a delight in racing the ship ; porpoises which bobbed up and tumbled about on the surface, and homeward-bound ships from India, China and other parts.

On a voyage to or from India life on board ship need never be dull. Deck games are played daily—Sunday not excluded. Those who want exercise but do not play games promenade the deck. In the evening there are concerts, dancing and bridge. Even the children enjoy themselves, crawling about on that part of the deck reserved for them, or playing with their toys under the watchful eyes of mothers and nurses.

After a long voyage of nearly six weeks we arrived in Bombay—India's second largest city and one of her large seaports. I was in India, the land of mystery, where life was to be a great adventure.

Bombay has been called the gateway of India, for it is here that most people who visit India get their first glimpse of this vast sub-continent. It is one of the most important seaports in the British Empire. In its fine harbour may be seen ships from every sea. Its extensive docks and warehouses give one some idea of its flourishing trade. The more modern part of the city, with its wide streets and fine hotels, offices and other buildings, is very impressive. Here, too, may be seen the palatial bungalows of some of Bombay's merchant princes.

Bombay is the Lancashire of India, for it is the centre of her great textile industry. Most of her many cotton mills are in the hands of Indians. These mills provide employment for many thousands of workers. This, the

second city of our Indian Empire, is one of the leading cotton markets in the world, exporting, as it does, over two million bales annually.

Here I got my first glimpse of that great feature of Indian life, the bazaar with its rows of narrow streets filled with shops and crowds of people of different races. It presented a scene of wonderful colour and movement. Robes of every colour of the rainbow and of many different types were worn by the seething crowds of Hindus, Mohammedans, Parsees, Sikhs, Arabs, Lascars, Burmese, Jews, Turks, Japanese and other races who thronged the narrow streets. The babel of tongues and the bewildering variety of types of faces all seemed very strange to me.

The shops were mostly small booths in which all the goods were open to full view, for there were no windows or doors. The shopkeeper squatted beside his goods. The artisan, too, did his work in sight of the passer-by, as if proud of his skill.

Cows, Brahmini bulls and goats wandered through these narrow streets without let or hindrance. Here I saw for the first time quaint Indian carts, each drawn by a pair of bullocks with humps on their necks. Here, too, were donkeys and sad-looking camels trudging along with loads on their backs ; snake-charmers with their cobras and mongooses, and vagrants with performing bears and monkeys.

The heat during the day was oppressive. Even at night it was trying for one who had not got acclimatised to the climate of the East. I was glad when the time came for me to leave for Nagpur, the capital of the Central Provinces and Berar, where I was to spend the greater part of my service in India.

The journey from Bombay to Nagpur was uneventful. What surprised me most was the absence of towns and homesteads on my route. It was villages, villages, villages all the way. In some of the fields in these villages, women were busy picking cotton ; in others *juar* (*Sorghum vulgare*) was being harvested. In the lower valleys crops of rice were being cut in some fields, and in others *rabi* (cold

weather) crops were being sown. Sowing and harvesting operations were going on side by side. Bullock-carts laden with cotton creaked along roads of hardened mud on their way to some market or ginning factory. Great buffaloes, with horns protruding over their backs, lay as if asleep in muddy pools. In some villages gardens were being irrigated from wells. The water was being drawn up in a kind of leather bucket, to which a pair of bullocks was yoked. Verily, this was a new and enchanting land to which I had come.

CHAPTER II

THE CENTRAL PROVINCES AND BERAR

THE Central Provinces and Berar, of which Nagpur is the capital, comprise tracts differing very widely from each other in physical features, scenery, language, people and in their systems of agriculture. The Central Provinces did not come into existence as a Province till 1861, and Berar was not added to it till 1903. Their combined area is just under 100,000 square miles.

In the combined provinces there are five natural divisions. In the north-west the districts of Saugor and Damoh lie on the Malwa plateau, rising from the Narbada valley to an elevation of from 1500 to 3000 ft. The surface of the plateau is broken by hills covered with a growth of rather stunted trees.

South of this plateau lies the Narbada valley, two hundred miles long and twenty broad. It is the principal wheat-producing tract in the Province; its deep alluvial soil is admirably suited to the growth of this crop.

The third division, which includes the Satpura range of hills, stretches right across the Province. The greater part of this division consists of an elevated plateau broken in places by a rugged mass of hills of volcanic origin, with peaks 3500 to 4000 ft. high. Between the hills are fertile valleys in which alluvial soil has been deposited by drainage. The steep slopes leading up to the summit of the plateau from the more level country to the north and south, are traversed in all directions by narrow ravines, hollowed out by the action of streams and rivers. Though the soil is shallow, these slopes are clad with dense forest.

South of this plateau lies the great plain of Berar, Nagpur and Chhattisgarh, in the western portion of which there is a long stretch of millions of acres of rich black

soil—known as black cotton soil, and largely cropped with cotton. Farther east is an area where the rainfall is higher and where rice is the main crop. It is noted for the number of its tanks, the water of which is used for irrigating rice. Farther east again comes the open and almost treeless country of Chhattisgarh with its large stretches of rice lands, and laterite plains producing little but the coarsest of grasses.

On the east and south of Chhattisgarh lies a vast area of hill and jungle which in the old maps was shown as "The Great Wilderness." In the zamindari estates and feudatory states in this tract one finds the typical aborigine of India. The impenetrable forests and precipitous mountains and ravines of this wild country have been an effective barrier to invasion or immigration. It is sparsely populated by primitive Gonds and other forest tribes, who are poor cultivators but great hunters and trackers of big game. I have, in company with some of these "children of the jungle," armed only with bows and arrows, followed up wounded tigers. They are born *shikaries*, and very brave. Their favourite method of killing big game is to sit near a pool in the jungle at night, and to shoot with poisoned arrows such animals as come within bow-shot. The only flesh they do not appear to like is that of the tiger and panther; but the liver, fat, heart and other parts of the former are prized for their medicinal value. In religion they are Animists; they venerate different gods at different times. Their belief as a rule goes no further than some idea of a distant god who has committed the charge of this world to demons and ghosts who have to be pacified by offerings. Prior to British rule, human sacrifices were a common form of propitiation.

But this tract of the Central Provinces, which was at one time one of the wildest and least known parts of India, has within recent years been opened up in all directions by good roads constructed under Government supervision. The improved communications have provided facilities for intercourse between these primitive jungle tribes and the

more advanced peoples living in adjoining districts. When touring in their country I saw much of them, and greatly admired their honesty, simplicity, courage and sporting spirit.

The climate of the northerly plateau districts of the Province is cooler than that of those lying south, and the cold season is longer and more marked. Throughout the Province nearly all the rainfall is received in June, July, August and September. From October till June there is a long period of nearly eight months during which the amount of rain received seldom exceeds two or three inches.

The landscape varies in character according to the place and season. It has nothing stereotyped about it. The recurring contrast of woodland and village, of hill and valley, jungle and river, is the chief characteristic. No country could have been more unlike my native land in its climate, its people, its fauna and its flora. I fell, nevertheless, under the spell of its subtle charm. Its brilliant sunshine and mellow warmth, its beautiful flowering trees, its primeval forests and the primitive simplicity of its peasantry greatly appealed to me.

Owing to the extent of the area under forest, the Province is a paradise for the big-game hunter. In the jungles of the eastern and southern districts where the rainfall is heavy and swamps and marshes abound, the wild buffalo finds a congenial habitat. The bison frequents the higher summits and slopes of the hills in several of the more jungly districts. Tigers, leopards, wild boars, bears and wild dogs are common. The wild elephant is reported to be found in one or two feudatory states in the east of the Province. The wolf, too, is seen, but in small numbers only. The principal deer are the *sambhar*, the *chital* or spotted deer, *barasingha*, swamp deer and *chinkara* or "ravine deer." Of antelopes, the *nilgai* or "blue bull" and the black buck are very plentiful. Large herds of the latter may be seen roaming over the plains in all the drier districts. In some of the rivers crocodiles are to be seen in considerable numbers. They

occasionally find their way to village tanks, but in these they do not remain long as a rule. In the rivers they may be seen sunning themselves during the heat of the day on a sand-bank. If you approach them cautiously you will find that some of them are fast asleep ; but it is very difficult nevertheless to bag a crocodile, for if you do not hit a vital spot it slithers into deep water and disappears entirely. I can still remember the surprise I got when I wounded one badly as it was lying on the sandy bank of a river. By discarding my shoes and walking quietly over the soft sand I had got within forty yards of it before I fired. My bullet struck it behind the head and just below the spine ; I could see the blood oozing from the wound. Taking for granted that it was quite dead, I did not fire a second shot. That was a mistake, for in a minute or less it began to struggle, and, before I could say "Jack Robinson," it had dived into the river.

In the jungle, pea-fowl, red and grey jungle-fowl and the brown and painted spur-fowl are found in large numbers. When camping in the jungle I was sometimes awakened in the mornings by jungle-cocks crowing as they strutted round my tent with their hens. From my tent I sometimes saw, too, peacocks wooing their peahens by dancing proudly in front of them, with the gorgeous feathers of their tails spread out like a fan all ablaze with colour. Several varieties of plover, sand-grouse, partridge, quail and pigeon are common. In the open country the great Indian bustard is sometimes seen. In the northern districts of the Province the florican is fairly common, and in the cold season ducks of many different kinds are found in large numbers on the tanks, and snipe in the marshy ground surrounding them. In the same season flocks of geese and demoiselle cranes frequent the vicinity of some of the rivers.

India is a land of villages : in the Central Provinces there are 400 villages for every town. Ninety-one per cent. of the whole population live in villages, and three-fourths get their living from the land. For hundreds of miles at a stretch village succeeds village ; towns are few

and far between. The term village in India comprises the whole area within the village boundaries, including the residential village, the fields under cultivation, the waste land and the area reserved for grazing. Villages vary in area and population : one of average size has a cultivated area of about 500 acres and a population of from 300 to 400.

Of the total population of about 15 millions in the Province, more than 3 millions are forest or hill tribes, of which the most important are the Gonds, an aboriginal people mostly engaged in agriculture. In the open country the best hereditary cultivators are the *Kunbi* and *Kurmi* castes.

The average cultivator, or *ryot* as he is generally called, cultivates with one pair of bullocks about seven acres of land if his main crop is rice ; nine if it is wheat and thirteen if it is cotton. In Great Britain such holdings would be considered very small ; they are nevertheless much larger than the bulk of the holdings in other parts of India. There are in every village a few cultivators who have holdings of from thirty to fifty acres, and the *malguzar* (proprietor or co-sharer in a village) may cultivate all his *sir* (home-farm) land, extending to a hundred acres or more. These *malguzars* correspond more or less to the "gentleman" farmers of our country. With their assistance the Government of the Province has within the last thirty years made rapid strides in introducing improved methods of farming in the villages.

There is a sameness about Indian villages. The dark brown mud-houses are huddled together in a more or less compact area, situated in the midst of the fields which provide the means of livelihood for their occupants. There are no compact farms and farmsteads such as we have in the West. The houses are built on each side of the narrow streets or alleys of the village. In the more populous villages many of them are built of sun-dried brick with roofs of tile ; but in most villages the bulk of the houses have mud walls and thatched roofs. On the outskirts of the village are the houses of the out-castes, who are

" the hewers of wood and drawers of water " for the village community. They number about one-sixth of the total population. In the village little attention is given to sanitation ; heaps of rubbish and standing pools of dirty water provide ideal breeding grounds for flies and mosquitoes. There are no latrines ; when a villager has to answer the call of nature, he proceeds to the nearest field. This accounts for the fact that these fields are the most fertile in the village. In every village there is a religious building of some kind—a shrine, a temple or a mosque. Religion means much to the unsophisticated rustic.

Nearly all the villages have been raised upon the ruins of many former villages, and the ground on which they stand is therefore higher than the surrounding country. In some parts of the Province, and more especially in Berar, some of them still nestle within the walls built to protect them against raids in pre-British days, when hordes of marauders swept over the country from time to time to plunder or to ravish.

The village well is a favourite meeting-place ; to it women are coming and going all day long. At the well, some are drawing water with which to fill their water-jars ; others while awaiting their turn are chattering and laughing together over some domestic adventure perhaps. Each one after filling her jar deftly balances it on her head and with graceful steps wends her way to her home. The whole scene is reminiscent of biblical times.

In the rice tracts there is generally a tank, or reservoir, in the village, the water of which is in great demand. To the tank the village herds come in the morning and at sundown to drink, and in it buffaloes find contentment and rest during the heat of the day. In the tank, too, the *dhobies* (washermen) wash the clothes of the villagers. Though the water thus contaminated would not be passed by any sanitary authority as fit for drinking, it is freely used for that purpose, more especially by the low-caste villagers. In times of drought the water of the larger tanks is utilised for irrigating rice and sugar-cane.

In the cold season these village tanks are things of

beauty. The lotus lilies which grow on them are then in full bloom, and their thousands of pink blossoms and roundish dark-green leaves floating on the water, give them the appearance of a beautiful water-garden.

Around the village site lies the cultivated area. In the cotton and wheat tracts each field may comprise an area of several acres ; but in the rice tracts the bulk of them are not more than a tenth of an acre. Each rice-field however small has an embankment of earth around it to hold up the rain and any water applied by irrigation. In the rains, when all the fields are green with the growing crop, the rice area in a village reminds one of a chessboard, for each field is clearly demarcated by its embankment of earth. In October the great stretches of rice-fields, in some of which the rice ears are still dark green in colour, while in others they are of a golden hue and the crop is ready to be harvested, are not without beauty. The beauty of the scene is enhanced when varieties with purple ears are intermingled with the other varieties.

There are no compact farms in the village. The different fields which form the holding of each cultivator are scattered over the cultivated area. The grazing area of the village is common to the whole village. On it all the village flocks and herds graze together, and when bovine diseases such as rinderpest and foot-and-mouth disease break out they spread rapidly from herd to herd. For the greater part of the year these grazing areas are parched and bare, for they are much overstocked. In every village there are many hungry animals of little or no value, but that reverence for animal life which pervades Hinduism prevents their owners from destroying them. On the grazing area a dying cow or bullock surrounded by vultures is a common sight.

Before the Province came under British administration each village was self-contained. It provided for the whole of its wants, growing not only its food-grains but its sugar and tobacco, the cotton from which the clothes of the villagers are made and the oils required for cooking and lighting. The landlord took his rent and the labourer

An Agricultural College in India

Improved Ploughs at Work

his wages in kind ; even the village artisans were paid in grain, cotton or cakes of *gur* (raw sugar), as the case might be. For any surplus available for sale the demand was very small : there were very few towns of importance to consume it, and the cost of transporting it to more distant markets was high. Village produce purchased by middlemen for export to other lands had to be carried hundreds of miles over bad roads on pack-bullocks to distant seaports. The roads were both bad and dangerous ; many of them were infested by gangs of robbers. As the trader, in these circumstances, paid very low prices for such village produce as he purchased, there was no incentive to produce crops for export. Moreover, civil strife and lawlessness throughout the country also checked enterprise : the cultivator never knew whether he would be allowed to reap what he had sown. " Sufficient unto the day " became his motto. In years of good rainfall he sometimes allowed part of his bumper crops to rot in the fields rather than take the trouble to provide himself with a surplus which might attract the envious eye of an unscrupulous tax-gatherer.

The opening up of the Province by road and rail in the 'sixties of last century brought the cultivator in his capacity as producer into touch with the markets of the world. The representatives of firms in other lands came to India to buy his oil-seeds, his wheat, and his cotton and other fibres. He came to regard the crops for which a demand was thus created as his money crops, and he increased the area under them by bringing waste land under the plough. The area under cotton in Berar increased by leaps and bounds, as did the area under wheat in the Narbada valley. In other parts of India the cultivator responded in the same way to the demand for his produce. In Bengal he began to grow jute to meet the demand from Dundee, and in Burma he greatly increased his area under paddy in response to the world demand for rice. As industries sprang up in India itself, the demand for the produce of the village was still further increased, and prices soared higher and higher.

The improvement in India's communications, carried out very largely with British capital, stimulated the external and internal trade of the country and benefited the cultivator and the landowner in particular. The value of land was doubled or even trebled. This development also greatly benefited our country and other countries trading with India; for she supplied them with raw produce for their mills and factories and took from them in exchange their manufactured goods. But this great economic revolution, which has made India one of the greatest trading countries in the world, has not conferred benefit on all alike in rural areas. Imported goods have found their way to these areas, where they compete with local products made by village artisans. Machine-made goods have supplanted the cloths woven on hand-looms, and kerosene oil the vegetable oil produced by the village oil-man. The revolution has also been detrimental to good farming in one or two cases. The cotton-growers of Berar, for example, after bringing nearly all the waste land of their villages under cultivation, devised a new and very faulty method of increasing the area under this fibre crop. They discarded the principle of rotating their crops, and grew cotton year after year in the same field, with the result that their fields are now infected with a fungus disease known as cotton wilt, which reduces the yield every year.

The opening up of the Province by road and rail, and latterly by motor transport, has greatly affected villages near towns and railway lines. It has changed almost out of recognition, too, villages which have industrial concerns in or near them. In some parts of the Province the change has gone very far, and on the whole has made for an improvement in the material prosperity of the people. It has transformed their outlook on life and given rise to a desire for a higher standard of living. A demand for luxuries has grown up—a demand largely met from Japan and the West. If you were to visit one of these villages you might see a Singer sewing-machine being worked by the village *durzi*, and perhaps hear records

of Indian songs being played on an imported gramophone. You would very probably meet in the village an educated Indian landholder who, having been attracted by the amenities of life which the village offered, had settled down there and become a leading light in the community.

Throughout the greater part of the Province, on the other hand, the self-contained Indian village community which has been maintained unmodified for centuries still exists. When I first toured in the districts of the Province in 1905, I was surprised to find that most of the villages I visited were still almost self-contained. Each was, more or less, an independent economic unit, in which the villagers were providing their own wants. The cultivator was producing the foodstuffs ; the oil-presser, by means of a kind of pestle and mortar contrivance made of wood, was extracting oil from the oil-seeds grown in the village ; the weaver on his primitive hand-loom was weaving the cloth from which the clothes of the villagers would be made by the village *durzi* (tailor) ; the shoemaker was making shoes and sandals from leather prepared by the leather-worker ; the carpenter and blacksmith were fashioning simple agricultural implements, tools and articles of household furniture, and the potter the earthenware vessels so widely used by the villagers. Each was making his contribution towards the material welfare of his community, and some of these artisans were still being paid in kind. There were, too, in some villages servants paid by the community for the social and religious services they performed. The astrologer was consulted regarding the date to be fixed for a marriage or the sowing of a crop. The village priest performed the religious rites for his community, and when epidemics broke out and took their toll of man or beast, the village magician was called to the rescue.

Of all the village craftsmen the potter, sitting at his wheel surrounded by fragments of pots which had failed and by others which he had set in the sun to dry, was perhaps the most interesting. His is one of the oldest and most famous crafts of India. Upon his primitive wheel he places a dome of wet clay, and as the droning wheel spins

round he deftly moulds the clay into the required shape. For thousands of years these village potters have been turning, on the same type of wheel, the earthenware vessels so largely used by the villagers for cooking food, carrying water, storing grain and other purposes. Besides articles of use, he sometimes finds time to exercise his artistic faculties in designing images of gods and goddesses, of men and women, and of beasts and birds, to be used as idols for shrines or offerings to a temple.

The villagers are very fond of ornaments. Much of their spare cash is converted into bangles, nose rings and other kinds of jewellery worn mainly by the women. The village goldsmith, like the potter, is an interesting craftsman ; but rightly or wrongly he gets the name of deceiving his customers by pocketing some of the gold and silver handed over to him by his customers, and of making up the weight of the article of jewellery ordered by using base metals.

One of the most striking things about the ordinary village is the scarcity of shops of any kind. The vast majority of the inhabitants depend upon the weekly bazaar for the supply of any commodity which they do not grow or make themselves. These weekly bazaars, held in certain villages, supply the petty needs of the villagers in the neighbourhood. In the larger villages where shops are to be found, the shopkeeper, a *bania* by caste, as a rule, combines shopkeeping with money-lending. His house, like that of the landowners and more substantial cultivators in the village, is made of sun-dried brick and is much more commodious than that of the *ryot*.

To the bucolic mind life in an Indian village makes a strong appeal. In the early morning the village is all life and movement. The cultivators, carrying their wooden ploughs on their shoulders, and driving their bullocks in front of them, wend their way to their fields. Others are carrying sickles and are accompanied by their women-folk, for there is *juar* (a millet) or rice to be harvested. Boys and girls of tender years are driving flocks of goats and herds of cows and buffaloes to the grazing area. In

the houses women are cooking the mid-day meal, cleaning pots, smearing the floors of their houses with cow-dung, or making fuel-cakes of the same material. At sun-down the day's work ends, and in the short twilight the husbandman, his plough on his shoulder, drives his two bullocks homeward through a cloud of dust. The boys and girls shout to each other as they bring in their goats, cows and buffaloes. The buffaloes, with their long horns, look fearsome animals ; if you are wise you will not go near them, for they do not like strangers. Though they look dangerous, you will notice that some of them are being ridden by small boys of tender years, and that in their hands they are remarkably docile.

To know the simple, unsophisticated tiller of the soil in the village is to love him. He is wonderfully contented despite his illiteracy, poverty and low standard of living. He has not been accustomed to luxuries and does not miss them. The pity is that the educated sons of the village drift to the towns and that there are so few left in the village who can, by precept and example, play the part which is played in rural areas in our own country by the "gentleman" farmer, parson and teacher. The villagers stand much in need of men of light and leading who can gain their confidence and help them to ameliorate their lot.

CHAPTER III

THE DUTIES OF A DEPUTY DIRECTOR OF AGRICULTURE

In the beginning of the present century there was a distinct awakening of interest in the scientific study of agriculture in Great Britain. That interest was reflected in the quality and number of students who attended the classes in Agriculture and sciences allied thereto at Edinburgh University. Very few of these students took an advanced course in any one of these sciences, for specialisation in the sciences bearing on agriculture was in its infancy in Scotland, and adequate provision for specialised training had not as yet been made at Edinburgh. On the other hand, most of the students who took the B.Sc. course in Agriculture in those days had been reared on the land and were therefore good practical farmers. Several of them, too, had, before starting their science course, graduated in Arts. Their broad training in the science and practice of agriculture, combined with a sound general education, fitted them admirably for work in the wide spaces of the tropical and sub-tropical parts of our far-flung Empire where new departments of agriculture were coming into being, and where the work of organising the different activities thereof made big demands on the administrative ability of the newly appointed staffs.

Of my contemporaries at Edinburgh University, several were appointed to the Indian Agricultural Service, for in India a forward policy in matters of agricultural research and improvement was at this time being embarked on by the Government of the late Lord Curzon, to whose far-sighted vision much of the progress of Indian agriculture must be attributed. The men recruited in this country for service in India were posted either to the Imperial Agricultural Research Institute at Pusa, or to the Provinces.

Those posted to Pusa, which is primarily a research station, were, with few exceptions, specialists. As members of the staff of the Imperial Department of Agriculture they were under the administrative control of the Department of Revenue and Agriculture.

Of the men recruited for employment in the Provinces some were specialists, while others, including nearly all those who had been trained in Edinburgh, had had only a general training in agriculture and its cognate sciences. Graduates of the latter class were sometimes loosely described as " all-round " agriculturists. They were appointed as deputy directors of agriculture, and were placed in charge of large administrative areas known as Circles. When one of my colleagues joined the Department in the Central Provinces as a deputy director he was described, in an official letter emanating from the Director's office, as an " all-round " agriculturist whose requirements in the way of tents were two square Swiss Cottage tents. The Secretary to Government, being a bit of a wit, replied to the effect that Government, though prepared to sanction the purchase of the tents, doubted the advisability of trying to accommodate a man of this type in a square tent. The products of our Alma Mater fitted all right into the tents allotted to them. What is more important, they proved in their appointments to be the right men in the right places, and some of them, in course of time, rose to be the heads of their Departments. They were the pioneers in the field of agricultural research in India, and laid the foundations of a gigantic organisation which was to bring the fruits of research to the door of the village cultivator.

The duties of a deputy director were, in those days, of a most varied and exacting nature ; they were nevertheless intensely interesting. He had to select areas suitable for experimental, seed, and demonstration farms ; equip these farms with implements, bullocks and staff ; draw up a programme of experiments for those to be used for experiment and research ; open depots for the sale of improved seed, implements and manures ; supervise

the work done by his staff employed on the different farms and in the districts in his Circle ; organise agricultural associations and shows ; prepare leaflets and bulletins explaining in simple language the improvements recommended by his Department, and keep in touch with the work of the Irrigation, Veterinary and Co-operative Departments of his Province. He had, in short, to discover improvements by experiment and research, and build up an organisation by means of which cultivators could be induced to incorporate them into their farm practice.

In the early years of the Department the botanists, chemists and other specialists at headquarters were obliged to devote most of their time to the training of Indian students in the science and practice of agriculture ; for it was realised that until and unless an adequate number was so trained, to assist the handful of Britishers employed, progress in developing India's premier industry would be slow.

During this transition period when agricultural colleges were being built, laboratories fitted up and Indians trained, the deputy directors were obliged to undertake plant-breeding and other duties for which they had not been specially trained. In the Central Provinces, the deputy directors classified the varieties of the principal staple crops ; tested them for yield and quality, and selected the most promising types for propagation and distribution to the cultivators. Excellent progress was made, and many of the improved types of cotton, rice, wheat and other crops thus selected nearly thirty years ago are now being grown on many hundreds of thousands of acres.

The deputy directors in those days were working in virgin soil so to speak. Little or nothing had previously been done to improve crops by selection, hybridisation, or by the introduction of foreign varieties. India had not produced a Burbank or a Garton, and she had no seedsmen who could supply pure seed, as there was none available. Her cereal crops had got mixed on the threshing-floors, and her cottons in the ginneries. When I classified the cottons of the Central Provinces, I found that the cotton known as

jari was not a pure variety, but a mixture of six, the most productive variety of which gave twice as high a yield as the least productive in this mixture. Other crops were classified in the same way, and seed of the productive types was multiplied on Government seed farms. From these "feeder" farms it was supplied to private farms belonging to enterprising village landholders, who undertook to propagate this pure seed, and sell it to the cultivators. These private seed-farms were inspected from time to time by the district staff of the Department. In the case of one crop, namely ground-nut, of which only one or two varieties were to be found in the Province, seed of superior kinds was obtained from Japan, Spain and other countries for trial. One of the exotic types imported proved much more productive and profitable than the local ground-nuts, with the result that its introduction stimulated the cultivation of this crop, and the area under it increased by leaps and bounds.

All the work of classifying and testing varieties, and of building up an organisation for the multiplication and distribution of seed, took time ; but within twenty years we had nearly nine thousand private seed-farms, through which over eight thousand tons of pure seed of the approved varieties of cotton, wheat, rice, ground-nut and other crops were being distributed annually. The work of controlling this supply of seed kept the district staff of the Department in touch with a large body of progressive landholders who, though they were not Government servants, did most valuable work in popularising and introducing pure seed, up-to-date implements and other improvements in their villages.

But there were serious difficulties to contend with, despite the fact that many of the leading landholders were co-operating with the Department. Crops grown from selected seed were sometimes badly damaged in the villages by wild pig. For our thick juicy canes and beardless wheats they showed a distinct preference. In the absence of fences the village cattle were sometimes the "spoilers." When trying to introduce Egyptian clover as a fodder crop in Chhattisgarh—a rice tract where no fodder crop is grown,

and where the grazing grounds in the villages are brown and bare from December till June—I found it necessary to have the small field in which it was being grown fenced with five strands of strong wire. The agricultural assistant whose duty it was to report on the condition of the crop gave the following account of it in his diary : " The crop is so green and tempting, that hundreds of hungry village bulls, cows and calves were, at the time of my visit, pressing against the fence with *one eye* fixed on the clover."

Some of the deputy directors had quite a *flair* for agricultural engineering, and by co-operating with engineers representing English firms rendered valuable assistance in the designing and testing of improved implements. Those recommended to the cultivators were thoroughly tested before being stocked for sale at Government depots. Thousands of iron ploughs, sugar-cane mills, winnowers and other agricultural appliances were sold annually. Hundreds of thousands of these are now in use in the villages of the Central Provinces and are giving satisfaction to the users. In some cases the old type has been entirely displaced by the new. The iron cane-mill has, for example, displaced the primitive and very inefficient wooden mill formerly used for extracting the juice from the sugar-cane. It extracts about twenty per cent. more juice than did the older and more primitive type, and pays for itself in about two years.

The working of the improved implements recommended was demonstrated at agricultural shows, on Government farms, and in central villages. To popularise the use of the improved iron ploughs, ploughing matches were sometimes held, at which the primitive wooden plough which has been used in India from the time of Adam, was worked alongside the " Turnwrest," " Monsoon," and other new types introduced. To the villagers a ploughing match was a new idea. They have from time immemorial been accustomed to hold bullock races, in which bullocks are yoked in pairs to a very light cart, on the pole of which the driver sits with the reins in one hand and a formidable-looking pointed stick in the other. By constant goading and wild shrieks, he gets his pair up to a pace which, if not equal to that of a

Derby winner, certainly rivals the speed of a horse of humbler birth. When we first started ploughing matches, the competitors treated them as races, and in the Press reports on these matches they were spoken of as " ploughing races." In the first match I attended, much more attention was given to the speed of the bullocks than to the quality of the work done. For each plough there were two men ; one held the plough, while the other with the reins in one hand and a pointed stick in the other, goaded the bullocks into a trot, encouraging them with most abusive terms. Experience brought home to them in course of time the fact that more marks were given for quality than for quantity.

Motor tractors and three-furrow ploughs were introduced later, and for them a small demand arose, more especially in tracts where large areas had got overrun with deep-rooted perennial weeds. Some of the well-to-do landholders developed a craze for new and expensive agricultural appliances, and sometimes purchased implements and machinery which did not meet with our approval. One old gentleman in Berar who had, after making a small fortune as a lawyer, taken to farming, once asked me to order for him a self-binder with which he intended to cut *juar* (a millet with a stem about three-fourths of an inch in diameter). He was a suscriber for the agricultural bulletins published by the Department of Agriculture in the U.S.A., and had, after reading in one of these bulletins an article on self-binders, decided forthwith to get one, and to work it by means of camels. This, as he put it, would be a very interesting experiment. I politely refused to order one for him, as I knew it could not be used for the purpose for which he required it. But he got his self-binder nevertheless through an American missionary stationed in his district. It proved a complete failure, and one more expensive piece of machinery was added to his heterogeneous collection.

The Hindu venerates the cow and its offspring ; but this veneration does not stimulate stockowners to improve their herds by better feeding and breeding. As old and useless animals are not allowed to be slaughtered, they share

with better cattle the meagre supply of fodder available. From December till June grazing areas are parched and bare, and as adequate provision for stall-feeding is not made, except for draught oxen and cows in milk, dry cows and young stock have during this period to subsist on a starvation diet. Though badly bred and badly fed, cattle are perhaps of more economic importance in India than in any other country. Without the ox no cultivation would be possible : without the ox no produce could be exported. In Great Britain our fine breeds owe their existence to our "gentleman" farmers who have in the past done so much by precept and example for agriculture in this country. In India this class of farmer is a *rara avis*. Most of the wealthy landowners live in the towns and are not in touch with rural conditions. The initiative in cattle improvement, as in crop improvement and other measures of rural welfare, was taken by Government. The work of improving the breeds was conducted on large Government cattle-breeding farms. The formidable task of selecting foundation stock for these farms was in most provinces entrusted to the deputy directors. It was not an easy one ; for cross-breeding in the village herds had been going on for centuries and there were no pedigree herds in the country.

In selecting a herd of one particular breed, of which typical specimens were difficult to find, I had to tour in jungly tracts in the Central Provinces where large herds of cattle belonging to a nomadic people known as *Banjaras* were grazed. Their herds shared the pastures in these tracts with the wild buffalo, the bison, and the sambhar, and were frequently attacked by tigers and panthers, more especially when resting at night in the open jungle. One of the cows I had purchased was killed by a tiger when it was being driven to my camping ground. Before completing my tour I had my revenge by bagging a tiger and a tigress. In establishing a herd of another breed, difficulty was experienced in getting a good bull ; for in the district in which the breed predominated the practice was to castrate the best of the young bulls as soon as they were fit for the yoke. The under-sized, weedy animals which were long in

maturing, mated with the cows on the village grazing lands. At this time I was experimenting with different methods of capturing herds of wild cattle, which were doing much damage to crops grown in the villages adjoining the jungle frequented by them. One of several bulls secured was a magnificent animal, which, after having been tamed, was used as the stud bull for this new herd. But despite initial difficulties good progress was made on Government cattle-breeding farms in evolving superior herds of draught and dual-purpose breeds by selective breeding. The dual-purpose breeds are suitable both for draught and dairy purposes. Hundreds of bulls were supplied from these farms to Indian stockowners, who used them for grading-up their mongrel herds. Experts in animal husbandry have since been appointed in most provinces, and young Indians are being trained in the theory and technique of cattle-breeding and dairying ; for this branch of husbandry is of enormous importance in India, where milk and milk products are in great demand in the dietary of the people.

In order to keep in touch with the more enterprising landholders who were co-operating with the Department in introducing improvements in the villages, Agricultural Associations were formed of which they became the members. At the meetings of these associations the progress made in getting the villagers to incorporate into their farm practice the various improvements recommended by the Department was discussed in the vernacular, and suggestions made as to ways and means of overcoming difficulties. Some of these associations played an active part in distributing improved seed and in selling implements. In course of time, the members co-operated in raising funds for the purchase of implements for sale, and large numbers of ploughs and other appliances were sold from depots controlled by them.

The annual agricultural show was another factor which made for progress in popularising improved methods of farming. At times divisional shows were held at which exhibitors from the different districts of the division competed. These larger shows enabled the cultivators who attended them to see the progress being made in other districts, and

as the shows were always held on Government farms, it gave them an opportunity also of seeing the improved crops, methods of cultivation, implements and cattle on these large and well-run farms. At these annual shows cattle, crops, fruit and vegetables were exhibited, and prizes awarded ; implements were shown at work, and leaflets, explaining in the vernacular the improvements recommended by the Department, were distributed. These shows were organised with the assistance of the members of the local agricultural association. To make them more attractive they were sometimes made the occasion for bullock races, ploughing matches and exhibitions of weird dances by jungle folk. At these shows the number of crop exhibits was very large, for in India many different crops and varieties of crops are grown. Of rice alone there were more than one hundred types under cultivation in the Province. In the Animal Section of the show, bulls, cows and bullocks were exhibited. In the Implement Section the exhibits included iron ploughs, winnowers, fodder-cutters, sugar-cane mills and other improved implements.

Some of our exhibitors were inclined to regard an agricultural show as a *tamasha*—an occasion for pleasurable entertainment. I have seen fighting rams, quails, partridges and cocks brought to the show ground, and on one occasion a Gond brought a young panther which he had captured in the jungle. Such zealous exhibitors were never turned off ; their exhibits, judging from the crowds that gathered round them, were by no means the least attractive. The villager is very fond of a little gambling on ram, cock, quail and partridge fights ; but as Government did not approve of gambling in any shape or form it was not permitted at our shows.

The behaviour of the crowds that attended these exhibitions was admirable. They passed off without any untoward incident as a rule. I only once saw a man injured at one of them. Bullock races were being run, and there was a dense crowd on each side of the race course. The races were being run in heats, and two pairs of bullocks were careering down the course at a great pace. The drivers

were shouting at the pitch of their voices and prodding their animals with their pointed sticks. When half-way down the course, the wheel of one of the carts came off, and continuing its motion apart from the cart, ran into the crowd and cut open the lower part of the leg of an onlooker. The driver of the cart stuck to the pole, despite the bumping of his vehicle, and finished the race with great éclat, though he did not win it.

CHAPTER IV

A STRANGER IN A STRANGE LAND

BEFORE I sailed for India, I had heard of the luxurious style of living which British people enjoyed there. Every Government official had, I was told, a host of servants who anticipated his every need. Every bedroom had a bathroom. Food, including fruit and vegetables, was good and cheap. In India the official enjoyed nearly all the amenities of civilised life and had a good time.

One of my informants regarding living conditions in India was a student from Travancore, who was a close friend of mine at Edinburgh University. In his " digs " I ate for the first time curry and rice. The curry had been sent by a devoted mother to her boy studying in a foreign land.

From this friend I gathered, too, that educated Indians resented the lordly overbearing attitude of many of our British officials in India. " Clouston," he said, " when you go to India you, too, will suffer perhaps from that superiority complex which makes some of your countrymen so objectionable to our people."

I rather liked my Indian friend, for he was a companionable young man who sought the company of men of my race, and attended and took part in the debates at the meetings of a University Society of which I was president. I made a point of introducing him to my other friends, and of showing that I appreciated his friendship. Some years later he stayed with me in Nagpur and we recounted our experiences as students together at our Alma Mater. He did not, I hope, find me smitten with that superiority virus which, in his opinion, afflicted some of my race in his country.

The amenities of life in India were not quite so good as I had been led to expect. One had many servants, it is true,

but the duties which each was prepared to perform were regulated by their caste rules. Division of labour was carried to extremes. When, for instance, my *mehtar* (sweeper) failed to turn up owing to illness or other reason, no other servant on my staff would consent to do his work. Threats were of no avail. Even my low-caste servant held that his caste would be broken if he touched the sweeper's brush. For the newcomer this strict adherence to caste distinctions and caste rules is very annoying at times, but if he is wise he will submit to the inevitable.

The advantage of having a bathroom for every bedroom was not great, I found. Mine was sometimes frequented by snakes, which gained access to it by crawling through the hole in the wall by which my bath water escaped when the bath was emptied. Before one could get a bath the water had to be heated in the kitchen some distance away, and carried to the bathroom where it was emptied, not into a commodious enamelled bath, but a zinc tub of no great dimensions. In it one felt very cramped and confined. To float or otherwise disport one's self therein was out of the question.

My cook had evidently not served an orthodox Scot before, for he could never remember to put salt in my porridge. Indian milk, beef, mutton, chicken and eggs lacked flavour. The milk being a potential carrier of disease, had to be boiled before it was used ; its quality was poor owing to the Indian milkman's age-long custom of adulterating it with water. The tinned butter available in Nagpur in those days was obtained from towns in Bombay Presidency, where it was manufactured under filthy conditions in the bazaars. Vegetables were plentiful in the cold weather, but in the hot weather and rains they were very scarce. Though oranges, mangoes and plantains were good when in season, there were long periods when little in the way of fruit could be had.

When I went on tour, I had to carry with me blankets and sheets. These were not provided either in dâk bungalows or on the trains in which I had to sleep when travelling at night. I had to carry, too, a mosquito net, for mosquitoes, like the poor, were always with us in India.

They give the newcomer a noisy welcome, buzzing round him in search of that pure and appetising blood which they, by instinct I daresay, associate with fresh complexions and tender skins.

If the amenities of life fell short of expectations, its discomforts surpassed anything I had dreamt of. The hot weather began about the end of February : by the end of March the temperature had risen to 105° in the shade. In April, May and June it ranged from 110° to 117°. By the end of May, Indians and Europeans who had spent the hot weather on the scorching plains were feeling limp and tired. They longed for the break of the monsoon. Even the birds seemed exhausted as they sat with open mouths in such shade as they could find. Stones exposed to the sun got so hot that you got burned if you touched them with your bare hand.

During my first few years in India I did much touring in the hot weather, both by road and rail. Passenger trains were not provided with fans in those days, and the temperature of the air in the compartments rose at times to well over 100°. The heat was like that of a furnace. I saved myself from heat-stroke when travelling by rail by bathing my head in water at short intervals. On these journeys one ate very little, but drank a great deal. I once drank thirteen bottles of soda water, as well as several cups of tea, on a day's journey from Hoshangbad to Akola.

Such journeys by rail in India make one dazed and stupid : they sometimes prove fatal. I once travelled with an Army Major who was so affected by the heat of the compartment we were in that he had a stroke, became quite unconscious and died of heat apoplexy that night. When I noticed that he had collapsed I called the conductor, who in turn called a doctor who happened to be on the same train ; but he could do but little for the dying man.

Europeans who spent the hot weather on the plains slept outside during the hot weather. Every evening our beds, fitted with mosquito nets, were carried out to the garden. There we slept under the canopy of India's blue and cloudless

sky, studded with stars which shone like jewels. To sleep in the fresh and comparatively cool air after the fatigue and grilling heat of the day was, indeed, pleasant and restful. Even at night the temperature was high, but dressed in light pyjamas and with a thin sheet as the only other covering for the body, we slept in comfort. The cloudless pageantry of the cold-looking stars overhead, and the gentle rustling of the leaves of the trees, lulled us into forgetfulness of the discomforts undergone by day. In the stillness of the night we could hear at times the wild shriek of a prowling jackal. We could hear, too, the monotonous but rhythmic noise of distant tom-toms, but to these and other strange noises we soon became accustomed.

When the monsoon breaks about the middle of June, the abrupt fall in the temperature is most marked. To this event—the break of the monsoon—there are many millions in India who look forward with a longing which it is hard to describe. A wonderful transformation comes over the face of the whole countryside. Nature, deadened by the drought and scorching heat of the previous months, springs into life again. Trees put forth their buds ; bull-frogs croak and crickets do their best to out-voice the frogs. Millions of flying ants, moths, fire-flies and other strange insects come like a bolt from the blue. At night, attracted by the light, they invade the table at dinner and drop into one's soup and whisky peg. Lizards perform wonderful feats on the walls ; in the midst of plenty, they can pick and choose, and gorge themselves at their leisure. Snakes, too, are in clover. Attracted by the croaking of the frogs, they leave their holes in numbers to kill and eat.

Nature, by waving a magic wand as it were, stirs to life and activity countless forms of crawling things, many of which are obnoxious to man. She provides, too, conditions under which the cultivator, on whose prosperity the prosperity of India as a whole depends, can produce the fruits of the earth. The village grazing areas which for months have been parched and bare, are soon carpeted in green and provide pasture of a kind for his hungry animals. For months they have been living in a state of semi-starvation,

as their owners had not stored sufficient fodder to tide them over the hot weather.

When the rains begin the cultivator is as busy as a bee. From early morn till late at night he is in his fields ploughing or sowing. His fields have to be got ready and his crops sown without delay. Nature is a hard taskmaster. She provides a definite growing period for each crop, and the husbandman who fails to take advantage of that period knows by experience that his crop will give a poor yield. He is so anxious to get his seed sown in time that he sometimes spends the whole day in his fields, and eats there his midday meal brought to him by his wife or one of his children. While he is eating, his draught bullocks are allowed to graze.

In India there are three well-defined seasons, namely, the rainy season from the middle of June till the end of September ; the cold weather, so-called, from October till February, and the hot weather from March till mid-June. The crops sown in the beginning of the rainy season and harvested in the beginning of the cold weather are known as *kharif* crops. Those sown in the beginning of the cold weather and harvested in the beginning of the hot weather are called *rabi* crops. The former includes crops such as rice, cotton and millets, and the latter such crops as wheat, linseed and gram. When the monsoon is good, both *kharif* and *rabi* crops are benefited. When it is a partial failure, owing to its coming late or to its early cessation, both groups of crops are affected. One can understand how the possibility of failure of the rains, and the appalling threat of famine are dreaded by the 260 million villagers in India who get their living from the land.

The servant problem did not worry us much in India. Quantity made up for quality ; but as I was allotted a bungalow on my arrival and lived by myself for a time, the language difficulty was a handicap. I was lucky, however, to get as bearer a low-caste Hindu, Yito by name, who knew a little English. Though he and I drifted apart after some years, he never failed to call on me from time to time to pay his respects and to assure me that he prayed for me and mine every morning. With his assistance I got together a staff

of menials who on the whole served me well. Some of them knew a few English words. To them I was a *ma-bap*—a father and mother, to whom they came for succour when in trouble.

There was a story current in India of a young lady who had come out from home to get married to a man stationed in a small town up country. She could not speak a word of the vernacular of the district she was in ; but her young husband had employed some servants who professed that they could speak English. This thoughtful husband had also provided a cow for his young *memsahib*, because the milk supplied by the professional milkmen (*gaolies*) who kept cows and milch buffaloes in the bazaar was of poor quality. As the young lady had been reared in a city at home and did not know much about cows, that quadruped was left in the care of a servant. He looked after his charge very well ; the *memsahib* got all the milk she required, and had nothing to worry about. One day, however, he set her a problem by appearing before her saying : " *Memsahib*, cow have cough." Thinking that her one milch animal had caught a cold, she ordered him to get medicine for it from the local veterinary dispensary. " But, *memsahib*, cow have cough," again repeated this embarrassed menial. The young lady in despair called her bearer, who after salaaming very respectfully to her, and casting a look of scorn on the cow-boy, said : " *Memsahib*, him be very jungly man, and not good English speaking. He mean *memsahib's* cow give leetle puppy."

In Nagpur the professional dairymen kept their cows and milch buffaloes in filthy sheds in the bazaar, and made a practice of adulterating their milk before delivering it with water taken sometimes from dirty pools. Some of my countrymen in Government service got over this difficulty by using tinned milk. Others arranged with a *gaolie* for a cow to be brought to their bungalow, where it was milked under the supervision of a servant. Milk obtained in this way was more expensive, but it was pure and comparatively clean. Through Yito I also arranged to have a cow milked at my bungalow ; but strange to say the milk was

none better than what the *gaolie* had previously brought me from the bazaar. As Yito, who supervised the milking, could not solve the mystery, I decided that I should try to do so. In accordance with my instructions the *gaolie* brought his cow under my porch in the very early morning, while I was having my *chota hazri* (early breakfast). For several mornings I kept a close watch on him from the moment he sat down at the cow's side till he had finished milking. To my surprise there was no improvement whatever in the quality of the milk. Cow's milk in India gives nearly 5 per cent. of butter-fat; that which the *gaolie* handed over to me gave less than 3 per cent. On thinking the matter over I decided to examine his brass *lota* (the utensil used as a milk pail) before he started milking, as it was just possible that it had some kind of false bottom.

When he appeared under my porch one morning I hastily jumped out of bed, and seized his *lota*. The mystery was solved at last. It was half-full of rather muddy water. Poor Yito, who was much embarrassed, pretended to be very indignant. He called the man a *budmash*, and would have beaten him had I given him any encouragement. But I was disappointed in Yito. He was quite prepared to wink at this trickery apparently, so long as he got for the use of his family a free supply of milk direct from the *gaolie*.

The *gaolies*, having no lands of their own, were accustomed to let their animals graze at night when there was always a chance of their being allowed to feed undisturbed in private compounds. To the Civil Station of Nagpur their leggy half-starved cows paid nightly visits and entered compounds by jumping over the fences, with the agility of a well-trained hunter. Had they been trained to the saddle they might well have made their mark in steeplechases. They were a real nuisance in the eyes of all garden-lovers, for they ate not only the vegetables being grown, but also some of the flowering plants.

In course of time my Department gave serious attention both to the milk problem and the improvement of cattle generally by better breeding and feeding. Though Hindus do not eat beef, milk and milk products form an

important part of the diet of those who can afford to pay for them. The pity is that the price of this valuable food is so high that millions of the poorer classes are debarred from using it. It is high because the cows of most Indian breeds are inefficient milk producers. The average cow in the Central Provinces gave a yield of little more than half a gallon of milk per day when at the height of her lactation period, and an annual yield of less than eighty gallons. In this country a good dairy cow gives approximately ten times that quantity of milk.

To the work which has been done by Departments of Agriculture in India in improving the milking capacity of dairy herds by selective breeding, crossing and better feeding, I shall refer later. Suffice it to say here that after studying the conditions under which these professional milkmen carried on the dairy industry in the crowded bazaar of Nagpur, Government offered to provide them with sheds, and an extensive grazing area with a good water supply on a Government farm near the Civil Station. A considerable number of them accepted this offer and transferred their cows, milch buffaloes and calves to this farm. Our scheme also made provision for the formation of a Co-operative Dairy Society, of which each *gaolie* became a member. A generous Parsee gentleman, Khan Bahadur Byramjee, who was much interested in the development of dairying, provided the dairy building and utensils. His dairy manager took over the milk at a fixed price from the members of the Society and arranged for its distribution.

To this Co-operative Dairy Farm the *gaolies* brought their calves or imitations thereof, because most Indian cows refuse to give their milk except when their calves are near them. When a calf dies its owner has the skin stuffed with straw and this dummy calf is placed near the cow's side at the time of milking. This particular bovine instinct is a handicap on a dairy farm on which calves are hand-fed, but it is possible to surmount it. Experiments carried out on some of the Government farms in India have shown that the maternal instinct of the Indian cow, in refusing to give her milk when her calf is not with her, can be overcome by removing her

first and all subsequent calves as soon as they are born. If allowed to suckle one, it is very difficult to get her to give her milk later except in the presence of her offspring in some shape or form.

The *gaolie* is a bit of a psychologist in the way he uses a sham calf to induce his cow to give him her milk. But even when the calf is alive he takes an unfair advantage of her maternal instincts, by allowing it to have only the first pull of the udder. The unsuspicious dam, on seeing that the calf is being fed, lets her milk flow freely, and chews the cud in a contented mood. But the hungry calf, after having done its duty by turning on the tap, so to speak, is thrust aside by the owner, who proceeds to drain the udder to the best of his ability. When the milk of the udder is nearly exhausted, the calf is allowed to drain the dregs. The Hindu *gaolie* does not believe in taking life, for that is against his religion; but he does not see any harm in starving his calves.

In organising this Co-operative Dairy I took a keen interest. For years I was guide, philosopher and friend, both to the *gaolies* and the staff who controlled it. Cleanliness was our watchword. To its customers the Dairy proved a great boon. From it they got pure milk, and fresh butter and cream of a quality unknown in Nagpur previously. The *gaolies*, too, were greatly benefited financially; we helped them to help themselves. Their cows were no longer harried, and sometimes pounded, for trespassing. Their buffaloes had the time of their lives, for they could without let or hindrance indulge their semi-aquatic instincts. Dozens of them could be seen in the hottest part of the day almost submerged in Telankheri tank—a large reservoir covering about 200 acres and included in the area of the farm.

CHAPTER V

EARLY EXPERIENCES, SOME GRAVE, SOME GAY

DURING my first two years in India I was exceedingly busy. I spent much of my time on tour, inspecting existing Government farms and selecting land for new ones to be opened. When not on tour I was working in my office. In the evening I generally studied Hindi, as I had to go up for an examination in that vernacular within two years from the date of my arrival in India. To gain practice in speaking it, I sometimes carried on conversations with Ganpat, one of my little punkah-wallahs. Sitting cross-legged on my verandah, he talked to me in Hindi about his home, his family and the games he played. On Yito, too, I sometimes tried out my Hindi, to his great satisfaction. He was quite illiterate, but very loth to admit it. I asked him one evening to read for me a passage from one of my Hindi books. With his eyes glued to the book he began to mutter words which I failed to understand. On taking it from his hand I noticed that he had set himself a task which would have been difficult even for an educated man. He had been holding the book upside-down. But my principal tutor was a cultured and very orthodox Brahmin who spoke English, Hindi and Marathi. Much of the time we spent together was devoted to conversation in Hindi. We discussed crops, cattle, their pests and diseases, irrigation and rural conditions generally. He anticipated that my examiners would expect me to be able to talk intelligently in Hindi on matters pertaining to agriculture and village life. When conversing one evening about the deities commonly worshipped by the villagers, I essayed in halting Hindi to tell him about the God worshipped by my people. When I had finished, he launched forth into an account of the attributes of, and feats performed by, the gods of the

Hindus. He spoke of Shiva and his divine spouse Kali, to whose shrine the Thugs brought their gruesome offerings ; of Vishnu the Preserver, the god who has given Hinduism its loftiest ideals ; of Rama and of Sita his devoted wife ; of the aid given by Hanuman, commander-in-chief of the monkeys, in rescuing the latter when she was abducted by Ravana the demon king of Ceylon, and of other giant-like deities in the Hindu pantheon. His account of the wonderful deeds his gods had performed far surpassed my humble effort to describe my one God.

The *munshi's* response to my effort reminded me of a story which a minister of the Church of Scotland used to tell about a visit he once paid to a family of tinkers. Robbie, the father of the family, in the way of opening the conversation, spoke of the hard life which people of his race had led for centuries. The padre, being a deeply religious man, after sympathising with Robbie, unfolded to him the simple Bible story of how our Saviour when a wanderer on this earth had experienced its hardships ; how he had died for sinful men, but now sat at the right hand of God the Father. " Ay, and there was ma great grand uncle, Jock Macafee," said Robbie. " Jock was sent to Botany Bay for stealin' a sheep or some other jimp ; but in twa years he was guvner, and heid o' the whole rickmetick." The conversation, begun in a serious vein, had drifted from the sublime to the ridiculous. The minister was somewhat shocked. Robbie's wife, Betty, poured oil on troubled waters. She at least was no scapegrace. She had lately sold her parrot, because she had heard it using " bad words." She did not want her bairns to learn such words. She had dutifully told the man who bought it that it was a wicked bird ; but he had taken it all the same. " He was no gentleman, or he wadna hae bought a parrot that swears," concluded Betty. Her story eased the situation.

I never again crossed swords with my devout *munshi* on the subject of our religious beliefs. My knowledge of the vernacular placed me at a disadvantage. To him, nevertheless, I owe a debt of gratitude, for I passed the

language test with credit to him and myself. Proud of my accomplishment as a linguist, I lost no opportunity thereafter of gaining practice in speaking this new language. In some of the districts of which I was in charge the people unfortunately spoke Marathi, a sister language. Though they knew a little Hindi, they experienced difficulty in understanding it when spoken with a Scotch accent. On one occasion, after I had addressed a meeting of land-holders in Berar, the Commissioner of the Division, who had presided, asked one of the audience whether he had understood all I had told them. He, honest man, bluntly replied in Marathi that he did not know English!

On other occasions, I discovered that the Indians with whom I tried to converse in Hindi could speak my mother tongue much better than I could speak theirs. When going round an Agricultural and Industrial Exhibition one day, I stopped to inspect a Singer sewing-machine, and the figure of an old lady who formed part of the exhibit. She appeared to be providing the motive power for the machine. There was a group of what seemed to me to be simple village rustics gazing intently at this exhibit. Turning to one of them, who was dressed in a scanty loin-cloth, I suggested in Hindi that he should ask the *memsahib* who was working the machine where she came from, and how she liked India. Instead of replying in Hindi, he salaamed and said in perfectly good English: "Sir, you are labouring under a delusion. The good lady is quite inanimate."

I began to realise that of the two hundred and twenty-two languages and dialects spoken in India, English is the one most universally understood. I came to realise, too, that an Indian, though dressed in a *dhoti* (loin-cloth), may be a well-educated man, and a gentleman to boot. Clothes do not make the man.

Many vernacular expressions are adopted by the Britisher who has lived in the country for years and the newcomer finds some difficulty in following his mongrel English. When arranging one day for a tour which

I was to make with a senior officer, the following conversation took place :—

Me : " Shall I bring a cook and some food ? "

Senior Officer : " No, I have given my *bawarchi* the *hookam* to make a *bahut achcha bundobust*, and to take his *masalchi* with him. The *bawarchi* is a *pucca budmash* and the *masalchi* a *sharab-wallah* ; but I hope they will not give us much *takleef*."

My friend merely meant to tell me that he had instructed his cook to make proper arrangements for our tour and to bring his assistant with him. Though the cook was a rascal and his assistant a drunkard, he hoped they would not give us undue trouble.

During my first two years in India I had many difficulties to contend with, of which the language was the least formidable. Before I had been four months in the country I met with a motor accident which nearly ended my career. At that time there were very few motor cars in India and still fewer reliable drivers ; for in those days it was not necessary in India to undergo a test in order to get a driving licence. To save time I had hired a car to take me from Piparia to Pachmarhi, a distance of just under thirty miles. The driver, a Goanese employed by the Indian company to which the car belonged, had with him in the car another Indian employee whose duty it was to act as his factotum. As the car came to a standstill every mile or so, this subordinate was much in request. To do the first twenty miles of the journey took five hours, at the end of which time we found ourselves on the top of a hill with a fairly long decline in front of us leading to a deep gorge crossed by a bridge. The car gained considerable momentum in running down this long decline, and had reached a dangerous speed before we got to the bridge. When we were about to cross it, another car appeared on the far side. Our driver, fearing a collision, lost his head completely, and the control of the car as well. It smashed through the railings and on falling into the rocky gorge below turned a somersault. The driver, who in sheer terror had clung

to the steering wheel, was thrown out when the car struck the rocks, but was not badly hurt. His factotum, on the other hand, was pinned between the car and the rocks and terribly mutilated. I had a miraculous escape, for when the car struck the railings I was catapulted from the back seat into the air and landed in the bottom of the ravine—not on the rocks, but in a shallow pool of water about thirty feet from the bridge.

The two Englishmen whose car had caused our driver to lose his head had, on seeing the speed at which we were travelling, stopped their car before reaching the bridge. When I regained consciousness I found that they had already hauled out the unfortunate Indian from the wreckage, and arranged for a bullock *tonga* to take us to Pachmarhi. The road being very steep and the bullocks slow, it took us about two hours to cover the remaining seven miles. To me it seemed like twenty. The dying Indian's pitiful cry of "Ram, Ram, Ram!" never ceased, for he was still conscious. That "Ram, Ram!" resounded in my ears for days. He, poor man, died the following day. After spending some weeks in hospital, where I had my broken bones attended to, I got back to work again.

Several years later I had another rather trying experience when motoring down to the plains from Simla. I had hired a car belonging to a burly Sikh, who was both owner and driver. We started off a little before sunset and got half-way down the mountain before darkness began to set in. On asking him to put on his lights, he coolly told me that they were out of order. The Simla-Kalka road is a dangerous one to drive on even in daylight, for it is narrow and tortuous and in places skirts deep ravines. As it soon became so dark that the driver could not see the road clearly, we had to stop the car. I had an appointment in the plains for the following day, and in order to keep it had to catch the train which left Kalka at 9 o'clock that evening. There was, therefore, no time to be lost. On seeing a car coming down the mountain on its way to Kalka, I decided to take advantage of its

lights by getting my driver to follow it closely as soon as it passed us. My driver started his engine, and as soon as the other car passed us he started off and followed it down that steep winding motor road for thirty miles—and without an accident. We ran along the edges of precipices and swung round hair-pin bends in its wake. It was a perilous drive, but we reached Kalka in time to catch my train. I admired the skill and courage of my Sikh driver.

CHAPTER VI

ON TOUR IN RURAL INDIA

Both officials and non-officials gave much help and encouragement to my colleagues and myself in our work. Our successive Directors were members of the Indian Civil Service—"sun-dried bureaucrats," as they have been nicknamed. I do not know what that phrase exactly means as applied to this, perhaps the finest Service in the world; but I would be prepared to accept Lord Morley's definition of what it ought to mean. In a memorable speech which he made when Secretary of State for India, he said: "I have seen what is called the 'sun-dried bureaucrats,' and I have seen that what is meant by that phrase is a man eminent for experience, for knowledge, and for responsibility faithfully and honourably discharged."

Though not scientists, our Directors took an intelligent interest in the research and experimental work of the Department. Their thorough knowledge of rural conditions and of the customs of the people was a great asset in the early days of the Department, when its young and enthusiastic specialists had still to find their feet.

The different Governors of the Province also were most helpful. They used their influence to encourage district officers to take an interest in every phase of the Department's work, because they realised that agriculture was India's premier industry and that the welfare of the agricultural population was the true basis of national prosperity. They had great faith in the value of science as applied to agriculture and never lost an opportunity of giving us encouragement.

In those days the success of the official work of a deputy director depended very largely on his personality, which is

always a dominating factor in district work in India. In translating into practice the experimental results which had been achieved by research and experiment, he was brought into close personal touch with many different officials and non-officials. By displaying friendliness and sympathy towards all, and by using moral suasion rather than force, he could always rely on getting things done. His work called, too, for the display of self-reliance and resourcefulness. In the Central Provinces we were most fortunate in being under a regime which permitted and even fostered initiative and resource.

But the pioneer work of the deputy directors was very hard, and the consideration received from the more experienced administrators under whom we served could do little to lighten it. To cope with our responsibilities, we had to spend much of our time on tour under most trying conditions. The memory of some of the tours I did in the hot weather is still to me something of a nightmare. I found it necessary once when touring in Berar, one of the hottest parts of India, to cycle twenty-eight miles in the middle of the day when the temperature was 116° in the shade, and on another occasion, and on an equally hot day, I spent eight hours in the sun when inspecting a remote area proposed as a site for a cattle-breeding farm. In the absence of a road the long journey had to be made in a bullock-cart. The furnace-like heat of the sun brought on an unquenchable thirst, and my tongue felt like a piece of dry untanned leather. This and many similar journeys in the scorching sun were very exhausting. They severely tried the human frame and the human temper : their main effect on me was to make me dazed and sleepy. On some occasions I travelled by night in a bullock-cart in order to save time, and escape the intense heat by day. Stretched out to my full length in the cart I generally got some sleep despite the jolting and the dust which rose in clouds from the cart-tracks over which we wended our way.

For want of other accommodation, I had at times to spend the night in a school or on the platform of a railway

station. The platform of a railway station in India is generally a very noisy place ; for one had to reckon not only on the noise of arriving and departing trains, but on the jabbering of the people on the platform. Crowded platforms with dozens of Indians taking their meals, or making up their beds for the night, are very characteristic of Indian railway stations. They are a most patient people : they do not attach so much importance to time as we do in the West. The village rustic, instead of consulting a time-table before starting off on a railway journey, trusts to luck, and often finds on arriving at the station that the train which would have taken him to his destination that day has already gone, and that he cannot get another till the following day. That does not worry him ; he has food with him, and instead of travelling back to his village which may be a good many miles distant, he makes himself comfortable on the platform, and waits patiently till his train turns up the following day.

I have often slept in a long armchair on railway-station platforms in India with these patient rustic folk squatted around me. On waking up in the early morning it was not uncommon to find an Indian barber standing near my chair with a razor in his hand. He, good man, meant no harm. He had, after surveying my chin, come to the conclusion that I required his services, and waited patiently for me to open my eyes before he addressed me.

I was once caught in a thunderstorm when touring in the hot weather with Rai Bahadur Tundilal Powar, a member of my staff. A hail-storm in India is a strange and unpleasant phenomenon : the hailstones are almost as large as pigeon eggs, and people exposed to the fury of such a storm in India are sometimes killed. We were travelling in a bullock *tonga* when the storm broke with a peal of thunder. The only other indication of its coming was fleecy clouds careering across the sky. To prevent our *tonga* from being blown over we took shelter under a tree. Great lumps of hail rebounded in thousands from the hard road ; carts were blown over, and animals badly injured. To prevent the hood of the *tonga* from

being blown off, I clung to it with one hand, and this exposed my fingers. The bruised blood showed under my nails for weeks as a result of their being bombarded with these icy bullets from the clouds. On driving back we found difficulty in circumventing trees that had been blown down and animals which had been injured on the road. It was bitterly cold; the temperature had within an hour or so dropped from 112° in the shade to what appeared to me to be in the neighbourhood of zero.

A year later in the same district, and with the same assistant, I was caught in another violent thunderstorm when crossing one of the *bhata* plains which are so characteristic of the district. The soil of these plains is a poor, reddish gravel, which produces an inferior and stunted spear-grass. The rain came down in torrents, and lashed and whipped our faces without mercy. I gained some protection for my face by pulling my large *topi* well over my forehead, but my Indian friend in his small Hindu skull-cap had no way of protecting his, and suffered severely. It was soon pitch-dark except when the lightning flashed and lit up the plain in front of us. That plain was soon one great sheet of water with roaring torrents here and there. We lost our way, but waded through streams and struggled on in the direction in which we thought the road lay by which we intended to return to the Government farm seven miles distant. After an hour or so I discovered that I was alone: my friend, in sore distress, had given up the struggle. On scanning the ground behind me a flash of lightning revealed him lying on his face in the water. Retracing my steps, I encouraged him to make an effort to carry on, and off we started in the darkness again. The wind had by this time abated to some extent; but it was still raining heavily. After some time we descried a light in the distance, for which we made a bee-line. It was in a village, and we had the misfortune to walk into a midden before reaching the house in which it shone. We knocked at the door, but the occupant, a woman, gave us no welcome. She opened the door slightly, and then slammed it in our faces. Our

bedraggled appearance had terrified her: she had no intention of communicating with the evil spirits she took us to be. At another house we had better luck, for we found in it a man who possessed a lantern and was willing to show us on our way. He brought us to the road we had been looking for, and we were soon on our way to our destination—the Government farm, where I was to stay in a small Rest House, and my Indian friend in his own house, for this was his headquarters.

Touring in the hot weather was trying, but my work was intensely interesting and the discomfort suffered was soon forgotten. To guarantee the success of that work it was necessary to see that certain agricultural operations were completed before the rains broke. On some of our new farms the staffs required much guidance. New crops and methods of cultivation were under trial: to secure reliable results mistakes had to be rectified in time. Some of these new crops were being tried on the gravelly (*bhata*) soil of which there were many thousands of acres lying waste in the rice tract of the Province. Government had recently constructed irrigation reservoirs, commonly known as tanks, from which water was brought to large areas of this *bhata*. Our experiments had proved that this poor class of soil, not previously brought under cultivation, could be made to give, when irrigated, good crops of cotton, cane and ground-nut. Our experiments had proved, too, that the method of growing rice in this tract was faulty. The practice was to broadcast the seed in the fields, and to thin out the seedlings a month or so later by means of a plough. This rough-and-ready method of growing rice was wasteful: the seed-rate required was very high, and the yield low. Experiments carried out on the Government farms showed that by raising the seedlings in a nursery and planting them out singly, the seed-rate was reduced by two-thirds and the yield was much larger. This new method of growing the crop had been introduced in the villages by the staff of the Department working in co-operation with the leading landholders, and thousands of acres were being planted in that way.

Some of the new crops were also being tried in the villages, and strains of rice selected by the Department were being grown on a large scale.

With the introduction of these improvements, the scene which met one's eye in walking round the cultivated fields of a village was a pleasing one. In the *bhata* soil, cotton, ground-nut and perhaps sugar-cane were being tried. In many fields there were selected rices evolved by the Department: some of these belonged to recognised seed-growers, who would distribute the seed in their own and other villages, for they were co-operating with the Department in extending the area under the improved strains. The new method of growing rice introduced by the Department under the name of "transplantation" is practised by the more progressive cultivators only. If you ask a *ryot* who has not yet adopted this method to give his reasons for not doing so, he will tell you very probably that transplantation involves more labour, and that he is a poor man who is satisfied when he gets enough "to fill his belly," as he crudely puts it. He is a fatalist: though living in the twentieth century his outlook on life is not much brighter than that of his forefathers who in pre-British days were at the mercy of the tax-gatherer and the raider, and who in years of plenty allowed some of their rice to rot in the fields rather than take the trouble to harvest it. He therefore broadcasts his seed, and thins out the seedlings in the easy-going manner already described.

In the villages in which large areas are being trans-planted, the low-caste, landless labourers readily find employment. Some of them are engaged in uprooting the seedlings in the nurseries and tying them into small sheaves: others carry these to the fields where they are to be planted out. In the ploughed fields, women, standing ankle-deep in soft mud, are bending over their work. They are planting the seedlings at equal distances apart, each of which will in three or four months give five or six ears of golden grain. These workers, dressed in enormous hats as big as umbrellas, look rather odd. The hats are not Paris models, but they serve a useful purpose

in protecting the body when the rain comes down in torrents. If you examine one, you will find that it is made of broad leaves, held together by a framework of thin strips of bamboo ; and if you ask the cost, you will be told that the owner made it herself, and that it cost her nothing. The planting is done by women : fecundity is her attribute, and she must needs sow the seed and plant the young seedlings in Mother Earth. Adjoining fields are being ploughed : there were several inches of water in these fields when the ploughmen started work, but with their small wooden ploughs they have stirred the soil underneath to form a soft mud, in which young rice seedlings will, in due course, be planted by the deft fingers of the female labourers.

During the rainy season, the Director—a member of the Indian Civil Service—sometimes accompanied me on tour. At that season of the year touring in the rice tract was far from pleasant, as communications were bad. Most of the villages were several miles from any road, and the only way of getting to them was by following the muddy tracks connecting them with the main highways. On one occasion I was touring in September with my Director, Sir Frank Sly. The temperature was not much over 90° in the shade ; but it was a moist, sticky heat which caused extreme perspiration. After inspecting the improved methods of rice cultivation introduced in some villages, we found it necessary to spend the night at a small two-roomed bungalow where, to my embarrassment, I discovered that there were no mattresses for the beds or cutlery for the table. We spent an uncomfortable night : the air was close and stuffy and the beds hard to sleep upon. Nothing daunted, we started off next morning in a bullock *tonga*, kindly lent us by a well-to-do landholder, and visited other villages seven miles distant. In accordance with our programme, we were to return by four o'clock to catch a train at a small railway station near this Inspection Bungalow. It was the one train of the day : if we missed it, we would have to spend another night of discomfort. The track to the villages was very

bad, and the bullocks were slow ; but we got there in time. Having inspected the improvements in hand in the cultivated area of the villages, we started off on the return journey. After trotting for about a mile on the muddy track, one of the bullocks suddenly stopped and lay down. The driver got down from his seat on the shaft, and after much prodding with his stick, got it on to its feet again. We made a fresh start, hoping for the best ; but had not gone far before both animals went on strike : they plumped down so suddenly that we were nearly thrown out of the *tonga*. The end of the shaft being on the ground, we were left sitting at an awkward angle in the vehicle and had to jump out. The possibility of our having another uncomfortable night in that accursed little bungalow stared us in the face. The *tonga wallah* did his best. By a free use of his pointed stick he got both animals on to their feet, and showered on them biting imprecations as to their utter worthlessness. By twisting their tails and applying his stick, he got them to start off in fine style ; but alas, in the twinkling of an eye, they were down again. As a last resort, I volunteered to take them in hand. On getting them up, I took the driver's place on the shaft and instructed him to keep running ahead of the *tonga*. With a flourish of my stick and a wild shriek after the best manner of their old driver, I, seated on my shaky perch, got them into a trot, which they kept up all the way to the station. With their bells tinkling at their throats, they trotted steadily all the way after their whilom master. Sir Frank, with his mind at ease and a benignant smile on his face, praised my skill in the art of handling these two lazy and recalcitrant herbivorous quadrupeds.

Another amusing experience in an adjoining district belongs to a later period. I was at the time touring with Mr L., the Director of the Department at that time. My friend, the Deputy Commissioner, with whom I was staying, informed me that the river which we had to cross on our way to the villages to be visited was in flood, and that there was no boat available. He volunteered, however, to let me have two horses which he thought would take

us across without our having to swim them; but one of them, he said, had developed the inconvenient habit of lying down when he entered water. This is not uncommon in the case of imported horses which suffer much in India from the intense heat. I said that would be all right, as we would let Mr L. have the more unreliable mount. To my readers this may appear a wily and unworthy plot hatched behind the back of an unsuspecting superior officer. That officer, however, had only just returned from the Hills where he, a "brass-hat," had been cooling his heels all the hot weather, while I had been stewing on India's scorching plains. On his arrival the following morning he was given *his* mount, and off we started. The river was indeed in flood, and about a quarter of a mile wide. On getting to the middle of it I found that the water was above my stirrups; but by keeping my legs parallel with my horse's neck I managed to keep dry. The water crept up and up, and I was beginning to think that my Director's horse, on which I was keeping an expectant eye, would fare ill if he were to try his tricks in water of that depth. I got the surprise of my life when my own mount went down head foremost. I was deposited in the river, but clung to the reins. My horse jumped up almost immediately and I, drenched from head to foot, was soon on his back again. He had tripped over a stone at the bottom of the river, or set his foot in a hole most probably. We got across without further incident and spent a useful forenoon in the villages. When we returned to the Deputy Commissioner's bungalow, he and I had a hearty laugh over my discomfiture, as soon as Mr L. took his departure. The latter would have been less sympathetic had he known the truth.

But this strenuous life in one of the most malarious parts of India began to take effect even on my strong frame. After being three years in the country, I was camping in the cold weather in a tract where malaria was rife. My servants having forgotten to bring a mosquito-net into camp, I was bitten at night by hundreds of mosquitoes and was shivering with malaria nine days

later. After four or five days I was at work again ; but exposure to the sun brought on a second and much more severe attack. Daily doses of twenty grains of quinine caused sickness and deafness but did not allay my fever. I was suffering from tertian malaria—one of the worst types of that disease. After a month I was on foot again, and my benign Government, on the advice of the Civil Surgeon of Nagpur, decided that I should have a change. I was asked to visit Bombay Presidency and to study the work being done by the Department of Agriculture there. The change proved very effective : I never again had malaria in India.

When in bed with malaria my faithful attendant was Yito, my head servant, who was at my beck and call by night and day, for he slept near the door of my bedroom. Among the Scottish missionaries I had several true friends : there could be none truer in time of need. For a week before starting for Bombay I was the guest of the Rev. John Douglas, one of the most charming and Christ-like men in our mission community. The change to his bungalow on the other side of the Civil Station would, he thought, do me good, and it did. I could write a volume on the self-denying work being done by our missionaries in India. In every corner of the land they are rendering selfless service for India's teeming millions. I have visited mission stations in some of the more remote parts of the Central Provinces, and have found there lonely men and women devoting their lives to the moral and material uplift of backward races. I have seen something also of the splendid medical and educational work being done in mission hospitals and schools, and of the industrial work done at some of the mission centres in Northern India. Verily, Christian missionaries have been a great force for good in the land.

PREPARING A FIELD FOR RICE

TRANSPLANTING

CHAPTER VII

TROUBLESOME WILD ANIMALS

THE amount of damage done by wild animals to crops and live-stock in India is enormous. Tigers, panthers and wolves kill many thousands of cattle, goats and sheep every year ; while wild boars, monkeys and jackals take their toll of sugar-cane, ground-nut and other toothsome crops. Sugar-cane being a very valuable crop is sometimes fenced with thorny bushes or other material obtainable in or near the village. But these fences are in most cases only makeshifts. Wild boars can force their way through them. The more enterprising cultivators have a second string to their bow ; for when their sugar-cane is nearly ripe, they keep a watchman in the field all night. Seated on a raised platform in the middle of the field, this watchman gives wild yells whenever a boar is heard approaching, and if he descries the animal he hurls stones at it with his sling. But despite these measures much damage is done to this crop by these animals, some of which are not intimidated by the raucous shouts and harmless ammunition of the night-watchman. Rumour has it that the son of the soil is sometimes at fault in falling asleep and waking up only in the morning when the boars, after having eaten their fill, are about to return to their haunts.

About one-third of the total area of the Central Provinces, where I spent most of my service in India, was under jungle in which many thousands of wild boars were to be found. But there were many, too, which made their haunts in waste areas within the village boundaries. They were such a pest in the villages which they frequented that the Department of Agriculture found it necessary to organise Pig-killing Clubs. This was possible, as in most villages there are men of the *Dhimar* (fisherman) caste who

eke out a somewhat precarious existence by catching duck and other wildfowl, fish and wild boars.

They capture boars in pits, or by driving them into strong nets. The pits are dug near pools and lightly covered with brushwood, on the top of which a thin layer of earth is spread. When an unsuspecting boar steps on to the brushwood covering, it gives way, and he finds himself a prisoner at the bottom of the pit. In the morning, the *Dhimar* comes along and kills him with his long spear.

When nets are used, the boars are driven into them by the *Dhimars*, assisted by their dogs. Though the boar is a strong and savage animal, he is helpless when enmeshed in a strong net, and the dogs know it. There are some daring dogs that will attack a boar in the open ; but of them it may be truly said that the brave die young.

Our object in organising Pig-killing Clubs was to get the cultivators and *Dhimars* to co-operate in carrying out a campaign against this animal pest. In one of the first drives in which I took part, eight wild boars were driven out of a patch of long grass. The two which came out first ran headlong into nets. While they were being done to death by tooth and spear, five more emerged but escaped. After the two which had been killed had been removed from the nets, the dogs located a solitary old boar sitting under a bush on the far side of the same patch of rough grass. He charged the dogs, one of which he badly injured. When they returned to the attack, they barked furiously, but kept at what they considered a safe distance from him. From time to time he scattered them by his rushes, but always returned to the shelter of his bush. With his back to the wall, so to speak, he feared no foe.

With a shot-gun loaded with No. 4, I fired at him with a view to making him change his quarters. It did so effectively. Out he came with a rush, and ran into one of the nets. The dogs, which had followed him, now boldly attacked him as he struggled to free himself. Hot and breathless their masters soon arrived on the scene and finished him off with their spears. What with the shouting of the men and the barking of the dogs there

was a great pandemonium for a time ; but it was soon over. The boar disdained to utter sound, sob or sigh. When at bay he had fought over thirty dogs and won ; but gun and spear proved his undoing.

Many wild pig were thus killed by these Clubs organised by the Department of Agriculture ; but owing to religious prejudices it was not easy to maintain the enthusiasm of the cultivators for any length of time. Moreover, it soon became evident that owing to the very large area under forest, and the enormous number of wild pigs breeding therein, these Clubs could do but little to hold them in check. The Department therefore never lost sight of the possibility of being able to protect the more valuable crops by a fence of some kind. A barbed-wire fence had proved quite ineffective ; for the wild boar has a tough skin and a strong head, and when he gets his snout between two strands, he finds little trouble in getting his whole body through. As it had occurred to me that a meshed fence of strong wire was what was required, I wrote to a firm in Calcutta and suggested their getting a boar-proof fence of that kind manufactured either in India or at home. They replied to the effect that a firm in England, for which they were agents in India, had lately sent them a sample of meshed fencing wire of the kind I had in mind, and that it was being used at home for sheep mainly. They presumed that it would prove to be boar-proof too.

A bundle of this meshed wire fencing, supposed to be boar-proof, was duly sent to me at Nagpur. As I had undertaken to have it tested in a " practical manner," I instructed the Superintendent of one of our larger experimental farms to capture a wild boar by the " pit " method. Several were captured, but great difficulty was experienced in getting them out of the pit alive. After a time luck favoured us. A half-grown " grunter " was secured, and as an agricultural show was to be held on another experimental farm a few days later, we decided to have the fence erected and tested there, and to demonstrate its use in the event of its proving satisfactory. Such a demonstration would, we thought, impress the *ryot*. We

had in our mind's eye a very graphic picture of the boar trying his snout in one mesh after another in his efforts to escape, and the assembled cultivators greeting his futile efforts with loud cries of "*Sha-bash!—Sha-bash!*"

Erring on the side of caution, we had the fence put up within the square of the farm buildings, from which there was but one exit, barred by a strong iron gate. The fence was erected, the box containing the boar placed inside, and the gate leading to the farm-square closed. When everything was ready I gave orders to the man in charge of the box to raise the sliding lid. In a second the boar rushed out, got his head through one of the meshes, and to our dismay forced his whole body through. There was great excitement and much shouting as he careered round the closed yard, followed by yelling braves who had picked up such farm tools as came to their hands.

At this juncture a most unfortunate incident occurred. The wife of one of the farm overseers, whose house faced the square, on hearing the noise opened her door to see what was wrong. Being in purdah she could not show her face to the crowd inside the square, but curiosity overcoming discretion she tried to view the proceedings through a half-open door. The wild boar, unfortunately for us, failed to recognise the sanctity of even the purdah-lady's quarters. He bolted into the house, escaped by the back door which had been left open and disappeared into a field of tall millet. He may be in that neighbourhood yet for all I know.

He made good his escape, and the husband of the purdah-lady found his helpmeet in a state of collapse. The boar in his haste had collided with her. She had never seen a wild boar before, and to be suddenly confronted by one on her own door-step was indeed a trying experience.

Experiments which give negative results are often of great value. This one proved that the lower meshes of the fencing wire under trial were too large. At my request that defect was remedied by the manufacturer, and in course of time we were supplied with miles of real boar-proof fencing which we could recommend with confidence.

When in later years I had the pleasure of seeing it used in the villages, my mind always drifted back to that eventful afternoon when the boar, captured after much difficulty, demonstrated to us the defects of the original type recommended to us, and almost frightened a purdah-lady out of her wits.

Shortly after the introduction of this improved fence, it was reported to me that some damage had been done by wild animals to the sugar-cane crop on the Raipur Experimental Station. On inspecting the boar-proof fence which ran round the field, I found that it had been faultily erected, and that the animals had got under it at a spot where it crossed a hollow in the ground. This entrance to the field we stopped by filling it up with stones.

As the Superintendent of the Station thought that the damage had been done by jackals, and that they sheltered in the cane during the day, we arranged to eject them. About fifty coolies working on the station acted as beaters, while the Superintendent and I took up our positions at the far end of the field. He had a small .303 rifle, while I had a shot-gun.

The only animal which emerged was a large boar which, after repeated attempts to get through the fence, ran back into the sugar-cane. The fence proved thoroughly boar-proof. In one of his rushes at the fence the Superintendent fired at and wounded him. Now thoroughly infuriated, he again entered the cane, and bowled over three of the coolies. On the *dhoti* (loin-cloth) of one of the men knocked down there was blood which had evidently come from the boar, for the man himself had not been scratched ; but one of the other two had a small gash in his thigh.

As the boar was evidently wounded and dangerous, we decided to drive him out of the cane the following morning by means of dogs which could be obtained from neighbouring villages. Next morning the dogs, after searching the whole field, started barking at something lying almost up against the fence. It was the boar : he was dead. Before dying he had made one final effort to get out of the field, but there was no exit. On examining his tushes, which were

about four inches long, we realised how wise had been our decision to withdraw the beaters the previous evening.

Much damage was done to crops in parts of the Central Provinces and Berar by herds of wild cattle which lived in the jungle during the day and grazed on crops in the villages at night. In response to petitions from villagers whose crops had been ruined, Government ordered that an effort should be made by the Department of Agriculture to capture them. But as the cow and its offspring are sacred in the eyes of the orthodox Hindu, they had to be captured alive and, if possible, unhurt.

The method of capturing them which we adopted was a simple one. An area of about an acre in that part of the jungle frequented by these animals was fenced with eight strands of barbed wire. To prevent animals when inside from charging it at a great speed, a trench was dug along the fence. The entrance to this *kheddah* was by a pathway, the gateway of which could be closed by means of a rope manipulated by a man who lay concealed in a pit nearby.

To induce these wild herds to enter the *kheddah*, a trail of millet straw and cotton-seed was put down. The trail began at a spot some distance from the gate, and ended at the centre of the *kheddah*. Such a bait proved irresistible in the hot weather, when there were no crops in the villages and grazing areas were parched and bare. The hungry animals followed the trail, eating as they moved forward, and when they had entered the enclosure the watchman lying concealed in the pit closed the gate by pulling the rope attached to it.

The difficult and dangerous part of the operations began with the lassoing. The villagers were most helpful, for it was they who were to reap the benefit when once these herds were rounded up. They knew, too, that the method of capture was to be a humane one and would not offend their religious susceptibilities ; but the assistance they could render had its limits, unfortunately, owing to their lack of experience. There was no one of the American cow-boy type among them who could throw a lasso from

the back of a horse going at lightning speed. My staff and I devised a simpler method by which the lasso could be dropped, rather than thrown, over the head of an animal by using a long thin bamboo. The men who were to use this contraption entered the *kheddah* in a heavy covered village cart drawn by a pair of bullocks.

The first animals to be captured were four large bulls which, having been driven out of their herd by younger and more vigorous males, had got into the habit of grazing by themselves. Great combats between the males of gregarious animals are common in the jungle, and the less virile, on being driven from the herd, lead solitary lives.

The first bull lassoed was a magnificent animal but, like old bulls generally, his temper was bad. Irritated by the futile attempts of the men to drop the noose over his head by means of the long bamboo which they manipulated from inside the cart, he bellowed with rage and charged those of us who had entered the *kheddah* on foot. After tossing two of our number, he pursued the rest of us as we ran towards the ladder which I had taken the precaution to place up against the fence. I just escaped his horns by getting beyond his reach before he got to the foot of the ladder. He stood for a time pawing the ground and bellowing in furious anger. He had cleared the *kheddah* of every visible human being, but the carts with the men inside them were still there. In his rage he now attacked the cart bullocks, and again there was wild confusion for a minute or two.

On finding that the two injured men were bruised but not badly hurt, we determined to make a second attempt to capture this obstreperous animal. We succeeded after a time in getting the running noose over his head and in bringing him down. In the twinkling of an eye a dozen men were around him, and in less than ten minutes he was tied to a tree by a nose-string which served the same purpose as a nose-ring. The other three bulls captured later were tied up without incident. All four were after a time brought to the nearest Government experimental farm, where they were first tamed and afterwards trained as

draught animals. As such they did useful work for several years.

The fenced area in which the four bulls had been captured had proved too large. It had provided them with too much scope for charging their would-be captors. We therefore experimented with one covering an area of about one-tenth of an acre only. The methods employed of inducing animals to enter it and of closing the gate were the same as for the larger *kheddah*, but the lassoing was done from trees. This new form of enclosure proved very successful. About one hundred wild cattle were captured in them within a year, to the great satisfaction of the villagers.

In some parts of India monkeys are a formidable pest both in rural and urban areas. From time immemorial they have been regarded as sacred by pious Hindus, and no attempt is made to destroy them. In the jungle they are comparatively harmless. Their numbers there are kept within limits by their enemies, the panther and the crocodile. Crocodiles seize them when they come during the day to a pool or stream to quench their thirst.

In some towns in Northern India the monkey population has increased enormously. In these urban areas they live in comparative safety—far removed from their enemies—and are a great nuisance. They pilfer from the stands of shopkeepers, pillage fruit gardens and sometimes enter railway carriages, houses and hotels, and steal whatever attracts their attention. If they cannot find anything to eat they may carry off valuables instead.

They are bold thieves: if, on entering a room, they find some dainty, they will, if not disturbed, eat it before they leave. In a hotel in Simla they once entered my sitting-room by the window in the early morning, and finding a basket of mangoes on the table ate them there and then, leaving only the stones and skins. I have known them to carry off from a lady's dressing-table a pincushion with brooches sticking in it, while she looked on from her bed too astonished to take action. In some towns they are such a pest that efforts have been made from time to time to reduce their numbers by capturing and deporting them

by rail to distant jungly tracts. But monkeys reared in urban areas do not readily adapt themselves to life in a jungle. For them the slogan " back to the land ! " has no appeal. They are less alert than their confrères of the jungle and fall an easy prey to leopards. Those which survive are said to take up their abode, in course of time, in villages bordering on the jungle, where they once more make themselves a nuisance.

There is a story current in India of a Government officer who was driven almost to madness by the dozens of monkeys which frequented the trees round his bungalow. In the very early morning they scampered over his roof, quarrelling and barking. Sleep for him was impossible when they were astir. They pilfered fruit from his garden and even from his table when there were no servants about. In desperation he called in a Mohammedan *shikari*, explained his plight to him, and offered a substantial reward on condition that he would drive every monkey from his compound. The *shikari* undertook the task, though it was no easy one. To capture them all would take months or perhaps years, and the irate *sahib*, whose frame and temper had been sorely tried by the enervating heat of the plains of India, had used the words *jaldi karo* when giving him orders regarding their deportation. To shoot them would take but an hour or two, but if he were to adopt such drastic measures it was certain that he would be ostracised by the majority of the people of his village. Not wishing to offend their religious susceptibilities, he made other plans. Knowing that all monkeys fear and hate their arch-enemy the panther, he captured a full-grown monkey in a box-trap, dressed it in the skin of a panther and released it near the *sahib's* bungalow. It dashed towards the nearest tree, in which some of its friends were disporting themselves ; but before it reached the tree there was pandemonium in the branches overhead, and that pandemonium increased tenfold when the panther-monkey climbed the tree. Barking and cursing their hated enemy, they sprang to higher branches ; but that was of no avail. Their enemy followed them in hot haste to the very

topmost branch. Like flying squirrels they literally flew from tree to tree with their enemy hot on their heels. Each tree added its complement to the terror-stricken troop, which in the end sought safety in the nearest jungle, with the faked panther still in pursuit. The only stragglers left behind were the baby monkeys which, in the hurry-scurry, had lost their hold of their mothers' breasts and could not keep pace with them in flight.

In the jungle the monkey is a comparatively well-behaved animal, living as it does in harmony with all other animals except the carnivora and snakes. In the villages, on the other hand, it does much damage to both field and garden crops. It is particularly fond of crops of the pea family, and of such fruits as the banana and the mango. It is no uncommon sight to see a troop of twenty or thirty of them on the edge of a field nimbly picking the pods from the ripening crop. Their remarkable intelligence makes them resort to strange devices in order to get what they want. In some of the village tanks in the Central Provinces the *singhara* nut (water-nut) grows profusely. This edible three-cornered nut being much appreciated by the people as a food, is collected by men of the *Dhimar* caste who go out in their dug-outs to harvest the crop when ripe. Monkeys, too, are fond of this nut. I was told by an Indian gentleman that he had once seen a wise old monkey gathering them in the water and afterwards eating them at its ease on the bank. Before entering the tank it had plastered the top of its head with soft clay, into which it stuck the nuts one by one. Having placed the eatables on the table, so to speak, it swam to the shore and had its breakfast on *terra firma*.

My friend J. McGlashan, the inventor of the McGlashan furnace, found it necessary at one time to live for several months in a lonely little Government Rest House situated in my Circle in the Central Provinces. No vegetables could be obtained in the neighbourhood ; but the *chowkidar* (watchman) who was in charge of the Rest House undertook to raise a supply of English vegetables in the garden under his charge. The monkeys in the jungle a few miles distant

discovered, unfortunately, his plots of tasty vegetables, and at sunrise every morning a troop of thirty or forty, including mothers carrying babies at their breasts, invaded the garden. J. McGlashan was at that time clearing a forest area for cane cultivation, and was, in that connection, using explosives for uprooting the larger trees. Having determined to give the pilferers a fright, he laid his plans accordingly. The *chowkidar* was instructed to keep watch in the early morning and report to him as soon as he saw the invaders approaching. A detonator and a very small charge of dynamite was put down in the middle of the garden and my friend, concealed behind a window, waited to see the result. The monkeys trooped into the garden and began to pick and eat beans, peas and other tasty vegetables. Even the little ones which had been carried there on the breasts of fond mothers were busy. Suddenly there was a terrific explosion. The monkeys in terror leapt six feet into the air and scampered back hell-for-leather to the jungle. Babies followed their elders as fast as their little legs would carry them : maternal instincts had gone by the board. My friend had no intention of inflicting physical injury on these pilferers, and had regulated the charge accordingly. The monkeys, however, got a fright which deterred them from coming again to that garden.

CHAPTER VIII

WILD ANIMALS ON GOVERNMENT FARMS

TIGERS, panthers and bears sometimes visited our Government farms. When on one occasion I was inspecting one near Jubbulpore, in the north of the Province, I discovered that the Superintendent had been badly mauled by a mad bear and had been conveyed to the hospital in Jubbulpore. On visiting him I found that the bear had bitten through the muscles of his thigh and injured the bone. For three months he lay in hospital. As he never fully recovered from his injury, he was obliged to retire from Government service before reaching the age of superannuation. The same bear had cruelly mauled eight other people, six of whom I saw in hospital. Two had died before my visit.

The story of how all these people were so badly mutilated by one bear reads like a romance. The bear was mad, and had in the very early morning attacked a village woman who was sitting in a field near her house. Though mauled she got out of the bear's clutches and ran to the village to raise the alarm. As it was the beginning of the rains, when the atmosphere is close and stuffy, many of the villagers were sleeping on their little verandahs where the air was comparatively cool. The bear, having followed the woman into the village, bit and clawed several of the people whom it found still in their beds. It even pursued some into their houses and mauled them there. Ramcharanlal, our Superintendent, was called to the rescue, as he had a Government gun and knew how to use it. When he arrived on the scene, the bear was inside a house. With his finger on the trigger, he peeped in at the door; but before he could say "Jack Robinson" the bear had his whole thigh, just above the knee, between its jaws. He was knocked out completely; the bear did not give him time to fire.

There was weeping and wailing in the village, for the mad bear had left its mark on several of them. It had bitten through arms and legs and with its great claws torn skin and flesh off breasts and faces. When things were getting desperate an unarmed policeman happened to be passing on his way to Jubbulpore. His help was eagerly solicited, as all policemen know how to use firearms. On being given the Government gun he got on to the roof of a hut. He fired at the bear, which was now in the narrow street of the village, but its coat being very thick small shot did it little harm. Seeing the constable perched on the roof it scrambled up there too, and savagely seized him by the ankle. The constable kicked out before its teeth had had time to penetrate deeply into the flesh and sent it rolling down the roof. In the end this bear was finished off by armed policemen from Jubbulpore who, at the request of the villagers, had been sent out to deal with it.

Another member of our staff had a serious encounter with a panther on the same farm a few years later. A message was sent to him in Jubbulpore one morning by the Superintendent to the effect that there was a panther on the farm. J. R., being a keen sportsman, placed all the firearms he had in his side-car and rushed out on his motor bicycle to tackle this unwelcome visitor. The patch of grass in which it had taken cover having been pointed out to him, he loaded his gun with slug shot and walked towards it. But, instead of waiting to be driven out of the grass, the panther charged him before he reached its lair. On pulling the trigger of his gun, J. R. discovered to his horror that the safety-catch was on and it would not function. The coolie who was carrying his rifle bolted, leaving him to defend himself as best he could by means of his ineffective shot-gun. Grasping the stock with his left hand, and the end of the barrel with his right, he used the gun as a shield.

The panther, with its ears laid back, its lips puckered and its cruel fangs showing, was the living embodiment of hate and savagery as it sprang at his throat. Again and again it renewed the attack. It sometimes stood on its hind legs and struck at his face with its open claws, but he parried

each blow as best he could by holding out his gun at arm's length. The battle went on for some minutes—to J. R. it seemed hours. He was exhausted, but so was the panther, very fortunately. After a time it retreated a few paces, tired as a result of the tussle. At that moment its attention was drawn to a coolie who had climbed a tree nearby for safety. The sight of him seemed to add to the venom of its spleen. Springing at him it mauled him rather severely ; but by this time J. R. had got his revolver ready, and when it descended from the tree he wounded it in the jaw with a well-aimed shot. The wound but added to its fury, and again it charged him, and again he had to use his gun in protecting his body from tooth and claw. After this second struggle it retreated a short distance and lay down. The coolie who had bolted with the rifle now appeared on the scene : one more shot was fired and the wounded and aggressive animal was finished off.

J. R., on recovering from the excitement of this adventure, discovered to his surprise that one of his arms was bleeding. He had failed to parry one of the blows which the panther had struck at him and it had clawed his arm. Blood-poisoning set in, and for a time there was some danger of his losing the injured arm. By careful medical treatment, however, he fully recovered the use of it. The hard-earned skin of his grim foe is his only reward for his prowess.

Tigers sometimes entered our Government farms, but were seldom given an opportunity of carrying off any of our cattle, as these were always housed in their sheds at night. One or two were, however, carried off by tigers which took to roaming near our grazing grounds during the day. On one occasion my friend B. B., from Bombay, was spending Christmas with me on the Sindewahi Experimental Farm in Chanda district. Some weeks previously a tiger had killed two cows grazing on the outskirts of the farm jungle. The Superintendent on going out to inspect the cows found him gnawing the flesh of one of his victims. He raised his head and gave a wild roar, but did not leave his "kill." The Superintendent, being a wise man, took to his heels, and the tiger proceeded with his meal. This

happened in the afternoon, when normally tigers are asleep in the jungle ; but this tiger was not normal in his habits, as we were to discover later.

After killing the cows he had disappeared from that part of the jungle. In the hope that he would return again, sooner or later, we had a buffalo tied up for him as a bait. Towards the end of Christmas week he returned and killed the buffalo. We beat for him, but to our great disappointment he failed to come out.

On returning to the farm in the evening, we were surprised to learn that while we had been beating for this tiger in the jungle he had been roaming about in the open country and had mauled a bullock near the farm buildings. With shouts and stones the herdsman had driven him off before he had time to kill his bullock outright. Snarling at this brave but humble rustic, he had moved off leisurely in the direction of a village nearby.

As the maimed bullock had been removed to its shed, B. B. and I came to the conclusion that the tiger would return that night to eat what remained of the buffalo he had killed in the jungle the previous night. That, as far as we knew, was the only table spread for him. A *machan* was erected near the kill. With as little noise as possible B. B. climbed into it, and after wishing him the best of luck I wended my way back to the farm. Next morning B. B. turned up before breakfast. No luck ; he had had a disappointing night. The tiger had not visited the "kill," and the mosquitoes had been on the war-path all night.

The reason why the tiger had not returned to his "kill" was soon explained. A messenger, from the village towards which he had walked after attacking and injuring the bullock the previous afternoon, brought the news that he had killed a cow in his village on arriving there. He had been driven off his "kill" by the villagers, but had returned after nightfall and dined at his ease on fresh meat. Twice within twenty-four hours that tiger had thus given us the slip. The brazen-faced and daring manner in which he had stalked cattle in broad daylight and in the open country, while we had been beating for him in the jungle, was almost uncanny.

He was evidently both a bold and restless animal. We lost trace of him after that night, but a month or so later several cattle were killed during the day about twenty miles farther east in the same district. It was most probably the same bold King of the Jungle which had hoodwinked us near Sindewahi. He was cunning and daring and got off with it, as he roamed over a large area in search of his prey, and changed his lair almost every night.

The panther is even bolder than the tiger and more wily too. In a park on the Telankheri cattle-breeding farm near Nagpur we had a herd of spotted deer (*chital*). These singularly graceful animals were much admired by the many people who, in the cool of the evening, used to motor out to see them. But they attracted also a less welcome visitor which came not to admire but to devour. The unwelcome visitor was a male panther which came at night and apparently got into the park by jumping over the six-foot wire fence. This woven wire fence was of the type which had proved boar-proof, but was much higher than that used in fencing crops likely to be damaged by that animal pest. We tried to capture this slayer of our deer by using a large box trap with a goat tied inside. These so-called tiger traps are sometimes used for capturing tigers and panthers alive and unhurt when they are wanted for menageries or zoological gardens. We had no luck. The panther continued to make raids on our deer at night and to pass by the tiger trap without molesting the goat bleating inside. Attempts were also made to shoot him by moonlight, but he never ventured near the goat tied up as a bait when the light was sufficiently good. In desperation I decided to try to trap him in an otter trap. A small area was fenced outside the park with brushwood, leaving an entrance about a foot wide. A goat was tied inside the enclosure thus formed, and the trap, securely chained to a tree, was set in the entrance, and covered lightly with fine earth.

Early one morning the panther was found struggling in this trap. Attracted by the bleating of the goat, he had decided to make a meal of that animal rather than take the trouble to jump the fence and catch a deer. When caught

in the biting grip of the steel-springed trap he had raged with fury ; but though he had left the marks of his sharp fangs on the steel, this new and strange foe had refused to release its hold of his paw. The otter trap did its duty, and he was finally finished off by a bullet. The butchered deer were avenged. By violence he had lived, by violence met his death.

His skin now decorates the back of a sofa in our house in the Orkney Isles. It is a unique trophy, in so far as it is the skin of perhaps the only panther ever caught in an otter trap. This and other trophies which now adorn our home bring back memories of happy days, spent in hunting the denizens of India's jungles. When I look at them, I seem to hear the whisper of the East from far away.

On this same farm, and within three hundred yards of some of the bungalows in the Civil Station of Nagpur, a beat for a tiger took place in the hot weather of 1920. Six *machans* were put up on one side of a small patch of jungle, in which the tiger was reported to have been seen, and six Government officials turned out to slay him. This small patch of jungle adjoins both the Civil Station and the public gardens known as the Telankheri Gardens. It is skirted on two sides by the public road, where at every hour of the day this daring animal which had invaded the busy haunts of men could, if he so desired, have found a meal. Perhaps he was a man-eater. In any case he was a potential danger, more especially to unarmed pedestrians, and some Government officials, after a hurried consultation, therefore pronounced on him the sentence of death.

The arrangements for the beat were made by the Forest Officer, the Deputy Commissioner, and other prominent officials, whose zeal and high sense of duty in this case did credit to the best traditions of the Civil Services in India. The tiger had been seen in the early morning and the beat had to be carried out that afternoon at the latest. Beaters were hurriedly collected. Rumour has it that among those who turned up were several Government chaprassies arrayed in gorgeous uniforms. One of the officers who occupied a *machan* was S. W., a Deputy Director of Agriculture. He

had been in India for about a year only, but was given this seat of honour because he was the man who had actually seen this tiger. As the small patch of jungle comprised an area of only a few acres, the beat was a short one. The tiger did not emerge. Where, then, had it gone? S. W. on getting down from his *machan* was bombarded by questions regarding this elusive tiger. How far was he from it when he saw it? Was he sure it was not a dog or a calf? They omitted to ask him one crucial question, namely, whether it was alive or dead when he saw it.

At the back of some of their minds there was perhaps the suspicion that they had had their legs pulled. To that suspicion, if it did exist, no one gave expression; for it was most unlikely that a very junior Government officer would take the liberty of playing a practical joke on the "brass-hats" who had, from a sense of duty, taken their places in the *machans* despite the scorching heat. But what convinced them most of all of the reality of this tiger was the fact that S. W. himself had occupied one of the *machans*.

When I returned from leave in October of that year the Telankheri-tiger mystery was still exercising the minds of the people of Nagpur. It was in fact a common topic of conversation at dinner parties, and I was sometimes asked whether this Deputy Director in my Department could possibly have mistaken a domestic animal for a tiger. My answer was always in the negative, for I knew S. W. to be a most reliable young man.

Four years later when I was about to leave my old Province, the mystery was revealed to me. S. W. had seen an actual tiger on that eventful morn, but it was as dead as mutton. It had been shot by an Indian gentleman the previous day in a jungle many miles from Nagpur. Being desirous of having something in the way of pictorial evidence of his prowess, he had had the dead tiger sent out to this bit of jungle, and had employed a photographer to take a photograph of it with the bamboos as a background. S. W. having never seen a dead tiger before, examined it very closely while it was being placed in position for the camera. On returning on his motor bicycle to the bungalow which he

was sharing with another officer, he found there a young officer in the Indian Civil Service who was in the act of mounting his motor bicycle. " I have seen a tiger in the jungle at Telankheri," said S. W. " You have, by George ! then we must beat him out," added the keen young I.C.S. man who hailed from Ireland—that land of sportsmen. Without waiting for any further information regarding this tiger, he went off like lightning to report to the Deputy Commissioner that " a tiger had been seen in the jungle at Telankheri." The Deputy Commissioner set the ball rolling, by phoning up the Forest Officer who was one of the most experienced, if not the most experienced, of big-game hunters in the Central Provinces. The beat was arranged and carried through without a hitch, for meticulous attention had been given to every detail. S. W. was much embarrassed when invited to occupy a *machan*.

It is now nearly sixteen years since that famous beat took place, and the Telankheri-tiger mystery is no doubt still discussed at times at dinner parties in the capital of the Central Provinces. In revealing the truth, I have refrained from giving S. W.'s present address, in case his colleagues in that beat may even yet feel inclined to throw a brick at him for allowing them to beat for a dead tiger.

CHAPTER IX

HUNTING BIG GAME

In the Central Provinces an Agricultural Officer had to carry on unending warfare against insect and fungoid pests. He had often to tackle, too, those denizens of the jungle which took their toll of crops and cattle and at times were a danger to man himself. When we went on tour the patient, plodding tiller of the soil came to us for advice and help. He wanted supplies of the improved seeds, implements and manures. If he was a man of means and had a large herd of cattle, he ordered perhaps a stud bull to be supplied from the particular Government cattle-breeding farm where the breed was similar to his own.

The Indian cultivator, far from being a grumbler, is one of the most long-suffering of his kind in the world. No one who understands the difficulties which he has to face, and the losses he sustains from droughts, animal diseases and insect pests, can help sympathising with him. But the misfortune which he dreads perhaps more than any is the loss of his draught bullocks, for in India the ox is the motive power on the farm. The zeal which he has shown in using sera and vaccines to give his cattle immunity against bovine diseases shows how anxious he is to preserve their lives. But inoculation with serum or vaccination with a vaccine gives no immunity against attack by tigers. They kill every year many thousands of village cattle, and the owners are generally so poor that they can replace them only by borrowing money from the local money-lender at an exorbitant rate of interest.

Some tigers become persistent cattle-lifters. They take up their abode near a village and become so bold that they roam about during the day in search of cattle grazing in the jungle. A tiger rarely succeeds in killing more than one of

a herd, for when he springs on one animal the others run like hares. When stalking his prey he seeks cover wherever it can be found. If there is long grass near the animal he is stalking, he creeps through it until he gets within a short distance of his prey. Then, after crouching for a second or two, he springs on to its shoulders and brings it down by his weight and momentum. With his forelegs encircling its neck he throws it on its back as it falls. Before eating any of the flesh, he pierces the jugular vein with his fangs and drinks the warm blood. He then proceeds to eat the flesh of the hindquarters of his victim, starting with the buttocks. Before retiring to his lair in the jungle he drinks at the nearest pool. Here he sleeps all day, if not disturbed; but when darkness sets in he again begins to roam in search of food, and the chances are that he will finish what is left of the "kill" of the previous night.

The professional hunters of big game in India, locally known as *shikaries*, are generally Gonds or Bhils, large numbers of whom are still to be found living near the outskirts of the jungle. These aboriginal races have for ages studied the habits of the tiger and other wild animals. A good *shikari* can, after locating the remains of a "kill," tell fairly accurately where the tiger is lying up, and the direction in which he will walk or run when driven from his lair by the beaters. Knowing the route he is likely to take, the *shikari* arranges his *machans* (platforms erected in trees) accordingly. The tiger is a timid animal. If he can avoid it he never exposes himself by coming out into the open. If there is a *nullah* (dry bed of a stream) along his line of retreat he walks through it. In the *nullah* he is screened by the trees growing on its banks.

Before a beat begins the *shikari* has the *machans* put up at a spot near the route likely to be taken by the tiger. The beaters are then arranged in a line beyond the place where he is supposed to have his lair. To prevent him from escaping by breaking through on the right or the left, there are two lines of men known as "stops," who sit in trees and make a slight noise by tapping when he comes near them. He thus moves between two lines of men sitting in trees and

in front of another line of men known as the beaters, who drive him in front of them. Some big-game hunters believe in the beaters making as much noise as possible, by using tom-toms, rapping the trees with their axes and shouting to their hearts' content. A noisy beat, however, sometimes enrages and frightens the tiger to such an extent that he gallops off to the right or left regardless of the "stops," and thus makes his escape before coming within reach of the *machans*. Other hunters prefer a quiet beat after the tiger has been driven from his lair. He is more easily guided towards the *machans*, they say, when he is not excited. In the interests of the beaters, however, it is desirable that they should make enough noise in the beginning of the beat to drive the tiger from his lair. If this is not done the beaters run the risk of walking almost on him while he is still asleep, in which case he may maul one or more of them.

When touring in the Native States and Zamindaries, I was generally accompanied by one of my Indian assistants, namely, Rai Bahadur Tundilal Powar. One of our first tours together was in a very jungly tract about a hundred miles from the nearest railway line. On entering a village where we were to spend the night in tents, we were told that a tiger had killed a cow that afternoon but had been driven off his "kill" by the herdsman. The local *shikari* was of opinion that the tiger would return that night to dine on the dead cow. Immediately after tea I rode out to the "kill" which was lying in an open space in the jungle where the cow, when attacked, had been grazing with the rest of the herd. Had the tiger been left undisturbed he would no doubt have dragged her to a more secluded spot and made a meal of her there and then; but the herdsman had prevented this by raising a great hullabaloo, with the result that the tiger, being a timid animal, had retreated into the dense jungle. The herdsman had run to the village to inform the local *shikari*, Manchu, of the loss of his cow, and he in turn brought us the news as soon as we reached our camp.

Manchu fixed up a *machan* in the fork of the only tree which was within a suitable distance of the dead cow. The fork was only about ten feet from the ground, but Manchu

thought that even at that height I should be quite safe. If the tiger came back to the "kill" it would be with the object, he said, of eating the cow—not the *sahib*; so he left it at that.

Any fears which I may have entertained with regard to my safety were soon dispelled by the glamour of my surroundings. For miles nothing but jungle could be seen, and when the sun set and the moon rose, the various denizens of the jungle began to move around me. In the benumbing stillness of the night I could hear a tiger's low cough as he walked along a hill a mile distant. I could hear also the cough of a panther, a throaty cough like the sound of a saw cutting wood. There were deer too, which barked as a warning to their mates that their enemies were afoot. Mongooses on emerging from their holes were attracted to the "kill" by the smell which it emitted, and fought and squeaked as they helped themselves to appetising bits of the carcase. Peacocks and peahens after "meeawing" for a time flew to tree-tops in which they would find safety from enemies which roam by night. The whole jungle was astir. Some of the denizens thereof had rested during the day and were now on the move again in search of food. Others were seeking their night-beds.

From five o'clock in the afternoon till two in the morning I sat as in a trance. I was a hundred miles from a railway and people of my own race, but I was in close touch with Nature and her innumerable forms of plant and animal life. That trance gave place to a thrill when the "aaouh" of a tiger was heard a quarter of a mile away. He was approaching and had probably met a mate whom he was greeting with this affectionate "aaouh." But the greatest thrill of all was when I heard him walking towards me: the dried leaves rustled at his every step. Nearer and nearer he came to the "kill"; but though the moon was full I could not see him, as the trees were throwing their dark shadows over his path. When I pointed my rifle in the direction from which he was coming there was a dead silence for a second or two. He had heard me, or seen me in my *machan*, and was following my movements very closely, though I could not descry him. With a wild roar which could have been

heard for miles, he galloped away, leaving me in a state of intense but pleasant excitement. Before daybreak the moon sank below the horizon and the jungle was shrouded in darkness. I was now to have another and still stronger tremor of excitement, for a tiger walked under the tree in which I was sitting. Though he was within a few feet of me I could not see his form distinctly, nor could I see the sights of my rifle. I waited patiently, hoping to get a shot at him as soon as the sun rose. He would still be gnawing the flesh of the "kill," I thought, and I would shoot him in the head or the heart. But it was not to be. He, too, took fright, and with an angry "whoof! whoof!" disappeared into the darkness of the jungle.

After getting back to camp about seven o'clock, Rai Bahadur Tundilal Powar and I arranged with our *shikari* to have a beat in the hill near the "kill." After breakfast we started off for the *machans* which had already been put up. Mine was on a *nullah*, while the Rai Bahadur's was about a hundred yards away on my right. Nearly 200 beaters had been collected, and soon after we got settled down in our trees the beat began about a mile distant. We could distinctly hear the shouting of the men as they made their way through the jungle, armed with axes with which they added to the noise by thumping the tree-trunks at intervals. The noise suddenly ceased; the *shikari* who was in charge of the beaters was apparently satisfied that the tiger was on the move and that there was no further risk of coming suddenly on him while still asleep in his lair.

On our perches, twenty feet or so high, we were in a state of suppressed excitement—waiting events. It was very hot, for a scorching sun shone overhead in an azure and cloudless sky, and there was not a breath of wind. Were the tigers which I had heard but not seen the previous night in the beat, or had they cleared off? The omens were certainly good; for the barking of monkeys as they sprang from tree to tree indicated that they had seen their dreaded enemy and were warning their mates in neighbouring trees. But a still more hopeful sign was the faint tap, tap, of the "stops." For some minutes silence reigned supreme. It was broken

by the sound of an animal walking towards me. The rustling of the dry leaves could be distinctly heard. It was now quite near me, and judging from the slow pace at which it was approaching I knew it was a tiger. About seventy yards from me he came into view. He was a magnificent full-grown animal, and seemed quite unperturbed by the beaters who were coming on behind. I aimed at his head, and luckily got him right between the eyes. A second shot was unnecessary ; he rolled over like a great cat sixty yards from my tree. The loud report of my high velocity rifle, as it resounded through the jungle, called forth a warm but noisy response from the beaters who were still nearly a quarter of a mile distant. They shouted with delight ; for had not one of the *sahibs* fired at, and most probably killed a tiger. About the same time the angry " whoof ! whoof ! " of another tiger was heard. It proved to be a tigress ; and the report of my rifle in front, and the shouting of the beaters behind, had excited and angered her. Had she run back she would probably have mauled one or more of the beaters ; but, as luck would have it, she ran towards the tree in which the Rai Bahadur was sitting. As she galloped past him he fired and bowled her over with a shot in the heart.

The tiger and tigress were taken in carts to our camping ground. The news soon spread abroad that the *sahibs* had shot two fine tigers, and on our way to camp we found the road outside each village and hamlet through which we had to pass, barred by young women and girls of the Gond race. These children of the jungle had evidently no respect for the purdah system of the Hindus. By stretching a thick rope made of rice straw across our path they effectively brought our horses to a halt, and demanded a reward. This is a custom which had long been practised by the women living in these parts. It was a custom which in the circumstances we were pleased to honour. Several rupees changed hands that afternoon on our ride back to camp, for we were in a generous mood.

When the tigers were being skinned, nearly a hundred men and women appeared on the scene to ask for further favours ; but on this occasion their demands were modest

enough. They did not want the flesh. Certain Gonds had, they said, eaten the flesh of a tiger in a neighbouring village some years previously, and they had all gone mad ! All they asked for were parts of the entrails. The fat, liver and heart were in great demand for medicinal purposes or as philtres : even the male organs of the tiger were carried away. My own low-caste servant, Yito, who was touring with me, obtained as his share a very substantial lump of fat which he intended to sell as a cure for rheumatism on his return to Nagpur. On making inquiries two days later as to the cause of the bread served up to me at meals having a peculiarly disagreeable flavour, I discovered that Yito had placed his lump of tiger's fat in my tiffan basket. It was wrapped in paper it is true ; but the smell nevertheless was abominable and had contaminated my scanty supply of bread.

Soon after reaching our next camping ground in a very dense part of the jungle where wild buffaloes, tigers and other kinds of wild game were plentiful, Manchu reported that a tiger had, after killing a village buffalo about a mile from our camp, dragged it into a *nullah*. Within an hour I was perched in a *machan*. A tiger appeared about an hour before sunset, and walked slowly towards the " kill." When about ten yards from it he stopped and, with his head well up, surveyed it carefully. At that opportune moment I fired, and he fell shot through the heart. Within six days we had accounted for three tigers and had fired the same number of shots.

But good fortune was not always ours. On one occasion when beating for a tiger, I knocked him down with a shot in the ribs when he was walking down the side of a *nullah*. His roar as he fell, or deep cough rather, indicated that he was badly wounded ; but in an instant he was up again and well behind my tree before I let off the second barrel. It was for me an awkward shot, as I had to turn round in my *machan* and fire when he was galloping away from me. He was badly wounded and was bleeding profusely. We tracked him for some distance, and came to a spot where he had lain down for a time. Here we found a pool of

frothy-looking blood which indicated that the bullet had passed through his lungs, or at least that was the opinion of the Gond tracker who accompanied us. A little farther on there was a patch of elephant grass, where he was supposed to be lying.

The *shikari*, after consulting some of his confrères who had accompanied us, suggested that a number of she-buffaloes should be collected and that we should use them as a screen by driving them in front of us through the grass. To this proposal the Rai Bahadur and I agreed, for in the event of our following up this tiger, which was now infuriated by the pain of his wound, the chances were that if we did not have buffaloes to locate him, he would lie concealed in the long grass until we were within a few yards of him. He would then charge and knock out some of us before a shot could be fired. The advantages were all in his favour. Had we followed him up there and then, the *shikari* and other Gonds who were with us would gladly have shared the danger, for though armed with bows and arrows only, they were brave men. As trackers they were superb. The way in which they stood on one leg and listened intently when, on another occasion we had stalked sambhar, fascinated me. They could hear animals moving in front of us long before I could, and point them out to me long before I could descry them clearly. Their only article of dress was a scanty loin-cloth ; they had no covering for their heads or feet. Reared in the wilds, they were true emblems of the jungle. Though quite illiterate they were wonderfully observant, and had by long experience acquired much knowledge regarding the habits of the animals they hunted.

The hamlets in which buffaloes were procurable were several miles apart. It was not therefore possible to collect them that afternoon, as the day was already far spent. But early next morning we were all ready for the fray. About a dozen she-buffaloes with calves had been brought to our camp during the night. Driving them in front of us, we followed the path taken by the tiger after entering the long grass. Our nerves were on edge when at one spot we found a pool of blood on the flattened grass. Here he had lain for

some time, but urged on by an ever-increasing thirst due to the loss of blood he had moved on again towards a stream which was about half a mile distant. We had no difficulty in tracking him right up to this stream where, after quenching his thirst, he had lain for a time in the water before entering the jungle beyond. Unfortunately for us, there was no longer a blood-trail to show in what direction he had gone. The cool water had caused the blood to congeal on his wound and the trackers had to give up in despair. He had eluded us only to die, no doubt, in some secluded spot far from the haunts of men.

The vitality of a tiger is almost uncanny. This one, though he had received a bullet in the lungs from my 500 "express" and had lost gallons of blood, we followed for nearly two miles without coming up with him. Even when shot through the heart a tiger will sometimes run a considerable distance before he falls. I once wounded a tigress with an expanding bullet which smashed one of her ribs and pierced her heart. She ran for fully one hundred yards, nevertheless, before she dropped. Though badly wounded they are capable of doing much damage to the pursuers. When I was camping on one occasion with some friends in Chanda district in the Central Provinces, three officers who had a camp nearby had a trying experience with a tiger after they had put six bullets into him. After wounding him in a beat, he ran back and mauled one of the beaters. They followed him up and found him lying under a clump of bamboos. Kneeling down and taking deliberate aim, they all three fired. With three more bullets in him he charged. Again they fired, but did not stop him. He mauled two of them very badly. The third man, who had managed to reload his rifle, finished him off with a shot in a vital spot.

Our next camping ground was in primeval forest, in which wild buffalo, sambhar and *chital* were plentiful. The unbroken stretches of bamboos, intermingled with huge trees, creepers and thorny bushes on the hillsides, the perennial stream in the valley and the long grass on the banks of the river, provided them with all they required in the way of shade, food and water. There were tigers, too,

but owing to the density of the jungle beating was out of the question. Our *shikari*, ever anxious to add to our bag, tied up a young buffalo in the sandy bed of the river, three miles from our camp. Next morning he brought us the news that a tiger had passed within a few feet of this bait but had not killed. He had, after carefully examining the footprints, come to the conclusion that it was a large tiger. Why he had not killed and eaten part of the buffalo was a mystery which even this expert big-game hunter could not solve. Next morning the tiger had solved it for him, for he had killed and eaten part of the buffalo and had then walked through a sandy *nullah* into the nearest hill. Driven by curiosity, the *shikari* tracked him for a short distance up the *nullah*. At a spot about seventy yards from what was left of the carcase of the buffalo he found the remains of what had been a very fine sambhar. The tiger had killed and eaten most of it on the night on which he had walked past the buffalo without molesting it : he had dined well, and had no desire to kill for the lust of killing. On returning the following night he had killed and made a meal of the buffalo because he was again hungry. I sat over this buffalo " kill " but he did not return to it. Where game was plentiful, stale meat did not attract him. I got the head of the sambhar, however, and it was the best trophy of its kind I ever got in India.

Some big-game hunters have wonderful luck in the jungles of India. I have met others who, after spending weeks of hard labour in the wilds, had had no luck at all. I remember meeting an Army officer who was spending a month's leave in the jungles of the Central Provinces. He had come nearly a thousand miles with the hope of getting a tiger, and was living in a small hut made of grass, leaves and twigs. This make-shift dwelling he had constructed with his own hands. A more primitive one it would be hard to imagine ; but it served its purpose to some extent in providing him with some shade during the heat of the day. I admired his keenness as a sportsman, but could not help being sorry for him, for having contracted malaria in the jungle he was a sick man, and was about to return

to his station in Northern India without having got a single trophy.

On one occasion I was the guest of the Maharajah of a certain State in Central India which is noted for the variety of its big game. The late Lord Dudley, who was also staying at the Palace at that time, went out with the Maharajah one morning to try to get a panther which had, after killing a goat, dragged it into a cave. On reaching this cave they instructed their *shikari* to drive the panther out by throwing in stones. They got the surprise of their lives when a large and angry tiger came out with a "whoof!" and galloped off towards the nearest hill.

The *shikari*, on being reproved for mistaking the pug marks of a tiger for those of a panther, went to the mouth of the cave and, after peering into it, reported that he saw a dead panther inside. The tiger had entered the cave and attacked the panther with tooth and claw when it was in the act of eating the goat. After killing the panther he had finished the latter's meal.

After making arrangements for the collection of beaters and the erection of *machans* they started off for the hill, and evidently followed more or less the route taken by the tiger; for when near the hill they found a large sambhar which he had just killed.

In the beat which started an hour or so later, the tiger appeared and was shot by his Lordship. They had now three fine trophies though they had fired only one shot. Before the day ended they had yet another miraculous stroke of luck, for, when motoring home at a rapid pace in the dim twilight, they ran over a crocodile which had come out of the adjoining lake. The chauffeur on seeing the dark object on the road in front of him had applied his brakes, but it was too late. The heavy car, in passing over it, had broken its back. I need hardly say that the Maharajah and his guest were in high spirits when they returned to the Palace that evening. They had a full-grown panther, a large tiger, a sambhar and a crocodile, and had fired only one shot.

Personally, I never had a stroke of luck of that kind,

though I once shot a bear which I had not seen when I fired. It happened thus. I fired at a large she-bear which was approaching me through long grass. She went off at a good pace, and my friend and I took for granted that I had missed her. A few minutes later, on hearing plaintive child-like cries, we assumed that she was wounded. We followed her up, but had not gone more than a hundred yards when we came on a small bear, little bigger than a large cat. It was not badly wounded; my bullet had little more than grazed its rump. Though small it offered battle, and we had some difficulty in capturing it alive. I brought it back to Nagpur in my car, and after having its wound treated by a veterinary surgeon presented it to the Government Menagerie where, in course of time, it developed into a fine specimen of its kind. When I fired, it had apparently been clinging to its mother's back as she waded through the tall grass in front of the beaters. The wound, though slight, had made it lose its hold before the mother had run far. Till then I did not realise that the mother bear carries her young on her back when trying to escape from her pursuers.

It sometimes happens that when beating for a tiger one gets other animals as well. When out in a jungle in the north-east of the Central Provinces in company with Lord Linlithgow and Sir Henry Lawrence, we had a beat for a tiger which had killed and eaten a buffalo.

Soon after the beat started the tiger was on the move. His angry roar as he left his lair we heard distinctly, though he was more than half a mile from the *machans*. As a result of judicious tapping by the "stop," assisted to some extent by myself, he walked straight towards his Lordship's *machan* and was bowled over with one shot. But as tigers when knocked over often jump up again and make off, his Lordship kept him covered with his rifle for a minute or two. While doing so a bear ran past his *machan*. His Lordship had two difficult shots at it when it was behind him, but missed it. A few minutes later a panther appeared, which he wounded badly with the first shot and killed outright with a second. I do not

know what the feelings of the noble Marquis were after firing five shots at three different species in little more than the same number of minutes. I myself felt inclined to ask the *shikari* and beaters whether they had, by any chance, broken open the door of Noah's Ark.

STARTING OFF FOR THE MORNING SHOOT

THE END OF A CATTLE-LIFTER

CHAPTER X

THE FEUDATORY STATES OF CHHATTISGARH

To the east of the Central Provinces lie the Feudatory States of Chhattisgarh. The improvements in agriculture being introduced in the adjoining districts of the Central Provinces aroused the interest of some of the Rajahs of these States. They were specially interested in a new and superior cotton known as *Buri*, which suffered less than the indigenous varieties from a heavy rainfall. They were interested, too, in the improved agricultural implements, the use of which my Department had popularised in the Central Provinces.

My friend, H. F., who was manager of a cotton mill in the Native State of Rajnandgaon, generally accompanied me on my tours in this part of our Province. He, too, was interested in the spread of the finer cottons in the States near his mill. On one occasion we went to a village belonging to the Rajah to see an English plough, manufactured by Ransome, Sims and Jefferies. We were amused to find that the enterprising State official, on whose advice the plough had been purchased, had a huge elephant yoked to it. The village bullocks were, he thought, too small and weak to draw such a heavy plough, so a lordly elephant was being used instead. Judging from the pace at which he walked and the contemptuous manner in which he glanced at the plough from time to time, this great giant evidently regarded it as a toy and a bit of a joke.

H. F. was very popular with the Rajahs. His manly appearance—he was a 6-ft. 3-incher—and his *flair* for sport appealed to them. They regarded him as a personal friend, and consulted him about the education of their sons, the purchase of motor cars and horses, and other matters on which his advice was much appreciated.

He was on very friendly terms, too, with some of the

leading Zamindars, *i.e.* large landowners. The Zamindar of Khujjee, a wealthy Mohammedan, who had, as a young man, been at Oxford University, was a special friend of his. Khujjee, as we called him, was a keen sportsman and a good shot. I once saw him bowl over a running black-buck at a distance of 100 yards. In politics he took but little interest. The reason perhaps was that he had a fine sense of humour, and did not take life too seriously. He devoted himself to a more profitable study in his leisure time, as the following tale will demonstrate.

When H. F. visited him one morning he found him seated at a table on his verandah with thirty-six bottles of medicine in front of him. Round the table stood about a dozen of his co-religionists, suffering from ailments, real or imaginary. He, with the air of a born physician, was feeling pulses and examining tongues, and his patients with wry faces were swallowing his potions. The medicines had been obtained from a German Mission in India ; the Germans are a methodical race. The manufacturer had, in this case, simplified the technique of dispensing by numbering the medicines and giving, in booklet form, the different ailments for which they should be used.

H. F., who like his friend enjoyed a joke, button-holed each patient as soon as he had taken his medicine, and inquired as to how long he had been coming to this would-be doctor for treatment. On their replying, he solemnly warned them that the medicine would have to be taken over a long period of years. The periods he suggested varied for each individual ; but they ranged from ten years to a century !

This advice was so discouraging that Khujjee's patients left him, and H. F. chuckled over his jest. But Khujjee, who was by no means at the end of his resources, did not acknowledge defeat. Calling his patients together, he told them that the *Angrezi* (English) *sahib* who had spoken lightly of his medicines was himself a patient and a *pagal* (madman). This *pagal* was getting medicine from bottle No. 13, he said, and his mental condition had greatly improved since he started to take it.

When H. F. next visited Khujjee, he found him in a jubilant mood. All his old patients had returned. By this clever story about the *Angrezi pagal* he had regained their confidence. He laughs best who laughs last.

H. F.'s bungalow was like a small menagerie. By kind treatment he succeeded in domesticating monkeys, mongooses, and other wild species. His pet monkey was an expert at catching crows. Indian crows are the most unpopular of the feathered tribe. They are the jackals of the air. These "Peeping-Toms" skulk on every tree, and nothing escapes them. Their appearance is unpleasant, their voices harsh, their numbers monstrous, their habits disgusting, and their value infinitesimal, says one writer. Perched on a tree near the cook-house, they do not hesitate to carry off any meat, fish or eggs, which may be left unguarded by a careless cook.

H. F.'s pet monkey waged war against these noisy thievish birds. When a crow settled on the ledge of his cage which was fixed to the top of a pole, he pounced on it, and proceeded to pluck it. Having deprived it of most of its feathers, he placed his hind feet on its body, took hold of the head with his teeth, and with a jerk beheaded it.

His bear was not so useful, but it provided its master with companionship of a kind. The mongoose kept his compound free of snakes and scorpions. When I was dining with him one night, his Persian cat jumped on to our table, and was given bits of meat from her master's plate. The mongoose soon followed the cat. Instead of waiting to be served, it tried to pick meat off our plates, but a gentle tap on the nose with a spoon when it came too near sufficed to keep it at bay. It was very jealous of the well-behaved cat, which was sitting quietly near her master's plate and eating with decorum what was handed on to her. The fun began when the mongoose, losing patience, rushed at a tit-bit intended for the cat. There was soon a battle-royal on the table-cloth, and much hissing and squeaking. Pussy won the day, and Rikki-tikki, with eyes red with anger, retired to the end of the table to put its fur in order. It was feeling hurt and neglected, I daresay.

The dog, another pet, viewed these proceedings from the floor with a keen and hungry interest. Waiting till the long furry tail of the mongoose showed itself over the table, he seized it in his teeth, and then began a tug-of-war. The mongoose squeaked, and, with its claws stuck deep into the table-cloth, held on gallantly. But the dog was winning. The table-cloth and all thereon was moving towards him.

My tolerant friend, who had been giggling all the time at the antics of his pets, interfered at last. Fun was fun, but he did not wish to have his best china broken in the fray. The dog was made to let go the tail. The smell of the pudding, which was the next course served, was less attractive for cat and mongoose. The squabbling ceased, and Rikki-tikki, ever restless, scuttled off to the cook-house, the source from which all mercies flowed. He was full of curiosity and nearly always on the move. In the cook-house there would, he knew, be no pugnacious dog or cat to thwart and tease him. The cat remained on the table, but we finished our dinner without further incident.

In my travels I have dined with many friends and strangers, but have never had as fellow-guests such amusing creatures as H. F.'s cat and mongoose. Living all alone in this Native State, he made much of his pets. They shared with him his loneliness ; they shared even his table.

We did several tours together ; to describe them all would fill a book. Our last tour was to a Zamindari in Chhattisgarh, where I was to inspect a cattle-breeding farm which the Zamindar had, with the assistance of my Department, established. This Zamindari comprised an area of some hundreds of thousands of acres, most of which was under jungle. The villages were small, and cut off from each other by belts of jungle. The Zamindari was a backward one ; there were no roads in it worthy of the name.

We started off from Rajnandgaon. After motoring over twenty miles, my motor suddenly broke down. The jolting on a most execrable road had damaged the magneto. A cyclist opportunely passing by took a message back to Rajnandgaon for H. F.'s car to be sent out. Leaving

servants and luggage to follow, we started off in the twilight to walk to a small *dâk* bungalow nine miles ahead of us. The road ran through dense jungle and was very dark. Fortunately we encountered no man-eating tigers and trod on no poisonous snake.

Tired and footsore we arrived at the *dâk* bungalow before midnight ready for sleep. Beds there were, but no bedding, ours having been left to follow with the servants. We lay down as we were and fell fast asleep. Next morning we woke up to find that our servants had arrived, complete with luggage in H. F.'s motor according to programme. We were ready for the breakfast they were preparing, having gone to bed supperless.

After breakfast we started off for the Zamindari, which was only ten miles distant. The road so-called, was the worst I had ever been on in a motor. In some places there were deep ruts made by the wheels of the bullock-carts which had passed over it in the rains. In other places there were formidable boulders and outcrops of rock. Strange to say, we reached our destination in our Ford without an accident.

The grazing area of the cattle-breeding farm I had come to inspect was more or less surrounded by jungle. Eight of the herd had, during the year, been killed by tigers and panthers. A tigress with two cubs which were nearly full-grown was responsible for some of the deaths, and they were, we were told, still lurking in the neighbourhood of the farm.

In the afternoon a beat was arranged with a view to getting rid of some of these cattle-lifters. When we were getting our rifles ready before starting off for the shoot, H. F. discovered that his servant had forgotten to take the fore-end of the stock of his weapon. As he did not consider it safe to use his rifle without it, he borrowed the Zamindar's primitive-looking single-barrelled musket.

Before the beat began we drew lots for the *machans*. H. F. was in luck ; he drew the *machan* overlooking a *nullah*. That the tiger if he was in the beat would walk through that *nullah*, was the opinion of the *shikari*, and that *shikari*

was right. The beat began and the " whoof! whoof!" of a tiger was soon heard on the hillside. In ten minutes or less, H. F. fired at one when it was passing his *machan*. When in the act of reloading, two more tigers ran past him ; but the spent cartridge had got stuck in the breech of his old musket and he was not ready for them.

The beat ended late in the afternoon. H. F. had wounded the tiger he had fired at, but how badly we did not know. We decided to use buffaloes the following morning in following it up, and to spend the night in a tent which had been pitched for us. We could not return in the dark to the *dâk* bungalow, where we had left our servants and luggage, owing to the state of the road.

After eating some oranges, a gift from the Zamindar, we went to sleep on the floor of the tent. Though it was very cold, I refused to share with my friend a blanket which he had borrowed from the mahout in charge of the Zamindar's elephant. His experience proved that I was right. His sleep was much disturbed by unpleasant companions : circumstances sometimes " acquaint a man with strange bedfellows."

Early next morning H. F.'s chauffeur, a dirty-looking fellow, whose hands were coated with motor oil and dust, produced some eggs—a gift from the Zamindar. When I heard his master instructing him to cook them for us, I took for granted that we would breakfast on hard-boiled eggs. Instead of boiling them, he poached them and served them up in a dish which had taken its colour from the pigment on his hands. Hungry though I was, I refused the poached eggs. My friend crowed over my squeamishness, and ate the lot.

To follow up a wounded tiger is a most exciting experience. He sometimes lies in wait for his pursuers, and with an enervating roar charges them when they come near him. If he is not killed outright when charging, the chances are that he will kill or seriously maul one or more of them. We took the precaution to use she-buffaloes with calves at heel as a screen. With a line of over a dozen of these animals in front of us we followed the blood trail.

We had not proceeded very far before they began to bellow and to form up in line with their calves behind them. Their bellowing in unison was so like the roar of a tiger that we mistook it for that, and on the spur of the moment raised our rifles.

The tiger was dead, but the buffaloes continued for some time to bellow with rage. That their dreaded enemy was no longer able to do them or their offspring any harm did not appease their wrath.

When touring in the Native States of this part of the Province, H. F. and I had amusing and somewhat disconcerting experiences sometimes. On arriving one evening at Kawardha after a long and tiring ride in the hot sun, we found the *dewan* waiting at the State Rest House to welcome us, for we were to be the guests of the Rajah. While we were having a friendly chat with the *dewan* on the verandah, a *mali* (gardener) brought us a tray laden with luscious fruit from the palace garden, and a note from the Rajah to say that he would call on us in the evening. The *dewan* gave the *mali* orders to transfer the fruit to another receptacle and take the tray back to the palace. On entering the dining-room later we found the garden produce in a receptacle which is not ordinarily mentioned in polite society. Having failed to find a sufficiently large dish in the dining-room, this palace servant had shown some initiative by making a search farther afield. In a bedroom he found an article which, he thought, would just meet his requirements. Well pleased with his brilliant idea, he had placed it in the centre of the table filled with the fruit. I can imagine his saying to himself "*Shabash!—Shabash!*" as, after the manner of a good table servant, he surveyed this, the crowning touch to a well-laid table.

The Rajahs and their *dewans* always gave us a hearty welcome when we visited their States; for H. F. they claimed as a personal friend, and I, a representative of the *Sircar* (Government), being a friend of his, required no other recommendation. We found a splendid dinner cooked and ready for us when we arrived one night at the Rest House of another Rajah. But it was not good enough for

my friend : he must needs have Indian food. A note is sent to the Rajah, and in twenty minutes H. F. is eating, with evident relish, an Indian meal, and I my English dinner. He knew and understood his friends the Rajahs ; he could see with their eyes, hear with their ears, and think with their minds. My friend was tact personified : he would have made his mark in the Diplomatic Service.

CHAPTER XI

SNAKES, SCORPIONS AND MOSQUITOES

WHEN I first went to India, my Director took it upon himself to give me advice as to how to take care of myself. "Keep your horse's head turned slightly up-stream when crossing a river: shake your boots well, especially your long riding ones, each time before putting them on, and always sleep under a mosquito-net," were his words of wisdom. I never had occasion to swim my horse across a river, so that piece of advice was never put into practice. For years I faithfully shook each boot before putting it on, lest there should be a snake, scorpion or poisonous spider harbouring in it; but I never found one. Owing to the negligence of my servants I once went to camp without a mosquito-net. I had reason to regret it later; for I was soon on the sick-list with malaria.

Strange though this idea of looking for danger in one's boots may seem to be, the precaution of shoe-shaking soon becomes so much of a habit that one almost forgets to think of the reason for so doing. A friend of mine, whose father had given him this invaluable advice before he left for India, acted accordingly every morning. One day, however, a scorpion lurking in the toe of his boot managed to retain its hold; but it was only after a ten-mile ride that he was made aware of his enemy by being stabbed in the toe. In dismounting, his foot had most probably changed its position slightly in his boot, and the tail of the scorpion had thus been released for action. Despite his failure to dislodge this scorpion, however, I did not give up my daily hunt for these crawling things when dressing.

The most dreaded of all the reptiles is the poisonous snake—a slimy loathsome creature. Though I never found one in my boots, I once nearly trod on one lying

coiled up at the side of my bed, and encountered two or three in my bathroom at different times. They are much dreaded because, being deaf, they lie apparently asleep till you are about to tread on them, and, when suddenly disturbed by the vibration caused by your footsteps, they strike in self-defence before crawling off. It is all so sudden and tragic that death from snake-bite has excited the imagination of men from time immemorial.

From biblical times the serpent has been regarded as cunning, treacherous and malicious. We have all heard the story of how it deceived Eve by enticing her to eat the forbidden fruit. In India snakes are a constant and haunting danger against which one must always be on one's guard. In that sub-continent there are over 300 kinds, some deadly, others less poisonous, whilst many are quite harmless. They kill from 20,000 to 30,000 people every year, and account for a still larger number of deaths among village cattle, sheep and goats. With the exception of the king cobra, they are not as a rule aggressive. They get out of your way if they can, but if you corner one, or come upon it suddenly, the chances are that your hours are numbered. In self-defence it will drive its fangs into your foot or leg and inject enough venom into your blood perhaps to kill several persons. If it is a cobra, it will lift its head and strike forwards and downwards; if a viper, it will throw out its head almost horizontally.

At night they crawl about in search of their prey—frogs, rats, mice and birds, and are often seen on roads and paths. Most people in India consider it extremely unwise to walk abroad after nightfall without a light to locate any snake that may be in their way. An Indian often carries a stick instead of a light and with it repeatedly taps the road as he moves along, hoping thereby to scare away any snake that may be lying in front of him. But, as snakes are deaf, it is doubtful whether this device is of much practical value as a safeguard. It may be, however, that the vibration caused by the tapping is discerned by the snake and that it responds by crawling off in search of a hole or some undergrowth in which to hide.

In every age, and in every land where poisonous snakes abound, there have been people who have claimed that they were endowed with a mysterious power which enabled them to cast a spell over the most poisonous snakes, after which they could handle them without danger. On the first day I spent in India, one of these snake-charmers appeared in front of the hotel at which I was staying in Bombay. In one basket he had some cobras and in another a mongoose. For the sum of five rupees he volunteered to let his mongoose fight a cobra. A generous onlooker handed him that amount, and the mongoose and the reptile were soon in deadly combat. The cobra, with its head inflated and its tongue flickering, reared up to one-third its length and began to sway its head and body from side to side. When the mongoose came within striking distance it struck at him, but he jumped to one side, and before it had raised its head for another stroke, he had caught it by the head with his teeth. He killed the cobra, and would have eaten it there and then had his master allowed it. The limp body of the reptile was returned to the basket and another produced which the snake-charmer essayed to charm by playing on a pipe. The cobra swayed its hooded head from side to side, and the snake-charmer tried to make us believe that it was under a spell and was keeping time to the rhythm of the music of his magic pipe. Orpheus could move even inanimate objects with the music of his lute. Our friend the snake-charmer was not another Orpheus : he was in fact clearly deluding us. It was not the music that was attracting and fascinating the deaf cobra, but the pipe which the player swayed from side to side in front of it. The snake moved its head in like manner, so as to be in a position to drive its fangs into the instrument in the event of its coming within striking distance.

When touring in the Central Provinces some years later, I saw another and much more desperate fight between a mongoose and a cobra. Snake-charmers carrying two baskets—one containing a mongoose and the other several cobras—came to my tent one afternoon, and heralded

their arrival by playing a pipe. The first item on the programme was the charming of the cobras. When the lid of the basket was removed, they raised their heads and expanded their hoods. One about five feet long was removed from the basket and duly performed its part when its master played his pipe. When the mongoose was brought out, the cobra, intensely excited, hissed incessantly and flickered its black forked tongue. The mongoose was spoiling for a fight: all his hair stood on end as he faced his hated foe. When the cobra struck at him, he nimbly jumped back or to one side and thus evaded its fangs. Waiting his chance he sprang on it, seized its head in his jaws and held on like grim death. The cobra in desperation wriggled and threw its coils around his lithe body; but its efforts were all in vain—the mongoose did not let go his hold till the snake was limp and dead.

There must be many millions of snakes in India. Most of the species are viviparous and multiply fast. They have many enemies, some of which help to keep down their numbers. Birds hate them, and flutter about and give their notes of warning when they see one. Vultures are said to carry away snakes in their claws and kill them by dropping them from a great height; but I myself have never seen a snake killed in that way. The brave little mongoose is the snake's most formidable enemy. He kills to eat: he is as fond of its flesh as of that of rats, mice, birds and scorpions. In the evening he may be seen tripping about very quietly in search of his prey. Being extraordinary quick in his movements he sometimes succeeds in seizing a snake unawares, but he is not always so fortunate. The snake sometimes sees him approaching and is ready to strike. The mongoose in that case braces himself up for a fight to the death: he expects no quarter and asks for none.

The mongoose is a familiar friend in an Indian compound. He is made welcome by the servants, who believe that there is no fear of snakes when he is about. The mongoose fights and kills snakes of all kinds, and

if by chance he gets bitten by a poisonous one he goes off at once in search of a certain plant which he eats. The juice of this plant is, they say, an antidote for the venom of the snake. This myth is hoary with age: Aristotle referred to it three hundred and fifty years before the beginning of the Christian era.

The mongoose is much more resistant to snake-venom than most animals; but when fighting a snake he puts no reliance on this resistance. He is generally the victor, but not always: he is sometimes bitten and dies a hero, fighting to the end. In a fight his agility and pluck are astounding. He is so quick and nimble in his movements that the snake seldom "gets home" with its strokes. In its rage it strikes at the small, lithe body of the mongoose; but he changes his ground so quickly that the venomous fangs seldom find their mark.

The snake-charmer, too, is sometimes bitten and dies. Those who succeed in handling their pets for years without mishap are men who have studied their habits and are always on their guard. Some of these men take the precaution to remove the fangs of their snakes. They dangle a little ball of cloth tied to a string in front of the reptile, and when it drives its fangs into the cloth they give a violent jerk which extracts them. This process has, needless to say, to be repeated at intervals of two months, as new fangs spring up to replace those extracted. Other snake-charmers swallow snake poison and claim that this gives them immunity against snake-bite. So far as I know, there is no evidence to prove that immunity can be acquired in this way, and the mere fact that many of these men die from snake-bite would appear to indicate that as yet they have no panacea for it.

Monkeys also kill a certain number of snakes—not with the object of eating them, as does the mongoose, but for the fun of killing a creature which by instinct they fear and hate. An Indian gentleman once told me that he had witnessed an encounter between a monkey and a cobra. When the monkey, all alert, approached, the snake raised itself to a height of over a foot, inflated

its hood in a threatening manner and then struck forwards and downwards. But the deadly fangs missed their mark: the agile monkey leapt aside, and before the snake had had time to regain its position to strike again he had, in the twinkling of an eye, gripped it firmly behind the head with the fingers of his right paw. With a grin of satisfaction on his face he proceeded to rub the head on a rough stone; but raised it from time to time to see the result of his labour. He continued thus to rub and to inspect until he had literally rubbed the head off the reptile. Having no further use for the cold slimy creature, he threw aside its limp body.

Snakes have wonderful vitality; pythons have been known to live for over three years without food. The heart of a snake will continue to beat for half an hour after it has been removed from the body. The easiest way to kill them is to break their backs by means of a long stick. If the stick is sufficiently long it is not necessary to go too near them. The first snake I encountered was sunning itself on a public road on which I was travelling in a bullock *tonga*. The *tonga wallah* on seeing it stopped and pointed it out to me. From a nearby village we procured a piece of bamboo, armed with which I cautiously approached the reptile. When it saw me it moved off at a great pace and took cover in some long grass. After my first blow it raised its hooded head in anger and made a hissing sound. I retaliated by bringing down the stick on its back, and with some effect. Though injured, it crawled off in search of a more secure hiding-place; but I was hot on its heels and with another blow or two finished it off.

From the manner in which my victim had raised its head and expanded the skin of its neck into the form of a hood, I had taken for granted that it was a cobra—one of the most dangerous of Indian snakes. On examining the limp body later, I found on the back of its head the distinctive spectacle markings of the cobra—two round marks or "eye-pieces," like those of an inverted pair of spectacles. It was not a king cobra. If it had been, it very probably would have been the pursuer and I the pursued.

A snake, despite the fact that it has no feet, can move quickly when frightened or when pursuing its prey. All its vertebræ except the first three carry a pair of ribs, each of which is movable forward and backward. The lower end of each rib is connected by muscle to the overlapping scales which are on the underpart of its body. When crawling it brings forward in succession the points of its ribs, and at the same time carries forward the scales to which they are attached. By drawing back the points of the ribs into a normal position it causes the hinder edges of the scales to press and catch against any roughness of the surface over which it is moving, and thus it goes forward. A snake is almost helpless when placed on a very smooth surface, because on such a surface there is nothing for the hinder edges of the scales to grip.

Poisonous snakes, such as the cobra, king cobra, krait and Russell's viper, generally kill by injecting poison into the bodies of their prey, after which they proceed to swallow them. A non-poisonous snake, on the other hand, swallows its victim alive. When that victim is a bull-frog, it sometimes continues to croak after disappearing down the throat of its devourer.

The python, which is one of the larger snakes, has no poison apparatus and no fangs. By means of its numerous recurved teeth it can, however, inflict a ghastly wound. Its habit is to lie in wait near a path or water-hole, and to launch itself on its prey with great fury. Throwing the coils of its powerful body round its victim, it crushes it out of all shape and then proceeds to swallow it, starting from the head. The act of swallowing may take an hour or so. I once saw a large python which had swallowed a young goat—a big mouthful. The hind feet of the victim were still visible when I appeared on the scene.

The python can swallow comparatively large animals, because the bones of its palate and upper jaw are movable: those of the lower jaw are held together only by elastic ligaments and are separable at the chin. When the python is swallowing its prey the bones of the lower jaw become, for the time being, completely separated from those of the

upper jaw both at the base and chin—thus providing an orifice which adapts itself to the size of the object to be swallowed. The act of swallowing is facilitated by the abundant flow of saliva with which the python oils its victim.

Poisonous species of snakes differ from the non-poisonous in that they are provided with teeth specially developed for the conveyance of poison. The poison or venom is secreted by glands which are enveloped by muscles. When these glands are compressed the poison is forced down the duct leading to the base of each poison-fang. When the snake bites its victim, the poison flows into the wound inflicted and thus gets into the blood-stream. A poisonous snake is thus provided with a complete outfit for killing by poisoning—a poison-bag stocked with poison, a syringe, and fangs to puncture the skin. The venom of some species is a nerve poison, and that of others a blood poison which causes hæmorrhage and dissolves the red corpuscles of the blood.

Of the different ways of treating snake-bite the most simple method of procedure is to suck the wound immediately, so as to prevent as far as possible the poison from circulating through the blood-vessels. Cauterising the wound by means of a hot iron or burning acids is also said to be an effective method of treatment when carried out without any delay. To prevent the poison from being quickly absorbed into the blood-stream a ligature should be applied a few inches above the bite. Some people believe in giving the sufferer a large quantity of alcohol in the form of brandy or whisky ; but this method does not recommend itself to the medical authorities, as alcohol aids the diffusion of venom through the body. Moreover, the poison of some species paralyses the nerves of the stomach, and alcohol when drunk has no effect on the sufferer. When I first went to India the use of potassium permanganate for snake-bite was recommended by Government, and a supply of it was kept in stock on Government farms. It has gone out of favour, as its antidotal value is very small. At the present day the most approved method

is by injection into the blood of the person bitten of an anti-venom serum prepared by inoculating horses, donkeys and other mammals, with small but ever-increasing doses of snake venom. After repeated injections the animals so inoculated become immune from the effects of the poison. Blood from the immunised animal is then drawn off and forms into a clot from which clear fluid arises. This fluid when purified is the anti-venom serum, which is put into sealed glass flasks and sent out as a remedy against snake-bite under the name of "Antivenene." Each variety of snake-venom requires its own special antidote.

The venom used for inoculation has to be removed from a living snake. I was one of a party visiting the Parel Laboratory in Bombay where anti-venom is prepared. We saw there some of the poisonous snakes and the method adopted of removing the venom. The task of the snake-wallah who was in charge of the cobras, kraits and Russell's vipers was not a pleasant one; but by practice he had become wonderfully adept in handling them. He demonstrated to us the method by which the venom is obtained from their poison-glands. With a forked stick which he held in his right hand he pinned the head of a cobra to the ground, and then grasped the back of its head between the forefinger and thumb of his left hand. After lifting it and forcing it to open its mouth, he placed the lip of a wine-glass against its fangs and slightly pressed its glands. Nearly a thimbleful of whitish poison was excreted into the glass. When this process, known as "milking," had been completed, the contents of a hen's egg were poured down the snake's throat: milking-snakes have to be well fed!

The snake-wallah, we noticed, had no thumb on his right hand. On our asking him how he had lost it, he informed us that he had been bitten at one time by a Russell's viper —India's most poisonous snake. He had promptly had the thumb amputated to prevent the venom from being absorbed into the blood-stream. This somewhat drastic method of dealing with snake-bite was at one time considered one of the most effective in cases in which a finger or toe had been bitten by one of the more poisonous snakes. Judging

from the cautious manner in which he handled the cobra "milked" in front of us, we came to the conclusion that there was much truth in that old maxim, "Once bitten, twice shy."

For various reasons antidotal treatment for snake-bite is not always successful. The poison gets into the blood-stream very quickly, and by the time the sufferer receives treatment the case may be a hopeless one. Moreover, the anti-toxins now available are not efficacious for all kinds of snake-poison. It is therefore necessary to know the kind of snake which caused the bite. As the snake generally escapes, it is not always possible to tell its species.

I have on two occasions treated people who said they had been bitten by snakes, both of which had made good their escape. The first unfortunate was a woman coolie who said she had been bitten on the hand while cutting grass with a sickle. I was riding nearby at the time and promptly dismounted on hearing shouts of distress. When I started to search in the grass for the snake with a view to killing it and determining its species, these humble workers, as with one voice, shouted out a doleful warning to the effect that if I took the snake's life their friend was sure to die. This strange superstition is based on tradition. Ages before the Aryans set foot in India, its people worshipped the snake; many of its low-caste men and women still do so. They rarely kill one except under dire distress. On a certain day in August every year the snake is still worshipped by millions of India's depressed classes. On this festive occasion the women amuse themselves by making counterfeit presentments of these reptiles with which they frighten their men-folk. In Hindu mythology the snake has for thousands of years played an important part, and in the eyes of many of India's peoples it is still a sacred creature.

On examining the woman's right hand, I found what appeared to be a bruise between the knuckles of the second and third fingers. There was no puncture as far as I could see; but as I had not been long in India and knew

very little about snakes, I decided to apply potassium permanganate which was at that time recommended for snake-bite. It could do no harm, I thought, and the treatment whether effective or not would give her confidence.

The psychological effect of the fright she had got on being bitten was surprising. She seemed quite dazed and stupid. Had she not been supported by two of her friends she would have fallen, most probably. In her imagination death was staring her in the face. After applying a ligature to the wrist of the hand which had been bitten, I ordered her to be brought to a Government farm about half a mile away. In due course I applied the lance and pressed a little of the antidote into the incision I had made. As I considered it advisable that she should be examined by a surgeon, too, I arranged to have her brought to Nagpur, two miles distant, in a cart—the only vehicle available on the farm. There was delay in getting it ready, as all the farm bullocks were out grazing. While we were waiting, I noticed that my patient had been brought to a *peepul* tree, at the base of which was a little shrine with an idol, and that a *mali* (gardener) who had a reputation for being able to cure snake-bite was in the act of exorcising the evil spirits which had, according to his belief, taken possession of the sufferer. He had loosened her hair, removed her bangles, and was chanting *mantras* (prayers) and throwing small quantities of *juar* (grain) into her face from time to time. The evil spirits could not be exorcised, he averred, so long as there was anything binding her hair or limbs.

When the *mali* had ended his incantations, another would-be physician appeared on the scene. He was an old man with a dyed beard. Forcing his way through the crowd to the foot of the tree where the woman stood, he seized her forehead with his left hand, forced it back, and with his right proceeded to squirt the juice of the fruit of the *tulsi* plant (*Ocymum sanctum*) into her eyes. The pain thus caused was supposed, I was told, to act as a counter-irritant to the pain caused by the venom of the

snake, and to be of some value as an antidote. In India *tulsi* is regarded as a very sacred plant.

Before the cart arrived, still another performer came forward to exorcise the evil spirits which still possessed the unfortunate woman. He, too, chanted *mantras* for a minute or two, and then with his lips near her left ear began to make a noise like a ship's siren. This he repeated seven times, as there were, he said, seven evil spirits to be driven out of her by hook or by crook.

At last the cart arrived ; we had waited twenty-five minutes for it. But my plans were again upset. The crowd of a hundred or more cried out with one voice that if the woman were made to sit in the cart she would die. As there was no time to be lost, I rode to Nagpur as fast as I could and reported the matter to the Civil Surgeon, who promptly sent out his assistant to attend to the sufferer. He found that during my absence the ligature had been removed from her wrist, and that she was still being subjected to occult treatment. But the most satisfactory information he was able to give us was that she had not been bitten at all ! The snake's fangs had failed to puncture the skin and the poison had not therefore got into the blood-stream.

This incident greatly impressed me. The woman's fellow-workers and others who came to her assistance were keenly anxious to save her life. Their remedies, it is true, were futile ; but the fact remains that they had displayed great sympathy and kindness. The Civil Surgeon, too, had done his duty by sending, at considerable inconvenience to himself, his assistant to attend to do what he could for this very humble worker.

When I was camping in a lonely part of Balaghât district, a villager came one afternoon to tell me that a carter in his village had been bitten on the foot by a snake when working in the jungle. On reaching the village I cleaned out the puncture made by the fangs of the snake and applied potassium permanganate. I also gave him nearly half a tumbler of brandy to revive his spirits. He complained of great pain in his back and was afraid he

was going to die. When I went to see him the following morning he was quite fit and expressed a desire for a little more of the medicine I had given him to drink the previous afternoon. After I had treated him, his friends had put a cow-dung poultice on his foot and bandaged it with cotton cloth. Neither the potassium permanganate nor the poultice accounted for his recovery, I think, as he had been bitten more than an hour before I saw him. But it is probable that the snake was one of the less poisonous species.

The length of time a man lives after being bitten by a poisonous snake depends on several factors. If properly treated he may, of course, recover ; but only a very small percentage of the persons bitten are so treated. The venom of some species is much more deadly than that of others. The nature of the bite is also a matter to be taken into consideration. The snake does not always succeed in injecting enough venom to cause death : its poison-sac may be nearly empty, or the wound made by its fangs may not be sufficiently deep to allow the poison to enter the blood-stream freely. When a fang directly penetrates a vein, death may take place in less than an hour. I have known a case in which a man died half an hour after being bitten ; but most people survive for some hours. The carpenter on one of our farms was, when mending a fence, bitten on the foot by a cobra. In great pain he walked over a mile to the farm buildings to report the incident. He was rushed to hospital, but was dead when taken out of the car. The physical exercise had aided the diffusion of the poison through his body.

CHAPTER XII

HELPING THE VILLAGERS TO HELP THEMSELVES

THE work carried out on the Government farms in my Circle was intensely interesting. On those run as experimental stations there were hundreds of plots of one-tenth of an acre, on which indigenous and exotic varieties of crops, manures and various methods of cultivation were being tested. Under trial there were ground-nuts from countries as far apart as Spain and Japan, and sugar-canes from Mauritius and the East and West Indies. These and other foreign varieties were grown alongside Indian types, some of which had been improved by selection. In course of time the Department was in a position to give the cultivators reliable information as to the varieties they should grow, the manures they should use, and the methods of cultivation they should adopt. The progress made in discovering superior varieties was most gratifying: many of the rices, *juars*, ground-nuts and sugar-canes tested in those early days still hold the field, and have spread over hundreds of thousands of acres.

We gave special attention to the testing of sugar-cane, as we anticipated that a much larger area would be put under this crop when the Government irrigation works, then under construction, were completed. In India the quantity of sugar consumed every year is enormous. It is used mainly in the form of *gur* (unrefined sugar) which is made in the villages by the cultivators themselves. If you were to visit a village in the cold weather when the sugar-cane crop is being harvested, the diversity of the operations going on would both interest and surprise you. In the fields coolies armed with small sickles are cutting down the cane and stripping off the leaves. The stripped cane is being carted to a spot nearby, where there is a primitive

plant for extracting the juice and making *gur*. Though the bullocks are moving slowly, there is a constant flow of juice from the rollers of the mill. The juice is collected in a kerosene tin or some other receptacle placed underneath the mill, and when that receptacle is nearly full it is emptied into a large shallow iron pan on the top of the furnace. If the villagers are progressive the fields of sugar-cane will be securely fenced with a pig-proof wire fence, and the furnace will be an improved one which requires as fuel only the refuse of the sugar-cane, namely, the dry leaves stripped from the stalks, and the *megass*, *i.e.* the woody fibre left after the canes have been crushed. If, on the other hand, the village is a backward one, the fields will be fenced with thorny bushes ; the furnace will be the primitive one used in India for centuries, and to raise sufficient heat to boil the juice, the owner will be using wood, as well as the refuse of his sugar-cane.

The improved furnace which is now being used on a large scale in India was invented by my old friend John McGlashan. On his estate in Chanda district in my Circle he, too, made *gur*, but soon discovered that the draught of the old type of furnace was defective, and that it required in consequence much fuel. In a week or two he had, at a cost of a few shillings, designed and constructed one which could be adequately heated by cane refuse only. Its introduction gave an impetus to cane cultivation in the Province, and to the demand for more efficient mills ; for one of the objections previously urged against these improved iron mills was that they extracted so much of the juice of the canes that the *megass* was a poor fuel. They had to burn more wood in consequence. I did not quite follow their line of reasoning until I remembered having seen housewives at home reviving a dying fire by throwing spoonfuls of sugar on it. For the " McGlashan " furnace there was no sugar required : that in fact was its outstanding merit. It did not even require all the cane refuse.

I have lost trace of my old friend John McGlashan, whose simple invention solved a problem which had, for ages, baffled the village *gur*-maker in India. In that land

his name is kept green by the thousands of furnaces which owe their existence to his inventive genius.

If you stroll round the village you will observe that while many of the cultivators are making *gur*, others are preparing the seed for next year's crop. The long stalks of cane to be used as seed are being cut up into short lengths, each having three buds. When these pieces or "setts" are planted in moist soil, the buds will send forth shoots which, in eleven or twelve months, will develop into tall juicy canes.

The cotton tract comprises all Berar and some of the districts of the Central Provinces. Owing to the low rainfall the climate of this tract is less malarious than that of the rice tract; the people are more progressive and prosperous, and the standard of living higher. Communications, too, are better: there are bus services on several of the main roads. Many of the landholders are educated men and leading lights in their villages. With the Department they co-operated whole-heartedly in introducing improved methods of farming in their districts. In this tract the Department gave much attention to the improvement of cotton, *juar* and ground-nut. Seed of the selected varieties after being tested and multiplied on Government farms was handed over to these landholders who, in turn, propagated it on their seed-farms and sold it to the cultivators. Hundreds of village seed-farms were started with that object in view, and in course of time many thousands of acres were sown every year with strains of seed evolved on Government farms, and afterwards multiplied by leading landholders on their village seed-farms. To maintain the purity of the seed special precautions were taken. They were inspected regularly by the district agricultural assistants, and alien plants uprooted. Several of the owners of cotton seed-farms undertook to erect ginning plants and to have their cotton ginned under their own supervision instead of sending it to a large factory, where there was always a risk of the seed being mixed with that of other varieties.

The demand for the Government's improved seed

increased to such an extent that it soon became impossible to supply, from our farms, the large quantity required by the seed-farms in the villages. To meet this difficulty the village seed-farms were organised into groups, called Seed Unions. To one farm in each Seed Union Government supplied pure seed every year, and the owner undertook to take special precautions to maintain its purity, and to supply the other farms of his group or Union with the quantity they required. By organising the work of seed multiplication in this way Government was able to cater for a much larger number of village seed-farms, and to increase very largely the quantity of seed available for distribution. The rapid progress made in this and other directions attracted the attention of Departments of Agriculture in other provinces, and officers came therefrom to study our organisation.

The sale and hire of improved agricultural implements was also organised on a co-operative basis by working with and through the leading landholders. Thousands of ploughs were sold annually : the poorer cultivators who could not afford to buy ploughs took them on hire.

To the more enterprising landholders we were much indebted for the rapid strides made in popularising improved methods of farming. In all our activities in the districts they played their parts, as members of their District or Taluq Agricultural Associations, and of their Seed Unions. They were friendly men and very hospitable, too ; I was seldom allowed to leave their villages until I had broken bread with them and been garlanded. When breakfasting on one occasion with my friend Rao Sahib L., I found that he had on the table a bottle of Scotch whisky—one's accent does give one away even in the East. When I told my host that I seldom partook of that beverage, he was surprised and, I believe, disappointed ; but we had a hearty meal together, though the cork of the bottle was never drawn. After inspecting all his crops, improved implements and small ginning plant, we again returned to his clean and well-furnished house. A gramophone was placed on a table, a record of a Marathi song put on,

and a troupe of eight or ten village boys and girls were ushered into the room. Squatting on the floor with their legs crossed, the little ones led by the old Rao Sahib sang with gusto. Getting somewhat breathless, for he was well past middle age and rather stout, he stopped for a time ; but the children continued to sing. When they lagged, owing to difficulty in following the words of the song, he started afresh with a voice like that of one of the " Bulls of Bashan." Song after song was sung to my great delight. But he had a still greater treat in store for me. " Roamin' in the Gloamin' " was the next item on the programme ; but it was soon evident that the little village choir had not rehearsed that song to their satisfaction. Like the bottle of whisky it had, I daresay, been purchased very recently for my benefit. The little urchins, though they knew neither English nor Scots, made a praiseworthy effort to hum the refrain, and the Rao Sahib a less praiseworthy attempt to sing the words. He spoke English very well, but this new dialect was Greek to him. I joined in, and with the children humming the tune with more confidence, we made the rafters ring. But I wish Sir Harry had, when recording the song, sung it on a lower key. The top notes worried us not a little. But for the high-pitched voices of these village youngsters, the rendering of that sweet melody—" Roamin' in the Gloamin' "—would have left much to be desired. The Rao Sahib was delighted with our performance : I was amused, for the incongruity of the situation had tickled my fancy. My old Indian friend, a high-caste Brahmin, had, in the goodness of his heart, found time to teach these village children to sing to the accompaniment of his gramophone, and had, regardless of caste and purdah restrictions, sung of " roamin' in the gloamin' wi' a lassie by his side "—a custom tabooed by his caste fellows. He had, moreover, invited me, a Christian, to have breakfast with him. In his village he was loved and respected ; for he was a good-natured soul who found happiness in making others happy.

Caste among the educated Hindus is breaking down to some extent ; but the process is a slow one. I had on

my staff a Jain assistant who was religion personified. The Jains are a sect of Hindus who follow the teachings of Mahavira. He is believed to have been a contemporary of Buddha, who was born approximately five hundred years before Christ. The tenets of Mahavira are closely akin to those of Buddha in their benevolence and humanity. The Jains believe that all animals possess souls ; and for fear of injuring one of them, orthodox members of this sect refuse to eat in the open-air after dark or during rain. They will not walk in the wind without covering their noses and mouths, lest they breathe in insects of the air and so destroy them. My Jain assistant had to be freed every evening from his duties to enable him to eat his food before darkness set in. He could not eat in the dark for fear of killing any fly or other insect which might have settled on his food. Another assistant, a high-caste Brahmin, who was a graduate in Science, and the Superintendent of one of our large experimental stations, kept a white cow which he and his family worshipped twice a day. The cow gave very little milk ; but she was regarded, nevertheless, as a very sacred animal. All cows are sacred in the eyes of a Hindu ; but this one was considered to be particularly so, as her hoofs, eyelashes and nose were of a peculiar light creamy colour.

I admired these spiritually-minded men in whose simple faith was much of benevolence and humanity ; but I took strong exception to the conduct of five or six assistants who made their religion an excuse for refusing to carry out their duties at a critical time on the Nagpur Experimental Farm. Plague had broken out in the Nagpur bazaar : hundreds of people had died of it, and rats, carrying fleas infected with the deadly germ, were spreading the fell disease in other parts of the city. Two of our ploughmen died : the remainder deserted the farm, and even the most urgent work was brought to a standstill. The Brahmin assistants claimed that their religion forbade their doing any form of manual labour. I was firm, and insisted on their performing certain duties, and was backed up by my Director, before whom they had laid their grievance.

The Department was then in its infancy and largely manned by town-bred Brahmins who were too high and mighty to do what they called " coolie " work. In course of time non-Brahmin students were attracted to the Nagpur Agricultural College for training, and in selecting these the Principal, himself a very sound practical agriculturist, gave preference to young men who had been brought up on the land. On the College farm they had their own plots which they themselves had " to plough, to sow, to reap and to mow " like the farmer's boy. The work-shy Brahmin was made to see that he could not effectively control the operations carried out on a Government farm, unless he himself knew how each should be performed. By precept and example we portrayed to them the true meaning of the dignity of labour, and in time the best of our Brahmin assistants became so interested in every phase of our work, that they conveniently forgot about their caste rules.

The multifarious duties of a Deputy Director, spread as they were over a vast Circle, comprising thousands of villages and millions of acres of cultivated land, necessitated in those early days much touring, under most trying climatic conditions, over country but ill-provided with roads. Relief came in the course of time, for more men were recruited at home for service in the Department, and the Agricultural College began to turn out batches of young Indians trained in the science and practice of agriculture. The Circles were greatly reduced in size, and the staff attached to each was increased. With the advent of the motor-car, the younger generation of deputies were able to tour in much greater comfort than the old veterans who had been obliged to use horses, bicycles and even bullock-carts, in their pioneer work of laying the foundations of scientific agriculture in our Indian Empire. After serving nearly twelve years as a Deputy I was made Director of my Department, and was privileged to spend the hot weather in the hills. After holding that post for over six years, I went to the Government of India as Agricultural Adviser and Director of the Imperial Research Institute at Pusa, and spent the hot weathers with other " brass-hats " in the

charming society and salubrious climate of Simla. When confronted with the worries inseparable from that office, I sometimes longed for a spell of the open-air life I used to lead as a Deputy Director, inspecting work in progress on seed, demonstration, and experimental farms ; discussing crops and cattle with leading agriculturists ; wading through rice-fields ; or camping, after a long, hot, dusty march, in a village mango grove, where I was soothed to sleep in my frail camp-bed by the peal of temple bells and the blood-curdling shrieks of jackals and hyenas.

CHAPTER XIII

A CHRISTMAS CAMP

In theory, Government officials in India are supposed to get several holidays in the course of the year, besides the long break at Christmas; for there are many days of feast and fast in the Hindu, Mohammedan and Christian Calendar gazetted as holidays. In practice, however, Government officers find their work too exacting to permit of their ceasing work on days on which their offices are closed. Instead they clear off arrears at home in their bungalows. Christmas week is the only holiday in the year which is taken advantage of by almost all.

At this season of the year the weather is dry and comparatively cool; for Christmas is in the middle of the cold weather. The sun is hot during the day, but clad in the lightest of clothes, and with a *sola topi* to protect your head, the heat does not cause any great discomfort.

In England Christmas is associated in one's mind with theatres, parties and dinners. In the larger towns in India such amusements are possible at this festive season; but in the *mofussil* (rural districts) it is different. There, officials look forward to getting into the jungle to enjoy the freedom of camp life.

The place selected for the camp may be in the heart of a great jungle, or it may be near a sheet of water where duck and snipe are abundant. In the Central Provinces there are fine camping grounds within easy reach of the haunts of both big and small game.

The places selected for these camps are sometimes a hundred miles or more from any town; but they are as a rule within easy reach of a road or a railway. If the officer who arranges for the camp is a bachelor, he may invite only bachelors and "grass-widowers" to join him. If, on the

other hand, he is a married man, he consults his better-half as to who are to be invited, and the party will consist most probably of both sexes.

With the list of guests complete, and the site of the camp selected, the commissariat comes next in importance. That department may safely be left in the hands of the *memsahib*. If the site chosen for the camp is in a new and unexplored jungly tract, the assistance and advice of someone who knows it is sought. For example, it is necessary to find out whether fresh fish is available in the neighbourhood, and what vegetables, if any, can be procured, before the list of food-stuffs required for the week can be drawn up. The *babu*, that most obliging of assistants, is appealed to. He being an encyclopædia of information will probably find someone among his fellow-clerks or *peons* (office messengers) who has a fifty-second cousin living in a village near the spot in question, and in a few days the requisite information is obtained.

In one camp near a river we found it necessary to employ a *dhimar* (fisherman) on a weekly emolument, and all the fish in the river was ours !—if he caught them. His pay was sixpence a day.

English vegetables are not appreciated by the jungle folk, and as there is no market for them in outlying parts they are not grown. One would appear ridiculous if he were to carry round with him a sack of potatoes and perhaps cabbages when spending a holiday in a rural area in this country ; but in India they form part of the luggage that you carry with you when you are catering for a party at a Christmas camp. Such common necessities as sugar and flour must also be brought, as shops are few and far between in jungly tracts, and none of them keep a stock of these as a rule. The villagers satisfy their " sweet tooth " by chewing sugar-cane, or using *gur* (unrefined sugar). *Gur*, though very sweet, does not go well with tea.

The joint course for the week is a matter for serious consideration. As the *memsahib* cannot always rely on the guns of the camp bringing down a peafowl for the Christmas dinner, a turkey is ordered. If you travel by

road to your camping-ground, there is little enough room for it in the car—and its repeated chuckles are rather disturbing. Chickens, which are obtainable in most villages, are always bought alive. Their preparation for table is a work of magic in the hands of an Indian cook. Here a cackle and there a casserole, is perhaps as apt a description as any I can think of. However, when duck and snipe are plentiful the chicken trade is dull in camp. Spiced venison or pickled hump are prepared beforehand by the resourceful cook, and are useful to fill in the gaps when one's luck with the gun is out. Hump is the piece of flesh which distinguishes the Indian ox from his English cousin.

For a large party a good supply of tinned foods is essential; the tins are easily transported, and what is left over can be taken back again.

Plum-puddings and cakes are made beforehand, but the bread problem is more difficult. As loaves soon deteriorate in quality in a hot and dry climate, the cook has to make them daily. Before commencing to bake he prepares the yeast from hops by using a " starter " which he has brought with him in his luggage.

All cooking utensils, from a skewer to an oven, have to be brought to camp. The oven is like a huge iron pot and lid which fit into one another. When required, it is placed over a wood fire with some glowing charcoal laid on a depression in the lid. The heat of the fire is tempered by a thick layer of sand on which the cake is placed. The joints are cooked in a very large *degchie* (an aluminium saucepan without handles). All saucepans in India being without handles, fit neatly into each other and are easily packed for camp.

In making the necessary preparations for a Christmas camp, the *memsahib* has a busy time planning and arranging everything in advance. Food is not the only item to be seen to. Beds and bedding, curtains and carpets, cushions and chairs must all be provided for the comfort of the guests.

What, it may be asked, are the attractions which induce so many men and women in Indian districts to take all this trouble in order to spend a few days in the wilds? One of

the attractions is the opportunity it offers for big-game shooting—one of the most fascinating of all sports. Though the love of that sport is not universal even in India, it is more widely practised there perhaps than in any other land. The lure of it is in the blood. In many of the clubs the walls are decorated with the heads of buffalo, bison and other wild beasts of the forest. In private bungalows you see floors carpeted with tiger, panther and other skins, and walls studded with heads of sambhar, *chital* and other game, and if you are tactful you will admire them and ask intelligent questions as to their sizes and how the owner secured them. In India big-game shooting is one of the most popular subjects of conversation at the club and in the home. The sportsman there is as proud of his trophies as the Naga head-hunter is of the human heads he has taken. The one prizes his human heads partly because it raises him greatly in the estimation of the lady of his choice: the other prizes his trophies because of his inherited *flair* for sport, and big-game shooting is perhaps the most fascinating of all manly sports.

But a Christmas camp has other attractions for most men. The freedom of camp life, its good comradeship, and the scope it gives for studying wild life in the great silent jungle, where "Nature red in tooth and claw" reigns supreme, appeal to one and all. Surrounded with new interests, men in these camps forget the petty cares and worries inseparable from their daily tasks.

Of physical exercise one got more than enough in these camps. In the very early morning we went out stalking deer or bison perhaps; or shot duck and snipe over some tank or *jheel*. On other mornings we sometimes accompanied the *shikari* when he went into the jungle at dawn to inspect the buffalo and other baits tied up the previous night. These expeditions to inspect the baits at dawn, when many of the animals which had been wandering round all night in search of food had not yet gone to their lairs, were full of possibilities. Just before "the sun looks over the hill-tops, calling the day-life of the jungle out to play, and sending the night-life home to its covert for sleep," you can see something of both sides of the picture of wild life in the

great forests of India ; for you see the day-sleepers retiring to their beds, and the night-sleepers rising from theirs. In the afternoon we beat for tiger in the event of their being a " kill " ; but if none of the baits had been touched, we again found pleasure and healthful exercise in the evening by resorting to a tank or *jheel* where small game could be got, or by stalking *chital* or sambhar. At night round our camp-fires we recounted the experiences of the day and made our plans for the morrow. And perhaps a member of our party, musically inclined, would bring out his gramophone and entertain us by playing some of the latest jazz music. For the primitive tribes of the jungle the gramophone was a great attraction. It always drew a big audience.

Though the shooting of duck and snipe was less fascinating than that of hunting bigger game in the jungle, it, too, had its tang of excitement at times. On the tanks we went out in dug-outs—the name applied to a type of boat made by hollowing out the trunk of a tree. It is a most primitive craft. It has no sails or oars : the boatman propels it by means of a long bamboo pole. Being very narrow, it is apt to capsize ; but if you take a seat near its centre of gravity, and stick to that seat like a limpet to a rock, there is little danger.

When the first shot is fired, thousands of duck of different species rise from the water with a great flutter of wings resembling the noise of a passing train. If you are lucky, you will bring down a few as they circle overhead before flying off to another tank.

Parallel with the embankment of the tank there is, as a rule, a stretch of marshy ground in which there may be little patches of scrub jungle. This marshy ground is frequented by snipe : in patches of the scrub jungle you may find quail, hares or even wild boars. On one occasion when shooting snipe with His Excellency the Governor we put up a large boar. One of the more impetuous members of our party promptly poured a shot of No. 10 into its hindquarters. The boar reacted in a strange manner to the pain caused by the small pellets. It made straight for the embankment of the tank, climbed the slope and dived

into the water at the other side. On reaching the top of the embankment we shouted to the Governor's A.D.C., who was in a dug-out collecting some ducks we had shot but not recovered earlier in the day, and at the same time pointed to the boar which was swimming strongly towards the far side of this big expanse of water, which it evidently intended to cross. The A.D.C. was soon in hot pursuit, but when his boatman got to the middle of the tank he was handicapped by the depth of the water. His pole, though a long one, scarcely reached the bottom. But the A.D.C. thrilled by the strange phenomenon of a wild boar out of its natural habitat, poured shot after shot into its head and shoulders at a distance of seventy or eighty yards. But at that distance his No. 4 shot proved as ineffective as the No. 10. On reaching the opposite bank, after a swim of nearly half a mile, the " grunter " went hell-for-leather up-country, and was soon lost to sight. I have often been told that when a pig swims it cuts its own throat. The wild boar apparently does not do so : it is a bold and strong swimmer.

The denizens of the jungle may be roughly divided into two groups. One group feeds during the day and rests during the night ; while the other group feeds during the night and rests during the day. Most of the birds belong to the former, and most of the animals to the latter group. In the early morning the birds are nearly all astir. Jungle-cocks after descending from their perches in the trees, where they have roosted out of reach of mongooses, jackals and other enemies, crow lustily as their hens wander round in search of seeds and insects. Peafowl, with a noisy flutter of wings, also fly down from their perches, and a strutting male, " as proud as a peacock " spreads out his beautiful fan-like tail and dances in front of his lady admirers. Turtle-doves coo to each other in every tree. The " tap, tap, tap " of the woodpecker searching for grub shows that he, too, is feeling the pangs of hunger after his night's fast. Parroquets, like green meteors, shoot past on their way to trees where they know they can find the breakfast of their choice. Green pigeons, so camouflaged by their colour that they cannot be seen, whistle in the foliage above your head. Brilliant

bee-eaters, pink-coloured paradise birds, and honey-suckers with shining blue plumage flit about. Jungle crows, guided by their sense of smell and keen eyesight, are flying round in search of any carcase left the previous night by a panther or tiger. High overhead vultures are soaring : they, too, are searching for dead flesh. How peaceful the jungle seems, now that so many of its four-footed denizens have retreated to their lairs for the day.

But all the animals of the jungle are not nocturnal in their habits. The monkeys, like the birds I have mentioned, are also astir after sleeping all night in the trees. Some of them are picking buds or fruits with clawy hands and popping them into their mouths ; others are quarrelling and pursuing each other from branch to branch. The agility with which they leap through the air and always find a foothold on some branch is astounding. Old mother-monkeys with faces like that of a wise old crone, suckle their babies, and youthful members of the family, no longer tied to apron-strings, are disporting themselves like kittens on what would appear to be very slender branches.

Though most of the animals of the jungle are replete with food by sunrise and are on their way to their day-beds, you may perchance see a herd of *nilgai* (blue bull) grazing in open scrub jungle or even in a village field. They bear the mark of sanctity and seem to know it, for they are much less shy than most of the animals of the jungle. This species, owing to its resemblance to the cow, is not as a rule molested. The *nilgai* thus takes advantage of the villagers' regard for him by damaging their crops.

Though it is unusual for tigers to roam about during the day, hunger or habit or both at times goads them on to do so. Panthers, even more frequently, sometimes leave their lairs long before sunset. At our last Christmas camp a panther paid us frequent visits in the evening. He probably hoped we had a dog with us, for he is very fond of dog's flesh ; or he may have been attracted by the savoury smells coming from our improvised cook-house. The servants were terrified lest he should prove a man-eater. There being no moon there was little chance of shooting him at

night ; but we devised a plan by means of which we hoped to lure him into the open by daylight. A goat was tied to a tree near our tents and a *machan* erected on a neighbouring tree. About 4 o'clock in the afternoon a lady and I took our seats on this platform. She was armed with a shot-gun loaded with buck-shot, and I had a rifle. We sat back to back : I was facing the goat, which was between us and our camp, and she was facing a part of the jungle in which the panther was likely to be resting in his lair. I had given our servants orders to make as little noise as possible, and hoped that the panther, attracted by the bleating of the goat, would pay us a visit before the sun set. The lady, on finding that her back was towards the goat, somewhat petulantly expressed her dissatisfaction with her position in the *machan*. The following conversation took place—in whispers, for I anticipated that the bleating of the goat would soon have its effect :—

She : " How do you expect me to shoot him when I cannot even see the goat ? "

Me : " You are to shoot the panther—not the goat."

We had scarcely finished arguing this point when the panther literally stepped out in front of her. Nudging me in the ribs with her elbow, she said in a very subdued whisper : " There he is." He had come right out in front of her in broad daylight and was eyeing the bleating goat. To see him, I had to turn round, and on moving my head and shoulders I attracted his attention from the goat to our *machan*. He bolted back into the jungle : we never saw him again, though we sat till sunset. This incident like many others was recounted over our camp fire that evening with much good-natured chaff and banter. The lady, in self-defence, held that I, scared to death, might have had a fifteen-foot fall from the *machan* had she fired without giving me warning.

To sit over a stream or pool in the jungle in the moonlight is one of the most fascinating experiences I have ever had. In the dry season the number of such pools is limited, and the thirsty animals which have lain in their lairs all day have often to go far afield to quench their thirst. I still have a

very vivid memory of the first night I spent over a pool in the wilds of Chhattisgarh. The mud round the edge of that pool was a veritable mosaic of foot-prints of deer, antelope and other animals. I sat down behind a bush when the sun, like a great ball of fire, was sinking below the forest-clad hills in the west. An awe-inspiring silence pervaded the jungle : there was not a breath of wind, or a sound to be heard. I had not waited long when the shrill cat-like call of a peacock, coming to drink before roosting for the night, pierced the silence brooding over the jungle. As it stalked along over the tinder-dry leaves, it halted every now and then to listen and survey the ground in front of it. It was followed by others, all of which were equally cautious. The sun had set before the first animal, a wild boar, appeared. He, in approaching the water, also halted and hesitated from time to time and peered in front of him. Like the peafowl, he was ever on the alert. Even when drinking he raised his head again and again to listen and scan the undergrowth near the pool. Deer and antelope came to drink in the same hesitating manner ; they sniffed the air and peered into the darkness of the shadows where their enemies might be lying in wait for them. In the jungle there is fear everywhere.

There were birds astir also—birds of the night, such as the night-jar and the wattled plover. The latter's alarm cry " Did-you-do-it, Did-you-do-it, Did-you-do-it" heralded, no doubt, the approach of some roaming animal.

But the most thrilling sound which broke the silence of that beautiful calm moonlight night was the "Aaouh, Aaouh, Aaouh " of a tiger wandering in a neighbouring hill. It was probably a tiger calling to his mate, or a tigress to her cubs. For an hour or more I listened intently to that " Aaouh, Aaouh " of the King of the Jungle, as he roamed in the hill half a mile away, wondering the while whether he too would come to my pool to drink and what I should do if he did.

At dawn some animals again visited the pool before retiring to their day-beds : the birds of the night went to rest, and those of the day, throbbing with gladness at being alive, began to enliven the jungle once more.

Though bitten by red ants and countless mosquitoes, I had enjoyed my first night in company with the beasts that roam and feed at night in the wilds, where "strife and cruelty prevail" and only the fittest survive. I had seen the wonderful lights and shades which characterise the jungle in the moonlight. I had seen that jungle as it really is—awake and full of throbbing life—and I had seen for myself something of the protective instincts with which the weaker animals are endowed. Nature may be red in tooth and claw; but Nature has also made the hunted creature quicker and more constantly alert than the hunter. She eliminates the unfit, and thus maintains the vigour of each species. The carnivora feed mainly upon the weak or unwary, leaving the main herds of stronger animals undisturbed. The fittest survive. That law of Nature accounts for the deer, the bison, the wild buffalo and other herbivorous animals seen in the jungle being so much stronger and healthier than the domestic animals of man.

What makes big-game shooting so intensely fascinating for the sportsman is the fact that it is never without the spice of danger. You may spend a whole day in a jungle teeming with big game and yet see none at all. They are resting in the dense undergrowth, in caves, and in the more inaccessible hills not frequently visited by man. Some of them are so effectively protected by their coloration that you may fail to see them even when you are quite near them. When stalking a harmless deer you may inadvertently walk into the arms of a bear, and if she has cubs and you have come upon her unexpectedly, the chances are that she will give you a warm reception by hugging you with her fore-paws and tearing you with the claws of her hind feet. When stalking sambhar at one of our Christmas camps, I once encountered a herd of bison in a very dense bamboo jungle. On seeing me the bull in the herd pawed the ground with his fore-feet and snorted loudly with anger. Fortunately for me he did not charge. Had he done so, my 500 black-powder rifle would not have stopped him.

Tigers and panthers will, if they are not man-eaters, slink away on seeing a man. That they should do so is

rather remarkable, seeing that they are not afraid to tackle much larger animals—wild buffalo, for example. At one Christmas camp our *shikari* showed us the horns of a wild buffalo which had died after a fight with a tiger. That the buffalo had put up a good fight was evident, for on the points of his horns were bits of tiger's flesh and tufts of hair. Whether or not the tiger had died of his wounds it was impossible to say, as no trace of him could be found. If only wounded, he probably retired to a cave or other secluded spot to die ; for whenever a wild beast is seriously hurt he seeks instinctively to be alone and to lie down and relax.

When a tiger roams through the jungle in search of his prey, he sometimes makes a peculiar noise which is something between a grunt and a throaty cough. Why he should thus give himself away when hunting it is difficult to understand. At a Christmas camp in Baihar, I went out one evening to stalk *chital* in some scrub jungle near our camp. I found a herd of about twenty grazing quietly in a small glade. Overlooking the glade were some monkeys, sitting quietly in the trees. Suddenly I heard the low "Aaouh, Aaouh, Aaouh" of a tiger some distance behind the deer. The monkeys, all alert, sprang to higher branches, and the deer with raised heads listened intently. On spotting him the monkeys gave the warning by cursing him with angry barks. A *chital* repeated that warning in its own peculiar alarm cry, and the whole herd bounded away into the depths of the jungle. Had the monkeys not proved such effective watchmen I might have witnessed a tragedy in the herd.

In India the twilight is very short. Soon after the sun had sunk below the tree-clad hills in the west, it was dark, for there was no moon. I had a tiger to reckon with—a tiger roaming between me and my camp. From his repeated "Aaouh, Aaouh" as he moved along very slowly, I could follow the direction he was taking. After the deer had fled, he seemed to give up the hunt and veered round to his right. I returned to camp as soon as I was satisfied that he had crossed, and got well beyond, the route I was to take.

Next morning there was a "kill." One of the buffaloes

tied up as a bait had been killed and dragged to some bushes a hundred yards from the tree to which he had been tied. After eating all the hindquarters of his prey, the tiger had tried to conceal the remainder of the carcase from the hungry eyes of crows and vultures. He evidently intended to come back to it the following night. The neck of the buffalo had been broken and its head twisted round. On the nape of the neck were punctures caused by the fangs or claws. We pictured to ourselves how the tiger, after stalking the *chital* unsuccessfully, had wandered round in search of other prey. On seeing the helpless animal, he had stalked it too, no doubt, and on getting within the required distance of it had launched himself with terrific force on to its shoulders. In a minute or less it was probably dead, the neck being broken when it fell. Gorged with flesh, he had drunk at a stream, and the chances were that he had lain down nearby to rest for the day. Our *shikari* anticipated that he would, when driven from his lair, make for the hill which was about a mile north of the "kill"; because by taking this route he would not have to come out into the open. Our *machans* were put up in a line between the "kill" and the hill, and the beaters were drawn up in a long line well behind the spot where he was supposed to be lying. They were to drive him towards the hill. To prevent his wandering off to the right or left, there was a line of "stops" in trees on each side of the beat.

Half an hour after getting into our *machans* the beat began. One man gave a loud shout—the signal that all was ready. The other beaters followed his example and continued to shout as they moved forward. There was not a breath of wind, and not a sound could be heard but the shouting of these men a mile or so distant. Soon after the beat had started a light patter was heard in the dry leaves in front. A beautiful peacock emerged. Halting for a second with head erect, he scanned the trees in front of him and caught sight of one of the *machans*. With a flutter of wings he flew past and was lost to sight. A few minutes later a wild-cat crept stealthily through the undergrowth and slunk off between two of the *machans*. With padded feet it

had come out so quietly in front of us that we had not heard it approaching. When the beaters were within a quarter of a mile of the *machans*, the steady " tramp, tramp, tramp," of an animal was heard. For a minute or so it ceased, and then began again. It was the tiger, and he was coming straight towards us on his way to the hill. We had not heard any of the "stops " tapping : they had probably never seen him. Our hearts beat at racing speed when he appeared, hurrying along with his head bent down and his lips drawn up. Angry at being wakened up from his siesta in the heat of the day he was showing his teeth. When my friend on my left bowled him over with a well-aimed shot, the beaters made the welkin ring with their shouts. One of the *sahibs* had killed the *sher* (tiger) and that meant enhanced pay for them ! Had the *sahib* blown his whistle after the shot, they would have scrambled up trees like monkeys ; for the whistle would have been blown to warn them of danger in the event of the tiger being only wounded. But there was no need to blow the whistle : he was dead.

Instinct in animals has been described as propensity prior to experience and independent of instruction. The domesticated buffalo of India has inherited the instincts of his wild ancestors, fine specimens of which are still to be seen in some of India's jungles. Like his progenitor in the jungle, the domesticated buffalo loves to wallow in muddy pools, and to graze by night. When village buffaloes encounter a tiger, they immediately form up into a line between their calves and their enemy so as to protect them from attack. By instinct many species of animals live in herds, and whenever an individual darts away, he is instantly followed by those nearest him and then by the whole herd. The first to run has seen or winded an enemy. Thus they save themselves from approaching danger. By instinct very young animals hold close to their mother's heel or side, and by instinct a wounded animal makes for a quiet spot where, concealed from its enemies, it can rest in peace. The young of all ground birds follow the mother as soon as they are able to leave the nest. Were it not for this saving instinct, most of the

brood would soon be lost in the grass or bush. By instinct young fishes dart aside on seeing a prowling fish, hide beside a rock or root, or stir up the mud from the bottom and conceal themselves in it.

In the jungle the weak and less alert individuals in a herd fall victims to their enemies : the fittest survive. This is Nature's way of keeping every race strong and vigorous. The flesh-eaters in India's jungles thus help to keep up the standard of the herbivora by eliminating the unfit. That standard is undoubtedly high. The average deer or antelope seen in its native haunts is a strong, alert, majestic-looking animal.

In India's jungles there are many thousands of carnivora. They kill hundreds of thousands of deer, antelope and wild pig every year. Mill, the economist, spoke of Nature as a chaos of struggling beasts, a large proportion of animals passing their existence in tormenting and devouring other animals. Another writer has spoken of the lust of killing as being a natural law of the Wild. Neither of these points of view is quite correct. The tiger, panther and other flesh-eaters of the jungle do not torture their prey, and they do not as a rule kill for the lust of killing. They kill to eat, and kill quickly. The tiger, for example, stalks his prey, and when he gets within striking distance launches himself upon it with such violence that it is killed almost instantly, either by a broken neck or by a blow so heavy that all feeling is knocked out of it. The shock produces a kind of mental stupor or paralysis on the part of the victim, and it is not conscious of pain, or of the teeth or claws which rend it. It is not even terrified, but seems to be in a condition of vague wonder at what is happening. Man, because of his highly-developed self-consciousness, has far more capacity than the lower animals for feeling pain. Moreover, his keen imagination intensifies the agony and terror when he suffers ; but when mauled by a tiger or a lion he feels little or no pain at the time. I knew of a man who was mauled by a man-eating tiger which seized him by the nape of the neck and dragged him for some distance. After this most trying experience he could not

remember having felt any pain when the tiger seized him ; but he did remember how the abominable stench of the animal had affected him at the time.

David Livingstone, the great missionary and explorer, has given a very vivid account of how he was severely mauled by an enraged lion which tore his flesh with its claws and crushed his shoulders with its terrible fangs. The lion shook him, he says, as a terrier does a rat. The shock produced a kind of stupor and dreaminess in which there was no sense of pain, or feeling of terror. And he adds that his condition was like that of one who is partially under the influence of chloroform ; that without suffering or any concern whatever, he could look on calmly while the beast was rending him. If no real pain or terror is felt by man when he is being mauled by one of the carnivoræ, it is reasonably certain that wild creatures struck down by them are commonly killed quickly and painlessly, before they have time to know what has happened.

One eminent naturalist has told us that " Nature, instead of being cruel and pitiless, or merely thoughtless, seems to have provided most carefully that birds and beasts should be joyously abundant and, lest they should increase too greatly and overrun the earth, that death the 'dark mother' should approach them mercifully, without pain or the shadow of fear. Into their dumb lives come two great blessings, besides the common mercies of food and play and rest : they are spared all regrets for yesterday and all anxiety for the morrow : they lie down for their last sleep with the familiar expectation that they will awake once more in the morning." In his opinion, wild animals live joyously with full confidence in their own powers : they have no conception of injury or death : when they are killed they feel no pain or terror, being dazed and stunned by the rush or shock of the charging animal ; and their alleged fears and terrors are the reflections of Man's sympathetic imagination.

In that doctrine there is much truth no doubt. Nature is not cruel : she tempers the wind to the shorn lamb. The lust of killing is not a natural law of the Wild : birds

and beasts of prey kill to eat. The weaker animals multiply so rapidly that they would fill the earth and exhaust the food supply were not their excessive numbers kept down. I find it hard to believe, however, that the alertness of deer, antelope and other shy creatures in India's jungles is not associated with fear. The cautious, hesitating manner in which they come to the pool or water-hole to assuage their thirst—tiptoeing, listening and peering into the shadows—indicates fear, as does also the abrupt manner in which they dash away to save themselves from approaching danger.

CHAPTER XIV

THE THUGS

WHEN camping in the Central Provinces I had many long chats in the cool of the evenings with village cultivators. We discussed the weather and particularly the rainfall; their crops and cattle and the pests and diseases from which they suffered; irrigation facilities in their villages and other subjects in which they were interested. At times we discussed, too, the rural conditions which obtained in their villages a century or so ago when there were no railways. Farm produce available for export had in those days to be carried for long distances by road, either in carts or on the backs of bullocks. Cotton, for example, used to be transported pannier-fashion on bullocks from districts in Berar and the Central Provinces to Bombay—a distance of several hundred miles. The roads were often infested with brigands, who robbed and sometimes killed the peaceful husbandman on his way back to his village.

Of the various kinds of robbers who frequented the public highways in those days, the most dreaded perhaps were the Thugs, a secret religious fraternity who murdered stealthily by strangling. In the thirties of last century, men, women and children from the neighbourhood in which I once camped had been murdered by them. There was the sad story, current still in the district, of how Durga Prasad, a landowner, had gone with his wife and little boy, Motilal, four years of age, to a festival in another district. They never returned to the village and no trace of them could be found. Thirteen years later a gang of Thugs was captured by Sleeman *sahib* in the district to which Durga had gone for the festival. The leader (Jemadar) of the gang, to save his neck, became an approver and pointed out the spot where Durga and his wife had

been buried. He also produced some of the jewellery which had been found on them when they were murdered. When asked what had happened to little Motilal, he remained silent for a time, but after a little coaxing pointed to a member of his gang and said, " That is Motilal ; he is now my son." Motilal's life had been spared because this notorious Thug leader had taken a fancy to the little chap. He had adopted Motilal and trained him in the science and art of Thuggee.

This and other gruesome tales handed down from father to son of crimes committed by these professional assassins were told me by simple-minded village folk. I was interested in these stories, for this Province in which my lot was cast had been one of the happy-hunting-grounds of the Thugs. Hundreds of them had been hanged in Saugor—a town in which I sometimes stayed when on tour—but all those arrested were not hanged. To escape the gallows some of them, having become approvers, divulged the secrets of Thuggee and supplied detailed information regarding the men, women and children whom they had strangled.

Thuggee, as practised by these miscreants, was a hereditary system of murder handed down from father to son. They sometimes killed for the sheer lust of killing, because they believed that their goddess, Kali, regarded their victims as sacrifices to her. Kali, otherwise known as the Goddess of Destruction, first appeared on earth, say Indian mythologists, at a spot called Kali-Ghat (now Calcutta). Here stands her most famous temple, in which she is portrayed as a black figure with matted hair, fang-like teeth, and with face, hands and breasts smeared with blood.

To this loathsome idol the Thugs offered human sacrifices in the firm belief that their goddess would reward them in the next world. Other criminal sects also worshipped Kali ; even at the present day cut-throats are said to make their vows to this idol before going forth to commit a murder in her name.

The Thugs worshipped this goddess because they claimed that she had created the first Thugs. The legend

is that away far back in the beginning of time, the world was harassed by a mighty demon who was so tall that the deepest ocean reached only to his waist. This monster devoured mankind as fast as they were created. Kali came to their rescue by attacking with her sword this man-eating monster. Her thrusts, however, proved quite ineffective, as from every drop of blood that flowed from his wounds there sprang a new and equally dreadful monster. When almost in despair she tried another device. From the sweat of her arm she created two men, to each of whom she gave a small strip of cloth torn from the hem of her garment, and ordered them to use it in strangling all the demons. This they were able to do without shedding a drop of blood, and soon there was no demon left to harass the world. Kali was so proud of the achievements of the men she had created that she presented them with the strip of cloth as a reward for their labours, and ordered them to hand it down to their posterity, with the injunction to use it in strangling all men who were not devotees of their goddess. On the strength of this fantastic legend the Thugs, as worshippers of this Goddess of Destruction, had cut short the lives of hundreds of thousands of people in India, and without shedding a drop of blood.

Disguised as ordinary pedestrians they frequented the roads in the dry season when human game was plentiful. They buried the bodies of their victims in lonely spots and camouflaged their graves by lighting fires on them and leaving the ashes thereon. Generation after generation of Thugs thus lived the lives of professional assassins without coming under suspicion. They kept secret their cult and murderous practices.

In private life some of them followed peaceful and highly respectable occupations; they led double lives. There is on record one case in which an Indian servant in the employment of an English family proved to be a professional Thug. The duty of this servant was to attend to the children of the family. He attended to them so well for eleven months of the year that the children were

devoted to him. He was a great favourite with the parents too. In the dry season each year he used to get a month's leave in order, as he said, to visit an aged and dearly beloved old mother ; but he always returned to his duties as caretaker of the little ones he loved so tenderly. He was given away at last by an approver who had been one of his associates in the gang with which he had spent his month's leave each year.

The campaign against the Thugs was carried on from 1829 till about the middle of the nineteenth century ; but most of the gangs had been rounded up in the first ten years of the campaign. The task of proving their guilt was far from easy, for each member was sworn to secrecy regarding their practices. They concealed the bodies of their victims and bribed such local chiefs, landowners and village policemen as were likely to give evidence against them. The difficulty of getting evidence to prove their guilt was, however, overcome when members of gangs, caught red-handed, so to speak, became approvers to save their own necks. These approvers, some of whom had been leaders of gangs, gave detailed information regarding the travellers they had strangled, the spots where they had been buried, the amount of money, jewellery and other valuables taken from each, and the names and addresses of such members of their gangs as had evaded arrest. On the strength of the evidence supplied by the approvers, hundreds of their confrères in crime were laid by the heels. They had returned to their villages and were once more following peaceful avocations. In their houses large quantities of gold and silver coins, pearls, diamonds and other property belonging to the men, women and children they had done to death, were found. So extensive was the amount of booty thus recovered, that after returning to the relatives of the murdered travellers all that was claimed by them, the remainder sold for the benefit of the Government realised a sum sufficient to pay for the erection of two prison houses in Saugor.

When there was a large party of travellers to be " done in," two gangs sometimes joined forces. On ascertaining

from a member of the party the name of the place they were bound for, one of the Thugs would say that they too were travelling in that direction and that they had better keep together as there were many robbers on the road. Thugs would thus travel sometimes for days in company with unsuspecting men, women and children whom they had marked down as their prey.

The spot at which their devilish work was to be carried out having been decided on, some of the members of the gang were sent ahead to get the graves ready. On reaching this spot the Thugs used to induce their fellow-travellers to rest in the shade for a short time and to have some food with them. At the end of the meal the leader of the gang gave the recognised signal for action. The stranglers applied their strips of cloth to the necks of the unsuspecting travellers while they were still sitting on the ground. Other members of the gang held their hands and feet and pressed them down on their faces. In a few minutes all was over and not a drop of blood had been shed.

The bodies, after being ransacked for jewellery, money and other valuables, were thrown into graves already prepared. Some of their victims were, though unconscious, not yet dead ; but with four or five feet of earth on the top of them there was but little risk of their rising from their graves and disclosing the secrets of Thuggee. The spoil was quickly divided, after setting aside a part thereof for Kali, and the gang was on the road again and ready for another adventure.

The approvers in their confessions gave away the secrets of Thuggee. The gangs had been well organised, it would appear ; to each member a definite task had been allotted. To use the strip of cloth quickly and effectively was a highly specialised art entrusted only to the most skilful of the gang. Everything depended on quick action.

When they were finally rounded up by Sleeman, they showed neither penitence nor remorse for their fiendish crimes. They had, by practising murder by strangulation, done honour to Kali ; their victims were sacrifices to her. She had, they said, been their protector for centuries ; but

now she was angry and they were about to lose their own lives. Yes, their goddess was very angry, because some of their fraternity had strangled women and children, as well as men. She had ordered her followers to murder men only.

In the early thirties of last century many hundreds of Thugs were under trial at the same time in Saugor and Jubbulore in the Central Provinces. They retained their religious fanaticism to the very end. On their way to the improvised gallows where they were to be hanged in batches of ten, they made merry. At their own request they were allowed to hang themselves, for they were about to die to the glory of their goddess Kali, they said, and must not be polluted by the touch of a low-caste hangman before joining her in Paradise.

In a spirit of bravado they exchanged many quips and jests as they mounted the ladders leading to the platform of the gallows. On reaching it each selected his rope, placed the noose over his head, drew the knot firmly home behind the right ear, jumped off the platform and launched himself into eternity.

It is reckoned that the Thugs must have strangled on an average at least 10,000 people in India each year, over a period of three centuries. Of those captured by Sleeman, one, Buhram by name, confessed to having committed 931 murders, Ramzan 604 and Fatty Khan 508, and these were but three of many thousands of these professional assassins who had practised Thuggee on India's highways. One of the finest feats ever performed by any police organisation was that of wiping out these gangs of fanatical criminals, who claimed divine sanction for their heinous crimes. Verily, Sleeman the great Thug-hunter served India well.

CHAPTER XV

THE NON-VIOLENT, NON-CO-OPERATION MOVEMENT

BETWEEN 1905 and 1914 the progress made in building up a Department of Agriculture in the Central Provinces and Berar had been most gratifying. Much research and experimental work had been carried out, and a solid advance made, more especially in crop improvement. An organisation had been established by means of which landowners and *ryots*, in ever-increasing numbers, were being induced to adopt improved methods of farming. Young Indians, trained at the well-equipped Agricultural College at Nagpur in the science and practice of agriculture, had been given posts in the Department and were gradually relieving the senior officers of much of their burden. Unfortunately, just at the stage when a still more rapid advance was anticipated, the War broke out, and for four years progress was checked by shortage of staff and the difficulties caused by financial stringency. Four officers were released for War service, two of whom took up appointments in other countries after demobilisation. Soon after the War ended political agitation began, and the Non-Co-operation movement took shape. The organisers of the movement were members of the Indian Congress. Their object was to paralyse the administration by every possible means, and to make British government and law unworkable. Constitutional agitation was declaimed as useless, and passive resistance, or what Mr Gandhi, their leader, described as non-violent non-co-operation advocated.

The Congress party's paid agents, designated National Volunteers, carried on revolutionary propaganda both in rural and urban areas. In some parts of India the peaceful peasantry, who, for centuries, had lived in pathetic contentment, were roused as they had never been before.

Persistent efforts were made to boycott British goods and Government institutions. At frequent intervals—under the name of a *hartal* (day of mourning)—shops were closed and trouble fomented. The rioting which ensued sometimes ended in violence and hospital cases. Government officials, and more especially British officials, were jeered at and sometimes assaulted. Men charged with murder were eulogised as heroes, and public meetings and demonstrations were held in their honour. Repeated attempts were made to undermine the loyalty of the troops and the police, and rumours were disseminated to the effect that British rule had come to an end.

Those were troublous days in India. District officials were in a quandary as to how to deal with the law-breakers. They could not always rely on being backed up by their provincial government in the event of their taking strong action.

Mr Gandhi, a supreme tactician and a super-propagandist, had acquired enormous power and influence with the masses. Hundreds of thousands wore the Gandhi cap and garments made from *khaddar* (coarse home-spun and home-woven cloth)—the symbol of revolt against Western industrialism. The rumour had been spread that their adored leader was endowed with supernatural powers, that prison walls could not restrain him, and that Government was afraid to arrest him.

At increasingly frequent intervals there were outbursts of savagery, which were not in keeping with the avowed policy of the Mahatma: his policy was not accepted by all his lieutenants. Some of them made it clear that the question whether or not to adopt a policy of violence was one of mere expediency, and not of principle.

Mr Gandhi—"Something of a mystic, something of a *fakir*, altogether a rebel to the British Raj"—had reached the zenith of his fame. He boldly advised his millions of devotees to defy the "Satanic Government." India was in a turmoil. *Hartal* followed *hartal*, and riot followed riot. Lawlessness brooded over the land. The Mahatma and his henchmen had excited forces which they were quite

incapable of controlling. In April 1919 there was a very serious outbreak amounting almost to a rebellion in the Punjab, in which several Europeans were brutally murdered. In 1921 a rebellion broke out among the Moplahs—a fanatical race of Mohammedans in Malabar in Madras Presidency. They committed ghastly outrages upon the Hindus of Malabar, murdering thousands of them with fiendish barbarity. The Non-violent Non-Co-operation movement, so-called, had, in short, developed in practice into a positive challenge to the constituted government, and had become a grave menace to the good order of the body politic.

In dealing with this revolutionary movement, the Government had, from the very beginning, shown wonderful restraint, if not weakness ; but the massacre of thirty-two policemen at Chauri Chaura in the United Provinces by a frenzied crowd spurred them on to take action. These unfortunate men after being mauled were reported to have been burnt alive.

Mr Gandhi was arrested, tried, convicted and imprisoned the following month. The delusions of his many followers that the Government was afraid of him, and that he had supernatural powers which no prison could restrain, were dispelled. His gospel of Civil Disobedience had stirred them as they had never been stirred by any other leader. They had made great sacrifices for the cause of *Swaraj* ; but the millennium which he had promised them had not materialised. Non-violent non-co-operation had belied its name : it had led to acts of fiendish savagery, and that they had not bargained for.

When on a tour of inspection in Southern India about five years later, I had the pleasure of meeting Mr Gandhi at Bangalore, in Mysore State. For health reasons he was spending the hot weather there, and was staying in the Guest House of the Maharajah. In appearance he is a shrivelled-looking little man with very prominent ears. When I met him he was wearing a two-piece garment of home-spun cloth, his head was bare and closely-shaven, and his spectacles covered much of his small wrinkled face.

But I was impressed by his quiet dignity and utter lack of self-consciousness.

In his life he had played many parts. In England he had qualified as a barrister. In South Africa he had earned a reputation as a lawyer and a political agitator, and had, with much shrewdness and ability, initiated and directed a "Passive Resistance" movement among the Indians there. During the Boer War of 1899 and the Zulu revolt of 1908 he had, as a non-combatant, rendered valuable service to the Government. After returning to India he had experimented with Passive Resistance on a much larger scale, and with the consequences I have already described.

When I met him at Bangalore he was playing one of his more peaceful and commendable parts. Like other great men, he concentrates on one thing at a time. He was intensely interested in the practical side of dairying and cattle-breeding, and was considering ways and means of improving the dairy-farm which he had at Ahmedabad for supplying milk and milk products to his *ashram* (seminary). Politics, propaganda and the spinning-wheel were being given a rest.

During his rather long stay at Bangalore he visited, almost daily, the Government Institute of Animal Husbandry and Dairying and the cattle-breeding farm and dairy attached thereto, and saw, for the first time in his life perhaps, a fine herd of Indian and cross-bred kine, green fodder crops being preserved in silos, an up-to-date dairy with cream separators, pasteurising plant and other machinery imported from the West, and dozens of young Indian students, neat and trim, being trained in the theory and practice of dairying.

He had, in his more passionate moods some years earlier, played to the gallery by damning material progress and the British who had introduced it into India. They had thereby "acted as the Devil's agents in defiling a land of primitive contentment and peace with the screech of the locomotive, the whirr of machinery, and the curse of competitive industry." But if the whirr of our dairy

machinery grated on his ear, he was much too tactful and complaisant to show his displeasure. He was, for the time being, an ardent student of dairying and cattle-breeding, and as a student he wisely refrained from dabbling in politics.

Our modern dairy farm with its fine herd of sleek and well-fed cows with offspring at all stages of growth, its clean and comfortable cow-sheds, and its fields of luscious fodder-crops, were tokens of the humane manner in which the sacred cow was being treated. These tokens appealed to his deep religious sentiments ; and the very thorough arrangements made on the farm for the training of the keen and contented batch of young Indian students whom he met there appealed to his sympathies as an Indian nationalist. These young men would, in course of time, play their parts in building up the dairy industry in their own land.

Each of the many cows on the farm had her pet name entered in a very formal register in which detailed information regarding her age, milk yield from year to year, the number and sex of her calves and other particulars were recorded. Though I never attended a christening ceremony on the farm, I had occasion at times to study the life-history and performance of these dairy animals. Some of them had English names such as Martha and Grizell ; and to some, Indian names such as Tulsi and Sita had been given.

In one cow—Jill by name—Mr Gandhi took much interest. I still have a photograph of Jill which was taken while he was petting her. She, the oldest cow in the herd, had both British and Indian blood in her veins, and had earned the reputation of being " the best cow in Asia." Jill had a wonderful record : she had given 14,000 gallons of milk and sixteen healthy calves. In the photograph she looks plump and spruce in spite of her age, and holds her head high as if posing for her picture. It would appear as if she realised that she, the best cow in Asia, was being admired by the greatest of all cow-worshippers.

Jill, the pet and mascot of the farm, was a wonderful animal. Despite her decreasing milk yield, due to her great age, no member of the staff ever dared to suggest that she was no longer paying her way. She was treated as a privileged pensioner. During the day she wandered round the farm without let or hindrance, and fed whenever she felt inclined to. For her, grain bins were left open and gates leading to fields of luscious fodder crops kept ajar. In the heat of the day she could be seen quietly chewing the cud as she rested beneath a roof or under a shady tree. Years later she died, as Mr Gandhi would have wished her to die—peacefully in her stall.

On his visits to our dairy-farm Mr Gandhi was sometimes accompanied by Miss Slade—one of his disciples. Her father was an Admiral in the British Navy. She, it is said, decided to devote her life to the Mahatma's service after having read some of his writings. She renounced her old manner of living, adopted Indian dress and took the Indian name of Mira Bei. At his *ashram* she is said to have had a very harsh novitiate ; but undaunted she continued to serve him as a faithful nurse and servant.

On Mr Smith—a very efficient and tactful Scot who was in charge of this and other dairy and cattle-breeding farms controlled by the Government of India—fell the pleasant duty of teaching the Mahatma the principles of dairying and cattle-breeding. He personally showed him round the farm and dairy on several occasions, lent him books on dairying, and sometimes visited him in the afternoons at the Guest House. Mr Gandhi had, by his doctor's orders, to rest in the afternoon ; but that did not prevent their having heart-to-heart talks about cows and calves, butter and *ghi*, dairy schemes suitable for village conditions, cattle-breeding and feeding, and many other aspects of the dairy problem. The teacher knew his subject from A to Z and did most of the talking : the pupil lying at his ease in bed, and dressed in the scantiest of loin-cloths, was an attentive listener.

Our whole staff, and Mr Smith in particular, was delighted by the charm of Mr Gandhi's manner. He

was very considerate of others, appreciated the attention paid to him, and showed a fine sense of humour. He was a keen pupil, too. Though ailing, he must needs go everywhere and see everything on the farm. He even entered the deep silo pit to inspect the silage, and, on reaching the bottom of it, gave rise to mirth by declaring solemnly that he was at last " in the bottomless pit."

For the time being the stormy petrel of Indian politics had switched off his interests from non-co-operation, civil disobedience and the spinning-wheel, to the constructive work being done for India by one of the institutions of a " Satanic Government." When I met him he at once expressed his gratitude for the help he had received from our staff in his study of dairying, and spoke of Mr Smith as his *guru* (teacher).

He got Mr Smith to visit his *ashram* dairy more than once, and to prepare for him a memorandum on how to improve cattle in a typical Indian village. In the issue of his paper *Young India*, published on the 4th of August 1927, he wrote as follows regarding this memorandum :—

" This week I give Mr Wm. Smith's note on a co-operative scheme for the improvement of village cattle. The *panjrapole* scheme published in the issue of July 7th is capable of being enforced almost immediately, because the machinery is ready and only requires supplementary improvement, whereas the proposed scheme for the villages outside the *ghi*-producing tract and remote from cities is comparatively difficult of operation. But real improvement has to begin from these numerous villages, which, on account of economic pressure and the ignorance of people in cattle-breeding, helplessly become centres for slaughter-houses to draw upon. If a careful student were to study the movement of cattle that find themselves in the numerous slaughter-houses of India, he will find that agents who know no principle save that of making money as fast as possible and anyhow, purchase cattle from these remote villages for the slaughter-houses. A *gosevak* is not easily made, certainly never for the wishing. He has to study his art as much as an engineer or a lawyer or a doctor, and has to take more pains than any of them. Mr Smith's scheme should, therefore, be studied by those who desire the

welfare of cattle and of Indian villages, with a view to putting it into operation in select villages. There is nothing sacrosanct about the scheme. It serves as a model for one who knows nothing about cattle-breeding or co-operative schemes. Nor need a non-co-operator be frightened of it, because of the mention of its Government co-operative department. There is no such thing as national non-co-operation at the present moment. When it was in vogue, it did not touch all Government departments. There were non-co-operators who did not taboo co-operative societies, and I know several to-day who call themselves non-co-operators although they belong to active co-operative organisations. But a *gosevak* who does not wish to take advantage of a statutory co-operative society may still utilise the scheme. Indeed I do not know that on the whole it would not be better to do without seeking the shelter of a statutory society. He may take the advice of the co-operative department if it will whole-heartedly give it to him, and may also make use of studs if any are available. The chief thing is to make a beginning in the matter of the education of villagers in cattle improvement. The proposed scheme is a help in that direction. Mr Smith promises a double increase in the value of cattle and the yield of milk if the scheme is properly worked.—M. K. G."

Personally, I rather liked what I saw of the Mahatma. His quaint sayings and sense of humour were refreshing. He likes to create a laugh, and does not stand on his dignity. At Bangalore he showed the better side of his character—the side which makes for constructive work for the economic betterment of India. The pity is that a man so charming in manner and versatile in ability should have induced a people, by nature law-abiding, to hold in contempt the sanctity of law.

In his article from which I have quoted he made it clear that, though a non-co-operator by profession he was willing to accept help from at least one Government department. The " Satanic Government," like the curate's egg, was, in his estimation, good in parts. Even non-co-operators believe apparently in getting the best of both worlds. But politicians generally are notoriously inconsistent, and in this country they are but little better than they are in India.

CHAPTER XVI

HANDICAPS TO PROGRESS

With Mr Gandhi's exit from the political arena, the Non-Co-operation movement lost its driving force. His lieutenants lacked his influence with the masses : they could not rouse them as he had done.

The movement had not affected our work to any appreciable extent. Efforts had been made to boycott our agricultural shows and to create discontent among our subordinate staff, but without much success. A few of the more politically-minded landholders wore the Gandhi cap and garments made of *khaddar* ; but that did not prevent them from accepting all the assistance they could get from our Department. They, too, believed in getting the best of both worlds : they ran with the hare and hunted with the hounds.

In 1923 trouble of another kind began to make itself felt. Ever since the introduction of the Reforms the feeling between the Hindus and the Mohammedans has been growing more bitter. The religious feuds between these two communities go as far back as the eleventh century, when Mahmud of Ghazni invaded and conquered parts of Northern India and destroyed and pillaged many Hindu temples.

The prospects of national autonomy gave the leaders of these two communities food for thought. If the British were to relax their hold on India, which of the two communities was to be top-dog ? That was the question which agitated their minds. The seventy-eight million Mohammedans never forget the fact that for centuries they were the ruling race in India. Many of them believe that with help from Afghanistan and the frontier tribes they could, if the controlling hand of British rule were removed,

conquer India again. The Hindus, on the other hand, think that, in the event of that happening, their numbers and superior education would give them a paramount place in the governance of the country.

During the period of intense political activity I was Director of Agriculture in my Province. With the introduction of the Reforms, Agriculture had been transferred to the control of an Indian Minister chosen from and responsible to the local legislature or Legislative Council. The Indian gentleman appointed was, fortunately for the Department, a trained administrator who had for many years served in the Indian Civil Service, and was a large landowner to boot. He had, after retiring from Government service, been giving some attention to his estate. A more agreeable political chief it would have been hard to find. We worked in the utmost harmony.

Despite shortage of staff, difficulties caused by financial stringency, and the state of unrest in the body-politic, the Department continued to make progress. By establishing more Government farms and more village seed-farms and agricultural associations in the districts, we gradually got into touch with an ever-increasing number of the tillers of the soil. We demonstrated in the villages, as far as possible, every improvement recommended for adoption ; for we had learnt by experience that the bucolic mind is much more deeply impressed by practical demonstrations which hit him in the eye, so to speak, than by verbal or written advice.

Co-operation with other Government departments interested in promoting the well-being of the agriculturists was our maxim. With the Irrigation Department we co-operated in inducing the cultivators to take water from the Government tanks and canals for their rice, sugar-cane and other crops ; with the assistance of the Co-operative Department we organised societies for the sale and distribution of selected seed, improved implements, manures and fungicides ; and we consulted the Veterinary Department regarding the outbreaks of bovine diseases.

To sustain the interest of landholders in rural

development, we showed them how much we appreciated the services they were rendering by instituting a system of rewards. Every deserving landholder was presented with a decorative *sanad* (testimonial) which testified to the fact that he had done useful work in his village in promoting agricultural improvements. In the event of his continuing to do good work, he was given a suitably designed silver medal. But this was not all : in course of time he was presented with a gold medal and recommended for a Government title. These *sanads*, medals and titles were much appreciated, for they were presented to the recipients at large public gatherings, and, when possible, by His Excellency the Governor. The recipient invariably wore his medals at agricultural shows and on other big occasions.

Writing about 300 years ago on the subject of the importance of agriculture to a country, Markham said :

"The husbandman is the master of the earth, turning barrenness into fruitfulness, whereby all commonwealths are maintained and upheld. His labour giveth liberty to all vocations, arts and trades to follow their several functions with peace and industry. What can we say in this world is profitable where husbandry is wanting, it being the great nerve and sinew which holdeth together all the joints of a monarchy . . . "

In India, unfortunately, the agriculturist's vocation is not held in high esteem. That it is an honourable vocation and worthy of the attention of the best brains of the community is not as yet realised there. The more ambitious and intelligent lads of the village drift to the towns, where they take up clerical and other posts and enjoy the amenities of town life. The type of education given in village schools is one of the factors which make for this drift. It is too literary, and tends to give the schoolboy a bias against manual labour in any shape or form. He is taught words, words, words : the education he gets exercises his memory, but fails very largely to interest him in the many attractions of the countryside. Following the example of the West, there is a garden attached to some of the schools ; but this garden is maintained for ornamental rather than

for educative and practical purposes. The boys of the higher castes are prejudiced against gardening, as it involves what they regard as "coolie" work. Their parents, too, discourage them from performing tasks which are not in keeping with the dignity of their caste.

Froebel, the mystic and disciple of Pestalozzi, held that the child should be a pupil of Nature, and learn by doing things. In the school-garden he should have his own plot and cultivate it with his own hands. A century or so later Spencer, another great educationist, stressed the importance of encouraging self-activity in the child, and an interest in natural things. He should, he said, be allowed to do things ; because by doing things he acquired manual skill and quickness of eye and became more practical and resourceful.

The village teachers in India unfortunately have no such high ideals. Many of them are men of high caste who have been reared and educated in the towns. The tuition they give does not bear a close relationship to the lives of the patient, plodding tillers of the soil. They train the memory of the pupil ; but his intelligence, latent interests and manual skill are left undeveloped.

This and other handicaps to the promotion of rural education we discussed at length with the Department of Education, and suggested ways and means of overcoming the defects. With a view to giving a rural bias to education as given in rural areas an agricultural officer was lent to that Department. He, after visiting village schools, gave advice as to how the Nature Study work could be improved, and the teaching made more objective and less abstract, by associating it with gardening and natural things generally.

In the preparation of leaflets, popular bulletins and other agricultural publications we also tried to make the information supplied as objective as possible. One of these publications, for example, took the from of a book entitled *The Story of Rai Sahib Kaluram Kurmi of Petgaon.* Into the warp and woof of this story was woven much useful information regarding ways and means of assisting the advance of the rural community towards a fuller life.

Kaluram Kurmi, the hero of the story, was a worthy and enterprising landlord who lost no opportunity of learning all he could about the discoveries of the Department, and of applying them in his village. He visited the Government farms in his province, took note of all he saw and worked hand-in-glove with Government in bringing the fruits of these discoveries within reach of the *ryots* of his village.

Instead of sending his son to a high school or arts college where he would be taught philosophy, history and other literary subjects, he got him admitted into the Agricultural College ; for he realised that, though India is an overwhelmingly agricultural country, these high schools and art colleges were turning out a nation of clerks who were ill-fitted to play their part in the development of the one great industry of their Motherland.

The book was illustrated and published in English, Hindi and Marathi. Thousands of copies were sold : Kaluram Kurmi, though a mythical personage, became the ideal of many an enterprising village landholder.

Towards the end of the story the title of Rai Sahib had been tacked on to his name ; for Government in recognition of his services to the community had conferred on him that prized decoration. Petgaon had become a model village : by his precept and example the Rai Sahib had made it so.

To make the book as realistic as possible a photograph purporting to be that of the hero of the story, appeared on the frontispiece. The actual photograph used was one of a landowner, Mahdo Dao by name. He, it is true, was not a Rai Sahib ; but he agreed to have his picture taken with borrowed insignia prominently displayed on his breast. Mahdo Dao was a very old friend of mine. Fifteen years earlier when the Department in its enthusiasm was working zealously in Chhattisgarh—a very backward tract—he had been to it a pillar of strength ; for he had induced the *ryots* in his village to transplant and irrigate their rice, to grow ground-nut and sugar-cane and to adopt other agricultural improvements.

A year after the publication of this book in which his picture appeared, Government, on my advice, bestowed on him the coveted title of Rai Sahib. The investiture in Government House in Nagpur was an impressive ceremony. It was attended by the *élite* of Nagpur and by the Europeans and Indians who appeared in the Birthday Honours list of that year. Old Mahdo Dao from his remote village in Chhattisgarh was very nervous when his name was read out and his good work as a progressive landowner recounted by the Chief Secretary to Government dressed in his uniform. His Excellency the Governor, after decorating him and declaring him a Rai Sahib, shook him warmly by the hand and said, with a twinkle in his eye : " Well done, Rai Sahib *Kaluram Kurmi of Petgaon*." His Excellency, too, had read the story.

For four years the War had checked the development and work of provincial departments of agriculture throughout India. When the Reforms were introduced a little over a year later, they received a further check when several of the more experienced members of their staffs retired on proportionate pension rather than serve under the new conditions. Most of them had made their mark in their several provinces, and had but little difficulty in getting lucrative appointments in other parts of the Empire. Their gain was India's loss. I could have followed their example by accepting a responsible appointment offered to me in South Africa ; but I turned it down because I was very loath to sever my connection with my work in India. Moreover, there is much in what the Prince of dramatists has said about it being better " to bear those ills we have than fly to others that we know not of."

But I was destined to leave my old Province and to take up the appointment of Agricultural Adviser to the Government of India and Director of its research institutions, including the Imperial Agricultural Research Institute at Pusa.

For many reasons I was sorry to leave my old Department, in building up which I had played a part. With the Tundilals, Ramcharanlals and many other assistants who

had served me so loyally and well when its foundations were being laid, I was sorry to part. I realise now how extremely arduous their duties were. They toured in the monsoon when the rain came down in torrents, and in the hot weather when the fierce heat of the sun was like that of a furnace. They found shelter for the night as best they could—sometimes in remote and backward villages where living accommodation and food supplies were not easy to procure. They suffered from malaria, they suffered from exhaustion ; but they never complained. Several of them were, in course of time, promoted to higher grades in the Department, and justified that promotion. On retiring from Government service some of them have taken up farming and are now filling the rôle of *Rai Sahib Kaluram Kurmi* in their villages. In their retirement they have the satisfaction of knowing that their life's work has borne fruit, and that they have earned the gratitude both of Government and of thousands of their countrymen.

Of the many landholders who co-operated with us in the villages I have the most pleasant memories. Very few of them knew any language but their own vernacular ; but they had a first-hand acquaintance with earth and animals. Most of them were comparatively small men, holding only a share in their village. They cultivated part of their own lands, understood the difficulties with which the village cultivators generally have to contend, and had much influence with them.

There were other landowners—some of them men owning several villages—who were less helpful. They were absentee landlords who took little interest in agriculture. They lived in the towns, where they enjoyed the society of their caste-fellows and many amenities of life unobtainable in their villages. But even among these absentee landowners who, being rent-collectors rather than practical farmers, took little or no personal interest in the work of ameliorating the lot of their tenants, we had some good friends. The pity is that India's landed aristocracy generally do not as yet realise that agriculture is a vocation worthy of the attention of the highest in the land. It is so worthy a vocation that the King

Emperor worships at its shrine. The rapid strides made during the last century and a half in developing arable and animal husbandry in Great Britain have been largely due to the fine example set by the patriotic and enterprising " gentleman " farmers of our land.

CHAPTER XVII

RACES, CASTES AND CREEDS

TILL I had toured over the length and breadth of India, I did not realise how vast it was. Its length, from the Himalayas in the north to Cape Comorin in the south, is nearly 2000 miles. In breadth it is about the same. It extends from 8° to 36° northern latitude, from 61° to 100° eastern longitude, and comprises an area of 1,800,000 square miles. It is as large as Europe excluding Russia. Nearly two-thirds of this area is under British administration; the rest is administered by Indian States. These States in the aggregate embrace an area of 675,000 square miles, and have a population of 70 millions. There are over 600 States. Of these some comprise only a few square miles, and others an area of thousands of square miles and a population of several millions. Hyderabad State, for example, is as large as Italy and has a population of over 12 millions.

The population of all India is over 352 millions. Under British rule she has, for over a century, enjoyed unbroken peace. The British-Indian Army has protected her against invasion from the north, and the British Navy has guarded her seas. She has been given, too, a great measure of security against famine, and much has been done to provide medical aid both in rural and urban areas. The population, as one would expect, has increased very rapidly in consequence. Within the last sixty years it has gone up by well over 100 millions.

The pressure of the population on the land is becoming greater year by year. There has, as yet, been no pronounced food shortage, as new lands are being brought under irrigation and large areas sown every year with the high-yielding strains of seed evolved by the Departments of Agriculture. If, however, the population continues to

increase at the present rate, the time will come when India will have to import much larger quantities of food-grains than she is now doing. She is at present importing every year rice from Burma, and she has found it necessary at times to import wheat from Australia.

India is inhabited by a medley of races, speaking many different languages. These races differ much in appearance as well as in their manners and customs. Speaking generally, those in the north, where the climate is more invigorating, are much more muscular and virile than those in the south, where there is no real cold weather.

But the climate is only one of several factors which have affected the physical qualities of the different races. Diet has played its part. In the north many of the peoples are flesh-eaters and their principal food-grain is wheat: in the south much less flesh is consumed and the diet consists very largely of rice and pulses. In the north, moreover, a large percentage of the people are the offspring of those hardy, warlike races which invaded India between the 12th and the 18th century.

Prior to British rule India had always been at the mercy of the invader. Of the invasions which have taken place within historic times, the first of which we have any authentic account were those of the Aryans who, about 1500 years before the beginning of the Christian era, came in vast hordes from the table-lands of Central Asia and poured through the north-western passes in successive waves. Branches of the same race, speaking a similar language, namely Aryan, migrated west, and settled down in the countries skirting the Mediterranean. One of the western off-shoots, we are told, built Athens and Sparta; another migrated as far north as the shores of Scandinavia.

The Aryans who trekked into India with their flocks and herds drove the people, whom they found in possession of the fertile lands of the Indus and Gangetic plains, back into the hills and jungles. Those who failed to find a safe hiding place there were treated as slaves.

The Aryans were a pastoral and agricultural people: they kept their flocks and herds and grew cereals. The

cow to them was sacred, for she provided them with one of their staple foods, namely, milk. They were a spiritually-minded people ; all Nature was gods to them. Their gods personified all the good things they desired. Indra was the God of Rain ; Agni the God of Fire ; but these were but a few of the many gods who could, they believed, make or mar their happiness. The father of each family was the priest and performed the rites of propitiation and thanksgiving.

The religion of the orthodox Hindu has not changed much since then. He still worships the cow, and in his villages addresses supplications to his gods in times of stress and strain.

In the course of time the Aryans devised a caste system. One of their objects in doing so was to prevent intermarriage between their tribes and the despised aborigines whom they had conquered. These Indo-Aryans were proud of their blue Aryan blood : they had, as we say, a good conceit of themselves.

Within recent years Hitler and his Nazi followers have heralded to the world that the Germans are of Aryan stock. Like the Indo-Aryans they, too, have devised a kind of caste system with a view to maintaining the purity of their race. In this case the unfortunate victims are the Jews who, under the present regime, are Germany's " untouchables."

The literature of ancient India being entirely religious and exegetic in origin tells us very little about the life and culture of the Indo-Aryans, or about the people they found in possession when they invaded India. The excavations carried out within recent years at Mohenjo-daro in Sind, and Harappa in the Punjab, have proved, however, that India even in pre-Aryan days enjoyed a comparatively high standard of culture and civilisation. The excavations at the former place have shown that 5000 years ago a well-built, flourishing city stood there. This city was built of brick, and the streets were laid out with great regularity. Most of the houses had their own wells from which they drew water which had filtered from a river nearby, and all had a drainage system of a kind. The citizens cultivated

wheat and barley ; bred cattle, sheep, pigs and poultry for food ; practised certain arts and crafts, and were acquainted with the use of gold, silver, copper and lead. Their culture and civilisation rivalled, and was contemporary with, that of Sumeria and Elam ; their civilisation was hoary with age when the ancient Briton was still a painted savage, dressed in skins.

It is probable that Mohenjo-daro and Harappa, and the culture and civilisation which they represent, owed their existence to earlier invaders who were of Dravidian stock, and that the aborigines whom they found in occupation were the ancestors of the Gonds, Bhils and other primitive races still found in the jungles and mountain regions of India.

The Aryan conquerors, after settling down as colonists in the fertile plains of the Indus and the Ganges, evolved that faith known as Brahmanism which, in course of time, was to spread over all India, from Cape Comorin in the south to the Himalayas in the north. That faith became the foundation of Hinduism, the religion of all the people of Hind or India. It was, and still is, a somewhat elastic religion. It received within its fold tribes and races who worshipped many strange deities ; but these deities though not recognised by the Aryan priesthood, were accepted by them as being local manifestations of their gods.

The priesthood of the Aryans became, in course of time, a hereditary profession, and when the caste system took shape the priests were drawn from the Brahmin or priestly caste. They were the intellectuals, and to them was entrusted the work of elaborating a theory of religion and life suitable for the peoples of India. Being men of subtle mind, they succeeded in evolving a religion which has stood the test of time—a religion of which caste is the soul.

One of the fundamental beliefs of Hinduism is the doctrine of transmigration. The soul of man after death is supposed to enter some other living creature of lower status, and in each transmigration the soul raises itself or debases itself by its actions. For his good works in this

life a man is rewarded in the next, and *vice versa*. This doctrine of *karma*, as it is called in Hinduism, is cheering for the caste Hindu who is already supposed to have made good progress in his spiritual life ; but it is very depressing for the out-caste whose sad plight is attributed to the sins of his ancestors.

The caste system as formulated by the Aryan priesthood provided for four castes or classes : the Brahmin or priestly caste ; the Kshatriya or governing and warrior caste ; the Vaisya or trader and agriculturist caste ; and the Sudra or menial caste, which included artisans and other humble folks who did manual labour. The people were thus divided into four castes, representing religion, war, commerce and agriculture, and servitude. Of these four castes the first three were high-castes, and at the outset were entirely Aryan. The Sudras were most probably mainly Dravidians. All the people in India at that time were not included in one or other of these four divisions. The Bhils, Gonds and other aboriginal tribes were left outside the pale of the caste system.

As time went on, the four caste divisions got divided up into numerous castes and sub-castes. There are now 2300 different castes recognised in Hinduism, as evolved by the Aryan priesthood.

Hinduism is a religion, but it is something more. It is a philosophy of life, in accordance with which human beings are divided up into definite social classes, in which they and their posterity remain for all time. No man can, by accumulating wealth, or acquiring education and culture, raise himself or his children to a higher caste. He cannot even marry outside his caste. As a social system it sorely handicaps the under-dog.

Brahmin supremacy was the real foundation of Hinduism, with its rigour of caste distinction, and with learning and culture the monopoly of the priesthood. Though the caste system is no longer the force it once was, the Brahmins still maintain their supremacy in Hinduism, and wield a power in India which is out of all proportion to their numbers.

The caste system is particularly hard on the out-castes or "untouchables"; for no matter how well they acquit themselves in life, they and their offspring are destined to be out-castes for ever. In most parts of India they are segregated in the villages, and are not allowed to take water from the wells used by caste Hindus, or to worship in their temples. In parts of India they experience difficulty, too, in getting their children admitted into the village schools, though these are supported by the State. The high-caste Hindu believes that he is defiled when his person, food or drink is touched by a low-caste man. In Madras Presidency, caste Hindus hold that even the shadow of an "untouchable" defiles the high-caste man, woman or child on whom it falls.

The "untouchable" is, as a rule, quite illiterate. In towns many of them are employed in factories or as navvies. In the villages they work as labourers in the fields of the more substantial landholders.

The Hindus number 238 millions, including from 50 to 60 millions belonging to the depressed classes. The second largest community are the Mohammedans, who are the descendants or the converts of the virile and warlike Arabs, Turks, Persians, Moguls and other Moslem races who overran a great part of India between the tenth and eighteenth centuries. They number over 77 millions. They were the followers of the Prophet Mahomet who, in the beginning of the seventh century, built up a religion which took the world by storm. Before the close of the eighth century Islam in its hot crusading youth had carried the banner of the Prophet as far as France and Spain in the west, and Afghanistan in the east, converting to the new creed the wild and warlike tribes of the Indian border-land.

Buddhists number nearly 13 millions, 96 per cent. of whom are to be found in Burma, Sikhs 4 millions, Jains about 1¼ million, Parsis just over 100,000, and Christians about 6 millions.

The Sikhs of India live almost entirely in the Punjab and in adjoining Indian States, such as Patiala. Unlike

the Hindus, they reject polytheism, image worship and pilgrimages. This small but vigorous community contributed no less than 80,000 men to serve in the Great War—a larger proportion than any other community in India. The Jains are to be found mostly in Rajputana and the Native States of Bombay Presidency. The Christian community is the third largest religious body in India—omitting Burma. The Christian missions have rendered splendid services in opening and maintaining schools and hospitals, and in working for the uplift of the depressed classes. Their converts are drawn mostly from the " untouchables." To them the missions have given a new dignity and new hope. The Parsis, who follow the religion of Zoroaster, trace their origin from Persia. Their community is small, well educated and very prosperous.

Outside the pale of these religions there are tribes and sects, each with its own peculiar customs and religious rites. They are to be found mainly in jungly regions, and include aboriginal tribes whose beliefs as to the unseen world are bound up with the practice of worshipping the forces and objects of nature, and the spirits which, according to their belief, reside in natural phenomena. These primitive peoples, of whom there are some ten millions in India, do not belong to any particular religion. For countless ages they have followed their own simple animistic and tribal faiths.

Early in the eighth century the Mohammedans conquered Sind after a desperate fight with the Rajput chiefs. Regarding, as they did, the Hindus as idolaters, they destroyed their temples, smashed their idols, murdered their priests and forcibly converted thousands to the Moslem creed. For some centuries after this India was comparatively free from invasions. In the beginning of the eleventh century they began again when Sultan Mahmud of Ghazni, hearing much of the wealth of Ind, invaded India from the north. He came not to colonise but to ravish, to plunder, and to slay the infidel and destroy his places of idolatrous worship. Again and again he burst into India, and after destroying temples and slaying

priests, carried back with him slaves and looted cattle laden with booty.

By the Mohammedans Mahmud of Ghazni is greatly venerated : by the Hindus he is despised as a ruthless barbarian who plundered their temples and slew their priests. In his sixteenth and most famous expedition in A.D. 1024 he marched on Somnath, where there was a famous Hindu temple which was strongly fortified. In a desperate battle many thousands of Hindus were slaughtered. On entering the temple, Mahmud, otherwise known as the " Idol Breaker," was offered an enormous ransom by the priests if he would spare the great phallic symbol of Siva. But Mahmud cried out in disdain that he was a breaker, not a seller of idols, and at the same time clove the lingam of the idol with his mace. Forthwith a vast treasure of jewels and gold poured forth from its vitals. Mahmud carried off the treasures to his Afghan kingdom.

But in course of time the Mohammedans came to stay, and dynasty after dynasty was established. More and more of India came under the conquerors, till at last Delhi was captured. Each fresh horde of invaders swept everything before it like a devastating pestilence. Towns and villages were sacked and burnt, and thousands of men, women and children massacred. The Hindus, torn by dissensions, due partly to their caste system, were no match for the fierce, virile races which poured through the passes.

Of the several Moslem dynasties established in India, the greatest was that founded by the Moghul Baber, and known as the Moghul Empire. It lasted for nearly a century and a half. Akbar, a grandson of Baber and a contemporary of Queen Elizabeth of England, was the greatest of the Moghul Emperors and the true founder of the Empire of that name. He was a fine military leader and a wise administrator. His aim was to be popular with all the peoples in his Empire and to gain their confidence. But this great Emperor, like the other Moghul emperors who came after him, was embittered towards the end of his reign by the plots of his sons, who were

jealous of him and wanted to take his place on the throne. He died very suddenly in 1605. Poisoning was suspected.

Jehangir, his son, who succeeded him, was the first of the Moghul emperors to devote his attention to architecture. At Sikandra near Agra he erected a beautiful tomb to his father, and under his direction many of the fortresses and palaces at Agra and Lahore were built.

Shah Jehan, the eldest son of Jehangir, erected the divinely beautiful Taj at Agra, in memory of his principal wife, Mumtaz Mahal, "the Exalted of the Palace." Towards the end of his reign he, too, had much trouble with his sons, each of whom claimed the throne. Aurungzeb finally deposed his father and installed himself as Emperor. He ruled over as much of India almost as the British do at present; but he was cruel and fanatical, and when he died the greatness of the Moghul Empire died with him. During his reign he had introduced the system of entrusting the administration of the dependent provinces of his Empire to governors. In course of time these became more or less independent, and established dynasties of their own.

Interesting descriptions of the Moghul Empire have been given by Captain John Hawkins, Sir Thomas Roe and others, who had the privilege of residing for a time at the Courts of the Emperors. Hawkins tells us that Jehangir's Court was one of great magnificence. The Emperor had in his treasury an incalculable collection of gold and silver coins, and countless chests filled with gems of all kinds. In his capital were 200,000 armed men, and 40,000 elephants, half of them trained for war.

Sir Thomas Roe, who resided at Jehangir's Court some years later, also speaks of the enormous wealth of the Emperor. His revenue was enormous, being derived from the land, the accepting of presents, and the inheritance of all men's goods. All property passed to the Crown on the death of the owner. Merchants, no matter how rich, and some of them left one or two millions sterling, were stripped of their belongings. The Emperor assigned what he thought sufficient for the widow and family and retained

the rest for himself. The jewels he kept entirely for himself: of them there was no redistribution.

There are some who hold that the history of India is not worthy of study. They assert that it is merely " a monotonous round of conquest, ephemeral greatness, revolt, bloodshed and decay, which carries man to no higher stage." During the reign of the Moghul emperors civilisation, in one sphere at least, was carried to a higher stage ; for they left us " some of the noblest of man's monuments in stone." They were endowed with large architectonic ideas, and left behind them many fine buildings to perpetuate their memory.

In Agra, Akbar built a magnificent fort and palace. The palace, with its Pearl Mosque and other beautiful marble buildings, is superb. Like some of the other Moghul emperors, Akbar was capricious in his tastes. On getting tired of Agra he transferred his place of residence to Fatehpur Sikri, twenty-two miles from Agra. Here he built a second palace, of which it has been said that " every building is a palace, and every palace a dream carved in red sandstone."

The tomb of Akbar, six miles from Agra, designed and commenced by Akbar and completed by his son Jehangir, is another marvellous piece of architecture. The building containing the tomb rises in terraces. The lower storeys are of red sandstone, and the top storey is of white marble decorated with panels of marble wrought in the most exquisite patterns. On the tomb of pure white marble in the centre of this most beautiful building is the one word " AKBAR."

The Taj Mahal has been called " the most glorious tomb that grief ever raised in memory of love." In the construction of this palace of dream-like beauty, with its lovely gardens and fountains, twenty thousand workmen, and many Indian and Italian architects, artists and artificers, are said to have been employed for seventeen years 1631-1648. The Taj Mahal, or Taj, as it is commonly called, is one of the wonders of the world. By day, the pure white marble of which it is built shines with a dazzling

brilliance. By moonlight, its great domes and stately minarets are a glow of light. Its phantom-like beauty is hard to describe. The domes and minarets seem to be floating in the silver light of the moonlit sky, and are reflected in every detail in the waters of the fountain at the base of the Taj. Countless visitors have been enchanted by the kind of unearthly charm of this palace. Over a century ago Meadows Taylor spoke of it in the following terms : " If there was nothing else in India this (the Taj) alone would repay the journey. The distant view of this matchless edifice satisfied me that its fame is well deserved. So pure, so glorious did it appear, that I almost feared to approach it, lest the charm should be broken." This is the impression which the first view of the Taj creates in the minds of most visitors. It is, however, by no means a phantom monument, but a solid building of purest white marble, the brilliance of which two hundred years of scorching sun has not bedimmed. Its marble base alone contains enough marble to build a modern block of flats. There are eighteen or twenty steps leading to a perfect platform on which the cenotaph is erected. One hardly knows what to admire most : each point of beauty is excelled by the next. The interior of the tomb is like a fairy palace. The open tracery-work of the large octagonal marble screen surrounding the vault ; the walls, arches and portals, covered with the most graceful and exquisite designs inlaid in marbles of different colours, and the tombs of the purest white marble inlaid with jasper, cornelian and other precious stones, are so beautiful in every detail that it is hard to believe that the æsthetic taste of man was so highly developed three centuries ago. In the vault, the Emperor Shah Jehan and his adored wife sleep together.

Your Indian guide dilates on the beauty and virtues of Mumtaz Mahal as he walks round with you. She was not only beautiful, she was tender-hearted and very faithful to her consort. She even accompanied him on his campaigns, as they were never happy when apart, and when she died, he was overwhelmed by grief. For weeks he refused to see any of his courtiers, or to transact any business of State.

The guide ends the doleful story by affirming that the Emperor's hair turned silver-grey with sorrow.

Shah Jehan decided to build, on a still more splendid scale, a new palace at Delhi. He erected there the Red Palace and the Jama Masjid : the latter is said to be the largest mosque in the world. The walls rise over 100 feet in height. High above these again rise the massive domes and stately minarets of the palace itself. The wall is built of red sandstone crested with battlements. In the Hall of Public Audience in this palace is an alcove in which once stood the famous Peacock Throne, valued by Tavernier (a Frenchman who travelled much in India in the seventeenth century) at nearly six-and-a-half million pounds sterling. That throne, celebrated in song and history, blazed in Shah Jehan's day with diamonds, sapphires and other precious stones. It was carried off by Nadir Shah and his army of wild Afghan invaders in 1739, after he had massacred thousands of men, women and children in the ancient city of Delhi.

These relics of the Moghul Empire testify to the grandeur and extravagance of the Courts of the Emperors. Tavernier tells us that the rulers of India at that time were of fabulous wealth ; but the peasantry were very poor and much oppressed. Some provinces were, he said, like deserts, as the peasants to escape their oppressors had fled from their villages to the hills and jungles.

Macaulay gives a still more graphic picture of Moghul times. In his essay on Clive he says :—

" The Empire which Baber and his Moghuls reared in the sixteenth century was one of the most extensive and splendid in the world. In no European kingdom was so large a revenue poured into the treasury. The beauty and magnificence of the buildings erected by the sovereigns of Hindustan amazed even travellers who had seen Saint Peter's. The innumerable retinues and gorgeous decorations which surrounded the throne of Delhi dazzled even eyes which were accustomed to the pomp of Versailles. Some of the great Viceroys who held their posts by virtue of commissions from Mogul emperors ruled as many subjects as the King of France or the Emperor

of Germany. . . . There can be little doubt that this great empire, powerful and prosperous as it appears on a superficial view, was yet, even in its best days, far worse governed than the worst governed parts of Europe now are. The administration was tainted with all the vices of Oriental despotism, and with all the vices inseparable from the domination of race over race. The conflicting pretensions of the princes of the royal house produced a long series of crimes and public disasters. Ambitious lieutenants of the sovereign sometimes aspired to independence. Fierce tribes of Hindus, impatient of a foreign yoke, frequently withheld tribute, repelled the armies of the government from the mountain fastnesses, and poured down in arms on the cultivated plains. In spite, however, of much constant maladministration, in spite of convulsions which shook the whole frame of society, this great monarchy, on the whole, retained, during some generations, an outward appearance of unity, majesty and energy."

CHAPTER XVIII

THE EAST INDIA COMPANY

PRIOR to British rule, dynasty after dynasty rose and fell in India as wave after wave of invasion swept down the passes from the colder climes and hungry lands of Central Asia. These invaders had heard fabulous stories about that El Dorado which lay south of the Himalayas, where, by force of arms, rich booty and fertile lands could be obtained and kingdoms established. Theirs was the same spirit as stimulated the Vikings to sail west-over-sea in the Viking Age. Like the Vikings, they were nearly always successful, for they were brave and hardy men who had been reared in cold and inhospitable climes. But when they settled down in the plains of India, the intense heat of the hot weather, and steamy heat of the rains, gradually sapped their strength. They mated freely with the women of the country, and their mixed offspring lacked that vigour and martial spirit which had made their forefathers indomitable. They were in time crushed and swamped by new invaders, fresh from the invigorating climate of the North, who in turn suffered the same fate. Only as long as the victors could stiffen their ranks by recruitment from the countries of their origin, were they able to maintain their supremacy as a separate and a ruling race. Of the Scythian, Persian and other dynasties founded in India before the beginning of the Christian era nothing now remains. They were crushed in time, and the peoples absorbed in the Indian population. From one of the Scythian clans the Rajputs, the fighting caste of the Hindus, are mainly if not wholly derived.

Romantic stories about the wealth of Ind were prevalent in Europe long before Alexander the Great set out on his perilous march to the East. The great distance to be covered, and the difficulties to be overcome, had deterred

other European peoples from making the attempt. Alexander, before starting on his expedition, had got much information regarding the route from merchants trading in the Levant. With his mighty army he was prepared to fight his way to that land of plenty which had attracted so many other adventurers.

He invaded India early in 326 B.C. The feat he performed in bringing an army thousands of miles by road, over high mountains, scorching plains and deep rivers, is one of the greatest of its kind in history. When he entered Northern India he found it divided into many Aryan kingdoms ; but he did not meet with much opposition till he reached the banks of the Jhelum River in the Punjab. There he found Porus, a Hindu king, on the opposite bank with a large army ready to oppose him. Alexander was a great strategist : instead of trying to cross the river in the face of the enemy, he selected a spot ten miles upstream, and in a night of rain, thunder and lightning, got one part of his army across. Porus, on being informed of this by his scouts, sent his son with chariots to drive them back ; but in the battle which followed the chariots got stuck in the muddy banks of the river, his son was killed and his army routed. In this battle, Alexander lost his horse Bucephalus, famous in history.

Alexander, having won this victory, advanced towards Porus's main army, now drawn up in battle array. In front there was a long line of two hundred war elephants, behind which stood great masses of foot-soldiers with the cavalry and chariots on the wings. To break through this formidable line of elephants was well-nigh impossible. Instead of making the attempt, Alexander made a flank attack with his cavalry on the horsemen and chariots of the Hindu king. When these were driven in among the elephants and foot-soldiers there was indescribable confusion. Porus now ordered his war elephants to charge ; but on being met with a shower of arrows and javelins these huge but nervous animals got completely out of control, wheeled round and trampled many of his own men under foot. The army of the Hindu king was thrown into great confusion

and fled : in the retreat large numbers were cut down by Alexander's horsemen, and Porus himself was wounded and taken prisoner.

Alexander won this and many other battles, conquered much territory, founded cities and established garrisons in various parts of Northern India. In bringing an army all the way from Europe to India by road, he had done what no other man has ever attempted ; but the strain of the long march to India, and the heavy fighting in a most trying climate, had depressed the spirits of his men. They had had enough of hardships, and insisted on being taken back to their own homes in Greece and Macedonia.

The enormous difficulties which Alexander and his army had had to face in this expedition probably prevented other European adventurers from following his example. Eighteen centuries later, however, the advance made in building and navigating ships, opened up a vista of great possibilities for the seafaring nations of Western Europe. It stimulated them to explore other possible routes to the East Indies, from which for many centuries spices, pepper, silk, gems and other commodities had reached their markets by way of the Persian Gulf, across Syria, or up the Red Sea through Egypt. These routes, however, had been practically blocked by the Turks ; trade had become more precarious, and prices had risen.

In 1498, Vasco da Gama discovered a new route to the East by sailing round the Cape of Good Hope, and his countrymen, the Portuguese, lost no time in making use of this discovery. Fleet after fleet, laden with merchandise, sailed from Portugal to the East Indies and the coast of India ; trading stations were established, and valuable cargoes of the produce of the East were brought back for sale in Europe.

The Dutch were their first rivals in the East. They had established their control over Sumatra and Java, broken through the Portuguese trade monopoly, and raised the price of pepper in European markets to an exorbitant figure.

The English did not start on any ambitious maritime enterprise till the beginning of the seventeenth century.

Centuries of war and social disorder had drained the strength of their poor country. Moreover, the Pope had decreed that all the discoveries in the New World should be assigned to the Spaniards and Portuguese. With the advent of the Reformation, however, a new spirit came into being in England—a spirit less servile to the dictatorship of the Roman Church. After the defeat of the Spanish Armada, Spain was no longer a formidable opponent at sea ; and Portugal by her union with Spain had lost her political independence and initiative. The Dutch, it is true, were building up a great navy ; but the new spirit awakened in England feared no foe.

In opening up trade in the East, the initiative was taken in England towards the close of the sixteenth century, when some of the more enterprising merchants in London formed a trading company called " The Company of Merchants trading to the East." On the last day of 1600, Queen Elizabeth signed a royal charter incorporating this Company, which was commonly known as the East India Company. In 1601, it sent out a fleet of four ships to trade with the Spice Islands. James Lancaster, the commander of this fleet, had already gained some knowledge of the East Indies. Ten years earlier he had been second-in-command of a fleet of three ships sent out by a group of enterprising London merchants to trade there ; but that expedition had ended in disaster. One ship had had to run back before reaching the Cape of Good Hope, as the crew had been greatly depleted and enfeebled by scurvy, and one sank during a storm with all hands. The remaining vessel, on which Lancaster was second-in-command, reached the East Indies after losing most of her crew from scurvy and in fighting with pirates and Portuguese merchantmen.

The expedition, though it ended in disaster, served a useful purpose ; for it provided Lancaster with an opportunity of gaining practical experience which proved of the very greatest value to him and his employers when, in 1601, he sailed on his second expedition, as commander of the Company's four ships. These ships, though very small, the largest being a 600-ton vessel, were fitted out

for a twenty months' voyage. Their cargoes included iron, tin, lead, broadcloth, Spanish gold and other merchandise which he was to exchange " at the greatest possible profit " for pepper, spices, musk, wax, silk, precious stones and other products of the East. This voyage, too, was a long and eventful one ; for the ships were sometimes caught in violent gales and driven off their course, and sometimes becalmed in the doldrums. The crews of three of them suffered terribly from scurvy: a hundred men died, and many more were enfeebled by this scourge before the Cape was reached, seven months after leaving the shores of England.

During the voyage Lancaster made a great medical discovery. He had, as he put it, " brought to sea with him certaine bottles of the juice of limons, which he gave to each seaman as long as it would last," with the result that very few of the men on his own ship, the *Red Dragon*, suffered from scurvy. Lemon-juice, strange to say, did not come into general use as a preventive of this disease till nearly two centuries later.

After spending over a year on the voyage all his ships reached Achin in Sumatra, the Ophir to which, according to legend, the fleets of Solomon had gone for their gold. The King of these islands, Ala-uddin-shah by name, gave Lancaster a great welcome to his dominions. He had heard of the naval victories which the great Queen of England had gained over the Spaniards, and his hatred of the latter was a strong bond between him and England's Queen and her subjects. He willingly signed a treaty giving the East India Company complete freedom of trade in his dominions, hoping no doubt to curb thereby the activities of the Portuguese and Dutch traders who had forced their way into his territories. His faith in the English was still further strengthened by the exploits of Lancaster himself who, with crews depleted and greatly weakened by scurvy, had captured two Portuguese galleons, with cargoes which included among other valuable merchandise 144 butts of wine. Though nominally a trader, he was not averse to a little buccaneering.

On the voyage home his small fleet was caught in a storm, and the *Red Dragon*, after losing her rudder, drifted helplessly to leeward, buffeted by overtowering waves. But her brave commander never gave up hope despite the perilous condition of his ship. When all seemed lost, he comforted his crew with the words, "We shall yet abide God's leasure." The storm raged and the waves lashed his helpless craft; but the fates were kind. The wind at last abated, an improvised rudder was fitted up, and all four vessels got back to England with their rich cargoes. Lancaster was given a triumphal welcome, and knighted by James I, who had succeeded Queen Elizabeth, of whose greatness stories had reached even Ala-uddin-shah in the Far East.

The tale of Lancaster's seafaring is as romantic as anything could well be, and he is but one of the hundreds of intrepid English seamen who, in the seventeenth and eighteenth centuries, played a part in building up for us a mighty Empire overseas. These glorious, indomitable fellows, with their red and weather-beaten faces, rough voices and rolling gait, "made England what she once was, and gave her what she still has." The almost unbelievable hardships which they had to undergo was the price paid in establishing Britain's commercial and imperial supremacy, and in providing us with much of the comfortable wealth and pensioned leisure of our own time. Have we inherited the superhuman courage of these men of our wandering sea-born race? When I listen to some of the harangues of our pacifists I am inclined to doubt it.

In the East Indies the Dutch had gained commercial supremacy. Owing to their jealousy and opposition the good work done by Lancaster in laying the foundations of the Company's trade in that region failed to fructify. The Company was obliged, in consequence, to turn its attention to India, most of which was at that time ruled by Jehangir, one of the Moghul emperors. In 1612, Jehangir granted the Company permission to establish a trading station at Surat on the west coast; but the

Portuguese, who had been trading in India for over a century and claimed the monopoly of that trade, proved as jealous and almost as troublesome in India as the Dutch had in the East Indies. The Dutch, already well established as traders in Java and the Moluccas in the East Indies, also turned their attention to India in the first half of the seventeenth century. In the last half the French appeared on the scene. After staking their claims as traders, they devised ambitious schemes by means of which they hoped to establish a French empire in India, and drive out all the other European competitors. With this end in view they carried on intrigues with native rulers, trained native troops to fight their battles, and tried by every possible means to extend and consolidate their power in the land. They would probably have succeeded in setting up the empire they had in view but for the genius of Clive. He was a clerk or writer in the Company's service; but incensed by the humiliation of his country at the hands of the French, he determined to exchange the pen for the sword. His conspicuous courage was only excelled by his aptitude as a leader of men. The brilliant victories which he, with a handful of troops, won over the French and Dutch, and over the infamous Nawab Suraj-ud-Dowla at Plassey, are well known and will not be recounted here. Of him Macaulay has said :—

> " Our Islands, so fertile in heroes and statesmen, have scarcely ever produced a man more truly great, either in arms or in council."

In the pages of history there is not a more romantic figure than this self-made Englishman who has been called the " Founder of the British Empire in India."

The Portuguese were in the seventeenth century overcome by the Company's superior sea-power, and the Dutch and French in the eighteenth century by its sea-power and brilliant leadership on land. Shortly after the middle of the eighteenth century the Company was confronted with a still more serious menace to its trade. After the death of Aurungzeb in 1707, Moghul emperors continued

to succeed one another upon a nominally Moghul throne, but India was slowly drifting into a state of anarchy. Warring rajahs and governors under the crumbling Moghul Empire each plotted and fought to win a kingdom or crush a rival. India was bespoiled by civil war. Taking advantage of her weakness, invaders from the North-West once more poured through the passes to plunder, to murder and to ravish. Her villages were harassed by robber gangs. Those were stirring and troublous times in India. Macaulay tells us that whenever the kettledrums of these freebooters were heard in the distance "the village peasant threw his bag of rice on his shoulder, tied his small savings in his girdle, and fled with his wife and children to the mountains or the jungles, to the milder neighbourhood of the hyæna and the tiger."

On the East India Company fell the mantle of the Moghul emperors at this critical period of Indian history. For over a century it had remained essentially a trading concern, and had gone from strength to strength despite the opposition of its rivals. During the reign of Aurungzeb, the rebellion of the Mahrattas, Sikhs and Rajputs gave rise to much lawlessness, and the Company found it necessary to fortify its trading stations against the attacks of freebooters. On the sea it had to defend its ships against the hordes of pirates who, during the time of chaos, infested Indian waters. Amid anarchy, confusion and the clash of arms, it had to use force in protecting its trade.

The story of how this Company of Merchants found itself appealed to on every side for advice and assistance in stemming the tide of tyranny and disorder, of how its small number of well-drilled troops again and again defeated large armies, and of how it brought order out of chaos, is a long and fascinating one which, on the whole, reflects credit on our race. They brought peace to this vast sub-continent torn by dissension, and laid the foundations of an Empire the constituent parts of which have ever since been held together by British power.

What, it may be asked, has India gained by coming under the ægis of the British Empire? She has gained

peace and security, and justice for all. She has, through a common language and a centralised administration, been more closely united than ever before in her history. To her material gains I refer in later chapters. " The English administration of India is a greater feat than any performed under the Roman Empire," said President Theodore Roosevelt; but this feat, let it not be forgotten, was performed by the co-operation of Britishers and Indians, who for one hundred and fifty years have been co-workers in building up a new and better India. The number of Britishers in all the different branches of the Civil Services has never exceeded 5000. When we consider the size of this vast sub-continent with its varied population, its conglomeration of races and religions, and social divisions, the achievement is indeed a most remarkable one.

Great Britain has conferred great benefits on India; but India has also conferred great benefits on Great Britain. No country has contributed so much to our prosperity; for India has, for over a century, provided us with large quantities of raw materials for our mills and factories, and taken from us in exchange manufactured goods. With India we have established many points of contact, and a close friendship.

CHAPTER XIX

GEOGRAPHICAL FEATURES, CLIMATE, AND PEOPLES

In wandering round India what impresses one most perhaps are the wonderful contrasts and diversities noticeable in its geographical features, its climate and its peoples. Few countries possess so great a variety of scenery as India. The great mountain chains of the Himalayan and Suliman ranges, more than 2000 miles in length, form an almost unbroken wall around the entire northern frontier. The Himalayas (abode of snow) rise sharply from the plains of the Indus and the Ganges—otherwise known as the Indo-Gangetic plain. In this mighty range are to be found some of the highest mountain peaks in the world—peaks which no man has ever scaled.

I had occasion frequently in the course of my work to inspect a veterinary research station at Muktesar, in the foothills of this range. In riding from the plains to this station, the altitude of which was between seven and eight thousand feet, I was sweltering in tropical heat one day, and shivering with cold the next ; but that did not prevent me from enjoying thoroughly the grandeur of the scenery as I ascended and descended the mountain-sides.

Sixty miles or so beyond Muktesar one could see the snow-clad ridges stretching like a white and glistening ribbon on the distant sky-line ; for the majestic peaks of this great mountain range are clad with a mantle of eternal ice and snow.

In the journey from the plains to Muktesar the panorama which unfolds itself as one climbs higher and higher is that of deep ravines, gurgling streams, and sheltered glades in which grow many species of trees, including rhododendrons blazing with colour. In the distance one can see, too, isolated hamlets, with houses built, not of mud or sun-dried

brick as are those on the plains below, but of solid stone. Round these lonely hamlets are terraced fields on the steep mountain-side ; for even at these high altitudes hardy hill-men make a living by growing potatoes, barley and vegetables.

Once I was caught in a violent hailstorm when riding down the mountain path from Muktesar to the plains. On descending about 3000 ft., the hail gave place to sleet, and the path became so slippery that I was obliged to dismount and lead my horse. It was bitterly cold, and I was drenched to the skin before I reached Bhimtal, which is about half-way down the mountain. There I hoped to change into dry clothes without delay ; for my pack-mules were, I thought, following close behind me. After some weary hours of waiting the mules and muleteers turned up. They, like myself, had had their difficulties on the journey ; for when the storm broke the mules had bolted, and it had taken hours to capture them and recover my belongings, scattered as they were over the mountain path.

Owing to this delay I was obliged to put up in Bhimtal that night. My hotel was of a somewhat primitive type, where one had to depend on one's own bedding for a warm bed. To my dismay my own blankets and sheets had got thoroughly soaked, and the wearing apparel in my suit-cases was also damp. It appeared that the mules, in their mad flight down the mountain-side, had shed their loads when crossing a muddy stream. There was no hope of sleep until a rather ineffective log-fire had done its duty to my bedding. Such a luxury as a drying-room, or even a hot pipe, was not known in this hotel, so-called. A hot bath was provided in the customary fashion of India. Boiling water from a kerosene tin was emptied into a zinc tub, a trickle of cold water from a pig-skin water-bag added to it, and the bath was ready.

On ridges on the southern fringe of the Himalayas are the many hill stations of Northern India—Simla, Kasauli, Mussourie, Naini Tal, Darjeeling, etc.—to which Europeans and Indians flock in April to escape from the scorching heat of the plains.

In the southern slopes of this mighty barrier between India and the rest of Asia, the Ganges, the most sacred river of the Hindus, takes its rise. In a trough still higher up this range are the sources of two other great rivers—the Indus and the Brahmaputra.

South of the Himalayas lies the great Indo-Gangetic plain which stretches from the Arabian Sea on the west of India to the Bay of Bengal on the east—a distance of about 2000 miles. The scenery of this plain is monotonous as compared with that of the wild and picturesque mountainous country which towers above it; but during the monsoon and cold weather it has a beauty all its own. The soil is very fertile, and as far as the eye can reach the scene which presents itself is that of brown villages standing in the midst of long stretches of wheat, oil-seeds, sugar-cane and other crops, some of them still green in colour, and others yellowing towards maturity.

On these plains are to be seen many of India's ancient cities whose carved temples and splendid mosques with shining domes stand out amidst minarets of graceful and delicate design. Here the Aryan invaders settled down and evolved their religion four thousand years or so ago: here they erected their finest temples to the honour and glory of their gods. Here fierce Mohammedan conquerors established dynasties many centuries later, and erected mosques to the glory of their one god—Allah; and here the Moghul emperors built many magnificent palaces and gardens, for they had an eye for the beautiful things of life. "If a man hath two loaves, let him sell one and buy lilies; for bread nourishes only the body, but the lilies feed his soul," said Mahomet the prophet.

In the Gangetic valley there are spots sacred to the pious Hindu, as one realises on visiting Benares, the junction of the Ganges and the Jumna and other places of pilgrimage. At the time of the annual festival I have seen thousands of them bathing with much ceremony where the Ganges and the Jumna meet. Some of these pilgrims come hundreds of miles, many of them tramping every yard of it on foot, to wash away their sins in the sacred water. As you wend

your way along the banks of these rivers you see also *sadhus* (holy men) with long and tangled hair who have given themselves to a life of mendicancy, meditation and rigour. By degrading the body, they hope to uplift the soul and win salvation. Some of these holy men are sitting under trees, deep in meditation. They resent any effort to draw them into conversation. With hands clasping their crossed legs, and their eyes fixed on the tips of their noses, they meditate. Others are sitting on beds of spikes : they torture the flesh in the name of religion.

In the Indo-Gangetic plain the heat in the hot weather is intense ; but from November till February the climate is cool and pleasant as compared with that of South India. In the western part of this plain the temperature sometimes drops to freezing-point. The peoples in this part of India are superior physically to those of Bengal and South India, where the climate is much more steamy and enervating throughout the year.

South of this vast plain rise ranges of mountains—the Vindhyan and Central Indian Hills of the Deccan. In this tract of somewhat rolling country the scenery is varied and picturesque. There are extensive table-lands and fertile valleys cropped with cotton, millets, wheat, rice, oil-seeds, etc. There are, too, irregular hill ranges clad with dense jungle and tangled undergrowth in which the tiger, the wild buffalo, the bison and their like, make their home.

The climate of this tract of rolling country, with its plateaus, hills and valleys, is very hot and dry for the greater part of the year. During the hot weather the whole countryside looks parched and bare ; the earth becomes as hard as iron, and rivers, streams and tanks tend to dry up. When the rains break in June, however, the change that comes over the scene is magical. In a week or two the streams and rivers are roaring torrents, and the land is clothed with a mantle of green.

As we travel farther south, the climate and scenery again change in a remarkable degree. South India is a land of steamy heat for most of the year. The heat is never so intense as it is in the North : on the other hand, there is no

cold weather worthy of the name except in the high lands. The scenery of its mountain ranges—the Western and Eastern Ghauts—is most attractive. Its coffee, tea and rubber plantations ; its long stretches of brilliant green rice-fields ; its luxuriant groves of coconut and other palms fringing the coast-line and its estuaries and lagoons, are very characteristic of this the more tropical part of India.

But the charm of this sub-continent is its people rather than its scenery. India is a museum of races. In historic and prehistoric times wave after wave of invaders poured into the country for conquest or for plunder and left behind them a mixed progeny which go to make up the composite people we find there to-day. Within the confines of that sub-continent are to be found representatives of every epoch in human history, and races speaking over two hundred different languages. The more one sees of these many-tongued peoples, the more one is impressed by the achievement of our military and civil administrators in bringing so vast a territory occupied by such diverse races under a just and orderly administration.

Among my most interesting tours in Northern India were those I made in the North-West Frontier Province and Baluchistan. In the former Province and in the tribal tracts between it and Afghanistan, one finds races which are very dissimilar both in appearance and instincts to those seen in other parts of India. Here you see the big, fierce-looking Pathans of the frontier. Dressed in baggy trousers and gaudy waistcoats they are impressive figures. Their large turbans with flowing tails add to their height.

I had seen some of these warlike frontier-men before I visited this part of India ; for in the larger towns some of them find employment as watchmen, and others carry on a rather tyrannical money-lending business with the menial classes. In Nagpur I had more than once seen one of their fraternity, armed with a formidable-looking *lathi* (thick stick), visiting my servants' quarters to collect his dues.

The North-West Frontier Province lies between the Hindu Kush range on the north and Baluchistan on the south, and between Kashmir and the Punjab on the east

and Afghanistan on the west. In the rugged mountain system between the North-West Frontier Province and Afghanistan live tribes who own allegiance to no one but their *khans* or chiefs. In their deep and irregular valleys they live and quarrel, and extract from the stony soil a miserable pittance. Being well armed and very courageous, they are dangerous raiders. From time to time they swoop down to loot the caravans coming down with loaded camels from Samarkand and Bokhara to the markets of Jamrud and Peshawar. At times, too, they raid villages in British territory, where many of their fraternity have settled down as peaceful cultivators. Having discarded the sword for the ploughshare and the spear for the pruning-hook, they form an easy prey for these armed and hungry marauders.

On a large experimental farm which I had to inspect at times in the North-West Frontier Province, the Superintendent had a small force of nine policemen to protect the staff and property of the farm against raiders from across the frontier. At times marauding gangs of these men raided villages in the neighbourhood and murdered some of the villagers. They came at night, and generally managed to escape across the frontier again before daybreak, with such booty as they had been able to seize. On one occasion a murderous gang of Pathans, after plundering a village, hid themselves in a field of sugar-cane on the Government farm. They had spent more time than they had intended in their raid that night, and would most probably have been captured by the Frontier Police had they attempted to cross by daylight.

In this field of sugar-cane in which they lay concealed they would have been safe enough, but for the fact that the Superintendent had decided to harvest the crop that day. When supervising the coolies who were cutting the cane with their sickles, he was suddenly confronted by the whole gang. One of them, brandishing a dagger, threatened to cut his throat there and then ; but would, he said, let him off on condition that he made a promise not to divulge their hiding-place to the police. The Superintendent, being himself a Pathan though a British subject, knew that this

was no empty threat. He took on the vow, and kept it, and no doubt refrained from harvesting any more of his cane that day, for fear of exposing the ruthless ruffians hiding there to those responsible for law and order in the Province. They decamped as soon as darkness set in.

In some respects these wild, hook-nosed Pathans are not unlike our Scottish Highlanders of three centuries ago. Rugged mountains and a hard climate produce, it is said, people of a similar severity of type. Our hungry Highlanders in days of yore were noted raiders. They, too, were divided up into tribes or clans and they had their blood-feuds. The Chief of the Campbells or the Macdonalds had as much influence and authority over his clansmen as the Khan of a Pathan tribe has over his wild tribesmen on the North-West Frontier of India at the present day.

A people's environment also determines to some extent their taste for music. If their country is rocky and mountainous, something of the pibroch order appeals to them. In the hills and rugged valleys of their desperately poor country the Pathans play a kind of chanter from which they produce music very similar to that of the bagpipes. That music has revived in the mind of many an exiled Scotsman sweet memories of hill and glen and " but and ben " ; but when the musician, sheltering perhaps behind a rock, presents himself the spell is broken, and disappointment follows. He is wearing not a Balmoral and kilt with sporran, but a turban and baggy trousers.

Fighting incessantly with each other, these wild Pathan tribesmen live in fortified villages provided with watch-towers, from which they take pot-shots at any enemy who unwarily walks abroad. There are blood-feuds between families and blood-feuds between tribes. Their feuds sometimes go on for years, until, in some cases, all the men of a family are wiped out.

When we were motoring through the Khyber Pass on our way to the Afghan frontier, every man we met was carrying a rifle. In one village which we passed the only people to be seen outside were women. In the watch-tower there was an armed man waiting patiently with his eyes fixed on a

neighbouring village about half a mile distant. What the nature of the feud was I did not ascertain ; but I gathered that by their code of law their women-folk were not considered belligerents, and that they could safely attend to their duties while the men dug themselves in, so to speak.

In these tribal tracts across the frontier lawlessness is in the blood. There is no recognised system of civil justice : an eye for an eye and a tooth for a tooth is their code of justice. But these Pathans have a system of traditional justice administered by tribunals called *Jirgas* (Councils of Elders).

In Baluchistan also the indigenous system of administering justice through *Jirgas* is still adhered to ; but the working of the *Jirgas* is supervised by Government officials of the rank of Extra Assistant Commissioner. When a crime is committed, or a civil dispute arises in a village, the *Jirga* will investigate it. The *Jirga* meets, hears witnesses, discusses the evidence and finally drafts a report in which it states its findings and the punishment, if any, recommended. The matter then comes before the Extra Assistant Commissioner who, as a rule, confirms or modifies the punishment.

When I toured in Baluchistan I was accompanied by two different Extra Assistant Commissioners. They had interesting stories to tell about the kinds of punishment recommended by the *Jirgas*. A man found guilty of murder was sometimes obliged to make heavy payment to the family of the murdered man. That payment had generally to be made in kind, and might include camels, a horse or horses, or even a girl. It would appear, however, that the working of the *Jirga* system even when supervised by Government officials leaves loopholes for blood-feuds. One of the two officers who accompanied me—a Baluchi by race, if I remember well—seemed rather proud of the fact that there had long been a blood-feud between his family and that of another Khan—a feud which had resulted in several tragedies. On his upper arm he showed me an old scar as evidence of the serious nature of this feud. He had been wounded years previously by one of his own and his father's enemies.

Pathans consider themselves to be of the tribe of Benjamin. They are descended, they say, from Afghana, son of Solomon. In the Book of Genesis we are told that

"Benjamin shall ravin as a wolf: in the morning he shall devour the prey, and at night he shall divide the spoil."

In appearance the Pathan bears witness to his Semitic origin, and his instincts are still those of a ravening wolf. In tribal tracts across the British frontier he is taught from early youth to use the rifle and to qualify himself as a freebooter.

Their conception of the rights of property are certainly primitive. A male child, at birth, is passed through an aperture in the wall by his mother who says, "Be a thief, be a thief." In tribal tracts across the frontier the Pathan rather despises manual labour: in his villages the women do nearly all the work. For education they have but little use: the Pathan youth is taught instead to use the rifle and to become a useful marauder. For centuries prior to British rule these turbulent denizens of the bleak and frowning mountains had invaded the fertile northern provinces of India, and many of them are far from forgetting their warlike past, with its long record of raids upon the plains. It is not surprising that they regard the *Pax Britannica* as a passing inconvenience.

Though all are Mohammedans by religion, they do not as a rule keep their women in *purdah*. The freedom of the women is probably the result of the marauding habits of the tribes and the consequent prolonged absences of the men from their villages. In the absence of her lord and master, the woman has to attend to the cultivation of his lands. Should she prove unfaithful, her nose is cut off as a punishment, with the hope, I daresay, of making her less attractive to the other sex. The husband does not stop there: if the male offender is caught, one of his feet is cut off as a permanent testimony of his misdeeds.

The Pathans are men of intense religious zeal amounting to fanaticism. Their priests or *mullahs* have great influence over them and often incite them to acts of violence against

THE FOE ON THE NORTH-WEST FRONTIER

THE NAGAS IN THEIR WAR-PAINT

"unbelievers"—Hindus and Christians. Nearly every Border rising is instigated by these *mullahs*, who preach that the path to Paradise is open to the slayer of the infidel.

At the time of my first visit to Peshawar, a young English lady was, when about to enter her club, attacked by a fanatical Pathan who had been incited by some such *mullah* to take the life of an infidel. She was knocked unconscious by the blow of a *lathi*; but before her assailant had time to strike again he was arrested.

Though ugly incidents of this kind are by no means frequent, a European who desires to explore the bazaars of Peshawar would be well advised to get someone to accompany him; for Peshawar is at the head of the Khyber Pass and is a rendezvous for Wazirs, Mahsuds, Bannuchis, Afridis, Shinwaris, Mohmands and other wild tribesmen from across the Border. As one of a party of four I once explored the crowded bazaar of this frontier town under the guidance of a Pathan placed at our disposal by the Superintendent of Police. As we made our way through the motley crowd we ran up against no less a person than Professor S. of Edinburgh University. Alone and unarmed, he apparently suspected no danger. He was intent on collecting subject-matter for another book—his nineteenth, if I remember well; and with that end in view he, brave as a lion, had explored streets and alleys teeming with fanatical tribesmen. Perhaps he relied on the coat of dust, with which his face was veiled, to conceal his identity. He had just returned from a trip up the dusty road of the Khyber Pass, and even we would have failed to recognise him as a *Feringhee* had he been dressed in the garb of a Pathan.

CHAPTER XX

THE NORTH-EASTERN FRONTIER AND BURMA

THE peoples on the North-Eastern Frontier of India are as distinct from those I have described in the previous chapter in race and language as they are from the British. This frontier is one of almost impenetrable forests and rugged mountains. Here large military stations such as we have on the North-West Frontier are conspicuous by their absence. Nature has provided the necessary safeguards against invasion : other measures of defence are scarcely needed.

The races found in this part of India are among the most picturesque in the world. Bred and reared in jungle-clad hills, they are born hunters. For countless ages they have hunted both the wild animals of the jungle, and their fellow-men.

Of these races the Nagas of the Naga Hills are perhaps the most interesting. When decked out in their wonderful head-dresses of feathers and skins, and armlets and necklaces of boar and elephant tusks, they are fascinating figures. The Pathan uses a rifle ; but the more primitive Naga carries instead a long spear. Once I saw about a dozen of them pursuing a dog with their spears, and was surprised to learn that their intention was to kill and eat it. They prefer dog's flesh to that of any other animal, more especially when it is high. When a Naga enters a village, the dogs thereof are said to put their tails between their legs and run like hares. By instinct the canine species are presumably terrified by the aroma of the eater of their kind.

They also eat the flesh of the elephant. I was told by a tea-planter in Assam that he was once faced with the problem of how to dispose of the bulky carcase of an elephant that had died on his estate. For sanitary reasons he could not

allow it to rot there, and to bury it involved time and money. The Nagas solved the problem for him. From their hills they came in hundreds to claim a share of the food which they could have for the taking. A large hole was cut in the side of the carcase so as to gain access to the entrails. A man let himself down into the cavity, and with his primitive cutting tool proceeded to remove the heart, liver and other tasty tit-bits. These were handed up to waiting friends—men and women, boys and girls, all anxious to get their share. Bits were eaten raw, and faces, arms and chests were soon besmeared with blood. The more juicy portions having been accounted for, they next proceeded to remove the flesh from the framework, and in a few hours what had once been a huge elephant was being transported piecemeal and with much rejoicing to their hamlets and villages in the hills.

Across the Border the Nagas are still head-hunters, and openly display the skulls of their victims in their villages. There are several theories about head-hunting. One is that this race being animists believe that evil spirits prefer, as an abode, a human skull, and that if they are provided with a sufficient number of such skulls they will not trouble the villagers. That, in short, is the head-hunter's method of solving the housing problem for these spirits, and keeping them contented. Another theory is that those whom you decapitate will serve you as slaves in the next world, and the more heads you have to your credit, the less difficult will the servant problem be.

These primitive hillmen on this frontier have for countless generations raided the plains of India and carried back slaves and heads. Though civilisation has been forced upon them since they came under British rule, they, like the Pathans, are far from forgetting their warlike past, or from accepting the *Pax Britannica* as an unmixed blessing.

Of Burma I saw less than I should have liked, for it is one of the most interesting and beautiful countries in the world. It is, nevertheless, comparatively little known to the majority of people. Its practically impassable land frontiers and its long distance from India by sea, make it

comparatively inaccessible. From India it is cut off by sea, mountain and jungle, and from China, Indo-China and Siam by a series of desolate and sparsely populated mountain ranges.

The Burmese are distinct from Indians in race, religion, language, manners, customs and dress. Their whole outlook on life is, in fact, different. In religion they are Buddhists—a religion which has done much to mould the character of the people. Their religion makes them tolerant, kind and gentle, and discourages ambition and thrift. Their character has been determined to some extent, too, by their beautiful and fertile country. The land is so fertile that almost anything will grow there, and Nature provides food for the people with the least possible effort on their part. The climate is perhaps another factor to be taken into consideration, for it is hot, damp and enervating, and tends to sap energy and restrain ambition.

The men are lazy : they leave most of the work to the women. One can understand why the Burmese have been called the " Irish of the East."

A woman enjoys much more freedom in Burma than she does in India : she is the freest in the world, in fact. A girl marries, as a rule, the man of her choice and from love. Marriage is not a religious ceremony, and divorce is easily obtained. There are no child-marriages and no *purdah* system as in India.

In the bazaars you see Burmese women sitting at their stalls with their merchandise in front of them ; for in the retail trades they are much in evidence in town and village. One sees them cracking jokes with potential buyers of their silks and lacquer-work, or it may be fruit and vegetables, and smoking their large cheroots " as to the manner born." Happiness to them is the chief end of man, and gaiety and goodness are not inconsistent.

You see them, too, with their faces all aglow with smiles, enjoying their *pwes* (dances) and you are fascinated both by the rhythmic motion of their bodies as they keep time to the music, and the bright jewellery and dainty flowers with which they adorn themselves. Some of the girls are very

pretty ; but the thick coat of enamel-like *thanaka* with which they paint their faces somewhat conceals their natural beauty. As a race the Burmese have an eye for the beautiful. Of the charm of a pretty woman one of their love-songs says : " Her cheek is more beautiful than the dawn : her eyes are deeper than the river pools. When she loosens her hair upon her shoulders, it is as night coming over the hills."

The men in particular dislike a life of drudgery, and a large number of Indian immigrants are, in consequence, employed in Burmese villages every year in cultivating and harvesting the *paddy* (unhusked rice) crop for which this Province is so famous. The Burman is not as willing as the Indian to do hard work for small pay. In Rangoon there are more Indians than Burmans : much of the trade of this busy seaport is in fact in the hands of more active alien races. The Burman, easy-going and contented by nature, does not seem to mind. His aim in life is happiness, and to be happy one must, he thinks, have time to enjoy life.

But though the Burmese are easy-going, no race spends so much on charity. Wherever you travel in this Province you see pagodas, monasteries and rest-houses which have been built by pious but by no means wealthy Burmans.

The men and women dress almost alike. The former wear a short jacket, and a skirt of coloured silk or cloth : the latter are clad in much the same way ; but their skirts are open on the side, and round their shoulders they wear a long scarf of delicately coloured silk. The head-dress worn by the men is a silk scarf tied round the head : the women adorn their black glossy hair with flowers or an attractive comb. Both sexes enjoy fresh air, sunshine, colour and all beautiful things. Make the best of this life is their motto, " for when you die you are a long time dead."

Burma has been called " The Land of Pagodas." Temples are to be seen everywhere—in towns and villages, on river-banks and hills. At Pagan miles of country are studded with them. In every one of the many thousands of pagodas and wayside shrines, there are images of the Buddha, the founder of Buddhism—the religion of nearly one-third of the world's population.

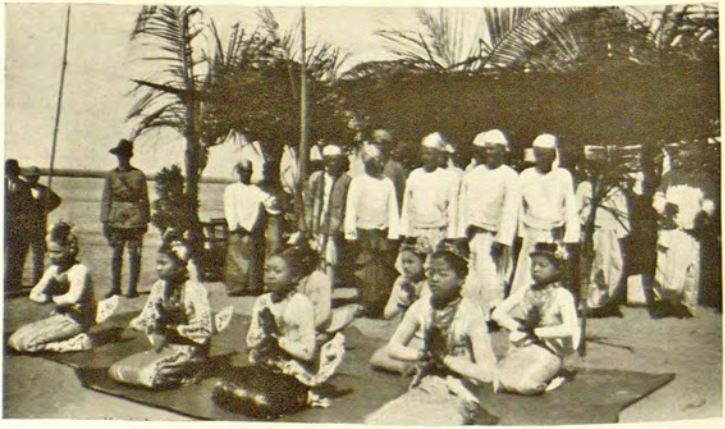
Buddhism was founded by an Indian prince called Gautama almost 600 years before Christ was born. It is an off-shoot of Brahmanism. This prince, though heir to a kingdom and surrounded by luxury, left his palace and wife and little son, and became a hermit. Dressed in the yellow robe of a mendicant, he carried the beggar's bowl and begged his bread as he wandered up and down upon the earth, searching for truth and seeking peace. For six years he lived in the fastnesses of the jungle-clad mountains, accompanied by his disciples. One day, while resting beneath a fig-tree by a river, the truth was revealed to him in a dream, and so it came at last that he saw the light and went forth and preached it to all the world.

In every town and village in Burma one sees yellow-coated monks with shaven heads going from door to door in the early morning, each carrying his beggar's bowl, as did their great teacher twenty-six centuries ago. In the monasteries they teach the children of the neighbourhood, and instruct the pilgrims who visit them, in the beauties of their religion. Every Buddhist boy enters a monastery for a longer or shorter period. In the pagodas the monks perform the necessary religious ceremonies ; but they, unlike priests of the Roman Church, claim no human sanctity, or power from above, or holiness acquired, except by the earnest effort of a man's own soul.

The Buddhist's faith is a simple one. He tries to work out his own salvation. By good deeds and good thoughts he strives after peace and happiness—peace with the world and everything within. Thus his great teacher, the Buddha, made himself perfect though he was but a man.

Many of the monasteries are very beautiful. Every Burman who can afford to do so tries to build one in his lifetime if he can. They are usually bell-shaped and built on a hill or mound. The golden spire of the Shwe Dagon pagoda, the greatest of all the pagodas, is the first object to attract your notice on approaching Rangoon from the sea. It is 370 feet high. In the distance it looks like a great golden cone. Its spire of iron fretwork glitters with gold and jewels, and the whole pagoda is covered with pure gold-

BUDDHIST TEMPLES IN BURMA



BURMESE DANCERS

leaf. At the base, as if protecting the pagoda, stand golden lions. There are little shrines, too, embellished with carved woodwork and red lacquer. Their tapering roofs, one above another, end in golden spires full of bells. The tinkle, tinkle of these bells, as they swing lightly from side to side in the breeze, makes sweet and enchanting music that adds to the charm of this golden temple of the Buddhists.

CHAPTER XXI

THE BEGINNING OF ORGANISED AGRICULTURAL RESEARCH IN INDIA

By the beginning of this century there was a great awakening of interest in the scientific study of agriculture in Great Britain. The opening of the Rothamsted Research Station, and the Cirencester Agricultural College in the forties of last century had helped to create a scientific outlook on agriculture and to pave the way for this awakening. In India, too, the powers-that-be began early in the present century to take note of the claims made for science as a panacea for the ills of agriculture, and to ask themselves whether it could not be used to cure some of those from which that country suffered. The spectre of devastating famine had, again and again, right down the centuries, haunted her peaceful villages whenever there was a failure of the monsoon. How far was it possible to diminish the severity of these calamities, or to place the people in a better position to withstand them? That was the question which the Government of India had asked itself again and again.

The Indian Famine Commission of 1901 had, in their Report, stressed the need for research in agriculture, and recommended that the expert staff of agricultural departments in all provinces should be strengthened. In their opinion, "the steady application to agricultural problems of expert research was the crying necessity of the time."

The recommendations of this Commission were speedily translated into action by Lord Curzon's Government. An agricultural research institute, with fully-equipped laboratories, an experimental farm, a cattle-breeding farm for the improvement of the local breeds of cattle, and an agricultural college for the training of students were

established at Pusa in the Darbhanga district of Bihar. The experimental farm was to serve as a model for similar institutions to be opened in the provinces, each of which was also to have its own agricultural college and scientific experts for purposes of research and instruction.

Between 1905 and 1914 much progress was made in the provinces in building up agricultural departments as planned. Under the stimulus and direction of the Government of India, and with the assistance of grants from Imperial revenues, a considerable number of scientific experts was recruited from Great Britain; agricultural colleges were constructed; experimental and other Government farms established, and a substantial advance made in developing India's premier industry on scientific lines.

The outbreak of War in 1914 led to a distinct slowing down of the pioneer work of these departments. Many members of the staff joined the forces; expenditure had to be curtailed owing to financial stringency; and work and development were in consequence interrupted.

About a year after the War ended, the Reforms were introduced, intense political agitation began, and the conditions under which provincial agricultural experts had to carry on their duties became more irksome. A number of the more experienced men decided to retire on proportionate pension.

In accordance with the constitutional changes introduced under the Reforms, the Government of India divested itself of the right of superintendence, direction and control over the administration of agriculture in the provinces. It was also debarred from making grants to provincial departments. These departments were, as a result, no longer tied to the apron-strings of the Central Government. They had gained their independence: the Gordian knot had been cut. The tendency of the specialist, who had replaced the civilian as Director, was to organise and direct his department on his own plan, independent of his colleagues in other parts of India. In some provinces, in particular, self-sufficiency in regard to agricultural research was greatly intensified. In support of that attitude there was much to be said. India

with an area of 1,800,000 square miles is as big as Europe without Russia. It is twenty times as large as Great Britain. British India is divided into fifteen Local Governments, nine of which are distinguished as Governor's Provinces. Of these the smallest, Assam, is about the size of England. Most of the others are more than twice as large as Great Britain.

That was the position which confronted me on taking over the duties of Agricultural Adviser to the Government of India, and Director of Pusa and its subsidiary research stations. Pusa, which had played no mean part in laying the foundations of scientific agriculture in this great sub-continent, had got out of touch to a great extent with some of the provinces, and its staff was, in consequence, disheartened and somewhat disgruntled. Some of them were disgruntled because though they had been selected on their merits for service under the Government of India, their pay and prospects were not as good as those of some of their less-distinguished provincial colleagues who had been made directors of their departments. They had another grievance to which they attached much importance; like other officers serving under the Central Government, they were denied the right of retiring on proportionate pension.

The comparative inaccessibility of Pusa had always tended to limit collaboration between the research staff and their colleagues in the provinces. From some of the provinces the railway journey to Pusa was a long and tedious one, involving the changing of trains and crossing of the Ganges. From Madras, for instance, it took about three days. When visitors after these long journeys reached Pusa Road (Waini) railway station, they were faced with a further journey of six miles by road.

The isolation of Pusa discouraged potential visitors; it also prevented the staff from mixing with other men as freely as they would have liked. Owing both to their isolation and to the nature of their duties as research workers, their interests were unavoidably more circumscribed than those of their fellow-scientists who had, in the provinces,

varied duties and more frequent opportunities of conferring with landholders and *ryots* in the villages, and with the officials of other departments regarding schemes of work in hand or under consideration.

One of the functions of the Board of Agriculture over which the Agricultural Adviser to the Government of India presided was to bring agricultural experts working at Pusa and in other parts of India into touch with each other, and to establish that personal contact which is so invaluable to workers scattered over a country as large as India. The meetings, however, were held only biennially, and alternately at Pusa and in a province, and for financial reasons, the number of provincial experts permitted to attend these meetings was strictly limited.

The difficulties which stood in the way of collaboration between the agricultural experts in various parts of India did not lighten the very onerous duties of the Agricultural Adviser. He advised the Government of India in all matters of agricultural policy, and acted in a similar capacity to provincial governments when called upon to do so. He was in administrative control of Pusa, the Institute of Animal Husbandry and Dairying at Bangalore, the cattle-breeding and dairy farms at Karnal, Bangalore and Wellington, the creamery at Anand, the sugar-cane breeding station at Coimbatore, and the Imperial Institute of Veterinary Research at Muktesar and its branch at Izatnagar in the United Provinces. He was *ex-officio* Chairman of the Indian Central Cotton Committee, and Editor of *The Agricultural Journal of India* and *The Journal of Animal Husbandry and Dairying*, and had to write each year a lengthy report in which he reviewed the work of all the Agricultural and Veterinary Departments in India during the year, and the work of Co-operative Departments in so far as it affected agriculture.

The estate attached to the Pusa Institute is situated in the bend of the River Gandak, a tributary of the Ganges, and is about six miles from Pusa Road Station on the Bengal and North-Western Railway. The total area of the estate is 1358 acres. The College buildings occupy a

splendid site overlooking the river. They consist of a two-storied ornate range with flat roof surmounted by a large and massive dome. The building is portioned out among the various scientific sections and contains well-equipped laboratories, lecture-rooms, meeting-halls, herbaria, and an up-to-date scientific library. Near the College there are offices, a power-house, quarters for the College staff, a students' hostel and a hospital. The farm buildings on the estate consist of "go-downs," Dutch barns, cattle-sheds, and a modern workshop where the farm implements and machines are repaired.

The activities of the Institute were mainly directed towards research, experiment and education. As regards research the scientific staff dealt, as a rule, with problems of general or all-India importance, or with problems which could not be studied properly or conveniently by provincial departments.

On the educational side, it served the purpose of a higher teaching institution, and provided post-graduate courses for selected graduates of provincial agricultural colleges, and distinguished graduates of Indian universities.

The Institute published in the form of Scientific Memoirs and Bulletins the results of research work carried out by members of the staff, and by research workers in the provinces, and thus acted as a clearing-house for information in regard to research and agricultural and veterinary matters generally. It also supplied information and advice on agricultural topics to all who cared to ask for it.

To describe the pioneer research work carried out in the different scientific sections of the Institute would fill a book. Suffice it to say that that work dealt with different branches of farming and cattle-breeding ; with crop pests and diseases ; with the improvement of crops by selection, hybridisation and acclimatisation ; with the relationship existing between bacterial action and soil fertility ; and with the water requirements of crops, the availability of plant food materials in different types of soil, the composition of feeding stuffs available in the country and many other branches of agricultural chemistry. The great

body of knowledge accumulated has been placed at the disposal of every other agricultural research institution in the country, and students trained at Pusa are to be found in almost every provincial department of agriculture.

The Sugar Bureau, a more recent addition to the Institute, also performed a useful function in collecting information relating to different aspects of the sugar industry throughout the world. This information it supplied to Indian merchants, importers and others interested in the sugar trade. The Bureau also conducted field experiments with sugar-cane, manures, seed-rates, methods of planting, implements likely to be suitable for large-scale cultivation, and with the new cross-bred varieties evolved at the Imperial Cane-breeding Station at Coimbatore. These new and prolific sugar-canes took India by storm ; the British planters in the districts round Pusa were among the first to appreciate their value.

The other research stations controlled by the Government of India, in their respective spheres, also did pioneer work of the greatest value. At the Coimbatore Sugar-Cane Breeding Station, the achievement in the domain of plant-breeding excelled perhaps anything previously accomplished in the British Empire. At its Institute of Animal Husbandry and Dairying at Bangalore and other cattle-breeding and dairy farms, the basic principles of breeding and feeding were worked out and applied.

In the improvement of cotton in India as a whole the Government of India had taken the initiative, in constituting the Indian Central Cotton Committee, which did excellent work in promoting research on cotton in every important cotton-growing tract ; in evolving superior varieties ; in facilitating their distribution ; in finding profitable markets for them ; and in improving marketing conditions generally. With this Committee, which included representatives of the Government of India, and of provincial agricultural departments, cotton growers, cotton merchants, cotton ginners and spinners, I was closely associated from the time it was constituted in 1921 until I left India in 1929, and I am glad to say that the co-operation between

Government, the producers and the trade made for complete success.

My duties took me to every province in India, and I can testify to the remarkable progress made in nearly all, in developing agriculture on scientific lines. The greatest advances were made in the sphere of crop improvement. In India crops are of paramount importance. The people are largely vegetarians, and live mainly on rice, pulses, and wheat and millet flour. The cultivator is essentially a grower of crops. With some he feeds himself and his family ; from the sale proceeds of others he pays his land revenue and meets other calls on his purse. The income which the average cultivator derives from the sale of animals and animal products is insignificant.

But though crops are so very important in Indian agriculture, the cultivators have for centuries been placed at a disadvantage in having to use impure seed for sowing. There are no seed-merchants from whom supplies of pure seed are obtainable, and, mixed seed being used for sowing, mixed produce is the result. As the mixed produce lacks uniformity, it commands a comparatively poor price in the world's markets. Moreover, mixed seed gives, as a rule, a lower out-turn than pure seed, because of the presence of low-yielding varieties in that mixture.

In all the major provinces much work had been done in improving the more important staple crops by classifying the different varieties, eliminating the inefficient forms and selecting the best for propagation and distribution in the villages. By this method of improving crops, strains of seed superior with respect to yield, or quality, or both, had been isolated, tested and distributed on a very large scale. The area under improved varieties, when I left India in 1929, was about twelve million acres. In some cases the results achieved were most remarkable. In the Punjab there was an area of nearly a million acres under one strain of a selected American cotton, the original mother-plant of which had been selected eighteen years previously on the Government farm at Lyallpur. In Bengal and Burma almost equally startling results had

been achieved in the improvement of jute and rice respectively. In the Central Provinces there was an area of about 700,000 acres under a white-flowered variety which I had, shortly after I came to India, selected from the mixed cottons grown in that province under the name of *jari*. It gave an enhanced profit of over £1 per acre, and had added crores of rupees to the farming profits of the growers.

In some provinces foreign varieties have been introduced with advantage. Long before the departments of agriculture began to function in India, attempts had been made to grow exotics. During the American Civil War the Government of India had, in response to an appeal from Lancashire, experimented with American cottons of the Upland Georgian type. Under the severity of Indian conditions they gave poor yields of inferior fibre. When the departments of agriculture got into their stride about thirty years ago, however, these American cottons were again tried under the canals of North-Western India, and it was discovered that they could be grown successfully with irrigation. Under dry conditions they had been a partial failure, because of their shallow root-system ; but the earlier experimenters had not spotted this as the cause of their failure. The area of these exotics increased in about twenty years to nearly two million acres.

Another crop of which foreign varieties had been introduced with advantage was ground-nut, or monkey-nut as it is sometimes called. Foreign varieties were imported for trial, because the indigenous kinds had deteriorated both in quality and yield owing to their being subject to a fungus disease. Some of these exotic introductions proved much superior to the best of the indigenous varieties, and in comparatively few years spread over an area of hundreds of thousands of acres.

Some success had been achieved, too, in introducing foreign types of sugar-cane and tobacco, and in crossing some of these with indigenous varieties. Exotic sugar-canes have been freely used for that purpose at the Coimbatore Cane-breeding Station, and American tobaccos at Pusa.

The substantial results achieved in improving the quality of India's more important staple crops have greatly benefited the cultivator. They have benefited Great Britain too, for we import large quantities of her farm produce for use in our mills and factories. With an improvement in the quality, comes an increased demand as a rule. The improvement effected in the quality of Indian cotton within recent years, for example, has resulted in much larger quantities being used in Lancashire.

But crop improvement was only one of the many activities to which provincial departments were giving their attention. In every province research and experimental work was carried out with the object of discovering the most economical methods of increasing the fertility of the soil. Over extensive areas in India crops have, for centuries, been raised year after year on the same land without manure. The soil has reached what may be called its maximum state of impoverishment ; but as yet it shows no signs of becoming exhausted. When the monsoon is normal, the out-turn varies but little from year to year.

The soils of India are wonderfully fertile. Speaking generally, nitrogen is the limiting factor in production, and the gains and losses of this constituent on land cultivated without manure seem to balance each other. When an addition is made to the nitrogen content of the soil by applying a nitrogenous manure, or by growing in the rotation a leguminous crop whose root-nodule organisms enrich the soil by absorbing nitrogen from the air, the cultivator obtains a substantial increase in yield.

The provincial departments therefore gave much attention to ways and means of increasing the amount and efficiency of the nitrogenous manures available in the villages, and of encouraging the cultivation of leguminous crops. Many different kinds of manures were tested, and the stage had been reached at which some of them were recommended for use in the villages. Depots had been established at which those in demand were stocked for sale.

The supply of farmyard manure in India is very small, as much of the cattle dung is used as fuel. With a view

to providing an equally good substitute for the manure which is thus lost, methods of conserving crop residues, leaves of trees, weeds and other forms of organic matter composted with a little cow dung, and of conserving cattle urine by spreading a layer of dry earth in the sheds, were recommended in the villages.

The remarkable progress made in introducing superior varieties of crops, most of which made heavier demands on the supply of plant food in the soil than those which they had replaced, had stimulated the departments of agriculture to make a special effort to raise, too, the standard of cultivation and the fertility of the soil in the villages, so as to enable the cultivators to reap in full the possibilities of these heavier-yielding varieties.

Much progress had been made also in establishing pure herds of the principal draught and dairy breeds of cattle by selective breeding; in designing and testing improved implements; in studying the pests and diseases which take a heavy toll of some of the crops in India, and in discovering preventives or remedies. These, in short, are a few of the many lines of work to which the provincial agricultural experts were giving their close and unremitting attention.

In 1926 a Royal Commission on Agriculture in India was appointed under the chairmanship of Lord Linlithgow "to examine and report on the present conditions of agriculture and rural economy in British India, and to make recommendations for the improvement of agriculture and the promotion of the welfare and prosperity of the rural population." Before the arrival of the Commission in October of that year, I had collected much information for them in the form of memoranda, and afterwards acted as liaison officer between them and the Government of India. The Commission visited every province in India, examined 395 witnesses, and brought out a most informative report which includes many hundreds of conclusions and recommendations. One of the recommendations is to the effect that an Imperial Council of Agricultural Research should be established, the primary function of which

should be to promote, guide and co-ordinate agricultural and veterinary research in India, and to link it up with agricultural and veterinary research in other parts of the British Empire and in foreign countries, and that as it was not permissible under the existing Constitution to incur expenditure from central revenues on agricultural research in the provinces, "*the Devolution Rules should be altered to permit of this being done.*"

This chapter would be incomplete were I to omit any reference to the political Head of my Department—the Honourable Member for Education, Health and Lands in the Government of India. It fell to my lot to serve under four different Indian officials. When in the Government of India I had three different Members. Their duties correspond to those of Cabinet Ministers in this country. One of the three held the post for a few months only : the other two I came to know well. They were courteous, considerate and hospitable gentlemen of the best Indian type. We parted the best of friends.

Of the Pusa Institute there is a sad story to tell. The great earthquake which played such havoc in Bihar in the early part of 1934, shook that fine edifice to its very foundation. A new Pusa is being built near India's capital city, Delhi.

CHAPTER XXII

THE ECONOMIC DEVELOPMENT OF INDIA UNDER BRITISH RULE

In Great Britain, Nature is kind to the farmer : she seldom lets him down. He tills the soil and sows his seed with confidence, knowing from long experience that he will reap, in due course, an abundant harvest. The rainfall is, as a rule, well distributed over the growing period of his crops ; and the moisture-content of the soil is adequate for healthy vegetative growth.

In India conditions are entirely different ; for there the husbandman is at the mercy of a short and capricious monsoon. He dare not sow until the rains have set in and soaked the dry and thirsty soil. Except in the north-west, where perennial irrigation is available, all major agricultural operations are fixed and timed by the monsoon.

The chief characteristics of the rainfall on which the Indian cultivator is so dependent are its unequal distribution over the country, its irregular distribution throughout the season and its liability to failure or to serious deficiency.

The normal rainfall ranges from 460 inches at Cherrapunjee in the Assam Hills to less than three inches in parts of Sind. In some parts of the country crops suffer from excessive rain, and in others from excessive drought.

Over the greater part of India the rainy season, or monsoon, begins in June and ends early in October. This comparatively short period of four months or less is followed by eight months of dry weather during which the rainfall seldom exceeds two or three inches.

The average rainfall for the country, as a whole, is 45 inches ; but in certain districts it is liable to vary considerably from year to year. In a dry year it may drop to one-half, or even less than one-half, the normal. That generally spells failure of crops, and scarcity.

Crops sometimes suffer severely even in years in which the total rainfall is up to the normal in amount, but irregular in its distribution. The damage in such cases is done either by long breaks in the monsoon or by its early cessation.

A British farmer working under these erratic climatic conditions would be on tenter-hooks from the time he sowed till the crop was ready for harvesting, and he would, I am afraid, curse the elements when his crops were poor. His prototype in India suffers patiently " the slings and arrows of outrageous fortune." When, owing to the vagaries of the monsoon, his crops suffer, and scarcity prevails, he tightens his belt and accepts misfortune calmly.

In the very arid tracts in the north-west of India where the rainfall is only 3 or 4 inches annually, crops cannot be grown without irrigation. When touring in these tracts I was astounded at the progress made by Government in irrigating vast areas of barren waste which had previously produced little but deep-rooted shrubs.

This part of India is particularly well adapted topographically to canal irrigation. The country is very flat; the rivers are fed from the melting snow and glaciers of the Himalayas, and the demand for irrigation is strong. Millions of acres of barren sun-scorched desert have been supplied with water drawn from these snow-fed rivers. One of India's proconsuls has told us that when he first went to the Punjab this useless and unwanted land could be purchased for a few shillings per acre; but before he retired millions of acres of it had been brought under irrigation, and its value had risen to £25 per acre.

The desert has been converted into a land which blossoms like the rose. The magnitude of some of these irrigation works is awe-inspiring. The Lower Chenab Canal, for example, irrigates 2¼ million acres annually, and serves a tract much of which was formerly barren and uninhabited land—barren, because without water no crop could be grown thereon. After providing water for this vast area, Government divided it up into Canal Colonies. In these colonies farms were laid out, and thousands of sturdy and

industrious cultivators settled on this virgin soil. Artisans, merchants and others flocked into this Land of Canaan—a land flowing with milk and honey. Villages and towns sprang up ; roads and railways were constructed ; schools were built, and in a few years these new and prosperous colonies had a population of nearly a million people. The hard-working Punjabi cultivators—perhaps the best farmers in India—concentrated on the cultivation of wheat, cotton and oil-seeds. Large quantities of these are now exported from these colonies to this and other countries.

The Lower Chenab Canal is but one of several large irrigation works which are providing life-giving water for India's Saharas. In Sind, the Lloyd Barrage is the largest irrigation work in the world. In course of time it will irrigate nearly five million acres of arid land in one of the hottest and driest parts of the country.

The story of what has been accomplished in converting these arid tracts into valuable land reads like a romance. The gigantic irrigation works, with their weirs and thousands of miles of canals, are monuments which will keep green both the vast areas for which they provide the fertilising water, and the memory of the engineers to whose technical skill they owe their existence.

The tanks and canals constructed in those parts of India where the average annual rainfall is considerable, though precarious, are also serving a most useful purpose. In the Central Provinces, for example, I have repeatedly seen the rice crop in the villages saved from damage during long breaks in the monsoon, by the timely application of water from the nearest Government tank or canal. The water thus applied tides the crop over the critical period, and relieves the grower of a load of worry.

In no other country is irrigation carried out on so large a scale : in no other country is it of such vital importance as it is in India with its teeming millions entirely dependent on the fruits of the soil. The total area under irrigation is over fifty million acres, of which over thirty-two million are irrigated from tanks and canals constructed by Government.

In the past, devastating famines were common in India. By bringing large areas under irrigation, Government has given the country a great measure of security against them, and increased, at the same time, the prosperity of the people. When, owing to the failure of the rains, crops suffer severely in any tract, food supplies can now be rapidly transported to it by road or rail from districts where the harvest has been a good one. India is now covered with a network of roads and railways. She has 70,000 miles of good roads and over 43,000 miles of railway. Improved communications have helped to give her security against the grim spectre of famine, and to pave the way for her industrial and commercial development. To the opening up of the Suez Canal and the coming of steamships, roads and railways, she owes the position she occupies to-day of being the sixth largest trading country in the world. Improved communications, moreover, have brought her into touch with wider markets overseas, and enriched the cultivators by securing for them better and steadier prices for their produce, and by lowering the cost of the necessities imported for their use.

When I visited India's North-Western Frontier I realised that the strategic railways there serve still another purpose, in helping to give her security against invasion by the virile but lawless races which live beyond.

When the complete history of British enterprise in India comes to be written the historian will, I am sure, have much to say about the remarkable progress made under British rule in increasing her prosperity, in providing for her the means of protection against famine, and in giving her security against both the warlike peoples which threaten her frontier, and potential law-breakers who live within her gates. He will have much to say, too, about the wonderful manner in which the whole administration of this vast sub-continent stretching from Cape Comorin to the confines of Persia has been organised; about her fine postal and telegraph services; her Co-operative movement which has induced millions of *ryots* to work with their neighbours and to make a better use of money; her

schools, colleges and universities which are carrying the torch of learning to every corner of the land ; her hundreds of hospitals and dispensaries, and their beneficent work for suffering humanity ; and her large and flourishing seaport towns—Calcutta, Bombay, Rangoon, Karachi and Madras —which have been developed very largely by British brains, British enterprise and British capital. He will have something to say, too, about the planting industry, and the extent to which India owes her existence to the enterprise of intrepid Britishers who converted malaria-ridden mountain slopes and valleys, previously clad with densely matted jungle growth, into valuable estates.

The cultivation of indigo was the earliest venture of the Britisher in the field of agriculture in India. Though the discovery of the synthetic dye has greatly reduced the profits to be made on its cultivation, there are British planters in Bihar who still grow it on a small scale. The discovery of a chemist knocked the bottom out of the indigo industry in Bihar ; but by the genius of two other scientists planters have been provided with a substitute. They are now growing on a large scale the cross-bred sugar-canes evolved at the Coimbatore Cane-breeding Station.

The tea plant, though indigenous to Assam, owes its introduction into India on a large and commercial scale to the wisdom and enterprise of the Government in encouraging the formation of companies interested in the cultivation of tea. The Assam Tea Company was formed in 1839 : by 1880 the tea industry was well established. Within the last sixty years the quantity of tea produced in India has risen from thirty-four to four hundred million pounds, which is about 40 per cent. of the world's production. The value of the exports to the United Kingdom alone amounts to about £20,000,000 a year.

The British pioneers in this industry reclaimed from the jungles of the Assam Valley areas for tea cultivation. They suffered from the severity of the climate ; malaria and black-water fever took their toll of these brave men ; but those who survived made good. New companies were formed ; hundreds of thousands of labourers were recruited

in Central and Southern India for work in the gardens ; the valleys and mountain slopes were repopulated, and modern Assam, the smallest and most jungly province in India, was created.

In Bengal a somewhat similar course was pursued on the ridges and in the valleys of the foot-hills of the Himalayas. Suitable sites for gardens were selected, cleared and planted. In the Nilgiris (Blue Mountains) in Southern India tea cultivation was started at a later date ; but there, too, great progress has been made in converting comparatively useless thickly-grown jungle into valuable gardens.

British tea-planters have done a great work in converting waste and jungle lands into productive estates on which millions of Indians have been provided with employment and good wages.

Coffee is grown mainly in Mysore and Coorg in Southern India, and rubber in Travancore and Burma, where many of the estates are owned by Indians.

The planting industry has been built up by British enterprise and with the help of British capital. There are many others which owe their origin to British initiative. For example, in Calcutta and its neighbourhood nearly a hundred British-owned jute mills are, year after year, providing work for about a third of a million hands. They are providing work for many times that number of *ryots* in the villages of Bengal and Assam, where jute is now the principal cash crop grown in the villages.

The unifying influence of British administration has made possible the development of these and other great industries in India, which have added greatly to the resources of her masses and raised the standard of living. That standard, though still very low, has steadily risen, despite the rapid increase in population. But the outlook is not too bright. Every year about three million new inhabitants are being added to India's half-million villages. Emigration has almost ceased, and the present tendency is for Indians in foreign lands to drift back to their own country. The rapid development of irrigation, more

especially in the north-west, has undoubtedly added largely to the food supply by increasing the area under cultivation and the out-turn per acre. The agricultural departments are also playing a useful part in increasing the harvests by introducing better methods of farming, and industries and trades are absorbing a larger number of workers. Still the fact remains that the pressure on the land is steadily increasing and that the population may, in time, outgrow the food supply. How to avert this danger is one of the most formidable problems confronting our statesmen in India to-day.

Government has, by its beneficent measures for protecting the country against invasion, civil strife, famine and pestilence, and such crimes as *suttee* and infanticide, greatly reduced mortality and the population continues to multiply at an enormous pace. The burden of over-population falls largely on the villages. Over the greater part of India the pressure on the land is already severe, and village holdings have been sub-divided to such an extent that millions of them are too small to support a family. But despite the fact that so many of the holdings are uneconomic units, the *ryots* who occupy them raise large families.

When the Royal Commission on Agriculture were taking evidence in Assam regarding economic conditions in that remote and jungly province, the witnesses included a Naga from the Naga Hills. The Nagas are a fascinating but primitive people who, before they came under British rule, were noted head-hunters. On being asked whether he desired to bring any special grievance to the notice of the Commission, he replied in his vernacular to the effect that the Government had forbidden them (the Nagas) to take heads and kill one another, with the result that the population in their hills had increased faster than the food supply, and now they did not have enough to eat. As the Government refused to countenance their indulgence in this particular form of native sport, he hoped the Commission would help them to extend their arable cultivation on the hillsides. Though this primitive and illiterate Naga had

never heard of the Malthusian doctrine, he evidently believed in head-hunting as a method of preventing the population from increasing faster than the means of living. Beyond the frontier of Assam men of his race are still pursuing this sport of head-hunting : they have not come under the civilising influence of a benign Government, and human life is cheap. The burden of over-population does not weigh heavily on the barbarian.

An Irrigation Canal in the Punjab

One of India's New Hybrid Sugar-Canes

CHAPTER XXIII

THE VICEROY VISITS PUSA

THE visit which the Viceregal party paid to Pusa on the 4th January 1929 was a red letter day in the history of that Imperial Research Institute — the Rothamsted of India. For weeks prior to that great occasion everyone at Pusa from the Director to the humblest coolie had, in their several capacities, been preparing for the event, and to their credit be it said that there was not a grumble from anyone, high or low. We knew that Lord Irwin took a keen interest in the development of agriculture, and that he would want to see not only the whole estate of 1358 acres, with its herds of cattle, improved agricultural implements, methods of cultivation practised, and selected and hybrid strains of crops evolved at Pusa, but also the work being done by the chemists, entomologists, bacteriologists and mycologists in their laboratories in the massive buildings of the Institute. Lord Irwin is one of that class of "gentleman" farmers who have done so much to promote improved methods of farming in Great Britain; and had, before coming to India, been for some time Minister for Agriculture at home. There was no use, therefore, trying to hoodwink him. Having previously had the opportunity of showing him round other agricultural stations in India, I had learned to appreciate his wide and accurate knowledge of the principles on which good farming is based.

To entertain a Viceroy at Pusa, which is an isolated station in North Bihar in the Province of Bihar and Orissa, is a formidable undertaking; for it is far from any town where fresh and reliable provisions can be had. But "where there's a will there's a way" says the proverb. At Pusa a fine spirit of co-operation prevailed: it was a

case of all for each and each for all. The *memsahibs* rose to the occasion and worked whole-heartedly in order to have all their domestic arrangements for the entertainment of the Viceregal party cut and dry before their arrival. Larders were well filled; dainty cakes baked or obtained from Calcutta; furniture polished and verandahs restocked with flowering plants.

Dozens of tents were pitched for guests who could not be accommodated in private bungalows; for in addition to the members of the Viceregal party there were officials of the Bihar and Orissa Government and others to be provided for. The permanent residents at Pusa were not the only people interested in the Viceroy's visit. The Railway and Police authorities, on whose shoulders devolved the duty of seeing that he travelled in safety, were as anxious as we were that there should be no untoward incident to mar the great occasion. The Superintendent of Police of the district had three hundred policemen in or near Pusa, and before the 4th he and other officers of his Government paid frequent visits to Pusa to consult me or the Joint-Director regarding the arrangements being made in preparation for the visit.

On the 3rd the Inspector-General of Police, commonly known as the I.G., called to say that he would like to rehearse at the Waini railway station, at which the Viceroy's train was to arrive early the following morning, the procedure to be followed in welcoming their Excellencies and bringing them by car to Pusa. He wanted to make sure that the drivers of the different cars knew exactly what was expected of them. To the I.G.'s proposal I readily agreed, and at a fixed hour on the afternoon of the 3rd, all those who had been deputed to meet the Viceroy turned up at Waini station.

The more ceremonial part of the rehearsal, which included the meeting of their Excellencies on the platform of the station, was soon got through. To arrange the cars in order of precedence outside the station took a little more time; but thanks to the efficiency of the I.G. we were soon ready for the return journey to Pusa.

In the first car, a fine Rolls-Royce kindly lent by the Maharaja of Darbhanga, I was to travel the following morning with the Viceroy and his Military Secretary; in the second car Dr H., the Joint-Director of Pusa, was to accompany and drive Her Excellency and the Honourable Anne Wood. There were other cars for the Viceroy's Surgeon, A.D.C.'s and Secretaries.

As soon as we were all ready, the engines of the cars were started and the Superintendent of Police was ordered to lead the way in his—the "pilot" car. Car after car moved off like clock-work, at intervals of a few minutes, as we desired to avoid the dust, which is something to be reckoned with in this part of India.

In Bihar, as in other parts of the Gangetic plain, the alluvial soil is of great depth. For countless ages the Ganges and its tributaries have been transporting to this plain silt from India's greatest mountain range—the Himalayas. In this fine deep alluvium, the nearest approach to stone is the rather inferior *mooram* (a kind of gravel) obtainable from the dry beds of streams. Stone not being available, the second-class roads are made of earth, and are very dusty in the dry weather.

The second-class road between Waini and Pusa was in places raised forty or fifty feet above the level of the fields on each side; for in Bihar floods are common, and if not protected by embankments the roads are sometimes washed away. This road, however, was narrow and the surface bad; the steep embankments added to the danger of motoring on it, as the driver of the Rolls-Royce was soon to learn. An unexpected encounter with a country cart obliged him to draw too near the edge of the road, his car skidded in some loose earth, and ran or fell over the steep embankment. When Dr H. and I reached the spot where the unfortunate Sikh driver had come to grief, we stopped our car and rushed to his assistance. Though not seriously hurt, he was dazed and very sorry for himself. The Rolls-Royce had turned over, but, strange to say, was not badly damaged. It was evident, however, that it would not be ready for the road again for some time.

To me Providence had been kind ; I had gone by preference with Dr H., in the second car, though asked to travel in the Rolls-Royce to represent His Excellency.

The fear of some such accident happening the following day worried me not a little. I tried to reduce the risk to a minimum by putting one of my most reliable colleagues in charge of the car in which the Viceroy would travel, and by giving him instructions to the effect that his speed limit on the morrow should on no account exceed twenty miles an hour. He would set the pace for the drivers who were to follow him.

Pusa that week was buzzing with policemen and members of the C.I.D. (Criminal Investigation Department). In the early morning of the 4th my wife, on making a final inspection of the rooms of our bungalow before our guests arrived, found a stalwart scarlet-coated Indian, who appeared to be a *chaprassi*, standing in front of the room to be used by the Viceroy as an office. The same man had been at the bungalow the previous day, but was then in plain clothes, and my wife, not recognising him in his new garb, asked him to light the fire in the office room and see that it was kept going. To her surprise he replied in perfect English, to the effect that he would carry out her orders. Men of the C.I.D. are not often given jobs of this kind, I daresay.

On the morning of the 4th there was a considerable crowd at Waini station to meet the Viceroy's train. After the usual formalities in the way of introductions had been attended to, we were ready for the return journey of seven miles. The cars started off as arranged, and we reached Pusa safely. His Excellency, always considerate of others, halted for a short time on the road when passing a school, the teachers and boys of which had come out to greet him. For them, too, this was a great day ; for had they not seen and spoken to the greatest *burra sahib* in India.

When we arrived at our bungalow we found my wife and Mrs H. on the steps to welcome our august visitors. They had scarcely finished their curtseying when Her Excellency's car arrived, and the curtseying began again.

The *memsahibs* at Pusa had for days been practising that curtsey, and, like everything else they undertook in preparation for the 4th, they did it "as to the manner born."

A few minutes later we started off to inspect the work being done in the fields and laboratories of the Pusa Research Institute. I had rehearsed with my colleagues the procedure to be followed in this tour of inspection, and had drawn up a time-table showing the amount of time to be allotted to each of the different scientific sections. Lord and Lady Irwin were interested in all we had to show them, and had so many questions to ask that my time-table soon became a dead letter.

In the Botanical Section they were shown hundreds of selected strains of wheat, tobacco, linseed and other crops, under which there are now many hundreds of thousands of acres in India. The Pusa wheats alone cover about two million acres. Outside India also Pusa wheats have gained a reputation for yield and quality. They have carried off prizes in countries as far apart as Rhodesia and Australia, and are now being grown extensively in the latter.

In the Agricultural Section they saw fields of the new hybrid sugar-canes evolved at one of the Department's sub-stations by one of our most successful plant-breeders who, after discovering that the sugar-canes grown in parts of Madras Presidency produced fertile seed, raised innumerable hybrid sugar-canes from which he was able to select types suitable for India's varying soil and climatic conditions. Before retiring he had thoroughly trained a talented Indian assistant, who is now carrying on the good work. The story of how this Englishman, as a result of this discovery, was able to evolve entirely new and superior types of sugar-cane which have, within the last twenty years, been distributed all over the cane-growing provinces of India, reads like a fairy tale. They now cover most of India's huge sugar-cane area of about two and three-quarter million acres, and have added many millions of pounds to the profits of the growers. Their introduction

has opened up a vista of great possibilities for India's sugar industry, and factories for the manufacture of white sugar have, in consequence, sprung up in large numbers. Some of these new canes give about 50 per cent. more sugar than those previously grown in India. Their fame has spread abroad; they are being grown in Australia, South Africa, Cuba and other lands.

In this Section they saw, too, the primitive Indian *nagar* (plough) working alongside improved iron ploughs imported from the West. Yoked to these ploughs were slow-moving bullocks, for in India the bullock has for thousands of years provided the motive power required for tillage operations. In the same field there were up-to-date motor tractors and a powerful steam-plough, each drawing a large three-furrow plough. This display of the most up-to-date and of the most primitive of tillage implements was impressive. It was a symbol of the contrasts so characteristic of this baffling and fascinating land—a land of confusing contradictions.

The fine herd of Sahiwal cows grazing with their cross-bred offspring in the fields of luscious green clover—a fodder new to India—also caught the eye. The milk yield of the Sahiwal herd—an Indian breed—had, by selective breeding, been doubled in seventeen years, and the milking capacity of the cross-bred herd, raised by mating them with imported bulls, was as high as that of a good dairy herd in Great Britain. The high milk yields of this cross-bred herd was the fruit of enterprise: the Ayrshire bulls had been imported from Scotland, and the clover seed from Egypt.

In the work being done in the other scientific sections also His Excellency took much interest, and our tour of inspection having taken nearly an hour longer than I had anticipated, we were late in getting back for lunch.

Nineteen of us sat down to lunch in the awe-inspiring presence of our Viceroy and his consort. But they were so perfectly charming to everyone that there was no need for awe. After lunch we retired to the drawing-room, where our guests were brought up, one by one, to talk to

their Excellencies: each was allowed to bask for five minutes in the sunshine of their presence.

In the anticipation of the Viceroy's desiring to rest in the afternoon, a large seven-foot bed had been specially made for his room, as our beds were only six and a half feet in length. But I do not think Lord Irwin even sampled this bed, for after completing his office work he and Lady Irwin went to the tennis courts of the Pusa Club and played tennis quite unostentatiously with visitors and residents who had assembled there. On their return from tennis they had a quiet tea—in the drawing-room by request, where at small tables round the fire we ate and chatted, while the Honourable Anne Wood made herself useful by toasting home-baked Scotch scones for the whole company. It was a homely scene in that quiet but cosy drawing-room. Their Excellencies were most appreciative: they had not, they said, had such a good tea for a long time. The interval between tea and dinner was spent in their rooms.

Again a party of nineteen assembled for dinner—the maximum number for which accommodation could be provided. That dinner was not uneventful. Soon after the first course had been served one of the Viceroy's Secretaries, who was sitting next to the Honourable Anne Wood, clandestinely placed on her plate an imitation roll of bread which he had produced from his pocket while she was in the act of talking to the gentleman on her other side. When she fingered her roll, it emitted loud squeaks which gave rise to much laughter; but I, let it be confessed, was rather shocked. This jocular Secretary was the guest of Mrs H., who had that day obtained from England a belated assortment of rubber rolls, cigars, cushions and small cakes with which she had intended to cheer us up at the festive board during Christmas week. On showing them to the "driver of the quill" he had asked her permission to take one to the Cloustons' dinner party.

His Excellency, instead of standing on his dignity, entered into the spirit of the joke and in a few minutes a whole trayful of the toys were, at his request, brought for him to examine. The squeaking and laughter began

anew. I was in a quandary, for as host I had not bargained for such merriment on this particular occasion ; and when the toys were passed round for Her Excellency's inspection I, rather boorishly I am afraid, showed my disapproval by placing the tray in the middle of the table. When lunching some months later at Viceregal Lodge in Delhi, Lord Irwin amused his guests by describing this dinner-party, and finished up by saying that the only two persons at the table who did not enjoy the rubber toys were Her Excellency and their host—Her Excellency because she was not allowed to play with them, and their host because he thought they gave rise to undue merriment in the presence of the Viceroy.

Their Excellencies left late that night. To our small community at Pusa they had endeared themselves by their charm, friendliness and consideration for other people. Before saying good-bye to my wife they presented her with their signed portraits in leather frames, and spoke so kindly in giving her the gift that we felt that it was the crowning joy of an altogether pleasant day—a day which would always remain a happy memory. Our land, so fertile in great statesmen, had never before provided India with a Vice-King whose character so closely resembled that of Good King George himself.

CHAPTER XXIV

FROM IND TO THE ORCADES

To most men who serve in India that country makes an irresistible appeal. I left it with regret; for there is a sadness inseparable from the giving up of any task to which a man has devoted the best years of his life. On retiring from service, I returned to Scotland with an abiding affection for India and its peoples. Since my retirement life has been comparatively uneventful, and perhaps dull at times; for it takes time to adapt oneself to a new environment, and to make new friends.

Though my wife and I have settled down in Edinburgh, each year the Call of the North takes us to Orkney and our native heath. There we forgather with old friends, some of whom have given their life's work to our Islands as farmers, traders, professional men, or artisans. We meet there, too, some who, like ourselves, are on holiday and never lose an opportunity of visiting the land of their birth—that "Land of the whirlpool, torrent and foam, where oceans meet in maddening shock."

In the last thirty years a great improvement has taken place in the material welfare of the people of our Islands. There is less poverty, and the standard of living is higher. Thirty years ago there was not more than one or two motor vehicles in the Orkneys: there are to-day hundreds of motor cars and motor bicycles, and on all the main roads there are regular bus services. The people get about much more easily and travel a great deal more than they did in the old days. The opening of Air services between Orkney and Aberdeen, and Orkney and Inverness is another great innovation. It is remarkable how kindly Orcadians have taken to this means of travel. Old and young have flown without fear. Last year the aeroplane in which a young

couple were returning to Orkney after their honeymoon dropped into the sea in the Dornoch Firth, shortly after leaving Inverness. They were rescued, and despite this most trying experience, proceeded to Orkney by air the following day.

The wireless set has become very popular. A more appreciative audience than that of the Orkney farmers and their families who, in their " buts and bens," listen intently to the varied programmes of the B.B.C., it would be hard to find anywhere. These broadcasts are a source of pleasure and profit—of profit in so far as they keep the farmer informed regarding prices of farm products.

The outlook of the people as a whole has changed. The many new interests which have come into their lives have broadened their outlook on life. The wireless, the S.W.R.I., improved facilities for travel, and last though not least, the Great War, have all contributed towards this change. During the War, Scapa Flow was our chief naval base. The demand from the Fleet for supplies of farm produce forced up prices ; farmers and traders were in clover while it lasted. The War benefited the Orkneys financially ; how far it affected the moral outlook of the people it is hard to say.

Throughout the War Scapa Flow was not only the main base of our Fleet ; it was, too, the base for fleets of trawlers and drifters, colliers, oilers, store-ships, ammunition-ships and other craft. In those days the harbour was like a bee-hive buzzing with activity. From early morn till late at night ships were firing at targets, running torpedoes, and going through fire-control exercises. At night the dark forms of battleships exercising in divisions could be seen steaming without lights.

This never-ending commotion in the harbour was increased a hundredfold when, as sometimes happened in the early months of the War, the periscope of a German submarine was reported to have been seen. Guns were fired ; the ships of the Navy raised steam with all despatch, and destroyers, tugs, trawlers, drifters and picket-boats rushed over and round the spot where the submarine was

supposed to be. Battleships fitted with torpedo-nets got them into position, and store-ships rushed alongside of those which were not provided with nets. The last scene in the drama showed the Fleet hastily putting to sea—there was safety in open waters.

It would appear that no German submarine ever succeeded in getting into Scapa Flow during the War, and that the periscopes reported to have been seen were figments of the imagination. That some of the enemy's submarines attempted to enter the harbour is certain, for one was destroyed in the winter of 1914 in the outer approaches to the Flow, and in November 1918 another met its fate when trying to get through the defences. The latter was manned by German officers who, after the mutiny in the German Fleet, made this last desperate effort to save their honour.

Scapa Flow and its environs were the scenes of many tragedies between August 1914 and November 1918. Ships of the Fleet in passing through the Pentland Firth in stormy weather sometimes had men swept overboard, and their decks badly damaged. More than one destroyer, when steaming in the darkness without coastal lights to guide it, missed its direction, ran into a precipitous cliff and was lost. The *Vanguard* was blown up while at anchor in the Flow and only two of the crew were saved. The flash of the explosion which lightened up the sky was seen by people miles away.

The sinking of the *Hampshire* was another great tragedy which was witnessed by several of the local inhabitants. With her, Lord Kitchener and hundreds of other brave men went down. In our Islands he had many admirers, as may be gathered from the fact that the natives of Orkney contributed very generously towards the cost of the monument erected at Marwick Head to perpetuate his memory. Lord Kitchener was in their eyes a national hero. He had, as they knew, detractors who had not done this great, silent hero justice. At Cabinet meetings they had defeated him in argument, but then they were but wordy, glib-tongued theorists. He was a man of action, as proved by the great work he had done in India and Egypt, and

latterly in organising our military forces in the Great War. My countrymen were, and still are, biased in their hero's favour. In their minds he is a martyr who, from a high sense of duty, went on a most dangerous mission and gave up his life for his country. The loss of the *Hampshire* they attribute to the plots of German spies, and they blame the naval authorities for not getting the assistance of the local people as soon as it was reported to them that she was sinking. They hold that more lives might have been saved if prompt steps had been taken at the cliffs to render assistance to the men driven ashore on rafts. In my opinion, however, it is doubtful whether much could have been done even by local men to save these lives. The cliff is 300 feet high in places, and being exposed to the full fury of the gale that was blowing, was lashed in foam on the night of the disaster.

It would appear as if the loss of the *Hampshire* had been willed by the Fates. Lord Kitchener would brook no delay, so assiduous was he in his duty to the State. Had it been possible to delay his departure from Scapa Flow for a day or two, till the gale abated, the mine-sweepers would have been at work again, and the route to be taken by the *Hampshire* cleared of mines. The decision to take the western, instead of the eastern, route round the Orkneys was not made till the day she sailed. It was taken because as a gale was blowing from the east, that route would have been much exposed. As it happened, unfortunately, the wind veered round north-north-west after she had sailed, and the western route was exposed to the full force of the gale and fury of the sea.

The *Hampshire* sailed at 5.30, escorted by two destroyers; but about 7 P.M. the destroyers were ordered back to Scapa, as they were unable to face the heavy sea at the speed of the larger ship. The speed at which she aimed was 16 knots an hour. About half an hour later she struck a mine 1½ miles off-shore, between Marwick Head and the Brough of Birsay. In fifteen minutes she sank, bows first. Lord Kitchener was below when the mine was struck, but was escorted on deck by an officer. An attempt was made

to lower a boat for him, but after that he was not seen again. The only survivors were twelve men who drifted ashore on a raft.

It is certain that the *Hampshire* was mined, though local opinion still harks back to insidious plots, and bombs placed on board her by German spies. The mine had been put down by a German submarine a night or two before Lord Kitchener sailed. When mine-sweeping operations were undertaken as soon as the gale abated, several moored mines, of the type laid by submarines, were discovered near the spot where the *Hampshire* had met its fate. No surface type of mine-layer could, without being seen, have laid mines off the Orkney coast in mid-summer, when the period of darkness in the Orkneys is so very short.

It is strange to think that the unsophisticated natives of the remote Orkney Islands should have been the spectators of so many of those momentous events and tragedies which, like the great convulsions of Nature which shake the earth, stunned the manhood of our Empire between 1914 and 1918.

Before August 1914, Orkney to most people in other parts of the Empire was little more than a geographical expression, and of Scapa Flow they knew less perhaps than they knew about Timbuctoo. This Flow, sheltered on the north by the mainland of the Orkneys, and on the south, east and west by islands of that archipelago, has long been noted for its good anchorage. It is a very large harbour and is accessible in all weathers and tides. King Haakon of Norway selected it as the jumping-off ground for that ill-fated expedition of his against the King of Scotland in 1122. To this harbour he returned after the Battle of Largs with a mere remnant of his fleet of 300 ships. From this harbour, too, Earl Rögnvald, the rhymer, animated by a spurious piety and a lust for plunder, sailed for the Holy Land with other buccaneering Crusaders in 1152. During the Dutch and Napoleonic wars it was used by the British Fleet.

Years before the Great War began, our naval authorities

had considered the possibilities of Scapa Flow as a naval base. Germany, too, had for years prior to 1914 been interested in this harbour. They had made a special study of its entrances. Their ships had frequently visited it, and the channels had no doubt been explored. Moreover, their information was up to date, for only three weeks before the War began one of their cruisers had lain at anchor in Scapa Flow for some days. The Intelligence Staff on board were, one would imagine, overjoyed to find that this prospective naval base was still defenceless against attack by destroyers and submarines.

There are three main channels by which ships can enter the Flow, namely the Hoxa, the Switha and the Hoy channels. These were not mined and netted till some time after the War had started. The less important channels were barred shortly after the outbreak of hostilities by sinking large merchant ships across them. But for some months the defences were not sufficiently reliable to guarantee the safety of the Fleet when in the harbour. Why the Germans failed to take advantage of the opportunity afforded during that period, of attacking our ships at anchor with submarines and destroyers, is a mystery. They made attempts to get submarines through the entrances at a later date, when the odds were all against them.

Throughout the War, the scene in Scapa Flow and its neighbourhood was one of constant change and ceaseless activity. Almost every day had its thrills for the inhabitants of the Orkneys. They saw large merchant ships being sunk in some of the entrances to the Flow. They saw destroyers, torpedo-boats and other craft lashing the sea in search of phantom submarines. They saw the bright flash and heard the loud report of the explosion when the *Vanguard* was blown to smithereens. They saw the *Hampshire* going down off Marwick Head. Though these and other grim tragedies left their impress on their minds, they never despaired of their country and her allies being able to win the War. Despite the stress and strain of war, they retained their fine sense of humour, too. Round the Orkney peat-fires many amusing stories dating back to this period are still being

told. One of the best is that about the pawky farmer whose dog had stolen some meat from the mess kitchen of a company in charge of one of the batteries commanding the entrances to the Flow. The irate Major called on the owner of the dog, and warned him that it would be shot if it gave them any more trouble. "Shut me dog, wad you!" said the old farmer. "I'll lead oot me peedie cat, and you can shut it too, if you're sure you can shut something. You have been here twa year, and niver a German hae you shot. It will niver do for you to leave here withoot killin' something." The gallant Major, finding it hard to gainsay this aspersion cast on his company, returned to his battery somewhat discomfited. The old farmer had had the last word. He had a fine sense of the ridiculous.

During the War the inhabitants of the Orkneys got accustomed to strange happenings. From their shores they had viewed disasters which, in a second or two, wiped out hundreds of brave men. After the War they had seen the great German Fleet, of which they had heard so much but never seen, brought into Scapa Flow as the prize of the victors. If they were elated they did not show it, for they are a shy and unemotional folk who do not readily show their feelings. Their hearts are never on their sleeves. But when that same Fleet, scuttled by its own officers, toppled over and disappeared in the blue sea, they were thrilled at last, and that thrill was intensified when British destroyers and patrol boats dashed to the rescue of the crews of the sinking ships. Dame Rumour has it that the sinking of these ships so stirred the imagination of a funeral party which was reverently wending its way to a cemetery on the shore of Scapa Flow, that all the mourners, including the husband of the deceased, deserted the coffin and climbed on to the top of a stone dyke from which they got a better view of the sinking ships.

In company with friends from London, my wife and I explored Scapa Flow last August in a motor-boat. It was no longer the hub of the activities of our Fleet. The Flow, after the stress and strain of war, was a picture of peace and beauty. It slumbered once more undisturbed by war's

alarms. It was a wide deserted sea, without a sail to break the monotony of its waters. Myriads of puffins, shags, cormorants and gulls and other sea-birds added beauty to the scene. They were everywhere, in the air, in the water, and on ledges of the cliffs. On the beach in places dozens of seals were basking in the sun. When we got near them, they clumsily hobbled over the rocks and dived into the water with a splash. The main object of our trip was to inspect a German battleship, the *König Albert*, which had been raised a few weeks previously by the salvage company known as Metal Industries. The engineer in charge kindly invited us to come on board, or rather to climb to the bottom of this great leviathan which had at one time been one of the units of the mighty German High Seas Fleet. Lying there bottom-up, and covered with seaweed and barnacles, she brought back to some of us memories of the World War, and the wanton crimes committed by that Fleet.

The bottom of this great ship was, we were surprised to find, almost as flat as a billiard-table. There was no keel. Before she could be towed to Rosyth, funnels and masts had to be blown off under water by means of an explosive. While we were walking round, a diver came up to say that a charge of dynamite was ready to be fired. The necessary order was given, there was a low thud, but we were not blown sky-high. A diver went down again to see whether the explosive had served its purpose. He returned to say that the funnel had been blown off. About half a mile away, the *Kaiserin*, another battleship, was about to be raised. The air-locks, like great chimney stacks, were in position on her hull, and air was being pumped into the holds. In course of time she, too, would rise to the surface from the 70 to 80 feet of water in which she lay. But we had seen enough of the relics of that mighty Fleet of which Kaiser Wilhelm had at one time been so proud. Our next destination was the Longhope in South Walls. The hotel of this small village had been very popular with officers and men of the King's Navy during the War. There many of them had found contentment and rest after long spells at sea.

The hotel, like the Flow itself, was once more a picture

of peace and beauty. Built on the side of a hill, it commands a magnificent view of the low green islands in the Flow, and of " Hoy's dark lofty hills." We had just seen some of the relics of Germany's Fleet which had at one time been a menace to Great Britain. In the hotel we were brought face to face with another link with the past, for in the garden were several hawks bedecked in hoods. They were the property of a party of two young men and two girls who had come all the way from the South of England to practise in Orkney this old-time sport of hawking. Five centuries ago hawking was one of the most popular sports pursued by our nobility.

This modest little hotel may one day be famous in history. In July 1915, King George spent a night under its roof, and in August of the same year the Prince of Wales spent six. Upstairs in the best front bedroom we were shown a plate on the door which read : " His Majesty King George V slept in this room 7th-8th July 1915." The next bedroom has a similar plate on the door which reads : " H.R.H. Edward Prince of Wales slept in this room 18th-24th August 1915."

PRINTED IN GREAT BRITAIN BY
OLIVER AND BOYD LTD.
EDINBURGH