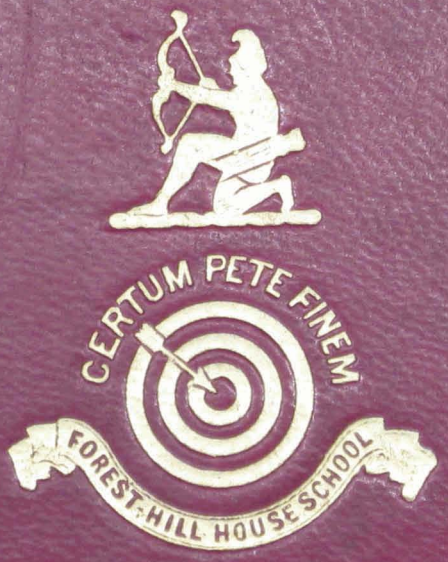
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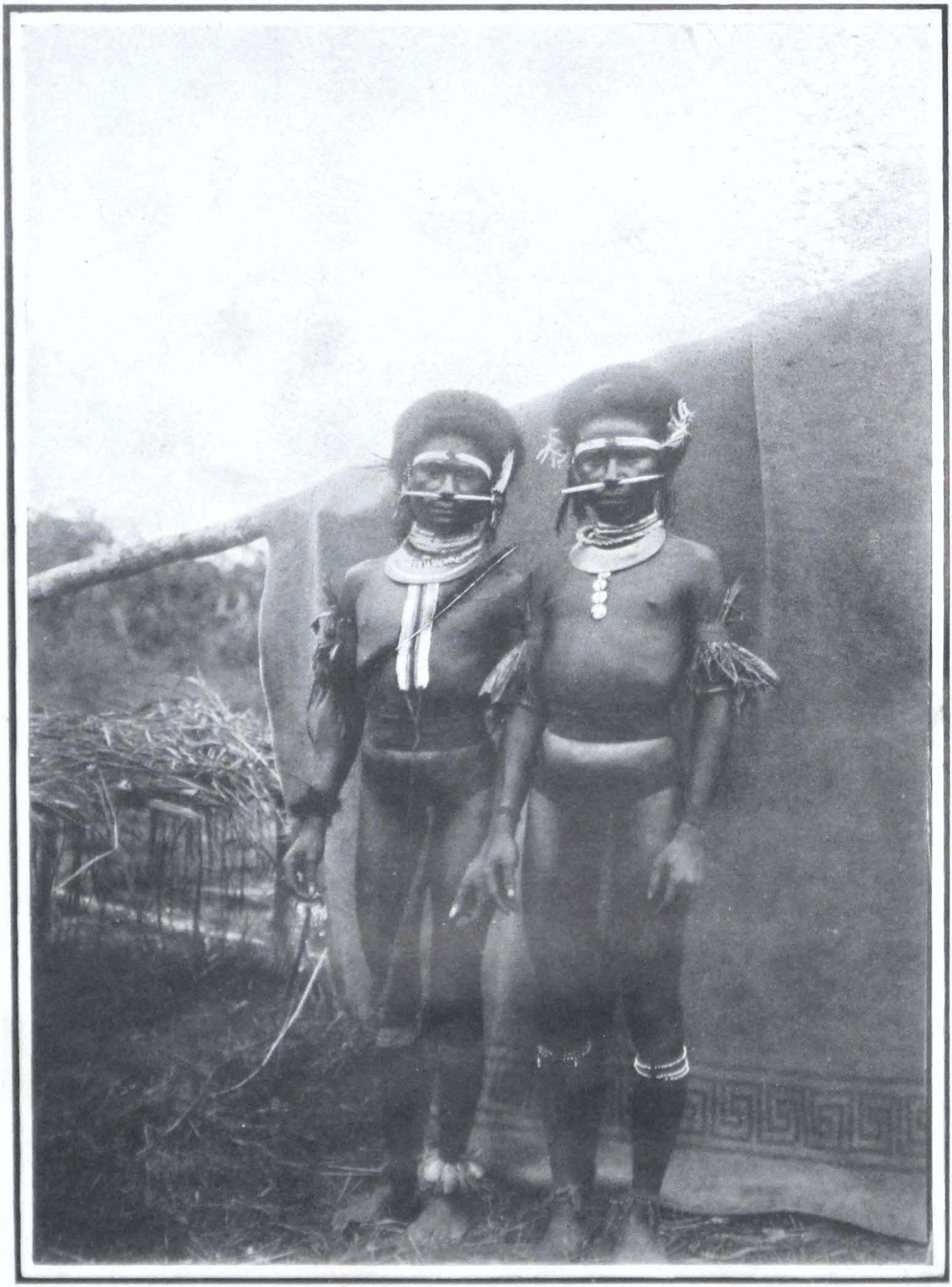

TWO NEW GUINEA DANDIES

They are natives of Dinawa. Notice their tight-laced waists and the nose ornaments of polished shell.

THE WONDERS

OF

ASIATIC EXPLORATION

BY

ARCHIBALD WILLIAMS, B.A., F.R.G.S.

AUTHOR OF "THE ROMANCE OF ENGINEERING"
"THE ROMANCE OF EARLY EXPLORATION," &c.

WITH TEN ILLUSTRATIONS

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INTRODUCTION

TWO thousand five hundred years ago there lived on the shores of the Greater Syrtis, a gulf of the Mediterranean Sea, between Carthage and Cyrene, a Libyan tribe called Nasamonians. Five young nobles, greatly wishing to learn something of the mysterious Sahara and the countries beyond, determined to make an expedition to the south. Herodotus, the Father of History, has given us a short account of their fortunes. They set out, he says, well furnished with food and water, and crossed first the inhabited country, then a region infested by wild beasts, and a great desert, through which they journeyed many days till they saw some trees growing in a plain. While they were gathering fruit off these trees some diminutive men came up and carried them away. Neither party understood the other's language. The Nasamonians were taken through vast morasses to a city inhabited by black dwarfs, and situated on the banks of a river running eastwards, full of crocodiles. The young men at length reached home in safety.

Thus was the Niger discovered. We may regard this as the first exploring expedition made deliberately into unknown lands, of which we have any historical record.

Since that far-off date the successors of the Nasamonians have steadily increased in numbers, until at the present day civilised nations can count a small army of enthusiastic men ready to risk life and wealth in learning the secrets of the still unexplored parts of the earth's surface. They are indeed far better equipped than Marco Polo or Columbus. The camera enables them to show to the world what they have seen. The theodolite puts it in their power to add something definite to the map of the world. Their vision is extended by the telescope. Arms of precision defend them better against man and beast. Neatly packed drugs aid them to fight disease. Preserved and essential foods provide a handy staff of life. In short, the latest discoveries of science are at their service.

It may be thought, perhaps, that exploration must be comparatively easy work to-day. Less laborious no doubt it is in some details than when Mandeville and Magellan travelled. But there are difficulties enough remaining to leave the romance of exploration untouched. Every explorer carries his life in his hand, however fine may be his outfit. Like St. Paul, he suffers perils of waters and of robbers; perils of the wilderness and of the sea. Like him, he suffers from weariness and pain, from hunger and thirst, from watchings and cold. Like him, he carries a burden of care—the care of a man who toils scientifically in the face of adverse circumstances.

Within the limits of this volume it is impossible even to notice all the modern explorers who have a claim on our admiration. Nor can the many sides of an explorer's activity receive equal notice, since the more technical

details of the scientific part of his work would not appeal to the general reader.

We select, then, a small group belonging to the nineteenth century, and chiefly to the latter half of it, whose exploits are in some cases unique, in others typical of what many other brave men have done. Each traveller will be to us as the Ulysses of his times; one who has seen—

> "Cities of men
> And manners, climates, councils, governments."

We shall follow him in his adventures, sharing in sympathy his difficulties and perils, his admiration of the scenes that Nature spreads before him, his intercourse with strange people, and interest in curious customs. This will teach us what qualities go to make up the Knight Errant of travel, and give us an insight into a mode of life which, in spite of all its hardships, causes him to exclaim—

> "How dull it is to pause, to make an end,
> To rust unburnished, not to shine in use,"

and constrains him after each interval of rest to plunge once more into the mysteries of the unknown.

PREFATORY NOTE

For the kind help they have given him in connection with the gathering of materials for the illustrations and letterpress of this book the Author begs to thank the following gentlemen:—

Dr. J. Scott Keltie, Secretary of the Royal Geographical Society; Mr. Edward Heawood, Librarian of the Royal Geographical Society; Mr. W. J. Harding King; Professor A. C. Haddon; Mr. J. R. Boosé, Librarian of the Royal Colonial Institute; and the following firms of Publishers: Messrs. Methuen and Co.; Mr. John Murray; Mr. T. Fisher Unwin; Messrs. Macmillan and Co.; and Messrs. Sampson Low, Marston, and Co. Further individual acknowledgements are made at the end of the chapters.

CONTENTS

PUBLISHERS' NOTE

THE contents of this book have been taken from Mr. Archibald Williams' larger book entitled "The Romance of Modern Exploration," published at five shillings.

A chapter on Exploration in New Guinea by Mr. Norman Davidson has been added.

LIST OF ILLUSTRATIONS

CHAPTER I

FOUR YEARS IN THE WILDS OF ASIA

AS a preparation for the better understanding of this chapter the reader will do well to take a map of Asia and study the physical features of the countries known as Eastern Turkestan, Tibet, and Mongolia. Together, they form a vast tract of sterile, inhospitable land, hemmed in on all sides, and intersected by mighty mountain-chains radiating from the Pamir, or "Roof of the World," as it is locally named, situated on the extreme north of India. The Thian Shan and Kuen Lun mountains almost encircle E. Turkestan; the latter range also forming the northern boundary of Tibet, which is a gigantic tableland rising southward to the Himalayas and of an average height above sea-level equal to that of the summit of Mont Blanc.

While Tibet is the cradle of many great rivers, notably

the Brahmapootra, Yang-tse-Kiang, and Hoang Ho, both E. Turkestan and Mongolia are very poorly watered by streams that, after a comparatively short course, are lost in the sands or some quickly evaporating lake. For sterility these two countries may compete with the Sahara; and for the violence of their wind-storms, laden with sand or snow, they cannot be equalled. As a consequence, our maps are but sparsely supplied with names. Many races have at one time or other inhabited these desolate regions, but the ceaseless energy of Nature has overwhelmed their works. Where busy cities once stood, all is now sand-dune and silence. Their very sites are forgotten.

A few nomadic tribes still cling to the watercourses; and in places, where there is sufficient moisture to keep at bay the desolation of the desert, other cities have arisen. But in time these too will probably disappear before the resistless march of the dunes, the children of the disintegrating winds. And so a little piece more will be added to the great Gobi.

Despite the extreme unkindness of the three countries mentioned, they have a never-ending fascination for the explorer. To record the mere names of those men who, at hazard of their lives and in the cause of science, have pushed through the highlands of Tibet and the northern deserts, would demand a page or two of this volume. Bit by bit they have unravelled the mysteries of snow-clad mountain, wind-swept valley and sandy ocean; but much remains to be done, and every year sees fresh workers start on expeditions which shall increase the general store of knowledge.

Passing over the generality of these adventurous men we will fix our attention on the doings of Sven Hedin,* a Swede, who stands pre-eminent among the successors of Marco Polo, the Venetian traveller of the thirteenth century. At an early age he proved himself a born geographer. When but fifteen or sixteen years old we read that he made a series of maps of the arctic regions, showing most accurately the tracks of each arctic explorer. On leaving school he studied geography in Sweden and in Berlin, where he became a pupil of the great Baron Richthofen. A natural aptitude for science and a remarkable facility in learning languages being proved by several journeys in Persia and Central Asia, he prepared in 1894 for an investigation of, to use his own words, "that part of the world which was the cradle of the Aryan race, and from whose dim interior the Mongols streamed out over the whole of Asia and part of Europe, and where there is such a host of geographical questions still awaiting solution. . . . The object of my prospective journey is to traverse Asia from west to east, from the Caspian Sea to Peking, and in particular to explore the intermediate regions which are least known." † The nature of his task will be inferred from the fact that at the last moment he

* In his *The Heart of a Continent*, Captain F. E. Younghusband, himself a famous traveller, writes of Dr. Hedin: "He impressed me as being of the true stamp for exploration—physically robust, genial, even-tempered, cool, and persevering. . . . I envied him his linguistic capacities, his knowledge of scientific subjects, obtained under the best instructors in Europe, and his artistic accomplishments; he seemed to possess every qualification of a scientific traveller, added to the quiet, self-reliant character of his Northern ancestors" (p. 314).

† *Through Asia*, vol. i. p. 19.

determined to go alone, because, as he admits, he did not wish to involve a companion in dangers and hardships which he himself was quite ready to face. So for four years this dauntless explorer was practically cut off from civilisation, attended only by the wild sons of the desert.

To aid him in his observations he took with him a very complete outfit of scientific instruments, which included a couple of cameras and a large supply of photographic plates and chemicals.

Abandoning the trans-Caspian route, Dr. Sven Hedin crossed the Kirghiz Steppes along the right bank of the Syr Daria to Tashkend, and on to Margilan, where he made preparations for his journey over the Pamir in the early part of 1894.

On February 22nd the expedition left Margilan to follow the difficult mountain path through the Alai Mountains, over frail bridges and perilous tracks, barely a foot wide, that overhung the brawling torrent of the Isfairan. At places the path was covered with slippery ice, sloping to the precipice, along which progression was possible only after the ice had been cut into steps and sprinkled with sand for the animals to get a footing; the explorer himself having sometimes to crawl on all fours. Further on avalanches threatened the party. "These ice-slides," writes the explorer,* "rush down the mountain-side with such overwhelming force that, under the enormous pressure, their lower strata become converted into ice, and anything living which should have the misfortune to be

* *Through Asia*, vol. i. p. 124.

buried under it would be literally frozen fast in the block of ice as hard and vitreous as glass." An avalanche a quarter of a mile across and nearly seventy feet deep rushed across the path a day before the caravan arrived at the spot. And just after the Tengis-bai pass had been crossed a terrific snowstorm swept through it, which, had the party been a day later, would probably have annihilated them all. The snow-*buran* is a terror of the Pamirs. One moment the sky is clear, the next down swoops the flake-laden tempest, blinding, dazzling, stupefying the traveller, who, if he be separated but a few yards from his companions, is soon beyond the reach of help. Amid the howling of the elements the loudest shouts, even the report of a gun, are undistinguishable. The caravan blunders on, and the straggler's fate is sealed.

After a week of these "fascinating perils" of the Alai mountains Dr. Sven Hedin descended into the valley through which the Murgab, a tributary of the Amu Daria, flows. This river is fuller at night than in the daytime, as the snow which melts on the mountains during the hottest period of the day does not reach the Murgab till several hours afterwards.

The march in the valley was much impeded by the deep snow, into which the horses sank to the girths. In parts it even became necessary to spread the felt mats, used to cover the tents, for the animals to walk on, the rear mats being transferred to the front successively as the horses passed over them. A man must have a hardy constitution to endure the extremes of temperature prevailing in these regions. Though the thermometer showed

125° in the sun, in the shade it stood at but 14°, and a traveller could literally be almost scorched on one side while in danger of frostbite on the other. In the night sixty degrees of cold was quite a common experience. Eventually, however, the expedition arrived safely at Fort Pamir, a Russian outpost in the heart of the snowy wilds, where 160 Cossacks and their officers guarded the interests of the Czar. The difficulty of building such a structure on the "Roof of the World" is evident from the fact that all the materials had to be fetched across the mountains from Osh in Fergana, 200 miles away! In their isolated fortress the soldiers lived happily, accounting the place a paradise, because it was free from the presence of women!

After a welcome rest among these kindly people Sven Hedin prepared for a visit to Mustaghata, the loftiest mountain of the Pamirs, rising to a height of 25,600 feet above sea-level. Its name, which means "The Father of the Ice Mountains," indicates the veneration in which it is held among the Kirghiz, who have honoured it by using their imaginations to weave curious legends and stories around the great shining peak that looks out over the deserts of Central Asia. And the traveller from other countries also falls under the enchantment of the snowy summits of the Ice Father.

"Whenever the Kirghiz pass it [Mustaghata]," says Sven Hedin,* "or first catch sight of it in the course of a journey, they fall upon their knees and say their prayers. They declare that it is the abode of three score and ten

* *Through Asia*, vol. i. p. 218.

saints. . . . Within its interior dwell, amongst others, the souls of Moses and Ali, the son-in-law and nephew of the prophet Mohammed. When Ali lay at the point of death he prophesied to those about him that as soon as the breath was gone out of his body, a white camel would come down from heaven and carry him away. As he said, so it came to pass. When he was dead the white camel appeared, took the holy man on its back, and hastened with him to Mustaghata. The Kirghiz are firmly convinced that Moses' soul also abides in that mountain; and for that reason they sometimes call it Hazrett-i-Musa or the Holy Moses."

The Kirghiz of Subashi also told the explorer another story. "Many hundred years ago an aged *ishan* (holy man) went up the mountain by himself. And when he came a certain way up it, he found a lake and a little stream, with a white camel grazing on the shore. There was also a large garden planted with plum-trees, and under the plum-trees there walked to and fro a number of venerable old men dressed in white garments. The holy man plucked some of the fruit and ate it. Then came one of the venerable inhabitants of the garden, and said to him, that it was well he had done so, for if he had despised the fruit, as all those aged men had done, he would have been condemned like them to stay on the mountain, walking up and down the garden till the end of time. Then came a rider on a white horse and caught up the holy man, and galloped with him down the steep mountain-side. And when the *ishan* came to himself, he found that he was down in the valley, and could only

remember dimly all the marvellous things he had seen."* The Kirghiz firmly believe that there is on the mountain a mysterious city named Yanaidar, an abode of the blessed, who enjoy perpetual happiness in gardens which everlasting spring loads with never-failing fruit. There the women are beautiful and never age; and death, cold, and darkness are unknown. But such delights are not for ordinary mortals, to whom the way is barred by terrific abysses, and cliffs covered by ice of blinding brightness, and winds that would sweep off any impious adventurers like so many grains of sand.

Yet, in spite of these beliefs, Hedin found several Kirghiz quite prepared to assist him in an ascent of the holy mountain. After a consent had been reluctantly given by the Chinese authorities, whose suspicions caused them to search his baggage, lest Russian soldiers should be concealed therein, he set off armed with the usual mountaineering paraphernalia. A first attempt was unfortunately foiled by a severe attack of inflammation of the eyes, which compelled him to withdraw for a couple of months to Kashgar and recuperate there. During the return to the mountain for a second essay, his party witnessed some Kirghiz games. These may be compared to the pancake scramble held on Shrove Tuesday at Westminster, the pancake being replaced by a slaughtered goat, while the scholars are represented by some scores of wild horsemen. The rules of the game must, however, in this case have been rather vague, since two competitors entered the fray mounted on sharp-horned yaks, which

* *Through Asia*, vol. i. p. 219.

speedily made their presence felt among the horses! The goat was repeatedly seized by a rider stooping from his saddle and borne off, the other Kirghiz thundering in pursuit and endeavouring to wrest it away. At the end of the game the poor carcase had been battered almost out of recognition, and nearly every man had received some shrewd knocks, and the horses limped over what, owing to the number of caps and whips spread about, resembled a small battlefield.

For the ascent of the mountain yaks were used. These animals are marvellously sure-footed, though more obstinate than mules, and are able to travel at heights where the rarefaction of the air would bring all other beasts of burden to a standstill. During the several attempts to reach the summit the greatest height attained was 20,660 feet; from which elevation the traveller witnessed all the glories of a moonlight night on Mustaghata. "A curious feeling of being at a vast distance from the earth took possession of me. It was difficult to realise that the four continents actually lay below my feet; and that a girdle drawn round the earth at the level where I then stood would cut off only the tops of a very few mountains in Asia and South America."*

But the explorer found none of the legendary spring weather of Yanaidar in those altitudes. On the contrary, the cold was so great that all hopes to reach the loftiest crest had to be abandoned; yet Sven Hedin could claim that he had ascended Mount Mustaghata to a greater height than had previously been attained by any European.

* *Through Asia*, vol. i. p. 379.

After a winter in Kashgar he undertook a very different task, namely, the crossing of the great Takla-Makan Desert of E. Turkestan from west to east. Like Mustaghata, this region is the subject of many legends; though some are perhaps more worthy of a little credence, as they centre round ancient cities buried beneath the sand. The inhabitants of Merket, a town on the westerly edge of the desert, include a number of men who make it their business to explore the sand-dunes for treasures of gold, which they hope to find sooner or later if they only hunt diligently. Their unsuccess doubtless gave rise to the story that if a man were fortunate enough to stumble on heaps of silver and gold it was useless to load his camels with them, as the spirits of the desert would permit him to return only after the treasure had been restored to its original position.

In a paper read before the Royal Geographical Society Sven Hedin related that in some places the desert is called Dekken-dekka, because it is believed that 1,001 cities have been entombed beneath the dunes.

It was to investigate the truth of such statements that the adventurous Swede started from Merket on April 10th, 1895, with several attendants and eight camels, the latter carrying 100 gallons of water in tanks to last the travellers until they reached the Khotan Daria, on the further side of the Takla-Makan. As the expedition rode through the streets, the spectators looked gravely on what many of them regarded as a doomed band. And, as will be seen, their fears were only too well justified.

FIGHTING THE DESERT.

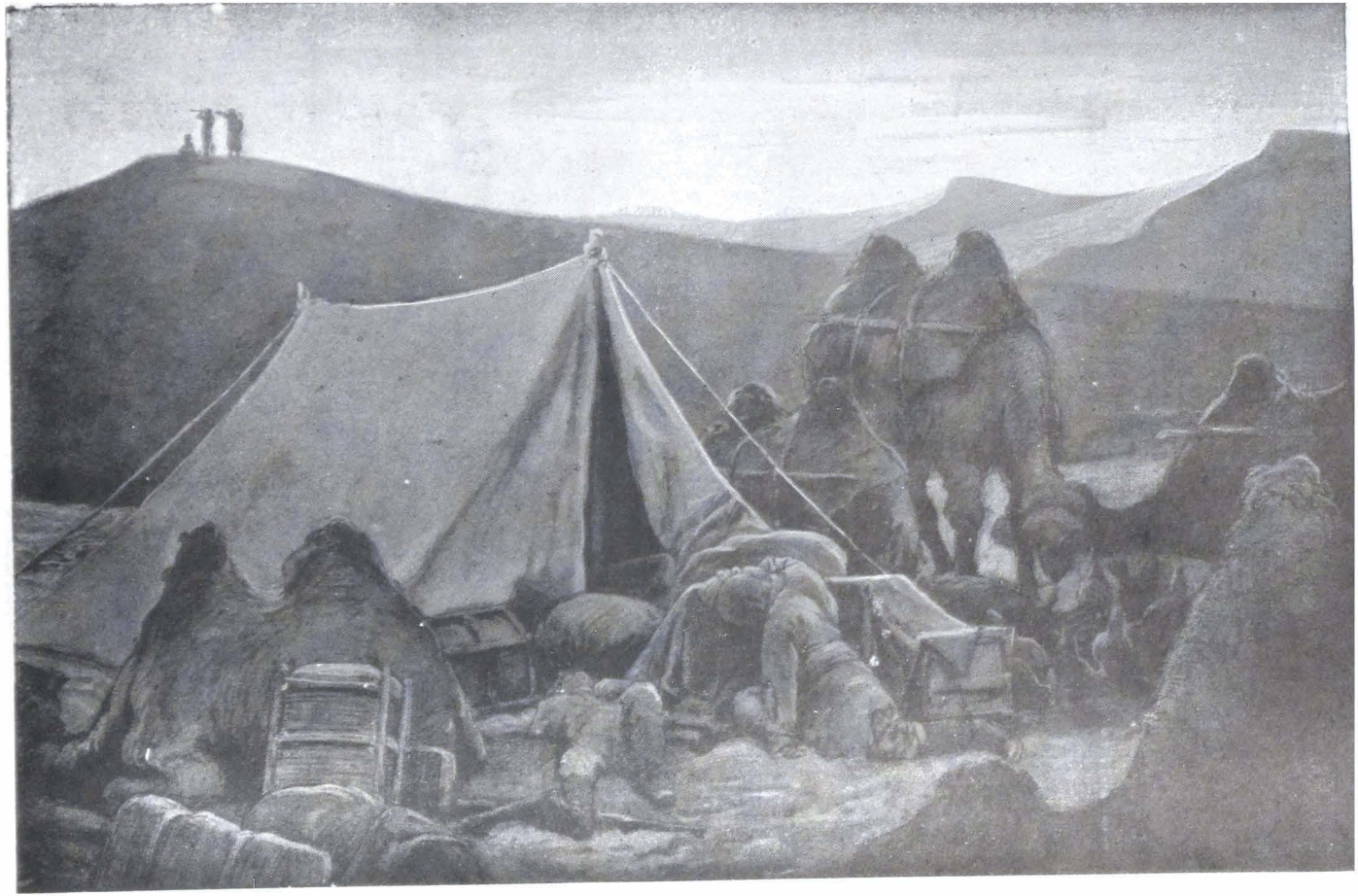
During the first thirteen days all went well, and water could be found by digging, brackish, but good enough for the camels to drink. The caravan then reached a couple of small lakes, inhabited by large flocks of ducks and geese, and surrounded by groves of poplars and tamarisk trees. There it rested two days—days which afterwards seemed to have been spent in an earthly paradise.

On the 23rd the true desert was entered. Anyone who has not read a description of the Central Asian deserts will probably regard them as level expanses, over which the eye can range to great distances. But furious wind-storms, raging many days a year, and the comparative absence of moisture, keep the surface of the ground, broken into an infinite number of particles by the action of cold and heat, in almost perpetual motion. Small protuberances serve to dam back the sand, which gradually collects in a long ridge, the crest of which is continually breaking off and slipping down on the leeward side of the dune, where the sand is soft and treacherous; whereas on the windward side it is beaten hard by the wind. The sheltered slopes have a uniform angle of about 30° with the horizontal; the exposed flank may rise almost imperceptibly, be perpendicular, or even overhang its base, according to the particular circumstances attending its formation. Some of the Takla-Makan dunes rise to the extraordinary height of 350 feet, and cross one another at an angle so as to form the meshes of a gigantic network. As may be imagined, the

difficulty of crossing these sand billows was formidable enough; even for men and animals in good condition.

On April 24th the caravan had a taste of a desert storm, whirling the sand along in clouds and columns not more than a dozen feet high, so that though the travellers moved in an atmosphere which prevented them from seeing clearly in which direction they should advance, the sun still streamed down on them with full fierceness from the blue heavens. Two more days passed, and then the question of a water supply became serious. On the evening of the 26th the men dug a well in the bare clay between two dunes, working with the energy of desperation. At a depth of three feet they met signs of water, and their courage rose. Men, camels, sheep, even the hens, crowded round, waiting eagerly for the promised water; but, alas! a few feet further down the sand was dry again. Then despair seized all but the gallant leader, who, on examining the tanks, found that there was still a little left. For the future, until fresh water was discovered, each man would receive two cupfuls a day, the sheep and dogs a bowlful; while the camels must do without, sustaining themselves as best they might on the hay and straw with which their saddles were stuffed.

No treasure had indeed been found or buried cities; but the genii of the desert, Thirst and Weariness, were laying their curse on the caravan. Wherever the eye turned there was nothing but sand, sand, sand. Even in the furthest distance no sign could be descried of the woods flanking the Khotan River. Clouds blew up. The men stood ready with the tent cloths to catch the promised rain.



The "Camp of Death" in the Takla Makan desert, where Dr. Hedin was obliged to leave behind two of his followers in a dying condition, and all his supplies, while he pushed forward in search of water. The sand-dunes in the background give some idea of the country traversed during this terrible march.

But the clouds passed over without shedding a single drop.

On the 29th there was left two quarts of water—stolen by one of the guides. The camels were fed for the last time on the whole of the butter supply.

Dr. Hedin's own words will best describe the *finale* of this terrible march.

"On May 1st we were tormented still more with thirst; the men drank the camels' rancid oil, and I drank some Chinese brandy, which otherwise was used for a lamp-stove. This paralysed my muscles, and I dragged myself laboriously along, far behind the caravan, ready to drop at any moment, in the burning rays of the sun. The bells of the camels could no longer be heard, but I followed the tracks, and after walking on about three miles, I found the others lying flat in the sand. A couple of them were weeping and calling upon Allah. Even the camels had lain down tired to death and with outstretched heads. We had hardly enough strength to pitch the tent. We undressed, crept into the shade of the tent, and lay there all day. We slaughtered the last sheep, in order to drink its blood, but it was so thick and sickening that no one would taste it. The men put up with a drink of still worse character, which was provided by the camels. It was mixed with vinegar and sugar, and doubtless hurried on the death of the desert man and Mohammed Shah. They got lost the same evening, and we never heard of them again. Even Islam wasted his strength in this way.

"As the sun began to set, I felt myself entirely re-

stored, and with Islam and Kasim and the five camels I left the miserable camp, where everything except my notes, instruments, money, and some other necessary things were left in the tent. In order to save my strength I rode on a camel, but it soon became pitch dark, and we could not see where we were going. I therefore lit a lantern and went on foot to find out the best passage. At midnight we had only gone two and a half miles; one of the camels had been deserted, and Islam was done for. Now that I saw the end was near, I decided to leave everything, took Kasim with me, and hurried to the east, after having encouraged Islam, and told him to follow our tracks as soon as he was able to walk again. Thus we left the last fragment of our caravan in Egyptian darkness. The lantern was left burning beside Islam, but its weak rays were soon hidden by the dunes.

". . . I hurried eastward with Kasim. We walked, with innumerable interruptions, all night. At eleven o'clock on May 2nd it was so hot that it became black before our eyes, and we rested all the rest of the day. We undressed stark naked and buried ourselves in the sand, with our clothes hung above our heads on the spade by way of protection from the unmerciful sun.

"From six till one o'clock at night, we walked in the moonlight. After a short rest, we crept on over this ocean of fine, yellow sand, which appeared to be endless. Suddenly Kasim stopped short on the morning of May 3rd, caught hold of my shoulder, and, with a blank stare, pointed to the east. I looked and looked, but could not discern anything unusual; but, with his falcon

eyes, he had descried a green tamarisk, on which our hope of rescue was now concentrated, for its roots must reach down to water. When we at last reached the bush, we thanked God for his mercy, and I have never before so forcibly realised that the Mohammedans have the same God as the Christians. We rested awhile, and chewed the juicy needles of the tamarisk like animals. It was the olive branch which showed there was a shore to the desert ocean, an outlying rock which causes the shipwrecked seaman to hope that the coast is near. In the shade of another tamarisk we rested all day, from ten till seven o'clock. In the evening we reached three fresh poplars, where we tried to dig a well, but were not strong enough; so we kindled a fire instead, in order to let Islam know where we were, if he should still be alive."

"On May 4th, we were discouraged again by the appearance of a high belt of sterile sand. During the hottest hours we rested again under the shadow of a tamarisk. When I dressed myself again at seven o'clock and encouraged Kasim to come on, he hissed out that he was not strong enough. I then continued alone until one o'clock at night, when I sank down in utter fatigue under a tamarisk. Some hours later Kasim came staggering up, and we continued together. After a short rest, we dragged ourselves along on May 5th with the waning strength of dying men: Kasim looked dreadfully giddy and confused. But at last our hope grew lighter—we saw a dark line along the horizon: it was the wooded banks of Khotan Daria! We walked into its leafy

arbours, and realised that the river was near at hand, but were not able to walk any further in the heat of the day, so we sank down under a leafy poplar. At seven o'clock in the evening, taking the spade handle as a staff, I crossed the wood, creeping long distances on all fours. Kasim remained where he was, lying on his back, motionless, with eyes wide open and mouth gaping, and he did not answer when I asked him to go with me.

"Then the wood suddenly ended, and a plain, lit up by the pale rays of the moon, spread out before me. I at once understood that it was the bed of the Khotan Daria, but I found it dry, and waiting for the summer freshets from the mountain; but I did not think that I was doomed to succumb in the very bed of the river. I therefore crossed it, and with great difficulty reached the opposite bank, whose woods and reed thickets could be dimly seen in the darkness. It had taken me five hours to go scarcely two miles! All of a sudden a duck flew into the air, water splashed, and I stood on the edge of a little pool of fresh, clear water, which was still left in the deepest part of the bed of the river, where the stream had last flowed."*

The intrepid Swede—for his courage alone had carried him through—proved himself the most self-controlled of the scientists. Just imagine what must have been the intense desire for knowledge that drove him, although dying of thirst, to feel his pulse before drinking, and ascertain that it was beating forty-nine to the minute;

* Quoted by permission from the *Geographical Journal*, March, 1898.

After dreadful sufferings Dr. Hedin found water in the almost dried-up bed of the Khotan River. He satisfied his own thirst and hurried back, with his two jackboots full of water, to Kasim, one of his companions, who was thus in the very last moment rescued from death.

a record which in itself proves the extreme exhaustion of the observer! *

Having satisfied his own needs to the full, without experiencing any ill-effects from the indulgence, his first thought was for his companion, to whom he bore water in his Swedish top-boots, and so rescued him from the very jaws of death. He then left him to go in search of food, and after living on grass and tadpoles for three days and two nights fell in with some shepherds. Kasim followed up his tracks, and Islam, who had been found by some merchants, also rejoined him, leading the camel that bore his notes, some instruments, and the Chinese money. The remaining seven camels and two men had perished; and but for the unselfish heroism of Islam all the records of this terrible journey would have been lost too. A year or more afterwards Sven Hedin recovered some of the missing instruments, his camera, medicine chest, and cooking-stove, which had been stolen by the merchants who rescued Islam.

The three survivors returned to Kashgar; and at the end of 1895 Hedin left that town for the last time, bent on a further search for the mysterious sand-buried towns of the desert. To use his own words: "My first journey across the Takla-Makan had been disastrous; the second proved a series of triumphs. On the first journey I sought for ruins of an ancient civilisation, and sought in vain; the second journey clearly demonstrated that the

* The normal rate is about 70 to 75 beats a minute. On Mustaghata, at an elevation of 20,660 feet, the explorer counted 106 pulsations in the same period.

thousand and one legends of hidden treasure and cities buried in the sand were not altogether old wives' tales." *

For this second crossing of the desert Hedin chose Khotan as his starting-point and struck in a north-easterly direction towards the Tarim River. The passage took forty-one days; but he had learnt his lesson and travelled with little luggage. Though the expedition was short of water by the end of the journey, it did not experience such sufferings as those of the previous year.

Anybody interested in archæology will be fascinated by the story told by Sven Hedin of how he discovered, on the edge of the old course of the Keria Daria, the remains of what must once have been a great and populous city—Takla-Makan. As far as the eye could reach rose the weather-worn frames of houses, covering an area 2½ miles in diameter. Excavation revealed images of Buddha, tastefully painted walls, pillars, and evidences of various kinds of industry. Basing his calculation on the rate at which the sand-dunes travel, Hedin concludes that this "second Sodom in the desert," as he calls it, was overwhelmed some 1,500 years ago.

In the centre of the desert dwells the wild camel, an animal about the origin of which opinions widely differ. Przhevalsky, the famous Russian explorer of Central Asia, held that wild camels are descended from strictly wild ancestors. But the natives regard them as the descendants from tame animals, which have strayed into the desert and bred, their offspring becoming wilder in each succeeding generation; until at the present time

* *Through Asia*, vol. ii. p. 848.

troubles with some of the men engaged to accompany the caravan; by terrific hailstorms; and by threatened attacks of Chinese robbers, the Tanguts. At Kumbum Hedin visited a temple containing an image thirty feet high and plated over with gold; and a shrine famous for a magical tree that, according to the *priests*, put forth leaves bearing the Buddhist prayer "Om maneh padmeh hum." Rumour, however, ascribed the words to a combination of priest and paint-brush!

The country round Sining-fu, a town on the upper reaches of the Hoang Ho, had been, a few months before Hedin's visit, the scene of the great Dungan revolt. The Dungans, a fanatic Mohammedan race, quarrelled among themselves on a point of religion. The Buddhist authorities intervened, and executed some of the leaders; and in retaliation the Dungans massacred a body of Chinese soldiers. This was a signal for a general rebellion, during which 50,000 Chinese and as many Dungans are said to have perished. The Mohammedans showed great courage, the Chinese very little—as may be inferred from the following episode:—

"A large force of them beleaguered a Mohammedan town near Sining, and shot at its walls for three days, but did not dare to make an attack, fearing that the inhabitants were prepared to play a ruse on them, since there were no sentinels posted on the walls. General Ho came to the scene and had the gate blasted open. An old blind woman, the only remaining being in the town, came up and said that all the rest had fled to the mountains long ago, and she had been wondering why

they are so shy that the mere smell of a camp fire will urge them to a flight that lasts for some days. This shyness Sven Hedin, who agrees with the shepherds' theory, at least so far as concerns the camels of the Takla-Makan, attributes to an "instinctive feeling that their ancestors, thirty or forty generations ago perhaps, were bound at camp fires, and now they have a feeling that human beings are their very worst enemies, and their ancestors have been the slaves of men." The same uncertainty surrounds the origin of the wild horse of Central Asia and North Africa; and in both cases it appears impossible to decide whether the animal's earliest development was from a domesticated or wild creature. It must at any rate be conceded that there is a striking resemblance between the tame species and their brethren of the wilderness.

On reaching the Tarim Hedin struck eastwards to investigate the problem of Lop Nor, which he was able to solve to his own satisfaction.

Lop Nor, the lake into which the Tarim flows, was first visited by Przhevalsky among Europeans, who found it to be fresh and also a degree further south than the lake marked in Chinese maps. As the natives, when questioned by the Russian explorer, denied the existence of a lake further north, Przhevalsky concluded that he had discovered the historical Lop Nor of the Chinese maps. But Baron Richthofen maintained that a lake which had no outlet must be salt; and that therefore this body of fresh water could *not* be Lop Nor, but a lake of more modern formation.

Hedin therefore determined to visit the spot where the Chinese Lop was marked; and in the same latitude he found a string of four lakes, which he concluded to be the remains of the old Lop; especially as that region was wooded with poplars of the same kind as those bordering the Tarim. Now, the Karakoshun, or Lop of Przhevalsky, is destitute of these trees; so that there seemed to be no doubt that Richthofen was correct in considering it a modern formation. His views received additional weight from the statement made to Hedin by an old man living near the northern lakes, to the effect that in his grandfather's time the site of Przhevalsky's lake was an expanse of dry sand. Some years later, as we shall see, the truth was finally brought to light in a very interesting manner.

All the lakes in this district are overgrown with reeds, which in places reach a height of nearly thirty feet, and are so dense that a man may safely walk over the top of them. The Lop-men, who live almost entirely on fish, keep open narrow channels through the growth for their poplar dug-out canoes, plucking out the new shoots of the reeds every year.

Hedin spent a very pleasant time among these lakes, even in spite of clouds of mosquitoes, and returned to Khotan, to prepare for a journey through northern Tibet and China to Pekin.

For two months he pushed through the plateaux of the Kuen-lun Mountains, without sighting a single human being; then crossed the Tsaidam Desert, and skirted Koko-nor lake on the north. The march was punctuated by

troubles with some of the men engaged to accompany the caravan; by terrific hailstorms; and by threatened attacks of Chinese robbers, the Tanguts. At Kumbum Hedin visited a temple containing an image thirty feet high and plated over with gold; and a shrine famous for a magical tree that, according to the *priests*, put forth leaves bearing the Buddhist prayer "Om maneh padmeh hum." Rumour, however, ascribed the words to a combination of priest and paint-brush!

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the Chinese had been making such a noise with their cannon outside the walls." *

From Sining the route led through the Nan Shan Mountains to Liang-chau, whence Hedin was able to telegraph to the King of Sweden to say that he was nearing his journey's end. The Chinese are unable to comprehend the action of the telegraph, and believe that messages are transmitted on little balls of paper which travel along the wires at a speed too great for the eye to see them. They ascribe to the insulators a very peculiar purpose, namely, to act as halting-places for the paper balls in case of rain coming on! But, after all, it is not so long since an old English country-woman wished to send a pair of boots to her son by telegraph, and by the advice of the clerk, who was fond of a practical joke, sat for a long time at the roadside watching the wires. So the Chinese may be excused.

Hedin next crossed the Alashan Desert to Ning-sha on the Hoang Ho. Here his attention was drawn to the cruel custom of cramping a Chinese woman's feet, or rather a girl's, as the operation takes place between the fifth and sixth years. The big toe only is spared, the other four being tucked under the foot and held there by bandages until they have "set" in that position. The torture of this operation is most intense. Sometimes the poor victim is crippled for years by it, suffering agonies from the slightest movement of her feet. And when at last she is able to walk, her gait resembles a duck's waddle. And yet so curious is the strength of

* *The Geographical Journal.*

custom and tradition, that a woman who prefers to have ten good toes must give up all hopes of getting married! Yet before judging the Chinese ladies too hardly we must remember the tight-lacing and foot-torturing boots to which a good many of their white sisters are quite ready to submit at the promptings of personal vanity.

The intense cold of the Ordos Desert had to be faced before the party reached the Hoang Ho again; but after that travel was comparatively easy to the gates of Pekin, where a warm welcome and a great pile of letters awaited the explorer. He found, however, that four years spent in the wilds caused him to weary quickly of gay society; and though he had two comfortable routes by sea and land open to him, he preferred returning home through the Mongolian deserts and Siberia.

In the introduction to his book,* Sven Hedin gives some figures about the journeys which ended at Stockholm on May 10th, 1897.

He had mapped out a route 6,520 miles long, or one quarter of the earth's circumference. Of this distance 2,020 miles were through regions hitherto never visited by Europeans. In all, he travelled 14,600 miles, at an average rate of rather more than $2\frac{3}{4}$ miles an hour.

The important services rendered by him to science were promptly rewarded. King Oscar decorated him with the Order of the North Star, in diamonds—a distinction that has only been received by four members of that Order. Among other decorations came the

* *Through Asia*, which the writer of these lines can heartily recommend to all persons interested in travel and adventure.

Founder's Medal of the Royal Geographical Society, London, "For his important exploring work in Central Asia, and especially for his survey of the glaciers of Mustaghata, and for being the first explorer to cross the Takla-Makan Desert, for his discovery of a new route south of the Kuen-lun range, and for his investigation of the physical geography of the Lop region."*

* *Year Book and Record of the Royal Geographical Society.*

CHAPTER II

FURTHER ADVENTURES IN EASTERN TURKESTAN AND TIBET

GREAT as had been his achievements, Dr. Sven Hedin was not content to rest on his laurels. Shortly after midsummer of 1899 he left Stockholm for the fourth time in search of fresh worlds to conquer in the heart of Asia, encouraged by the pecuniary support of the King of Sweden and Norway, and several Swedish gentlemen.

The most interesting points of the following three years of travel are — the systematic mapping of the Tarim River from Lailik to Karakoshun, the lake into which it empties; the discovery of the site of the ancient Lop Nor, and of ruins on its edge; and his attempt to reach Lhasa, the sacred capital of Tibet. Speaking generally, his route lay outside that of his previous journeys in Central Asia, as he had no desire to go over old ground again, the Lop district excepted.

As the Tarim* had never yet been navigated by an explorer, he made elaborate preparations for descending

* The Tarim, otherwise known as the Yarkand River, flows due east on the north of the Takla-Makan Desert.

it by boat. A ferry-boat was bought, and by the aid of smith and carpenters, soon converted into a commodious dwelling and observatory. A tent was set up in the forepart, where he sat mapping the course of the river in detail as the boat floated down on the current. Amidships rose a hut of planks and black rugs to serve as a photographic dark-room, provided with tables and benches, and accessories for the development of plates. The servants' quarters, kitchen, and baggage occupied the stern; and for comfort's sake a smaller boat was taken for the commissariat—flour, grapes, melons, vegetables, live sheep and fowls. A small English collapsible boat, for independent trips, completed the outfit.

Sending on a caravan by the land route to the Lower Tarim, Hedin gave a parting feast to the natives of Lailik, and started on what he considered to be one of his pleasantest travelling experiences. The smooth motion of the boat was indeed a welcome contrast to the swaying of a camel's back. Every moment the landscape unfolded itself in an ever-changing panorama, every feature of which was minutely recorded on the map. When the weather became uncomfortably hot, refreshment could be found in the river. As night came on the boat was moored, and the crew went ashore to eat and sleep, after the volume of the river had been carefully measured and recorded.

Sandbanks, sunken trees, and rapids required a constant outlook to be kept. There was danger, too, from the high, crumbling banks. But the traveller's chief anxiety arose from the gradually diminishing volume

of the Tarim, and the approach of winter, which, as soon as it began in earnest, would stop the voyage. It thus became a race against time to reach the caravan rendezvous before the ice blocked further progress.

Sven Hedin thus pictures the earlier stages of his river journey: "The boats glided noiselessly through the dense forests, which were often so thick that scarce a ray of sunlight pierced through to the dark hiding-places and holes in which the wild boars, tigers, and other beasts of the jungle made their lairs. We glided on day after day, week after week, down the dark waters of the Tarim, through the enchanted forests, which shut it in, as it were, along a kind of Venetian thoroughfare lined by palaces magically changed into trees, and by quays of golden shimmering reeds. When the current flowed more slowly, the boatmen nodded in turns over their punting-poles. And when the wind blew through the forest, it scattered a shower of golden leaves over the face of the river, making a golden waterway for us all through the autumn, as we followed every curve and winding of the stream. It was as though we were threading enchanted sargasso seas."

In many places the Tarim winds in a most astonishing way, in almost circular bends, so that after some hours' travelling the boat returned to the same trees and landmarks that it had already passed close to. Its right bank is beaded with small lakes, separated from it only by the shifting dunes. These lakes, whenever connected through a small feeder, are like parasites, draining the life-blood of the Tarim.

Winter gradually closed in, and on December 7th, 1899,

the boat was finally held by the ice, at a point which, by a fortunate coincidence, the caravan reached the same day. Soon there arose in the desert a small town of tents and reed shelters for man and beast. It even boasted a market-place to which traders resorted from neighbouring centres.

Undeterred by previous experiences, Hedin resolved upon a third passage of "the most appalling desert on the face of the earth," as he calls the Takla-Makan, in its most easterly part. In 1895, the caravan had been scorched by heat; now it had to endure the extreme rigour of winter. Water was carried in the form of blocks of ice.

The dunes crossed were often 300 to 400 feet high, and ran both north and south, and east and west. The irregular depressions enclosed by the dunes were in places swept clean of the sand, the bare clay beneath affording a firm foothold for the caravan. So that these *bayirs*, as the natives term them, were taken advantage of to the utmost. But after a while they ceased, and the animals had hard work of it on the dunes, sometimes covered with snow, at other times swept by hurricanes. Want of fuel was most keenly felt, with the thermometer showing 30° below zero Fahrenheit; and the expedition would have suffered severely had not the snow covered the sleepers at night. No casualties occurred, however. The Cherchen River was reached, and its course followed north to the Lop lakes, from which point the head-quarters camp was easily reached.

A journey was then made in a northerly direction to survey the Kum River, the dried-up bed of which was an

outlet of the Tarim when it flowed into the old Lop lake. Fragments of earthenware and dead poplar trees were found as silent testimony to the life that had existed a thousand years ago on the banks of the old river, now reduced to a few salt pools. On reaching the basis of Altimish Bulak, or Sixty Springs, Hedin turned southwards, and stumbled upon the ruins of some houses, among which were discovered Chinese coins, axes, and cups. One of his Cossacks, returning for a spade that had been left behind at the last halting-place, discovered even more important traces of old civilisation, which Hedin resolved to examine more closely the next winter.

Before that season arrived he had made a long journey into Northern Tibet, over the Altyn Tagh and Arka Tagh heights. The whole of this region is so elevated that even the valley bottoms stood higher than the summit of Mont Blanc! The great altitude tried men and animals severely; and even more exhausting were the morasses encountered.

"The surface," says Hedin, "consisted of sand and mud, saturated with water like a bog, so that animals sank in it up to their knees. The moisture, becoming thickened by the snow and hail, does not run off the ground, but sinks down into it, making it soft and spongy and fearfully treacherous. Our animals kept falling incessantly, and every time had to be unloaded before they could be got up again. There was not a blade of grass to be found anywhere; and the continuous falls of snow, mingled with hail, caused our camels to suffer so much from the cold that we were forced to give

up every sack and blanket which could be spared to make into rugs to keep them warm."

A truly uninviting region!

On reaching the Dagla Mountains a return north was decided upon; and the party recrossed the mountains on a line parallel to, but 150 miles further west than that by which they came. One of the camels was engulfed in the morasses; bitter cold prevailed; nearly all the horses died; and there was a great scarcity of food. The most interesting object met with was a rock-carving, of a tiger, yak and elephant hunt, evidently of considerable antiquity, as the hunters were depicted using cross-bows.

This journey ended, Hedin prepared for a thorough examination of the old Lop basin and the ruins already discovered in that region, which he reached after making a wide détour to the north-east from his camp on the south side of the Altyn Tagh. On the way the party suffered much from thirst, and a critical situation was only saved by the fresh ice found on the surface of a very salt lake. But for the fact that water parts with its saline particles as it freezes, the disaster of the Takla-Makan might have been repeated, with even more disastrous results.

But these hardships had their reward. For on reaching the ruins most important finds were made—pottery, wood-carvings, images of Buddha, fish-bones, and last, but by no means least, papers and letters covered with Chinese writing. Here at last was a voice from the dead. Professor Himly, of Wiesbaden, an expert in Chinese scripts, has deciphered these documents, which appear to

belong to the third and fourth centuries A.D., and establish the following facts:—

That the buried town was one of considerable importance, and situated on a main route to China proper.

That the name of the district was Lau-lan (a province known to historians), and well peopled.

That the inhabitants were engaged in agriculture, since some of the manuscripts relate to a traffic in corn.

"They throw unsuspected light upon the physical and political geography of the interior of Asia during the first centuries after Christ, and show what prodigious changes have taken place in that part of the world during the last fifteen hundred years."

So then we may picture to ourselves the ancient city of Lau-lan, built on the edge of a great lake, surrounded by smiling fields of corn and pleasant gardens, into which water was conducted from the now vanished channel that formerly led the Tarim into the lake. Through the streets passed couriers on the road through the Gobi Desert, and merchants bringing their wares from far Cathay, and fishermen with their spoil fresh from the river or lake. At one time the town is full of soldiers in arms against the Emperor; at another, the royal troops are exacting the punishment of revolt, for Lau-lan, according to the chronicles, had several stirring political experiences. Then the lake begins to retreat further and further from the walls; the river wilts; the population withdraws before the advance of the desert; and last scene of all, desolation.

In order to get a better understanding of the move-

ments of lakes in this great desert, Hedin set himself the tedious task of taking the levels of the country lying between Lau-lan and the Lop Nor of Przhevalsky. So with the tape and level they walked the 50½ miles in stages of 110 yards at a time. The first day's work revealed a fall of 7½ inches in about six miles; and on reaching the New Lop the calculations proved that there was a total fall of but 7 feet 5½ inches between the point of departure on the north side of the old lake and the surface of Karakoshun. The deepest depression, of 26¼ feet, was about ten miles from Lau-lan.

So then the problem of Lop Nor is solved. Water is delivered by the river Tarim into an almost level region swept by fierce winds. The wind erodes the parts not covered by the water, while the lake is gradually choked with mud and drift sand. As the level of its bottom rises the water spreads, and naturally makes for the depression which has been hollowed out by the wind. After some centuries the same process takes place in reverse order; the old lake has now been scooped out again, and is ready to receive the outflow from the more recent lake. Lop Nor is, in short, "the oscillating pendulum of the Tarim River," swinging from north to south and back, "each oscillation extending over a space of a thousand years or more, yet, measured by the clock of geological time, we know that such periods are of no more account than so many seconds of *our* time."

So that Baron Richthofen was right after all in trusting the accuracy of the Chinese geographers, and Przhevalsky wrong in supposing his Karakoshun to be the lake known

to the ancients—unless, indeed, both theories are harmonised by the wider theory of Prince Kuropatkin, that at one time the *whole* of the Lop Nor Desert was a lake, which, as it dried up, was divided into smaller lakes, which have for centuries been gradually withering away and disappearing. It is interesting to learn that Sven Hedin had practical proof of the soundness of his belief that the Karakoshun will move northwards, for, at the conclusion of his survey, he actually found the lake throwing out new arms in the direction of Lau-lan. "The water," he says, "flowed northwards at a prodigious rate, forming a new lake as it went. Indeed, the water bubbled and boiled along at such a rate, and over such a wide stretch of country, that it was dangerous to encamp anywhere near its margin. . . . The Lake of Karakoshun is slowly creeping northwards, seeking to return to its old bed, where, I am perfectly convinced, it will be found at no great distance of time."

The Lop controversy being now practically settled, Hedin prepared for a long march into Southern Tibet, with the object of penetrating, if possible, to Lhasa. As the "Land of the Lamas" and its capital are given a special chapter later on, it will suffice here to state that the chief difficulty to be overcome was of a political nature, arising from the intense fear in Tibetan breasts of admitting "Russians," as all foreigners are called, within their boundaries. The Tibetans frankly confess that they prefer to keep to themselves and do not wish to be civilised, lest in the process they should lose more than they would gain. And it is just this ring-fence set

round their country by national prejudice that has nerved explorer after explorer to seek an opening—very seldom with success, owing to Tibetan watchfulness.

Sven Hedin had hopes of winning though, and went to work in his usual thorough manner. He equipped the largest caravan that he had ever led into unknown regions. "It comprised thirty Mussulmans, four Cossacks, one Mongolian lama from Karashar, thirty-nine camels, forty-five horses and mules, seventy asses, fifty sheep, and eight dogs." The lama, or priest, was engaged to accompany the expedition as interpreter and tutor in Mongolian; and, though he did not know this at first, to assist in the attempt on Lhasa.

The huge caravan toiled painfully over the ranges already crossed twice the year before, sticking in the terrible morasses, and battered by storms. So severe was the strain that many animals succumbed, especially the poor asses, very few of which ever reached home again. "Once over the pass of Arka Tagh, we pushed on south through an absolutely unknown region, where we crossed innumerable mountain chains, over passes of stupendous height, skirted the shores of innumerable lakes, and forded innumerable rivers, but almost the whole time through a barren country, totally devoid of grass, so that every day the caravan animals grew more emaciated. After some weeks of this, Hedin weeded out the worst animals, and leaving them in the care of a Cossack, pushed on as fast as possible to the south. Some Tibetan hunters whom he met, being suspicious of his purpose, had already warned the authorities to be on the

look-out; so that the explorer determined to burn still more of his boats, and set out for Lhasa accompanied only by the lama—who at first was terribly depressed at the prospect of possible captivity and death—and a Cossack named Shagdur. All visible clothing and utensils were of strict Mongolian pattern. Hedin had his head shaved quite bare, and his face darkened with grease to a brown hue.

The little party had a truly anxious time of it, especially in the night-watches, when horse-thieves hung round their camp ready to take advantage of any remissness. Rainstorm after rainstorm drenched them; and they narrowly escaped several duckings in the swollen mountain torrents which had to be crossed. On the eighth day they were surrounded by a body of Tibetan soldiers, who bade them at once halt, threatening death if they attempted to approach nearer to Lhasa. This motley band seemed to spring up out of the desert, as it were; and their numbers precluded an advance. At the same time, the officers treated Hedin with kindness and courtesy, only demanding that he should retrace his steps. The Dalai Lama, or chief lama of Tibet, had given orders that the intruders should be provided with all necessaries, without any payment whatsoever. Consequently Hedin and his two companions fared luxuriously. There soon appeared on the scene one Kamba Bombo, governor of the province, who visited Hedin's tent, and made himself most agreeable, though he was iron as regarded the Swede's withdrawal. The latter, therefore, taking what comfort he could from the fact that he had

done his best to reach the "Holy City," had to retire, and was "seen off the premises" by a squadron of the Tibetan cavalry.

But when he rejoined his caravan, he determined to make another attempt; which was equally futile. Scarcely had the march begun when the soldiers were round him again, begging him not to proceed further. Two lamas arrived from Lhasa, with 500 horsemen. As before, no violence was offered. Yet a watch was kept over their every movement all the way to the frontier of Ladak, on the west of Tibet.

Passing through Ladak and Cashmir, Hedin made a short visit to India, where he was received with great distinction by the Viceroy, Lord Curzon. After a short sojourn in Calcutta, he retraced his steps to Leh; and crossed the Himalayas to Kashgar. All that then remained was to dismiss the servants who, especially his Cossacks, had served him so faithfully through his wanderings. One of the most striking features of Hedin's travels is the good-fellowship existing between him and his men. It is also interesting to note that the Cossacks speedily learnt to make scientific observations with an accuracy which is astonishing, in view of the fact that none of them had received any education beyond that of the average Russian soldier. We are glad to read that all four were, for their loyalty and courage, rewarded with gold medals by both his Majesty the King of Sweden and his Imperial Majesty the Czar. Happy is Russia if Shagdur and Sirkin are a fair type of her Cossacks!

On December 8th, 1902, Dr. Hedin gave a lecture

before the Royal Geographical Society on the journeys briefly reviewed in this chapter. The opinion of experts as to the value of his work is expressed in the following words of the President uttered on that occasion: "During that time (*i.e.* the last four years) he has done an amount of work as a traveller by which he has equalled himself—we cannot say more than that—in his former expedition, for which he received the Royal gold medal of our Society. But I consider that he has done much more than that. He has shown himself to be a scientific geographer of the very highest merit—as a linguist, an observer, and an historian. Our Council this afternoon has considered the very great merits of Dr. Sven Hedin; and has decided to award him at once our Victoria medal instituted for the highest record in geographical research."

NOTE.—All quotations in this chapter have been made, with permission, from *The Royal Geographical Journal.*

CHAPTER III

SURVEYING IN MID-ASIA

IF you wish to measure the area of your back garden you have only to find its length and its breadth and multiply them together, should its shape be rectangular. This is surveying in its very simplest form.

But when a large property of irregular shape has to be reduced to acres, poles, and yards, the calculations necessarily become more complicated. Each field is broken up into a series of triangles, the area of which is easily found, and any irregularity of outline is allowed for by measuring "offsets" perpendicularly to the sides of the triangles nearest the boundary and making a number of subsidiary calculations. When, again, the operation is extended to the survey of a country other difficulties appear. The use of a measuring-chain is practically precluded by the time that it would take to cover many miles a few yards at a time; and also by the variations of the length of the chain itself in different temperatures; to say nothing of inaccuracies in the position of the chain from time to time.

The surveying engineer, therefore, conducts his operations without the use of a measure at all, except at the

very start, when he is making a "base-line." This once measured as accurately as is possible, he can pack up his steel chains or tapes and proceed, employing in their place an instrument called a theodolite, the function of which is to calculate the exact size of the angle between two lines drawn from any one point to any other two points.

Let us suppose that his base-line, AB, is 100 yards long, and that he wishes to determine the size of a triangle ABC, C being a point in the distance. First of all he must find the size of the angles ABC, BAC. Given them and the already known length of AB, he can by trigonometry easily decide the area of the triangle.

He begins by planting the theodolite at A. The instrument may be briefly described as a telescope attached to a small circular table which revolves on a second table mounted on a tripod. The edges of the tables are divided into degrees, minutes, and seconds. From the centre of the lower table hangs a line carrying a pointed plumb-bob at its lower extremity. The theodolite is moved about until this hangs exactly over A, the tables are levelled by means of spirit-levels and adjusting screws, and the telescope is turned round till its centre line is pointing quite straight for a pole planted at B. The surveyor then notes where the mark 0 on the upper table is as regards the marks of the lower table, and turns the telescope to a pole planted at C. Once more he looks for his 0 mark, and observes that instead of being over, say, 56° of the lower table, it is at 98°. He therefore knows that the angle BAC is one of 42°

He now removes his instrument to B, and after a repetition of the process discovers that the angle ABC is 30° : and by deducting the sum of ABC, BAC=72° from 180, he has 108° as the size of the angle BCA.

Now he is content: for he can tell you not only the area of the triangle ABC, but also the length of its sides AC, BC. Using these in turn as base-lines, he measures fresh triangles ACD, BCE, and from them others, until his operations have extended far in all directions from the original base. After surveying some thousands of square miles in this manner he tests his work by selecting a second base-line and seeing whether its length, as measured by delicate chains and standard tapes, is the same as the length that it *ought* to have according to his trigonometrical calculations. If there is a serious discrepancy, he knows that "something has gone wrong," and has to repeat his work until the mistake is discovered.

In the survey of the British Isles the two principal base-lines taken were 360 miles apart, the one being in Salisbury Plain, the other on the shores of Loch Foyle. From these a network of triangles were driven northward to the Shetlands, eastwards to Lowestoft, westwards to Valentia Island, across mountain, sea, and plain; and then, to test the accuracy of the work, the lengths of the base-lines were computed through the series of triangles spanning the 360 miles between them, and compared with actual measurements. It is true, but almost incredible, that the difference was but *five inches!* When you are told that the inaccuracy of a tiny fraction of a degree in any one of the angles of the hundreds of triangles

observed would have made an ultimate error of many yards, you will be able to understand the infinite care and patience exercised by the surveyors.

The triangles of the English survey have been extended to, and connected with, those of France, Russia, and other countries as far east as Siberia, and as far south as Algeria; and the Russian survey is rapidly being "tied in" with that of India.

This brings us to the vast undertaking known as The Great Trigonometrical Survey of India. It consists of "chains of triangles which extend from Cape Comorin to the borders of Tibet, and from Afghanistan to Burma," and was begun in 1800 by Colonel Lambton, "the Father of the Indian Survey," a man possessing the indomitable ardour and perseverance of which true heroes are made. The difficulties to be overcome were enormous: first, the deadly climate of the jungles and swamps; secondly, the hostility of the natives; thirdly, the absence of convenient landmarks at which to direct his theodolite. He was at once the explorer of hitherto unknown regions, and the surveyor of them; and had he not won undying fame by his surveys, he would still rank high among the pioneers of India. After twenty-three years of exposure and hardship he died in the wilds of Central India, a martyr in the cause of science. His own words will best testify to the spirit in which he performed his duties.

"In the twenty years devoted to this work," he writes, "I have scarcely experienced a heavy hour; such is the case when the human mind is absorbed in pursuits that call its powers into action. A man so engaged, his time

passes on insensibly, and if his efforts are successful his reward is great, and a retrospect of his labours will afford him endless gratification."

Lambton determined to survey India from coast to coast, and on April 10th, 1802, began operations by measuring a base-line $7\frac{1}{2}$ miles long at St. Thomas' Mount, Madras. The base was measured with a chain, corrections being made for variations of temperatures. This occupied forty-two days; but the utmost accuracy was needed, seeing that here was to be the starting-point of the Great Indian Survey. He drove his triangles westwards to Bangalore—160 miles—and then verified his base-line by observations taken back. The actual and calculated lengths of the line differed by only $3\frac{3}{4}$ inches!

Two methods of surveying in difficult and almost unexplored country are used. The one is known as the "network" system, which consists of continuously building out more triangles, in *all* directions, from the sides of those already made. The other is called the "gridiron." Long lines of triangles are calculated in parallel lines north and south, and east and west, until a country has been regularly "gridded" with lines like those of a gigantic window-sash. Having once found the distance apart and area of the frames of his window, the surveyor can at his leisure estimate the size of the "panes." Colonel Lambton began with the "network system"; but gave it up for the "gridiron," which was continued by his successor, Colonel Everest. This officer, whose name has been given to the highest mountain peak in the world,

conducted the "Great Arc Series" of triangles, reaching from Cape Comorin in the south to the Himalayas on the north—1,540 miles—supposed to be the longest arc ever measured on the earth's surface. The accuracy of the survey was simply marvellous. Thus, on one stretch of 400 miles an error of only 7·2 inches could be detected; while in another case the actual and calculated length of a 7-miles base differed by only a *quarter of an inch*, though the triangles to verify it had been carried 480 miles!

North of Sirong, and in Bhopal, the country was unhealthy, dusty, covered with trees, and yet flat. So that the surveyors had to build seventeen towers fifty feet high, on which to plant their staffs. They were so far apart that special signals had to be invented for both day and night work.

There are ten trigonometrical bases used in the Indian survey. The height of these above sea-level has to be carefully determined, by a process of levelling similar to that used by Sven Hedin in the Lop Nor Desert (*i.e.* with a spirit-level), as well as by trigonometrical calculations from *vertical* triangles. At Attock, 700 miles from the sea, the difference between the angle and spirit-level measurements was only 3 ft. 2 in. The line was afterwards carried down the Ganges Valley to the sea at Calcutta, the distance along the line levelled being 2,200 miles.

The survey has been pushed far up into and, in some parts, beyond the Himalayas. Signal stations have been set up on lofty, snow-clad peaks, never before trodden by

the foot of man. The difficulties that await the surveyors in the heart of the Himalayas and their offshoots will be the better understood after a perusal of the following pages, which relate to a typical piece of work done in the rugged uplands of Tibet by Captain H. H. P. Deasy, late of the 16th Lancers. This officer, who toiled not for the sake of reward, but merely for the love of the thing and a patriotic desire to extend the triangles of the Indian survey, is one of those men of whom any country might be proud. His achievements have not been proclaimed with any flourish of trumpets; but, none the less, they are such as to show in him the spirit that inspired Lambton and Everest.

During the spring of 1896 Captain Deasy left Leh, in Ladak, accompanied by a well-equipped caravan, an Englishman, Mr. Arnold Pike, and an Indian sub-surveyor, S. D., nicknamed "Dan Leno." His object was "to survey as accurately as possible as much of the unexplored parts of Tibet as circumstances would permit."

The route proved extremely difficult, on account of snow and precipitous slopes; and the process of surveying was rendered unnecessarily tedious by the men despatched to erect observation pillars on mountain-tops shirking their work and setting them up on the slopes instead. The error could not be detected until Captain Deasy got close to the pillars, and then, of course, much of the calculation had to be done over again.

At night, when observations of the stars were made, the bitter wind kept blowing out the candle used to illuminate the sighting-wires of the theodolite, wasting it

to such an extent that for economy's sake the surveyor had often to go to bed in the dark.

After a few days' travel, thousands of antelopes were seen grazing on an open, grassy plain high up in the mountains. These graceful little animals showed by their unsuspicious behaviour that they had had small acquaintance with human beings. Yet the district was not the abode of innocence; for a band of Chukpas, or Tibetan robbers, raided the camp, bound the two men left in charge, looted the baggage, and made off with eleven mules. A council of war having been held, Mr. Pike and two other men went in pursuit, and recovered the baggage from a party of robbers whom they surprised; but they had to return *minus* the mules. As a consequence it was necessary to burn certain camp beds and chairs, and—most grievous loss of all—the collapsible Berthon boat, for which there was now no transport.

Captain Deasy soon had a taste of the anti-foreign attitude of the Tibetans. On trying to purchase a yak from some nomads, their chief appeared and forbade a sale, alleging that the chief official of Lhasa, being a god, would know that he had helped a "foreign-devil" to enter Tibet: and the penalty was severe. In stolidity these natives can compare with the Chinaman, who, when shown a railway train for the first time, merely grunted and turned away. "Nothing," writes the explorer, "could surprise them. Arms were of importance to them, and they had never before seen a magazine carbine, but our carbines excited no interest nor curiosity. A fine blue-rock pigeon having alighted to rest and drink

at a spot within range, Pike took the opportunity of showing the precision of his weapon, and shot the pigeon, but not one of the Tibetans evinced the slightest concern in any way." At Gerge they also showed an equal amount of simplicity and suspicion. Rumour had preceded the caravan to the effect that a European officer and 2,000 soldiers were approaching. Consequently, when but a few men turned up, the Tibetans treated them somewhat unpleasantly, until the guide assured a Gergite in confidence that they had better look out for themselves, as a great number of soldiers were hidden away in the baggage. The result was a more respectful attitude towards the Europeans!

At an elevation of over 16,000 feet above sea-level the Ladakis experienced severe headaches; and smokers found great difficulty in keeping their pipes alight, as in a rarefied atmosphere greater suction is required. Soon there appeared on the scene a few Tibetans with the news that a band of robbers had been heard of in the neighbourhood. They proposed that these rascals should be at once attacked—by Deasy's men—while they remained behind to guard the camp. In return for this duty they should receive—about nine-tenths of all plunder taken! Needless to say, this generous offer was not accepted.

As the winter drew in the cold became such that "soon after sunset it was impossible to write with ink. The liquid froze in the bottle unless it was held in the hand, and in that case the drop on the pen-nib became solid before it could be transferred to paper." The poor animals suffered greatly. How many have died during

the night? was the first question in the morning. And the cordite in the rifle cartridges lost its power to such an extent that bullets dropped a few yards from the muzzle. Of the sixty-five animals that left Leh only six, and they mere bags of bones, crawled back into Ladak.

On September 14th, 1897, Captain Deasy set out on a second journey, from Srinagar, the capital of Kashmir. The caravan *bashi*, or leader, one Abdul Khalik, did his best to foment discontent among his following, and had finally to be thrown into prison. In contrast to him was Abdul Karim, Captain Deasy's orderly, whose fidelity remained unshaken under all circumstances. As soon as Chinese Turkestan was entered, the natives, acting on orders, endeavoured to deter the advance of the party; and on many occasions human opposition proved much more formidable than the worst obstacles of nature.

The particular field of this survey was the upper parts of the Yarkand River, from the west end of the Raskam valley to the town of Yarkand—already mentioned in Dr. Hedin's travels. This valley, and indeed the whole Pamir district through which Deasy conducted his triangulations, is of a most inhospitable character, affording but a perilous foothold for man and beast, not to mention the stands of the surveying instruments.

At Yarkand the usual civilities were exchanged between the Englishman and the Chinese Governor. Celestial officials are great sticklers on all points of etiquette, and expect a visitor to call on them without delay on his arrival in a town. He sends in advance his card, a large sheet of red paper; and dons the most suitable apparel

that he can command. When "the presence" is entered, he receives the cup of tea which is the Chinese idea of a "drink," and is fed with sweetmeats by his host. A tedious interview of this kind ended, Captain Deasy was proceeding homewards at a leisurely pace when the news reached him that his late host was already on his way to return the call! He had therefore to gallop hard to be able to welcome his visitor.

Few of us would care to participate in a Chinese dinner, especially when served in the open, with the thermometer showing many degrees of frost. "The dishes, as they were served one after another, seemed interminable. There were more than thirty in all, some of them very good, but others were bad and even repulsive. . . . Some of the usages at table were, to say the least, disagreeable to think of. If a guest had not emptied his cup when the time came for replenishing it, its contents (whatever might have been left) were poured back into the spirit-kettle, and then it was refilled. . . . The guests were not left absolutely unprovided for with respect to such comforts (*i.e.* napkins). An attendant handed round to them successively, in due rotation, a greasy, steaming cloth, wherewith each wiped his hands and mouth. When my turn came I made a strenuous effort to decline its use, but a look of calm surprise from the Chow-Kuan, backed by a severe frown from Raja, quite cowed me, and I meekly wiped my hands and mouth with the disgusting rag, even as the others had done."

From the dissipations of Yarkand he turned back into the fastnesses of Pamir, but illness soon compelled a

Captain Deasy's expedition advancing along the ice fringing the upper reaches of the Yarkand River. An ice-floe once swept down the stream and the party had only just time to regain the bank before the fringe was carried bodily away.

return to the town. The Yarkand valley being almost impenetrable in summer, Captain Deasy filled in the time till the next winter with an excursion across the Takla-Makan Desert in search of buried cities. The guide whom he took proved to be a fraud, quite ignorant of professed sites, and a great rascal in other respects. As punishment for spoiling the journey the Amban of Khotan decorated him with the *cangue*, a large board pierced centrally with a hole in which the neck is fixed. These cangues are often so large that the unhappy wearer cannot get his hand to his mouth, and is dependent on the charity of passers-by for his food. From Khotan Deasy pushed eastwards to the mountains of N. Tibet, where, in spite of Chinese opposition, he managed to do some very useful surveying. The caravan men mutinied, and were reduced to order only by an application of physical force to their ringleaders. Whether they suffered from homesickness or not, they were very anxious to return to the bosom of their families, regardless of contracts. As soon as "time was up" the men from Kiria set off home, leaving one of their number with the expedition. This man had a brother among the home-goers; and the separation was made with a truly Eastern display of emotion. "After shedding copious tears, the two men separated reluctantly and slowly. Each had his arms crossed, and, walking backwards, bowed again and again with dignity to his sorrowing brother. The performance was not mere acting, and it would have been pathetic had it not exceeded the requirements of the occasion, the parting being only for a few weeks."

Want of space forbids us to linger on the Tibetan Mountains, so we will return at once to Yarkand, from which, on November 3rd, 1897, Captain Deasy determined to make a fourth attempt upon the Yarkand valley. The river was not yet frozen over, and had to be forded—a very chilly operation. Several terrible passes had to be negotiated, worst among which was that of Pilipert. A slight fall of fresh snow balled in the animals' feet to such an extent as to make it almost impossible for them to stand on the track, only a few inches wide. Hacking the frozen mixture out of the hoofs was, on an eight-inch ledge, very perilous work. The yaks, though marvellously surefooted, were hard put to it on this declivity. The men had to hang on to their tails to prevent them turning head over heels down the slope. So intense was the cold that the candles used in the hypsometer—an instrument for ascertaining altitude from the temperatnre at which water boils—froze hard, and had to be thawed by an extravagant consumption of matches. The Chinese, and not unnaturally, were quite unable to understand why a European should want to stand about on wind-swept mountain-sides with queer-looking things on a tripod. It was useless to expatiate on the Royal Geographical Society, the love of topography, travel, sport, and adventure, when the Bey or Amban had made up his mind that behind it all was the secret hand of the Indian Government. Amid the general distrust of England prevailing in the Pamirs, it is refreshing to read of the attitude of the people of Sanglash—a small village in the Yarkand valley. Captain Deasy, when in straits

for money, was offered a loan of twenty-seven rupees by a villager. On expressing surprise at this offer to a total stranger, he received the reply that "he had entire faith in the British sahibs, and was perfectly certain that he would be repaid at Yarkand." As no European except the Russian Grombchefsky had ever visited Sanglash previously, this declaration of the simple villager is flattering to the Englishman.

The Kirghiz seem to share the hardiness of their yaks, ponies, and dogs. Though gloveless, and very poorly clad, they suffered very little inconvenience from a wind that shrivelled the stranger in his warm wraps and furs. Superstition affects them more than cold. On one occasion Deasy sent one of his party back for supplies, and told off a native boy to guide him through a certain pass. The boy was to sleep on the further side of the pass and to return the following day. Yet next morning early he was back in camp, having re-crossed the pass in the dark with the thermometer at 20° below zero. Why had he come back so quickly, running the risk of being frozen to death? Because, had he waited, he would have had to follow after the caravan through a place haunted by an evil spirit; and he preferred the dangers of cold to the terrors of ghostly enemies!

On Christmas Day, 1898, the cook prepared a pudding to celebrate the occasion. Wherever he be, in tropical heat or arctic cold, the Englishman is supposed to have at least a sentimental attachment to the national Christmas

dainty. As a matter of fact, Captain Deasy was ready to forego the delicacy, possibly from forebodings of what it might be. But the cook did not mean to let the "burradin" (holy day) pass unmarked. "Plum-pudding was prepared. The main or only ingredients were the shakings of the biscuit-bag, ghee, sugar, and a few currants. The process of manufacture was simple: the ingredients were stirred together, heated over a fire, emptied into a pudding-dish, decorated with a few bread-crumbs, slightly baked, and then served." From his own account, we may judge that the gallant officer felt more gratitude towards the cook for his well-meant attempt than avidity for the result of his labours.

Though nature and man were adverse, the survey proceeded steadily. Bit by bit prominent peaks were aligned on the plane-table, perched in slippery and dangerous places. Altitudes were ascertained; longtitude and latitude calculated; hitherto unsurveyed regions gradually "tied in" with the geodetic survey of India. One cannot but regard with admiration a man who persists in such work as this; feeling enthusiasm even when his hands are numbed with cold and in danger of frost-bite, when helpers are stupid or indifferent, and when the very pillars raised for surveying purposes are regarded by the natives with suspicion. Here is a short picture of actual experiences:—

"The steep slope was slippery with fresh-fallen snow, and by the time we had reached the pillar and had

fixed the theodolite in position, a strong wind had arisen which, with the temperature several degrees below zero, made observations difficult. A sudden gust would impel me against the eye-piece, or blow my coat-tail against the stand of the theodolite, and, unless I used a piece of paper or cardboard to screen my face from the instrument when reading the vernier, my beard or moustache invariably got frozen to the metal."

In truth, "the work of a surveyor at an altitude of 14,700 feet is not in itself attractive. It requires some resolution when the thermometer is below zero F., to bear exposure during the greater part of the day to a freezing wind, while on the moustache and beard icicles form, which can only be got rid of by melting before a smoky fire of dung."

Besides the difficulties of actual observation were those of moving from place to place. When following a river the travellers were sometimes driven by the precipitous slopes on either side to descend on to the ice fringing the banks (see illustration). In the Tashkurghan valley the caravan was thus proceeding when, to his horror, the leader espied a succession of floes moving down the river at a rapid pace. Should they encounter the ice-fringe carrying the men and ponies, the expedition was doomed. Just as the last pony had gained the bank the floe crashed into the fringe, sweeping away what but a few moments before had borne a living burden. It was indeed a narrow escape.

Undeterred by such adventures, Captain Deasy com-

pleted his survey of the Upper Yarkand, and again crossed the Takla-Makan towards Tibet. Here sickness and underhand opposition compelled him to relinquish the task of mapping the north parts of Tibet, and of verifying his previous surveys.

Like other travellers in Chinese Turkestan, he noticed the open corruption of the administration. The officials being wretchedly, if at all, remunerated, made their living out of the misuse of their positions. Thus the governor of the small and poor oasis of Kiria managed in fourteen *months* to save over £7,000; and the Chow-Kuans of more important places enrich themselves in proportion. Consequently there is actual bidding for these posts, which a candidate who is above bribing the electors cannot hope to fill. With each grade of official squeezing inferior grades the lot of the taxpayers is not a happy one; though in return for the fleecing they are in other ways granted a considerable amount of licence. Rich misdoers are fined, the poor beaten. Capital punishment is rarely inflicted, as a murder means that twelve yambos (about £120) must be paid by the Chow-Kuan in whose district it is committed. No wonder then that in one case a man who had murdered his *own father* escaped scot-free on the ground that he was drunk when he did the deed.

Old offenders are compelled to carry about with them a heavy bar of iron chained to a leg and the neck. For very serious crimes they are suspended by the neck in cages of such a height that their toes only touch the ground to relieve the pressure on the chin. As capital

punishment, they are left thus to die after days of lingering torture.

Such were the people in whose country Captain Deasy carried on his work; a people plunged in ignorance and prejudice. Some day the hand of Russia will be heavily felt among them.

NOTE.—The author has to thank Mr. Fisher Unwin for permission to quote from Captain H. H. P. Deasy's *In Tibet and Chinese Turkestan*.

CHAPTER IV

LHASA VISITED

THE LAND OF MYSTERY

THE Himalayas are remarkable for their altitude; and even more extraordinary are the climatic extremes between which they form a boundary. To the south is India, a country synonymous for heat; to the north, Tibet, the very mention of which conjures up visions of biting winds, hail, snow, and ice.

Of all the countries in the world few are less inviting than the inhospitable tablelands of Tibet. Rising as they do in places to an average elevation of 15,000 feet above sea-level, the natural cold of their great altitude is aggravated by their exposure to the icy blasts sweeping from the north over the sandy wastes of Central Asia. As a consequence, though Tibet lies between the latitude of Naples and Cairo, its climate is almost arctic in its severity; while the great mountains intervening between it and the sea rob all southerly winds of their moisture, so that during the short summers a great lack of water is experienced at a distance from the rivers and lakes which are found in the east, west, and south of the country. Wood does not rot in Tibet; it merely

perishes of brittleness; and even flesh will not putrefy where it is exposed to the winds.

Over so vast an area great variations in climate may be expected; and travellers have noticed that though the western regions are visited by very little rain, the central lake district, extending from the Kuen-lun range to the Himalayas, is plentifully moistened by the thunderstorms prevailing in the three summer months. Also, while snow may be lying on the Tsaidam passes, a man may pant in the heat of the plateau south of the Kuen-lun, though at an elevation of 16,000 feet. Speaking generally, however, cold and drought are the main characteristics of Tibet.

In spite of its repellent features this country has, for several reasons, been attractive to the inhabitants of more favoured lands. Among the hundreds of millions of Buddhists living to the north, east, and south, it is a religious centre, since Lhasa, its capital, contains, in addition to several notable temples, the residence of the high-priest of the cult, the Dalai Lama. A visit to Lhasa is, therefore, in the eyes of the pious Buddhist a work of great merit; and one undertaken in the same spirit as that which drives the strict Mussulman to Mecca. As a pilgrimage usually entails the payment of certain fees to the priesthood of the religion, the lamas or clergy of Tibet greatly encourage such journeys on the part of their co-religionists. But they evince an equal amount of hostility towards anyone who comes into their country from motives of mere curiosity, under which head they

include all desire for scientific exploration. This policy of isolation is an inheritance from the conquest of the country by the Chinese, which commenced in the thirteenth century, and may be said to have been completed in or about the year 1720, when the whole of Tibet became a tributary dependency of the Celestial Empire. The Ambans, or Chinese Governors, inculcate in all classes the same aversion to outsiders which has made China Proper a risky home for the "foreign devil," though, as in China, the upper classes, from motives of self-interest, are much more bigoted than the poorer population. Dr. Hedin was told by the Tibetan authorities that all they desired was to be let alone. Of European civilisation they knew little beyond the fact that it would have evil consequences to the country if once introduced. "The jealousy of the Tibetans towards Europeans is supposed to date from 1791–92, when English soldiers were believed to have taken part in the war which followed the incursion of the Gorkhas into Tibet; and as the English Government, then in its infancy, took no steps to cultivate the friendship of the Tibetans, that feeling took a lasting hold on their minds."* This is the opinion of Sarat Chandra Das, who also mentions a belief universally held in Tibet that within 200 years the whole world will succumb to the power of the Russians and English, thanks to their more potent gods and intellects.

In 1840 there was war between Tibet and Nepal. On this occasion the Tibetan gods did what was expected of them; the Nepalese were driven out and compelled

* *The Narrative of a Journey to Lhasa*, by Sarat Chandra Das.

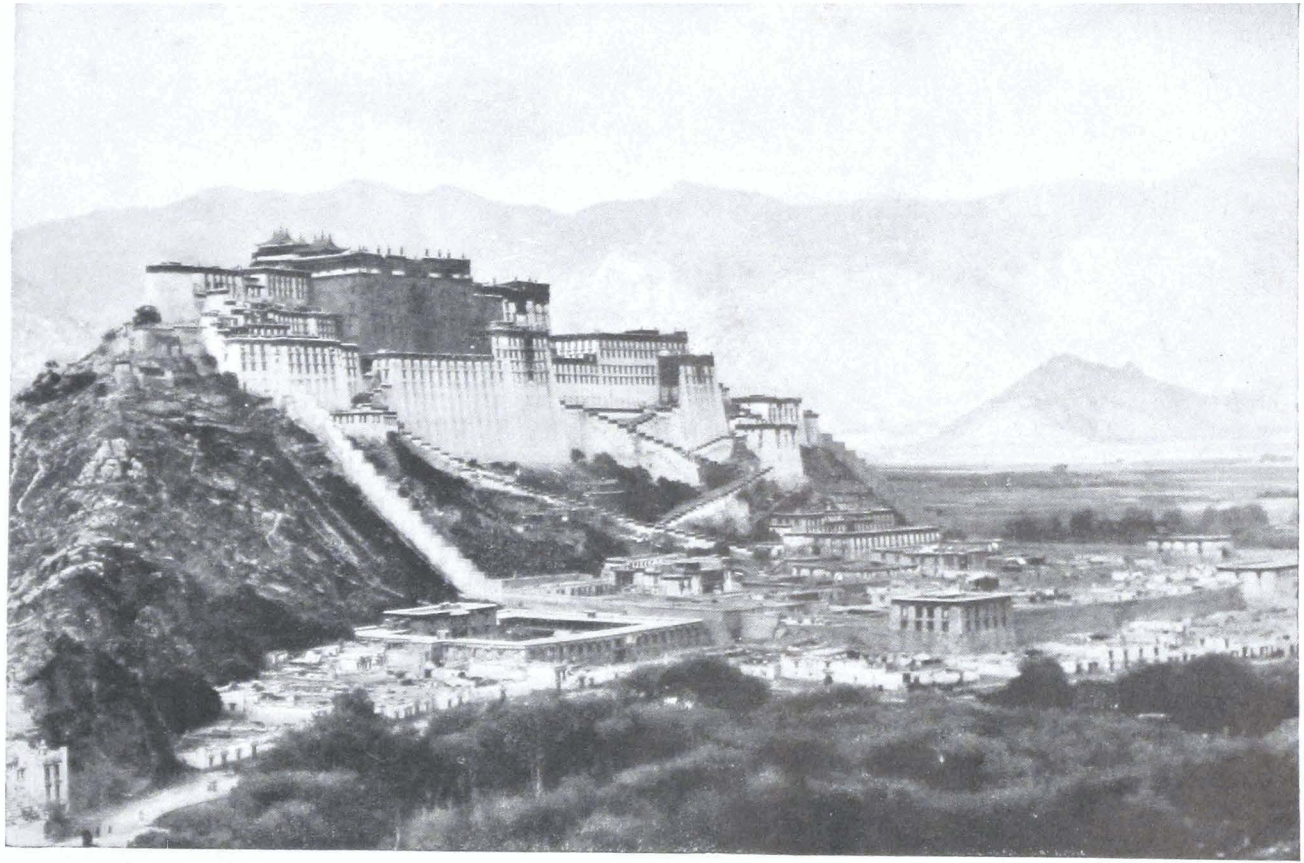
to pay tribute. Furthermore, the trade routes through the Himalayas were closed, lest the opening up of commerce with India should prejudice that already established with China, out of which lamas, nobles, and Chinese officials make a remarkably good thing. The staple trade is in tea, as dear to the Tibetan as to the Russian. Tea of six qualities is imported; the first, "extra superfine," for the Dalai Lama and a few other privileged individuals. The other five standards steadily fall to a substance composed chiefly of the wooden parts of the tea-plant, mingled with just enough tea-leaves to justify its name. This is known as Jong-ma, and fetches three shillings in Lhasa, to which place it is carried on the backs of sturdy porters, whose strength or skill is equal to a load of 300 lbs. For transportation the tea is done up into packets of about 22 lbs. each, which "are placed evenly one above the other, the upper ones projecting so as to come slightly over the porter's head; they are held tightly together by little bamboo stakes and coir ropes. A sling, also made of coir, holds the load on his back, and a string is fastened to the top of it, by means of which he balances it. A short, strong, wooden crutch is used by all porters to assist them along the steep mountain roads, and to put under their loads when they want to rest without taking them off their backs. Women frequently carry seven or eight packages of tea, and I have seen children of six or seven with a package, or a package and a half, trudge along behind their parents."*

* W. W. Rockhill, *The Land of the Lamas.*

The Government of Tibet is dual. On the political side are the Ambans, commanders of the army, and the supreme authorities on all points affecting the suzerainty of China. The salaries of the Ambans, together with the expense of maintaining the army, come out of taxes levied on the Tibetans, who entertain no great fondness for their temporal lords and masters.

Internal affairs and spiritual matters are nominally, at least, in the hands of the Dalai Lama and a council of five—four noble laymen and one lama. Until a Dalai lama reaches his majority—eighteen years—he is represented by a Regent, himself chosen from among the heads of the four greatest monasteries. Spiritually, the Dalai Lama is considered the equal of the Panchen Rinpoche, who lives in the great convent of Tashilunpo, near the town of Shigatze on the Brahmapootra, west of Lhasa. But the meanings of their respective titles, "The Priest as wide as the Ocean" and "the right reverend great teacher jewel," show the actual superiority of the Dalai, who is practically the ruler of the richest part of Tibet.

One of the main articles in the Lamaist creed is the belief in reincarnation—the reappearance of a soul in bodily form time after time. Closely allied with it is the belief in transmigration, whereby a human soul may be condemned by the gods to put on for one or more lifetimes the form of a lower animal. When a lama dies, it is taken for granted that he will reappear in human guise by virtue of his holiness; and it becomes the duty of his surviving fellows to determine in which child he



The Palace at Lhasa of the Dalai Lama, the Buddhist Pope. The ascent to the palace is made up three long flights of stairs and four ladders. This was probably the first photographic view of the palace ever taken.

is reincarnated—unless on his deathbed he has left convenient hints as to the family which he intends to honour. In the case of so great a person as the Dalai or Panchen a physical sign—the lack of a kneecap, etc. —betrays the reborn saint, and if several children all answer to the desired description a solemn decision must be made by the casting of lots. The names are sent in to the Regent for examination, and written on pieces of paper, which are enclosed in balls of paste. These are placed in a golden jar and presented for a week on the altar of the chief temple of Lhasa. The jar is on the eighth day twirled round till a name has come out three times, the possessor of which is brought to Lhasa and subjected to certain tests. "The reborn arch-saint, usually a boy of five years old, is questioned as to his previous career; books, garments, and other articles used and not used by the deceased are placed before him to point out those which belonged to him in his former life. But however satisfactory his answers be they do not yet suffice. Various little bells required at the daily devotions of the lama are put before the boy to select that which he did use when he was the Dalai Lama or Panchen. 'But where is my own favourite bell?' the child exclaims, after having searched in vain; and this question is perfectly justified, for to test the veracity of the reborn saint this particular bell had been withheld from him. Now, however, there can be no doubt as to the Dalai Lama or Panchen being bodily before them; the believers fall on their knees, and the lamas who successfully performed all these frauds join them in

announcing the momentous fact." (Chambers's *Encyclopædia.*)

So far so good. But the Emperor of China has to sanction the election; and if the child happens to be a member of a loyal family assent is given. If otherwise, some irregularity will be discovered to prove the choice invalid. So that here we have a close parallel to the *congé d'élire* given to our own clergy when a bishopric falls vacant: they may choose—him whom the sovereign has already chosen.

In addition to the two archbishops, or popes, as we may regard them, is a great host of reincarnated lamas, and lamas who cannot claim a previous existence but who hope by meritorious works to attain a pitch of holiness which will fit them for future rebirths. These are collected into huge convents containing as many as 4,000 inmates. "Chinese writers of authority," says Mr. W. W. Rockhill, "have stated that for every family in Tibet there are three lamas, and I do not believe that this is an exaggerated estimate." Their command of nearly all the wealth of the land, and the hold that they have over the community in all matters connected with marriage and burial, makes them everywhere the masters—under the Chinese—of the country. Like the great ecclesiastics of the Middle Ages, they are by no means lovers of peace when anything is to be gained by war. Exchanging their kilts for trousers, and their praying-wheels for lance and bow, they mount their steeds and go out to fight, taking their dependants with them. In the actions which the British Mission to Lhasa has fought

with the Tibetan forces the lamas have been well to the front, encouraging by example and compelling by threats.

Very many attempts, most of them unsuccessful, have been made by Europeans, or outsiders in the service of Europeans, to penetrate to Lhasa. As early as 1328 a friar is said to have reached the "Holy City" from China. Three hundred and fifty years later Fathers D'Orville and Grueber were equally successful; and between 1700 and 1750 A.D. several other Capuchins entered the capital from the Indian frontier. The only Englishman who has hitherto got through is Thomas Manning (1811), and his stay was brief. The last Europeans to enter Lhasa were the French missionaries Huc and Gabet (1844). Since that date many explorers have tried to add their names to the list of the favoured few, but with the exception of three Indian pundits, Nain Singh, Kischen Singh, and Sarat Chandra Das, they have shared the fate of Dr. Hedin, and been turned back by the ever-watchful subjects of the Dalai Lama. These men were the emissaries of the Indian Government, their duty being to survey with all possible accuracy such parts of Tibet as they should traverse. The most extensive results came from the expeditions of Kischen Singh, officially known as A. —K., who in four years crossed Tibet from north to south, and from east to west, and among other things managed to draw out a detailed plan of Lhasa. He was obliged, when in the company of natives, to play the part of a pedlar, and to conceal his scientific instruments in a roll of cloth. His survey is considered to be very accurate.

A year or two after his return to India, Sarat Chandra

Das, a native of Chittagong, in Eastern Bengal, made the first of two interesting journeys into Tibet. While head-master of a Darjeeling school he formed a friendship with a lama, Ugyen-gyatso, who in 1878 obtained permission from the chief minister of the Panchen Rinpoche to take Chandra Das with him into Tibet, where the pundit's name was entered as a theological student in the Grand Monastery of Tashilunpo.

Setting out in June, 1879, accompanied by the lama, he reached Tashilunpo safely, and remained there six months to study the fine collection of Sanscrit and Tibetan books in the convent library. On the outward and homeward journeys he explored the hitherto unknown country to the north and north-east of Kunchinjinga; and the data thus obtained have proved of great value. He fortunately found in "the Minister," as he calls him in his narrative, a man whose ideas were more enlightened than those of brother lamas, and who was anxious to make acquaintance with the civilisation against which his countrymen set their faces. Chandra Das was invited by him to make a second visit to Tashilunpo.

Accordingly, in November, 1881, he again set his face towards Tibet. Ugyen-gyatso went with him as his secretary and collector. In his *Narrative of a Journey to Lhasa*, Chandra Das gives a full description of what he did and what he saw. So interesting is the story that the reader will be glad to learn some of its most graphic details.

For fourteen months Das went among the Tibetans, noting their peculiar customs, visiting their chief towns—

including Lhasa itself—monasteries and temples, and gathering all kinds of useful information.

At Tashilunpo he gained an insight into the methods of Chinese government. The junior Amban was on the yearly tour of inspection of the guards of the Nepal-Tibet frontier. According to law the people through whose villages he passed were supposed to furnish him with a daily salary of about £35. Arriving at Shigatse, the town nearest to Tashilunpo, he suddenly demanded £54 a day, which was refused by the enraged populace. The chief magistrates were at once caught and flogged, an act that drew on the Amban volleys of stones, from some of which he received severe wounds. Troops appeared on the scene, arrested the ringleaders, and sent post-haste for the senior Amban. The latter soon arrived with his suite to judge and punish the refractory magistrates. The village headmen received 400 strokes of the bamboo and two months' imprisonment; while the two mayors of Shigatse, in addition to degradation, had the flesh stripped off their hands. No wonder that the Chinese are somewhat unpopular among the Tibetans!

One day Das observed a prominent citizen, Lagpa-tsering, distributing alms of one anna each to a crowd of cripples and beggars. This man had been a silversmith, and by industry amassed great riches. To gain merit he made princely gifts to the Tashilunpo monastery. But unfortunately he overdid the business by offering a very saintly lama a sum of about £120, in addition to many valuable articles, in the hope that his generosity would have an earthly reward. The saint, so far from being

grateful, refused the present, and said, "In a previous existence you were a great sinner, and in your next you will be a crocodile." Horrified by the terrible prospect, Lagpa implored pardon for his sin, asking how he could make atonement. "From henceforth," replied the holy man, "on every new moon you must give alms to the poor and helpless till you die. This will save you from becoming a crocodile, and also gain you immense wealth." Lagpa took him at his word; and for all we know may still be distributing a percentage of his income. It is satisfactory to learn that the action of the lama had a good effect on the commercial morality of the place; though the merit of the almsgiving is in our eyes somewhat discounted by the fact that Lagpa was distinctly advised to throw a sprat to catch a whale—the object with which he originally approached the lama.

The candidate for lamaism, when admitted to a convent, gains merit by a present of sixpence a head to his future companions, who may count 4,000 souls. To this formidable expense must be added handsome presents for the Dalai and the College of Incarnate Lamas. During his first year of novitiate he is expected to learn by heart 125 pages of selected passages from the holy books. These he must repeat without a single mistake if he is to retain his allowances and his rights to residence. The sacred books are often of huge size—some pages measuring as much as eight by four feet—and even if the novice is let off with a paltry couple of square feet to the page his memory needs to be a good one, and his nerve to be steady, when he comes up for his *vivâ*

voce. Sometimes he blunders; and then is shown the door, saddened by the thought of so much wasted labour. Candidates from outside Tibet have the advantage of a three years' period of study before examination.

The Buddhist religion is surprisingly mechanical. Prayers are offered—not said—by attaching a slip of paper on which the prayer is written to the outside of a wheel, turned by hand, wind, or water power. Every rotation means so much more merit gained by the owner of the wheel. By taking due advantage of a high wind he lays up a fine store against a rainy day. When gas illumination reaches Tibet there will be a good opening for the further increase of merit; for by the exercise of a little ingenuity a prayer may be turned off with every cubic foot of gas passed, and the counter will tell the householder just where he stands under this particular heading.

Rich men employ lama labour to read through the 108 volumes that compose the Tibetan canon; since reading by proxy is very meritorious. A band of lamas are collected and armed with teapots. The 40,000 pages of the sacred books are then equally distributed among them. They gabble them off as fast as they possibly can, having recourse to the teapots as soon as they get "dry"; which, from the nature and subject of their task, we may imagine to be pretty often. Lamas are not allowed to smoke, otherwise they would probably stipulate for a supply of cigarettes.

A not less effective way of earning merit is to cut the prayer "Om manch padmé hum" on the face of a

rock or religious memorial. Some pious Buddhists spend their whole lives in this interesting occupation. It has the advantage over the other methods that it leaves behind a visible testimony to the work done.

One story at least that Chandra Das tells is too good to be omitted. For the Buddhist it has a useful moral lesson.

A saint once saw his wife steal a piece of amber from the wallet of a beggar staying in the house, and substitute an apple. He lectured her by means of the following:—

In ancient India there lived two friends, the one honest as could be, the other dishonest. One day, while walking through a valley, they found a bowl filled with gold dust, which the honest man proposed to divide equally, after due thanks had been returned to the gods. The dishonest man suggested that they had done enough for that day, and that he should house the bowl till the morrow, when matters could be proceeded with.

Next day the contents of the bowl, much to the surprise of Dishonesty, had in some mysterious manner been changed to sawdust. Honesty saw through the fraud, but dissembled. Before leaving for home he besought his friend to loan him his two sons to help eat up the delicious fruit that grew abundantly in his garden. To this Dishonesty and his sons gladly agreed.

When he reached home Honesty bought a couple of monkeys and trained them to answer to the names of the sons, and come out of the house when called. He then wrote to his friend, saying that his two darlings had been changed into monkeys, and asking him to come and see

for himself. Sure enough, when the father arrived and uttered the names of his two boys, out ran the monkeys and climbed into his lap. In his distress he admitted his crime, and offered to divide the stolen gold; whereupon, of course, Honesty told him that the sons were busily engaged in the orchard.

There the story might well end. But the gods, who evidently possessed no sense of humour, could not tolerate deceit. The Lord of Death decreed that Dishonesty should spend five hundred years in hell; and Honesty be born a monkey during as many existences, for the crime of stealing human beings. This really seems hardly fair.

"The Minister," in return for his hospitality, was coached by Chandra Das in English and arithmetic. Like most orientals he studied the stars; and having seen the constellations marked on stellar maps with the form of the figures by which they are named—such as Great Bear or Orion—marked round them, he bought a large telescope that he might see the figures, which he believed to be actually existent in the sky. He also showed much interest in telegraphy and photography; but here, as Chandra Das honestly admits, little help could be given, and the pundit, after the manner of a nonplussed schoolmaster, tried, unsuccessfully, to hide his ignorance by a multitude of words. The good old Minister saw through the device, but entertained no grudges on account of it, as he took steps to clear the way for Das's visit to Lhasa—the consummation of his journey. On the way

Das fell ill, and in order to evade suspicion of his real character he permitted the usual rites of healing to be observed. These were :—

1. Reading of the holy books for two days by twelve monks.

2. Offerings of wafers to gods, demi-gods, and spirits.

3. Offerings to the genii presiding over a quiet mind and peaceful dreams.

4. To "deceive" Life and Death, by offering substitutes—five hundred fish.

These rites—and some medicines—restored the pundit to health. On the last day of May he reached Lhasa.

The most interesting event of his short sojourn there was his presentation to the Dalai Lama, at the palace of Potala, built on a rock outside the city. The audience chamber, on the roof of the building, which is nine stories high, was reached after the ascent of three flights of stairs and fourteen ladders. What followed will be best described in the traveller's own words :—

"Walking very softly, we came to the middle of the reception-hall, the roof of which is supported by three rows of pillars, four in each row, and where light is admitted by a skylight. The furniture was that generally seen in lamaseries, but the hangings were of the richest brocades and cloths of gold, the church utensils were of gold, and the frescoing on the walls of exquisite fineness. Behind the throne were beautiful tapestries and satin

hangings forming a great canopy. The floor was beautifully smooth and glossy, but the doors and windows, which were painted red, were of the rough description common throughout the country." Presents having been offered, the company sat round on rugs.

"The Grand Lama is a child of eight, with a bright and fair complexion and rosy cheeks. His eyes are large and penetrating, the shape of his face remarkably Aryan, though somewhat marred by the obliquity of his eyes. The thinness of his person was probably due to the fatigue of the Court ceremonies and to the religious duties and ascetic observance of his estate.* A yellow mitre covered his head, and its pendent lappets hid his ears; a yellow mantle draped his person, and he sat cross-legged with joined palms. The throne on which he sat was supported by carved lions, and covered with silk scarfs." †

Tea and rice were served, and after grace distributed among those present. The guests then withdrew, receiving as a parting gift packets of blessed pills.

Smallpox had broken out in Lhasa. As a cause of death it is particularly dreaded, since the victim is believed to go straight to hell. From prudential motives Chandra Das cut short his visit and returned to Tashilunpo, in time to be there at the time of the Panchen Rinpoche's death. He was invited to attend the invalid

* Since 1800 A.D. no Dalai lama has attained his majority of eighteen years.

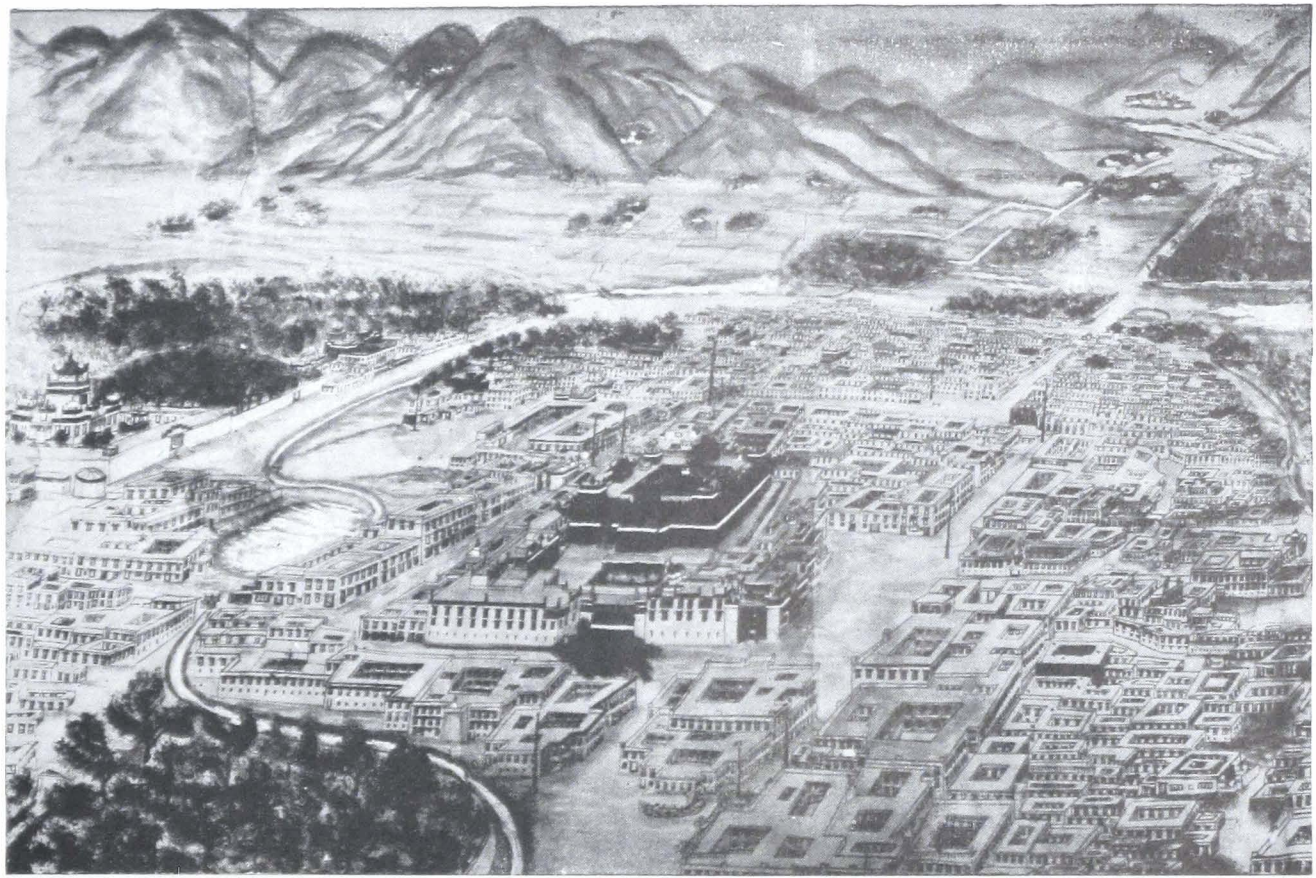
† From the *Narrative of a Journey to Lhasa.*

and prescribe for him, but refused, probably with good reason, as the Panchen's doctors were flogged after the death of their distinguished patient.

The burial—if so it may be called—of a corpse by the Tibetans is to merely cast it out to be devoured by vultures or dogs. The bodies of incarnate lamas are sometimes cremated, and their ashes placed in a tomb; and more rarely embalmed. A very great personage may be food to vultures, the officiating priest cutting up the body into small pieces, which are flung to the foul birds. If many vultures come to share the feast, it proves that the dead was very virtuous; whereas a small attendance betrays a sinful life. Before the partition begins a slit is made in a certain region of the skull lest the spirit should pass out some other way and enter a state of damnation.

Murder is punishable by a fine varying in value according to the importance of the slain. Thieves have to pay a fine of from one hundred to seven times the value of the thing stolen, according to the social position of the person from whom the thing is stolen. The harbourer of a thief is considered a greater offender than the thief himself; and one who steals a key or lock is considered to have stolen what it guards. When a person has bought an article with which he is dissatisfied he may return it the same day for nine-tenths of its value; on the next day for four-fifths; on the second day for one-half; and after the third day not at all.

Two kinds of ordeal are employed in the trial of



A bird's-eye view of the city of Lhasa. In the centre rises the Cho-Khang, the Grand Temple of Buddha. This city is to Buddhism what Rome is to Catholicism; but all "unbelievers" are rigorously excluded.

persons charged with certain serious crimes—the ordeal by fire and the ordeal by water. In the first case the accused has to carry away a red-hot stone as large as an ostrich's egg for a few paces in his bare hands; in the second, he must pick a pebble out of a cauldron of boiling oil or water. If his hands suffer little injury he is held innocent; if they blister badly he is condemned. The tests are almost precisely similar to those employed in Europe during the Middle Ages.

Polyandry, the marriage of one woman to several husbands, prevails in some parts of Tibet, especially in the agricultural. Mr. W. W. Rockhill considers the custom to have arisen from the extreme difficulty of maintaining a large number of families in the small districts where agriculture is possible. Among the nomadic Tibetans, whose flocks are constantly increasing, monogamy and, rarely, polygamy is the rule.

Chandra Das returned to India in January, 1883, and in consideration of his valuable services was created a Companion of the Order of the Indian Empire, besides receiving a pecuniary grant from the Royal Geographical Society.

His visits to Tibet had a tragic sequel. Soon after his departure from Tashilunpo "the Minister," or Sinchen Lama, was arrested by order from Lhasa, imprisoned, flogged, and flung into the Brahmapootra with his hands tied behind him. His servants, almost to a man, had their hands and feet cut off, and their eyes gouged out, and were left till death—which the lamas say they never inflict—released them from their agony. His house and

property were confiscated and remain unoccupied, and though the lama's reincarnation has appeared in a boy it has been refused recognition by the authorities. A writer in the *Times* * who visited the minister's home says: "There is one strange thing in the lama's house which defies explanation. The central upper room is decorated with minutely drawn scenes from the life of each one of the reincarnations of the Sinchen Lama. Beside these pictured chronicles is set the seated form of the special incarnation whose life they record. The last of the series is, of course, that of Chandra Das's patron. He sits conventionally, Buddha-wise, with a simpering baby face and a green nimbus round his head. Beside him are the events of his childhood and manhood. One after another the artists set down the miracles he wrought and the good deeds by which he acquired merit, the reward of which, as a Bodhisat, he was bound to renounce for the good of mankind. As he drew to the close of his work he painted in also small written descriptions explaining the pictures. Then the lama said, 'Paint me also a house of such and such a sort,' and he described it very clearly and in great detail. 'And under it paint me a river with a dead body floating in it.' And the painter did so. But when he asked what inscription he was to put on the house and on the river the Sinchen Lama said, 'Put no inscription.' But he would not explain nor say at all why the two pictures were to be drawn. Only after his disgrace the Abbot and lamas of Dongtse recognised with awe the very house in which he

* April 22nd, 1904.

was imprisoned, and the very spot where he was done to death. And there the pictures are to this day."

Like other Tibetan stories, that of the Sinchen goes too far. And the worst of it is that the ending relates to a fact.

NOTE.—The author has kindly been permitted by Mr. John Murray to make quotations in the above chapter from Sarat Chandra Das's *Narrative of a Journey to Lhasa.*

CHAPTER V

FROM MANCHURIA TO THE PAMIRS

IN the first chapter we saw Dr. Sven Hedin traverse Asia from the Pamirs to Pekin through Northern Tibet and the Ordos Desert. Ten years prior to his great march Captain F. E. Younghusband,* of the 27th Lancers, starting from Pekin with Kashgar in E. Turkestan as his objective, had already crossed Central Asia in the reverse direction by a route some hundreds of miles further north. As the two journeys are to a certain extent complementary, a few pages will be devoted to the experiences of this intrepid officer in the Gobi Desert, the Pamirs, and Himalayas; not omitting reference to an interesting "preliminary canter" that he took in Manchuria, as part of a transit of the vast Chinese Empire from end to end.

This great undertaking was modest enough in its inception. A traveller by instinct, Captain Younghusband gladly accepted, in 1886, an invitation to spend his leave with Mr. James, of the Indian Civil Service, in visiting Manchuria, a province just then beginning to attract the notice of military men, and almost a virgin

* Now Lieutenant-Colonel.

land for British exploration. The object of their particular interest was the "Chang-pai-shan," the famous "Ever-white Mountain," the birthplace of the Manchu dynasty at present ruling in China. This mysterious peak, which, though once visited by an adventurous Jesuit two centuries ago, still retained much of the glamour of romance, is situated in the heart of an immense forest on the border of Korea, and was described as rising to an enormous height and having on its summit a lake of unfathomable depth.

Starting from the treaty port of Newchwang, the party made their way by Mukden to the valley of the Yalu. Travelling was exceedingly laborious, especially after they left the river and turned off into the forest which everywhere clothes the spurs of the mountain, the baggage-mules having to be dragged by main force through the underwood and across frequent bogs lying between the ridges. At length the mules could go no further, so, each man shouldering his pack, the travellers proceeded on foot, following a branch of the Sangari River, said to have its source near the summit of the White Mountain.

It was tough work. Reduced to half rations, tormented in the day by swarms of blood-sucking insects, half suffocated by night in the wretched hovels of the Chinese musk-hunters, the only shelter obtainable, they toiled along, until at last the forest opened and they beheld the object of their search. It fell far short of their expectations. The height proved to be no more than 8,000 feet, and the whiteness, such as it was, was due, not to snow, but to disintegrated pumice stone. However, they were

not without their reward. Captain Younghusband writes: "We made for a saddle between two rugged peaks which crowned the mountain. We pressed eagerly on to reach this, as from it we hoped to look out beyond, far away over Corea on the opposite side. At last we reached the saddle, and then, instead of the panorama we had expected, we looked down in astonishment on a most beautiful lake in a setting of weird, fantastic cliffs, just at our feet. We were, in fact, on an extinct Volcano, and this lake filled up what had once been its crater. The waters were of a peculiarly deep blue, and situated here at the very summit of a mountain, and held in on every side by rugged, precipitous cliffs, this lake was particularly striking." From the summit nothing could be seen but leagues of rolling forest, stretching away in every direction as far as the eye could reach. Delighted with this success, the half-starved travellers recovered their mules and followed the main stream of the Sangari down to the considerable town of Kirin on the border of the forest. In this neighbourhood, as in many others, sturdy Chinese from the central provinces were to be seen reclaiming the country abandoned by its original Manchu inhabitants, and clearing the forest in the same energetic manner as our colonists in Canada. From Kirin they made their way to Tsitsihar, on the Mongolian confines — space will only allow the briefest descriptions of their further travels—and thence right across Manchuria to the Russian frontier, where they were most cordially entertained by the colonel commanding a Cossack post on the shores of Possiet Bay. Captain Younghusband formed the best opinion of

Russians as good fellows. All he met with on his travels, whether soldiers or merchants, invariably gave him a thoroughly warm-hearted and hospitable welcome, free from the slightest suspicion of international jealousy.

After a second expedition to the borders of Mongolia, they returned to Mukden and Newchwang, and thence followed the cross-road to Tientsin, observing on the way the first Chinese railway in course of construction between that city and Shan-hai-kwan. In connection with railways amusing mention is made of the "Feng-shui" superstition, relating to the spirits or devils which loom so large in Chinese imagination. These demons are supposed to be able to travel straight ahead, therefore a Chinaman is careful to build a wall across the front of his house-door to keep them out. When the railway was projected, the natives perceived that the spirits, by travelling on the tops of the carriages, would be able to plunge straight into the houses. However, the diplomatic engineer reassured them, pointing to the embankment and bidding them consider how many devils it would keep out, running for miles as it did just in front of their doorways.

At Tientsin the party broke up, and Younghusband proceeded to Pekin. While he lingered there enjoying the hospitality of the British Legation and studying Chinese life, there came what seemed the chance of a lifetime. Colonel Bell, V.C., arrived in Pekin with the purpose of travelling overland to India, and expressed his willingness to take the captain as his companion. "Here was a chance," writes the latter enthusiastically, "of visiting that hazy, mysterious land beyond the Himalayas,

and actually seeing Kashgar and Yarkand, with whose names I had been acquainted since I was a boy, through letters from my uncle, Robert Shaw. A journey overland to India would take us through the entire length of Chinese Turkestan, the condition of which was still unknown since the Chinese had reconquered it by one of those long-sustained efforts for which they are so remarkable. We should be able to see these secluded people of Central Asia, dim figures of whom I had pictured in my mind from reading the accounts of the few travellers who had been amongst them. Then, too, there was the fascination of seeing the very heart of the Himalayas, as we should have to cross their entire breadth on the way to India. And all combined was one grand project—this idea of striking boldly out from Peking to penetrate to India—that of itself inspired enthusiasm and roused every spark of exploring ardour in me." The Viceroy proved gracious in the matter of extended leave, and preparations were hurriedly completed.

It was arranged, however, that the two officers should take different routes at starting, and join forces at Hami (Khamil), a place some 2,000 miles away in the desert. Colonel Bell was first to move, his longer road lying through the Central Provinces, and, true to his reputation as a rapid traveller, was never overtaken. On April 4th, Younghusband also left Pekin, with one Chinese servant and an interpreter, starting upon his tremendous journey by a route never previously attempted by a European, through the deserts north of the Great Wall.

MANCHURIA TO THE PAMIRS

Before taking our traveller further, it will be well to glance at the map and briefly survey the country through which he had to pass. The plateau of Mongolia comes down, in rolling grassy plains, to within a few hundred miles of Pekin. Eastward, and south of the Altai Mountain system, stretches the vast Gobi, or Sham, Desert, a howling, barren waste traversed by arid mountain chains, which extends through Kansu, south of the Thian Shan, to join the Tarim Desert of Eastern Turkestan, the extreme province of China. Oases are few, and water is only found near the bases of the mountains. At the western end of Chinese Turkestan rises the lofty Pamir plateau—the "Roof of the World"—joined from the south-east by the mighty Karakorum range of the Himalayas, from which again run back eastward the Kuen-lun Mountains of Northern Tibet.

The start from Pekin was made on horseback, along the caravan route to Siberia, the luggage being carried in carts. On the second day they passed through the inner branch of the Great Wall, an imposing castellated erection of solid stone, over thirty feet high. Two days later, near Kalgan, they saw the outer branch, a poor structure of mud, with frequent gaps. Beyond lay the open plains of Mongolia, affording easy travelling as far as Kwei-hwa-cheng, where the carter's contract ended and the desert stage to Hami began. Fresh transport was difficult to find, as the road is dangerous for small parties; but eventually a contractor undertook, for the sum of £45, to provide camels and a guide, and to

deliver the travellers and their baggage at Hami in sixty days.

This was the most formidable section of the journey, and the start upon the 1,200 miles, almost all through desert, could only be made upon an auspicious day. Such an one having arrived, the little party set out. It consisted of the explorer himself, his Chinese boy Liusan, a little opium-smoking camel-driver, and his Mongol assistant, with eight camels, of which one carried water-casks and another brick tea, the current coin of the deserts. Climbing the buttress hills of the high plateau of Mongolia, they entered the solitudes of the Gobi. A sterile, waterless plain stretched to the horizon, broken only by ranges of bare hills to right and left. Scarcely a sign of life was at any time visible. To allow the camels to feed by daylight, travelling was mostly done between three p.m. and midnight.

It was not an enjoyable experience. "Anyone can imagine the fearful monotony of these long, dreary marches seated on the back of a slow and silently moving camel. While it was light I would read and even write; but soon the sun would set before us, the stars would appear one by one, and through the long, dark hours we would go silently on, often finding our way by the aid of the stars alone, and marking each as it sank below the horizon, indicating how far the night was advanced. At length the guide would give the signal to halt, and the camels, with an unmistakable sigh of relief, would sink to the ground; their loads would quickly be taken off; before long camp would be pitched, and we would

turn in to enjoy a well-earned sleep, with the satisfaction of having accomplished one more march on that long desert journey." The old guide possessed a marvellous faculty for following the track, scarcely visible even by day, and on the darkest night never failed to find the wells.

In this style they crossed the Galpin Gobi, about the worst part of the whole desert, suffering much from high winds and dust storms on the way, until they reached the foot of the Hurka Hills, an offshoot of the Altai Mountains. Here they entered a weird valley filled with wind-raised sand-dunes, having the barren Hurka Hills on the north and a similar parallel range on the south, between which they travelled for more than 200 miles, not without fear of brigands. After crossing an open plain, on which were seen herds of wild asses, they reached the spurs of the Altai Mountains, where water and vegetation became more plentiful.

About this point Younghusband discovered that, owing to the miserable quality and condition of their camels, they were already a week behind time, a loss there was no means of making up. Skirting, as usual, the base of the mountains, they came to the Ya-hu oasis, offering a pleasant sight of trees and cultivated ground. Then came another leap across the plains to the eastern butt of the Tian Shan, the snow-clad "Heavenly Mountains" of the Chinese, which marked the end of the desert journey. During this stage another very bad piece was crossed, the desert of Zungaria, absolutely destitute of even vegetable life. An incident was the finding of

the tracks of that mysterious animal, a wild camel. Further north they had picked up heads of another denizen of those wild regions, *Ovis Poli*, Marco Polo's great sheep, which stands twelve hands high, and has horns up to six feet round the curve. At last Hami was reached. But Colonel Bell had passed three weeks before.

From this point travelling through Turkestan was comparatively easy and comfortable. The Turks live in houses, decently clean ones too; cultivated oases are of frequent occurrence, and the roads are practicable for carts. For 1,500 miles Captain Younghusband's course lay through this province, following the southern foot of the Tian Shan, until he saw, as though floating in the sky, the snowy summits of the great Pamirs. He was now approaching Kashgar, forty days from Hami, and, as he held, the turning-point for his homeward journey. At Kashgar is stationed a Russian consul, with whom he did not fight, as an Afghan friend apprehended; and the town, as also Yarkand, the other principal city of Turkestan, is in regular communication with India, and the focus of a considerable trade. We will therefore leave our traveller to follow the beaten track alone, and take up the tale at the point where, still keen upon exploration, he left it to cross the mountains by a path new to Englishmen.

A threefold barrier of gigantic ranges over 300 miles in total width separates Turkestan from India, consisting of the Kuen-lun, the Karakorum, and the Himalayas. Through these the road in regular use winds by way of

Leh in Ladak to Srinagar in Kashmir. Younghusband proposed to take a short cut across the loop and examine the practicability of the Mustagh Pass over the Karakorum, which had been used by the natives, but was reported as now closed by a glacier. It was a bold enterprise, especially for a man worn with thousands of miles of travel, but a fitting conclusion to a remarkable adventure.

The most careful preparations were made. A guide and seven other native mountaineers were engaged and thoroughly equipped, and thirteen ponies packed with supplies. Crossing the Kuen-lun at an altitude of 16,000 feet the party plunged into "a labyrinth of pathless mountains, rising into tier after tier of snowy peaks," through which they made their way by difficult river-beds, until, under the shadow of the stupendous cone, K.2, the second highest peak in the world, they reached the foot of the Mustagh glacier.

The glacier was worthy of its surroundings. Its foot had reached the valley leading up to the pass, and had blocked it for miles with a jumble of bergs and mounds, among which it seemed impossible for man, much less for ponies, to find a footing. Nevertheless, way was made, and after incredible labour lasting several days the poor beasts were hauled up on to the snowfields above. Here the party bivouacked, and next morning, the ponies and less able-bodied men being left behind, completed the toilsome climb of the crest, some 20,000 feet in elevation, there to find themselves looking down from the brink of a sheer precipice of ice. Younghusband stood silent

in bitter disappointment. His men, however, holding that no Englishman ever turned back from an enterprise, saved the situation by forthwith preparing for descent.

It was a stern piece of mountaineering. "We had brought an ordinary pickaxe with us, and Wali (the guide) went on ahead with this, while the rest of us followed one by one behind him, each hanging on to a rope tied round Wali's waist to support him in case he slipped while hewing steps across the ice-slope. This slope was of hard ice, and, thirty yards or so below the line we took, ended in an ice-fall, which again terminated far beneath in the head of a glacier at the foot of the pass. Wali with his pickaxe hewed a way step by step across the ice-slope, so as to reach the rocky cliff by which we should have to descend on to the glacier below. We slowly edged across the slope after him, but it was hard to keep cool and steady. From where we stood we could see nothing over the end of the slope but the glacier many hundreds of feet below us."

They made their point, but this was child's play to what was coming. "The cliff we had now to descend was an almost sheer precipice: its only saving feature was that it was rough and rugged, and so afforded some little hold for our hands and feet. Yet even then we seldom got a hold for the whole hand or the whole foot. All we generally found was a little ledge, upon which we could grip with the tips of the fingers or the side of the foot. The men were most good to me, whenever possible guiding my foot into some secure hold, and often supporting it there with their hands; but at times it was

all I could do to summon sufficient courage to let myself down on to the veriest little crevices which had to support me." At last, after sunset, they safely reached the glacier below the pass, and the supreme object of the journey was accomplished.

Several hurried marches brought them to Askoli, whence supplies were sent back to the men left with the ponies, with instructions to them to take the back trail and join by way of Leh. Meanwhile Younghusband, scorched by sun and frost into the semblance of an Asiatic, pressed on to Srinagar, where congratulatory telegrams were handed to him, and on November 4th, exactly seven months after leaving Pekin, drove up to the mess-house of his regiment in Rawul Pindi. Colonel Bell had, however, arrived in India a month earlier, and so held the honour of being the first Englishman to achieve the journey from China by land.

The reputation gained from this successful travelling kept Captain Younghusband in the minds of the Government, and in 1889 he was commissioned by the Foreign Office to explore parts of the northern frontier of Kashmir. A tribe of freebooters had been giving a lot of trouble on the road from India to Yarkand, levying blackmail upon the merchants and raiding the helpless inhabitants even of the distant Pamirs. Their headquarters were the little state of Hunza, or Kanjut, in British territory, and the Government, with a view to putting a stop to their operations, desired to learn something of their immediate geographical surroundings. With an escort of six Goorkhas Younghusband travelled

by the road which, in most part, he had followed from Yarkand, crossing this time the Karakorum Pass. From the northern side of the mountains he carried on the work of exploring the unknown passes by which the raiders issued from their fortress. In the course of these investigations he discovered the Shimshal Pass, and coolly walked into a fortified post of the Kanjutis. Returning to India by the skirts of the Pamirs, where he met with a rival explorer, the Russian Captain Grombtchevsky, whose countrymen also were taking stock in this wild no-man's-land, on his way he passed right through Hunza and held an interview with Safder Ali, the chieftain of the country. Within two years a British expedition had entered Hunza, defeated Safder Ali, and driven him into exile, and the state is now peaceful under our rule.

In the following year Captain Younghusband was again on the tramp, this time to explore the Pamirs. A pamir, strictly speaking, is a plain high up among the mountains, formed by the filling up of a valley by detritus from the peaks; but the name is generally applied to the mountain mass, the "Roof of the World," in which the great ranges of Asia meet one another. The principal incident of this expedition was the high-handed action of the Russian Colonel Yanoff, who ordered him off what was not Russian territory, into unknown regions from which he extricated himself with great difficulty.

During 1893 and 1894 official duties occupied the explorer in Hunza and Chitral, the latter state then under the government of the Mehtar Nizam Ul-Mulk, whose murder a few months later led to the attack on the British

agent and the famous march of the relief expedition. With his interesting account of this remote country and its simple-minded but shrewd inhabitants, exigencies of space forbid us to deal, and this chapter must here find its end.

NOTE.—The quotations made in this chapter are taken from Captain F. E. Younghusband's *Heart of a Continent*, by the kind permission of Mr. John Murray.

CHAPTER VI

AN ADVENTUROUS JOURNEY AMONG CELESTIALS AND LAMAS

THE opening of the Chinese Empire to foreign trade has taxed the energies of many generations of merchants and statesmen, Asiatic, European, and American alike, and seems to promise abundant occupation of the same kind for generations still to come. The source of difficulty lies not in any objection on the part of the average Chinaman to intercourse with outsiders, for he is a born trader and only too ready to work hard for his living, whether at home or abroad; but may be ascribed rather to the political jealousy of the ruling classes, who dread, not without good reason, any form of change, as necessarily threatening their privileges and monopolies, and to the intense national pride, which the pushing European merchant is so prone to ignore, cordial relations being hard to establish between parties mutually despising one another. During the last few decades a much better feeling has grown up in the maritime provinces of the east, but the line of resistance has been very stubborn in falling back inland, and Western China, especially the quasi tributary kingdom of Tibet, still

maintains its uncompromising attitude, particularly against any access by land from British Indian possessions. A most interesting account of one of the earliest attempts to open up communications in these regions is to be found in the *Travels of a Pioneer of Commerce*, describing an overland journey from China towards India, written by Mr. T. T. Cooper, and published in 1871.

Mr. Cooper, who as agent of the Chamber of Commerce at Calcutta had acquired full knowledge of the possibilities and requirements of Indo-Chinese trade, started from Shanghai in the year 1867 to investigate the routes connecting Western China and Tibet with India and British Burmah. The undertaking offered every promise of dangerous adventure. Beyond Hankow, an open port 700 miles up the Yangtse River, there was at that time no security for the "foreign devil," even in the provinces of China proper, where the Imperial writ ran and the authorities might be looked to for aid and protection. Yunnan, on the Burmese frontier, was in a ferment of rebellion, and in the highest degree dangerous for travellers. The eastern kingdom of Tibet, though actually subject to China, was under the influence of the lamas of Lhasa, no better inclined towards strangers than at the present day. The only road ran through one or other of these contiguous provinces, consequently the prospect of a successful crossing of the tremendous mountain barrier, in the face of organised hostility, was a remote one for a solitary Englishman, unable to speak the language, and so poorly equipped with funds that he had barely £200 wherewith to make his preparations.

But Cooper, whose dignified and convincing narrative unmistakably conveys his force of character, was of the stuff of which real pioneers are made. Determined to be turned back by nothing but the imminence of certain death, he started with the primary intention of making his way "from the farthest navigable point on the Yangtse River, *viâ* Li-kiang-foo, in the north of Yunnan, to Sudiya, on the Brahmapootra, in Northern Assam, and thence to Calcutta." Should this prove impracticable, he proposed to reach Lhasa, and thence India by the now familiar route taken by General Macdonald's expedition. As a further alternative, there was the chance of some other intermediate path by which the obstacle might be penetrated.

Before leaving Shanghai Cooper had obtained the invaluable co-operation of the French Roman Catholic Mission, by the aid of whose admirable organisation it would be possible for him to reach the farthest confines of Western China, and even beyond, with a minimum of trouble and risk. A draft of young missionaries, freshly arrived from France, was just then starting for Chung-Ching in the province of Sechuan, and in their congenial company he travelled to within a few miles of Hankow. At this place trouble arose through the spiteful action of the French consul, who happened to be smarting under the editorial lash of the local English newspaper. This gentleman, by a kindly exercise of authority, hurried the Fathers away from Hankow while Cooper was still occupied over his passports at the previous halting-place, and all efforts on his part to re-establish touch with them

proved of no avail. Without their aid he could not proceed, so had to return to Shanghai.

However, the check had beneficial results, for the scurvy conduct of the Frenchman gained for the traveller the sympathy of the mercantile community at the great port, who had previously been inclined to look askance on the undertaking as likely to bring about competition with their trade, and funds were subscribed which enabled him to engage an interpreter and a guide, whose services he could not otherwise have afforded. The former, George Philips by name, Philip for short, was a Chinese Christian, highly educated for the priesthood, and proved a most valuable auxiliary, for though his determination to face the unknown required some nursing at first, he afterwards showed admirable nerve and resource in the face of danger. Eventually a start was made from Hankow on January 4th, 1868, by one Tang Koopah, a tradesman, according to the imposing Viceregal passport he carried, duly authorised to travel on the Great River and through the countries beyond to India, in appearance a respectable elderly Chinaman, with spectacles and shaved head, and clad in pigtail and petticoats.

The Yangtse-kiang is one of the mighty streams of the earth. Rising in Tibet not far from the sources of the Indus, it becomes navigable soon after entering China and forms the grand highway of commerce between east and west. At Hankow it is a broad breast of waters, flowing tortuously through extensive plains, and easily navigable by sail or steam. Higher up, among the hills of Sechuan, it has cut for itself a tremendous channel, forcing its way

through a succession of awful gorges, where the westward-bound junks have to be hauled up against the current, by means of a rope attached to the mast-head, upon which pull perhaps a hundred men. Notwithstanding the arduous and dangerous nature of the work, constant strings of junks and rafts pass up or down at all seasons, carrying an astonishing aggregate of merchandise.

Travelling on the Yangtse, as Cooper found it, was not luxurious. It is possible to lie down in a cabin six feet wide and five feet high, but not to do much else, nor has a junk a promenade deck. It will therefore be kind, as well as expedient, to hurry our Englishman over this stage of his journey, through the dreary fens of Hoopeh, as far as the important town of Shasu. Here he betook himself, as one travelling in Europe might, to his hotel, a verminous hostelry where he declined the foreigner's privilege of paying twice the usual charge for his accommodation, but had to submit to the curiosity of the natives, who, of both sexes, thronged his room without ceremony, but not without the politeness which is a natural attribute of the Chinese. Less politeness, but no active insolence, was shown by a party of disbanded soldiers, true to type, "braggarts, thieves, opium-smokers, and inveterate gamblers," who invaded the inn and lived at free quarters, according to the custom of their class.

At Shasu a fresh boat had to be hired, suitable for surmounting the rapids of the next stage, to Chung-Ching in Sechuan. The rate to that place reached the formidable figure of 48,000 chen, a charge which reads

more reasonably when reduced to English currency, for 1,000 iron chen, or cash, go to the silver tael, value 6*s.* 8*d.* Hence the great convenience of the letter of credit upon the western establishment of the French Mission, which Cooper had obtained at Shanghai.

Through the famous Ichang gorge the mighty river, contracted to a width of 300 yards, debouches from the hill country, gliding deep and black between walls of perpendicular cliff, towering to a height of nearly a thousand feet. Owing probably to the great depth of the channel, the current is generally sluggish, rapids only occurring where an obstruction of rocks rises in the bed of the stream. Similar gorges are characteristic of all the Upper Yangtse, and the navigation of them provides a livelihood for a numerous and peculiar stock of boatmen and trackers, the hardest-working folk in the world, who strain incessantly at the tow-ropes, singing cheerfully as they go, from morning till night, for something less than a shilling a day.

Chung-Ching (otherwise Chung-King) is a large city, and the central mart of Western China. Arriving safely here, after some perilous experiences, Cooper had definite news of the spread of the Mohammedan rebellion in Yunnan, making it necessary forthwith to set aside the idea of traversing that province. By this the choice of route was severely limited. In fact, it only remained to push on to Bathang in Eastern Tibet, and thence endeavour either to reach Sudiya on the Brahmapootra, or to proceed by Lhasa to Darjeeling. The commercial

objects of the journey would be better served by the former route, so it gained the preference.

Bathang, like Chung-Ching, is on the Yangtse, which makes a deep bend to the southward in the interval. The connection between the two cities is therefore by road, through the tremendous frontier range of the Yung-ling. For this part of the journey fresh preparations had to be made, entailing a sojourn of some days in Chung-Ching, which were spent in sight-seeing under the auspices of the French Fathers and their native friends, Cooper's disguise making such diversion possible. He was now an exemplary Chinaman, except in the matter of talk, which his dignity allowed him to leave to his companion. The Western Mission, which plays such an important part in this brief history, requires, and deserves, a few words to itself. Established about 1745, after the failure of the Jesuits in the same region, it made steady progress, in the face of continuous opposition from the authorities and occasional persecution, until at the beginning of last century its converts numbered 40,000. More peaceful times came about 1820, and some years later the Chinese Christians were reckoned at nearly 100,000. Subsequent treaties secured some rights, or at least some recognition, for the missionaries, and under an edict of Khang-hi toleration was accorded to those who would swear never to return to Europe. Thus the Fathers now enjoy some sort of protection from the authorities, but their true safeguard against the ever-present danger of lawless outbreaks, of which the late Boxer uprising is typical, lies in the good-

will of the classes from which their converts are drawn. A young missionary entering China devotes the rest of his life to his task, and adopts Chinese costume, language, and mode of life, moving among the natives in all respects as one of themselves. His pay is a mere pittance, 20 taels a month, while 100 is the salary of a bishop. The operations of the Mission, admirably organised, embrace the provinces of Sechuan, Yunnan, and Eastern Tibet, under the paramount authority of the Apostolic Bishop at Chung-Ching. The success of their methods is remarkable, but it is only won in the face of unremitting hostility from the governing classes, desperately jealous of the political influence they fear the Fathers may obtain.

The journey from Chung-Ching was made in chairs, each carried by three coolies. Two or three extra men carried the baggage, and the whole party kept up a good average pace of six miles an hour. The country traversed is extremely fertile, and bears large crops of sugar, wheat, barley, opium-poppies, and other produce. Coal and other minerals are plentiful in the hills. The possession of his Viceregal passport secured respect for Tang Tajen ("his Excellency Tang") wherever it was necessary to show it, especially when some minor mandarin, according to custom, attempted a "squeeze"—in other words, tried to levy blackmail.

This "squeezing" is the curse of China. It is universal. Every official, from Viceroy to tax-collector, deems it his privilege, if not his duty, to get something for himself out of every transaction, and the unhappy layman has

no choice but to submit. Extortion has become a custom, and custom tyrannises supreme in the Flowery Land.

At Chen-tu, the capital of Sechuan, a passport was obtained for Lhasa, useless, as it subsequently turned out. Shortly after leaving the city, Cooper overtook a military force marching towards Yunnan for the suppression of the rebellion. It appeared that a general had been ordered to enrol 40,000 men, which he had done, so far as drawing many months' pay for such a force constituted enrolment. In six months, however, the army, whose numbers fortunately never exceeded 250, had only managed to advance thirty miles towards the scene of operations, and having received no pay whatever during the period, was recouping itself as best it could. At their halting-place Cooper found the soldiers roaming about "like so many wolves," dragging shrieking women by their hair through the streets, or carrying off doors and shutters for firewood. This is the normal procedure of a Chinese army on the march through its native land. The general's methods are illustrative of the rank corruption which reduces to a farce an excellent scheme of Imperial government.

The Fie-yue-ling range was crossed by paths "fit only for birds," and suspension bridges of loose planks laid on chains: this, nevertheless, was the mandarins' high-road to Tibet, kept in repair at the public cost! The exhaustion caused by this climb necessitated a rest of several days, devoted to buying mules for the Tibetan passes. Meanwhile the gallant army overtook the travellers. Bursting into Cooper's room at the hotel, intent on

pillage, the advance guard suffered a severe check, going down like ninepins before the fists of the enraged Englishman. Reinforcements came up, but were held at bay by his revolver, until the arrival of the mandarin in command, whom the weapon also brought to reason. The officer proved to be a decent fellow in his way, and behaved well afterwards, though getting professionally drunk at night; but the wretched village, deserted by its inhabitants, was utterly devastated.

The rest of the stage to Ta-tsian-loo was made in the company of a kindly French Bishop, through an awful country of defiles, torrents, and hurricanes. The town named is in Eastern Tibet, but held by a Chinese garrison, and here the travellers first came in contact with the Buddhist lamas. These gentry had been warned of the Englishman's approach, and were taking due precautions against his entering their forbidden Central Kingdom. From this point onwards he met at every turn their relentless opposition, which only stopped short of taking his life owing to their fear of the Chinese jurisdiction.

His Chinese costume being no longer useful, Cooper now appeared, to the astonishment of the natives, in the garb of a British sportsman. He also changed his stock of chen, which are not current in Tibet, for Indian rupees, tea, beads, and other articles of barter. The rupees that carry most value are those showing the head of Queen Victoria, held to be the presentment of the Grand Lama! It is always necessary in these wild

regions to carry a stock of food, as little is obtainable outside the towns or larger villages.

The natives of Eastern Tibet, as well as those of the Central Kingdom, if we may accept reports from the present scene of military operations, are kindly folk and sociable enough in themselves, owing their truculence towards foreigners entirely to the teachings of the lamas, who hold them, body and soul, in abject servitude. It is not possible here to investigate the causes of this predominance of the priestly caste, but its results may be briefly summed up in saying that the lamas jealously reserve to themselves all knowledge, wealth, trade, and political power, and are numerically strong enough to keep them so long as existing conditions remain. The intrusion of foreign ideas of liberty, especially such as they see prevailing in British India, would soon destroy their monopoly, hence their inveterate hostility to strangers may be ascribed less to religious fanaticism than to sordid worldly wisdom.

The road from Ta-tsian-loo to Bathang crosses even more difficult ground than the previous stage, some of the passes reaching an altitude where breathing was difficult. The animals barely survived, and a prolonged halt for recuperation was necessary at the latter town. The plot now began to thicken. The boundary of the Inner Country was close ahead, and though the mandarins, both Tibetan and Chinese, were polite and even cordial, it soon became evident that the road to Lhasa was practically closed. Cooper endeavoured to match craft with craft. Learning incidentally that there was a prac-

ticable road from Bathang to Rooemah, in Assam, he worked his Lhasa passport for all it was worth, hoping his antagonists might consent, by way of compromise, to his taking the southern, and for his purpose the more desirable, route. But neither lamas nor Chinese had any desire to bring Assam tea into competition with their own monopoly, so this scheme met with no more encouragement than the other. The position was desperate, so Cooper decided to start for Assam, having accepted passports for Yunnan which would take him to Atenze, some distance on his road, where he hoped he might be able to give his obstructers the slip. Eventually, having parted affectionately from his good friends, he and Philip, escorted by two unwelcome Tibetan guides, left Bathang on the most adventurous stage of his journey.

Complications began at once. Tempted to join what seemed to be a merry picnicking party of girls in a pleasant walnut grove, all unawares Cooper was put through the ceremony of marriage with one of them, and to his astonishment found himself, at this most inopportune juncture, saddled with a wife. There was no escape, so he had to feign acceptance of the situation, and treating the young lady as a daughter, he proceeded on his way. A day or two later a band, apparently of robbers, appeared, but sheered off promptly at sight of the revolver. In the confusion, however, the rascally guides, acting doubtless on orders, bolted with the whole stock of provisions, pursuit being impossible under the circumstances. The scope of this calamity was realised

when they tried to obtain food on the road. The lamas were showing their hand. Everywhere provisions and shelter were churlishly refused, and starvation stared them in the face. Philip now proved his sterling value. A lamb was "picked up" out of a flock on the road, but before a meal could be made a lama furiously set upon them, claiming it as his property, though paid for several times over. Suddenly a gigantic Tibetan pinioned Cooper from behind, while an Amazon of equal stature set to cudgelling his head from in front. Things were looking very serious when Philip seized his master's rifle, clapped it to the giant's head, and compelled him to let go. Cooper fought himself clear, but the precious lamb disappeared with the lama and his men. Genuine robbers also attacked them, but were driven off by rifle-shots. Happily other travellers had pity on them, and they struggled into Atenze, a little frontier town, finding there a comfortable hotel. Meanwhile the unhappy little bride had been safely handed over to some of her relations.

The tribes of this region are out-and-out savages, rendering slight allegiance to China, but firmly ruled by powerful chiefs. Fortunate in making friends among these, particularly with La-won-quan, chief of the Rooquors, an honest warrior, who afterwards proved a strong rock of defence, Cooper was able to press on as far as the town of Weisee. By this time, fairly beaten by the lamas, he had again changed his plans, and was aiming for Tali-foo in Yunnan, thus coming within the zone of the trouble caused by the Mohammedan re-

bellion. The moment was an unpropitious one for travellers, as military movements were imminent. Both sides regarded him with suspicion, and spread reports to his discredit. From Weisee he advanced some marches to the village of Tze-fan, the chief of which befriended him for La-won-zuan's sake; but the extreme precariousness of his position was brought home by a night attack made upon him actually in the house of his protector, and reluctantly he allowed himself to be persuaded to turn back to Weisee.

His troubles, however, were by no means at an end. On the departure of his friend the Tartar general there commanding, the Chinese civil mandarin, one Tien, was left master of affairs. This worthy, of the type of the plausible villain of melodrama, induced Cooper, whose imagined wealth he coveted, to take up his abode for security's sake in the Yamen, or official residence, and kept him there a prisoner for two months. Insults and threats in increasing measure failing to extort a loan, at last Tien, in company of two other mandarins of like kidney with himself, invaded Cooper's room with forged letters demanding the surrender of his arms and baggage. Then follows some pleasant reading. Goaded to desperation, Cooper sprang to the door, bolted it, and drawing his revolver covered Tien's head. The terror of the mandarins, he says, was positively helpless. Writhing and helpless, they had to sit there while the contemptuous Philip deliberately turned out for their inspection every single article of baggage, to convince them once for all that the great wealth had no existence. Then they were

politely bowed out. This display of spirit had a wholesome effect, but the confinement continued. An attempt to escape by bribing the guard failed, but was so far successful that a letter was sent to the Rooquor chief. Very promptly that excellent warrior despatched a strong deputation, which quickly brought Tien to his bearings. The mandarins were now glad to be rid of their captive, who, fever-stricken and sick at heart, lost no time in departing from Weisee.

Having now given up all hope of effecting his purpose, Cooper proceeded to retrace his steps to Hankow. One more chance seemed to offer itself when he met the Nepalese ambassador, who had previously offered to convey him to Lhasa on his way home. But the Goorkha was unable to renew his offer. The return journey was now full of incident, of which space forbids mention, and eventually, after nearly two years' absence, Cooper safely reached Shanghai, so far from being discouraged that he forthwith began preparations to make good the missing links in his route to India by starting afresh from the other end.

NOTE.—The author has to thank Mr. John Murray for permission to here quote from *The Travels of a Pioneer of Commerce*, by Mr. T. T. Cooper.

CHAPTER VII

THE STRANGE PEOPLE OF THE EAST INDIAN ARCHIPELAGO

FEW portions of the empire are more vaguely known to its citizens than those British possessions which are situated in the islands, great and small, of the East Indian Archipelago, lying east of the Malay Peninsula and north of Australia, and sometimes grouped under the convenient name of Indonesia. These countries are comparatively old in the history of discovery, but apart from the adventures, dear to our childhood, of Captain Cook and the other early explorers, little in the way of stirring events has happened to bring that part of the world under the notice of the everyday newspaper reader. British North Borneo, Sarawak, and British New Guinea are, as names, sufficiently familiar to many, even outside the ranks of postage-stamp collectors, but they lie off the beaten tracks of travel, and have few European visitors beyond hard-driven Government officials, missionaries, and busy traders.

The smaller islands, in many cases, still remain nameless

on the map. Recently, however, mainly owing to this outlandishness, these regions, now fairly peaceful under British rule, have attracted considerable attention from scientific men interested in the customs and characteristics of primitive tribes; from the students, in more precise language, of anthropology, which is concerned with the descent and different races of mankind, and of its allied sciences, sociology and psychology, treating respectively of man's relations with his fellow-creatures and the keenness and development of his senses.

In the year 1898 a small party, headed by Dr. A. C. Haddon and consisting of Cambridge men of science, went out, under the auspices of the University, to explore anthropologically the islands of the Torres Straits and, as far as time permitted, the portions of Borneo and Papua mentioned above. The work before them was the investigation not only of the customs and beliefs of the native tribes, but also of their mental and sensory capabilities. The following may be given as examples of the subjects with which they had to deal: powers of sight, hearing and feeling, colour-vision, sensibility to pain, memory, and ability to write, draw, or read.

In taking these severely technical observations they had the use of a well-equipped physiological laboratory, the first, Dr. Haddon claims, to be brought to bear upon a people only just emerging from perfect savagery.

With the official records of the expeditions we have, perhaps fortunately for ourselves, nothing to do. Sufficient for the non-scientific reader is Dr. Haddon's popular account of what was seen and done, which he has published under

the title of *Head Hunters: Black, White, and Brown*, a book brimful of interest from cover to cover. The title is derived from the peculiar practice, common to almost all the countries under review, of collecting and hoarding, as trophies or mementoes, the heads of slain enemies or of defunct relatives. The "white" hunters are not, as might be eagerly surmised, a newly discovered savage tribe of Caucasian origin, but merely our peaceful scientists themselves; the playful allusion being, of course, to their zeal in acquiring museum specimens.

The expedition reached Thursday Island, in Torres Straits, in April, and worked together, or in separate parties, for about a year. Its actual movements, however, are of no great importance as no consecutive narrative is required; and in selecting for notice here out of the embarrassing abundance offered by the pages of the book, the few topics which can be compassed by a short chapter, an endeavour has been made to choose those that have the most general connection with the various islands visited.

Thursday Island is a military station, commanding the narrow channel by which alone, owing to the innumerable coral reefs and islets, large ships may navigate the wide straits. It is also the centre of extensive pearl fisheries, which attract adventurers from all parts of the world, especially from Japan; a fact which gives it further notability as being the first British colony to feel the pressure of that expansive and energetic nation.

From Thursday Island the route lay to the Murray Islands, at the eastern end of the Straits. Here the

expedition set to work. The methods adopted were those common in scientific exploration. Each member—all were men in the forefront of their profession and recognised authorities—conducted his special branch of research and was ready to give assistance to another when required. Dr. Haddon himself was mainly concerned with social investigations, such as the customs and beliefs of the tribes—by far the most interesting side to the general reader—and it is with his personal experiences that we have most to do. The daily routine devoted the morning to solid technical work, such as taking measurements, experimenting in sense-action, and studying languages. Later, native friends would drop in, and all would gossip together on lighter subjects—rain-charms, ceremonial dances, bull-roarers, and such like. The natives were usually very ready to give information. Dr. Haddon says: "Several of the elder men used to come and talk to me at various times, but they came more regularly after we had witnessed the Malu performances and while the excitement about them was still fresh. . . . These good people enjoyed describing the old ceremonies. Often they brought me something that was formerly employed in their mysteries, or a model of it. When any action was described the old fellows jumped up and danced it in the room, sometimes two or three would perform at once. I always had a drum handy to be in readiness when they broke forth into song, and for the dance they took bows and arrows or whatever else may have been appropriate from the stock of instruments that was in a corner of the room. We had many interesting séances, and it enabled

us to get a glimmer of the old ceremonies that was most tantalising. If only we could have seen the real thing, how different would the description be!"

When sacred subjects were under investigation some subtlety and tact was required. Such information as they were willing to give was obtained independently from the different old men who had it to impart. The evidence of one would then be checked by submitting it for criticism to another, who would probably add something fresh of his own. Thus a useful emulation was aroused, which gradually brought to light all that was to be learned. Sometimes investigation was carried a step further. The ceremonies of rain-making, for instance, being to the fore, and some little professional jealousy having been kindled, two of the leading practitioners were persuaded to give a small rehearsal in pantomime. This led to even better things. "A couple of days later Gasu gave us a complete demonstration at the other end of the island, with all the accessories. Four large plaited cocoanut leaves were erected to represent rain-clouds; there was a blackened patch on each of these to mimic the blackness of a rain-cloud, and one or two pendent leaves imitated the falling rain. The four screens enclosed a small space in which a hole was made in the ground. The *doiom* was decorated with certain leaves and packed in a banana leaf with various minced leaves and numbers of red seeds; the leaf was filled with water and placed in a hole, the rain-maker all the while muttering the magic formulæ. During part of the performance a lighted brand was waved about, and at another a

bamboo clapper was rattled. Thus were simulated the lightning and thunder." The *doiom* is a small human effigy in stone, very precious. Poor old Gasu's passed, by purchase, into the hands of his examiner, and now doubtless adorns an English museum.

The Murray islanders are of the Melanesian stock, narrow-headed people. In the western islands of the Straits heads are wide, showing an admixture of other blood. This question of head-measurement bears closely on the work of the expedition, and will justify a brief explanation of the terms used. Taking the figure 100 as representing the length of a given skull; if the breadth exceeds 80, the head is called short; if it falls below 80, the head is long. Europeans average 78 and so are long-headed. We have that much at any rate in common with the Murray men. They are generally pleasant, sociable fellows, gentlemen in their way, and blessed with a sense of humour. Hard work is not in favour, as is natural with the happy possessors of a fertile land and a productive sea. "By-and-by" is the season held most convenient for doing what must be done. Some of the men take a desultory part in the pearl fisheries and the collection of bêche-de-mer, the sea-slugs of the coral reefs, dear to the heart of the Chinaman. Their plentiful leisure is largely occupied in practising string-puzzles of the cat's-cradle order, and in earnest top-spinning competitions. Christianity is well established; and the efforts of the missionaries have been very successful in destroying the influence of old superstitions.

Totemism, so prevalent elsewhere, does not obtain in Murray Island, but its place is taken by the cult of Malu, a legendary hero, which constitutes a sort of secret society or guild. Very interesting is the account of the reconstruction of the initiation ceremonies held in connection with this cult. These ceremonies, by which youths are admitted to man's estate, are observed throughout this region. Customs and details vary widely, but the following outline is given as being fairly general. When the hair begins to grow on the face, "the lads are secluded in a tabooed spot in the bush, access to which is strictly prohibited to any non-initiated person. Sacred emblems are frequently shown to the lads; these are often masked men who symbolise some legendary or mystical person or event. Usually a flat, thin piece of wood shaped like a willow leaf is shown to them; this is the so-called bull-roarer. It is fastened to one end of a piece of string, the other being lashed on to a stick. The apparatus is whirled round and round above the head of the operator, and according to its size and shape it makes a buzzing or a humming noise; the movement may be varied by violently lashing it backwards and forwards, when it gives rise to a siren-like shriek. The weird and mysterious sounds issuing from the bush terrify the women and children, who regard them as the voices of spirits. The secret is soon learnt by the young initiate, who is given a bull-roarer and warned never to show it to a woman or child on penalty of death. Whatever may be done, or shown, or told to the lads is to be kept secret by them, and by way of

emphasising this they are usually frightened in various ways or subjected to severe treatment."

Taboo is a Polynesian word signifying a restriction, or a forbidden thing. It is also applied to a person who is restricted from the use of a tabooed thing.

Some of the elder Murray men were induced to rehearse in full dress the actual ceremony upon the ground where they had been wont to hold it. The *Kersi* (lads to be initiated) having been placed in position, seated in a semicircle at the end of a long, double line of former initiates, "Suddenly the fearsome procession appeared at the other end of the avenue of men, and the three *zogole* (holy men) slowly marched with peculiar movements. They alone wore leafy girdles (it should be remembered that at that time the Torres Straits men invariably went nude except the performers of certain ceremonies). The head of the first *zogole* was covered with a ruddled turtle-shell mask, representing a human face, which had a beard of human jaw-bones; above the face were leaves and feathers, and hanging from it behind was a painted carapace of a turtle, the latter was supported by a long string by the second *zogole*. The third *zogole* bore a turtle-shell mask representing a hammer-head shark, on which was a human face; it was provided with human arms and hands, and decorated with leaves, feathers, and turtle-shell figures of birds, frogs, and centipedes. When the *zogole* came to the semicircle of *Kersi* they turned round and kicked out behind. They retired and advanced again, and then once more. The sacred words were uttered and the chant sung. The *Kersi* were

told the hidden name (of Malu), and they had to make a present of food to the *zogole*." Other ceremonies followed, after which the lads entered upon a long course of instruction in the rules of conduct, the customs of the tribe, and the traditions of the elders, remaining the while under various taboos. At the end they were recognised as men, and at liberty to marry.

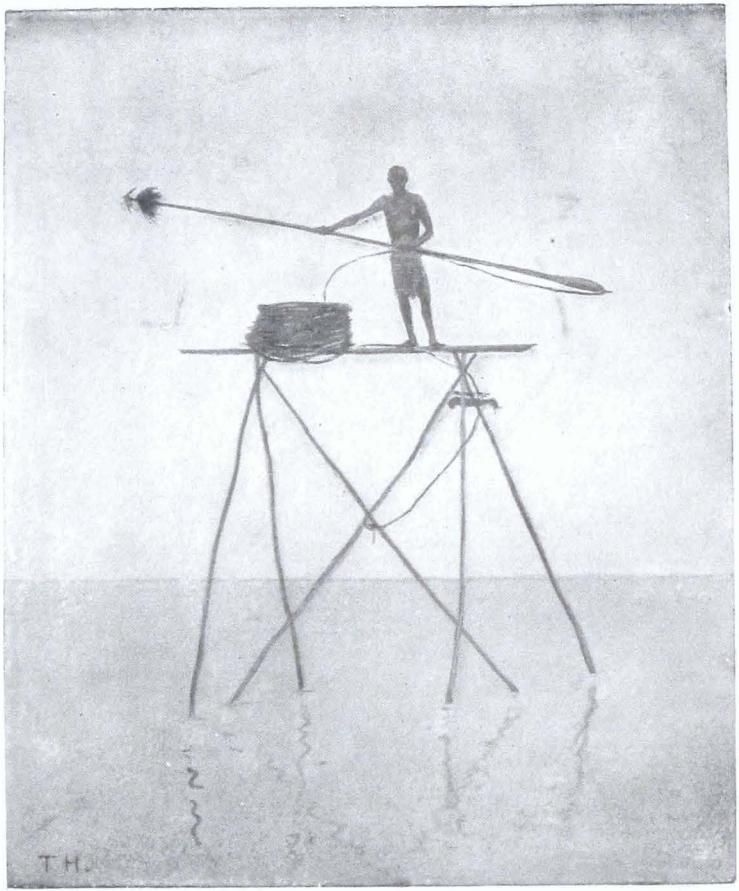
In Tut, a neighbouring island, initiation ceremonies are still observed. For a month beforehand the lads are kept in the *kwod*, or tabooed enclosure, out of sight of the women. It is not an altogether happy time for them, but violation on their part of the prescribed forms is punishable by death. "During the month of their seclusion the boys daily had charcoal made from charred cocoanuts rubbed into them; they might eat anything except fat, and were in charge of their mother's brother. During the day the boys were covered with mats, sewn together to make little tents; so that when the boys sat down only the tents were seen, and when they walked their legs alone were visible. The whole day was spent in the sacred camp. After sunset the uncles took the boys to a house set apart for them, and before sunrise, when 'the pigeon whistles,' they were marched back to the clearing. The old men taught the boys what they might and might not do as men. The code of morality, so far as it went, was very high, one quaint instruction being, 'you no like girl first; if you do, girl call you "woman!"' For it is the custom here for the women to propose marriage to the men." At the end of the period they were washed, decked out, and marched

back to the village to be rejoiced over by their female relations.

The tribes of Cape York, on the Australian mainland, seclude their initiates for a much longer period, and the ceremonies culminate with the knocking out of a front tooth of each of the lads. It may be assumed that an initiate is seldom sorry to have left his youth finally behind him; but the ceremonies are by no means mere empty heathen rites, but have their solid educational and social value.

The use of *zogos*—oracles for forecasting the future—is still common enough among the Torres Straits islanders. The Tomog *zogo* on Murray Island had been an oracle of fame in its day, but was found in a lamentable state of neglect. A *zogo*, it may be stated, is sometimes merely a place of divination, sometimes the shrine of a defunct hero, which if properly "worked" can bring desired events to pass. That of Tomog belonged to the former category and may be selected for description. "This famous *zogo* consists of a collection of stones, on each of which was formerly placed a large shell, usually a great Fusus or a helmet-shell; each stone with its shell represented a village or a district of the island. A little way off was a single stone and shell which stood for the whole island. Divination was accomplished by the voices and movements of birds, lizards, insects, or the appearance of natural objects. Anything that happened to the separate stone and shell concerned all the inhabitants of the island; but anything that happened to one of the grouped stones and shells related only to the man or men who live

A native of Waima, Borneo, clad in a dress of leaves and a mask. This is the official uniform in which he goes his rounds as a constable to see that no tabooed (forbidden) thing is eaten.



A platform from which the islanders spear dugong. The platform is quickly made of six bamboos lashed together and surmounted with the steering board of a canoe. The harpoon used is fourteen feet long, and ornamented with cassowary plumes, its upper end being attached to about forty fathoms of rope.

in the house or district represented by that particular stone and shell." By these means it was possible to discover who had laid a charm upon a sick, therefore bewitched, person. Witchcraft is very much the same all the world over. The news of the day might also be obtained in advance by those who cared to take the trouble. The party persuaded the old *Mamoose*—a dignitary ranking vaguely from headman to king—to give a private rehearsal. From the twittering of birds he foretold that a boat was approaching. Later in the day a boat duly arrived.

Other *zogos*, generally shrines, were useful for regulating the direction and force of the wind, or the movements of fish and turtles; others for ensuring good crops of yams or fruit, each having its special line of efficacy. A skull, properly prepared and decorated, made excellent *zogo* for the "smelling out" of thieves or spell-casters.

Mabuiag is another island of the straits which received particular attention. It lies to the west of Murray, and being less fertile is inhabited by a more energetic population, who are enterprising sailors and considerably more advanced in civilisation. Here our explorers were in touch with a people still under the influence of totemism, a subject of the greatest interest to anthropologists. Totemism may be defined as a very primitive stage of culture in which social life is bound up with and regulated by reverence for some natural object, such as a species of animal, bird, or plant. The system prevails throughout Australia and Polynesia, is very general among the North

American Indians, and occurs in several tribes inhabiting regions as widely separated as South America, Senegambia, South Africa, India, and Siberia. Traces are found in Europe, among the gipsies of Transylvania, for instance, and it was known to the ancient Egyptians, Greeks, and Romans. "Every tribe," says Dr. Haddon, "is composed of several divisions or clans, and it is the rule in Australia and in some parts of Melanesia for each clan to be intimately associated with at least one class of animals, plants, or natural objects. This animal, or whatever it may be, is spoken of as the totem of the clan or the individual, and it should be borne in mind that the totem is a species of animal or plant and not an individual one. Thus all cassowaries, and not any one particular bird, are the totem of the whole cassowary clan, or of each member of that clan."

The association between the man and the totem is vague, but, generally speaking, the totem is regarded as protecting the man, while the man respects the totem. Injury done to a totem is followed by death or disaster; thus a man whose totem is a turtle could not kill or eat turtle, except under desperate conditions. Some clans are unwilling to look upon, or even to name their totem. Where the totem is a plant, respect is shown by refraining from use of it for food, clothes, or house-building. For instance, the nupa-palm people will not use the leaves of that tree for roofing their houses, as is the custom, but make shift with sago-palm leaves. In some cases resemblance to the totem is aimed at by means of clothing or

painting, or the body is tattooed with its likeness. It is also used as a writer's signature.

The members of a clan regard as relations all outside their own tribe who have the same totem, and consider the bond even stronger than family ties. Thus a man may travel throughout the length and breadth of Australia and be assured of help and hospitality wherever he may meet with men of the same totem. Very important restrictions are placed upon marriage. It is a universal rule that no man may marry a woman of the same totem as himself, the penalty for breach of this law in Australia being death. Children as a rule inherit the mother's totem; but a wife, in many cases, acquires her husband's on marriage.

In the course of the sojourn in the straits, an extended visit was made to the opposite coasts of New Guinea, an island which we share with the Germans and Dutch. The people here belong to the eastern branch of Papuans, and do not differ greatly in manner of life from the western islanders. Tattooing is general, the bodies of the women being treated all over; but only the faces, and occasionally the arms and legs, of the men. Characteristic of this coast are the curious marine villages, built on piles driven through shallow water at some distance from the shore. They are the modern counterparts of the lake-dwellings of primeval man found in Ireland, Switzerland, and at Glastonbury, in Somerset. The land villages also are built on piles, ten feet above ground, and some of them contain houses perched high up on trees, the object being in every case security from raiding enemies. The same

principle of defence by piles is followed in Borneo also, where the houses generally accommodate a number of families, a whole village frequently residing under one roof, which may be well over 100 feet in length.

In November the party finally said farewell to the Torres Straits, and sailed by way of Hongkong and Singapore to Kuching, the chief town of Sarawak. Sarawak is a state in a unique position. It is an independent native state, under British protection only, but ruled by an English Rajah, and administered by a combination of English and native officials. Sir James Brooke, the late Rajah, came as a private individual to the rescue of the native ruler when things were going hard with him in 1839, and inspired the people with so much respect that he was appointed his successor in 1842. He in his turn was succeeded by his nephew, the present Rajah. The country is excellently administered, in the interests of its own people rather than of outsiders.

From Kuching Dr. Haddon made a three months' expedition into the interior, leaving the coast at Brunei, of which the name Borneo is a corruption, and travelling by canoe along the waterways followed by the head hunters on the warpath. The coast tribes of Borneo—Sea-Dayaks, Kayans and others—were famous as pirates in the earlier half of last century, and still are apt to raid the inland tribes in quest of heads. In the old piratical times the Malays, who were the leaders of enterprise, enjoyed the help of the Dayaks on easy

terms, taking the plunder themselves, while their allies were well content with the heads obtained.

It is in Borneo that the most interesting cult of the skull is found. The heads here collected are always those of enemies slain in warfare, usually in the course of raids organised for the purpose, and, like scalps with the Red Indians, serve to exalt the successful warrior in the eyes of the women. Further than this, the skulls are endowed with formidable powers for evil and for good, thus becoming treasured possessions of the fortunate takers, and the embodiment of their household goods. Properly housed, warmed, and fed, the skulls, or the spirits with which they are identified, will look after the owner's interests. If neglected, they know how to make their displeasure felt. They are kept in this wise: "Hanging from the rafters of the verandah in most houses are trophies of human skulls. They may be fastened to a circular framework, looking something like a ghastly parody on the glass chandeliers of our young days, or they may be suspended from a long board, which in one house that I visited was painted and carved at one end into a crocodile's head, and the board itself was suspended from carved images of men who represented captives taken in war. The skulls are smoke-begrimed and otherwise dirty, and interspersed amongst them are streamers of dried palm leaves, which all over Borneo are invariably employed in all ceremonies connected with skulls. Usually close by the skulls are pronged skewers on which pieces of pig's meat may be stuck, and short sections of a small bamboo, so cut as to form cups ready for the reception

of borak (a spirit made from rice), when it is desired to feast the skulls or their spirits. Below the chandelier of skulls there is always a fire, which is kept continually burning, for it is believed the skulls like to keep warm, and that if they are kept comfortable and their wants supplied, they will bring good luck to the house and ensure plentiful harvests."

After the death of the original owner, an opportunity is often sought for getting rid of skulls, as their beneficent powers are no longer exercised on behalf of their possessors. For this to be done with impunity ceremonies are necessary, as also when a head changes hands for any purpose. "When a skull is given to a friend the following ceremony has to be gone through. A living chicken is waved over the man who takes down the head, over the ladder, the basket or framework that contains the head, as well as over the skull itself. The owner talks to the fowl, telling it to explain to the head that they are parting with it to friends who will treat it even better than it was treated in its own house. That the new owners will feast it, and it must not consider itself to be slighted in the least degree. All then present join in a war-whoop. A piece of iron is taken, an old parang blade, or a spearhead, or anything made of *iron*, and the head and wings of the chicken are torn off with the iron, which thus becomes covered with blood. The hand of the owner of the skull, who is generally the chief or head man of the house, is next smeared with the bloody iron. This ceremony is called *wrip*, that is, life, and has for its object the prevention of harm coming to

the original owner. Finally, some of the wing feathers of the fowl are pulled out, and stuck into the framework or basket containing the remaining skulls."

A house-moving offers a good chance of disposing of useless skulls. Having been carefully kept in ignorance of what is going to happen, they are moved into a small hut close by and made snug over a fire. Here they are humoured and humbugged into the belief that all will be well, and kept in a good temper until the owners get clear away. The fire goes out and the poor skulls at last realise the situation. But it is now too late for action, and not knowing where to go, they moulder away into impotence amid the ruins of the hovel.

In Torres Straits heads are often those of relations, kept as mementoes. They are not difficult to come by, having lost much of their ancient value. In Mer an offer of sixpence apiece brought in a basketful. At Mabuiag a jew's-harp was a sufficient inducement.

After seeing many interesting sights and collecting much valuable information in the interior, the party reached the sea again at Baram, and a few days later sailed from Kuching for England.

NOTE.—The quotations made in this chapter are taken from *Head Hunters: Black, White, and Brown*, by the kind permission of Professor A. C. Haddon, the author, and of the publishers, Messrs. Methuen and Co.

CHAPTER VIII

THE UNEXPLORED PEAKS OF NEW GUINEA

FIFTY years ago, schoolboys, looking at their map of Africa, blessed the Dark Continent for an easy place to learn. A few names fringed the coast: inland nearly all was comprehended under the cheerful word "unexplored." Such in great measure is the case with New Guinea to-day. Its 300,000 square miles of territory, held by Great Britain, Germany, and the Netherlands, and now lying fallow, are destined in the course of the next half-century to enrich the worlds of commerce and of science to a degree that may to some extent be forecast by what is already known of very restricted areas. Whatever New Guinea may become to the trader, one thing remains sure—the extraordinary value of Papua to the man of science, particularly to the entomologist and the ornithologist. In the department of ornithology alone, we already know of 770 different species of birds inhabiting the mainland and the islands, which places it in this respect far above Australia, which, with a superficial area nine times greater, possesses less than 500 species in all.

The ethnologist, too, has in Papua a happy hunting ground; for the tribes on the fringe of exploration present wonderful varieties of type, and as the mountain

fastnesses of the interior are gradually opened up, there can be no doubt that rich material for the propounding of new problems and perhaps the solution of old ones will come to light. Language is curiously diversified: here you meet a tribe with a distinct speech, and camping near them for a time you learn the common currency of their tongue; a few miles further on appears another people, perhaps not greatly differing in type, but with another language altogether. It is in the statement "far further on foot," of course, that the main reason of this linguistic variation is chiefly to be found; for travel in the Papuan islands is extraordinarily toilsome, owing to the exceeding abruptness of the configuration, and the endless succession of almost razor-like ridges. Thus the tribes are confined to narrow areas. Long rough ascents and descents and devious windings are the portion of the wayfarer who wishes to reach some spot that may even be visible from his last halting-place. The following account of Mr. Pratt's adventures is given in his own words.

On the commission of several friends, all scientific enthusiasts, I and my son Harry, a lad of sixteen, left England in January, 1901, and sailed eastward on board the *Duke of Sutherland* to Thursday Island. Thursday Island, so small a dot in the Eastern Archipelago that the tiniest mark a geographer can make on his map is widely out of proportion to its size, rewards the traveller well for a visit. Although one can walk round the island in an hour and a half, the locality is full of interest, and the pearl fishery is very engrossing for the observer. The boats of the

fishing fleet afford a most picturesque accessory to the scene, and the harbour is full of life. Small boats dart about everywhere, and there is a continual coming and going. The large Chinese and Japanese steamers, of from 6000 to 7000 tons burden, are continually arriving at and leaving the Government wharf. The Europeans are most agreeable and hospitable. The sea round Thursday Island is a most wonderful colour—in parts emerald green and silver, deep blue varied with light yellow and brown, and everywhere perfectly clear. The tides, which at times flow with the rapidity of a mill-race, have been studied, but are not yet understood. They are tremendously erratic and very dangerous. Sometimes they run at the rate of seven miles an hour, and against this steamers can make no headway. The Torres Straits, indeed, as far as Cairns, are the most dangerous seas in the world. It is of course very warm in Thursday Island, but the heat is tempered by the most delightful sea breezes. I could have enjoyed a longer stay than twenty-four hours, but that was the limit of our vessel's call, and we left next day for Port Moresby, which we reached after a two days' run.

The approach to Port Moresby is dangerous owing to the reefs that encircle the coast, and accordingly great caution had to be used in navigating the ship into the harbour. The course lies east, then west along a certain known channel, and finally the navigator follows the coast for a few hours, when, rounding a promontory on his right, he catches his first glimpse of this anchorage. The Government post of Port Moresby, although pictur-

esquely situated among rolling hills which slope down to the water's edge, is in itself unpretentious enough—merely a collection of houses and offices of bare, galvanised iron, architecturally as insignificant as rabbit hutches. During the day the temperature resembles Hades or Aden, whichever may have the priority. Here the British official chooses to abide, although comfortable houses of sago, with thick grass thatch, cool on the hottest day, offering a delightful dwelling-place, might be had only a few miles distant. A paternal administration, however, prescribes galvanised iron, and there its servants swelter, patient and uncomplaining, after the manner of Britons.

Clustered about the Government buildings are various other buildings—the jail, which more resembles a pleasure-ground, shipping offices, stores, and the hotel. On the elevation at the farther end of the bay stands a Government House, a pleasantly situated bungalow, raised off the ground on five-foot posts. The best building in the place, as one might expect, is the station of the London Missionary Society.

Life at Port Moresby is not without its events, and one of the more noteworthy of its public spectacles, and one which I was fortunate enough to see on a subsequent visit, is the annual starting of the *lakatois* or huge sailing rafts, laden with pottery for trade in the western part of the possession.

Those who are familiar with the postage-stamp of British New Guinea must, no doubt, have often wondered what manner of strange craft is depicted thereon. The stamp bears the representation of a boat, or rather a raft,

carrying two gigantic sails resembling the wings of some weird bird, and the whole appearance of the vessel is one that arouses curiosity. This is the *lakatoi*, the remarkable trading vessel of the hereditary potters of Hanuabada, a little village not far from Port Moresby. The hamlet, with its neighbour, Elevada, is built partly on land and partly on piles in the water; but while the land part of Hanuabada stands on the mainland, that part of Elevada which is not aquatic is founded on an island.

TOWARDS THE UNEXPLORED

On January 1st, 1903, Harry and I left Port Moresby on board Captain Pym's vessel, the *Whaup*. This took us to Yule Island, and from that point we proceeded to Pokama, on the mainland. There we were met and entertained by Cavé, a hospitable Papuan woman, widow of Captain Williams, a trader. She has a very comfortable bungalow at Pokama, and keeps a small store, where she does business with passing traders, who are always welcome at her house. She also owns a small light-draught cutter, which brings sandalwood down from Bioto Creek, and this boat she is willing to let out to travellers. She also keeps up the beautiful gardens and fine mango trees planted by her husband, and she cultivates custard apples and a delightful fruit known as Soursop. It is the shape of a kidney and about the size of a pumpkin; within it is a mass of creamy pulp, surrounding black seeds. This pulp is most cooling, and it is accompanied by a pleasantly astringent acid juice, the whole fruit forming an ideal refreshment for the tropics.

From Pokama we went by canoe to Yule Island, where we halted at the Sacred Heart Mission, and then went on to Aruodaka, where we stayed for several days in the house of Mr. Russell. Mr. Russell himself was absent, but we joined him later at Moa, one and a half hour's row from Aruopaka, a voyage which we made in our host's whaleboat. From Moa we passed by way of Inawee, Inawa, and Inawabia to Aipiana, the Government station, where Mr. Russell entertained us for five days. In the curiously named villages just mentioned we tried to collect carriers, and at this juncture I sent Harry back to Pokama to bring on the goods we had left behind us, appointing to meet him at Bioto. During his absence Mr. Russell and I went to the southward through other villages, Rarai and Nara, and picked up twenty more men. On our way through these southern villages we met Captain Barton, then the head of the native armed constabulary, and now the Administrator. With him I spent one night, and then pushed on to Bioto with my thirty bearers, who, as yet, had nothing to carry. To perform the journey adequately I really should have had a force of seventy. At Bioto we enlisted a few, but our numbers were still very insufficient. At 4 a.m. in the morning after my arrival at Bioto, Harry rejoined me, and during that day we began sending the luggage by relays to Epa. Harry had been enabled to bring all our remaining goods with him, through the kindness of the Rev. Mr. Dauncey, who had lent him his whaleboat. With the help of the Chief Constable, who gave us the use of his canoe, we got the baggage along to Oofafa, from

which point I was assisted by my old friend Mavai, who sent down carriers from Epa to take the stuff up to Ekeikei. At Bioto the mosquitoes were at this time a terror, and were so thick that one could hardly put food in one's mouth, or take an aim with a gun.

While we passed through Epa on this occasion, I noticed specially the extraordinary method of water supply there in vogue. A spring which supplies the community was distant some twenty minutes' walk downhill, and twice every day, in the morning and just before dusk, the women went down to draw water. This they carried in long bamboos, measuring at least twelve feet. The partitions dividing the sections of bamboo had been knocked out with a long hard stick, the bottom one was allowed to remain, and these light but unwieldy receptacles, capable of holding about thirty-six pints each, were taken to the spring and filled. The open end was plugged with a green leaf, and the women carried the vessels uphill held slantwise over their shoulder. The bamboo was set up against a shady wall, beside the house door, and the method of procuring a small supply of water was comical in the extreme. Whenever you wanted a drink two people had to officiate: a native took hold of the bamboo by the lower end, and you proceeded to the other. It was then gingerly lowered towards you, for the greatest care had to be taken not to tilt it too far, otherwise more water than you wanted would have come out with a rush and drenched you.

On my reappearance at that village I was very heartily welcomed by the chief. I found him busily engaged in

hunting the cassowary and the pig, and generally keeping up his reputation of a great sportsman.

During this visit to Mavai, the excellent chief, who kept fowls, presented me with two eggs; these we boiled with lively anticipations of a treat, but we broke the shells only to discover that the eggs were of a remote antiquity. We passed them on, however, to Ow-bow, who received them with gratitude, for he regarded chicken in this form as a very great delicacy indeed.

I purchased some sago from the chief, and when we got bearers together I started for Ekeikei. One day's journey brought us to our destination, which was situated fifteen hundred feet above sea-level, on the foothills of the Owen Stanley range. This point I had already selected in my mind as the scene of my future labours, and I at once set about building a permanent camp. I chose the site in a part of the forest overlooking a fine valley, and we set to work speedily, felling the forest trees to make the necessary clearing. It was a big business, but I intended to erect permanent structures, which were to be built large enough not only to serve for scientific work, but as a depôt for explorations to other districts. The house and two collecting verandahs were all in one building, one verandah facing the forest and the other the valley, so as to permit of work being carried on whatever the direction of the wind. The whole structure was built on poles six feet six inches off the ground, so that my natives could shelter, sling their hammocks, and take their meals below. This work took us three weeks, and in it we were assisted by Mavai's people, who were helped by the villagers of the neigh-

bouring chief, Kafulu. These came in to lend a hand for the sake of tobacco and other trade articles they needed.

The best thatch to be obtained in New Guinea is the sago leaf, and of this the natives make roofs that are watertight and very durable. At Ekeikei we adopted this method. Along the rafters of our house we ran horizontal bamboos, and instead of a ridge-pole roof we had two of these bamboos running from end to end a few inches apart. The frond of the sago leaf which we used for this purpose is at least four feet long; it measures six inches at the base, and tapers to a point. To begin the thatch one takes the leaf and bends it two-thirds away from the apex. One starts from the bamboo horizontal that lies nearest the eaves, and hooks the leaf over, laying the pointed end out. On the next higher bamboo one hooks over another leaf, similarly folded, so that its long pointed end far overlaps the other, and so on until the ridge of the roof is reached. The operation is thus repeated until the whole roof is thatched. The space between the two parallels which form the ridge-pole is finally covered with grass laid thickly across and across. The sago leaf is grooved laterally, and forms, as it were, a natural water-spout for carrying off the rain.

So durable is this roof that after an absence of five months we found that our Ekeikei house was still water-tight. This thatch is, however, a great harbourage for cockroaches, and there must have been millions of them in our house. At night we could hear them rustling among the dry leaves. I could not ascertain that they had done

any actual damage, and they had the grace not to fall down on us.

As soon as the camp was finished we settled down to our old routine of work, and for a time all went smoothly. But suddenly a cloud loomed on our horizon in the shape of our neighbour Kafulu. This worthy, whose village was an hour's journey off, had often visited the camp while the building was in progress. He was a very low type of Papuan, with a receding forehead and a face altogether ape-like. After his people, who helped me in my building operations, had been paid off, I did a little business with the chief himself, and ordered sago stalks for wattling the sides of the house. For these I paid in advance, but the sago was not forthcoming. I made no complaint at first, and this probably deceived him into thinking I might be treated with further contumely, for he suddenly began to threaten my boys, until at last they would no longer venture out into the forest to collect. Accordingly I sent my trusty advocate Ow-bow and his wife down to Kafulu's village to know the reason why he did not deliver the sago, which was several weeks overdue. Ow-bow was allowed to take a gun with him, but no cartridges, and his empty weapon evidently was not impressive. My emissary's experience was painful: Kafulu did not take his life, but he took his effects. Now, every Papuan carries with him as his most cherished possession a little net-bag, containing a charming collection of oddments dear to the savage mind —his knife, tobacco, bamboo pipe, matches, which he had earned, betel-nut and gourd, and little trophies of the chase. All these Kafulu took from the unfortunate Ow-

bow, as well as his blanket, his dogs'-teeth necklace, and other ornaments. Thus bereft, Ow-bow executed a strategic movement to the rear, and returned to camp with his tale of wrong. Kafulu then sent in a polite message informing me that he had no intention of sending the sago, and further, that I was not to shoot bird, kangaroo, wallaby, or any game around my camp, for they were his animals; otherwise he would burn the camp and kill us all.

As matters stood thus, I considered that greater precautions were necessary, especially as I knew that Kafulu had recently broken into and robbed the mission house at Ekeikei, for it was more than likely that a treacherous spear might, in the darkness, penetrate the thin sago walls of our house, and perhaps find its billet. We accordingly built around our beds an inner screen of one and a half inch bamboo poles, and even though a missile had penetrated the thin sago walls, it would have been stopped by this barricade.

Matters did not improve, and accordingly, taking Harry and Sam with me, I determined to go down and try what a little plain personal dealing could accomplish with our agreeable neighbour. I found him in his village, sitting apart, smoking the bau-bau, and extremely surly. He gave us no greeting, in fact took not the slightest notice of us, and continued to smoke stolidly. We sat down, and I at once opened the affair, Sam and Harry acting as my interpreters. I told Kafulu that unless he sent the sago at once, and returned Ow-bow's goods, it would be necessary for me to bring pressure to bear on him. This

was continued for three-quarters of an hour, entirely on my part, for it was not until that time had elapsed that Kafulu deigned to reply. He then remarked that he did not want me in the neighbourhood, and that he could not answer for it that his villagers would not wipe us out. At the end of an hour he showed some signs of relenting, but the victory was not yet won. The parley still continued, and Kafulu resumed his pipe, whereupon I gave him some tobacco, which he took without thanks. At the end of three hours certain arguments, which I thought proper to use, prevailed, and he produced some of Ow-bow's goods. Ow-bow remarked that that was not all, whereupon Kafulu promised to send everything, to deliver the sago, and also that he would not frighten our collectors any more. With this assurance we shook hands upon it and I returned to camp.

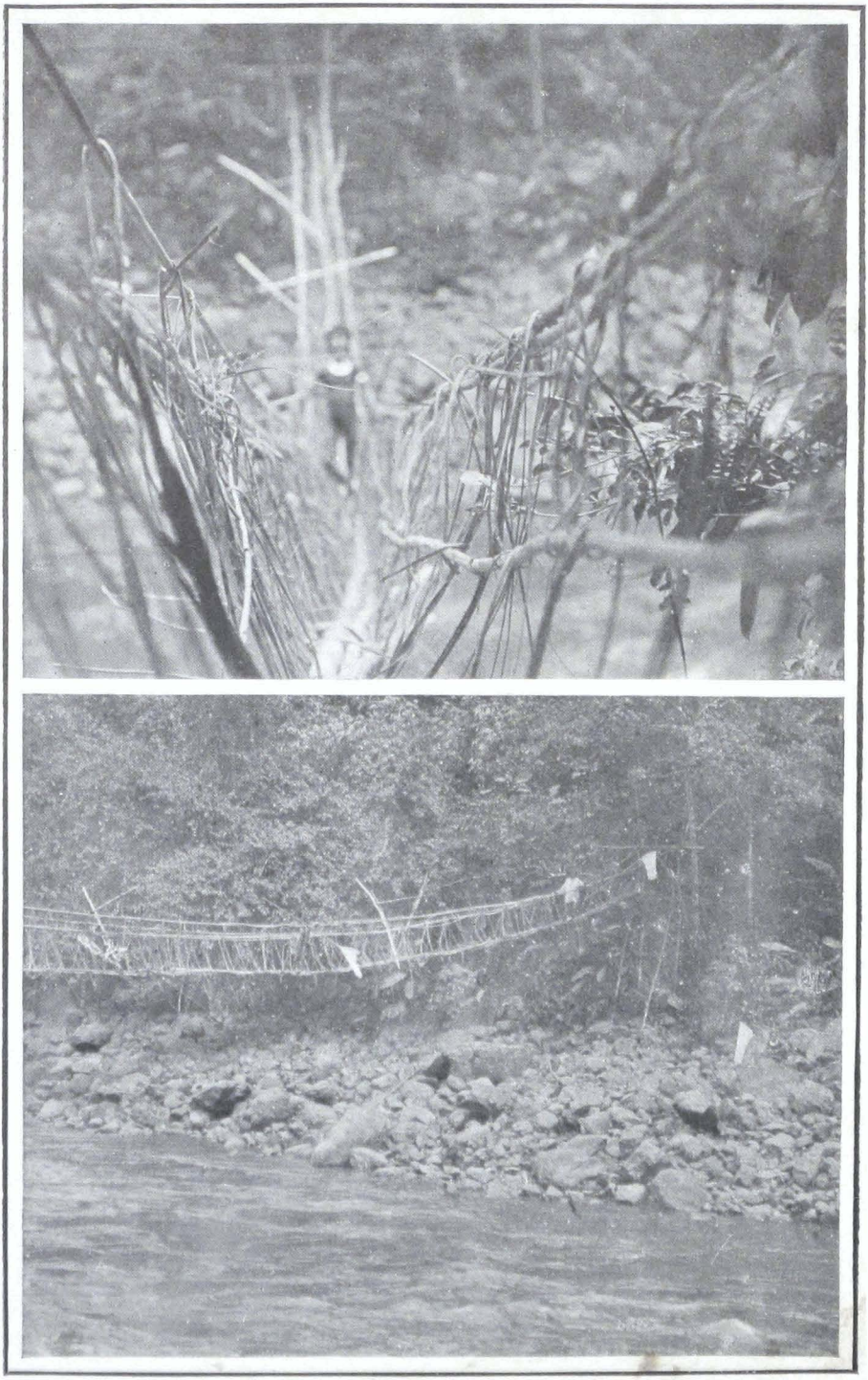
Two days after the sago arrived, and in four days the whole of Ow-bow's possessions were returned. They were brought in by some of Kafulu's villagers and handed to their owner without comment. Thereafter, so far as I could see, Kafulu lived a sober, righteous, and godly life. I am not sure, however, although he committed no overt act of hostility, that he was not the instigator of some trouble which I had at a later period with the Madui people.

During our stay at Ekeikei we experienced an earthquake shock, not great, but sufficiently alarming. There were two distinct shocks, which shook the house violently, and the phenomenon was peculiar inasmuch as it was not heralded by any preliminary rumblings as is usually the

case. Many of the other atmospheric signs usually accompanying an earthquake were, however, present. There was a tremendous and oppressive heat with death-like stillness; the skies were inky black, and there was a perfect deluge of rain, so heavy that it could easily have been described as pouring down in bucketfuls. Then the heavens opened with what seemed to be rivers of lightning, for the discharges resembled great main streams with thousands of fiery affluents, and all round us the thunder crashed terrifically, seeming at times as if it were inside the house. For three-quarters of an hour there was no cessation of the din. A tree just below our verandah was struck and split from top to bottom, but fortunately no one was injured.

After the worst of the storm had passed, a fierce hurricane came, tearing up the valley which our camp faced. We heard it roaring long before we felt its force. When it came it blew off some of the thatch of one of our buildings. We were, to a certain extent, protected from its full force by the large trees around us, and at the same time we were saved from the danger of falling trees, because, with a view to the emergencies of such storms, we had taken care to fell all the larger trees for a considerable distance around our camp. The effect of the oncoming wind heard at a distance had another weird parallel in the onset of rain-storms, for we heard the rush and patter of a distant shower long before it was actually raining at our camp.

At Ekeikei were swarms of wasps that haunted the low bushes, and concealed themselves under the leaves so



1.—LOOKING DOWN A NATIVE HANGING BRIDGE.

2.—A SIDE VIEW OF THE SAME BRIDGE.

cunningly that the traveller did not perceive them till he was actually upon them. Their bodies are a dark yellowish brown. At the least disturbance they all rise together in a buzzing crowd and take vengeance. The sting is severe, but the pain fortunately does not last long. It dies out in six or seven minutes, leaving a red lump which gradually subsides.

AMONG THE UNEXPLORED PEAKS

From Mount Kebea to Mafulu it was a five days' journey along the most rugged, toilsome, and difficult path. At one point one has to traverse a ridge which turns in a half-circle, and at the very top it is scarcely more than six inches wide, sheer precipice running down on each side. The dangers of the road were, however, somewhat compensated for by the magnificent view which one could enjoy from that point, and a butterfly collector had also something to reward him. As we rested there, after having passed the most dangerous part of the ridge, along which we had to crawl on our hands and knees, I saw some of the rarer *Papilios* in fairly large numbers. Unfortunately, they were all rather worn specimens, and of no value for the collecting-box, and I was sorry I was not there earlier, so as to have captured these butterflies when they had freshly emerged from the chrysalis. They measure about three inches across from wing to wing, and are of a most brilliant pea-green, shot with a lovely mauve sheen on the under wings. The descent was very, very steep, especially the last portion of the road, where it descended abruptly to the creek. We had to hold on

by roots and vegetation, and to look most carefully after our footing, for a false step might have sent us down a precipice, falling sheer for eight hundred feet. But for the support of the growing things we could not have made the descent at all, and the marvel was how our carriers managed it with their heavy loads. They seemed, however, quite unconcerned, and took no notice of the dangers besetting them. They would never think of lightening or setting down their loads, but moved on in a zigzag, catching hold of the creepers as they went, without effort. The bed of the creek, when we reached it, we found to be full of boulders. While my men took a bath, I examined the gravel in the river-bed, for it looked tempting for the mineral prospector. By way of experiment, and to pass the time, I washed out a panful or so of gravel, and noticed a few colours in the sand that indicated the presence of gold. It is not improbable that the prospector who worked that creek would find considerable trace of mineral wealth. Here I saw the indigenous bread-fruit, about the size of a cricket-ball, and full of kernels smaller than a chestnut, only with a thinner rind, and of a chocolate rather than a red-brown colour. The natives boil it, and we found it floury and very palatable, though slightly bitter. The Papuans are very fond of this fruit when they can get it.

We ascended, by way of one of the two villages known as Foula, for four hours, the climb being all the way through dense forest soaking with the humidity of the atmosphere. Even the hot sun seemed scarcely to affect the prevailing damp. The rocks which beset our

path were covered with lovely-shaded begonias, ferns, and trailing creepers, intermingled in richest profusion of golden tints. In the early morning the forest is alive with bird-life. The trees are of strange magnificence, particularly the mountain pandanus, with its aerial roots, which cover an immense space and all converge into one stem sixty feet above the ground, whence the trunk runs up perfectly straight. Around us everywhere were also tree ferns, some of them rising to thirty feet in height, and besides these there were the enormous *Lycopodiums* with leaves ten feet long. These luxuriant forms of vegetation were thickly clustered upon the trees, and some of the masses must have been of enormous weight. They displayed a glorious profusion of scarlet, which had taken full possession of its supporting tree, for far above the domed mass of this superb parasite one could see occasionally large clusters of brilliant blossom here and there. More humble, but still very beautiful, was a little fern, similar to our Parsley Fern, which was distinguished by an exquisite iridescent blue all over the upper side of the leaf, while on the under side those fronds that were in seed showed a most brilliant golden yellow. Parrots great and small flashed about us, and now and then we caught a glimpse of the white cockatoo with the yellow crest that is found all over New Guinea. As we passed among the feathered colony all these birds set up a tremendous screeching. The cockatoo, as I had occasion to know at a later period, can, when wounded, bite most cruelly. Of animals we saw little, for the inhabitants of this region are mostly arboreal and noc-

turnal. There are several species of the smaller animals, including the tree kangaroo, of which I wished I could have secured some specimens. These are born very imperfect, and are placed in the pouch; when they are once there the mother squeezes the milk into their mouths.

We found the village of Mafulu very small and the people extremely shy. One or two men were about, and the women were at work in their gardens. We sent on some of our men to discover the best possible camping-place, a work of considerable difficulty, for there are no plateaux in the Owen Stanley range, and the contour of the ground, as I have already indicated, is terribly abrupt. In fact, when one travels for some weeks in these regions, a peculiar habit of walking is acquired, which is somewhat equivalent to a sailor's sea-legs. This acquisition the traveller does not find out until he returns to low, flat ground, when he suddenly realises that he is stumbling at every step, and some practice is required to recover the ordinary method of locomotion, and he has to break himself of the habit of lifting his knees almost to his nose. About an hour's march from the village the men discovered a fairly level spot, and by the time we came up they had, with axes and knives, begun to cut a clearing of the undergrowth to enable us to pitch our camp. We set up our own fly-tent and the natives' two tents and built a large fire, for it was very cold, and the boys were beginning to feel the climate of that high elevation. Indeed, during our whole stay at Mafulu we felt the stress of the climate severely. That first night

was very chilly, and it was necessary to serve out blankets to the natives in order to enable them to withstand the cold. They slung their hammocks on sticks or trees, sometimes one above the other, and close to these they built large fires and kept them going during the night. The sky at night was clear and starlit, but the morning brought clouds, and mists enveloped the forest, often accompanied by heavy rain that made the place most depressing. The view was entirely shut out; everything was dripping; our clothes were very soon saturated, and the whole situation was most uncomfortable.

The humidity of that region was proved by the fact that the under side of the leaves of various plants was covered with moss.

The day after our arrival we began the building of a proper camp. We felled trees, erected a stockade and also a platform some little distance above the ground; over this last we threw the fly-tent, making a floor to it of split bamboo. Inside the tent we arranged to have a fire in the native manner. We put down a wooden frame, inside which we laid earth closely patted down to form a hearth in the Papuan style. After building our abode we had to discover another spot where we could carry on our work at night. When this was found a further task awaited us, for the forest came so close that we had to open up a space to enable our lamp to shine out and thus attract the moths. To do this we had to fell more trees, and the precipitous nature of the ground rendered our task all the harder, for once when we had allowed a large newly felled trunk to slide, it got out of

hand and careered three or four hundred yards down the precipice, taking other trees with it. Finally, however, we managed to open up a gap towards the camp, which left us an excellent clearing for scientific purposes. Here we built our collecting verandah, and thither we repaired every night, a little journey requiring some self-sacrifice, for as we went leeches attacked our feet and legs unmercifully.

We had to do a good deal of our work unassisted, for our natives were not willing to accompany us, as they feared the Mafulu people. We knew perfectly well there was some risk, and never went up to the verandah without taking our revolvers. As we worked there through the small hours our position was brilliantly lighted up by our lamp, so that, had the Mafulu people wished to do so, they would have had every opportunity of taking a good aim at us. Fortunately, however, they did not realise that while our lamp made us very visible to them, it rendered them entirely invisible to us, and although we felt sometimes rather uneasy, we never received any unpleasant reminder in the shape of a hurtling spear. Had they known, however, how entirely we were at their mercy, we might not have escaped.

As we pursued our collecting here, it was interesting to note the Alpine signs in insects and flowers. On the trees grew a very fragrant rhododendron. Moths were plentiful, but butterflies were not, for everything in this dense forest was struggling for light, and the butterflies had accordingly retired to the tops of the trees. Here I counted at least twelve different species of paradise birds.

We had not long been at Mafulu when we were faced with another trouble. Our food supply began to run low. We found that the tinned provisions had been tampered with, and suspected native thieves; our suspicions one day being confirmed, when our dog Yule brought in from the forest two empty meat tins which had been broken open with the axe. This evidence was incontestable, for we ourselves always used the tin-opener. Of course, when we taxed our Papuans they were ignorant of the whole affair. This theft did not improve our larder; meat ran out, we had very little tea and no sugar, only a scanty supply of flour, and, worst of all, no salt. We were accordingly dependent on sweet potatoes and yams, which we purchased from the Mafulu people, and occasionally a few bananas were obtainable. The boys soon began to grumble about the cold and lack of food, but the real reason of their discontent was, of course, fear of the Mafulu people. Every day deputations waited on me and threatened to leave. It was evident the discontent was stirred up by two ringleaders, so we found out who these were and talked to them very severely, telling them they might go; but two men would not dare to venture back to their own village through a hostile country, so, of course, our permission to leave was not taken. These troubles were very annoying, for we wanted to remain as long as we could, as we were getting admirable specimens, but about the fourteenth day of our stay matters had come to such a pass that we had to give the men a definite promise that we would leave in a week.

With such a state of things constant vigilance became necessary, and we had to divide the nights into watches. My man, Sam, would take three hours, and then I would take three hours, and some of the natives were always awake for fear of other natives. It was very lonely in camp, but we passed the time smoking and watching a few sweet potatoes baking in the embers. As our own fellows were disaffected, it was necessary also to keep them under constant observation. From the tent we could watch their quarters, and Sam made a bamboo bed in the men's shelter. They, poor fellows, had rather a rough time of it, apart from their fears and discontent, for one night a tremendous deluge of rain swamped their quarters. Next day they went into the forest and cut a large quantity of bamboo leaves, with which they made a splendid rain-tight roof about six inches thick. As it would have been a pity to have left without doing our best to get specimens of the paradise bird, we sent all our shooting boys away and allowed them to take a tent with them. The long-tail paradise birds frequent the pandanus trees when they are in seed, and when the shooters found a tree in that condition they would camp near it and lie in wait for the birds. While this little expedition was out, Sam, Harry, myself, and a boy remained alone in considerable anxiety, for while the guns were away none of us had any sleep.

I cannot say we had any actual threats, but the country round about us was disturbed, and great numbers of the Kabadi people, who had been to trade with Mafulu, and were returning home, began to stream

through our camp. They came through in strings, at intervals of an hour or longer. Some of them carried pigs that they had received from the Mafulu people after dances and entertainments. These companies consisted of men, women, and a very few children. Several of them were painted as for a festival, and they always passed through the camp as quickly as possible, taking no notice of us. The Mafulu people used to visit us a good deal with the ostensible purpose of trading, but they always took care to come armed with spears. This I did not like at all, so I directed them to lay down their arms before they entered, and if they came to visit me after dark, I said they must light torches and hail me from the edge of the clearing as they approached. This they did, but they seldom came at night after I had put this restriction on them. The few times, however, that they did come with their torches, the sight was weirdly picturesque as the lights came glinting through the trees and then congregated at the edge of the clearing, the flickering glare throwing up the lithe, bronze figures of the warriors into firm relief as they stood there waiting for permission to enter the white man's enclosure. They seemed to have a lot of intimate conversation with our people, although only one of our men knew their language. They were, however, content to do their talking through the interpreter.

Before we left, our food had practically run out and we were feeling the pinch very badly. Both Harry and I were growing extremely thin, and we were always taking in reefs in our belts. As regards weight, however, we

were in fine walking form. The nerves of my people got no better. Sometimes they would hear the Mafulu people calling, and then they would be on the *qui vive*, thinking something was about to happen; they were, in fact, like men living on a volcano. Before we left we were in such stress that we were compelled to try bird-of-paradise soup; it was truly abominable, and after the first spoonful we got no further.

All our things were packed, and Harry and I were inside taking the fly-tent down, when suddenly we heard a terrible uproar among the carriers. I rushed out, but by the time I got into the open I found one of the native houses in flames, and in less than ten minutes the whole camp was ablaze. I immediately demanded of the boys what they meant by this act, but they seemed to look upon it as a great joke, much as youngsters at home would regard a bonfire. It is not improbable that their object was to compel me to go, for the previous day my shooters had brought in twelve paradise birds, at which I had shown great delight, and they probably thought I should be tempted to prolong my stay. It is just possible that I might, for the last days were the richest we had so far as the capturing of birds and specimens was concerned. When the camp was still roaring up in flames we departed with our few remaining followers, the main body having gone on already with the chief part of the load. One thing that makes me sure that the firing of the camp was deliberate was that the outbreak occurred in two or three places simultaneously.

We returned to the coast by the same route by which

we came. After paying off our carriers, the mountain people went away with very happy faces, and bade us good-bye, cordially hoping that they would see us again, and saying that on my return, if I sent for them, they would come down to the coast and carry me up-country. Some of them even wept as they took leave, and I must confess that I was genuinely sorry to part from my warm-hearted, good-natured followers, who had up to the last served me faithfully in spite of occasional fits of refractoriness, which, after all, were easy enough to understand. It said a good deal for them that they followed the unknown white man as cheerfully as they did.

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