ALEXANDER MACKENZIE, ESQ.
(*From his Voyages . . . through the Continent of North America*)

[*face p.* 186

of North America at its greatest width, in spite of the most serious physical obstacles and constant liability to attack by the Indians. Reading his modest account, one admires the courage, tact and patience he displayed in his dealings with his own followers, and with the Indians, hostile or friendly, with whom he was brought into contact. In view of his splendid achievements in exploration Alexander Mackenzie may be considered worthy of the highest place among the great explorers of North America.

This brief survey of the chief explorers of North America may fittingly be concluded by an account of the discoveries of Captain George Vancouver. The finding of lands abounding in fur-bearing animals brought ships of many nations to the north-west coast of America. The Spaniards were especially active, and despatched expeditions to examine the coast near Nootka Sound and the Strait of Juan de Fuca, which was reported to lead to the Atlantic. They seized the British post at Nootka Sound, whereupon Great Britain insisted on restoration and indemnity. In the event, Spain yielded, and Vancouver was despatched to effect a settlement of the dispute with Spain and to examine the coast for the "Strait" which still loomed large in the mind of Europe.

Vancouver, who had accompanied Captain Cook on his third voyage, started from Falmouth in command of two ships in the spring of 1791, and sailing by the Cape of Good Hope, struck the south-west coast of Australia, which he carefully surveyed for some 300 miles. He reached the coast of America a year after leaving England and spent three seasons in surveying it from 39° 30′ N. northwards. The Strait of Juan de Fuca, with its complicated system of channels and inlets, was surveyed with a thoroughness unexampled in voyages of discovery, and Vancouver was finally able to report: "I trust that the survey will remove any doubt and set aside every opinion of a North-West Passage." Vancouver also surveyed the Strait separating the island called after him from the mainland and, although his work received little notice at the time, his name is now honoured as that of a great surveyor and a worthy successor of Captain Cook.

* * * * *

Exploration in South America, compared with the great discoveries of the *Conquistadors*, struck a minor note during the period under review. The struggle for the valley of the Amazon was the most important event, as it led to consider-

able activity on the part of the Portuguese, while the Spaniards also took a hand in the game.

In 1616, alarmed by the creation of Dutch and French settlements on or near the delta of the Amazon, the Portuguese despatched an expedition from Pernambuco and founded Para. In 1637 Pedro Teixeira led an expedition up the great river. He moved very slowly in order to survey the river and to note important branches, which were, in many cases, rivers of considerable size. As a result the voyage to Quito took ten months. There orders were received from Lima —Portugal did not recover her independence until 1640— that Teixeira should follow the same route back to Lima to perfect his survey. On the return voyage, the Portuguese leader solemnly took possession of a certain site in the name of King Philip IV, and set up a delimitation mark between the Spanish and Portuguese areas. This Act of Possession caused much bad feeling between the Spanish and Portuguese, owing, in part, to the ignorance that was displayed as to the exact locality of the boundary memorial. Indeed the question was not finally settled until 1771.

The great explorer of the upper reaches of the Amazon was Samuel Fritz,[1] a Jesuit of Bohemian origin, who converted the Omaguas and other Indian tribes to Christianity, and spent nearly forty years among them. He also made journeys to Para in one direction and to Quito and Lima in the other, these important explorations being embodied in a map which was published in 1691, and was of considerable geographical value. The Omaguas he describes as " wear-their forehead flattened and level, like the palm of your hand, and of this they are exceedingly proud; the women especially, to such an extent that they jeer at the women of other tribes by saying that they have their head round like the skull of a savage from the forest ". The Father's account of his illness during the flood is most moving:

> " As I was staying in this village, already almost wholly inundated, in a shelter on a roof made of the bark of trees, I fell sick of most violent attacks of fever. . . . In the daytime I felt somewhat easier, but spent the nights in unutterable burnings, as the river, though it was but a hand-breadth from the bed, was out of reach of my mouth, and in sleeplessness caused not only by my infirmities, but also from the grunting of the crocodiles that all night long were roving round the village, beasts of terrible deformity."

[1] Vide *The Travels of Father Samuel Fritz*, edited by the Rev. Dr. George Edmundson (Hakluyt Society), 1922.

Fritz was worshipped as a Saint by the Indians, and was a splendid type of the Jesuit missionary explorer, whose services to discovery have been so remarkable in every continent.

CHAPTER XXII

AMERICA: THE FINAL PHASE

"We had to pass where no human should venture. Steps are formed like a ladder by poles hanging to one another and crossed at certain distances with twigs, the whole suspended from the top to the foot of immense precipices, and fastened at both extremities to trees and stones."

SIMON FRASER.

"South America is full of amazing romances, of unknown rivers, lakes, and mountains, of unknown races, of riches still untouched, almost beyond imagination. Almost without exception the savages are hostile; they are very numerous and they use poisoned arrows. For years, civilized and savage have shot one another at sight."

COLONEL P. H. FAWCETT.

"Brazil is like the book of Genesis. In the begining there was forest. On succeeding days, gamblers who dreamed in millions said, 'Let there be cocoa, rubber, coffee, cattle.' The red earth responded with a prodigality that shook the scheme of creation."

ROSITA FORBES.

THE successors of Mackenzie were men of great determination and courage, and Canada was such a vast country that there was plenty of scope for their journeys of exploration, which, like those of Mackenzie, were mainly based on the desire to open up new areas to the fur trade. Among the stories which thrilled me as a boy was the descent of the terrible canyons of the Fraser River by its explorer, which stands out, among other feats of the period, for the indomitable courage that was displayed alike by the British leader and the hardy *Voyageurs*.[1]

Simon Fraser joined the North-West Company as a youth of sixteen in 1792, and for several years travelled in various parts of the West. In 1805 he founded a post on McLeod Lake, and in the following year, accompanied by John Stuart, he explored the headwaters of the Fraser River, discovering various rivers, lakes and streams which united to form the great waterway. In 1807 he founded Fort George at the point where the Nechako joined the Fraser River, and from

[1] Vide *The Search for the Western Sea*, by L. T. Burpie, 1908.

this post he started on his great adventure, believing that he was exploring the Columbia River.

Almost immediately dangerous rapids were met with. To quote Burpie, " the channel was contracted to forty or fifty yards, and through this narrow gorge the immense body of water rushes turbulently, its foam-crowned waves dashing hither and thither against the rocky walls ". Five picked men manned a light canoe, but " only for a moment could they control her. Over the first cascade she rode in safety. Then the men lost all power. Drawn into an eddy she was whirled about like a reed . . . surging round for a time, she flew out into the current, and finally she was forced against a low, projecting rock and the men sprang out." It was necessary, if the baggage was to be saved, to haul everything up the perpendicular bank. Steps were cut with daggers, and, with infinite risk and toil, the canoe and the baggage were hauled up the cliff. The natives advised him that the river lower down was impracticable for navigation, but Fraser was determined to carry out his instructions to the letter. At the next rapids, he took the desperate expedient of letting empty canoes float down them, and this was accomplished without loss. But carrying packs weighing some ninety pounds was terribly exhausting, while moccasins wore out in a day.

The crux of the voyage was a canyon where no portage was possible, and so the very serious risk of shooting the rapids with fully loaded canoes was run, and safely accomplished. Finally, Fraser perforce left his canoes, and, each man shouldering a heavy pack, started off on foot. Fortunately another section was navigable by canoes, which Fraser was able to hire, albeit there were dangerous eddies. At last he reached the section which was served by the tide. Here the party met with hostility, as the sea-coast Indians were enemies of the river Indians. The intrepid Scotsman finally came in sight of a bay of the sea where the party halted, having accomplished their mission. They had run out of provisions, and in view of Indian hostility, Fraser reluctantly decided to take advantage of the flowing tide and returned upstream. He took his latitude at 49° N. and, as the mouth of the Columbia was known to be about 46° N., he realized that he had descended an unknown river, which was useless for navigation. But, as an explorer, he deserves the credit that he won by his important discovery. By a most curious coincidence Thompson at this very time " was paddling up the true Columbia without knowing it ".

David Thompson, who was a greater explorer than Fraser, began his surveys in 1790 by exploring the Saskatchewan River to its source. He was, at that period, in the service of the Hudson Bay Company, but joining the North-West Company seven years later, he began a remarkable series of journeys which were of the greatest importance. In 1807 Thompson set out to explore west of the Rockies, and, to quote Burpie, "One gains an idea of the magnitude of the rivers that drain this great western country when it is remembered that within a few miles of the point where Thompson now stood, in the heart of the Rocky Mountains, he had followed one and the same river for a distance of 1,199 miles." Thompson descended the Blaebery River, and was the first European to reach the Upper Columbia. But his greatest feat was the discovery of the Athabaska Pass, which for many years constituted the main route to Columbia. To quote Burpie once more:

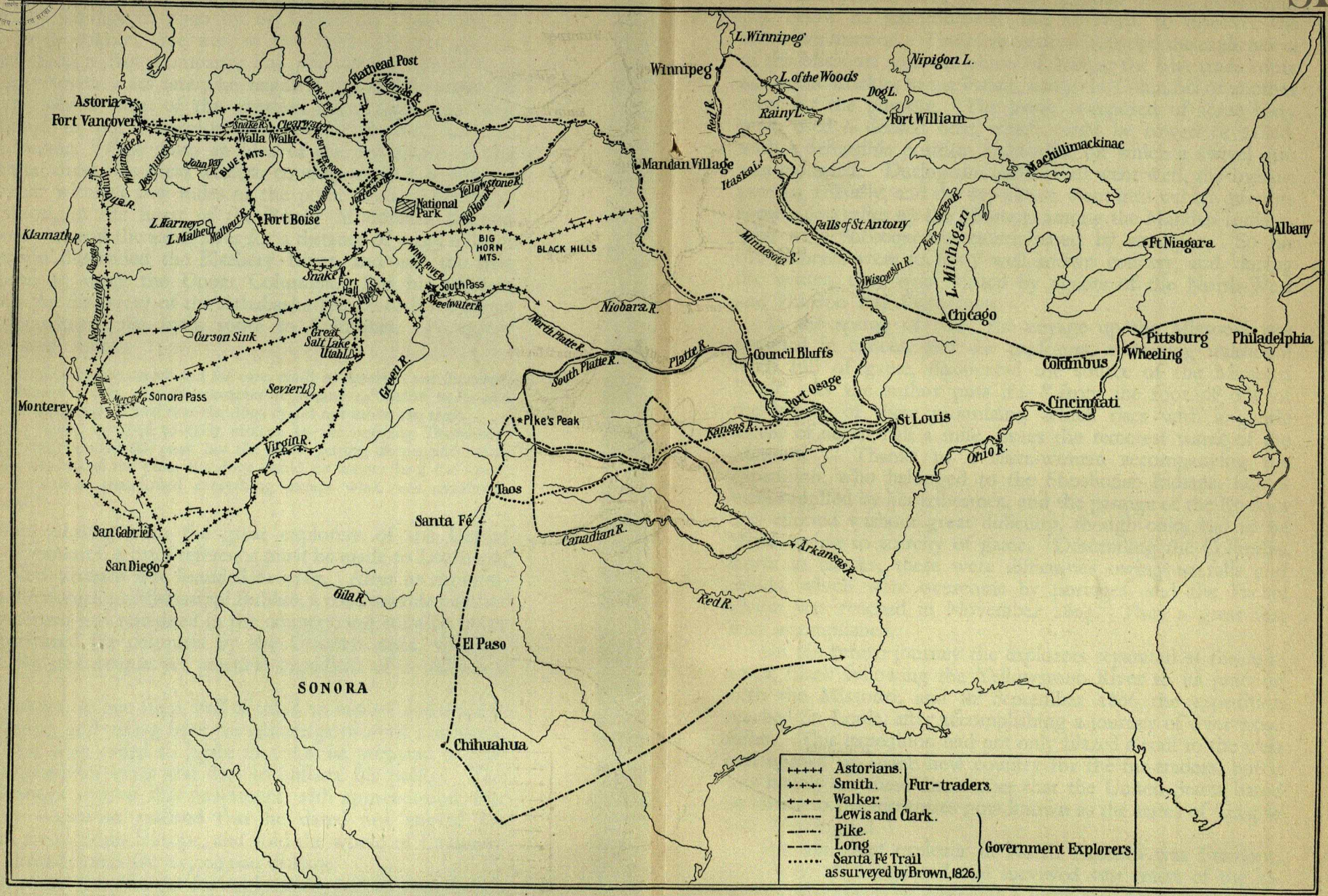
> "Provisions were scarce and the men ready to desert at any moment On January 1, 1811, the thermometer registered 24° below zero, and the travelling was so bad that the dogs could not move the sleds. . . . On they went, spurred to their utmost by the untiring Thompson. Finally they crossed the pass, but the snow getting deeper and softer as they descended the pass, the dogs could no longer haul the loads, and Thompson abandoned everything except what was absolutely essential."

Before dealing with the great explorers of the United States of America, a brief reference must be made to Louisiana, where New Orleans was founded in 1717. After its exploitation in the notorious Mississippi Bubble, a considerable number of Frenchmen had remained in the country, and suitable wives were procured for colonists by the Ursuline nuns, who invented the picturesque yet practical expedient of *les filles à la cassette*.[1]

Napoleon, at one time, had decided to restore and enlarge New France, and taking back the eastern portion of Louisiana, which had been ceded to Spain in 1762, he prepared to despatch a powerful army and fleet to enforce his policy. The United States viewed this movement with apprehension, but suddenly Napoleon realized that he dared not engage his strength so far from Europe, and sold the whole of Louisiana to the United States for 15,000,000 dollars.

The scene was thus set for exploration, and, in 1804, Lewis

[1] *History of the Expedition of Captains Lewis and Clark*, by J. K. Hosmer, 1902. The nuns collected money with which they were able to provide outfits and dowries for the selected girls.



THE UNITED STATES OF AMERICA, 1800-37

(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

[*face p.* 192

and Clark started from St. Louis, situated on the Mississippi just below its junction with the Missouri, to discover the unknown interior. Their instructions included the exploration of the Missouri with the object of finding the best trade route across the Rockies to the Pacific, using the Columbia or another river for the purpose. The party, composed of some forty men, used a decked boat which could be rowed or sailed, with a defensible position amidships, on which a swivel gun was mounted. During the summer all went well, the Indians proving friendly, and the expedition went into winter quarters some 1,600 miles up the Missouri among the Mandan Indians, who were subsequently exterminated by smallpox. So far the pioneers were in fairly well-known country, and, during the winter, they were visited by agents of the North-West and Hudson Bay Companies.

In the spring of 1805, the voyage up the Missouri was resumed in canoes, and the explorers, traversing unknown lands full of game, discovered the source of the Missouri River. As the author puts it: "from the foot of one of the lowest of these mountains, which rises with a gentle ascent of about half a mile, issues the remotest water of the Missouri". Thanks to a slave-woman accompanying the expedition, who belonged to the Shoshonee Indians, horses were supplied by her tribesmen, and the passage of the Rockies was effected without great difficulty, though colts had to be killed owing to scarcity of game. Descending the Columbia River in canoes, there were difficulties owing to falls and rapids, which were overcome by portages, and the Pacific Ocean was reached in November 1805. Thus a great feat was accomplished.

On the return journey the explorers separated at the Missouri, Clark following the Yellowstone River to its junction with the Missouri, and in September 1806 the expedition reached St. Louis, after accomplishing a journey of over 7,000 miles. This expedition had not only blazed a trail to the west and opened up much new country for the fur-traders, but it was mainly on these discoveries that the United States based its claims to the territories now known as the states of Oregon and Washington.

The last great explorer in North America was Fremont, who from 1838 explored and surveyed vast tracts of the interior. He began by exploring a large area between the Missouri and the Mississippi. In 1842 he led an expedition up the Kansas and Great Platte Rivers to the South Pass, where

the trade route to Oregon crossed the Rockies; and Fremont Peak in the Wind River Mountains still bears his name. On this expedition he gives a vivid account of a buffalo hunt: [1]

> "A grand herd of Buffalo, some seven or eight hundred in number, came crowding up from the river, where they had been to drink. A crowd of bulls, as usual, brought up the rear, and every now and then some of them faced about as if more than half inclined to stand and fight. . . . In a few moments the route was universal, and we were going over the ground like a hurricane. My horse was a trained hunter, and, with his eyes flashing, and the foam flying from his mouth, sprang on after the cow like a tiger. In a few moments he brought me alongside of her, and, rising in the stirrups, I fired at the distance of a yard, and she fell headlong."

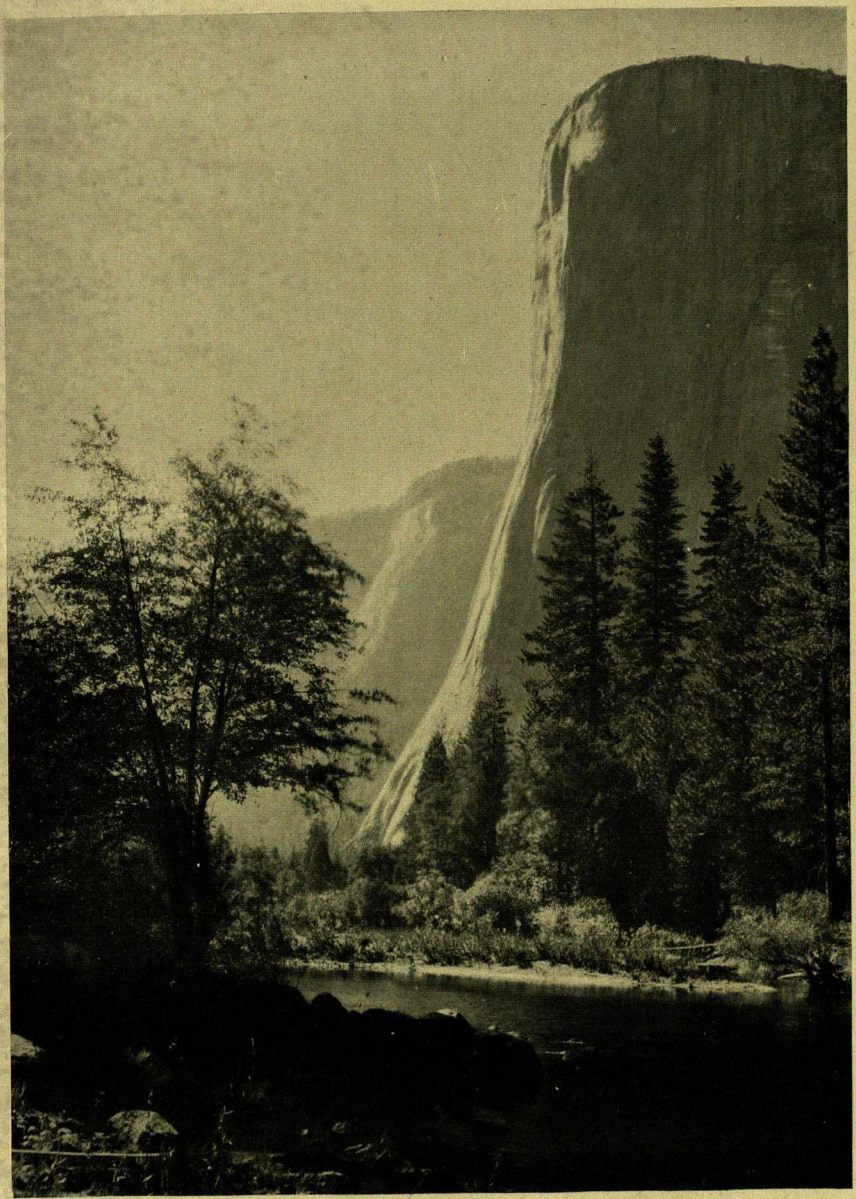
To turn to his description of the country we read:

> "It seemed as if, from the vast expanse of uninteresting prairie we had passed over, Nature had collected all her beauties together in one chosen place. We were overlooking a deep valley, which was entirely occupied by three lakes, and from the brink the surrounding ridges rose precipitously 500 and 1,000 feet, covered with the dark green of the balsam pine, relieved on the border of the lake with the light foliage of the aspen. The surprise manifested by our guides when these impossible obstacles suddenly barred our progress, proved that they were among the hidden treasures of the place, unknown even to the wandering trappers."

In 1843 Fremont led another expedition, which, starting from Kansas City, aimed at the discovery of a new route across the Rockies, but failed to find it. During this journey Fremont explored the Great Salt Lake: "To travellers so long shut up among mountain ranges, a sudden view over the expanse of silent waters had in it something sublime." However, the reality of the bare rocky island which they visited "dissipated our dream of fertile islands, and I called this Disappointment Island".

The main objective of the expedition was to explore the country between the Columbia Valley and California. Fremont accordingly crossed the Rockies and travelled from the Snake River to the Columbia. In November the expedition started to traverse the unexplored country south of the Columbia. The passage of the Sierras was accomplished with extreme difficulty, but, even so, Fremont found time to describe the sunrise: "Immediately above the eastern mountains was repeated a cloud-formed mass of purple ranges, bordered with bright yellow gold; the peaks shot up into a narrow line of crimson cloud, above which the air was filled with a greenish orange; and over all was the singular

[1] Vide *John Charles Fremont*, by C. W. Upham, 1856.



EL CAPITAN, CALIFORNIA

(From the collection of Reunion of British Official Missions to the United States)

[*face p.* 194

beauty of the blue sky." Finally, the stout-hearted explorers reached the Sacramento River.

Fremont in his report pointed out the extreme importance of the Columbia River:

> "It is the only river which traverses the whole breadth of the country, breaking through all the ranges, and entering the sea. Drawing its waters from a section of ten degrees latitude in the Rocky Mountains, which are collected into one stream by three main forks, this great river thence proceeds by a single channel to the sea, while its three forks lead each to a pass in the mountains, which opens the way into the interior of the continent."

Fremont made other discoveries, but the old order was changing, and, a decade later, great trans-continental railway surveys began, while the surveys of the Corps of Topographical Engineers to which Fremont was gazetted, took the place of the earlier explorers. Fremont continued his explorations for many a year and had many adventures. He was the last great explorer of North America.

* * * * *

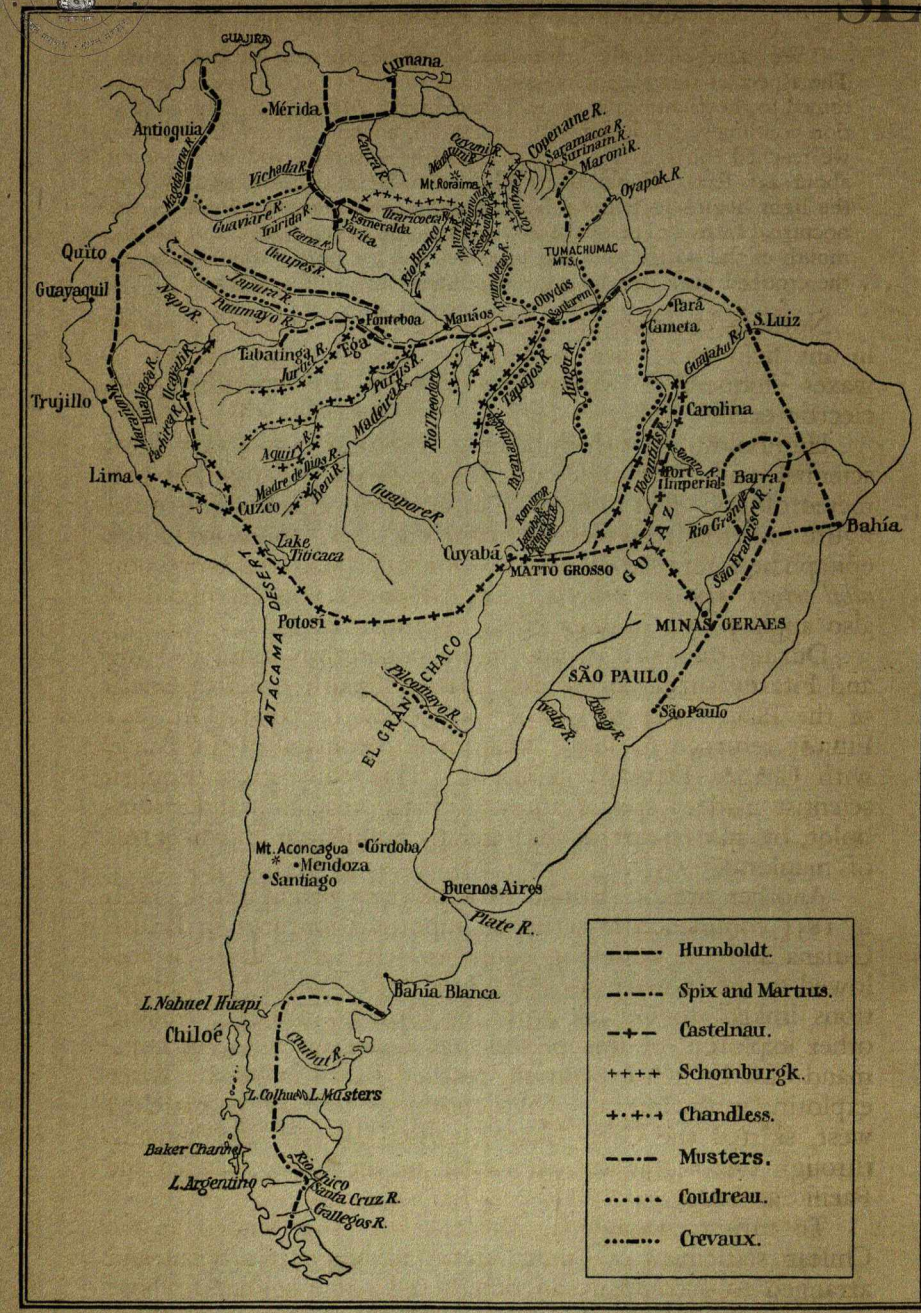
In the exploration of South America, so far as the nineteenth century is concerned, the leading figure was Humboldt. Landing in Venezuela in 1799, he travelled up the valley of the Orinoco for a distance of some 1,700 miles, and proved the connection of that river with the Amazon. After a visit to Cuba, the explorer returned to South America, and ascending the Magdalena River, traversed the Andes to Quito. He then explored the Andes as far as Peru, and examined the sources of the Amazon. He finally returned to Europe in 1804.

Humboldt's work[1] shows a deep insight into every subject which he touches. Take his first impressions of the tropics:

> "If the traveller feel strongly the beauty of picturesque scenery, he can scarcely define the various emotions which crowd upon his mind; he can scarcely distinguish what most excites his admiration, the deep silence of those solitudes, the individual beauty and contrast of forms, or the vigour and freshness of vegetable life which characterize the climate of the tropics. It might be said that the earth, overloaded with plants, does not allow them enough space to unfold themselves. The trunks of the trees are everywhere concealed under a carpet of thick verdure; and if we carefully transplanted the orchidae, the pipers and the pothos, which a single fig-tree nourishes, we should cover a vast extent of ground."

Or take his description of the celebrated "Cavern of the *Guacharo*":

[1] *Travels to the Equinoctial Regions of the New Continent*, by Alexander von Humboldt, 1822.



South America after 1800.

"We came suddenly before the immense opening of the grotto. The aspect of this spot is majestic even to the eye of a traveller accustomed to the picturesque scenes of the higher Alps. . . . The vegetation continues and does not disappear till, advancing into the interior, we reached thirty or forty paces from the entrance, and we went on about 430 feet, without being obliged to light our torches. Where the light begins to fail, we heard from afar the hoarse sounds of the nocturnal birds. The guacharo is of the size of our fowls, and has the mouth of the goatsuckers and procnias, and the port of those vultures, the crooked beak of which is surrounded with stiff silky hairs."

Nothing escapes the vigilance of this wonderful explorer in any field of science, whether he describes the natives, or waxes eloquent on volcanoes, or refers to experiments on electric eels.

Humboldt, apart from being an explorer, was a very great scientist, and the founder of modern physical geography and meteorology. It is difficult to estimate the effect of this great figure on the progress of mankind. Dr. Johnson in the epitaph he composed for Oliver Goldsmith used the expression *nihil tetigit quod non ornavit*. To Alexander von Humboldt it also applies with at least equal appropriateness.

During the third decade of the nineteenth century, King and Fitzroy surveyed the east coast of South America, south of the Plate River to Chiloe on the Pacific coast. In 1831 Fitzroy returned to South America in command of the *Beagle*, with Charles Darwin on board. This truly great English scientist made a special study of Patagonia, and, like Humboldt, by his researches has greatly influenced the progress of mankind.

Another notable British explorer was Schomburgk, who in 1835 commenced a series of important journeys in British Guiana and the adjoining countries. In many cases he followed in the footsteps of the *Conquistadors*, while his explorations linked up Guiana with the Orinoco Valley. Among other explorers of this period was Castelnau who, in command of a French expedition, reached Brazil in 1843. After exploring in the interior of this enormous country, he marched west, skirted the Gran Chaco, crossed Bolivia, and, passing through Cuzco, the ancient capital of the Incas, reached the Pacific at Lima.

To turn to Patagonia, Musters,[1] in 1869, landed at the Chilean settlement of Punta Arenas in Magellan's Strait and arranged to accompany an officer and some soldiers, whose mission was to recapture convicts who had fled north to

[1] "A Year in Patagonia", by Lieutenant Musters, *J.R.G.S.*, Vol. XXXIV, p. 205.

Santa Cruz. Of the Patagonians he wrote: "They were all fine-looking men, more than one standing over six feet, and one being at least six feet four inches." To-day these measurements would not be as remarkable as they were sixty years ago. Settling down at Santa Cruz until climatic conditions were favourable, Musters made friends with the Indians whom he accompanied on their hunting expeditions. On the second part of his expedition, Musters travelled north with a tribe of Indians, who lived by hunting the guanacos and ostriches, which were abundant. During the march an Indian was killed, and, to quote the explorer: "On the death of an Indian, his horses and dogs are killed; his arms, mantles and all his property gathered together and burnt. The body, enveloped in a shroud or mantle, is buried in a sitting posture with the face to the east."

Musters, whose name is commemorated by Lake Musters, finally reached the Rio Negro, having explored some 700 miles in Patagonia. His successor was Moreno, whose journeys made him the leading authority on the Argentine, filling in the blanks of these vast areas. In 1902 he served on the Argentine-Chili Boundary Commission under Holdich, and to him we mainly owe the scientific survey of the Argentine.

Among the greatest explorers of the huge Amazon basin in modern times is Hamilton Rice. Beginning his series of expeditions in 1907, he systemmatically explored tributary after tributary in the north-west of the basin. To quote one of his most interesting experiences: "The Casiquiare canal, which links the Orinoco and Amazon systems by a natural waterway, is the only example of its kind in the world. . . . The integrity of the canal as a connection between two rivers of separate systems, without its capture by one of them, may be likened to any material system in a state of neutral equilibrium, a condition where as much work is resisted as is performed by the applied and internal forces."[1] Later in this expedition the American explorer penetrated to the upper reaches of the Orinoco, until the hostility of the Indians compelled him to return downstream.

In 1925 another expedition was undertaken to explore Brazilian Guiana.[2] Altogether Hamilton Rice has made five expeditions, and has not only surveyed, and added much to our scientific knowledge, but has gained a remarkable insight into, and knowledge of, the Indians. He has made considerable use of seaplanes for surveying, while his wireless

[1] *G.J.*, Vol. LVIII, p. 323. [2] *G.J.*, Vol. LXXI, pp. 113–43, 209–23, 345–56.

messages reached England in one direction and New Zealand in another. Hamilton Rice is the foremost scientific explorer of South America, and there is every reason to hope that he will win fresh laurels before his race is run.

In the southern basin of the Amazon the unexplored area was equally vast. Many of the great tributaries were explored by Rondon, who year after year has not only surveyed, but has made friends with the Indians. In 1913 Theodore Roosevelt undertook an expedition which, starting from Asuncion, followed up the Paraguay River, where he noted that the *piranha* fish—only eighteen inches in length—"are the most ferocious fish in the world. . . . They will rend and devour alive any wounded man or beast; for blood in the water excites them to madness." [1]

On the Brazilian frontier Roosevelt was met by Rondon, who had lost one of his toes by the bite of a *piranha* and had been severely bitten in the thighs and hands. Under his guidance, continuing up the Paraguay River, the old Portuguese fort of Coimba, now garrisoned by Brazilian troops, was reached.

Crossing the Matto Grosso, the expedition reached the scene of Rondon's exploration, of which Roosevelt wrote that it "was as remarkable as, and in its results even more important than, any similar work undertaken elsewhere on the globe at or about the same time". From Tapirapoan, on the river of that name, the expedition started northwards across the Plan Alto or "Highland Wilderness" of Brazil. The route lay through a land inhabited by Nhambiqueras, natives of the most primitive type. Both sexes were naked, and "the men had holes pierced through the septum of the nose and through the upper lip, and wore a straw through each hole". One wonders what the origin of this custom could have been. Thanks to Rondon's remarkable influence on these natives, the explorers were well received, and on February 27, 1914, they reached the banks of the River of Doubt, as they termed this unknown stream.

Using seven dugouts, they started downstream, and Roosevelt writes: "The lofty and matted forest rose like a green wall on either hand. The trees were stately and beautiful. The looped and twisted vines hung from them like great ropes. Now and then fragrant scents were blown to us from flowers on the banks." The rapids took their toll of life and necessitated exhausting portages, some of considerable length.

[1] *Through the Brazilian Wilderness*, by Theodore Roosevelt, 1914, p. 40.

But at last, on April 15, the explorers of the Rio Roosevelt, as it was named, reached a hut inhabited by rubber-gatherers, who called the river Castanho, and, towards the end of April, worn out with illness and fatigue, they entered the mighty Amazon. To quote Roosevelt again: "We had put upon the map a river some 1,500 kilometres in length, of which the upper course was not merely utterly unknown to, but unguessed at, by anybody."

The last great explorer in Brazil was Fawcett. In 1902 there was a revolution in the Acre area of Bolivia, with the result that some 70,000 square kilometres were ceded to Brazil in return for a money payment and access to the navigable waters of the Paraguay River. Fawcett was invited to act as Chief Bolivian Commissioner, and in 1906 he undertook the ascent of the Alto Acre and the descent of the Abuna. To quote: "Parrots, dense forest, and half a mile of coffee-coloured river cutting a sinuous course in red lacustrine deposit is the tale of months—never the sign of a hill—weeks of laborious dragging of heavy canoes over sharp sandstone rocks—constant vigilance, heavy rains and not too much food—a story of much small incident and very hard work." [1]

After completing this survey to the satisfaction of both countries, Fawcett was commissioned to undertake similar work on the eastern frontier, for Bolivia, like Switzerland, has no seaboard. He accordingly proceeded to Corumba, where the frontier was to be rearranged to give Bolivia access to navigable waters. There was also a dispute in connection with the River Verde.

The exploration of this river called for exceptional courage and tenacity. Unable to drag the boats up the rapids, they were sunk and supplies were abandoned. "For nearly three weeks we lived upon occasional palm tops; we were eaten up by insects; were drenched by a succession of violent storms with a southerly wind, bitterly cold for wet and blanketless people." Through this "green hell", as it has been aptly termed by a recent traveller, the heroic explorers emerged into open country near the source of the river. Upon the return journey conditions were even worse, and five of the six persons died in Matto Grosso, which is noted for its deadly climate. In a later expedition, Fawcett explored the Heath River, where the Guarayos Indians were hostile. At

[1] The passage at the head of this chapter is quoted from *G.J.*, Vol. XXXIII, p. 181. This quotation is taken from *G.J.*, Vol. XXXV, p. 523. For the special maps dealing with these Boundary Commissions, vide *G.J.*, Vol. XXXV, opposite p. 620.

their first meeting they fired steadily at the party, but Fawcett, by the display of extreme forbearance and equal courage, at last made friends with them. In 1913 Fawcett penetrated among cannibal tribes, who were absolutely naked savages ignorant of metal.

In 1925 Fawcett started off on his last journey from Cuyaba in Matto Grosso, whence he disappeared into the vast territory of the Xingu. He hoped to discover a civilized race which had lost contact with the outer world. He was last heard of near Bakari, situated some distance to the north of Cuyaba, in May 1925. A search, involving considerable hardship and danger, was made by Dyott, an experienced explorer in South America. Starting on this quest in 1928, he not only traced the route, but found relics of the great explorer, including an air-tight case, and his final summing up runs: "that Colonel Fawcett and his companions perished at the hands of hostile tribes seems to me and to all my party beyond dispute".[1] Thus perished a splendid pioneer whose name is inscribed for all time in the list of the great explorers of South America.

[1] "The Search for Colonel Fawcett", G. M. Dyott, *G.J.*, Vol. LXXIV, p. 583.

CHAPTER XXIII

THE EXPLORATION OF AUSTRALASIA

"They are rhymes rudely strung with intent
Less of sounds than of words,
In lands where bright blossoms are scentless,
And songless bright birds;
Where, with fire and fierce drought on her tresses,
Insatiable Summer oppresses
Sere woodlands and sad wildernesses,
And faint flocks and herds.

. . . . . .

In the Spring when the wattle gold trembles
'Twixt shadow and shine,
When each dew-laden draught resembles
A long draught of wine;
When the skyline's blue burnish'd resistance
Makes deeper the dreamiest distance,
Some song in all hearts hath existence—
Such songs have been mine."

ADAM LINDSAY GORDON.

IN Chapter XX, an account is given of the discovery of Australia by Janszoon, and of the exploration of its eastern coast by Captain Cook. Many problems remained for their successors. The coast west of the point at which Cook's survey commenced was unknown. It was also quite uncertain whether Tasmania was an island or a peninsula, and finally there was a belief that the vast continent might be divided by a strait running up to the Gulf of Carpentaria.

In 1795 Flinders and Bass, either together or separately, explored the coast west of Cook's survey and reached Bass Strait, called after its discoverer. In 1798 they sailed together through the strait and circumnavigated Tasmania. In 1801–2 Flinders explored the coast of what is now South Australia, and disproved the theory that the continent was divided by a strait. Flinders, on a visit to England, secured the powerful support of Banks and returned to Australia in command of a ship on which John Franklin sailed as a midshipman. The unknown southern coast was charted by Flinders in the *Investigator*, by Grant and Murray in a sixty-ton boat, the *Lady Nelson*, and by the French explorer Baudin in *Le Géogra-*

phe. Flinders, however, was the greatest of these explorers, and in 1803 completed his task by the circumnavigation of Australia. He was a worthy successor of Captain Cook.

As in the United States of America, so in Australia, penetration was barred by a range of mountains. The coastal area was explored easily enough, but the Blue Mountains, with their precipitous ravines, sorely hindered access to the interior. It was not until 1813 that Blaxland, impelled to seek fresh pastures by a severe drought, pushed inland and crossed the Blue Mountains. He discovered a well-watered country in which Bathurst was founded in 1815.[1]

The great explorer of Eastern Australia was Sturt. He first explored to the north-west, in 1828, and wrote: "We suddenly found ourselves on the banks of a noble river. . . . The channel was from seventy to eighty yards broad, and enclosed an unbroken sheet of water, evidently very deep and literally covered with pelicans and other wild fowl." But "the water was so salt as to be unfit to drink". Sturt, owing mainly to lack of fresh water, decided to explore no further on this occasion, and "as we mounted our horses, I named the river the 'Darling' as a lasting memorial of the respect I bear the Governor".

In November 1829, Sturt started to explore to the south-west, providing himself on this occasion with a boat. Reaching the Murrumbidgee, he launched his boat on its waters on January 7, 1830, and after a week's voyage, the junction of the Murray was reached. "Hopkinson called out that we were approaching a junction, and in less than a minute afterwards, we were hurried into a broad and noble river. We had got on the high road, as it were, either to the south coast, or to some important outlet; and the appearance of the river itself was such as to justify our most sanguine expectations."

The natives had so far given no serious trouble, but while sailing down the Murray—

> "we observed a vast concourse of natives, and, on a nearer approach, we not only heard their war-song, if it might be so called, but remarked that they were painted and armed, as they generally are prior to their engaging in deadly conflict. . . . As I did not wish a conflict with these people, we passed quietly down the stream in mid-channel. The natives ran along the bank of the river, endeavouring to secure an aim at us; but, unable to throw with certainty, in consequence of the onward motion of the boat, they flung themselves into the most extravagant attitudes and worked themselves into a state of frenzy by loud and vehement shouting.

[1] *Australian Discovery*, Vol. II, by E. Scott, 1929.

"It was with considerable apprehension that I observed the river to be shoaling fast, more especially as a huge sand-bank projected nearly a third-way across the channel. To this sand-bank they ran with tumultuous uproar, and covered it over in a dense mass. . . . As we neared the sand-bank, I stood up and made signs to the natives to desist, but without success. I took up my gun, therefore, and cocking it, had already brought it down to a level. A few seconds more would have closed the life of the nearest savage. But at that very moment, when my hand was on the trigger, and my eye was along the barrel, my purpose was checked by M'Leay, who called to me that another party of blacks had made their appearance upon the left bank. Turning round, I observed four men at the top of their speed. The foremost of them threw himself from a considerable height into the water, and in an incredibly short space of time, stood in front of the savage, against whom my aim had been directed. Seizing him by the throat he pushed him backwards, and forcing all who were in the water upon the bank, he trod its margin with a vehemence and an agitation that were exceedingly striking."

Finally—

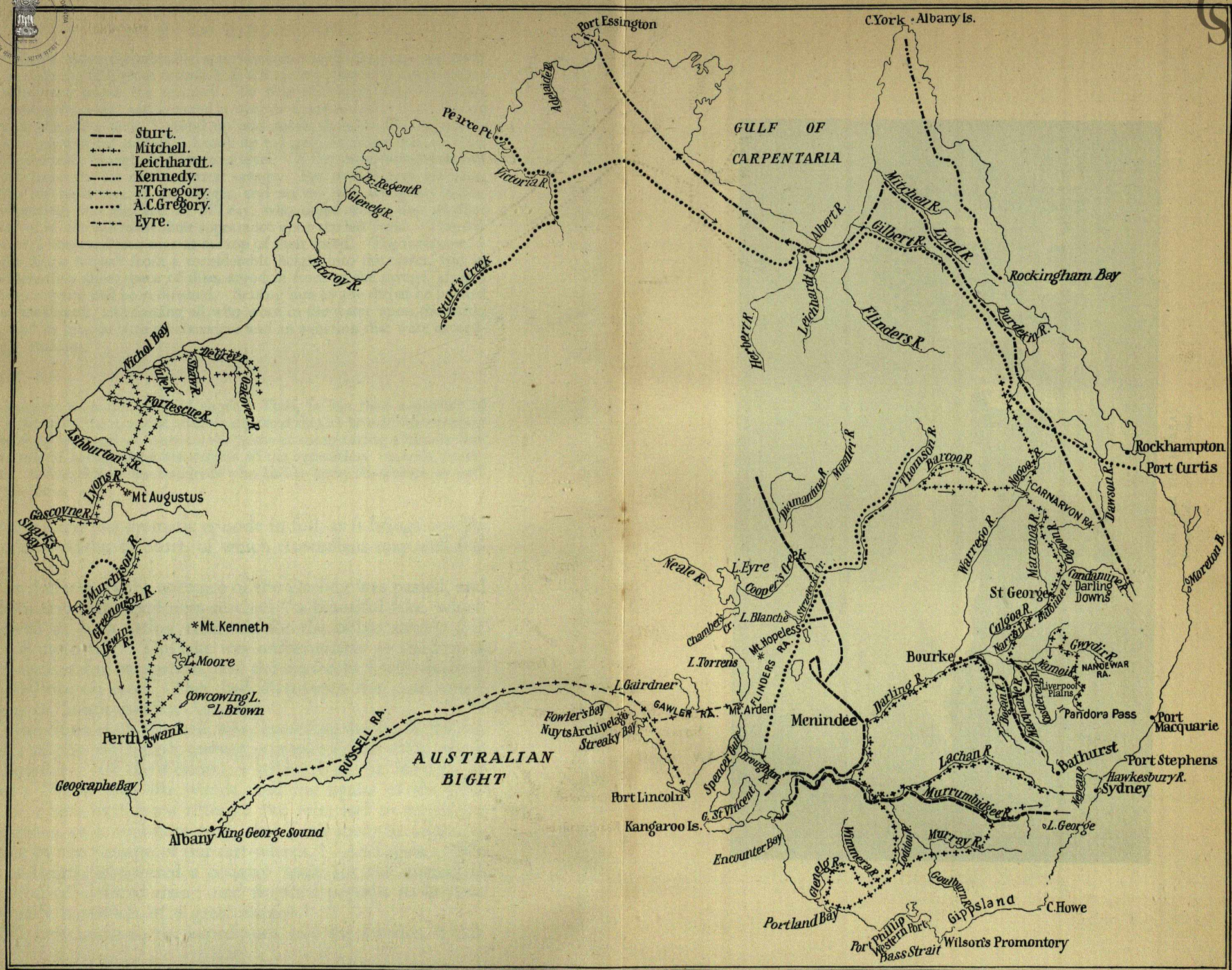
"curiosity took the place of anger. Thus, in less than a quarter of an hour from the moment when it appeared that all human intervention was at an end, and we were on the point of commencing a bloody fray that would have blasted the success of the expedition, we were peacefully surrounded by the hundreds who had so lately threatened us with destruction."

I have quoted this dramatic episode in full, as it brings out the splendid qualities of Sturt, of which Australians may well feel proud.

On January 23 the entrance of the Darling was passed, and on February 9 the explorers reached "a beautiful lake, which appeared to be a fitting reservoir for the noble stream that had led us to it". The lake was unfortunately so shallow as to be useless for navigation, and the explorers finally reached the seashore on foot. They had discovered the great river-system of South-Eastern Australia.

After Sturt came Mitchell, who, travelling during the fourth decade of the nineteenth century, completed the work of his predecessors. Of the Loddon, a tributary of the Murray, he wrote: "The turf, the woods, and the banks of the little stream which murmured through the vale, had so much the appearance of a well-kept park, that I felt loath to injure its surface by the passage of our cart-wheels." And again: "We had at length discovered a country ready for the immediate reception of civilized man; and destined perhaps to become eventually a portion of a great empire."

We now come to the expeditions into the interior, which



AUSTRALIA TO 1857

(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

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SUNSET ON THE MURRAY
(From Sturt's Central Australia)

[*face p.* 204

ultimately led to the crossing of the continent. In 1844 Sturt, starting from Adelaide, followed up the Murray and Darling Rivers, completing the exploration of the latter. He then marched almost due north into the "Dead Heart" of Australia, which he named the Great Stony Desert. In January 1845 the explorers discovered a lagoon and some pasture. There, owing to lack of water between them and the Darling some 200 miles away, "we were", to quote Sturt, "locked up in this desolate and heated region as effectually as if we were ice-bound at the Pole". In 1846 the worn-out members of the expedition reached Adelaide.

The next great explorer was Leichhardt, who in 1844 started from Moreton Bay with the Gulf of Carpentaria as his objective. This, the first journey of exploration through tropical Australia, took fifteen months to accomplish, and the intrepid explorer finally reached the coast half dead from hunger and almost naked. In 1848, Leichhardt started on an attempt to cross Australia from Moreton Bay to the Swan River, but he was lost, nor has any trace of him been found. Search expeditions were sent out and much exploration was accomplished by various parties.

In 1860, Burke and Wills set out from Melbourne to cross the continent from south to north. This expedition was supplied with camels specially brought from India and was well equipped in every respect. The plan was to establish a depot at Menindee on the Darling and, from that advanced base, to cross the continent to the Gulf of Carpentaria. After forming the depot, Burke marched northwards to Cooper's Creek, to which point, finding good grazing and water, he ordered the depot to be moved. After waiting some time in vain for the arrival of the rear party, Burke started off with Wills and two other Englishmen with supplies carried on six camels. Burke and Wills went ahead of the slow-moving camels, and reached the tidal estuary of Flinders River, thus accomplishing their task.

On the return journey one of the explorers died, and the others reached Cooper's Creek only to find that the man in charge had just left. Their best plan would presumably have been to make for Menindee, but Burke insisted on taking a direct route to Adelaide, and the two leaders perished from hunger and thirst. King, who survived, was kindly treated by the natives, with whom he lived until a rescue party arrived. Thus ended in tragedy the first journey across Australia from south to north. At the same time both the explorers and the

relief expeditions added materially to geographical knowledge in Australia.

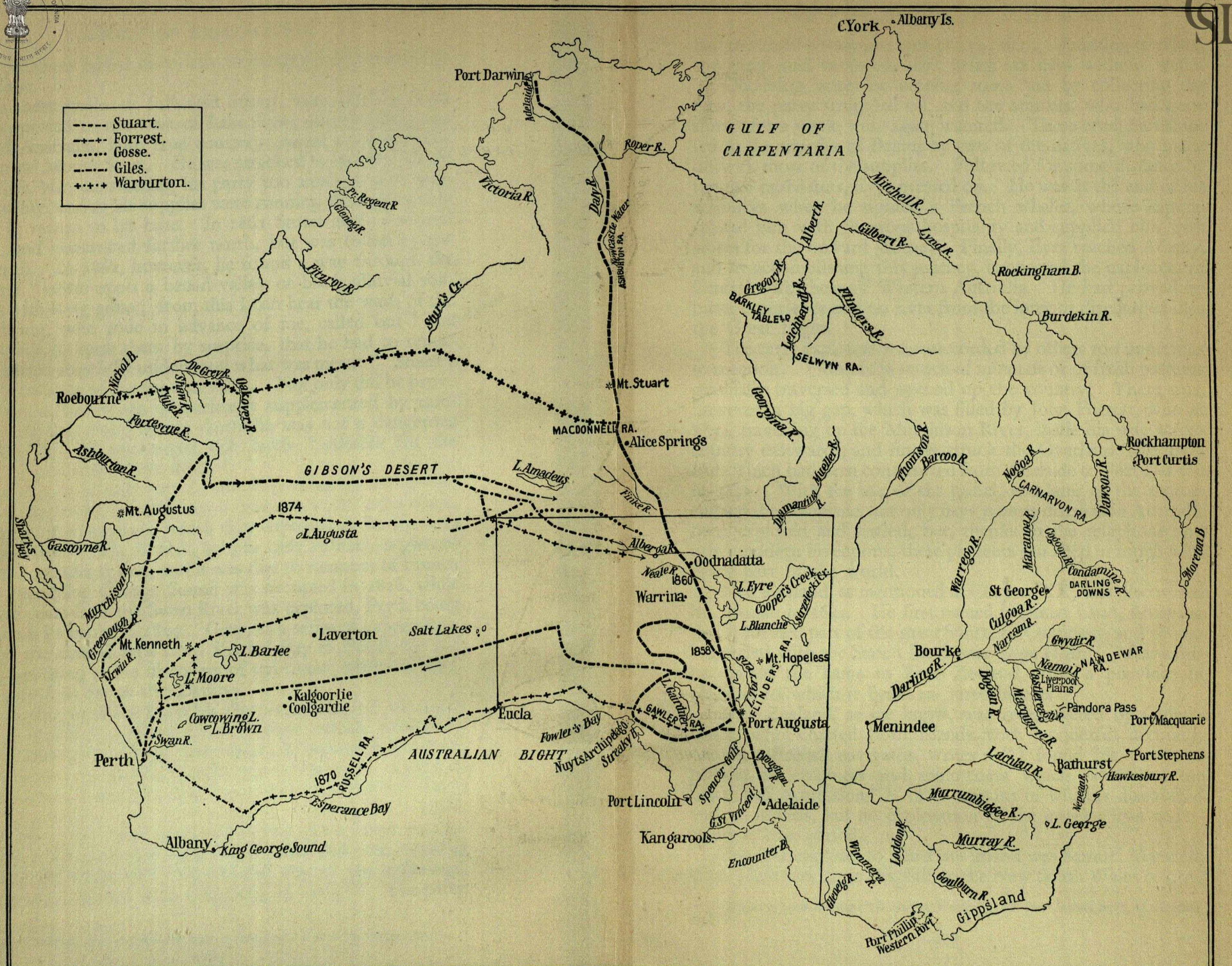
After these explorers followed Stuart, who, starting from Adelaide, passed to the west of Lake Eyre, and, reaching the centre of Australia, with true courtesy named a conspicuous peak Central Mount Sturt. He was attacked by natives, whom he repelled, but, considering his party too small to cope with their hostility, and as his supplies were running short, he wisely decided to return to his base. In 1861 Stuart made a second attempt, and penetrated farther north, but was foiled by the thick scrub. In 1862, however, he found a way through the scrub and "came upon a broad valley of black alluvial soil, covered with long grass; from this I can hear the wash of the sea. Thring, who rode in advance of me, called out 'The Sea!' which so took them by surprise, that he had to repeat the call before they fully understood what was meant." Stuart's explorations were of the greatest value. Not only did he prove that, given a knowledge of bushcraft supplemented by careful preparations, travel across Australia was not a dangerous enterprise, but he discovered rich lands "suitable for the growth of any and every thing".

Australia, as already stated, was discovered by the Dutch, who, although they decided that it was not worth occupation, charted the western coast, which they explored as far south as Cape Leeuwin.[1] The British, as was only natural, neglected Western Australia at first, and it was due to rumours of French activity that King George Sound was occupied in 1826, while some five years later the Swan River was explored, Perth being founded on its banks in 1829. Grey, in a series of expeditions, explored the coastal area from Sharks' Bay to Perth, his last journey resulting in the discovery of ten rivers, while he penetrated inland as far as the Darling.

Eyre, who explored from his sheep-run, situated 150 miles north of Adelaide, sighted Lake Torrens, which, misled by patches of ground covered with water, he reported as constituting a wide lake barring all advance northwards. Foiled in this direction, in February 1841 he set out from Fowler's Bay,[2] with John Baxter and three natives, determined to reach Albany by a direct route round the shores of the Great Australian Bight. He travelled with pack-horses, and soon suffered from lack of water, but "on the fifth day of our sufferings, we were again blessed with abundance of water". The party

[1] Baker, *op. cit.*, p. 153.

[2] Admiral Fowler, who charted this part of the coast, is thus commemorated.



AUSTRALIA, 1858-75

(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

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had traversed a waterless area of 135 miles. Amazing to relate, the sheep had survived, after being six days without water.

Obtaining water by tapping roots and by collecting the dew, the party struggled on, and the animals, who had gone thirsty for a week, were again watered. These cruel hardships led to the murder of Baxter by two of the natives, who made off with most of the supplies. Followed for some distance by the two murderers, Eyre pressed on. He was at the end of his resources when he sighted a French whaler, whose captain treated him with generous hospitality and supplied him with stores for the onward journey. Finally, Eyre reached Albany, and by accomplishing this journey, connected the explorers of Central with those of Western Australia. He had proved by bitter experience that no river from the interior discharged into the Great Bight.

The early explorers were succeeded by others too numerous to mention. Pioneers in search of minerals or of fresh pastures gradually traversed and opened up the country. There was, however, a big gap, which was filled by John Forrest, who in 1874, travelling up the Murchison River, made his way across country eastwards, and finally struck the Overland Telegraph Line which had been constructed from Adelaide to Port Darwin in 1872. With the use of the camel, and later of the motor-car and the aeroplane, not only have remote districts in Australia been explored and settled, but, thanks to the telephone and other modern inventions, these pioneers can keep in touch with every part of the world.

New Zealand, as mentioned in Chapter XX, was discovered by Tasman in 1642. He first named it Staten Land, believing that it formed part of the great Southern Continent, and so was connected with the Staten Land near Cape Horn. Afterwards he altered the name to New Zealand, from a province in Holland to which it bears no resemblance.

New Zealand, as we know, was rediscovered by Captain Cook, who charted both islands with wonderful accuracy. Crozet, a French navigator, writes: "I found his survey to possess an exactness and minuteness which astonished me beyond all expression." [1] The captains of whalers discovered various islands, but no exploration of the interior was undertaken at this period.

The first explorer to penetrate inland was Samuel Marsden, who, while serving as chaplain to the New South Wales colony,

[1] Quoted in *Some Account of the Earliest Explorations in New Zealand*, by T. M. Hocken, 1891.

made journey after journey in New Zealand. In 1814 he landed at North Cape, and explored almost as far south as the River Thames. For twelve axes, he purchased 200 acres of land at Rangihihoura. This purchase was conveyed to the Church Missionary Society by a deed of sale. As the vendor could not write, the chief's *moko* or face-tattoo was copied on the deed. Here Marsden founded his first missionary settlement.[1] Altogether he travelled some 600 miles in the interior by canoe and on foot.

In 1839, under the auspices of the New Zealand Company, a pioneer expedition reached the islands and selected Port Nicholson as the site for a colony, which has now developed into the city of Wellington. Among the earliest explorers of this period was Bidwell, who discovered the hot springs and Lakes Rotoaira and Taupo. But his fame chiefly rests on his daring ascent of the volcano of Tongariro. "The crater", he writes, "was the most terrific abyss I ever looked into or imagined." Upon descending, after accomplishing this feat, he was attacked by the Chief of Taupo for having dared to pollute the sacred mountain. However, a gift of tobacco appeased the furious Maori.

The company, which was well organized, soon sent out surveyors, who gradually explored far and wide in North Island. In South Island progress was far less rapid, but the situation was changed by the gold rush to Otago, which brought many settlers. In Southland there are snow-clad peaks exceeding 12,000 feet in height, with glaciers and lakes which rival Switzerland. Generally speaking, New Zealand is happy in its rich pastures and its splendid climate, in which Europeans thrive even better than in Europe. It is also blessed by the fine qualities of the Maoris, who, Polynesians by descent, improved in physique and warlike qualities in New Zealand. They were keen fishermen and agriculturalists, and "Let us die for the land!" was the appeal of their chiefs when fighting the English invaders. They owned no flocks or fowls. Their great benefactor was Captain Cook, who gave them seed potatoes and the seeds of cabbages and turnips. He also turned pigs and fowls loose. The descendants of the pigs, termed "Cookers", still flourish, and are hunted by the settlers. The views of the Maoris on Captain Cook were fortunately preserved. They run: "The people at Mercury Bay knew at once that the English were goblins, because a boat's crew pulled ashore rowing with their backs to the land. Only goblins have eyes

[1] *The Long White Cloud*, by W. Pember Reeves, p. 100.

in the backs of their heads." [1] New Zealand is eminently a happy land, and it is significant that in his last chapter, Pember Reeves quotes the words:

"No hungry generations tread thee down."

New Guinea was known to the Spanish explorers, who discovered it in the middle of the sixteenth century. As mentioned in Chapter XX, Janszoon's objective was Nova Guinea, while De Prado explored its southern coast and discovered the Strait called after Torres. Yet it was not until the middle of the nineteenth century that its coast was charted. Moresby's survey in 1873 was especially important. Not only did he definitely settle the shape of the island, but he fixed peaks in the high ranges of the interior. His name is recorded in Port Moresby, which is the centre of the British Administration.

Inland exploration began about the same period. It was stimulated in 1884, when Germany annexed a part of New Guinea. The Kaiserin Augusta River was almost immediately discovered, and ascended for some 400 miles, while in 1896 the Bismarck Mountains were reached from Astrolabe Bay. Later boundary commissions, dividing the island between the British, the Germans and the Dutch, added greatly to the area surveyed.

Most important explorations were undertaken in the British area by MacGregor. In 1889 he navigated the Fly River for 600 miles to the point where it reached the German boundary. In 1896 he crossed the island from the Mambura River on the east coast. He reported that the Peak of Mount Scratchley rose to 12,850 feet. As a result of these explorations, it was proved that a very high range ran right across the island from east to west.

In 1910, Captain Rawling explored in Dutch New Guinea and reached the Nassau Mountains from the south coast. The difficulties of exploration were very great. "Every march", he wrote, "included at least one great river, sometimes fordable and sometimes impassable, not counting the endless small streams between, each of which meant a wetting breast-high. During the first year twelve per cent. of the total force died, while eighty-three per cent. were invalided out of the country." [2]

[1] *The Long White Cloud*, by W. Pember Reeves, p. 80.
[2] *Explorations in Dutch New Guinea*, by Captain C. B. Rawling, *G. J.*, Vol. XXXVIII, p. 243.

The main peak of the great central range, Mount Carstenz, which rises to nearly 16,000 feet, was climbed by Wollaston in 1913. The work of exploration in this great island has in recent years been carried on mainly by administrative officers, and the entire country is now fairly well known.

CHAPTER XXIV

THE PROBLEM OF THE NIGER

> "Looking forwards, I saw with infinite pleasure the great object of my mission; the long sought for, majestic Niger, glittering to the morning sun, as broad as the Thames at Westminster, *and flowing slowly to the eastward.*"
>
> MUNGO PARK.

THE neglect of Africa as a field for exploration by Europeans until comparatively recent years is remarkable and requires explanation. Egyptian civilization, which ranks among the greatest of the ancient world, was developed in North-East Africa, and yet, at the beginning of the nineteenth century, we knew less about that continent than about Australia or New Zealand.

The Egyptians undertook voyages to Palestine, and also down the Red Sea, while their influence extended towards Ethiopia. But the valley of the White Nile was blocked by the *sadd*, and they had no knowledge of what lay beyond, while to the west the Sahara constituted a very serious barrier to intercourse. Nor must it be forgotten that ancient Egypt was chiefly concerned with her powerful neighbours in Asia, who conquered her time and again, whereas the barbarous tribes on her western frontier caused her relatively little concern.

In previous chapters some account has been given of Africa as it was known to Herodotus and Ptolemy. The most important event, after the Roman annexations in the north, was the Moslem invasion. Beginning with the conquest of Egypt by Amr in 640, the Moslems rapidly overran North Africa, and by 711 the entire northern coast was in their hands. Wave after wave poured into the conquered lands, which gradually included the Sudan, where Kordofan, Darfur, Wadai and Kano became Moslem cities, while more carvaan routes were established across the Sahara. It is of interest to note that, as we see in the celebrated map of Idrisi, the cities of the Central Sudan were known to the Arab geographers.

In the fourteenth century came the important journeys of Ibn Battuta, who voyaged down the Niger, and gave a detailed

account of the country and people as far as Timbuktu and Gogo; in the chapter dealing with that explorer, some account is given of the great empire of the Western Sudan. Like Herodotus, he believed that the Niger constituted the upper reaches of the Nile. Leo Africanus, who flourished early in the sixteenth century, was frankly puzzled about the Niger. He wrote: "These two rivers of Senegal and Gambia are not certainly known, whether they be the maine rivers of themselves, or branches and mouthes of the Niger." [1]

When the era of ocean exploration arrived, the Portuguese navigators and their successors devoted their chief energies to the profitable trade of India and the Spice Islands, and, generally speaking, regarded the stations they founded along the west coast of Africa as ports of call and refreshment or as centres for the collection of "black ivory", which constituted the chief export from this unfortunate continent. On the east coast they occupied the ports founded by the Arabs and Persians. There were, of course, exceptions to this rule. Henry the Navigator, as mentioned in Chapter XI, was anxious to form an alliance with the Prince of Ethiopia, and the world-map of the Venetian Fra Mauro, constructed in the middle of the fifteenth century, shows a remarkable knowledge of that country, based mainly on native information. Later, in 1613, the Jesuit explorer Paez discovered the source of the Blue Nile, and other Jesuits explored the Galla country.

Portugal, as we have seen, had won the mastery of the Eastern Seas in 1538, but before that date she had secured a dominating position along the western and eastern coasts of Africa, which was strengthened by the Treaty of Tordesillas into a monopoly.

In 1553 the first English ships sailed to the west coast of Morocco—much to the anger of the Portuguese—and in the following year John Lok bartered cloth for Guinea pepper, elephants' tusks and gold, and made a good profit, in spite of Portuguese hostility. The Dutch, entering the field in 1595, swept away the Portuguese monopoly, and in their turn attempted to establish a similar system. At this period slaves, destined mainly to work in the sugar plantations of the New World, became the chief export, which they long remained.

[1] *The History and Description of Africa*, edited by R. Brown (Hakluyt Society), 1st series, Vols. XCII–XCIV. I have to thank Sir William Gowers for kindly reading this and the following three chapters and for making valuable suggestions.

The French established themselves on the Senegal River, as the English had done on the Gambia, and the traders of both powers aimed at reaching the commercial centre of Timbuktu. The Dutch lost their dominant position early in the eighteenth century, and as the result of almost continuous fighting, Great Britain emerged the victor in the Napoleonic Wars of 1815.

It will be seen from the above epitome that Africa had not been penetrated at this period, and that Swift summed up the situation correctly in the verse:

> "Geographers in Afric maps
> Make savage pictures fill their gaps,
> And o'er inhabitable downs
> Place elephants in place of towns."

In 1788 the African Association was founded to promote exploration and the advancement of British interests. The first problem to be solved was that of the mysterious Niger, as neither its source nor its mouth was known, nor even the direction in which it flowed. Four explorers had died from sickness or been murdered, when Mungo Park,[1] a surgeon, who had made a voyage to Sumatra, offered his services for the adventure, undeterred by the fate of his predecessors.

Upon his arrival in the River Gambia, in 1795, he spent some months with a Dr. Laidley, studying the Mandingo language and the customs of the various races, who came to trade with the English. In December 1795, he set out on his great adventure, travelling with slave-traders for the first few stages. He was well received by the King of Woolli, whose subjects were Mandingoes, the majority of them being pagans with a Moslem minority. The King cheerfully remarked that he must expect quite a different treatment farther east in kingdoms "where the people had never seen a white man, and would certainly destroy me".

From Woolli, Park crossed into Bondou, which was inhabited by Fulahs, who show marked traces of Semitic blood, and he notes that the ruling class and most of the people were Moslems. In this state he created great interest among the wives of the King, "who rallied me with a good deal of gaiety upon the whiteness of my skin, and the prominency of my nose". At Bondou he was obliged to give the King his best coat, but was provided with "five drachms of gold" for the onward journey.

[1] *Travels in the Interior Districts of Africa*, by Mungo Park, 1799; and *The Journal of a Mission to the Interior of Africa*, 1815.

Algiers
Tangier
Tunis
Fez
Tripoli
Cairo
Siwa
Asyut
FEZZAN
Murzuk
Aswan
LIBYAN
DESERT
Suakin
Timbuktu
Niger R.
Kabara
Senegal R.
Khartum
Massaua
Goree Is.
Gambia R.
Medina
FULAH
Segu
Sokoto
HAUSA
Kuka
L. Chad
Shari R.
BORNU
KORDOFAN
Gondar
L. Tana
Tajura
DARFUR
Blue Nile
Ankober
Hawash R.
Rio Grande
Bussa
Rabba
Benue R.
SIERRA
LEONE
Bonka
ASHANTI
Lagos
EBOE
Calabar
L. Rudolf
Fernando
Po Is.
Ogowe R.
Congo R.
ANGOLA
Benguela
L. Bangweolo
L. Nyassa
Zambezi R.
Tete
Mozambique
L. Ngami
Walfish Bay
Limpopo R.
BECHUANA-
LAND
TRANSVAAL
Delagoa Bay
Orange R.
NATAL
Cape Town
Algoa Bay

+ · + · + · + Mungo Park.
– – – – – – Denham, Oudney, and Clapperton.
+ + + + + + Clapperton and Lander.
– · – · – · – Caillié.
– + – + – + – Lander.

AFRICA, 1788-1849

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quills, stopt up with cotton; and the washers are fond of displaying a number of these quills in their hair." The whole of the hill country of Manding was auriferous. Here, then, was one of the sources of the gold of the Ethiopians mentioned by Herodotus.

With the arrival of the dry season, the caravan of slaves was organized and the great explorer set out on the last stage of 500 miles. He gives a vivid description of the dangers from wild beasts and robbers.

Park, who was distinctly a humane man, noted that three-quarters of the negroes were "in a state of hopeless and hereditary slavery, with this aggravation, that their children are born to no other inheritance". He also noted that the unfortunate slaves, male or female, were flogged when exhausted, and then either killed or left to be devoured by wild beasts. Moreover he bears testimony to their kindness: "During a wearisome peregrination of more than 500 miles, exposed to the burning rays of a tropical sun, these poor slaves, amidst their own infinitely greater sufferings, would bring water to quench my thirst, and at night collect branches and leaves to prepare me a bed in the wilderness." He probably realized that slavery was wrong, but felt that it was useless to fight against the established order of things. It must also be recollected that Bryan Edwards, the secretary of the African Association, was hostile to the total abolition of slavery. Yet Park's moving description of this inhuman traffic appealed deeply to the conscience of thousands. As Wilberforce wrote: "It pleads, trumpet-tongued, against that diabolical system of wickedness and cruelty." [1]

Park finally reached the Gambia, where he was welcomed as one risen from the dead. He had accomplished a great feat in reaching the Niger, but he had not been able to follow its course to its mouth, or, according to Major Rennell's theory, to an inland swamp. Park himself considered that it became the Congo in its lower reaches.

In 1805, Park left England at the head of a badly organized expedition to complete his task. He reached the Niger with but a handful of his party left, all of whom were dying or sick. Undeterred, he started on his voyage down the Niger, and met his death in the Bussa Rapids below.[2] His heroic

[1] *Life of Wilberforce*, by his sons, Vol. II, p. 346.

[2] Mr. H. S. W. Edwardes has given me the following valuable note: "Park landed at Bussa and evidently got on well with the people there, as he gave the headman a large silver medal on leaving. As one approaches the rapids coming down-stream, the river is seen to divide. The broad middle channel goes straight on and seems to

achievements, effected in spite of almost insuperable obstacles, entitle him to rank as one of the greatest explorers of Africa.

In the years that followed, other explorers failed in the quest, but in 1823 Denham,[1] thanks partly to a large escort furnished by the Pasha of Tripoli, crossed the Sahara as the leader of a British Government expedition, and on one happy day "The great Lake Tchad, glowing with the golden rays of the sun in its strength, appeared to be within a mile of the spot on which we stood."

To return to the Niger, in 1825 Clapperton landed at Lagos at the head of an expedition with Bornu as his objective.[2] The west coast fully merited its sinister title of the "White Man's Grave", for hardly had the journey to the interior been begun when three English members of the mission died, leaving Clapperton and Richard Lander to continue the task. Everywhere treated with much friendliness, Clapperton reached Katunga in January 1826. Thence he proceeded to Bussa, an important town on the Niger, where he ascertained the details of Park's death.

From Bussa he proceeded to Kano. Clapperton left Lander at this city while he himself proceeded to Sokoto, where Lander finally rejoined him. Owing to the hostilities that were in progress with Bornu, Clapperton was unable to proceed thither, and he finally died at Sokoto, one more heroic explorer to be sacrificed to Africa. Lander, whose personality, tact and knowledge of the people were remarkable, returned to Bussa, whence, after many adventures, he reached the coast and found safety from Portuguese slave-traders, who attempted his life through the native rulers, on board a British ship.

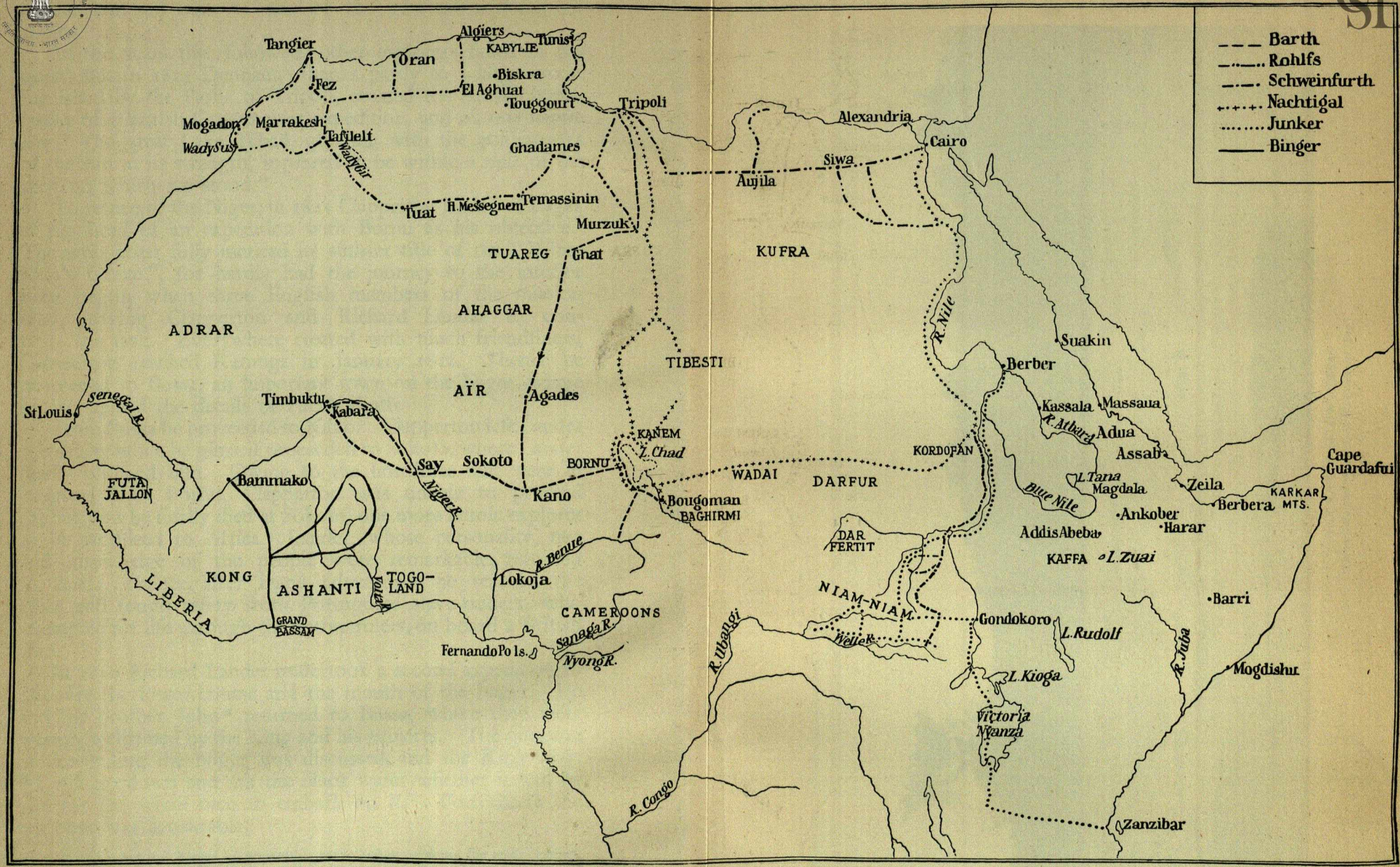
In 1830 Richard Lander undertook a second expedition to discover the lower course and the mouth of the Niger. He and his brother John[3] returned to Bussa, where they were warmly welcomed by the King and his subjects. The question of descending the Niger was discussed, and the King said: "I will go down and ask the black water whether it will be safe for the white men to embark on it." Fortunately the response was favourable.

be quiet water, but it is barred by impassable rocks before rejoining the main channel. Park, without a pilot, would almost certainly have chosen the quiet looking middle channel straight ahead. He may have been wrecked where the canoe is shown in the photograph, or he may have gone over the cataract a couple of hundred yards ahead."

[1] *Narrative and Discoveries in Northern and Central Africa*, 1826.

[2] *Captain Clapperton's Last Expedition*, by Richard Lander, 1830.

[3] *The Niger*, by Richard and John Lander, 1833.



NORTH AFRICA, 1849-89

NOTE.—The route of Rohlfs from Aujila to Kufra has been omitted

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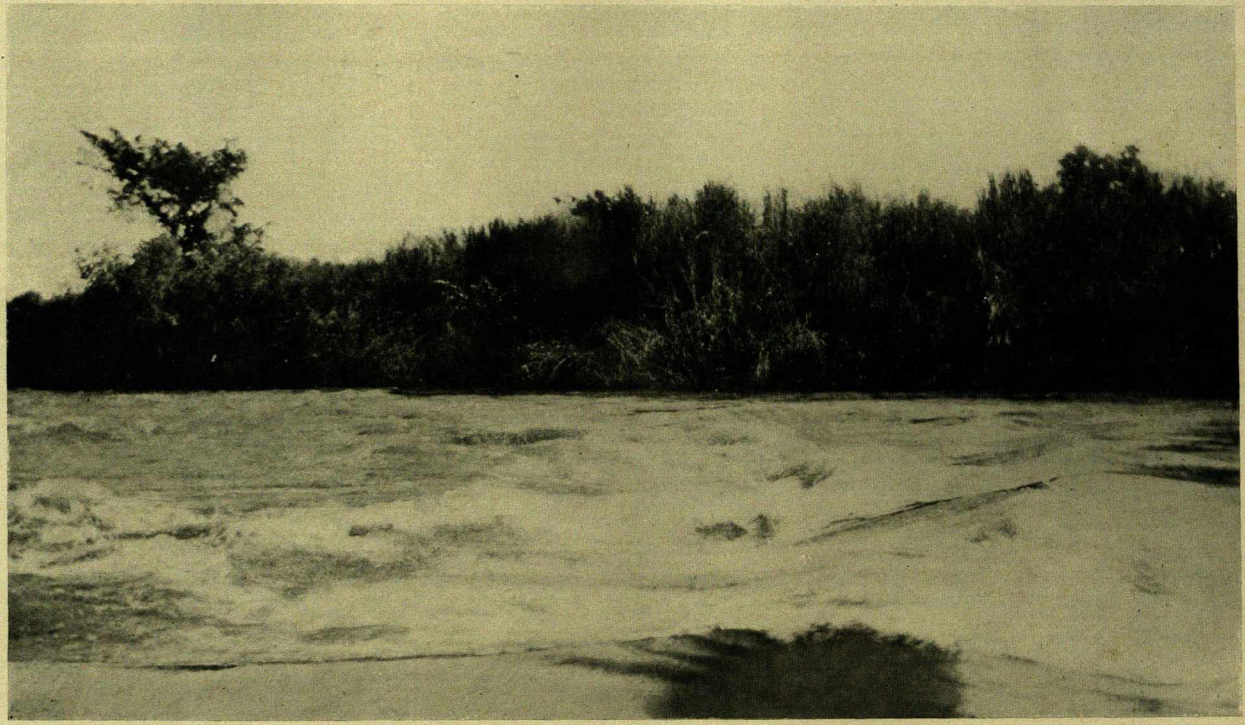
[face p. 216



THE RAPIDS BELOW BUSSA

(Through the courtesy of H. S. W. Edwardes, Esq.)

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The explorers had to wait a long time until the King's messenger had informed the Kings along the course of the Niger to Rabba of the proposed expedition and gained their good will. At last the messenger returned, and a start was made at the end of September. From the first stopping-place of Liaba—

> "we ran down the stream very pleasantly for twelve or fourteen miles, the Niger, during the whole of this distance, rolling grandly along—a noble river, neither obstructed by islands, nor deformed with rocks and stones. Its width varied from one to three miles.
>
> "The market of Rabba is very celebrated, and considered by traders as one of the largest and best in the whole country. . . . The price of a strong healthy lad is about 40,000 cowries (£8), a girl fetches as much as 50,000, and perhaps more, if she be at all interesting."

At Egga, where "we were struck with the immense number of large bulky canoes which lay off it", they were hospitably received, and excited intense curiosity. Lower down, the population, fearing a hostile attack, prepared to fight them. But the two Englishmen laid down their arms, and advancing unarmed prevented bloodshed. Indeed, the Chief hailed them as "Children of Heaven" who had dropped from the skies.

At Damuggoo, the explorers met traders who were in touch with the coast, and were most kindly treated, but lower down, off Kiree, they were attacked, robbed and made prisoners. They were taken to the King of Eboe, in whose state much of the palm oil exported to Europe was produced. There, after much palaver, a ransom was demanded, and the explorers were handed over to King Boy of the Brass River, who, in return for a bill of goods to the value of twenty slaves with the value of fifteen slaves for himself, agreed to hand over the two brothers to a British brig that was anchored off his town. Under his guidance the Landers penetrated the forest-clad delta to the mouth of the Nun branch of the great river. Thus the problem of the Niger was at last solved. Lander was awarded the first Royal Premium by the Royal Geographical Society, which had started its splendid career of service to exploration in the very year that he had accomplished his great feat.

In 1850, the British Government despatched a second expedition to the Sudan under Richardson, with whom was associated Barth,[1] who had studied Arabic. Starting from Tripoli, the expedition travelled to Murzuk in Fezzan. From this centre it followed a route to Ghat and Agades, being in

[1] *Travels and Discoveries in North and Central Africa*, by H. Barth, 1859.

constant danger from the turbulent tribesmen. From Agades, Richardson proceeded direct to Kuka, where he died, while Barth visited Kano and then proceeded to Kuka.

Barth was able to examine Lake Chad. He then penetrated southwards, traversing unknown country until he reached the Benue, that mighty tributary of the Niger, at a point where it was joined by the Faro. With the true explorer's spirit he wrote: "The Benue flowed in a broad and majestic course through an entirely open country. . . . I looked long and silently upon the stream; it was one of the happiest moments of my life." Throughout this journey high ranges were sighted, mainly to the east, while the explorer waxed eloquent on the beauty of the scenery. Camels were apparently almost unknown in Adamawa, for we read: "A great many women managed to pass under the bellies of these tall creatures, in the hope of obtaining their blessing, as they thought them sacred animals." On reaching Yola, the capital of Adamawa, the Governor was found to be unfriendly, partly because Barth came with recommendations from hostile Bornu, and he was obliged to return to Kuka.

Nothing daunted, he explored Baghirmi, and then travelled to Timbuktu, where he was in constant danger of attacks by fanatics. Barth reached England in 1855, after exploring this large area of the Central Sudan, with a rich harvest not only of geographical, geological and ethnographical data, but also valuable commercial information regarding the country he had made known to Europe. He deserves a high place among the explorers of Africa.

In continuation of Barth's explorations, in 1869 Nachtigal started from Tripoli for Murzuk. From this oasis he explored the unknown Tibesti area to the south-east. Later he visited Kanem, to the north of Lake Chad, and Baghirmi. But his most important journey was the successful penetration of Wadai, where previous explorers had been murdered, and thence to Darfur and Kordofan. He was thus able to connect the area explored by Barth with the Nile Valley.

In North-East Africa we have the journey of the Englishman Browne, who, in 1792, was probably the first European explorer to visit the Siwa Oasis since Alexander the Great. He made a still more important journey in 1793, penetrating into the Sudan as far as Darfur, and travelling by the caravan route from Asyut. Owing to intrigues, and fanatical hostility to Christians, Browne was detained at Darfur for a period of three years, during which he suffered alike in health and

in pocket. Finally he was able to depart, and embodied much valuable information in a work which remained the authority on the subject for many years.[1]

In the middle of the nineteenth century Rohlfs, travelling in disguise, visited Tafilelt, which has recently been occupied by the French, and then Tuat. Later he travelled to Bornu, and, striking the Benue, sailed down it to the Niger. In 1869 he travelled from Tripoli to Siwa, and some years later took part in an expedition to the Libyan Desert and revisited Siwa. His last expedition was a journey from Tripoli to the Kufra oasis, where he was imprisoned, but escaped with the loss of his camp and records.

The period under review constitutes a great age of exploration, especially signalized by the solution of the problem of the Niger. Elsewhere other heroic explorers, many of whom were murdered or died from sickness, blazed trails along which their successors were destined to make further discoveries until Darkest Africa was opened up to civilization.

[1] *Travels in Africa, Egypt and Syria,* by W. C. Browne, 1806.

CHAPTER XXV

LIVINGSTONE, THE GREATEST EXPLORER OF AFRICA

"Most geographers are aware that before the discovery of Lake Ngami, and the well-watered country in which the Makololo dwell, the idea prevailed that a large part of the interior of Africa consisted of sandy deserts, into which rivers ran and were lost. During my journey in 1852–6 from sea to sea, across the south inter-tropical part of the continent, it was found to be a well-watered country occupied by a considerable population; and one of the most wonderful waterfalls in the world was brought to light."

DAVID LIVINGSTONE.

IN 1841, David Livingstone, destined to rank as the greatest of African explorers, landed in Algoa Bay.[1] By way of setting to his epoch-making discoveries, I propose to refer briefly to the opening-up of South Africa. This country, discovered by the Portuguese, began to be settled by the Dutch in the middle of the seventeenth century, farms being established to supply ships with provisions, but little attempt at exploration was made during those early years. In 1752, a well-equipped expedition left Cape Town, passing Mossel Bay, keeping close to the coast, and examining Algoa Bay. The explorers crossed the Great Fish River, the Bantu country was entered, and intercourse was opened with those warlike tribesmen. In the centre of the country the Karroo, which closely resembles the sinister Lut, the great central desert of Persia,[2] constituted a formidable barrier, but it was crossed by Paterson in 1778, who struck the Orange River in its lower course. This, the most important river of South Africa, had already been crossed by Coetsee, an elephant-hunter, in 1760.

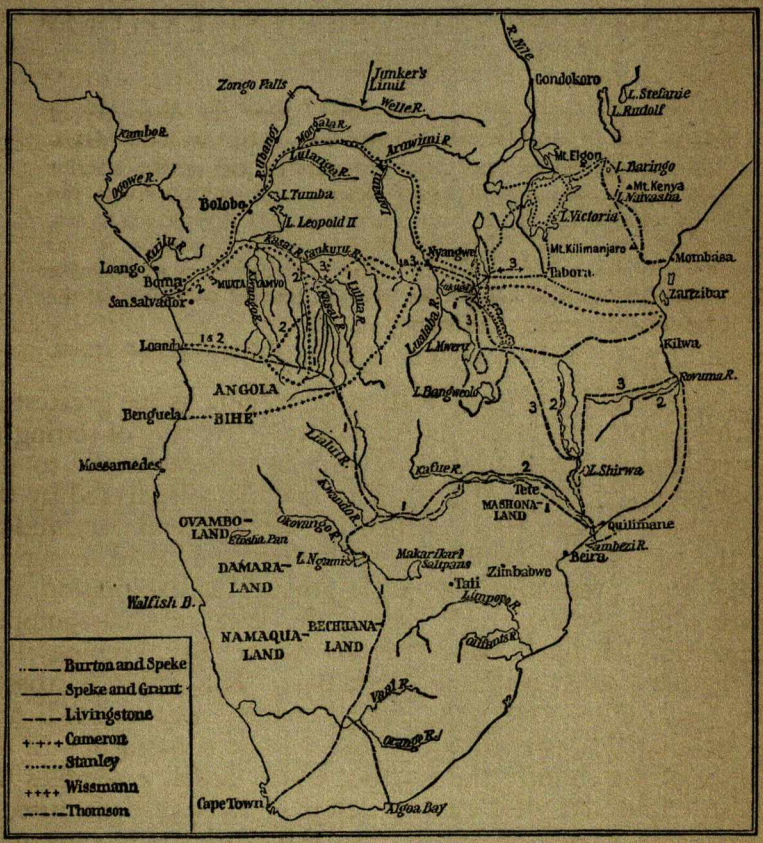
The fame of Livingstone has somewhat eclipsed the memory of other travellers, but the survey of the greater part of the Orange River by Robert Moffat in 1856 constituted a valuable piece of exploration. In Bechuanaland and the Kalahari Desert, Anderson, between 1864 and 1880, added considerably

[1] *Missionary Travels and Researches in South Africa*, 1857.

[2] Persian fat-tailed sheep have been imported, and, under the name of "persies", thrive on the scanty grazing of the Karroo. Camels also have been imported.

to geographical knowledge of those districts and of their inhabitants, while gallant Selous travelled for twenty years, from 1872 to 1892, in the Zambezi; towards the end of this period he explored Mashonaland. He was a worthy successor of Oswell, both men being "mighty hunters before the Lord".

From Algoa Bay Livingstone trekked across Cape Colony



CENTRAL AND SOUTH AFRICA, 1849–89.

The routes of Speke and Grant to Tabora and of Stanley to Lake Victoria are not shown. They are practically identical with that of Burton and Speke.

to Kuruman in Bechuanaland, the headquarters of Robert Moffat and "the farthest inland station of the London Missionary Society". Almost immediately he began to explore northwards, cutting himself off from all European society for six months in order to learn the language and the customs of the tribesmen.

Livingstone possessed a great gift for friendship and for grasping the point of view of the African. As a proof of his

influence, Sechele, Chief of the Bechuanas, said to him, "Do you imagine these people will ever believe by your merely talking to them? If you like I will call my headmen, and with our whips we will soon make them all believe together."

Livingstone's missionary labours among the Bechuanas at Koboleng, where he had settled, were sorely hampered by Boers, who were established in the Magaliesberg Range, and attacked the surrounding tribes to secure slaves and cattle. On one of these raids during his absence, "my house, which had stood perfectly secure for years under the protection of the natives, was plundered, my stock of medicines was smashed; and all our furniture and clothing carried off and sold at public auction to pay the expenses of the foray". However, Livingstone was not daunted: "The Boers resolved to shut up the interior, and I determined to open the country; and we shall see who has been the most successful in resolution—they or I."

For eight years Livingstone was maturing his plan for crossing the Kalahari Desert, and establishing relations with the people of Lake Ngami. In 1849, accompanied by Oswell, he started off on his first great journey. Thanks to his relations with the tribes and his tact in dealing with the Bushmen, the desert was crossed without any untoward incident, and on August 1, 1849, "for the first time, this fine-looking sheet of water was beheld by Europeans . . . It is shallow, and on the West there is a space devoid of trees. . . . This is another proof of desiccation." Sad to relate, this desiccation is still increasing.

In 1851, Livingstone pushed 200 miles farther north and made the acquaintance of Sebituane, Chief of the Makololo, a great conqueror, who had defeated the Matabele Chief, Mosilikatse. The latter attacked Sebituane twice, but on each occasion was defeated.

Thanks to the establishment of good relations with the Makololo, in June 1851 the explorers were rewarded by the discovery of the Zambezi in the centre of the continent, where its existence was unknown. At this period Livingstone decided that the hostility of the Boers had made further missionary work among the unfortunate Bechuanas out of the question. He thereupon escorted his family to Cape Town *en route* for England, and trekked north again, determined to devote his life to exploration.

Upon returning to the country of the Makololo, the great explorer was well received by Sekeletu, son of the deceased Sebituane, in what was considered royal style. In November

1853, he decided to travel across unknown Africa to Loanda to open up a trade-route to the Atlantic. With a strong party of the Makololo, he followed up the Liambai, as the upper reaches of the Zambezi are named, both words signifying "River".

In February 1854 the expedition crossed the watershed into the basin of the Congo. As the Atlantic coast was approached, each petty chief attempted to blackmail the weak party, which "had only five guns", while supplies were only forthcoming in return for value received—and Livingstone was ill provided. He suffered terribly from fever, but pressed on through the tropical forests, and at last reached the province of Angola and the port of Loanda, where the Makololo, upon seeing the sea, observed, "we marched along with our father, believing what the ancients had always told us was true, that the world has no end, but all at once the world said, 'I am finished; there is no more of me!'" Of a house they remarked: "It is not a hut; it is a mountain with several caves in it!"

Livingstone was treated kindly by the Portuguese authorities, by the solitary resident Englishman, who nursed him through a long illness, and also by officers of the British cruisers who appeared in the port. When he was sufficiently rested, he started on what was to be a great trans-continental journey to the Indian Ocean. After many trying experiences, the expedition reached Linyanti in triumph, after an absence of two years, and Livingstone writes: "We were looked upon as men risen from the dead, for the most skilful of their diviners had pronounced us dead long ago." Sekeletu and his tribesmen fully realized that a trade route to the Atlantic had been opened for them by the intrepid white "Father", and their trust in him was now unbounded.

After a rest, Livingstone organized a new expedition to follow down the Zambezi to its mouth, with a view to opening up a trade route to the Indian Ocean. Arranging with Sekeletu for a supply of tusks with which to purchase a sugar mill and many other things for the chief, the party started, travelling partly by water. Livingstone reached the wonderful "Smoke Sounding" Falls, and described them as seen from above.

> "Creeping with awe to the verge, I peered down into a large rent which had been made from bank to bank of the broad Zambezi, and saw that a stream of a thousand yards broad leaped down a hundred feet, and then became suddenly compressed into a space of fifteen or twenty yards. In looking down into the fissure, one sees nothing but a dense white cloud. From this cloud rushed up a great jet of vapour

exactly like steam, and it mounted 200 or 300 feet high; there condensing, it changed its hue to that of dark smoke, and came back in a constant shower which wetted us to the skin. It had never been seen before by European eyes; but scenes so lovely must have been gazed upon by angels in their flight."

Livingstone named these beautiful falls after the great Queen Victoria.

For some distance the explorer left the Zambezi and travelled north-east across the Batoka plateau, through beautiful country in which elephants and other big game abounded. Gradually as they neared the coast the "oppressive steaminess in the atmosphere" made itself felt, while tsetse-flies, the greatest bar to progress, made it necessary for the oxen to travel by night. The natives were hostile to the Portuguese, but had heard good accounts of the English. They were travelling through the kingdom of Monomotapa, or "Supreme Chief", whose empire was described by Leo Africanus in the 16th century as "the fourth general part of the lower Ethiopia". He adds that "their principal cities are Zimbas and Benamataza, the first whereof is one and twenty and the second fifteene daies journey from Sofala". The first name is surely reminiscent of Zimbabwe; and Livingstone mentions a chief as Katolosa (Monomotapa), thus proving that the title still remained, albeit the empire, which was in existence when the Portuguese first appeared on the scene, had lost its importance. Yet Katolosa was strong enough to prevent direct intercourse between the Portuguese and the populations of the interior. Livingstone refers to the gold mines of the country, which were not in a flourishing condition.

The Portuguese were expecting the explorer, as a native had arrived at Tete who had said, alluding to the sextant and artificial horizon, "that 'the Son of God' had arrived and that he was able to take the sun down from the heavens and place it under his arm". Livingstone finally reached Quilimane, having accomplished his greatest feat of exploration with miserable resources at his disposal. He had written a new chapter in the history of Africa by opening up an immense region for trade and for anti-slavery action. Apart from traversing so much unknown country, "The peculiar form of continent was ascertained to be an elevated plateau, somewhat depressed in the centre, and with fissures in the sides by which the rivers escaped to the sea." This alone was an epoch-making discovery.

In 1856, Livingstone returned to the Zambezi as British

Consul, with instructions to continue his fruitful explorations, to open up the country for trade, and to put down slavery. His chief assistant was Dr. (afterwards Sir John) Kirk. His first task was to discover the real mouth of the Zambezi, which had been concealed in order to deceive the British cruisers. Livingstone soon found it, when it was carefully surveyed, a considerable service to the commerce of the world. He then pushed inland in his unsatisfactory paddle steamer, and, at Tete, found his faithful Makololo. In January 1859, Livingstone[1] with Kirk made his first expedition up the Shiré. The Manganja were at first hostile, but the great explorer soon established friendly relations with them, being much aided by their knowledge that the British were suppressing the slave traffic. Lake Shirwa, "a considerable bit of water", with "exceedingly lofty mountains near the eastern shore", was discovered after a very trying journey over rough country. As Kirk pithily expressed it: "The heat now is like Hell—you cannot hold on at any time by the rocks." Yet the explorers had discovered the healthy Shiré uplands, which Kirk describes as a fertile district with highlands, "a healthy position for Europeans".

In the early autumn of 1859, a still more important expedition was undertaken to find the great lake, information of which had reached Livingstone. They found the women of the Manganja disfigured by the horrible lip-ring but, on Kirk remonstrating with a chief, the reply was, "Woman no lip-ring! Why, they would be men, no longer women!" Farther up the Shiré, owing to the accursed slave trade, the appearance of the explorers created a panic or marked hostility. Information was refused or grudgingly given, but on September 16, 1859, Lake Nyasa[2] was discovered. In the absence of a boat, no immediate attempt was made to survey this important body of water, but Livingstone pointed out that, by placing a trading steamer on the lake and purchasing the ivory, the slave trade would receive a heavy blow, "for it is only by the ivory earned by the slaves that the latter do not eat up all the profits of a trip . . . water-carriage exists by the Shiré and Zambezi all the way to England, with the single exception of a porterage of about thirty-five miles past the Murchison Cataracts". Nyasaland constituted the great discovery of Livingstone's second expedition. It led in due

[1] *The Zambesi*, by David and Charles Livingstone; *Kirk on the Zambesi*, by R. Coupland, 1928.

[2] Nyasa and Nyanza both signify a lake.

course to the establishment of missionaries, followed by traders, and culminated in the creation of the Nyasaland Protectorate. Nyasaland was truly the bequest of Livingstone to Great Britain.

In 1866, Livingstone started on his last journey. His base was Zanzibar, where the Sultan supplied him with letters of recommendation to the Arab Chiefs, which proved to be of considerable value. He followed up the Rovuma River, which he had already examined, to the Yao country, passing ghastly proofs of the slave trade in the shape of abandoned victims, dying or dead. He reached Lake Nyasa without any special difficulty, and, marching round the southern end of the lake, crossed the Shiré River to the settlement of Mponda, a powerful chief, who had become a Moslem. His rascally servants became alarmed at rumours of Mazitu or Zulu raiders, and were mostly dismissed, but, thanks to the excellent relations the great explorer knew so well how to establish, he was passed from chief to chief. Crossing a range with an altitude of 4,000 feet, and moving steadily northwards, Livingstone finally reached Tanganyika in April 1867. During this journey his health had begun to give way seriously, and the loss of his medicine-chest constituted a serious blow. Here he met "Tippo-Tib", a noted slave-raider of the Upper Congo, who became a friend of Stanley and other explorers. From Tanganyika, after resting for three months, Livingstone travelled to Lake Mweru, where again his health broke down. But nothing daunted he marched south to find Lake Bangweolo, which he discovered on June 11, 1868.

Livingstone then returned to Lake Tanganyika and crossed it to Ujiji, where he found that the goods despatched for him from Zanzibar had almost all been stolen on the way. Recrossing the lake, Livingstone explored the Lualaba River in 1871. He then returned to Ujiji, where he met Stanley, who had been despatched by the proprietor of the *New York Herald* to seek the lost explorer. Together they examined the northern end of Lake Tanganyika and proved that the river at that point flowed into it and thus could not be a source of the Nile. Livingstone refused to return to England until he had solved the problem of the Nile, and once more, with a well-equipped party supplied by Stanley, he marched to Lake Bangweolo, hoping to discover the sources of the Nile in this area. There on April 30, 1873, the great explorer died.

It is difficult to sum up the achievements of Livingstone

adequately. As an explorer he revolutionized the map of Africa, and opened an epoch for which the whole world is in his debt. Equally great were his services to humanity. He took up the abolition of slavery as the successor of Wilberforce and Buxton, and became the first instrument of its execution inland. Finally, his utter fearlessness, his complete devotion to the highest ideals and his amazing insight into the native mind mark him out for all time as a model to explorers and an inspiration to mankind.

CHAPTER XXVI

THE PROBLEM OF THE NILE

> "I saw that old Father Nile without any doubt rises in the Victoria Nyanza, and, as I had foretold, that lake is the great source of the river."
>
> SPEKE.

THE problem of the Nile has exercised mankind down the ages. In Chapter IV I have referred to the belief of Ptolemy that its sources were to be found in twin lakes, which were fed by the Mountains of the Moon. I added that, in all probability, this information was gained from merchants trading with the ports on the east coast of Africa. Reference has also been made to the mission to Abyssinia of Covilham in 1487. He was succeeded by military expeditions and by missionaries, one of whom, Pedro Paez, discovered the source of the Blue Nile in 1613.

The long line of British explorers in North Africa starts with James Bruce,[1] who, in 1768, sailed up the Nile to Assuan. He crossed the desert to the Red Sea at Massawa and sailed round those torrid waters, visiting Tor, Jedda and the Bab-al-Mandeb. Bruce then returned to Massawa, from which port he made for the Ethiopian capital. With some slight knowledge of medicine, he gained the favour of the Queen-mother, and, after surmounting many difficulties due to the disturbed state of the country, he reached the source of the Blue Nile. Following down its course to the White Nile, Bruce nearly perished from thirst in the Nubian Desert between Berber and Korosko. He took observations throughout his journeys, and published a record of his adventures.

The invasion of Egypt by Napoleon in 1798 stimulated French activity in the valley of the Nile. Not only was the Rosetta Stone discovered, but geographical information was eagerly collected and published in the *Atlas d'Égypte*. After the defeat of the French and the subsequent evacuation of Egypt by the British, under the strong rule of Muhammad Ali, the Sudan was conquered as far south as Kordofan. At this period, moreover, definite progress in the exploration of the

[1] *Travels to Discover the Source of the Nile in 1768.*

White Nile was made, one expedition penetrating through the *sadd* area as far as 4° 42′ N. But the Nile problem was not to be solved as yet.

In the fourth decade of the nineteenth century, two German missionaries, who were established at Mombasa by the Church Missionary Society, heard accounts from the Arab caravan leaders of vast lakes and great mountains, whose highest peaks were covered with a substance resembling salt in appearance. They penetrated some way into the interior, where Rebmann, in 1848, sighted the snowy peak of Kilimanjaro from afar, and Krapf, a year later, saw in the distance snow-clad Mount Kenya. Their discoveries were discredited, but they had blazed the trail for greater explorers.

In 1854 Richard Burton, who had already made his famous journey to Mecca in disguise, was stationed at Aden, which had been annexed by the British in 1839. In the following year he accomplished an adventurous journey to Harrar.[1] Starting from Zeila, he marched through a country infested with brigands and at last "About two miles distant on the crest of a hill, stood the city—a long sombre line, strikingly contrasting with the white-washed towns of the East." Upon his reception by the Amir, Burton handed him a letter written by himself, which purported to have been sent by the Governor of Aden, and expressed his good wishes to the Amir. Burton's remarkable knowledge of the Koran and of Arabic customs carried him most successfully through a ten days' visit in this fanatical city, and he reached Berbera after accomplishing a dangerous but valuable piece of exploration.

In 1856, Burton, accompanied by Speke, who had been his companion in a later but unsuccessful expedition into Somaliland, reached Zanzibar, having been commissioned "to penetrate inland from Kilwa or some other place on the east coast of Africa, and to make the best of your way to the reputed Lake Nyasa".[2] Furnished with letters from the Sultan of Zanzibar, the expedition started off from Bagamayo in August 1857, to follow the caravan route to Lake Tanganyika,[3] at the head of a number of unwilling carriers. The maritime region extended for about a hundred miles, and upon reaching the mountain area which succeeded it, we read: "By resting after every few yards, and by clinging to our supporters, we reached, after about six hours, the summit of the Pass

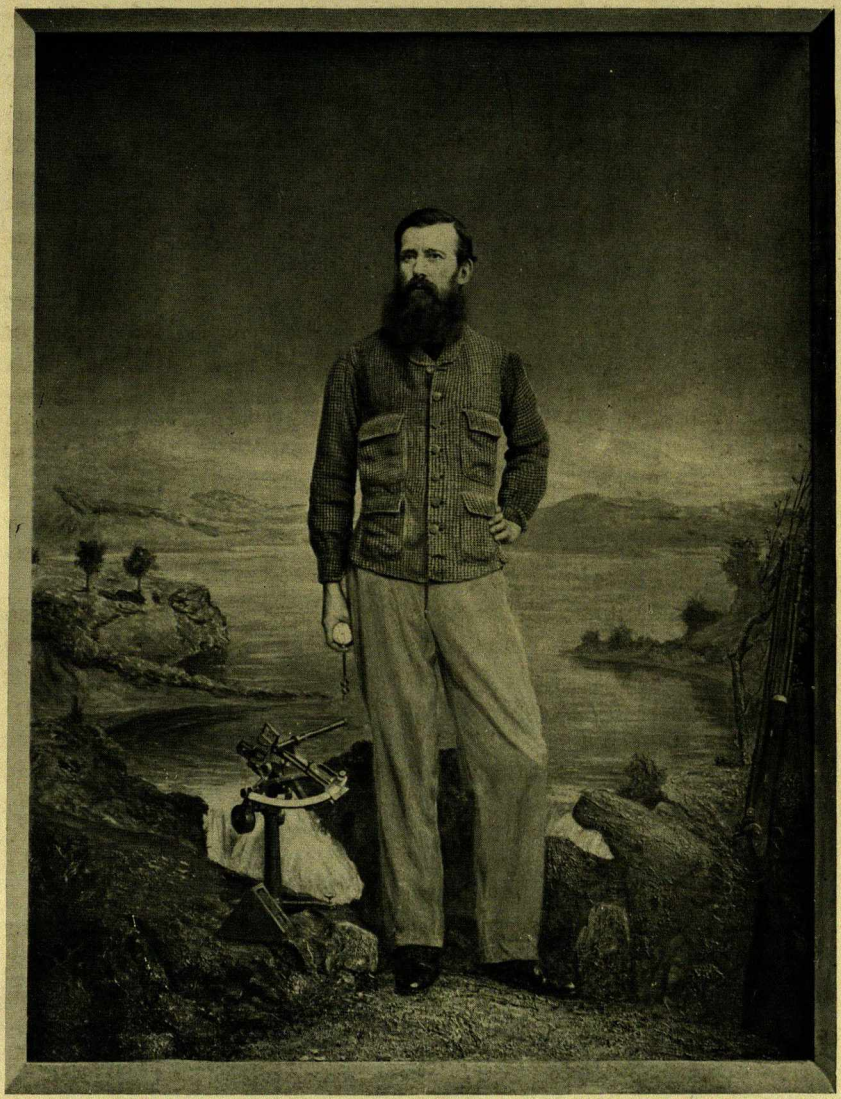
[1] *First Footsteps in Africa*, by Richard F. Burton, 1856.
[2] *J.R.G.S.*, Vol. XXIX, p. 5.
[3] *The Lake Regions of Central Africa*, by Richard F. Burton, 1860.

Terrible. . . . My companion could hardly return an answer; he had advanced mechanically and almost in a state of coma."

In the district of Ugogo, situated some 3,000 feet above sea-level, the general health improved, but the explorers were subjected to exorbitant taxes by the chiefs, and Burton remarks: "The African traveller's fitness for the task of exploration depends more upon his faculty of chafing under delays and kicking against the pricks, than upon his power of displaying the patience of a Griselda or a Job." Traversing the table-land of Ugogo, a hundred miles in width, the harassed explorers entered Unyamwezi, the "Land of the Moon". Thanks to the Sultan of Zanzibar's letters, they were most hospitably received by the Arab merchants, whose centre was at Tabora, distant some 600 miles from the coast. In addition to the help afforded in the way of supplies and transport, they were given definite information as to the existence of three great lakes, with their approximate distances. It was from this information that Burton knew the number of stages to Tanganyika, while it was by relying on Arab reports that Speke discovered Victoria Nyanza. Livingstone had no such reliable informants until his last journey.

A long halt was made at Tabora, the onward march was then resumed, and on February 13, 1858, Burton was able to write: "Nothing, in sooth, could be more picturesque than this first view of the Tanganyika Lake, as it lay in the lap of the mountains, basking in the gorgeous tropical sunshine. . . . In front stretch the waters, an expanse of the lightest and the softest blue, in breadth varying from thirty to thirty-five miles, and sprinkled by the crisp east wind with tiny crescents of snowy foam." Burton and Speke, in spite of serious illness, had discovered mysterious Tanganyika, at a distance of some 900 miles from Bagamayo. They soon made a cruise on the lake, but were unable to visit the river at its northern end, or to ascertain whether it flowed into, or out of, the lake.

After spending a month on this voyage, the explorers, who had run short of calico, returned to Tabora, Burton making the apt remark that "baggage is life" in these countries. Here Burton, who was broken down in health, agreed to Speke attempting to discover what was known as the Ukerewe Lake. Accordingly, in July 1858, Speke started off on one of the most important journeys undertaken in Africa. Everything favoured him, and on August 3, having travelled 218 miles in twenty-four days—



CAPTAIN JOHN HANNING SPEKE

(By J. Watney Wilson, by permission of the Royal Geographical Society)

[*face p.* 230

"the pale-blue waters of the Nyanza burst suddenly upon my gaze. It was early morning. The distant sea-line of the north horizon was defined in the calm atmosphere, between the north and west points of the compass, but even this did not afford me any idea of the breadth of the lake, as an archipelago of islands, each consisting of a single hill, rising to a height of 200 or 300 feet above the water, intersected the line of vision to the left, while, on the right, the western horn of the Ukerewe Island cut off any further view of the distant water to the eastward of north." [1]

Speke had promised to return to Burton within a fixed period, and was consequently unable, on this occasion, to explore the lake, which he christened Victoria Nyanza.

Upon returning to England, his epoch-making discovery was received with great enthusiasm by the Royal Geographical Society, whose President, Sir Roderick Murchison, arranged for him to lead a second expedition, with Grant as his companion, to confirm and amplify his discovery and to ascertain the connection of the Lake with the Nile system.

Starting from Zanzibar in October 1860, Speke suffered, as in his former journey, from troubles with porters and from theft. When he reached Tabora he wrote: "My losses were one Hottentot dead and five returned; one free man went back and one flogged and turned off; ninety-eight of the original porters deserted; twelve mules and three donkeys dead. Besides which more than half my property had been stolen."

Speke's onward journey was delayed by the eternal difficulty of securing porters; while to the north-west of his route Suwarora, chief of the country of Usui, was a notable robber, and fleeced the explorer outrageously. Speke's troubles were almost overwhelming, but at last he reached Karagwe, a district situated to the west of Victoria Nyanza. There Rumanika, a chief of Hamitic (Galla) descent, welcomed the traveller with true hospitality, and for the first time he really enjoyed some repose in delightful surroundings, while the big game shooting was superb.

In this district Speke discovered the Kagera River, and, as Sir William Gowers pointed out in a letter to me—

"it is evidence of Speke's great accuracy and thorough grasp of the topography of the region that he fixed on this river as the true source of the Nile. It has been left for the present century to confirm this by the discovery that not only does the Kagera River bring down into Lake Victoria a larger volume of water than any other tributary, but also its headwaters rise only about twenty miles from Lake Tanganyika."

[1] *What led to the Discovery of the Source of the Nile*, by J. H. Speke, 1864; *The Discovery of the Source of the Nile*, by the same author, 1863. The above quotation is taken from the first-named work.

Continuing to march northwards, Speke was the first European to enter Uganda in January 1862, and wrote: "The temperature was perfect. The whole land was a picture of quiescent beauty, with a boundless sea in the background." Upon reaching the court of Mutesa, Speke found a monarch occupying a palace built of palm trunks, with a hierarchy of officials. He soon found favour with Mutesa and his mother, who admired his beard and were amazed at his prowess in killing rhinoceroses and in shooting birds on the wing. They also appreciated the valuable presents with which the Government of Bombay had supplied him.

After paying a long visit to Mutesa, during which he witnessed acts of cruelty and realized the utter lack of purpose of the tyrant, the explorers resumed their march to the north, and on July 28, 1862, Speke, who had struck the left bank of the Nile, reached the famous "stones", which he named the Ripon Falls after the President of the Royal Geographical Society. "It was a sight", he wrote, "that attracted one to it for hours—the roar of the waters, the thousands of passenger-fish leaping at the falls with all their might . . . hippopotami and crocodiles lying sleepily in the water, and cattle driven down to drink at the margin of the lake . . . made as interesting a picture as one could wish to see." But of still greater importance was the fact that "the expedition had performed its functions" and the memorable words, which constitute the motto to this chapter, were evidently written with a full and thankful heart. It remains to add that the Victoria Nyanza is the second most extensive lake in the world, being exceeded only by Lake Superior.

Descending the Nile for some distance, the explorers marched to the capital of Unyoro overland. There, owing to his justifiable hostility to the Baganda, Kamurasi the king detained Speke and Grant for two months. During this period they heard of the existence of another great lake to the west, but were not permitted to visit it. At last they were able to depart, and striking the Nile they travelled partly by canoe to the Karuma Falls. Finally, on February 15, 1863, they reached Gondokoro, where they were greeted by Samuel Baker, after having accomplished feats of exploration that will never be forgotten.

Another great explorer of this wonderful period was Samuel Baker, a great hunter and a born adventurer. In 1861 he landed in Egypt and spent some time exploring and hunting in the upper reaches of the Atbara. Accompanied

everywhere by his devoted wife, Baker reached Khartum in 1862, and decided to ascend the Nile in search of Speke and Grant. Upon meeting them, he was at first disappointed that his expedition had been organized in vain. Speke, however, informed him of the existence of another great lake to the west of Unyoro, and Baker determined to take up the quest.[1]

His troubles were manifold, as the Arab slave-dealers were most hostile and caused a mutiny among his rascally followers. Baker's personality, however, triumphed. The King of Unyoro was at first unwilling to allow him to proceed, and fleeced him unmercifully, but when Baker threatened to shoot him, he realized that he had gone too far and despatched the explorers with an escort, whom the Englishman dubbed "The Devil's Own", and speedily dismissed. The heroic Mrs. Baker had nearly died from sunstroke, and he was worn out when on March 14, 1867, he discovered the Albert Nyanza.

Striking it on the south-east coast, Baker writes: "Far as the eye could reach to the south-west and west, the boundless sheet of water lay like a mirror. On all sides where land was visible, the lake was completely shut in by mountains." The explorers secured canoes and coasted the lake to its north-east corner, where it is entered by the Victorian Nile which almost immediately passes on again. Ascending the Victoria Nile, or the Bahr-el-Jebel as it is called by the Arabs, they discovered the Murchison Falls "where the river drops in one leap 120 feet into a deep basin, the edge of which literally swarms with crocodiles". Leaving the canoe, the explorers marched upstream towards Karuma Falls. They suffered terribly owing to Unyoro intrigues, but finally reached Khartum in May 1865. Here we take leave of a born leader of men, who had accomplished a great feat in connection with the problem of the Nile.

The last of the great explorers in Africa was Stanley. He returned to that continent in 1874, and, reaching the Victoria Nyanza in the following year, he sailed round it.

> "From January 17, 1875, to April 7, 1876, we had been engaged in tracing the extreme southern sources of the Nile from the marshy plains and cultivated uplands, where they are born, down to the mighty reservoir called the Victoria Nyanza. We had circumnavigated the entire expanse, penetrated to every bay, inlet and creek; . . . we had

[1] *Sir Samuel Baker*, by T. D. Murray and A. Silva White, 1895.

travelled hundreds of miles to and fro on foot along the northern coast of the Victorian Sea and finally had explored with a large force the strange countries lying between the two lakes Muta Nzige (i.e. Edward) and the Victoria. . . . I have not ventured beyond the limits assigned to me, viz. the exploration of the southern sources of the Nile, and the solution of the problem left unsolved by Speke and Grant. Is the Victoria Nyanza one lake, or does it consist of five lakes, as reported by Livingstone, Burton and others? This problem has been satisfactorily solved, and Speke has now the full glory of having discovered the largest inland sea on the continent of Africa, also its principal affluent, as well as the outlet." [1]

After his survey of the Victoria Nyanza, and his important discovery of Lake Edward, Stanley turned his attention to Lake Tanganyika, which he surveyed with equal thoroughness, but he decided—wrongly, as was subsequently proved—that the Lukuga was not the regular outlet of the lake. He then followed the Congo down its course and forced his way through the country, where Livingstone had turned back owing to the hostility of the Arabs. In August 1877 he arrived safely at Boma, having accomplished one of the great journeys in Africa which happily supplemented the explorations of Speke and Livingstone.

Stanley undertook yet another great journey in connection with the relief of Emin Pasha, a German official of the Egyptian Government, who was Governor of the Upper Nile provinces. The fall of Khartum in 1885 resulted in Emin being cut off, and Stanley, who had been founding the Belgian Congo, was commissioned to undertake his relief. This was his most arduous journey, since the Congo forests were almost as far-reaching as those of the Amazon and the population was frequently hostile.

The most important discovery made by Stanley was that of Ptolemy's "Mountains of the Moon", locally known as Ruwenzori. Curiously enough Speke had been told of them by the Arabs and had passed not far from them during his journey to Uganda. Stanley again, after surveying Victoria Nyanza and visiting Mutesa in Uganda, had accompanied an expedition to the base of the great range, and yet failed to realize their importance. In his last journey he wrote:

"My eyes were directed by a boy to a mountain said to be covered with salt, and I saw a peculiar-shaped cloud of a most beautiful silver colour, which assumed the proportions and appearance of a vast mountain covered with snow. Following its form downward, . . . I became

[1] *Through the Dark Continent* (8th ed.), 1890, pp. 306–7.

first conscious that what I gazed upon was not the image or semblance of a vast mountain, but the solid substance of a real one, with its summit covered with snow. It now dawned upon me that this must be the Ruwenzori." [1]

As Stanley comments, it was remarkable that neither Baker nor Emin Pasha had discovered it long ago.

Stanley's other important discoveries included tracing the Semliki River to the Edward Lake, which he had discovered on his former journey and now explored.

By these two great journeys Stanley completed the proofs that the White Nile has two separate sources of supply. The principal one is Victoria Nyanza, whose catchment area he explored, while the other comprises the Lakes Edward and Albert, connected by the Semliki River, which derive their main supply from the heavy tropical rainfall, but also from the snowfields of Ruwenzori. It remains to add that by these discoveries Ptolemy was, at long last, justified.

Looking back on the splendid achievements of Livingstone, Burton, Speke, Baker and Stanley, there seems to be little doubt that the solution of the Nile problem produced a band of explorers whose greatness has seldom, if ever, been surpassed. Their achievements added lustre to the great Victorian Age.

[1] *In Darkest Africa*, by H. M. Stanley, 1890, p. 405.

CHAPTER XXVII

AFRICA—THE LAST PHASE

"The sand-dunes hide many wells
That brim with waters unfailing.
You come to their margins like bracelets
Wrought of gold and rare gems in far countries."
The Beduin's Song to his Camel.

DURING the last fifty or sixty years no discoveries have been made in Africa comparable with the solution of the problems connected with the Niger or the Nile. Yet many important journeys have been made, and this chapter records the completion of the exploration of Africa, so far as any wide tracts of land are concerned.

Among the notable successors of Mungo Park, Livingstone, Speke and Stanley was Joseph Thomson.[1] Originally appointed geologist to an expedition despatched by the Royal Geographical Society in 1878, he succeeded to the leadership upon the death of Keith Johnston. The object in view was to explore the country between Dar-es-Salaam and Lake Nyasa and to open up the most practicable route into the interior. Thomson, who possessed remarkable tact in dealing with the natives, penetrated to Lake Nyasa, and then explored the country to the north, discovering Lake Rukwa. He next marched up the west coast of Lake Tanganyika, and examining the Lukuga outlet, reported that it had "a swift resistless current" and proved that the waters of the lake fed the Congo. Unable to reach that river owing to the marked hostility of the natives, Thomson returned to the coast *via* Tabora, after accomplishing a difficult task with complete success.

In 1885 Thomson was entrusted by the Royal Geographical Society with the still more difficult task of opening up a direct route from Mombasa to Uganda. Traveller after traveller had made the attempt, but the warlike Masai had hitherto proved to be an insuperable obstacle. Upon leaving the coast, 200 miles of desert had first of all to be crossed, and the thirst-stricken carriers only just crawled into Taveta

[1] *Joseph Thomson, African Explorer*, by J. B. Thomson, 1897.

with its cool shade "beside the majestic mass of Kilimanjaro". Thomson failed in his first attempt to penetrate the Masai country, but later he joined a large trading caravan and proceeded to Lake Baringo, situated in the Rift Valley, which he was the first European to view, and which he proved to have no connection with the Nile system. On December 10 he finally reached Victoria Nyanza, which was the goal set him on this expedition. On his return journey he visited Mount Elgon. Thus ended two journeys of exploration, during which many important discoveries were made and the direct route from Mombasa was explored, Thomson thereby becoming the pioneer of the Uganda railway. Apart from his geographical discoveries, Thomson also rendered valuable services to the elucidation of the geological problems of Africa.

We have now reached the period in which Africa was being rapidly partitioned among the rival European states, and surveys undertaken primarily for the delimitation of boundaries, such as those made by Close and Boileau between Lake Nyasa and Tanganyika in connection with the Anglo-German boundary in 1898, were of the greatest value. They marked a new epoch in scientific accuracy.

The successors of Livingstone in Nyasaland were Johnston and Sharpe, whose activities in establishing that protectorate included much exploration; while Lugard, throughout his distinguished career, in Nyasaland, Uganda and Nigeria, explored a great deal of country and amassed much valuable information.[1]

In 1891 Macdonald commenced his important survey for a railway from Mombasa to Uganda, in which he traversed much imperfectly known, and some unexplored, country. Work was started in 1895, before the conquest of Uganda was completed, and, in view of the desert nature of part of the country, the unhealthiness of other parts, the hostility of various tribes and the depredations of lions, its completion constitutes a monument to British determination and tenacity of purpose.

In 1899 Mackinder[2] led an expedition to climb Mount Kenya, which, rising to an altitude of 17,040 feet, gives its name to the colony. He camped on the site of the future capital, Nairobi, and after serious troubles with the Kikuyu porters, who attempted to desert in a body, and from feuds

[1] *The Rise of our East African Empire*, by Captain F. D. Lugard, 1893.
[2] "A Journey to the Summit of Mount Kenya", by J. Mackinder, *G.J.*, May 1900.

between the tribes, the expedition moved very slowly towards its objective. Indeed, it took about three weeks to cover 100 miles to the plateau of Laikipia at the western foot of Kenya. The forest belt was traversed in one day, thanks to the axes of the Swiss mountaineers, but meanwhile two Swahilis were killed in the vicinity of the base camp, which caused delay. The peak was extremely difficult to climb, but, on September 14, Mount Kenya was conquered —a great feat of mountaineering.

The Ruwenzori Range had been examined by more than one traveller, but although British mountaineers, Freshfield and Mumm, with a Zermatt guide, had attempted to scale its peaks in 1905, uninterrupted rains had forced them to abandon the attempt. In 1906 the Duke of the Abruzzi, with a staff which included the distinguished explorer Filippo de Filippi, appeared on the scene at the head of an important expedition, which included Swiss guides and porters.[1] The account of the ascent to the highest peak makes thrilling reading, and the Duke in true knightly fashion named the highest twin peaks of the range Margherita and Alexandra. In due course the entire range was examined. This brief account of the exploration of the "Mountains of the Moon" fitly closes discovery in Central Africa.

To turn to West Africa, in 1896 Trotter, as the British representative of an Anglo-French Boundary Commission, penetrated to the source of the Niger through a malarial jungle. The natives declined to point it out, "assuring us that it was the seat of the devil. . . . They believe that anyone who looks on the Niger source will die within the year, and they regard the water as poisonous."[2]

In 1887, the French traveller Binger explored the country to the south of the great bend of the Niger, and discovered that, contrary to the general belief, the Niger Valley was comparatively narrow. In 1892 he explored the Southern Sudan to ascertain the boundary between the Gold Coast and the Ivory Coast, travelling mainly in the hinterland of the latter area.

The commercial development of the Lower Niger was conducted by British firms, established on the Oil Rivers, which partly form the delta of the Niger and are partly independent creeks. In 1879 British interests were amalgamated

[1] *Ruwenzori*, by Filippo de Filippi, 1908.

[2] "An Expedition to the Source of the Niger", by Colonel J. K. Trotter, *G.J.*, Vol. X, September 1907.

into the United African Company, and, under the influence of that great Englishman, Sir George Goldie, the Royal Niger Company was founded.

In 1899 Nigeria was transferred to the Crown, and, under Sir Frederick Lugard, the country was systemmatically explored. In 1902–3 valuable surveys were made in connection with the Anglo-French Niger and Chad Boundary Commission, and in 1904 the Boyd-Alexander expedition proved that Lake Chad consisted of two shallow lakes connected by a number of smaller ones.[1] In 1884 Germany declared a protectorate over Togoland and the Cameroons, with the result that both countries were thoroughly explored and scientifically surveyed, mainly by surveyors attached to the military expeditions that effected the German occupation.

Boundary commissions followed one another in rapid succession, accompanied by scientific surveys, and to-day, with the possible exception of some parts of Liberia, West Africa is a comparatively well-known country.

No account of the country would however be complete without a reference to Mary Kingsley.[2] This intrepid Englishwoman travelled mainly in the French Congo, which at that time was but little explored. Landing at Gabon in 1895, she voyaged up the Ogowe in a canoe and explored the country. The Fans, who were cannibals, were unfriendly, but she managed to travel among them in the rôle of a trader, although she undoubtedly ran serious risks. Her description of the tropical forests runs :

> "One hundred and fifty feet above you there is a dense canopy, formed by the interlaced crowns of the trees, and then infinity of bush-ropes and parasitical plants, that shuts out all the sky ; around you on all sides in the green gloom are countless thousands of grey bare trees —columns, straight as ships' masts, and between them a twisted medley of great bare black bush-ropes, looking as if they were some Homeric battle of serpents that at its height had been fixed for ever by some magic spell, while beneath you and away into the shadowed vastness lay the stagnant currentless dark waters, making a floor for the forest, a floor whose face is like that of a mirror seen in gloom—dimly showing you the forms outside it, seeming to have in it images of unknown things."

But Mary Kingsley, who painted this wonderful word-picture, will chiefly be remembered for her insistence that the customs and point of view of the native should be studied and understood and that institutions should be administered

[1] *From the Niger to the Nile*, by Lieut. Boyd Alexander, 1907.
[2] *The Life of Mary Kingsley*, by Stephen Gwynn, 1932.

by native rulers under the direction of Europeans. To prove the impression made by her personality, when she died, a "Mary Kingsley" hospital was founded for the study and treatment of tropical diseases, and a "Mary Kingsley Society of West Africa" for the systematic study of native customs and institutions. Wilberforce and Buxton had abolished slavery, Livingstone on land and the British Navy at sea had carried this abolition into effect, while Mary Kingsley showed the world how to govern the negro with justice based on understanding and mercy.

To turn to the Congo region, the French explorer De Brazza explored the Ogowe, founding Franceville on its upper reaches, and discovered many of the northern tributaries of the Congo River, reaching the main river at a point where he founded Brazzaville. He was the able pioneer of what is known as the French Congo. His rival was Stanley, who in 1879, acting as the representative of King Leopold of Belgium, staked out what is now known as the Belgian Congo. Other explorers in this area were Von Wissmann, who discovered the great Kasai tributary, and George Grenfell, who also discovered many of the tributaries of the Congo. These explorers gradually surveyed the enormous Congo area.

In Abyssinia and surrounding countries many explorers have appeared on the scene. In 1885, Teleké, a Hungarian explorer, started from Zanzibar with the object of discovering a lake situated in North-East Africa, which was called Sumburu by his Arab informants. In face of constant difficulties, he was able to make a partial ascent of Mount Kenya and explored the country of the Kikuyu. He reached Lake Baringo, and, continuing northwards, made the important discovery of Lakes Rudolph and Stephanie, situated in the volcanic region of the Rift Valley.

From 1899 to 1904, British officers, Gwynn and Austin, executed valuable surveys between the Blue Nile and the Sobat. Again, Butter and Maud, starting from Abyssinia in 1902, passed to the west of Lake Stephanie, and, travelling along the eastern side of Lake Rudolph, reached the Rift Valley. During this journey important surveys were made. Nor must Wellby, who had already won his spurs in Asia, be forgotten. Starting from Abyssinia, he reached Lake Rudolph by the Omo Valley—the Niam-Niam of early explorers. He then explored the Sobat, and finally reached Fashoda.

In 1903, during the Somali expedition, Beazeley surveyed

many thousand square miles of British Somaliland, while Gwynn, in 1908, delimited the southern frontier of Abyssinia.

The last area to be explored in Africa was the enormous Sahara, the dead heart of North Africa. To continue the account of its penetration from Chapter XXII, Flatters, who was commissioned to survey a route for a trans-Saharan railway, was murdered by Tuaregs in 1881. His successor was Foureau,[1] who, beginning in 1890, made repeated journeys to In Salah, towards Temassinim and the Tademait plateau. He thus gained the necessary experience of the nature of the country and its fanatical inhabitants. Success was finally achieved by the Foureau-Lamy Mission of 1898–1900. Marching due south from Biskra the explorers, supported by a strong escort, passed through Agades and reached Lake Chad, where they met Meynier from the Niger and Gentil from the Congo. Foureau completed his journey at the mouth of the Congo. Geographical and geological discoveries of great value were made—more than 500 places were fixed by astronomical observations—and upon the results of this journey were based the subsequent military and scientific expeditions despatched by the French Government.

In 1912, Commandant Tilho attacked the fanatical Senussis at Tibesti, and later he explored Borku and Ennedi, finally travelling through Wadai to Darfur. As a result of these journeys, undertaken by French explorers, a chain of astronomically fixed positions was forged from the Niger to Lake Chad and thence to the Nile.

In 1922, and again in 1927, an intensive study of Aïr and Damergu was undertaken by Rodd.[2] Particularly interesting is his account of the Tuaregs: "A man's status in Aïr, as elsewhere among the Tuareg, is determined by the caste and allegiance of his mother. Survivals of a matriarchal state of society are numerous among the People of the Veil. They colour the whole life of the race." Explanation of the veil, which is not worn by women, the author can offer none, but he states: "In this veil the men live and sleep. They lift the *imawal* up to eat, but in doing so hold their hand before the mouth. When the veil requires refixing, a man will disappear behind a bush to conceal his features even from his own family."

The French are gradually completing the conquest of the historical Atlas Mountains. To the south of this dividing

[1] *D'Alger au Congo*, by F. Foureau, 1902.
[2] *People of the Veil*, by F. Rennell Rodd, 1926.

range the oasis of Tafilelt was occupied in 1932, and before long the Sahara, conquered to some extent by the agency of the motor-car and the aeroplane, will have yielded up the last of its many secrets.

To complete the story in North-East Africa, the grim Libyan Desert has been penetrated—of recent years by motor-car in expeditions led by Bagnold—while on the right bank of the Nile, Hume and Ball have done work of considerable geographical importance.[1] Moreover, during the Great War valuable information was gained in connection with military operations and with missions, especially on the western frontier of Egypt.

In Chapter XXII reference was made to Rohlfs, who in 1879 was robbed in the neighbourhood of the Kufra Oasis. In 1920 Rosita Forbes [2] and Hassanein Bey determined to attempt a journey to Kufra. Hassanein Bey, an Egyptian of good family, had served as secretary to the Italo-British Mission to *Sayyid* Idris, the head of the religious order of the Senussi, in 1916. He had mentioned his desire to penetrate to Kufra to Idris, who provided letters of recommendation, without which the enterprise would have been courting certain disaster. As it was, the explorers ran considerable risks of being attacked by bandits, through reports of their presence being known or through treachery, apart from the equally serious risk of losing their way and dying of thirst.

All went reasonably well until nearing the Kufra Oasis, when the guide, intentionally it would appear, missed the route, and the party ran out of water. They were in a dangerous situation, which was saved by their arrival at Buseima to the west of the direct route. Upon arrival at Hawari, owing to the treachery of the guide, they were threatened by the fanatical tribesmen, but upon entering the oasis they were welcomed by the representatives of *Sayyid* Idris. They had reached Kufra after a trying journey of more than 400 miles.

After visiting the villages that composed the oasis of Kufra or "the Infidels", so called from the pagan Tebus, who were its original owners, the explorers made for Jaghabub across another section of the desert. Here, at the headquarters of the Senussi, they were welcomed, and were permitted to visit the college buildings and the mosque. Shortly after

[1] "The Egyptian Wilderness", by W. F. Hume, *G.J.*, Vol. LVIII, p. 247, and "Problems of the Libyan Desert", by J. Ball, *G.J.*, Vol. LXII, p. 21.
[2] *The Secret of the Sahara: Kufra*, by Rosita Forbes, 1921.

leaving Jaghabub, the explorers met a British patrol, and this successful expedition ended at the Siwa Oasis.

In 1923 Hassanein Bey, encouraged by the success of this journey and the support of King Fuad, undertook a still greater enterprise.[1] Returning to Kufra he was well received, but he wrote about the suspicions he excited: "I finally discovered the real basis of the antagonism of those who live in the desert to the coming of persons from the outside world. It is not religious fanaticism; it is merely the instinct of self-preservation. If a single stranger penetrated to Kufra, the cherished centre of the life of their tribe, it would be as the Beduins say, 'the camel's nose inside the flap of the tent'."

The original plan of Hassanein Bey had been to proceed to Wadai across unexplored country, but hearing of two "lost" oases, Arkenu and Owenat, lying to the east of the Wadai route, he determined to find them. It was extremely difficult to engage guides and camels for the enterprise. However, the blessing of *Sayyid* El Abid helped matters, and at last the caravan started off south. After eight long marches "suddenly mountains rose before us like mediaeval castles half hidden in the mist. These were the mountains of Arkenu. . . . The sight of them so gripped me that for a while I dreamed that I was not in the desert any more." The oasis was temporarily inhabited for grazing by Goran tribesmen, who brought sheep and milk to the caravan, while the grazing was excellent and the water supply abundant, though not good.

A sorely needed halt was made and the journey was resumed. After a long night's march the Owenat Mountains were sighted, and in the oasis rock carvings of lions, giraffes and ostriches were discovered. The chief of the Goran agreed to act as guide to Erdi, from which camp the country was hilly. A herd of ostriches was sighted before reaching Enebah, where there was a well of good water and a large encampment. Here the explorer was seen by a *Shaykh* opening the instrument case, and "I could see in his cruel dark face with yellow eyes like those of a fox set close together that he believed I had gold in the box".[2] However sentry-go was ostentatiously instituted and no attack ensued.

Finally the expedition reached Darfur, where the Badawi, delighted with the dancing of the women, performed the ceremony of "singeing the girl's slippers" with their powder

[1] *The Lost Oases*, by Hassanein Bey, 1925.

[2] Similarly in Persia, the beautifully kept brass telegraph instruments were believed to be of gold by the ignorant tribesmen, who, on this account, time and again besieged the British Telegraph Offices.

play. These two important journeys, which lay almost entirely through unexplored country, not only linked up Egypt with the Sudan, but supplemented the explorations of Tilho, thus practically completing the exploration of North-East Africa.

So we complete the story of the exploration of Africa down the ages. Herodotus travelled in Egypt and drew the course of the Nile to correspond with the Danube. Later great Ptolemy, whose influence dominated geographers down to modern times, gave a remarkably accurate description of its sources. Idrisi and Ibn Battuta were followed by the Portuguese, but it was not until the nineteenth century that the heart of Africa was penetrated. Here Livingstone will remain for all time the central figure, not only for his wonderful discoveries, but for showing how to cope with the infamous slave-trade on land.

Europe had wronged Africa, inflicting unspeakable miseries upon her, but, led by Livingstone, heroic parties of missionaries settled in the country. They, in their turn, were supported by a magnificent band of British officers, who hoisted the British flag and abolished slavery over large portions of Africa. Other nations undertook the same task, and to-day the great continent knows such peace and security as never before. We sinned grievously, but repented, and, thanks to our great explorers and administrators, we have atoned for our sins.

CHAPTER XXVIII

THE EXPLORATION OF CENTRAL ASIA IN MODERN TIMES

"Oxus forgetting the bright speed he had
In his high mountain-cradle of Pamere.

. . . . . .

But the majestic river floated on,
Out of the mist and hum of that low land,
Into the frosty starlight, and there moved
Rejoicing through the hush'd Chorasmian waste,
Under the solitary moon."

MATTHEW ARNOLD.

"The locality is the surviving portion of reality of an event that has long passed by. . . . It often restores to clearness the picture which history has preserved in half-effaced outlines."

HELMUTH VON MOLTKE.

THE exploration of Central Asia in modern times has been accomplished by Russia, advancing from Siberia in the north and from the Caspian Sea in the west, while the British, based on India, have also played a leading part in discovering and surveying this immense area, which was first discovered by Alexander the Great. The advance of Russia began with the foundation of Sergiopol to the north-east of Lake Balkash in 1831. From this base, Semirechia was explored in 1840, and a decade later Kulja, situated in the upper valley of the Ili, was reached. Southwards Vyernyi was founded on the route to Kashgar.

In 1857 the Tian Shan was explored by Semenov, who, from the Balkash area, travelled south-east to Issyk Kul, crossing the Ala Tau. He then penetrated the main range of the Tian Shan. Other explorers followed, and, in 1871, Fedchenko crossed the Alai Range to the edge of the Trans-Alai Mountains, where he named the highest peak Mount Kaufmann in honour of the Russian Commander-in-Chief. This magnificent mountain was sighted by me from the neighbourhood of the great Kara-Kul Lake in 1915, when its austere beauty was enhanced by a mantle of freshly fallen snow.[1]

[1] *Through Deserts and Oases of Central Asia*, p. 134.

We next come to the Russian advance on Central Asia from the Caspian and the Sea of Aral.[1] Survey operations were started in the Caspian under Muraviev, who in 1819 crossed the desert to Khiva. Twenty years later, a Russian expedition from Orenburg attempted to traverse the steppe and attack Khiva, but retreated before reaching the Ust-Urt plateau, mainly owing to lack of forage. Indeed, it was not until 1873 that the great desert oasis of Khiva was annexed and explored.

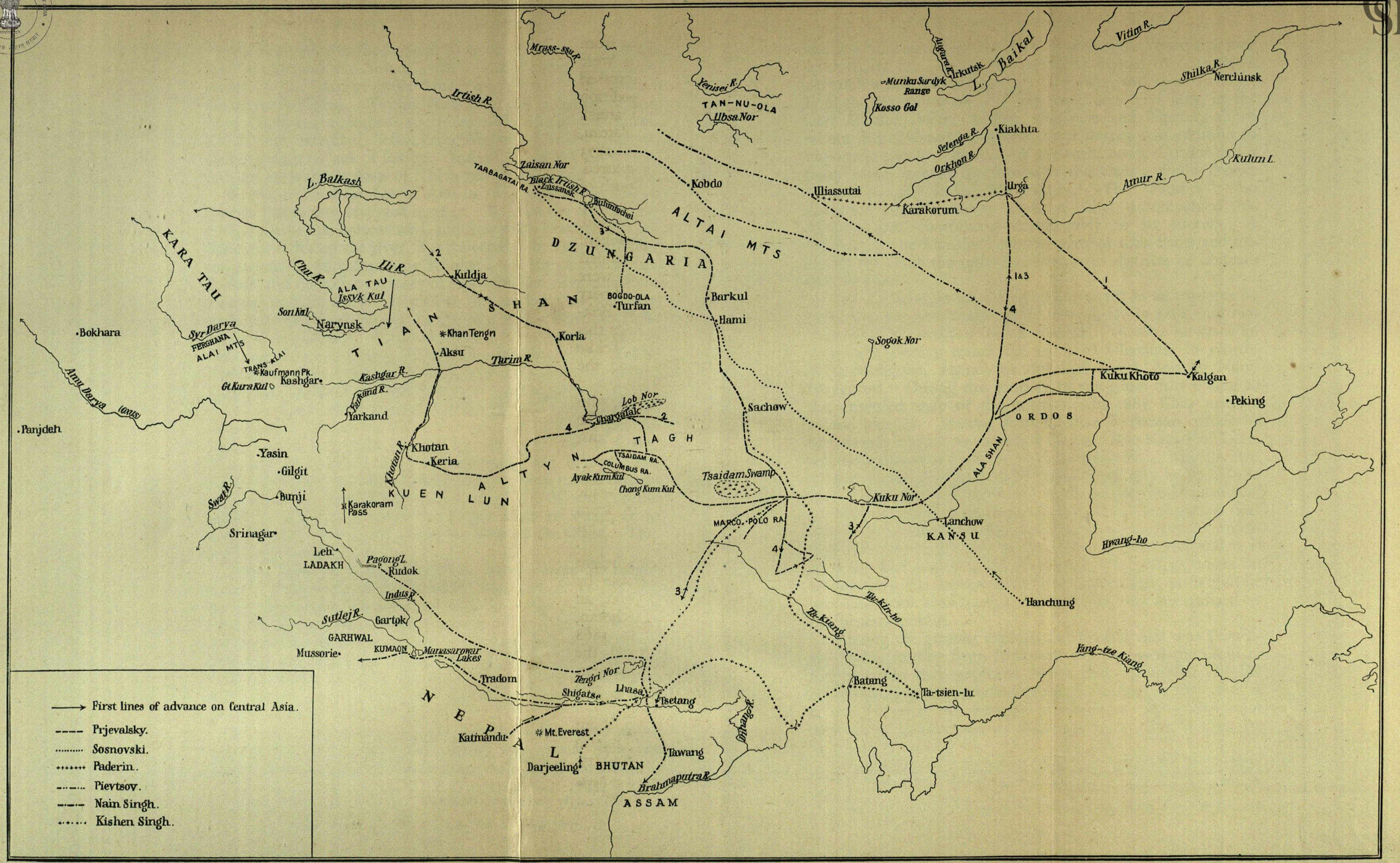
Russia reached the Sea of Aral in 1844, and the mouth of the Syr Darya was occupied in 1847. In 1849 the advance up the Syr Darya was commenced, and four years later Ak Masjid, some 220 miles up the river, was captured. In 1865 Tashkent was stormed, and before long Khojand, the site of Alexandria *Eschate*, and the rich provinces of Khokand and Farghana were annexed and explored. It was at this period that Vambéry made his celebrated journey in disguise across Persia to Bokhara and Samarkand. Russia completed her annexation of this vast area from her bases on the Caspian Sea. The Tekke Turkoman were crushed in 1881 at Geok Teppe, and the Turkoman of Merv submitted shortly afterwards.

The earliest British explorer of this period was Wood, who accompanied Burnes to Kabul in 1835. From that city he made a most important journey up the valley of the Oxus, following in the footsteps of Hsuan-tsang and Marco Polo, and on February 19, 1838, "we stood, to use a native expression, upon the *Bam-i-Dunia* or 'Roof of the World', while before us stretched a noble but frozen sheet of water, from whose western end issued the infant river of the Oxus. This was Lake Sir-i-Kul."[2]

From India the Karakoram Pass, known from its height as the "Ridge-pole of the World", was crossed in 1857 by the Schlagintwert brothers;[3] while in 1865 Johnson, an officer of the Survey of India,[4] travelled from Leh to Khotan, and fixed the position of the "City of Jade". In 1868 Hayward, travelling by the Karakoram Pass, explored the Yarkand River and the Karakash and reached Kashgar. In a second journey, with the Pamirs as his objective, this intrepid explorer was murdered.

The first Englishman to gain accurate information about Chinese Turkestan was Robert Shaw, who, while living in Ladakh, met an agent of Yakub Beg, the ruler of the country,

[1] This question is fully dealt with in Chapter LXXIX of Sykes, *History of Persia*.
[2] *A Journey to the Source of the Oxus*, by Captain John Wood, 1872, p. 232.
[3] *Proc. R.G.S.*, old series, Vol. II, p. 301.
[4] "Journey to Ilchi Khotan" (1866), *J.R.G.S.*, Vol. XXXVII (1867).



CENTRAL ASIA, 1857-84

(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

[face p. 246

and was invited to visit his master's domains. Shaw was well received by the *Atalik*, who cordially invited the British to despatch a mission to his court. In 1870, and again in 1873, Forsyth was entrusted with this task, and with him, in the later Mission, were Gordon, Chapman and Trotter, all of whom distinguished themselves as explorers. In addition to important surveys executed by the main body, Gordon led a party which crossed the Pamirs to the Oxus; while Trotter shot an *ovis poli* during this journey.[1] The "Pandits", who did such valuable survey work in Tibet, accompanied this Mission, and contributed considerably to its success. A Moslem, "The Munshi", left the party at Kala Panja and followed the Oxus through the unexplored districts of Shignan and Roshan.

Ney Elias began his distinguished career as an explorer by examining the new course of the Hwang-Ho in 1868, and two years later he surveyed its old channel. In 1872 he made an important journey across the Gobi to Uliassutai in North-West Mongolia, whence he travelled across Asia to Nijni-Novgorod. During this journey he ran great risks owing to the unsettled state of the country. In 1885 Elias made a second journey. Starting from Chinese Turkestan, which he had already visited, he travelled by the Little Kara-Kul Lake, which he discovered, to the Pamirs, where he visited the confluence of the Murghab and Panja Rivers, and indicated the true source of the Oxus. He then crossed Badakshan and reached the camp of the Afghan Boundary Commission near Herat. I first met Ney Elias at Meshed, where he was Consul-General. He taught me much about Central Asia, and it is my view that, owing to his disinclination to publish books on his journeys, the importance of his explorations, on which he invariably took astronomical observations, was not realized by the general public.

Among the greatest explorers of Central Asia was Prjevalsky,[2] who, starting from Kiakta in 1871, crossed the Gobi to Kalgan. He then explored North-East Mongolia. In the following year he travelled through Kansu to the lake of Kuku Nor, and the marshes of Tsaidam. Returning from Kuku Nor, he recrossed the Gobi to Urga. This journey lay

[1] Sir Henry Trotter, the first European to shoot the *ovis poli*, gave me an account which I embodied in *Through Deserts and Oases of Central Asia*, p. 326. In this work I have also described the rise and fall of Yakub Beg—the *Atalik*—and the Forsyth Missions.

[2] *Vide* "Prjevalsky's Journeys and Discoveries in Central Asia," *Proc. R.G.S.*, new series, Vol. XIX, p. 214.

mainly through unexplored country, and in the course of it a fertile, well-watered range had been discovered in Kansu.

In 1876 Prjevalsky, on his second journey, started from Kulja, and crossed the Tian Shan to the Tarim River, following its course down to Lob Nor, which he surveyed. He also discovered the Altyn Tagh, but was unable to cross it in mid-winter. The Russian explorer thereby proved the connection existing between the Nan Shan range [1] to the east and the Kuen Lun to the west, the three ranges holding up the great plateau of Tibet on the north as the Himalayas buttress it on the south.

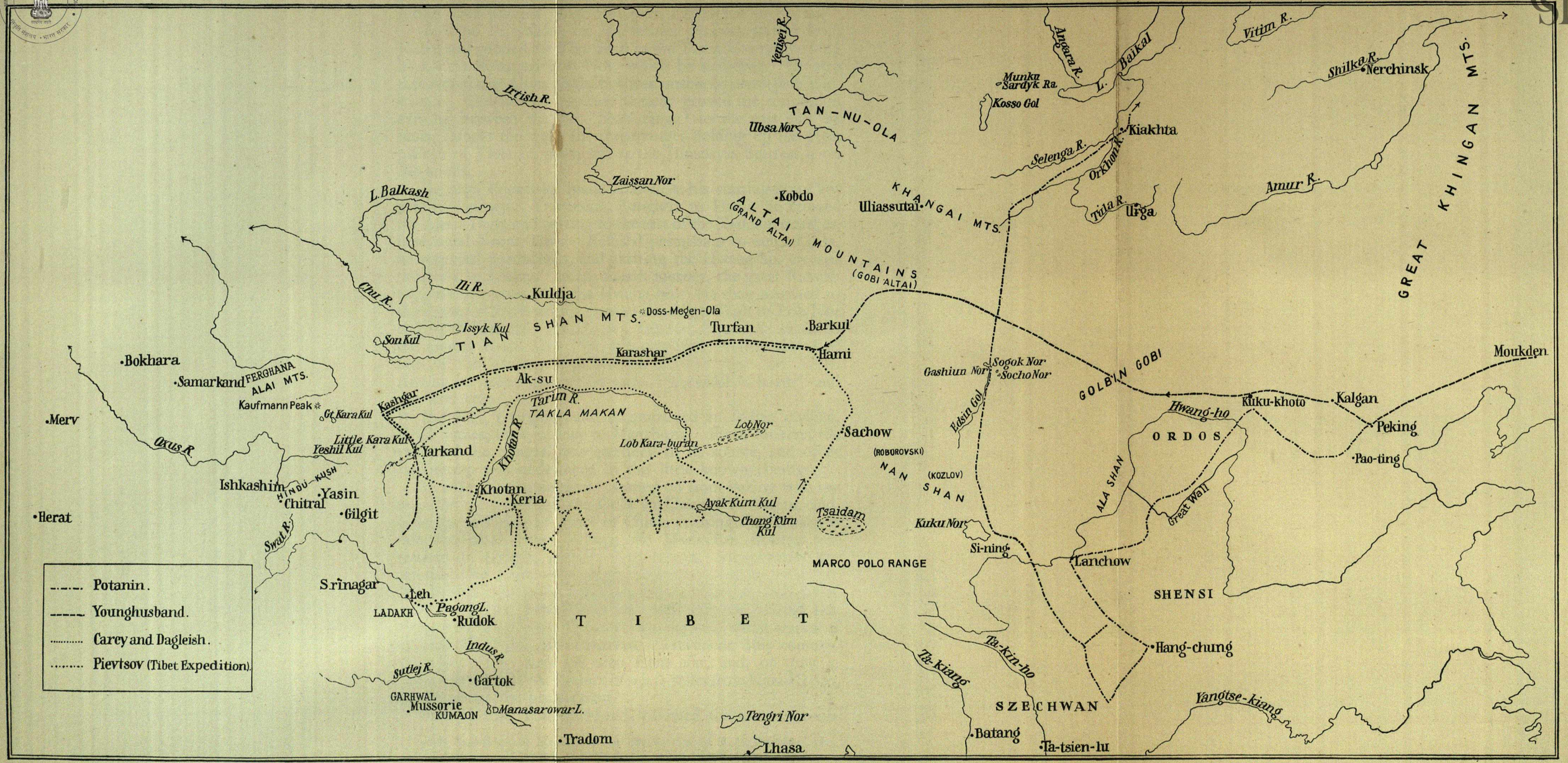
In 1879 Prjevalsky made Zaissansk his starting-point for a third journey. Traversing Zungaria to Hami, he crossed the Altyn Tagh, and passing to the east of the Tsaidam marshes, penetrated North Tibet. Refused permission to enter Lhasa, he returned northwards, and skirting the Hwang-ho, crossed the Gobi to Kiakta. In his fourth journey, the great Russian explored the sources of the Hwang-ho. He then marched to the south of Tsaidam and crossed the Altyn Tagh to Lob Nor and so to Khotan. During this journey, Prjevalsky explored the mighty Kuen Lun. He will certainly be remembered as one of the greatest explorers of Central Asia and Tibet. Among his many discoveries were "Prjevalsky's horse" and the wild camel.

In 1886, Younghusband accompanied an Indian civilian, H. E. James, on a journey to Manchuria. From Mukden the valley of the Sungari was ascended to its source, and other exploration was undertaken in this little known country.

In 1887, Younghusband [2] started off from Peking with the intention of traversing the Gobi to Chinese Turkestan, and, from that outlying province of China, crossing the Himalayas into Kashmir. From Peking, the Mongolian frontier was reached at Kalgan, and at Kara-Khoto, arrangements for crossing the Gobi were made, with the valuable assistance of a British missionary. Starting on April 26, an unexplored route across this great desert was followed, and, during this trying march, the *equus Prjevalsky* was sighted, while tracks of the wild camel were also observed. Traversing hilly country, the mighty Tian Shan was seen from afar, and, on July 4, Hami was reached—a distance of 1,255 miles from Kara-Khoto, mainly across the great desert.

From Hami, Younghusband followed the caravan route

[1] *From Kulja across the Tian Shan to Lob Nor*, by Colonel N. M. Prjevalsky, 1879.
[2] *The Heart of a Continent*, by Captain F. E. Younghusband, 1896.



CENTRAL ASIA, 1885-88

(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

[face p. 248

skirting the Tian Shan to Kashgar. He then proceeded to Yarkand, where he decided to follow an unexplored route across the Mustagh Pass into Skardu. By good fortune he found some Baltis at Yarkand, who knew the route (which had only been closed by the Chinese some ten years previously), and who were willing to serve him as guides.

Starting off on the last section of his long and adventurous journey, his route ran to Kargalik. There the plain ended and the party entered the mountains. At the head of the Tisnaf River, the main caravan route across the Karakoram Pass to Leh was left, and a westerly course followed to the Yarkand River, which was crossed and recrossed continuously. Where it flowed through precipitous cliffs a pathway had to be made by throwing rocks into the water—a very serious task. Continuing the journey the Shaksgam River was discovered and K2 was sighted: "We could see it through a break in the mountains rising up straight, bold and solitary, covered from foot to summit with perpetual snow. The upper part, for perhaps 5,000 feet, was a perfect cone." This celebrated mountain, second only to Everest, is 28,250 feet in height, and as I sighted it from the Pamirs, it seemed like a giant among the pygmies.

The Mustagh glacier constituted a formidable obstacle for the ponies, while supplies were running short and there was no fuel to be found. Finally, Younghusband decided to leave the ponies in charge of three men, and, in the dark, he began to climb the glacier leading to the pass. Progress was terribly slow at the altitude of some 19,000 feet, but at noon the summit was reached. The descent was precipitous, and it seemed that failure was inevitable. However, led by a Balti, who cut steps across the steep icy slope, a cliff was reached, and finally the adventurous explorers found a dry spot where they bivouacked. On the following morning they struck the Baltoro glacier, surveyed some twenty-five years previously by Godwin-Austen, who had fixed K2, which bears his name. Finally, on the third day after crossing the pass, Younghusband reached the little village of Askoli, where supplies were procured. A notable feat of exploration had been successfully accomplished.

During this period, thanks to the influence of Sir Mortimer Durand, the great boundary-maker, the northern frontiers of India were explored and laid down. Lockhart, making Gilgit his headquarters, visited the robber states of Hunza and Nagar, and, crossing the Hindu Kush, explored Wakhan, while

Younghusband surveyed the passes leading to the Pamirs, where he was arrested by a Russian force. Negotiations followed which led to the Pamir Boundary Commission of 1895, by the terms of which Wakhan was awarded to Afghanistan, to serve as a buffer between the two great powers.

The survey operations, undertaken before the Great War, by which the Indo-Russian triangulation connection was obtained, constitute a great achievement in the face of the gravest physical obstacles, and deaths by lightning and disease. When travelling in the Pamirs in 1915, I met the Russian Survey officers who had co-operated in this most important task, and they spoke in the most appreciative terms both of Bell, who died during the survey from illness aggravated by exposure, and of Kenneth Mason.[1]

During the latter half of the century explorer after explorer has penetrated into the fastnesses of the Himalayas. Their names, which appear on the roll of honour of the Royal Geographical Society, include Conway, Bruce, Longstaff, the Dukes of the Abruzzi and of Spoleto, De Filippi and Wood. Unfortunately space will not allow me to do justice to the skill and courage shown by each explorer.

Longstaff's discovery in 1909 of the Siachen glacier, the longest and most important in the mighty Karakoram system, led to the expedition of De Filippi. It was carried out by a body of Italian experts, whose explorations were aided by Wood and by Indian surveyors.[2] The chief geographical results included the complete delineation of the last great glacier system of the Karakoram. To this may be added the discovery of the source of the Yarkand River in a tongue of the Rimo glacier, which overflows northwards across the water-parting. The Great War brought the expedition to a premature close, but even so the results that were obtained were of the greatest importance.

From one point of view, Mason's exploration of the Shaksgam Valley [3] was a continuation and completion of the De Filippi expedition. Its important results included the survey of the main features of a portion of the divide between the drainage flowing to the Indian Ocean and that flowing into Central Asia.

[1] "The Indo-Russian Triangulation Connexion", by Lieut. Kenneth Mason, *G.J.*, Vol. XLIII, January 1914.

[2] *The Italian Expedition to the Himalaya, Kara Koram and Eastern Turkestan* (1913–1914), by Filippo de Filippi, 1932.

[3] *The Exploration of the Shaksgam Valley and Agil Ranges*, by Major Kenneth Mason.

LOADING UP THE YAKS ON THE PAMIRS
(*From Through Deserts and Oases of Central Asia*)

[*face p.* 250

During the expedition of the Duke of Spoleto,[1] the gap which existed between the farthest point reached by Younghusband and by Mason, was bridged. To come to still more recent exploration, Dainelli,[2] in 1930, crossed from the Siachen glacier by a new pass on to the Rimo glacier, thus making the passage of the main range of the Karakoram between the Mustagh and the Sasir Pass. This he named the Italia Pass.

Many explorers have visited the vast country of Mongolia in recent years. Among the most important expeditions were those undertaken by Kozlov, who, in journey after journey, completed the exploration of the Altai. He then surveyed the upper reaches of the Yang-tse-kiang. Later he took soundings in the Kuku Nor. Throughout, he made valuable collections of animals and plants, and his journeys were perhaps as valuable from the geological as from the geographical point of view.

In 1908, Carruthers explored the Tian Shan, and two years later he made a systematic study of the upper basin of the Yenesei. The last of the important expeditions in Mongolia is that of Chapman Andrews, who, utilizing motor-cars as well as camels, has not only added materially to knowledge of the geography of the country between Kalgan and the Altai, but has been responsible for the striking discovery of the eggs of prehistoric reptiles, which was a result of studies in which all biological sciences were represented.

During the present century, Sir Aurel Stein has played the leading part on the stage of Central Asia.[3] In his first journey, undertaken in 1900, he crossed the Himalayas to the Sarikol Valley. He camped on the Little Kara Kul Lake, whence he climbed the spurs of mighty Mustagh Ata and viewed the Qungur Alps, which were explored by Skrine in 1922.[4]

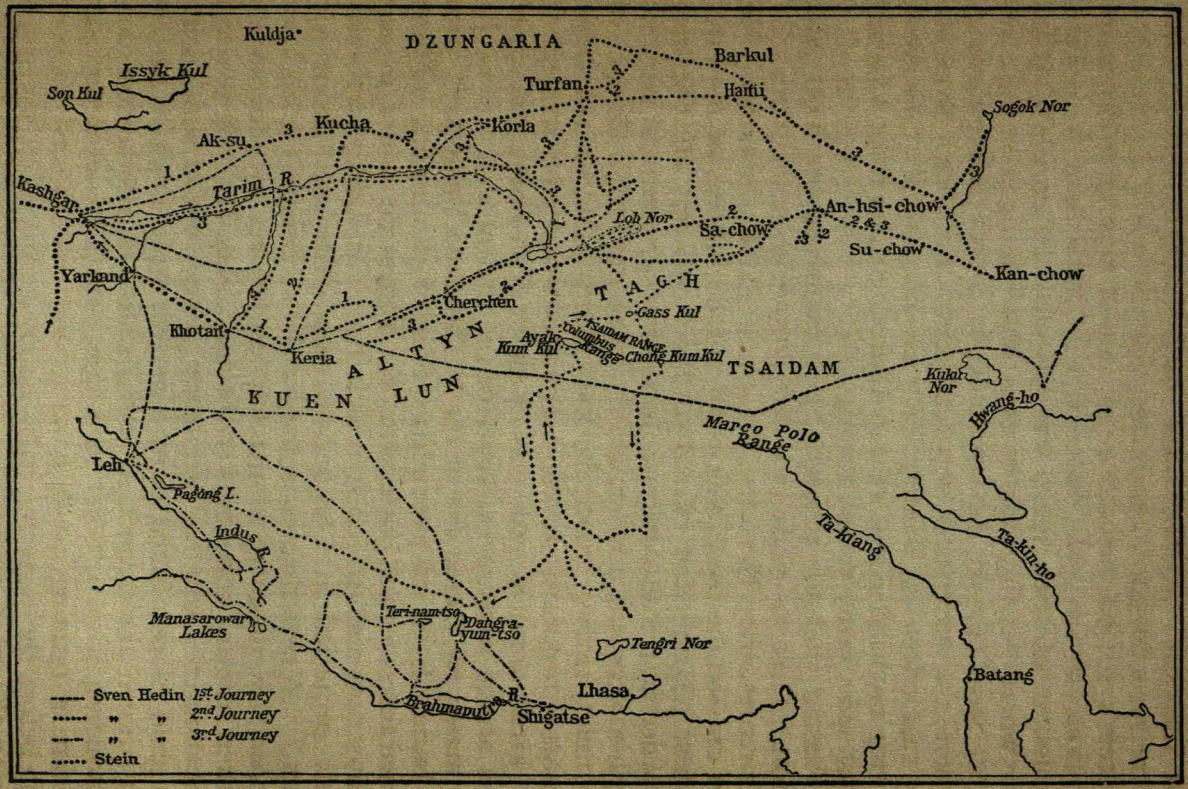
Reaching Khotan in the autumn, he set to work on its ancient site of Yotkan, and on Dandan Uilik, " the ancient city Taklamakan ". In the Taklamakan Desert, towns and villages which had been watered by rivers flowing down from the great Kuen-lun range had been abandoned, owing to failure of the water supply, and this constituted an ideal hunting-ground for the archaeologist.

[1] " The Italian Expedition to the Kara Koram in 1929 ", by H.R.H. the Duke of Spoleto, *G.J.*, Vol. LXXV, No. 5, May 1930.

[2] " Italia Pass in the Eastern Kara Koram ", by Giotto Dainelli, *American Geographical Review*, July 1932.

[3] Stein's works include *Sand-buried Cities of Khotan*, 1903; *Ruins of Desert Cathay*, 1912; *Serindia*, 1921; and *Innermost Asia*, 1928.

[4] " The Alps of Qungur ", by C. P. Skrine, *G.J.*, Vol. LXXVI, No. 5, November 1925.



CENTRAL ASIA AFTER 1899.

During the winter many sites were visited, a stupa with colossal statues in stucco of Buddha representing the most striking discovery, and, after what may be described as a most successful reconnaissance, Stein reached England with his treasures in good condition.

Stein's second expedition of 1906–8 was of a far more ambitious nature. He travelled to Chitral and, by special permission of the Amir, was allowed to cross Wakhan. Everywhere copying inscriptions and noting Buddhist remains, Stein crossed the Hindu Kush by the Baroghil Pass, "where the watershed between Indus and Oxus drops to only 12,400 feet". Fording the "stripling Oxus", he writes: "laving my hand in it as a pious salute to a great river, touched at last after many years' waiting".

Passing through Khotan, Stein examined the Lob Nor region. Here his finds included documents sealed with clay seals representing Hercules, Eros and Pallas *Promachos*. He then crossed the Gobi, following in the footsteps of the early Chinese pilgrims and of Marco Polo. In this area he was rewarded by the discovery of the ancient fortified wall with its watch-towers and stations, which he explored for a distance of 200 miles, reaping a rich harvest of early Chinese and other records of historical interest. The epoch-making discovery of the great archaeologist was made at Tun-huang, the chief oasis at the western extremity of the ancient wall. Close by is situated the sacred site of the "Thousand Buddhas", with its hundreds of cave-temples. Stein with amazing address gained access to, and possession of, "a great deposit of ancient manuscripts and art relics, which had lain hidden and perfectly protected in a walled-up rock chapel for about 900 years". A new chapter in the history of eastern art has been opened by these epoch-making discoveries of documents written in many tongues, known and unknown. Of especial general interest was "an excellently preserved roll with a well-designed block-painted picture as frontispiece, which had its text printed throughout, showing a date of production corresponding to A.D. 860. Here was conclusive evidence that the art of printing books from wooden blocks was practised long before the conventionally assumed time of its invention during the Sung period."[1]

Stein had convinced the guardian of the shrine of his sincerity by frequent references to his Chinese patron-saint Hsuan-tsang, and when the exquisitely beautiful banners were

[1] *Ruins of Desert Cathay*, Vol. II, p. 189.

discovered, he must have thought of the triumphal reception accorded to the explorer upon his return to neighbouring An-hsi, when, from every monastery, they met him with banners, carpets and rich palanquins in orderly procession.

During the summer of 1907, Stein explored some 20,000 square miles on the snowy Nan-shan, and in the winter of 1907–8, he crossed the "sea of sand" of the Taklamakan at its greatest width. The summer of 1908 was utilized for explorations in the mighty Kuen-lun. Here the intrepid explorer, at the very end of a most successful expedition, was surveying on the ice-clad crest of the main range when he was badly frost-bitten, and ultimately, after much suffering, all the toes of his right foot had to be amputated at Leh.

In 1913, Stein started on his third journey to Central Asia, and, owing to the favourable political situation, he was able to traverse the unexplored valleys of Darel and Tangir south of Gilgit, and, crossing the Darkot Pass, he returned to Chinese Turkestan. His first objective was again the Lob Nor area, where he made fresh discoveries of importance. He then proceeded to explore other portions of the fortified line of Han times.

Stein now penetrated to the ancient site of Kara-Khoto, first discovered by Kozlov, where he obtained a rich harvest of manuscripts in the Tangut and Tibetan languages. He thence made for Kan-chou, and, in spite of an accident to himself, his Indian assistant carried through the survey of the headwaters of the Kan-chou River. The untiring explorer then visited Zungaria, Turfan, and finally reached Kashgar in the summer of 1915.

In July 1915 Stein started on a new journey, which from the Pamirs led through Roshan and Shignan, where he made valuable studies, not only of the geography, but also of the types and languages of these unexplored valleys. He then travelled across Eastern Persia to Sistan, where, on the Kuh-i-Khoja, he discovered wall-paintings of the Sasanian period—the first to be brought to light in Persia.

This brief summary hardly does justice to a series of journeys which have embraced the whole heart of Asia. Throughout, the country has been scientifically surveyed, while almost every question, whether historical or scientific, has been dealt with in masterly fashion, so much so that Stein is undoubtedly the greatest archaeologist and explorer of Central Asia.

In a recent expedition Sven Hedin [1] made the remarkable

[1] *Across the Gobi Desert*, by Sven Hedin, 1931.

KASHGAR, SHOWING THE CITY WALL AND THE TUMAN SU
(*From Through Deserts and Oases of Central Asia*)

[*face p.* 254

discovery that Lob Nor had wandered back to its ancient bed. This famous lake, known from early antiquity to the Chinese, was located by Prjevalsky in 1877, a degree farther south than the Chinese maps had shown it. Sven Hedin, who examined the question on the spot, made a most remarkable prediction: "I am convinced that in a few years' time the lake will be found in the locality where it was formerly placed by the Chinese cartographers." [1] Nearly thirty years later the Swedish explorer was able to write:

> "A new and mighty swing of the pendulum has carried the flowing, as also the stationary waters back to the north again into their old beds in the Kum-darya and the lakes near Loulan. Thereby there have been produced anew the same conditions as prevailed 2,000 years ago, and the old intimate connexion between Tun-huang and Loulan has at the same time been restored."

The great Swedish explorer may be congratulated not only on the fulfilment of his remarkable prediction, but also on being the first European to discover that fulfilment.

[1] *Central Asia and Tibet*, Vol. II, p. 174.

CHAPTER XXIX

MODERN EXPLORERS OF TIBET

> "The Deserts of Tibet are certainly the most frightful country that it is possible to conceive. The ground continuing to rise, vegetation diminished as we advanced, and the cold grew more and more intense. Death now hovered over the unfortunate caravan. The want of water and pasturage soon destroyed the strength of our beasts. Each day we had to abandon beasts of burden that could drag themselves no further. The turn of the men came somewhat later."
>
> HUC *and* GABET *on the Central Plateau of Tibet.*

IN Chapter XVII an account has been given of Ippolito de Desideri, who in the eighteenth century raised a corner of the curtain which concealed Tibet from the outer world. After his great journey the curtain falls again for more than a century, until it is lifted once more by French missionaries.

Early in the nineteenth century, the French mission in China had been almost extirpated, when, to quote the Lazarist Fathers Huc and Gabet:[1] "a great number of Christians had sought peace in the deserts of Tartary . . . By dint of perseverance the missionaries collected together these dispersed Christians." While working as missionaries in Tartary, the two Fathers decided to undertake an adventurous journey across Tibet. Accordingly, in the autumn of 1844, to the grief of their Chinese converts, they cut off their pigtails, assumed the dress of Lamas and started off westwards. They were particularly well qualified for the undertaking owing to their knowledge of the Chinese and Mongol languages. Moreover, their perfect adaptability and their excellent education enabled them to play the difficult part which they had assumed with remarkable success. At first they crossed the wide plains to Tolon Nor, where they reported the existence of great foundries of the bells and idols which play such a leading part in Tibetan worship. They then give a wonderful description of the festival of the Loaves of the Moon among the Mongols. Even in this remote part of the Chinese Empire, news of the military operations of the English—the China War

[1] Huc and Gabet, *Travels in Tartary, Thibet and China, 1844–48* (Broadway Travellers), 1928. Colonel Ryder has read this and the following chapter and has made valuable suggestions.

had ended in 1842—had leaked through. The English, called "the Rebels of the South", were described as "Sea-monsters. They live in the water like fish. When you least expect them, they appear on the surface, and hurl fire-bombs at you; while the instant your bow is bent to shoot them, down they dive like frogs."

Upon reaching the banks of the Hwang-ho, the explorers had great difficulty in transporting their camels across the extensive inundated area, that animal being almost helpless in marshy ground, while it cannot swim, although it can float. Indeed, their experiences carried me back to marshy Sistan with the Helmand in flood, where I was faced with similar problems.

Travelling to the south-west, the French Fathers met the King of the Alechan, who was bound for Peking to offer his homage to the Emperor. The explorers, who had intended to traverse his country, were warned of its utter sterility, and so decided to avoid it by crossing into the Chinese province of Kansu. There they were mistaken for Tartars, and a mandarin attempted to oust them from the inn, but finally explanations were offered, and "having saluted us with his hand in a protecting manner, he retired like an ordinary mortal to the small room which had been prepared for him. . . . The triumph we had thus obtained in a country, admission even to which was prohibited to us under pain of death, gave us prodigious courage." Incidentally it proved how perfectly the Fathers were playing their part.

Taking the road to Ili for a short distance, the explorers reached the "Great Wall, which we passed over without dismounting". Their passports were demanded at a barrier, or failing them a considerable sum of money, but they bluffed the official with complete success. Traversing Kansu, which is described as a very fertile province with "inexhaustible mines of coal", they met a Living Buddha.

> "When the inn had become tolerably clear, this strange personage gave full play to his curiosity; he poked about all over the inn, going into every room and asking everybody all sorts of questions. . . . When he entered our chamber, we were gravely seated on the *Kang*; we studiously refrained from rising at his entrance. . . . Standing in the middle of the room, he stared at us intently, one after the other. We, like himself, preserving entire silence, exercised the privilege of which he had set us the example, and examined him closely."

Finally they became friends, and, at the return visit, the "Living Buddha" said that his Lamasery was situated near

the Russian frontier, and that he had heard of the English and of Galgata or Calcutta.

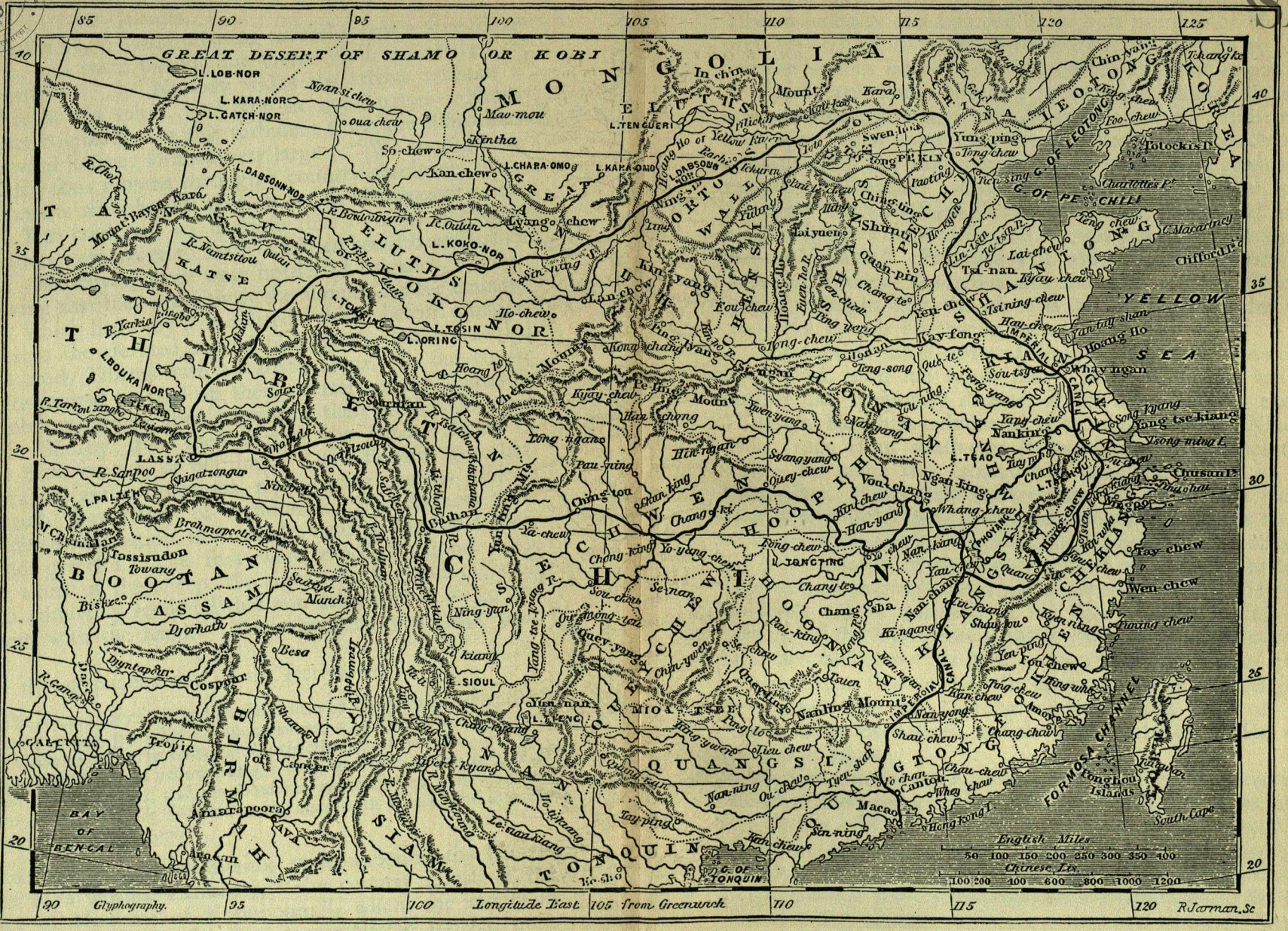
In January 1845, "after crossing several torrents, ascending many hills, and twice passing the Great Wall, we arrived at Tang-Keou-Eul. . . . Nobody walks the streets without a great sabre at his side. . . . Not an hour passes without some street combat." At this turbulent town the difficulties of the onward journey loomed very large. "We should have to travel for four months through a country absolutely without inhabitants and should have to lay in all necessary provisions. The cold was so horrible that it often happened that travellers were frozen to death or buried beneath avalanches of snow. Moreover, there were hordes of brigands."

Realizing that they must await the annual Chinese embassy to Tibet, which had only just quitted Peking, before attempting to cross the elevated central plateau, the Fathers settled down to study Tibetan with a learned Lama. In due course they were invited to take up their quarters in the Lamasery of Kounboum, where they continued their studies in great comfort. Shortly after their arrival the famous Feast of Flowers drew crowds of pilgrims. "The flowers were bas-reliefs, of colossal proportions, representing various subjects taken from the history of Buddhism. The features were full of life and animation, the attitudes natural, and the drapery easy and graceful. The furs were especially good. The various skins of the sheep, the tiger, the fox and the wolf were so admirably rendered that you felt inclined to go and feel them with the hand." Yet everything was made from butter!

On the auspicious day of the festival—

> "The Grand Lama walked in the centre of the principal dignitaries of the Lamasery, preceded by minor lamas, who cleared the way with great black whips. His costume was strictly that of our own bishops: he bore on his head a yellow mitre, a long staff in the form of a cross was in his right hand, and his shoulders were covered with a mantle of purple-coloured silk, fastened on the chest with a clasp, and in every respect resembling a cope."

After spending three months at Kounboum, the Fathers moved to a smaller Lamasery, "the country house of the Faculty of Medicine of Kounboum", where the mountain served "as an abode for five contemplative monks, none of whom seemed to know what it was that engaged their thoughts". When the summer came, with their "camels magnificently stout", the explorers travelled to Kuku Nor



THE DARK LINE INDICATES THE ROUTE OF THE TRAVELLERS, MM. HUC AND GABET.

MAP OF TARTARY, TIBET, AND CHINA

[face p. 258

or "Blue Sea", a vast body of salt water, surrounded by rich pasturage. There they remained until, in October, the Tibetan embassy accompanied by a great number of Mongol caravans arrived. Huc estimates the number of men at 2,000 and the various horses, yaks and camels at about 40,000.

From fertile Kuku Nor they traversed Tsaidam, "the soil, arid and stony, produces with difficulty a few dry, saltpetrous bushes". Then came the Bourhan-Bota Pass, which was not only steep and lofty, but dreaded because of its pestilential vapour. "Heavens! what wretchedness it was we went through; one's strength seemed exhausted, one's head turning round, one's limbs dislocated; it was just like a thoroughly bad sea-sickness." Presumably it was mountain sickness, in which connection Younghusband mentions that his Chinese servant thought that the air was poisonous when he was overcome by this distressing malady.

Yet another range—Mount Shuga—had to be crossed in bitter cold, with the result that "Poor M. Gabet had to deplore the temporary decease of his nose and his ears". These real hardships culminated in crossing the Bayen-Kharat, which runs from south-east to north-west. The point at which the range was crossed was near the source of the Hwang-ho. Fortunately the weather was warm, and plenty of *argol* or "dried dung", the only available fuel, was found on the camping-ground. Continuing the journey, they crossed the upper reaches of the Yangtze-kiang on the ice, seeing a heard of wild yaks which had been trapped in the ice and frozen to death. Many members of the caravan died during the crossing of the high plateau, which lies at a general elevation of 16,000 feet above sea level. Geographically it is of great importance, as from it flow the upper waters of the Yangtze, the Salwin and the Mekong. After twelve days on the plateau came the descent, and the goal of the expedition was reached at Lhasa.

At first the Lazarists were suspected of being surveyors, but when their property had been examined, they were taken into favour and were able to give a wonderful account of life at the capital of Tibet. "There exists a very touching custom at Lhasa. . . . Just as day is verging on its decline, all the Tibetans meet together, kneel down and chant prayers." The sacred formula runs: "*Om mani padme houm*," which signifies, "O the gem in the Lotus, Amen." This inscription, which may be seen on hundreds of stones in Tibet, possesses a mystical meaning, about which many books have been written.

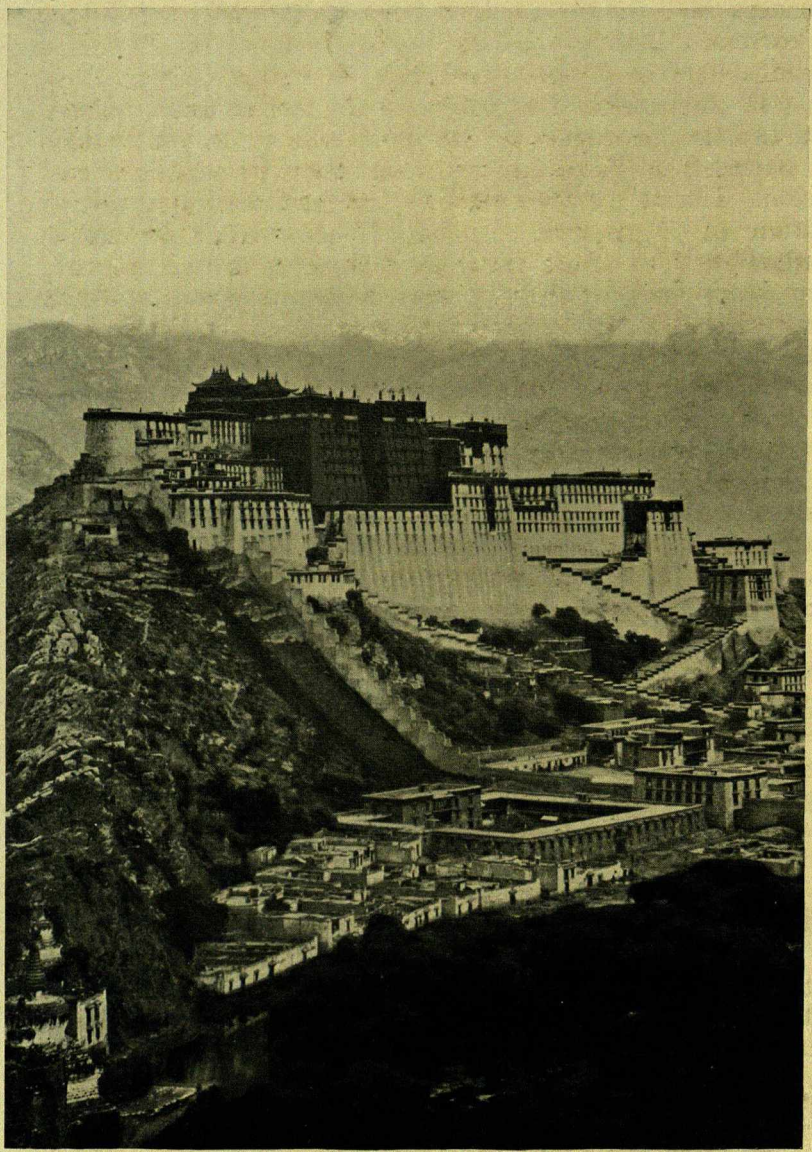
The Chinese Ambassador at Lhasa feared that, if it was reported at Peking that he permitted French missionaries to preach at Lhasa, his life would be forfeit. Consequently he decided to send Huc and Gabet back to China under escort. The Fathers behaved with much dignity under trying circumstances, and, after an affecting farewell with the friendly Regent—the Dalai Lama was only a child—they marched off eastwards towards China on March 15, 1846. Thanks to the arrangements made by the authorities the journey was performed in comfort so far as the accommodation was concerned, but although this was the main route between Lhasa and China, it was merely a track passing through a very difficult belt of mountains. They crossed the watershed of Lha-ri with the greatest difficulty, but, in accordance with the custom which prevails in High Asia, the yaks went first to make the road and they, following in their wake, reached the summit.

The descent mainly consisted in a rapid slide down a glacier in which the yaks led the way, followed by the horses and then by the men. "We sailed over those frozen waters with the velocity of a locomotive." The crux was the journey to Alan-To. To quote Huc:

> "Travellers are obliged to pass these deep abysses by following at a great height so narrow a ledge, that the horses frequently find only just enough room to plant their feet. As soon as we saw the oxen of the caravan making their way along this horrible path, and heard the low roar of the waters rising from the depths of those gulfs, we were seized with fear. . . . Lest we should get giddy, we kept our heads turned towards the mountain, the declivity of which was sometimes so perpendicular that it did not even offer a ledge for the horses to plant their feet on."

One more danger, well known to skiers, was a mountain where "you must abstain from even uttering a word, otherwise the snow and ice will fall upon you in abundance, and with astonishing rapidity". Nearing the end of the journey there was civil war in one district, but, to obviate risks, women were placed in charge of the transport, as "men who would have the cowardice to fight with women, and take the animals confided to their care, would be despised by the whole world".

At last the explorers reached the enchanting plain of Bathang. "We found ourselves all at once transported, as it were by magic. A delicious warmth gradually penetrated our limbs; it was nearly two years since we had perspired." A few days later, in June 1846, the heroic French explorers reached China.



LHASA: THE POTALA
(By permission of the Royal Geographical Society)

[*face p.* 261

The successors of these French explorers were Indian surveyors, who, travelling under various disguises, carried out journeys of great geographical importance under conditions of extreme hardship and risk.[1] Nain Singh "the Pundit", an inhabitant of Kumaon, had already visited Gartok when he was commissioned to travel to the upper Indus Valleys and explore the region of the gold mines. In June 1867, he started from Badrinath, and, after examination by the suspicious Tibetan frontier officials, reached the mines at an altitude of 16,300 feet. The gold was worked by miners clothed in thick black garments who scratched up the soil into heaps with antelope horns, always guarded by their fierce mastiffs. In this custom, without much doubt, we have the origin of the gold-digging ants, guarded by their fierce dogs, about which Herodotus had heard.

Even greater than Nain Singh was Kishen Singh, who in 1871 penetrated to Shigatse and Tengri Nor, where he made a complete circuit of the great lake. Shortly afterwards he was attacked by a band of sixty armed robbers and only reached Lhasa with great difficulty. There, by pledging his instruments, he obtained money for his return journey to India.

In 1878, Kishen Singh undertook his most important journey. From Lhasa, which he reached *via* Darjeeling, he travelled north-east across Tibet, crossing the Altyn Tagh to Sa-chow. From this centre he crossed Eastern Tibet to Ta-tsien-lu and Batang on the Ta-kiang. He was not able to enter Assam, so he returned to Lhasa, and finally reached Darjeeling in 1882. "In this journey", to quote Baker, "he had linked areas where the British were active to those reached by the Russians, while his visit to Ta-tsien-lu connected up Indian and Chinese route traverses."

I cannot refrain from giving one more story. In 1879, a Chinese lama was trained and despatched to Lhasa with orders to follow down its great river as far as possible, and then to throw specially marked logs into it. For two years a watch on the river was maintained and was then abandoned. To quote Mason:

> "Four years passed; Kinthup, who had been in the service of the lama, returned. He told his story; how the lama had failed in his trust; how he himself had been sold into slavery; how he had worked for freedom and made his way down the Tsang-po to carry out the work

[1] "Kishen Singh and the Indian Explorers", by Major Kenneth Mason, *G.J.*, Vol. LXII, p. 429; *Tibet the Mysterious*, by Sir Thomas Holdich.

allotted to his false master. He detailed the places he passed down the great river to a point within sixty miles of the plains of India. Finally, he reported how, being unable to proceed further, he had thrown the logs into the river."

Thirty years passed, Kinthrup's story was proved to be genuine, and at long last he received his reward. I have worked for many years with Indian surveyors, and I should like to add my tribute to the courage, capacity and enthusiasm of this very deserving body of men.

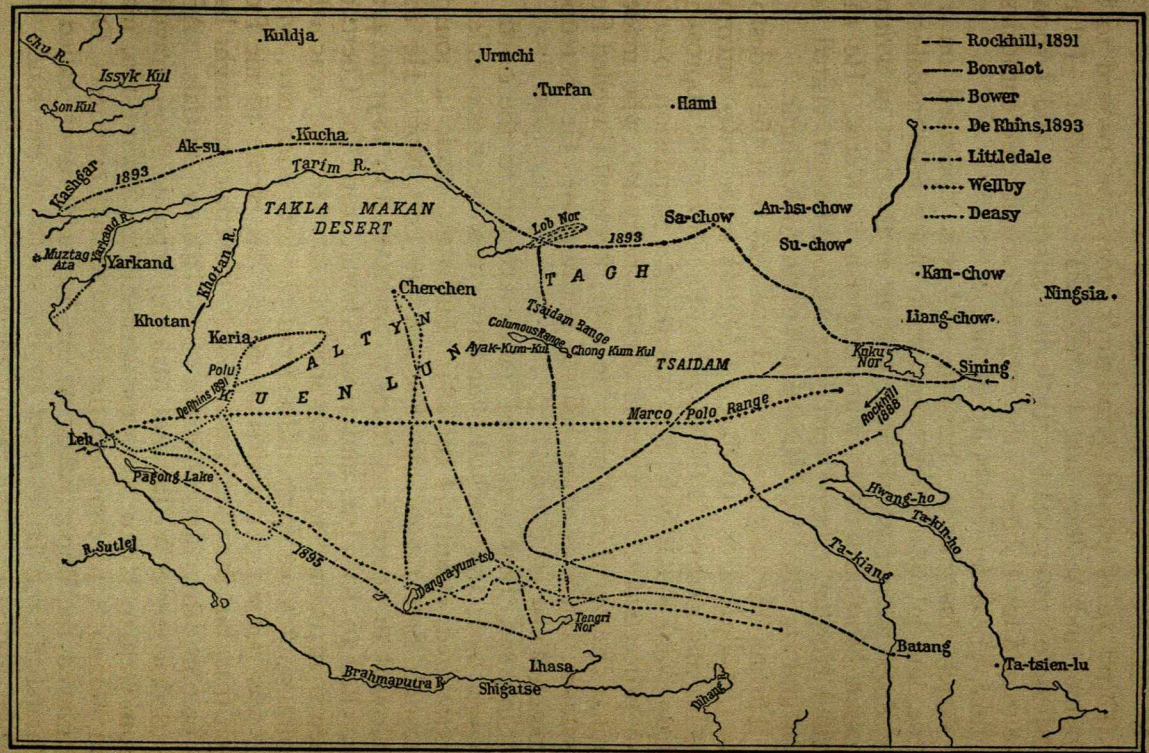
After this period, English explorers appeared on the scene, and in 1885 Carey, who is the oldest gold-medallist of the Royal Geographical Society alive at the time of writing, crossed Northern Tibet with Dagleish to Keria. He then visited Khotan, crossed the Takla Makan Desert, visited Lob Nor and travelled by Hami and Turfan to Kashgar.

During the last generation Lhasa has been the lodestone for traveller after traveller. Rockhill made two attempts. On his first journey in the disguise of a pilgrim, he approached Lhasa from Kuku Nor, but was refused permission to enter, and proceeded to Ta-tsien-lu, as did Bonvalot, who made a similar attempt from Kulja. In 1891, Rockhill travelled from Tsaidam, but was again refused permission. He thereupon crossed Tibet to Batang.

In 1891, Bower crossed Tibet, keeping to the north of Tengri Nor, and reached China after traversing 800 miles of unexplored country. In 1893 Littledale made a journey through Samarkand and Kashgar to Lob Nor. He then followed an unexplored route to Sa-chow. In 1895 he again travelled to Kashgar, and from Khotan made for Cherchen, thence marching south towards Lhasa. He had reached a point only some forty miles from the forbidden city, which he was refused permission to enter. He wrote to me from Leh that, but for the illness of Mrs. Littledale, he might have overcome the objections of the Tibetan officials. After Littledale came Wellby and Malcolm who, in 1896, travelled from Leh to Kuku Nor, and striking the Hwang-Ho, made for Peking. To complete the list of British explorers, Deasy surveyed the upper valley of the Yarkand River, called the Zarafshan, and large areas to the south of the Kuen Lun range, and also to the east of the Panggong.

In 1903, Rawling[1] entered Tibet to continue Deasy's explorations. He surveyed 35,000 square miles of unexplored country in North-West Tibet up to the southern slopes of

[1] *The Great Plateau*, by Captain C. G. Rawling, 1905.



CENTRAL ASIA, 1889–99.

the Kuen Lun. He was prevented from visiting Rudok by Tibetans, but they gave him supplies for his return journey, of which he was sorely in need.

In 1904, a mission under Sir Francis Younghusband crossed the Tibetan frontier to insist upon the observance of the Treaty signed at Darjeeling in 1890. The Tibetans, however, were hostile, and finally, after some fighting, the mission dictated terms at Lhasa. Among the articles, it was agreed that a trade mart should be opened at Gartok; and Major Ryder, who had been in charge of the survey party to Lhasa, and Captain Rawling led an expedition to explore the country westwards to Gartok. Captain Wood and Lieutenant Bailey, who had studied Tibetan, joined the expedition. At Shigatse a visit was paid to the Tashi Lama, whom Ryder describes as "an interesting personality, sixth holder of the office; his face is one that would not pass unnoticed anywhere, still less in Tibet. He has clear-cut features, high cheek-bones, and a pale complexion; his quiet dignified manner made a lasting impression on us." [1]

Rawling describes the sarcophagus of the first Tashi Lama: "It is of gold, covered with beautiful designs of ornamental work, and studded with turquoises and precious stones. Along the ridges at the side of the tomb stood exquisite old china vases and ancient cloisonné ware, whilst golden bowls and cups of the same material are placed in front of the base of the tomb." On the summit of the Kura La the explorers reached the watershed between the Ganges and the Brahmaputra basins. "Towering up thousands of feet, a glittering pinnacle of snow, rose Everest, a giant among pygmies, and remarkable not only on account of its height, but for its perfect form. It is difficult to give an idea of its stupendous height, its dazzling whiteness and overpowering size, for there is nothing in the world to compare with it."

This important journey resulted in the survey of the Tsang-po or Brahmaputra from Shigatse to its source. The Sutlej was also surveyed from its source to the Indian frontier, while the Gartok branch of the Indus was likewise explored. To Desideri belongs the honour of being the first European to travel along the Tsang-po to Lhasa, but it was reserved for British explorers, who were unaware of Desideri's journey, to survey this great area of southern and south-western Tibet under most trying physical conditions. To quote

[1] "Exploration and Survey with the Tibet Frontier Commission", and "From Gyantse to Simla *via* Gartok", by Major C. H. D. Ryder, *G.J.*, Vol. XXVI, October 1905.

Younghusband: "This would have been a magnificent performance if it had been undertaken in the very best of weather; but it was done at the very worst season of the year."

Sven Hedin has undertaken more than one important journey in Central Asia and Tibet. In 1895 he traversed the Takla-Makan, discovering buried cities both in the desert and in the vicinity of Lob Nor, which discoveries were of considerable value to Stein. In 1906, Hedin devoted himself to the region lying between Shigatse and Leh, keeping north of the Tsang-po. His chief discovery was the existence of an important range of mountains parallel to the Himalayas.[1] In addition to his geographical discoveries, Hedin has always collected geological, zoological and natural history specimens. He is the last great explorer of Tibet on a large scale.

The recent attempts to scale Mount Everest have included a considerable amount of exploration, while Mallory and Irvine sacrificed their lives in a heroic attempt to reach its summit and perhaps were successful.

In June 1933, Everest was again attacked with better preparations of every kind. But, owing to the difficulties of terrain being intensified by storms and snowfall, success has not yet been achieved.

Meanwhile the Houston expedition has conquered "Nature's last terrestrial secret". After their arrival at Purnea, there was a long spell of bad weather, during which winds of 120 miles per hour were reported. But, on the morning of April 3, 1933, Lord Clydesdale, with Colonel Blacker as photographer, followed by the second Houston-Westland, piloted by Flight-Lieutenant M'Intyre, flew direct for Mount Everest. Crossing the brown plains of Bihar, they gradually rose across Central Nepal, sighting Kin-chinjanga to the east. At 19,000 feet Everest became visible above the haze, but a downward current of air over Lhotse, the south peak of Everest, caused a loss of altitude amounting to 1,500 feet, so that they only just managed to clear the summit of mighty Everest. Then, in spite of the gale and the great frozen plume of the mountain, into which they had flown, close-range photographs were taken, before returning to the aerodrome.

The results of this great feat include a mass of geographical material from which a map of a large unexplored area will be made. The southern face of Everest has never been seen before while the camera depicts the grave of heroic Mallory and Irvine.

[1] *Trans-Himalaya*, by Sven Hedin, 1909.

CHAPTER XXX

EXPLORATION IN ASIA—THE LAST PHASE

"Oh, who can hold a fire in his hand
By thinking on the frosty Caucasus?
Or cloy the hungry edge of appetite
By bare imagination of a feast?"

SHAKESPEARE.

"From India and the Golden Chersonese,
And utmost Indian isle Taprobane,
Dusk faces with white silken Turbants wreathed."

MILTON, *Paradise Lost.*

IN this chapter some account will be given of various countries in Asia which are not dealt with separately. To commence our survey from the west, the Caucasus was not unknown to the Greeks. Some of their merchant-adventurers had reached the Phasis, and had brought back accounts of gold being secured by leaving sheep-skins in the mountain streams to catch the sediment, which report must surely have originated the legend of the Golden Fleece. Aeschylus, too, made its highest mountain the prison of Prometheus, who was chained to its crags for stealing fire from heaven and giving it to mortals. Curiously enough, the study of his great tragedy brought Douglas Freshfield to the Caucasus, where, although the Russians had surveyed the lowlands to some extent, Elbruz, Kasbek and a number of other superb peaks had never been scaled, from lack of initiative, from superstition and from ignorance of the art of climbing with ice-axe and rope.

In his attack on Kasbek, Freshfield and his companions, starting from a camp 11,000 feet high, reached the base of the peak of the mountain and were cutting steps in blue ice covered with loose snow when the step-cutter slipped, placing a severe strain on the climbers, who were just able to resist it. After this narrow escape from disaster, the summit was reached without great difficulty, and Kasbek was conquered.[1] This magnificent peak, which dominates the landscape, rises to 16,540 feet.

[1] *Travels in the Central Caucasus and Bashan*, by Douglas W. Freshfield, 1869; also *The Exploration of the Caucasus*, 1896.

Elbruz, the scene of *Prometheus Bound*, which I sighted from the Black Sea, was next attacked. Pitching a camp near the snow-field, the cold was bitter. "Near the point where the snow began to slope towards the base of the mountain," writes Freshfield, "the crisp surface broke under my feet, and I disappeared, as suddenly as through a trap-door, into a concealed crevasse . . . and it cost us all a long struggle before I was hauled out."

The cold was intense, and frost-bite was imminent; but the arrival of two porters, who had followed the explorers, encouraged them to persevere. A long climb up easy rocks restored their numbed limbs, and a few steps cut in an ice couloir, "the only approach to a difficulty on the mountain", led to the summit at "one end of a horseshoe ridge". Thus historical Elbruz, which rises to a height of 18,500 feet, was conquered.

Asia Minor was well known to the Greeks and Romans, but it was not until the beginning of the nineteenth century that it was scientifically explored. Leake and Kinneir both executed valuable surveys which were incorporated in Rennell's work, *The Comparative Geography of Western Asia*. In 1838 Ainsworth examined the country towards Sinope, and then visited Angora and reached the Euphrates. In the following year he travelled to Mosul. Of modern travellers, Wilson, Bryce, Ramsay and Hogarth have all left their mark on our geographical knowledge; the two last-named were also famous archaeologists. Nor must we forget the Kieperts, father and son, who compiled a monumental map of the country.

In the Book of Genesis we read that "the ark rested in the seventh month, on the seventeenth day of the month, upon the mountains of Ararat". It is no wonder then that Great and Little Ararat are among the most famous of mountains. Rising to an elevation of 17,000 feet, Great Ararat completely dominates the surrounding country. To quote Lynch: "Side by side stand two of the most beauteous forms in Nature, the pyramid and the dome. . . . On none of her works has she bestowed greater unity of conception, a design more harmonious, surroundings more august."[1] According to local belief, the sacred mountain could never be trodden by mortal foot. However, it was first climbed by Parrot in 1829, and since that date has been scaled by many travellers, including Bryce and Lynch.

[1] *Armenia*, by H. F. B. Lynch, 1901.

Palestine was surveyed by officers of the Royal Engineers, among whom Kitchener may be mentioned, in the interests of the *Palestine Exploration Fund.* They also studied its archaeology, geology and natural history. To-day the country is being examined with scientific minuteness, and the potentialities of the Sea of Lot, misnamed the Dead Sea, will probably prove a source of great wealth to the country.

Mesopotamia, now known as Iraq, has attracted many explorers and archaeologists. Rich spent many years as Resident at Baghdad and surveyed widely. But it was the Euphrates expedition under Chesney which surveyed that historical river with scientific accuracy. After Chesney came Rawlinson, who held the post of Resident at Baghdad from 1843 to 1855. With his support surveys were extended, while during this period Botta and Layard excavated ancient Nineveh. At the outbreak of the Great War there was, generally speaking, a distinct lack of accurate geographical information as regards Iraq. This, however, was remedied both during the progress of operations and after the Armistice, more especially in connection with the Boundary Commissions. To-day, thanks to the Survey of India, Iraq has been accurately surveyed—one of many benefits conferred on the country by the British.

Persia was visited by many travellers during the sixteenth and seventeenth centuries, who have been mentioned in previous chapters. In the middle of the eighteenth century an attempt was made to follow in the footsteps of Jenkinson and to reopen trade with Persia across Russia. At that time Nadir Shah, the Napoleon of Asia, who had sacked Delhi and conquered Khiva and Bokhara, was ruling the country with an iron hand, which provoked constant rebellions. Jonas Hanway,[1] the leading figure in this venture, decided to land his goods at Bandar Gaz and proceeded to Astrabad. His objective was Meshed, which was at that time the capital. Unfortunately a rebellion broke out at this juncture, during which Hanway lost his goods and barely escaped slavery. In a destitute condition he traversed the Caspian Provinces to Langar Rud, where he met Elton, the originator of the scheme, who supplied him with clothes and money. Thus re-equipped, he reached the royal camp at Hamadan, and gives an admirable account of Nadir Shah and of the tyranny exercised by that ruler. Hanway returned to Astrabad provided with an order for the restitution of his goods or for payment

[1] *Historical Account of British Trade over the Caspian,* by Jonas Hanway, 1753.

of their value. There he was a witness of the merciless punishments meted out to the rebels and saw two pyramids composed of their skulls.

At the beginning of the nineteenth century, the fantastic strain in Bonaparte's character brought Persia within the orbit of world politics. In conjunction with Paul of Russia he contemplated an invasion of India, in which the Persian army was to be utilized as an instrument of his far-reaching schemes.[1] To meet this peril, the British despatched Malcolm on missions to Persia in 1800 and again in 1810, which resulted in much discovery.

Notable explorers sent out by Malcolm were Christie and Pottinger. They travelled together in disguise as far as Nushki, whence Christie penetrated to Herat and thence reached Yezd and Isfahan. Pottinger traversed the whole of Baluchistan, of which he gave a most valuable description, and passing through Kerman, rejoined Christie at Isfahan. These two explorers, to quote Baker, "did much to reveal the essential geographical facts of Eastern Persia and Western Afghanistan".

The first Afghan War, that ill-considered campaign, which lasted from 1838 to 1842, saw British troops marching in the footsteps of Alexander the Great from Kandahar to Kabul and beyond. During this period the country was explored to a considerable extent and much geographical information was collected.

The British maintained a mission at Herat from 1839 to 1841, and from that city Shakespear was despatched across the desert to Khiva to open up relations with the *Khan*. Not only did he induce that potentate to release his Russian slaves, but he actually conveyed them himself across the steppe to Orenburg—a great feat which should never be forgotten.[2]

Among the most fascinating books of travel of the middle of the nineteenth century is that written by Layard,[3] describing his wanderings among the Bakhtiaris and Lurs. Visiting Petra and Baalbek on his way eastwards, he inspected the ruins of Nimrud opposite Mosul, the excavation of which, later in his career, gave rise to the saying that "Nineveh had found Layard". He then crossed the Persian frontier, and

[1] This question is dealt with in Sykes, *History of Persia* (3rd ed.), Chap. LXXV. The German plan for the invasion of India in the World War, utilizing the Turkish army for the purpose, was based on Bonaparte's scheme.

[2] In the *Journal of the Royal Central Asian Society*, Vol. VIII, 1921, there is an account of this memorable journey, together with a facsimile of the letter of the *Khan* of Khiva.

[3] *Early Adventures*, by Sir Henry Layard, 1887.

passing through Luristan reached Kermanshah. He joined the camp of Muhammad Shah, which he accompanied to Hamadan, and thence travelled to Isfahan by way of Burujird. His objective was the site of Shushan, and, making the acquaintance of a Bakhtiari, brother of Muhammad Taki, the Chief, he accompanied him across the Bakhtiari Mountains to Kala Tul, the residence of Muhammad Taki at that time. After curing one of his sick children, Layard was treated as an honoured guest, and was consequently in a position to visit the ancient ruins and to amass a vast store of valuable information. At this period lions—now practically extinct—were numerous, and Layard took part in more than one hunt. Later Layard travelled to Shuster, and explored the Hawizah district and other parts of Khuzistan.

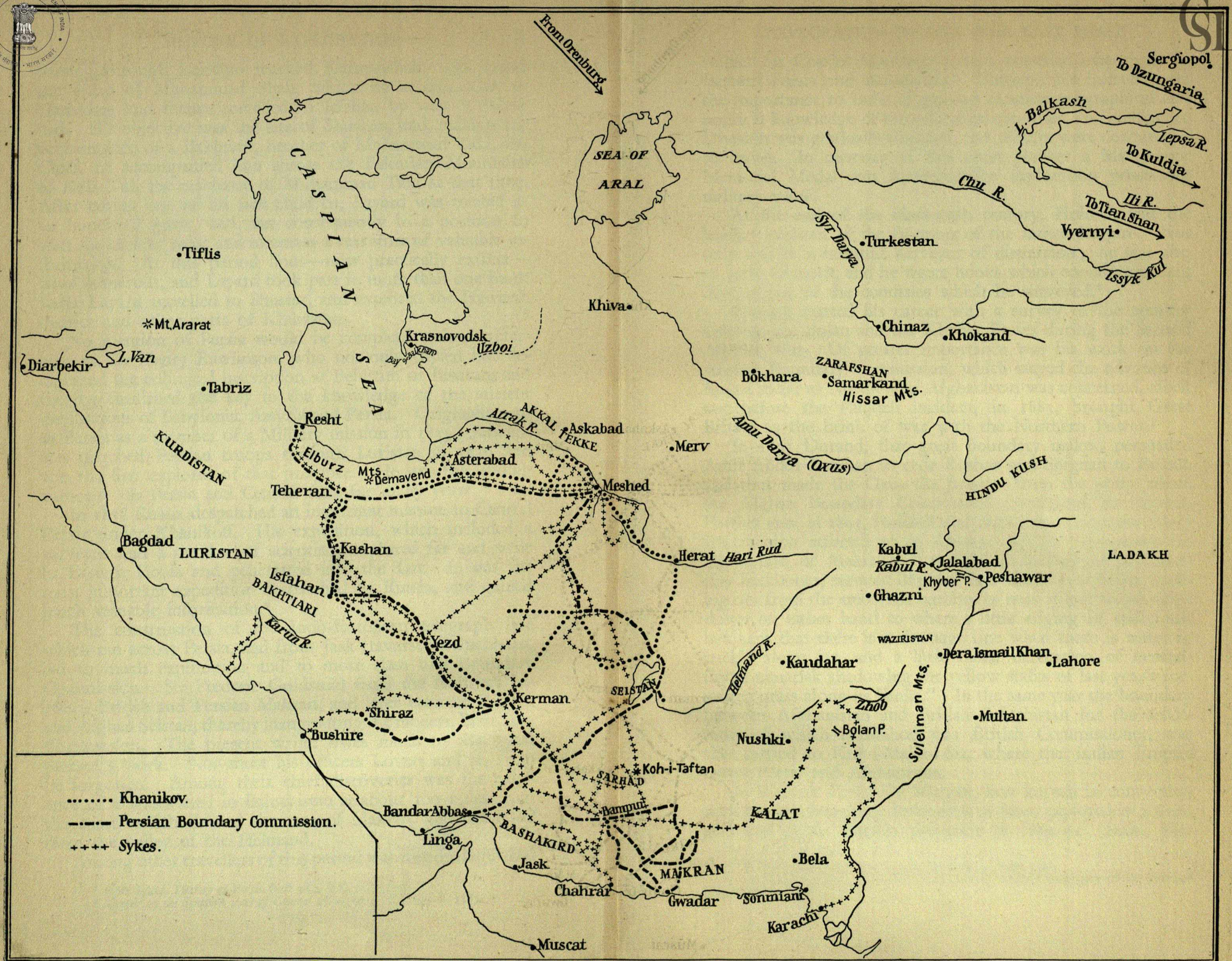
No mention of Persia would be complete without reference to Sir Henry Rawlinson, who not only copied but deciphered the trilingual inscription at Behistun or Bisutun, and thereby furnished the key to the knowledge of the ancient civilizations of Babylonia, Assyria and Persia. Originally sent to Persia as a member of a Military mission in 1833,[1] Rawlinson marched Persian troops through Luristan in 1836 and was the first explorer of that province. He was the leading authority on Persia and Central Asia for many years.

In 1858 Russia despatched an important mission to Central Persia under Khanikoff. His expedition, which included a surveyor and a number of scientists, explored far and wide in Eastern Persia and penetrated into the Lut. It was the most important expedition despatched by Russia, and gained much valuable information.[2]

The construction of the Indo-European telegraph line which ran across Persia, and from Jask traversed Baluchistan, led to much exploration and to more than one Boundary Commission. Sir Frederic Goldsmid fixed the frontiers between British and Persian Makran, and later between Persian and Afghan Seistan, thereby inaugurating the modern Boundary Commission. The present writer owes much to this great pioneer's work. Nor must his officers Lovett and St. John be forgotten. Among their chief discoveries was the existence of a water-shed in Baluchistan at about 100 miles from the coast, which defined the area of Makran, and cut it off from the valley of the Helmand.

Among other travellers of this period was that distinguished

[1] *Vide* Sykes, *History of Persia* (3rd ed.), Vol. II, p. 327.
[2] *Memoir on the Southern Part of Central Asia*, by N. Khanikoff, 1883.



PERSIA AND AFGHANISTAN AFTER 1800

(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

soldier Sir Charles MacGregor, who travelled extensively in Eastern Persia and Baluchistan. Through his insistence on the importance to India of gaining accurate geographical and political knowledge of trans-frontier countries, an Intelligence Division was gradually founded, and officers were encouraged to travel. In memory of this great pioneer a MacGregor Memorial Medal was instituted for exploration possessing military value.

At the end of the nineteenth century, Holdich was the leading explorer of the frontiers of the Indian Empire. Not only was he a scientific surveyor of distinction; he was also an artist of merit, and he wrote books which contain excellent descriptions of the countries which he surveyed.[1]

Holdich started his career with a survey of the country between the Bolan and the Khyber Passes during the Second Afghan War. Of greater importance was his work on the Afghan Boundary Commission, which stayed the advance of Russia so far as North-West Afghanistan was concerned, albeit not before the Panjdeh incident, in 1885, brought Great Britain to the brink of war with the Northern Power.[2]

In 1893 Durand, that great boundary maker, persuaded Amir Abdur Rahman to cede Roshan and Shignan to Russia, and thus made the Oxus the frontier from the point where the Afghan Boundary Commission terminated its labours. Farther east, in 1895, Holdich was chief surveyor on the Pamir Commission referred to in Chapter XXVI. To quote his description of Makran: "A dead monotony of laminated clay backbones, serrated like that of a whale's vertebrae, sticking out from the smoother outlines of mud ridges which slope down on either hand to where a little edging of sticky salt betokens that there is a drainage line when there is water to trickle along it; and a little faded decoration of neutral-tinted tamarisk shadowing the yellow stalks of last year's forgotten grass along its banks." In the same year the boundary between Afghanistan and British Baluchistan for the settlement of which McMahon was British Commissioner, was also carried to Kuh-i-Malik-i-Sia, where the Indian Empire meets Persia and Afghanistan.

In Western Persia De Morgan, best known in connection with his epoch-making discoveries at Susa, explored in Kurdistan and in the Caspian provinces in 1889–91. Stahl, who

[1] *The Indian Borderland*, 1901; and *The Gates of India*, 1910.

[2] This mission is fully dealt with in the present writer's biography of *Sir Mortimer Durand*, Chap. X.

gained valuable geographical information, also explored in Northern Persia. Vaughan made two important journeys, in one of which he travelled from Linga across the Dasht-i-Kavir and so almost to the Caspian, while Sawyer in 1890 explored a considerable new area in the Bakhtiari country.

To turn to my own journeys, in 1893 I travelled up the valley of the Atrek to Kuchan. I then crossed the Lut to Kerman, following in the footsteps of Marco Polo, and discovered a high range in its vast waste. In 1893–4 I explored in Persian Baluchistan, and was the first European to climb the volcano of Taftan, which is in the *Solfatara* state, and also the extinct volcano of Bazman.

In 1895 I founded the British Consulate for Kerman and Persian Baluchistan, and in the following year served under Holdich on the Perso-Baluch Boundary Commission. In the same year I visited the valley of the Karun on a special mission. In 1897 I took part in an expedition in Persian Baluchistan against the murderers of a British telegraph official, and in connection with it, in 1898, crossed an unexplored tract between Minab (close to the Harmozia of Nearchus) and Ramishk. In the autumn of that year King Wood and I travelled across Persia to Seistan to discover the best route for the Central Persian telegraph line to follow. There I founded the British Consulate for Seistan and Kain, and surveyed a large part of that little-known area.[1] Later when serving as Consul-General for Khorasan, I undertook journeys in the classical Parthia and Hyrcania. Thanks to the invaluable assistance of Indian surveyors, during the twenty-six years I spent in Persia, I was able to fill in many blanks on the map of that historical country.

Boundary Commissions have generally if not invariably been fruitful in valuable surveys, and that for the Turco-Persian Boundary has proved no exception to this rule. In 1848, British and Russian Commissioners appeared on the scene, among them being Colonel Williams, who was later to win fame as the defender of Kars. On this occasion "the Turkish salute of welcome at Erzerum included a gun charged with round shot carefully aimed at, and only just missing, the British Commissioners".[2] Thus the Turks welcomed their future defender! The leisurely labours of this Commission occupied four years, and were interrupted by the Crimean

[1] For these travels *vide* Sykes, *Ten Thousand Miles in Persia*, 1902.

[2] "The Demarcation of the Turco-Persian Boundary in 1913–14," by Col. C. H. D. Ryder, *G.J.*, Vol. LXVI, p. 227.

KUH-I-TAFTAN

(*From Frontiers of Baluchistan by G. P. Tate*)

[*face p.* 272

War, after which many years were spent in the production of a *Carte Identique*, which was both inaccurate and probably more or less obsolete.

In December 1913 a new Commission met,[1] which, by October 1914, "had travelled from the Persian Gulf to Mount Ararat, and demarcated practically the whole 1,180 miles of the frontier. . . . The first pillar, set up where the frontier leaves the Shatt-al-Arab, a few miles above Mohammerah, was erected with such zeal by the masons that they built themselves in and a hole had to be made for their release." Crossing the desert, the Commissioners reached the Karkheh River, "the drink of none but Kings" of Milton, and continuing northwards, near Qasr-i-Shirin struck the ruins of a great wall running in a dead line across country, and said to be over 100 miles in length. May not this have been one of the *Firdaus* or hunting parks of the Sasanian monarchs? The last pillars were placed on the col separating Mount Ararat from Lesser Ararat, and the Commission broke up a day before Turkey declared war. It remains to add that, during the Great War, important surveys were made in various parts of Persia.

The scientific exploration of India was begun by James Rennell.[2] He commenced operations in 1764 with the Ganges valley, and in due course his surveys extended to the great boundary range which he named the Tartarian Mountains, now known as the Himalayas. Working incessantly year after year, Rennell was able to hand over to Lord Clive a map of Bengal, Bihar, and Orissa, and the Moghul Empire as far north as Delhi. In addition to the above, he had made a chart of the Ganges. This great survey was published in the *Bengal Atlas* in 1779. Rennell left India in 1777, and during the next fifty years he was the leading geographer in Europe, influencing almost every field of exploration, and fully earning the title of "Father of English Geography".

After Rennell came the Great Trigonometrical Survey of India, which reached the Himalayas, and was extended to Kashmir in the middle of the nineteenth century. As mentioned in Chapter XXVI, it was joined up to the Russian Survey in 1911. Throughout the long period of its existence, many explorers who have already been referred to, or will be mentioned later, pushed beyond the borders of the Indian Empire. Indeed, no body of men has done more for

[1] Chief British Commissioner, A. C. Wratislaw, Captain Arnold Wilson, Assistant-Commissioner, and Col. Ryder, Chief Survey Officer. M. Minorsky was Chief Russian Commissioner.

[2] *Major James Rennell*, by Sir Clements Markham, 1895.

scientific exploration in Asia than the officers of the Survey of India.

Continuing our survey eastwards, one of the problems which had long been exercising the minds of explorers was whether the Tsang-po, which had been successfully explored in its upper reaches by Ryder, joined the Brahmaputra. The Abor country was explored by a punitive expedition in 1911, but still the problem remained unsolved.

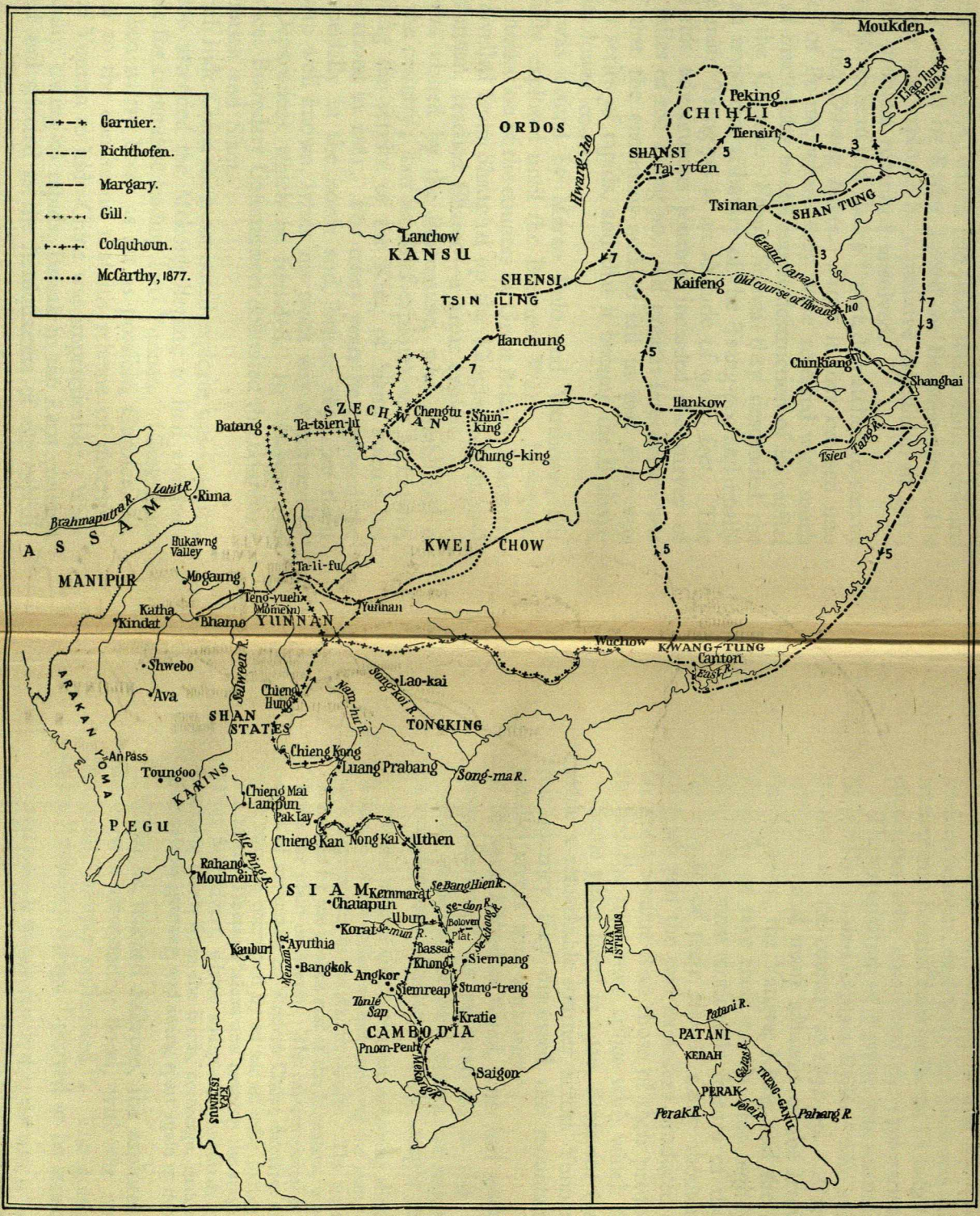
In 1913 Moorshead and Bailey [1] were despatched to survey the basin of the Dibang River. From it they crossed into the district of Po-me, where they were received with much suspicion at first owing to the recent destruction of its capital Showa by the Chinese. From Showa they descended the Tralung, an important tributary of the Tsang-po, and finally struck the main Tsang-po at an altitude of 9,680 feet. The results of this adventurous journey included the survey of some 400 miles of the Tsang-po. Of greater importance was the proof that the enormous sudden fall in that river was caused by a series of rapids, and that it became the Brahmaputra in its lower course.

Burma was visited by Marco Polo and Varthema, but was not fully explored until the Burmese Wars. However, before the annexation of the country by Great Britain, Margary, in 1874, travelled from Shanghai up the Yangtse-Kiang, and crossing Yunnan, reached Bhamo—a great exploit.

Siam was visited by the Portuguese, who established a colony in the country; but its chief explorer was McCarthy, who, entering the service of the King of Siam, started his survey operations in 1881. For many years he explored the country especially in the north and, before 1893, its main features were well known, while his work was continued by a Survey Department which he founded. In 1889–90 the Anglo-Siamese Boundary Commission delimited the boundary between Burma and Siam.

In French Indo-China the most noted explorer was Garnier, who in 1866 ascended the Mekong hoping to find a waterway suitable for commerce leading into Yunnan. Using gunboats and then native boats as far as possible, Garnier was soon forced to the conclusion that his scheme of diverting the trade of Yunnan to Indo-China was impracticable. With much difficulty, owing to rapids, Bassak in the Laos country was reached and selected as the headquarters of the expedi-

[1] "Exploration on the Tsangpo or Upper Brahmaputra", by Captain F. M. Bailey, *G.J.*, Vol. XLIV, p. 341.



SOUTH-EASTERN ASIA AFTER 1800

(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

[*face p.* 274

tion, and from this centre the country was explored in every direction, while its inhabitants and resources were carefully studied. The French mission accomplished much, surveying the course of the Mekong, noting the volume of its water at various seasons, exploring the Laos and Shan States and penetrating into South China as far as Ta-li-fu. Garnier had many successors who completed the exploration of Indo-China.

The exploration of Yunnan was scientifically undertaken by Major Davies and Captain Ryder [1] who surveyed considerable portions of the country in 1898–99. A reference to the map will show that many affluents of the Irrawaddy, the Salwen, the Mekong, the Yangtse-Kiang and the Red River all flow through, or take their rise in, this high-lying province, and this is the most noticeable feature of the plateau. During the course of their travels many thousands of miles were covered, and the two explorers produced maps that were of far greater value than those of their predecessors, while they studied the numerous tribes with which they met.

Some years later, in 1920, Professor Gregory and his son made a remarkable journey across Yunnan. As a result of this journey they discussed the mountain system and the parallel rivers with authority.[2]

In 1921 Kingdon Ward, who had started his journeys in 1909, continued his explorations in this area. Primarily a botanist in search of new plants, he has surveyed much of the country and obtained a deep insight into its inhabitants.

> "It is a strip of crumpled crust averaging about 75 miles wide, over a length of 150 miles, as measured off the map, and may be regarded as a huge breach in the Asiatic divide. The western portal of the gap is framed by the broken end of the Himalaya, where a great bluff overlooks the plain of Assam. The eastern portal is formed by a tangled skein of mountains in Western China, flanking the gorges themselves. The two are connected by an arc of lofty mountains which form the rim of the Tibetan Plateau and envelop the sources of the Irrawaddy. Thus four rivers, whose sources lie hundreds of miles apart, come charging down from the north, converge, rush side by side through this narrow gateway, and swing apart again to flow to different seas." [3]

When he reached Salween, the explorer found that there had been a devastating flood, with the result that the cliff path was "simply pulverized". The going was dangerous, and a "monkey bridge" proved to be more difficult to cross

[1] "Exploration in Western China", *G.J.*, Vol. XXI, p. 109.
[2] "The Alps of Chinese Tibet and their Geographical Relations", *G.J.*, Vol. LXI, p. 153.
[3] "From the Yangtse to the Irrawaddy", by F. Kingdon Ward, *G.J.*, Vol. LXII, p. 6.

unaided than a Tibetan rope bridge. After many adventures the western branch of the Irrawaddy was reached at Myitkyma. The photographs taken by Kingdon Ward are beautiful. In another expedition to the Burma-Tibet frontier, undertaken in 1930,[1] the explorer looked over the Tamai Pass into Tibet. Recently this indefatigable explorer has left England, determined to add to his laurels by exploration in Eastern Tibet.

In *Alastor*, Shelley describes a journey in Asia:

> "The Poet wandering on, through Arabie
> And Persia, and the wild Carmanian waste,
> And o'er the aerial mountains which pour down
> Indus and Oxus from their icy caves,
> In joy and exultation held his way;
> Till in the vale of Cashmire, far within
> Its loneliest dell, where odorous plants entwine
> Beneath the hollowed rocks a natural bower,
> Beside a sparkling rivulet he stretched
> His languid limbs."

[1] "Explorations on the Burma-Tibet Frontier", *G.J.*, Vol. LXXX, p. 465.

CHAPTER XXXI

ARABIA—FROM NIEBUHR TO DOUGHTY

> "The Beduins' old cruel rancours are often less than the golden piety of the wilderness. The danger past, they can think of the defeated foemen with kindness, having compassion of an Arab lineage of common ancestry with themselves."
>
> DOUGHTY.

> "Allah created the Beduin for the camel, and the camel for the Beduin."
>
> *Arab Proverb.*

THE "Island of the Arabs", as Arabia is termed by its inhabitants, is the westernmost of the three peninsulas of Southern Asia. Situated among sterile lands, the Red Sea on the west and the Persian Gulf on the east are too narrow to influence its continental climate, and the only areas approaching fertility in this huge peninsula, which exceeds India in its extent, are Yemen, the neighbouring Hadramaut and the valleys lying on both sides of the Oman Mountains, the *Arabia Felix* of the classical writers, which benefit by the life-giving monsoon rains. Yet, in spite of its sterility and its entire lack of perennial rivers, few countries have played a greater part on the stage of history than Arabia.[1]

In the book of Genesis we read of the journey of Abraham, an Arab *Shaykh*, from the neighbourhood of Ur, whose marvellous past has been revealed to us by Woolley, to Harran, where Crassus, many centuries later, was slain by the Parthians. Later, we read of the Patriarch at Sichem, at Bethel, at Hebron, at Gerar and at Beersheba. A famine compelled him to seek refuge in Egypt and, on his return to Canaan, we read that amazing piece of history known as the battle of four kings with five, which is given in the fourteenth chapter of Genesis.

In Chapter IV I have given a sketch of the ancient history of Arabia and have referred to the expedition of Gallus, on which Ptolemy based his description of *Arabia Felix*. To this Idrisi added, so far as the west and south-west coasts of Arabia

[1] Sir Percy Cox has read these three chapters on Arabia and made many valuable comments and suggestions. Colonel T. E. Lawrence has rendered me valuable help in this chapter and in part of the following chapter.

are concerned. But the first great explorer of Arabia was Ibn Battuta, early in the fourteenth century, whose journeys are dealt with in Chapter X. Two centuries later, Varthema describes the pilgrimage which he accompanied from Damascus. He also travelled in Yemen and visited Dhufar and Maskat. Not long after, the Portuguese failed to capture Aden, but succeeded in occupying ports on the coast of Oman, albeit they were unable to penetrate into the interior. In their track followed the English adventurer, Henry Middleton, who, touching at Mocha in 1610, was trapped by the Turks and taken to Sanaa, which he described as "somewhat larger than Bristol, well built of stone and lime". He was finally sent back to Mocha, and, escaping on a barrel to his ships, he promptly bombarded the port, with excellent results.

We now come to the expedition of Niebuhr,[1] which, consisting of five scientists, was despatched by the King of Denmark in 1761 and reached Jedda in the autumn of the following year. After a visit of two months, during which they were not permitted "to pass through the gate that opens towards Mecca", the Danes coasted to Lahiya, and from this port began making numerous short journeys into the interior. Reaching Bait-al-Fakih, the coffee emporium, they were so little interfered with that the party broke up and explored the coastal area in various directions, Forskal making a valuable collection of plants in the mountains. In 1763, they reached Mocha, where their Arabic scholar Von Haven died. They had much trouble with the authorities at this port, but finally were summoned to visit the *Imam* at Sanaa.

Niebuhr was well received by this potentate.

> "The *Imam* sat upon the throne between cushions, with his legs crossed in the eastern fashion; his gown was of a bright green colour, and had large sleeves. On each side of his breast was a rich filleting of gold-lace, and on his head he wore a great white turban. We were first led up to the *Imam*, and were permitted to kiss both the back and the palm of his hand, as well as the hem of his robe. It is an extraordinary favour when the Mahometan princes permit any person to kiss the palm of the hand."

Niebuhr gave a good description of Sanaa with the battery of guns lying derelict and a German mortar with the date 1514. He refers to the ill-treatment of the considerable Jewish colony, and mentions that "the *Banians* in Sanaa are reckoned to be about 125. They pay 300 crowns a month for permission to live in the city." The Mission had indeed been well received

[1] *Travels Through Arabia*, 1792.

at Sanaa, but knowledge of the *Imam's* avarice, joined to the facts that Forskal had died on the way up and that the sudden change of climate—Sanaa is situated at 7,250 feet above sea level—was injurious to their health, made Niebuhr think seriously of sailing for India with the English.

Consequently the explorers returned to Mocha and sailed for India, but finally, Niebuhr alone survived to return to Europe overland by the Persian Gulf route. Well indeed had he carried out his task of exploring Yemen, while he had compiled a mass of valuable information about other parts of Arabia.

The rise of the Wahabi religion in Central Nejd was an important event, which had repercussions not only throughout Arabia, but in neighbouring lands. The origin of this militant sect was as follows.[1] Among the petty chiefs of Nejd was Muhammad, a member of the noble clan of Anaza, whose stronghold was Dariya. Muhammad, the third or fourth in descent from his eponymous ancestor Saud I, was surrounded by powerful neighbours, who were always fighting with one another and with him for supremacy in Nejd. About 1744, an Arab, Muhammad ibn Abdul Wahab, who had studied at Baghdad and Damascus, returned to his home at Ayaina with a message, the gist of which is given in the following lines :

> " Hear what said the Prophet of God—
> ' Behold Jewry, it is divided into seventy and one divisions ;
> And lo ! the Nazarenes, into two and seventy divisions be they divided ;
> Verily, I say unto you, this people of mine shall be divided into seventy and three divisions ;
> They be, all of them, for the flames of Hell—except one '."

Suffering the usual fate of a prophet among his own people, Ibn Abdul Wahab betook himself to Dariya, where he was welcomed by its chief, Muhammad, and, under his patronage and that of his successor Abdul Aziz, the Wahabi religion was founded. Muhammad ibn Abdul Wahab lived to the great age of eighty-nine, and when he died in 1792, the Wahabi sect was successfully fighting its way to empire. " The Wahabi seer seems to stand out as a politician of amazing astuteness," writes Philby, " appealing to just that embryo of fanaticism innate in the hedonistic materialism of the Arab race."

The fighting Wahabis had no easy task in their rise to power, year after year passing without any striking success until, in 1773, they became masters of Nejd. The next generation was one of expansion gained by constant fighting, and

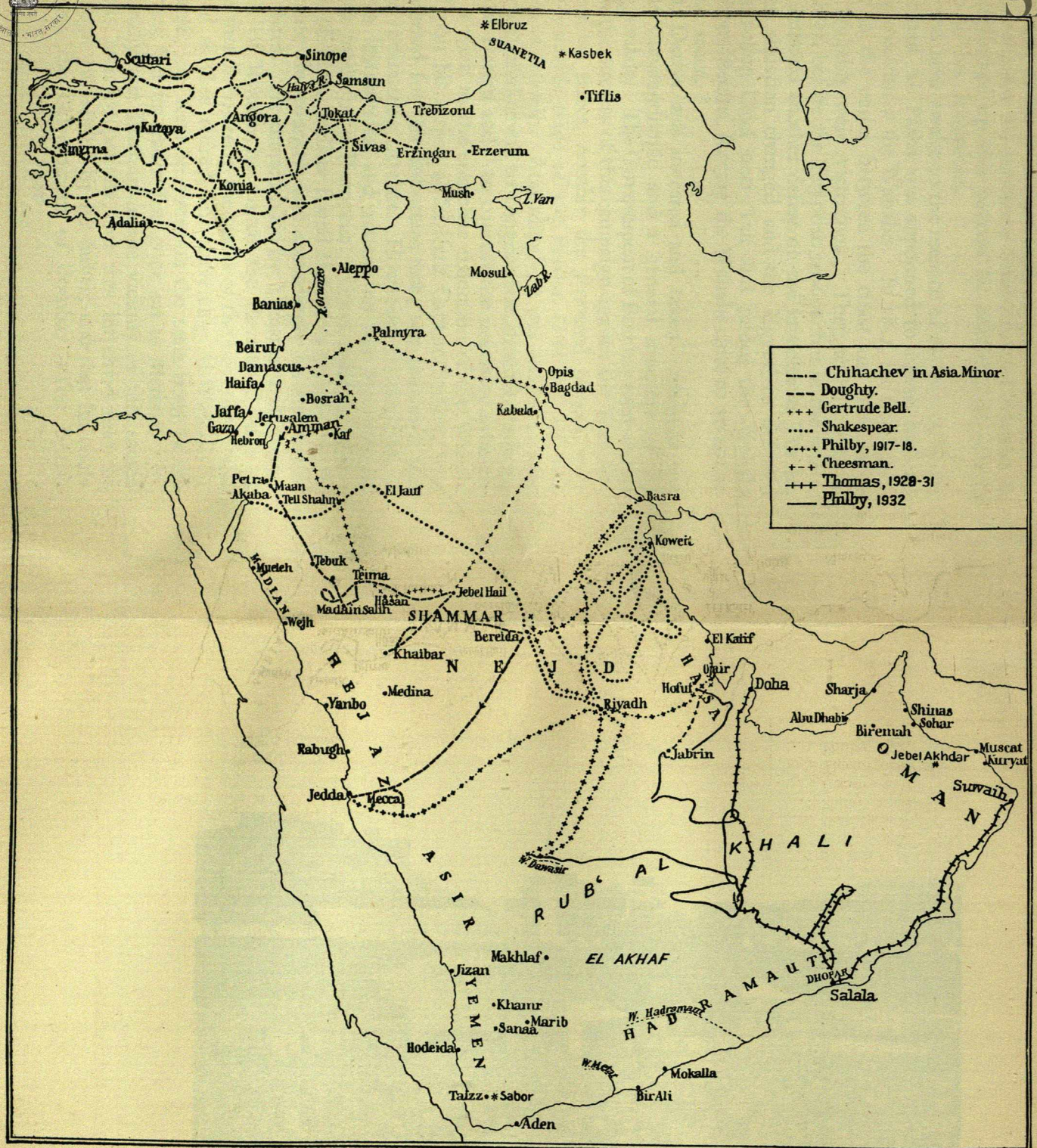
[1] *Arabia*, by H. St. J. B. Philby, 1930.

among the provinces that were annexed to the growing kingdom was Hasa. Karbala was captured in 1801, and, two years later, Mecca was added to the growing empire. Abdul Aziz was assassinated, but his successor Saud captured Medina in 1804. He followed up this success by adding both Oman and Yemen to his dominions.

Turkey was now awake to the menace of the new religion, and Muhammad Ali Pasha was appointed to Egypt with instructions to overthrow the Wahabis. In 1812, the first action was fought in the passes between the coast and Medina, in which the Wahabis were victorious. They withdrew from Hejaz, however, before the Egyptian troops, but in the winter of 1813–14 inflicted another defeat on the invaders at Turaba. In 1815, the situation changed and the Egyptians defeated Abdulla the ruling Chief near Taif and raided the Wahabi homeland from Medina, forcing the Wahabi chief to accept an unfavourable truce.

In 1818, Dariya was invested and taken. Abdulla was beheaded at Constantinople and a general massacre of the defenders was made. The Government of Bombay were deeply interested in the success of this campaign against the Wahabis, since the coastal tribes, notably the Jowasmi pirates, were ruining the valuable trade of the Persian Gulf and the rich pearl fisheries of Bahrein. Accordingly, it was decided in 1819 to despatch a special envoy to congratulate Ibrahim *Pasha* on the capture of Dariya and " to concert the necessary arrangements with a view to the complete reduction of the Wahabi power ". Upon his arrival at El-Katif Captain Sadleir, who had been selected for this important task, was informed that Ibrahim was evacuating Arabia. However, he decided to carry out his instructions and started on the first journey across Arabia made by a European. Upon reaching Hofuf in the oasis of Hasa, Sadleir found Ibrahim's troops preparing to evacuate the country, and accordingly he decided to march with them. He entered Nejd by Yemama, and passing to the north of Riyadh, he visited the devastated oasis of Dariya. He then followed in the tracks of the Egyptians, who had destroyed as they retired, and traversing Al-Washm, he reached Anaiza. At Rass he overtook the main body of the Egyptian army, but its leader had gone on to Medina.

Sadleir finally met Ibrahim in the vicinity of this sacred city. He was received politely, but was informed that the policy of Egypt was settled by his father, and that he could not treat with the Government of Bombay. The British



Chihachev in Asia Minor.
Doughty.
Gertrude Bell.
Shakespear.
Philby, 1917-18.
Cheesman.
Thomas, 1928-31
Philby, 1932

SOUTH-WEST ASIA AFTER 1800

(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

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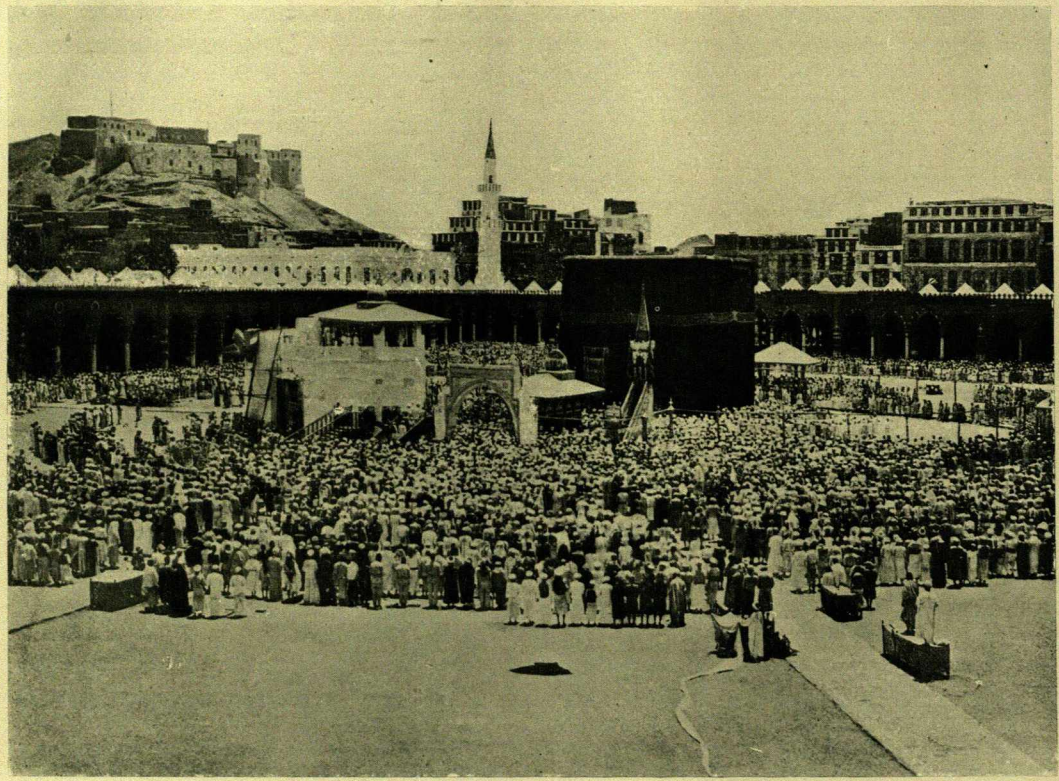


MECCA : PILGRIMS PRAYING TOWARDS THE *KAABA*

(*From Dr. J. Snouck Hurgronjes' Bilder aus Mekka*)

[*face p.* 280

Envoy was not permitted to enter Medina, and had to be content to view its minarets from afar while travelling to the port of Yanbo. Sadleir, throughout this important journey across unexplored country, made a careful compass route survey, and his report contained notes on the tribes and on the oases which he visited. He was the first English explorer in Arabia, and deserves a niche in the Temple of Fame.

Among the chief pioneers of exploration in Hejaz was Burckhardt,[1] who had already travelled widely in Nubia and had discovered Petra. Owing to his profound knowledge of Arabic and of the Koran he was able to pass as a Moslem. Landing at Jedda in 1814, he visited Muhammad Ali Pasha, whom he already knew in Egypt, at Taif. After several interviews with the *Pasha* no objection was raised to his taking part in the ceremonies of the pilgrimage at Mecca, of which he gave a most accurate and detailed account. In the following year he travelled to Medina by the coast. The caravan was mainly composed of Malay *Hajis*, who, he notes, although they reviled the British, "never failed to add 'but their government is good'". Burckhardt gave an excellent description of Medina, although he was suffering from illness, and he ended his important journey at Yanbo.

Among the successors of Burckhardt in the Hejaz was Burton. His journey to Mecca in the disguise of a Moslem made him famous, but he merely confirmed what his predecessor had so ably described, and added little to geographical knowledge. Burton, as Hogarth points out, hoped to be able to cross the heart of Arabia as a *Haji*, but, upon making inquiries, he abandoned the scheme as impracticable.

Burton's claims as an explorer in Arabia were to arise after his great journey to the heart of Africa. In 1877 he led an expedition into the land of Midian from the port of Muwailah, mainly in search of minerals. He explored the coastal area to a point half-way up the Gulf of Akaba, thereby supplementing Moresby's survey. After exploring Northern Midian, Burton returned to Muwailah, and, passing through the coastal range, penetrated to the inner plateau. As a result of this expedition the land of Midian was scientifically surveyed. Burton's chief interest was Arabia, and by his translation of the *Arabian Nights* and his amazing studies on the manners and customs of the Arabs, he perhaps did more than any other explorer to draw the attention of the world to the "Island of the Arabs".

[1] *Travels in Arabia*, by J. L. Burckhardt, 1829.

We now turn to the charting of the Arabian coast and especially to Wellsted,[1] an officer of the Indian Navy, who, in 1830, took part in the survey of the Red Sea in the "Palinurus" under Moresby. In addition to his arduous survey duties Wellsted landed at Tor, and, proceeding inland, visited cells hewn out of the rocks which had formerly been occupied by Christian hermits. Close to Tor, he visited the Jabal Nakus or "Mountain of the Bell", and gives an early account of singing sands. He also travelled by land to Suez. His interesting description of the survey of the Gulf of Akaba shows with what dangers navigation in unknown waters is attended.

In 1834, Wellsted, who was now surveying the southern coast of Arabia, sighted some ruins on a "lofty, black-looking cliff" termed Hasan Gorab. Visiting the site, he discovered the first Himyaritic inscriptions, and, realizing the importance of the discovery, "three separate copies were taken by different individuals, all of which have subsequently been examined and compared". In the following year, landing at a point some eighty miles east of Aden, Wellsted made an adventurous journey of some fifty miles up a long valley where he discovered the still more important ruins of Nakab-al-Hajar.[2] Situated on a hill rising out of the centre of the valley, a massive wall from thirty to forty feet in height, flanked by square towers erected at equal distances, encloses the fortress. A hollow square tower stands on either side of a ruined building in which the inscriptions, with letters eight inches in length, were discovered. The wall and the towers were carefully cemented with hard mortar. The discovery of these inscriptions, now numbered by thousands, created a new epoch in the history of Arabia.

Wellsted made further explorations under the protection of the *Imam* of Maskat[3] and landing at Sur, explored that part of Oman which lies behind Ras-al-Had. Although the tribes inhabiting this area had embraced Wahabi tenets and had been severely punished for supposed acts of piracy by a British force less than a generation before, Wellsted was received most hospitably. He thence travelled north-west towards the central range of Oman, passing a chain of fertile oases, which were fed by Persian *Kanats*, this system of underground irrigation channels having been introduced when Oman was a Persian province. Exploring the Jabal Akhdar, the great central range of the peninsula that is visible far out to

[1] *Travels in Arabia*, by Lieut. J. R. Wellsted, 1838.
[2] *J.R.G.S.*, 1837, p. 21. [3] *J.R.G.S.*, 1837, p. 102.

sea, Wellsted wrote: "From the summit of the Jabal Akhdar I had an opportunity during a clear day to obtain an extensive view of the desert to the south-west of Oman. Vast plains of loose drift-sand, across which even the hardy Beduin dare scarcely venture, spread out as far as the eye can reach. Not a hill, nor even a change of colouring in the plains occurs to break the unvarying and desolate appearance of the scene." Such is the *Rub' al Khali*, the great central desert of Arabia, which exceeds in its utter aridity the Lut, that dead heart of Persia. Nearly a century was to elapse before its austere desolation was to be explored by another Englishman.

Wellsted subsequently surveyed the fertile Batina, a coastal area to the north of Maskat, and attempted to penetrate farther west towards Nejd, but the Wahabis were hostile, and he had to content himself with exploring the northern end of the range which terminates in Ras Musandam or "the Anvil". I shall never forget this black sombre peak rising sheer from the sea for thousands of feet, when I first entered the Persian Gulf at full moon. Wellsted's explorations, which are not all included in this brief sketch, were of the greatest importance from the geographical point of view, while his knowledge of the languages and of the ancient history of the country, his sympathy for the wild tribesmen, and his calm courage mark him out as one of the great explorers of Arabia. Among the successors of Wellsted were Colonel Miles, who crossed the Jabal Akhdar to the Dhahira district and penetrated to Baraimi, and Sir Percy Cox, who in more than one journey supplemented the work of his predecessors.

Nejd, inhabited by the virile Shammar tribe, was still unknown to Europe, in spite of the excellent description given by Ibn Battuta, when a Swede, George Wallin, a distinguished Arabic scholar, decided to explore it. He was singularly well equipped for collecting information on many subjects, but made no attempt at even a compass route survey. Leaving Cairo in 1845, Wallin penetrated to Maan, situated to the south-east of the Dead Sea. He thence crossed the *Hamad* to Jauf, where he lived for two months. From this northern oasis he undertook the passage of the dreaded *Nafud*, travelling by night across a waterless stretch which took eighty-seven hours of marching to accomplish. His account of the Jabal Shammar with its capital Haïl are of great importance. He pronounces an eloquent eulogy on Abdulla ibn Rashid, of whose hospitality, justice and kindness to the poor he speaks in the highest terms. From Haïl Wallin proceeded to Medina and Mecca.

In a second journey Wallin landed on the coast of Midian and made for Tabuk, situated a considerable distance to the south of Maan. From this centre he marched south-east to Talima, and thence reached Haïl, where he found that Abdulla was dead. From Haïl Wallin marched north-east across the desert to Meshedi Ali in Iraq, thus winning an honourable position in the roll of explorers of Arabia.

The search for Himyaritic texts brought Arnaud to Sanaa in 1843. He visited the ruins of Marib and of its famous dam, whose destruction early in the Christian era caused the migrations of Arab tribes. His journey in the Jauf district and his discovery of Himyaritic texts in number too great to cope with, brought Joseph Halévy to Yemen some thirty years later. This Jewish traveller explored towards Jauf. He was also the first European to visit Nejran since Gallus. He discovered the ancient city of Negrana in the ruins of Medinet-el-Khudud.

In Central Arabia, in 1862, Palgrave started on a journey into the interior from Maan. Of Jewish extraction on his father's side, he had served in the Indian army. He then became a Jesuit on Mount Lebanon, and not only learned Arabic well, but was able to hold his own with any *mulla* by quoting passages from the Koran and other authorities. The French Government, anxious for information as to the political situation in Central Arabia, supplied the funds for this important journey, during which Palgrave travelled as a learned doctor who was a Syrian Christian.

The explorer crossed the desert to the oasis of Jauf, and gives a vivid description of the dread simoom:

> "So dark was the atmosphere and so burning the heat, that it seemed that hell had risen from the earth, or descended from above. But we were yet in time, and at the moment when the worst of the concentrated poison-blast was coming around, we were already prostrate one and all within the tent, almost suffocated indeed, but safe; while our camels lay without like dead, their long necks stretched out on the sand awaiting the passing of the gale."

On continuing his journey from Jauf, he describes the *Nafud*. "We were now traversing an immense ocean of loose reddish sand, unlimited to the eye, and heaped up in enormous ridges running parallel to each other from north to south, undulation after undulation each well two or three hundred feet in average height, with slant sides and rounded crests furrowed in every direction by the capricious gales of the desert." At Haïl, the pseudo-physician was received most kindly by Telal ibn Rashid, the Shammar Amir, to whom he, in due course, revealed

his identity. After amassing much valuable information on political and other subjects, Palgrave, with marked courage, decided to continue his journey southwards to Riyadh, the capital of the fanatical Wahabis. At Buraida he found a large caravan composed of Persians and Indians returning from Mecca, whom the Wahabi governor Mohanna was engaged in blackmailing in the most outrageous manner. Palgrave told the story of a former caravan which had been taken into the desert and left to die of hunger and thirst by the treacherous Arabs under the son of the governor, who ultimately gained possession of the whole of their property. After this atrocious act of perfidy, no Persian or Indian had ventured to follow the route across Central Arabia for two years, and the treatment which the " enemies of Allah ", as the Wahabi fanatics termed them, were now suffering must have acted as a strong deterrent to future pilgrims.

By good fortune Palgrave met a caravan leader, Abu Isa, who was bound for Riyadh and Hasa. Their party was completed by the Persian *Naib* of the caravan, who was visiting the Amir Feisal " to state by word of mouth grievances too many and too serious to be entrusted to pen and ink ". While crossing the *Nafud* Palgrave writes :

> " A little before noon, and just as the sun's heat was becoming intolerable, we reached the verge of an immense crater-like hollow, certainly three or four miles in circumference, where the sand-billows receded on every side, and left in the midst a pit seven or even eight hundred feet in depth, at whose base we could discern a white gleam of limestone rock, and a small group of houses, trees, and gardens, thus capriciously isolated in the very heart of the desert."

This was the little village and oasis of Wasit. The subsequent ascent was a matter of extreme difficulty. " Camels and men fell and rolled back down the declivity," but at last the *Nafud* was crossed and " the wall-like steeps of Jabal Tuwaiq came into sight, the heart and central knot of Arabia ".

To take up the story of the Wahabis, as Palgrave found them, Feisal, who was a grandson of Abdulla the defender of Dariya, had restored the fallen fortunes of the Ibn Saud family and had made Riyadh his capital. To quote again from Palgrave's breezy narrative, " Christians, heretics, polytheists and infidels were surely enough to call down fire from heaven ". As a preliminary measure to meet this menace, *Amir* Feisal " left the castle by the secret gate and buried himself in the recesses of a secluded garden ". The *Amir*, at first, decided to get rid of the physician, " packed with post-horse up to

heaven". However, gifts of *ood*, the famous scented wood of the eastern poet, judiciously distributed, resulted in a decision that Riyadh "did seriously stand in need of an Aesculapius". Consequently Palgrave was able to commence a practice which brought him into close touch with various important personages. Indeed, as at Haïl, he amassed much valuable and interesting information. Finally, he made a deadly enemy by declining to give strychnine to Feisal's son Abdulla, with which he wished to poison his half-brother Saud, and he was glad to leave suddenly for Hasa, after spending fifty days at the Wahabi capital.

Palgrave reached Hasa without incident, and there, in a friendly society of citizens who detested the puritanical tyranny of Wahabism, we may take our leave. In view of the extent of unexplored country that he crossed, and the great risks he ran, taking also into consideration his profound knowledge of Arabic literature and of the language, Palgrave certainly ranks as one of the greatest of Arabian explorers. His brilliant literary talents may have to be set against his undoubted lack of accuracy in geographical matters, but it is only fair to remember that he was primarily sent on a political mission.

In 1875, Doughty, who had already travelled far and wide in Syria, appeared on the scene at Maan. There he heard of the existence of ancient monuments at Madain Salih, some 300 miles to the south on the pilgrim route. Unable to venture alone, he proceeded to Damascus and arranged to join the annual pilgrim caravan. In this manner he travelled to Madain Salih, along the route described by Varthema, and examined the rock-hewn tombs with Nabathean and Himyaritic inscriptions as far south as the oasis of Al-Ala. He then, in the guise of an English doctor, joining a tribe of Beduins, set out on his leisurely wanderings, making in the first instance for Teima. He wrote:

> "Delightful now was the green sight of Teima, the haven of our desert; we approached the tall island of palms, enclosed by long clay orchard-walls, fortified with high towers. . . . Those lighthouse-like turrets, very well built of sun-dried brick, are from the insecure times before the government of Ibn Rashid. . . . We entered between grey orchard walls, overlaid with blossoming boughs of plum trees; of how much amorous contentment to our parched eyes."[1]

In due course Doughty, known to the Arabs as "Khalil", found his way to Haïl. There he was received by Abdulla ibn

[1] *Arabia Deserta*, 1888. This edition was published by the Cambridge University Press, but permission for quotation has been given not only by that body but by the author's executors and by Messrs. Jonathan Cape.

Rashid, brother of Telal, who had protected Palgrave. The *Amir* was suspicious, and to test the explorer, he was given a great historical work, dealing with *Isa bin Miriam* or "Jesus the Son of Mary", and was asked to read a certain line chosen at random. The passage happened to run: "The King slew all his brethren and kindred." At this "the *Amir* was visibly moved, and with the quick feeling of the Arabs, he knew that I regarded him as a murderous man".

Doughty was expelled from Haïl with such intense hostility that he feared the worst. However, the *rafiq*[1] to whom he had been confided was trustworthy, and the explorer was able to make his way towards Khaibar. Upon approaching this district, he crossed a range of volcanic stones at an altitude of 6,000 feet.

On the following day he writes: "The vulcanic field is a stony flood which has stiffened; long rolling heads, like horse-manes, of those slaggy waves ride and over-ride the rest: and as they are risen they stand petrified, many being sharply split lengthwise, and the hollow laps are partly fallen down in vast shells and in ruinous heaps as of massy masonry."

Upon reaching Khaibar, where he found that the Jewish colony mentioned by Varthema had disappeared, Doughty was arrested by the Turkish officer of the post and his books and papers were despatched to the Governor of Medina, who gave strict orders for his release and good treatment. After this experience, Doughty again started on his wanderings, but on arriving once more at Haïl, he was received with marked hostility and expelled. His conductors tried to murder him, and then to desert him, and at Buraida he was assaulted and robbed, but his property was restored.

Doughty found it advisable to leave Buraida for Anaiza, but his treacherous *rafiq* abandoned him on the way. However, he secured transport, and, upon reaching Anaiza, he was befriended by the Governor Zamil. There he remained, not without danger, until the annual "butter caravan" started for Mecca. Doughty, with remarkable courage, joined the caravan, but when he reached the last stage before Mecca, whence he proposed to make for Jedda, he was threatened by a fanatical *sharif* or "descendant of the Prophet". He was in serious danger, but thanks to his calm courage and ready tongue, although robbed and beaten, he managed to reach

[1] *Rafiq* actually means your (camel) pillion-rider and so your friend who will loyally defend and guide you. From another point of view a *rafiq* may be described as a living passport to his own tribe.

Taif, where he was received most hospitably. His great journey was now coming to an end and, in August 1878, he bade farewell to Arabia in these words: "I beheld the white sea gleaming far under the sun, and tall ships riding, and minarets of the town! In this plain I saw the last worsted booths of the Ishmaelites."

Doughty was not only a great explorer, but, better than any other European of his generation, he understood the mentality of the Arab. To read his *Arabia Deserta* is to travel with him, to learn much about its unstable, fanatical people, and to realize the truth of the saying quoted at the beginning of this chapter; it will remain a classic for all time.

The last notable traveller of the nineteenth century in Arabia was the Frenchman Huber. Travelling from Damascus to Haïl, Huber not only secured the famous Teima stone, which Doughty had reported, but the copying of many inscriptions and his geographical work were of the greatest scientific value. Indeed we are still dependent on Huber's observations for certain centres and on his maps for large areas which have not since been revisited. From Haïl the explorer made for Anaiza and Jedda. When travelling into the interior from Rabegh, the gallant Huber was murdered. Well wrote the Arab poet:

> "I read the history of man, age after age
> And little find therein but treachery and slaughter.
> No pestilence, no fiend could inflict half the evil
> Or half the desolation that man brings on man."

CHAPTER XXXII

ARABIA—THE MIDDLE PHASE

> "The Beduin could not look for God within him: he was too sure that he was within God. He could not conceive anything which was or was not God.
>
> * * * * *
>
> The Bedu were odd people. They were absolute slaves of their appetite, with no stamina of mind, drunkards for coffee, milk or water, gluttons for stewed meat, shameless beggars of tobacco."
>
> LAWRENCE.

AFTER the great period comprised in the previous chapter, there was a lull, which was but the prelude to a still greater period. In 1909, Carruthers [1] set out from Damascus to visit the blank that existed between the Hejaz Railway and the area to the east. His main object was to stalk that rare quarry, the Arabian oryx. Accompanied by a capable camel-dealer, he joined the Beni Sakhr tribe, and, while accompanying them on their migration, he purchased some dromedaries. Securing a *rafiq* of the Sherarat tribe, not without difficulty, he rode off to the south-east.

Entering the oasis of Teima, Carruthers was ordered by the Governor to quit it, and "escaping by night", he rode due north, skirting the western edge of the *Nafud*. Then, marching north-west again, he found at the well of Bayer the ruins of a large *Khan* on the ancient route between Basra and Egypt. Desiccation had apparently caused this route to be abandoned. The explorer then returned to the tents of the Beni Sakhr, after having succeeded in his quest of the oryx, which Aristotle mentions as having but one horn and which is possibly the unicorn of the medieval legend. He had also made valuable additions to the geography of Arabia.

In 1913, Gertrude Bell,[2] already an experienced traveller, made an adventurous journey from Damascus to Haïl, traversing the country east of the Medina railway. She called in at Ziza, now the starting-point of the air route between Palestine and Iraq, where her faithful servant rejoined her, and then made for Tuba, to visit a palace of the Omayyid Caliphs.

[1] *G.J.*, Vol. XXXV., No. 3, March 1910. [2] *G.J.*, Vol. LXII, No. 1, July 1927.

She was travelling in a land where raids were the order of the day, and was thankful to be able to avoid the wells, owing to the abundance of rainwater. Upon reaching Tubaiq, she was well received, and made her plans for the onward journey. She was advised to avoid Teima and to make for Haïl, cutting across the south-west corner of the *Nafud*. The party was held up by tribesmen, whose ungallant *Shaykh* demanded a revolver and a pair of Zeiss binoculars, and, having received them, tried to induce her *rafiq* to desert her and to halve the spoils. However, matters were arranged satisfactorily during the night, the *Nafud* was crossed in favourable weather, heavy rain hardening the sand, and in due course Haïl was reached.

At that time the Shammar tribe had been weakened by frequent assassinations in the Chief's family, and the Amir who was then ruling was absent on a raiding expedition. At first the English explorer was treated somewhat as a prisoner, and, as she wrote in her diary, " the place smells of blood ". However, in due course the period of forced seclusion came to an end, and Gertrude Bell was permitted to inspect the fortress and town of Haïl. There was, however, no question of her continuing her journey to Riyadh, and she returned north-east to the Euphrates.

Geographically, her journey was important, and later, during the Great War, to quote Sir Percy Cox, " the great experience she had of Arab traditions and Beduin customs, and the knowledge of individuals which she had gained in this and previous journeys, was an enormous asset to us all ".

Among the noted pre-war explorers of Arabia, Leachman[1] holds an honoured place. Possessing a remarkable gift for making friends with the Beduin, in 1911 he joined a section of the great Shammar tribe, which had crossed the Euphrates into Iraq, and accompanied them on their return migration to the neighbourhood of Haïl. His section of the Shammar was attacked by the Roalla, owing to a misunderstanding, but Leachman managed to escape. At that time the great Anaza tribe was marching on Haïl to attack the Shammar. " Looking from an eminence, the desert as far as the eye could reach was a moving mass of Arabs . . . while in the middle on a picked dromedary was the ' Mirkab ' of the Roalla. This consists of a frame covered with black ostrich feathers, in which a maiden from the sheik's family rides in battle, exhorting the combatants to deeds of valour."

[1] " A Journey in North-Eastern Arabia ", by Captain G. E. Leachman, *G.J.*, Vol. XXXVII, March 1911.

On the march the road of Zubayda, mentioned by Ibn Battuta, was struck, and, some days later, the Anaza were surprised by the Shammar, who swept through their camp. Few casualties were inflicted, but Leachman wrote: "I was much struck by the fact that several Anaza women, in passing me in their flight from the camp, thrust upon me their silver ornaments for safe keeping, rather than entrust them to one of their own countrymen." Leachman, who was protected by a Shammar acquaintance, accompanied him to Ibn Rashid's camp and gave an account of the series of assassinations which had brought the Shammar tribe to a very low ebb. He was received by Saud, son of Abdul Aziz, who had been killed in battle by the Wahabi *Amir*, and writes: "Saud is a handsome little boy with beautiful features and very fair hair." He also comments on the lavish hospitality shown to guests, of whom there were seldom less than sixty or seventy. Leachman was not permitted to visit Haïl, and after accompanying the Shammar to the famous wells of Lina, situated on the pilgrim route between Medina and Najaf, he was ordered to leave the camp by the Regent Zamil and to join a caravan bound for Zobeir.

In 1912, Leachman undertook another important journey,[1] starting from Damascus with a party of "Ageyl", privileged Arab traders of Kasim, who were returning to their homes, their privilege was soon proved, as, on being attacked near Dumeir, a village in the Damascus plain, by a section of the Roalla, the cry "Ageyl" saved the party.

In due course the explorer reached the wells of Lina for the second time and later saw the remarkable horse-shoe depression mentioned by Palgrave. Crossing the border between the Shammar and the Wahabis at Kusaiba, Saleh, his companion, ensured him a good reception at Ayun, where he posed as an inhabitant of Mosul. At Buraida, Leachman was not received too well, although he escaped the ill treatment suffered by Palgrave and Doughty. He then travelled to Shakra, the capital of Washm, and at Riyadh, Ibn Saud welcomed the English explorer. Leaving the Wahabi capital, Leachman was hospitably treated by the Turkish garrison of Hofuf and finally reached the coast at Oqair. The geographical importance of Leachman's journeys is evident, and the intimate knowledge he acquired of the politics and chiefs of Arabia were of the highest value to the British military authorities in Mesopotamia during the Great War.

[1] "A Journey through Central Arabia", *G.J.*, Vol. XLIII, May 1914.

Among the well-equipped explorers of South-West Arabia was Wyman Bury, who surveyed the country to the east of the Aden protectorate, and also visited Sanaa. His book, *The Land of Uz*, contains a fascinating account of his many adventures and incidentally proves how intimately he knew the mentality of the various wild tribesmen among whom he travelled. He points out that no one of tribal origin may marry into non-combatant stock. There is an ancient saw: "Quoth Father Noah: the ploughman, the retainer and the slave, to each his female counterpart." Like most Englishmen, he appreciated the virile tribesmen and disliked the effeminate townspeople, while the hill girls "throw stones with a force and accuracy that commands respectful admiration". There were few Englishmen who could rival the knowledge of "Abdullah Mansur," as he was termed, who certainly ranks among the noted explorers of South-West Arabia.

Among the explorers who perished in the Great War was Shakespear.[1] After serving at Bandar Abbas and Maskat, he was appointed Political Agent at Koweit in 1909, and for six years made journey after journey into the interior, filling up blanks in the map, making friends with the Chiefs and collecting information destined to be of the greatest value. Moreover, he discovered the first Sabaean inscriptions in North-East Arabia. These expeditions constituted admirable training for the journey he determined to make to Riyadh and thence across Arabia to the Gulf of Akaba.

Starting from Koweit in February 1914 with a well-equipped caravan, Shakespear marched south-west to the forty wells of Hafar, the site of the famous "Battle of the Chains".[2] Following up the great valley, "old wells and traces of buildings" were noted, and traversing the sand-belts of the *Nafud*, the English explorer crossed the northern end of the Tuwaiq escarpment and looked down on Zilfi. From this important trade centre Shakespear rode to Riyadh, where he paid a visit to Ibn Saud, whom he already knew. From Riyadh he accompanied the Wahabi *Amir* on an expedition for some distance to the north. He then left the Wahabi camp and made for Shakra, the capital of Washm, where he struck Sadleir's route. At Anaiza, thanks to Ibn Saud, Shakespear had a most friendly reception by *Amir* Saleh, the son of

[1] "Captain Shakespear's Last Journey", by Douglas Carruthers, *G.J.*, Vol. LIX, No. 5, May 1922.
[2] *Vide* Sykes, *History of Persia* (3rd ed.), Vol. I, p. 490.

Doughty's protector Zamil, and he notes that everyone spoke well of "Khalil". From Anaiza, Buraida was visited. There he made arrangements that enabled him to follow a new line to Jauf, and, during this section of twenty-nine days' travelling, he saw no village. At last he reached the edge of an escarpment and looked down upon Jauf, the most northern of the Arabian oases.

From Jauf, situated midway between Baghdad and Akaba, some 300 miles had to be crossed to the Sinai frontier. Serious troubles now began, each chief determining to pluck the traveller. Huweitat *rafiqs* promised safe escort to Akaba for £10, and then shamelessly guarded Shakespear only to the next section of their tribe. Auda, chief of the Abu Tayy section of the tribe, who was later Lawrence's stout henchman, proved the most avaricious of all, but he kept his word, and, under his guidance, Shakespear crossed "a smooth black basalt expanse, without a vestige of growth", for fourteen hours. Then came the storm-swept Tubaiq, where Gertrude Bell had preceded him. He struck the Hejaz railway south of Mudawara, later a scene of Lawrence's exploits, and avoiding a Turkish frontier patrol, the Egyptian police post of Kuntilla on the Gulf of Akaba was reached, after a journey which included 1,200 miles of unexplored country. Shakespear was killed in 1915 during an engagement between Ibn Saud and Ibn Rashid. But for his untimely death, he would have rendered more valuable services. In any case he was a great explorer of Arabia, and a worthy descendant of Sir Richmond Shakespear of Khiva fame.

No account of Arabia would be complete without mention of Lawrence, who, although his military exploits throw his geographical discoveries into the shade, yet travelled far and wide in Hejaz.

Lawrence had served under Hogarth, the eminent archaeologist and geographer, at the excavations of Carchemish on the Euphrates, and there gained his marvellous insight into the mentality of the Arabs which he turned to such good use when the Great War broke out. "Some Englishmen, of whom Kitchener was chief, believed that a rebellion of Arabs against Turks would enable England, while fighting Germany, simultaneously to defeat her ally Turkey."[1] Thus were laid the foundations of the revolt of the Arabs against the Turks. Lawrence as a junior member of the staff in Egypt visited Jedda, and was sent to examine the position of affairs at Feisal's

[1] *Seven Pillars of Wisdom*, by T. E. Shaw, 1926.

camp. Landing at Rabegh, he started off into the interior. He finally reached *Wadi* Safra and met *Amir* Feisal, now King of Iraq, for the first time. At this juncture the Arabs, badly equipped and fed, were demoralized by the artillery of the Turks. Munitions and supplies had been sent to Rabegh by the British, but the local chief had made up his mind that the Turks would be victorious and had appropriated them.

Lawrence returned to Feisal's camp only to see the Turks carry his position, and the whole demoralized force retreated to the coast at Yenbo, followed by the enemy. This port was hastily fortified and the Turks, alarmed by the number of warships and the searchlights, "turned back: and that night, I believe the Turks lost their war".

Lawrence realized that "if the revolt was to endure, we must invent a new plan of campaign at once". With British naval support, the base was removed north to Wejh, which was captured, and attacks were made on the Hejaz railway. Before long, Auda abu Tayyi, "came down to us like a knight-errant . . . The port of Akaba was naturally so strong that it could only be taken by surprise from inland." Lawrence and Auda decided to make the attempt, and started off on their great adventure. Their plan was to enrol tribesmen in Auda's neighbourhood for the operation. Crossing the railway, the adventurers reached Auda's area, where some 500 men were enrolled. Then recrossing the line, "we ruined ten bridges and finished our explosive".

A Turkish battalion, which held the pass leading to Akaba, broke under a charge of camelry and surrendered, and finally "we raced through a driving sandstorm down to Akaba, four miles further, and splashed into the sea on July the sixth, just two months after setting out from Wejh". This magnificent exploit brought the Arabs into contact with the British by land. Equally, it prevented the Turks from the railway at Maan using this port to threaten the right flank of the British.

Lawrence, needless to say, traversed much unknown country, and he discovered that the large *Wadi* of Taif, which starts from hills to the south-west, passes to the east of Mecca and keeping close to Medina, joins the *Wadi* Hamdh, which reaches the sea to the south of Wejh. Incidentally this proved that the main divide of the peninsula was situated inland from Taif. Much of the survey connected with this expedition was executed by Newcombe who had already in 1913–14 carried a survey across the Sinai Peninsula to Beersheba and connected it with surveys undertaken from Egypt. Woolley and

Lawrence were attached to this expedition as archaeologists. The old adage that connects progress with the powder-cart was certainly exemplified, so far as exploration was concerned, in Arabia, as in the neighbouring countries of Iraq and Persia, during the Great War.

CHAPTER XXXIII

ARABIA—THE FINAL PHASE

> "And Ophir, and Havilah, and Jobab: all these were the sons of Joktan. And their dwelling was from Mesha, as thou goest unto Sephar, a mount of the east."
>
> *Genesis x.* 29–30.

> "C'est la désolation absolue, le grand triomphe incontesté de la mort. Et là-dessus, tombe un si lourd, un si morne soleil, qui ne parait fait que pour tuer en desséchant. . . . Nous n'avions encore rien vu d'aussi sinistre; on est là comme dans les mondes finis, dépeuplés par le feu, qu'aucune rosée ne fécondera plus."
>
> PIERRE LOTI, *Le Désert.*

THE final period of exploration was the greatest. It is dominated by two British explorers, Philby and Thomas. The former may be said to have owed the first opportunity vouchsafed to him for exploration in Arabia to the fortunes of the Great War. In October 1917, the British being then in occupation of Baghdad, it was decided to despatch a small mission to Ibn Saud to study the actual situation in Central Arabia, and to report, after conferring with him, as to the manner and direction in which that potentate could render us the most serviceable co-operation. Philby, then serving on the Staff of Sir Percy Cox, was deputed to lead the mission, and proceeding *via* Bahrein landed in November with Lieut.-Col. Cunliffe-Owen and Lieut.-Col. Hamilton, at Oqair, the port of the Hasa Province, bound for Ibn Saud's capital at Riyadh.[1]

Like other successful explorers Philby had a competent knowledge of the language and of the country; he had also made the most of his opportunities for studying the manners and customs of the Arabs during his two years' service in Mesopotamia. On quitting Hofuf, the capital of Hasa, for the onward journey, Arab clothes were donned, "designed at once for comfort and dignity", as Pierre Loti once remarked, and surveying the route as they proceeded, the Mission reached Riyadh without incident.

Philby describes how, after the death of *Amir* Feisal, his sons, Abdulla and Saud, as Palgrave foresaw, fought for the

[1] Vide *The Heart of Arabia*, by H. St. J. B. Philby, 1922.

throne. The former called in Muhammad ibn Rashid, the Shammar chief, who defeated and killed Saud in 1885, and then annexed the country, Abdulla dying a guest-prisoner at Haïl without issue. For some years Riyadh remained under the Shammar, Muhammad ibn Rashid dying and being succeeded by his nephew during this period. The usurpation was, however, challenged in 1900, when, supported by *Shaykh* Mubarik of Koweit, Abdur Rahman, a younger brother of *Amir* Feisal, attacked the Shammar Chief, and was defeated. Abdul Aziz, the eldest son of Abdur Rahman, thereupon decided to venture all on a desperate hazard. In 1901, with only 200 men whom he had gathered round him in Hasa, he approached Riyadh secretly, and, with a picked band of fifteen, he seized the house of the Governor close to the fort, where that individual slept for greater security. At dawn when the massive gates of the fort were opened, the daring adventurers killed the Governor and his guard, and Abdul Aziz was acclaimed by the astonished populace lord of the land of his fathers.

Ibn Rashid, who was supported by Turkish troops, was not prepared to accept the position uncontested, but in 1906 a decisive battle was fought in which the Shammar chief was slain. The descendants of Saud were found cowering among their baggage. Their lives were spared, but, with the Arab genius for nicknames, they were called *Al Araif* or "Lost Property recovered", and by this name they are known to this day. Thus the victor, who had been trained by adversity and had learned much about British justice and power while residing at Koweit, re-established himself in the position of his forbears as ruler of Southern Nejd. As a religious leader, he has encouraged the spread of a stricter and more fanatical element of the Wahabi movement known as *Ikhwan* or "Brethren", whom he specially utilizes as colonists on his frontiers. They are not agreeable neighbours, as, contrary to the Arab custom of sparing women and children in their raids, they massacre men, women and children, and glory in these cruel deeds.

During the course of his negotiations Philby speedily realized that the relations between Ibn Saud and King Husayn of Hejaz constituted the chief difficulty to any concerted action between the two rivals. He had expected that an officer representing the High Commissioner for Egypt would have joined him at Riyadh, from Hejaz. However, while residing at Riyadh Philby heard that King Husayn had refused

to allow any British to enter Nejd from the west, on the grounds that the routes were unsafe. He thereupon decided to cross Arabia and to bring back the British representative to Riyadh.

On December 9, with a picked party of Ibn Saud's men and camels, Philby started on his journey, and visiting the ruins of Dariya, he lamented over its fall. The difficult Jabal Tuwaiq was crossed by the Sagta Pass, " between whose beetling crags and tumbled boulders a rough and narrow path descended precipitously to the plain below, zigzagging from ledge to ledge ". Philby studied his companions closely, and before long he learned their ideas on many subjects. One of the leaders of the party told him " in all seriousness and simplicity, that thunder is caused by the angels shouting and beating on their gongs among the clouds to precipitate the rain on places selected by God ".

The explorer was following the pilgrim route to Mecca and was travelling steadily to the south-west, surveying the country as he passed, marking its ranges and its drainage. He sums up his views : " While the main slope of the peninsula is from west to east, that is to say from the Hejaz Mountains towards the Persian Gulf, a central ridge running, so far as we can judge, in a north-easterly direction . . . creates a diversion."

Continuing the journey, on one occasion seeing distant riders, the guides marked " the brand-signs of Ibn Saud in the sand ; such is the simple desert method of communication . . . sufficient to proclaim the identity of travelling parties ". At last Taif was reached, with its striking four-storeyed buildings, and Philby was greeted with the good news of the capture of Jerusalem by Allenby. He then sat down to his Christmas dinner served on " a metal tray, whose snowy whiteness contrasted strangely with the brown mess of dusty rice boiled in dirty water to which we had grown accustomed in the desert ". Philby proceeded to Jedda, where he met King Husayn, but that monarch utterly declined to co-operate with Ibn Saud, and some six years later the Wahabi *Amir* conquered Hejaz and King Husayn fled with his treasure.

Philby returned to Arabia *via* Bombay and Basra, and gives an interesting account of his visit to the somewhat unreliable Arab chiefs to the west of Basra, who were being paid by the British to prevent supplies reaching the enemy. The party then turned towards Riyadh, and on the way met a party of the mysterious Saluba, " a race apart, assimilated by

environment to the Arabs, but not of them. . . . They are not ashamed of the current myth, which regards them as the surviving relic of some Christian tribe of the past. They are the tinkers and smiths of the nomad community, and as such indispensable." Crossing Summan and the Dahana, which had already been traversed in the former march to Riyadh, Philby finally, on April 11, 1918, reached the camp of Ibn Saud, and in due course accompanied him back to his capital.

In the spring of 1918, Philby started off on a journey to the unexplored districts of Southern Nejd. Passing the ruins of Manfuha, once the rival of the early Wahabi *Amirs*, he entered an arid *Wadi*, which, according to local tradition, was formerly dotted with fertile oases, and Philby inclines to the theory that a devastating flood was the probable cause of the change from fertility to sterility. Actually he heard of a recent flood in the Dawasir *Wadi*, which had carried away 150 human beings and countless sheep.

On this journey the first stage was Hair, with its palm groves cultivated by Bani Khodhir of negro extraction. Thence he came to the district of Kharj, where he saw the Persian *kariz*[1]; he also found the Persian name Firzan. Some miles to the east lay the once important city of Yamama, now a struggling village which was undoubtedly destroyed by flood action. From Kharj three days' journey due south led to Aflaj, with Laila its chief centre, and here were not only six great pools, but also a lake, "the like of which probably exists nowhere in Arabia". In this oasis the local tradition recognizes the ruins as "one of the great cities of the kingdom of Ad, son of Shaddad". The most southern point of the journey was reached at Sulaiyil in the *Wadi* Dawasir, famous for its beauty. From this centre Philby was informed that it was only seven days' travel to Najran in Yemen. During this journey fanatical hostility was only displayed at the village of Tamra, but fortunately there was no bloodshed, the "irreconcilables headed by the Wahabi prelate retiring temporarily into the desert". Philby reached the edge of the *Rub' al Khali*, some 300 miles south of Riyadh, and, as Hogarth put it, "thanks entirely to his journeys, Southern Nejd, a very large area, is now about as well known to us as was any part of Arabia before the war".[2]

Among the unexplored areas of Arabia was the district of Asir, which roughly stretches along the coast of the Red

[1] A *kariz* is an underground irrigation channel.
[2] *G.J.*, Vol. LV, No. 6.

Sea for some 250 miles north of Hodeida, while inland its boundaries are formed by the ranges of mountains that constitute the watershed of Hejaz. In November 1922 Rosita Forbes [1] landed at Jizan, after fourteen days' sail in a *dhow* from Port Sudan, to make a reconnaissance in Asir. She found herself among a fanatical population: "No strangers, whether Moslem, Christian or Jew, are allowed in Asir, and under its *Amir*, the puritanical precepts of the Senussi are observed most rigidly."

Thanks to an introduction to the *Amir*, Sabya, which, with the surrounding villages, has a population of 20,000 inhabitants, was visited, and the new quarter, containing some large houses, was inspected. The founder of the Idrisi sect, *Sayyid* Ahmad-al-Idrisi, is buried at Sabya. Later the journey was continued southwards to Hodeida. The English explorer was able to describe the guard of the *Amir*—"picked men from Abu Kish and Sabya . . . small of stature, lithe and hipless, olive-skinned, fine regular features with long noses and good foreheads. . . . Further inland the features coarsen, and we saw men from Jabal Huras who were like savages of Central Africa. . . . The intense hatred of strangers, which made our journey from village to village a succession of minor fights," must have constituted a serious state of affairs, and a tribute is certainly due to the gallant Englishwoman who raised a corner of the curtain concealing Asir.

No account of Arabia would be complete without some mention of Eldon Rutter, who, after studying among the Arabs of Malaya, and later in Egypt, felt himself prepared to undertake the pilgrimage to Mecca.[2]

In 1925, garbed as an Egyptian *Effendi*, Rutter took a passage in a *dhow* at Massawa. Mixing with fellow-pilgrims, with whom he was perfectly at home, he landed at the tiny port of El Gahm in Asir. The direct route was closed at this period owing to the fact that Jedda was being besieged by Ibn Saud. Crossing an unexplored section of the *Tihama*, Rutter in due course reached Mecca, and gives a most vivid description of the religious ceremonies, of the *Kaaba* and of its slave-market. He spent several months in Mecca, where he was received with courtesy by Ibn Saud, and his descriptions of that virile conqueror and of the Wahabis are among the most valuable in his book. After a residence of seven

[1] "A Visit to the Idrisi Territory in Asir and Yemen", *G.J.*, Vol. LXII, 1923, p. 271.

[2] *The Holy Cities of Arabia*, by Eldon Rutter, 1928.

months at Mecca, Medina surrendered to Ibn Saud, and Rutter, in spite of illness, completed the objectives of his journey by a visit to Medina. To quote one of his word pictures: "To the Badawi the empty desert is as full of interest as the English countryside is to ourselves. He rides hither and thither in it all his life, searching among the hot stones for pasturage for his camels."

In 1922, Philby, who was then in political charge of Trans-Jordania, and Holt,[1] who was anxious to examine the North Arabian desert with a view to ascertaining its possibilities for railway construction, visited Jauf. In a first attempt made with cars, they reached Kaf, situated near the head of the *Wadi* Sirhan, hoping to be able to arrange for camels and an escort for the onward journey. Philby was desirous of investigating the political situation at the great northern oasis, which was especially interesting owing to the fact that Ibn Saud, who had slain the Shammar Chief and annexed Haïl, had determined to add Jauf to his conquests.

Philby's first attempt ended in failure at Kat, but in May, upon receipt of an invitation from the grandson of Nuri ibn Sha'lan, the Ruler of Jauf, the explorers returned to Kat. There, after much hard bargaining, the party resumed its march; albeit the situation at Jauf was distinctly unsettled with a rebel holding one part of the oasis in the interests of Ibn Saud. Actually, the travellers just missed a Wahabi force which, camping at a neighbouring well, attacked the Sha'lan near Kat only to be decisively beaten. Having "by a series of flukes missed several opportunities of disaster", Philby entered Jauf on May 20, where the "slave governor was one of the most attractive personalities I have ever met in Arab lands". He refused a cash present, but was anxious to be provided with a good poison!

From Jauf, the explorers decided to cross the desert to Karbala, and after visiting Sakaka, where the siege was being pursued in the leisurely Arab fashion under the grandson of Nuri, they left Jauf without regret on June 2. Throughout this stage of the journey there was imminent risk of attack, although actually they were the attackers on the only occasion in which Beduin were sighted. Finally, Karbala was reached, after an adventurous journey, and, early in July, Ibn Saud took possession of Jauf.

[1] "Jauf and the North Arabia Desert", by H. St. J. Philby; and "The Future of the North Arabian Desert", by Major A. L. Holt, *G.J.*, Vol. LXII, No. 4, October 1923.

We now come to the conquest of the *Rub' al Khali*, the greatest feat of exploration in Arabia. The "Empty Quarter" of Arabia signifies the immense desert which lies between Oman and Yemen. The huge unexplored area of some 300,000 square miles has hitherto been protected by its aridity, but even more perhaps by the fanatical hostility of the Beduins, determined to prevent the curtain of their beloved land from being raised, and ready at all times to die in defence of its brackish water-holes and scanty grazing-grounds.

Among the recent travellers in Arabia to reach the *Rub' al Khali* is Cheesman,[1] whose main object was to investigate the distribution of resident birds and the movement of migrants through the Great Sand Desert. He had already made a journey along the coast from Oqair to the ruins of Salwa. Thanks to Sir Percy Cox, an invitation from Ibn Saud was secured and the explorer landed for a second time at Oqair; on this occasion, while searching for specimens, "a series of mounds strewn with a litter of blue pottery reminded me of the ruin-fields of Babylonia. . . . Mounds of rubble and lines of mounds radiated in all directions." Here then was the probable site of the ancient port of Gerra. Nor does the modern name Oqair, pronounced Ojair, fail to support this identification.

After a somewhat long delay at Hofuf, waiting for news of rain having fallen in the south, in February 1924 the expedition marched off under the guidance of a Murra tribesman, Saleh by name, whose knowledge of desert craft was amazing. Two short stages brought the caravan to the Zarnuga wells, an important centre of the Murra, who were a tribe of pre-Arab origin and recent converts to Islam. Six waterless marches southwards were now crossed to Jabrin. Along the route were sand-dunes, which could, however, be generally avoided by keeping a little to the west, where there was a bare gravel plain.

Cheesman was received with politeness owing to the orders of Ibn Saud, albeit the Murra chief, being a recent convert to the fanatical Ikhwan sect, naturally disliked entertaining a Christian. Saleh, who referred to the desert as *Al Rimal* or "The Sands", stated that his tribe wandered as far as Maqainma some 120 miles to the south, and that he knew of tribesmen who had traversed the desert to Najran

[1] "The Deserts of Jafura and Jabrin", by Major R. E. Cheesman, *G.J.*, Vol. LXV, p. 112.

in Yemen, which was considered to be a month's journey. Cheesman had blazed the trail for his successors.

At long last the *Rub' al Khali* was destined to be crossed by one British explorer, Bertram Thomas,[1] from south to north, and by another, Philby, from east to west. Thomas had served for thirteen years in Iraq, Trans-Jordania and Oman, and had studied the language, the dialects and the customs of the dwellers in the desert. At this period, he had served for six years as *Vizier* to the progressive Sultan of Maskat, and had thus gained indispensable contact with the Chiefs of his kingdom. Owing to the constant support of His Highness, coupled with his own deep knowledge of and sympathy for the Arab point of view, a spirit of tolerance towards the Christian *Vizier* had gradually been created, without which exploration off the beaten track would have been impossible. Thomas also realized that although Dhufar belonged to Maskat, the tribesmen beyond the Qara Mountains were as wild as hawks and that this state of affairs was the normal position at any distance from the capital.

Thomas started on his first journey, in which, as was his invariable rule, strict secrecy was observed, in December 1928, and landed at a little port to the south of Ras al Had with the intention of marching through the southern borderlands to Dhufar. His only predecessors had been Wellsted and Bent, who had visited the Dhufar Mountains in the early 'nineties. "Between lay a stretch of 500 miles untrodden by a European. Assuming Arab dress, wearing a beard, foregoing tobacco and alcohol and sharing the life of my Badawi, these were I knew the most hopeful paths."[2] Thomas was well received by the *Amir* of the Beni Bu Ali, whose predecessor had also treated Wellsted hospitably. The tribesmen are of the Wahabi faith, and used a currency struck by local Persian governors in the eighteenth century.

After meeting numerous objections the *Amir* arranged a party to escort the explorer as far as Khaluf, situated one-third of the distance to Dhufar. At this little port the inhabitants were, at first, hostile, but gradually, by tact and by gifts, camels and escort were forthcoming for the onward journey. In due course the frankincense country was approached, and in the *Wadi* Andhaur some rude Himyaritic characters were found, scrawled upon stones. A party from Dhufar now

[1] *Arabia Felix*, by Bertram Thomas, 1932.
[2] "The South-Eastern Borderlands of *Rub' al Khali*", by Bertram Thomas, *G.J.*, Vol. LXXIII, No. 3, March 1929.

appeared, and at Salala, its capital, this preliminary journey came to a most successful conclusion.

In 1929, thanks to the presence of the Sultan in Dhufar, Thomas was able to organize an expedition to the fringe of the sands of the *Rub' al Khali*.[1] Under the guidance of the chief of the Kathir tribe, who provided an escort of twenty-five camelry and three *rafiqs*, the explorer crossed the well-watered Qara range, and in the desolate *wadi* beds to the north found the frankincense tree. "In appearance it is a young sapling having almost no central trunk, but from near the ground there springs out a clump of branches which grow to a camel's height and more, with ash-coloured bark and tiny crumpled leaves. . . . It is found growing as a commercial crop, only in Central South Arabia between 2,000 and 2,500 feet in a region which happens to be identical with the territorial limits of the Qara tribe." This then is the region from which came the celebrated gum, and, as Thomas states: "it was burned before the tabernacle of the Israelites in the days of Moses, the hill of frankincense is mentioned in the *Song of Solomon*, and it was brought as a gift, with gold and myrrh, to our Infant Lord". In view of this priceless product, belief that Dhufar was the Ophir of antiquity and the mart for ivory and peacocks' feathers is much strengthened. In any case, the peacocks must have been imported from India, and on this account a port is clearly indicated.

Upon reaching the vicinity of Ar-Rimal, or "The Sands", as the desert is termed by its inhabitants, there was much fear of raiding parties, but Thomas had exceptionally good luck throughout. At the springs of Al Ain sandgrouse were bagged and mosquitoes became a pest, and from this stage a short excursion was made into the desert.

During the return journey near Aduwab, "the neighbourhood provided us with a mixed bag of fossils and snakes. There were nests of large sandstone oysters, all presumably of the same kind." Bertram Thomas had thus prepared the ground not only by undertaking these two journeys but also by the relations he established with the Kathiri and Rashidi Beduin.

Bertram Thomas landed once again at Dhufar in October 1930. In his second journey he had given a rich reward to Sahail the Rashidi, who had secretly pledged himself to meet the explorer with a camel party, ready to guide him into the

[1] "A Journey into *Rub' al Khali*", by Bertram Thomas, *G.J.*, Vol. LXXVII, No. 1, January 1931.

"Empty Quarter". But of Sahail there was no news, whereas there was war between the Rashidi and the Sa'ar of the Northern Hadramaut. The outlook was thus most gloomy, and the only hope lay in two Rashidi tribesmen, who had arrived at Dhufar for the frankincense harvest. Accordingly Thomas unfolded his plans to these men under their sworn oath and, to gain a rich reward, they promised to seek out the Rashidi and give the message.

Six weeks were spent in exploring the Qara range when one morning after his return to Salala "forty dainty riding camels and as many ragged Beduins" appeared on the scene at Dhufar. After many days spent in negotiations, *Shaykh* Salih their leader, who stated frankly that only avarice had brought his men, swore to accompany the explorer throughout his journey and to work to ensure the co-operation of the neighbouring Murra, whose territory extended to the northern limit of the desert, as Cheesman had proved. This weighty question having been settled, rations were arranged for forty men in four relays, and on December 1, 1930, Bertram Thomas started from Dhufar on a journey of 700 miles across Arabia. The direction at first lay northwards over the Qara range to Shisur, six marches to the north. So far Thomas was following his former route; he now marched north-west. Salih had already gone ahead to enlist the services of the Murra *rafiq*, Hamid bin Hadi, who alone knew the route through the heart of the sands. Shortly afterwards, "we were floundering through heavy dunes when the silence was suddenly broken by a loud droning on a musical note. I was startled for the moment, not knowing the cause. 'Listen to the cliff bellowing, Sahib!' and a man at my side pointed to a sand cliff a hundred feet or so high. . . . The noise continued for about two minutes and, like a ship's fog signal, ended as abruptly as it had begun." This was, of course, another instance of the famous "music of the sands".

The route then ran through the Uruq Dhaheya, "a great immensity of dune country. Vast ridges rise to towering heights; about them are precipitous gorges. Again and again we were driven to dismount and to scoop footholds with our hands in the soft yielding slope, so that the camels could climb." At the Khor Dhahiya, *Shaykh* Salih was not to be found, but, on the following day, "the footmarks of the Murra guide and his camel were identified in the sands by the Badus, and a little later those of other Rashidis, including *Shaykh* Salih. A *Badu* knows the impression of every man

and camel of his tribe and many of his enemies'. . . . The sands are a public diary."

Changing his camels and escort at the grazing-ground, under the guidance of Hamad bin Hadi, Thomas marched due north to the sands of Dakaka, lying at an average altitude of 900 feet—the invaluable Salih going ahead to arrange for a third relay of camels and men to be ready at Shanna, a deep waterhole in Western Dakaka. To quote again: "Lying inside the great dune bulwark of the southern borderlands, Dakaka consists of these wide, sweeping red sandscapes of hardest sand with low dunes running in all directions. It falls in altitude from probably 1,100 feet in the south to 785 feet hereabouts, and its long axis runs east-north-east for a seven days' march."

At Shanna, thanks to rains of the previous year, Thomas was able to secure good camels for the last stage. He also recruited a valuable guide, who had already crossed the sands from Qatar that year, and who knew the grazing grounds of the *Ikhwan* in the Jiban, the coastal area at the neck of the Qatar peninsula. Shanna was the most southerly stage reached by Philby in 1932.

After Dakaka came Suwahib, "one of the most extensive regions in the sands". Here a route was followed to the north-east to escape massacre at the hands of fanatical *Ikhwan* tribesmen. For similar reasons of prudence, contact with travellers or with grazing patties was also avoided.

At Banaiyan the northernmost limit of the desert had been reached, and the explorer had only a section of 100 miles to traverse. Fortunately the *Ikhwan* had retreated to distant oases "to observe the fast of Ramazan in the bosom of their families". Thus the way lay open to the sea, and, at Doha, in the peninsula of Qatar, Bertram Thomas reached the Persian Gulf on February 5, 1931, having crossed the *Rub' al Khali*.

It is difficult to express adequately the greatness of this achievement. The thoroughness of preparation included not only a knowledge of surveying, of geology, of photography and of natural history, but a long study of the language and its dialects, its history and that of the tribes, the manners and customs of the Arabs. Above all, the physical fitness and hardihood of the explorer were remarkable. Bertram Thomas owed much to the support of the Sultan of Maskat, but, once he had entered the *Rub' al Khali*, the success of the expedition depended on his being able to keep the Arabs loyal to the oath sworn by Salih. Unless he had displayed qualities that the Arabs

A SMALL AL-MURRA ENCAMPMENT

(From Bertram Thomas's Arabia Felix, by permission of Messrs. Jonathan Cape & Co.)

[*face p.* 306

admired, they would, in all probability, have murdered him for his wealth, all the more so, as he never concealed the fact that he was a Christian, and was thus liable to be killed as a *Kafir*. No living explorer has prepared himself more thoroughly for a great task and none has achieved greater success.

"Few men", writes Lawrence, "are able to close an epoch. We cannot know the first man who walked the inviolate earth for newness' sake: but Bertram Thomas is the last; and he did his journey in the antique way, by pain of his camel's legs, single-handed, at his own time and cost."

Apart from his feat as an explorer, Thomas discovered "the entire southern borderlands of the Great Desert stretching between latitude 57° 45′ E., and latitude 52° 00′ E., and the mountains of the central south, to be peopled by a 'bloc' of ancient pre-Arab remainders, troglodytes for a large part, speaking pre-Arab languages. Ancient quarries in their mountains, the mountains of Dhufar (also the great frankincense country), are traditionally held to be ancient gold diggings."[1] Not content with his own observations, he made systematic measurements which, on the authority of Sir Arthur Keith, proved "that they represent a residue of the population of South Arabia before the familiar Arab came in".

With this extremely important discovery to guide us, it would perhaps be convenient to discuss the passage quoted from Genesis. It is clear that Dhufar is the biblical Ophir, the Sephar of the motto and the Supphur of Ptolemy. Ophir and Havilah are mentioned together, while "the land of Havilah, where there is gold", is referred to in Genesis ii. In view of the gold diggings in the Qara Mountains, it may be accepted that Havilah was also situated in the south of Arabia. Finally Hazarmaveth, described as a son of Joktan, is undoubtedly Hadramaut, and Mesha is the Mesech of Ezekiel.

Again, Thomas proves by reference to Qazwini and Yakut, who flourished in the thirteenth century, that this great southern tract was known as Ubar, a later form of which is Philby's Wabar. Finally, Thomas suggests with much force that Ubar and the Hebrew Ophir are identical.

To approach the question from the ethnological side, "the sons of Joktan" may be identified with the Shahara tribe, considered to be the most ancient in Arabia. To-day a mere remnant inhabits the Qara Mountains, but among its

[1] "Ubar—The Atlantis of the Sands of *Rub' al Khali*", by Bertram Thomas, *Journal of the Royal Central Asian Society*, Vol. XX, Part II, April 1933.

divisions we find Qutun and Jabob which may perhaps be identified with Joktan and Jobab.

The *Rub' al Khali* had been crossed by one great British explorer, and on January 7, 1932, Philby,[1] who had long prepared himself for the expedition, started from Hofuf with a picked party of men and camels. The power and influence of Ibn Saud were at his back, and the instructions of the Governor of Hofuf to his guide ran: "You will go to Wabar if you can find it. And you will do as this man wishes as you value your life, and you will answer to me for him. Now go in the keeping of Allah." I would add that Philby was a convert to Islam, which fact strengthened his position among the fanatical Arabs.

At the wells of Dulaiqiya outside Hofuf, Philby found thirty-two picked camels in the pink of condition, and nineteen men, six of whom belonged to the Murra tribe in whose territory the journey lay throughout. The expedition then crossed the Jafura Desert in bitter cold, and, following in the tracks of Cheesman, reached the oasis of Jabrin. The unknown country was struck south of Jabrin, which was left on January 31, and in three stages, the well of Maqainama, situated in a strip of gravel dividing the limestone steppe from Ar-Rimal, or "The Sands," was reached. Near this well Philby found a bronze arrow-head, while the deeply-scored caravan tracks running westwards and eastwards suggested the ancient caravan route which may have run from Gerra to Mecca. Continuing the journey eastwards to Bir Fadhil and then southwards, freshwater shells and flint implements were collected "from a vast deposit which evidently represented the site of an old Neolithic period and date back to a period when there was permanent water in this arid desert".

For years Philby had heard of Wabar, the capital of King 'Ad, which, according to the Arab belief, had been destroyed by fire from heaven as a punishment for wickedness. The modern Beduin had reported an iron block "big as a camel".

To quote Philby:

> "I had resolutely persuaded myself that at the very best we should possibly find the remains of such broken-down forts as are still to be seen at Jabrin. But what I did see from that hill-top simply took my breath away, and I scarcely knew whether to laugh or weep. . . . I looked down not on the ruins of a city, but into the open mouth of what I took to be a volcano with twin craters side by side surrounded by low walls of what looked like outpoured slag and lava. And that

[1] "*Rub'-al-Khali*", by H. St. J. Philby, *G.J.*, Vol. LXXXI, No. 1, January 1933.

was the Wabar of which I had heard and dreamed so much all these many years." [1]

Actually Philby had discovered two distinct craters, the larger circular in outline with a diameter of some 300 and a depth of some 30 feet. Isolated patches suggested the existence of other craters buried beneath the sand. The piece of iron " as big as a camel " proved to be a much rusted mass of meteoric iron weighing only twenty-five pounds. Wabar, as he found it, was caused by the impact of a shower of meteorites. In view of the exaggeration to which Arabs are especially prone, it is not difficult to realize how the fall of a huge meteorite would in due course become a legend of the dramatic destruction by fire from heaven of the city of Ad. On the other hand Thomas, whose informants were perhaps more reliable, spoke of *Umm al Hadid* or the " Mother of Iron ".

From Shanna, Philby's " Farthest South ", he made the decision to cross the unexplored waterless desert to Sulayil in the Dawasir Oasis—a distance of some 360 miles. On February 22 the march westwards was begun, but the country was drought-stricken and the camels broke down. To proceed would have been madness, and so it was decided to retreat, the camels being given doses of water through the nose for the sake of economy. Then the situation was suddenly changed by a providential fall of rain

With grim determination Philby induced his discouraged Arabs to make another attempt, and, on March 5, the venture was undertaken with picked men and camels. For six days they marched long stages, and again the camels were exhausted: " It was pitiable to see their ugly pessimistic faces as they stood or sat round us without making the slightest effort to prospect for forage." On March 11, the camels were driven from 2 a.m. to 9 p.m. " Never had I seen Arabs drive camels as they drove that day, never have I seen camels on the borderland of starvation march as those camels marched."

The worst was now passed, the uplands of Tuwaiq were sighted, grazing was found and animal life began to reappear. At last the *Wadi* Dawasir was reached. The *Rub' al Khali* had been crossed for the first time from east to west, and a journey of 1,800 miles had been accomplished in ninety days —a magnificent achievement.

[1] " *Rub' al Khali* ", by H. St. J. Philby, *Journal of the Royal Central Asian Society*, Vol. XIX, October 1932. I have also consulted *The Empty Quarter*, 1933, by the same author, which was published after this chapter had been printed.

By the journey of these two great British explorers, the veil that hid the *Rub' al Khali* from the world has been rent not once but twice, and the word *Finis* has been written on land exploration in the old sense of the world. The last of the great unknown areas of the inhabited globe has been conquered. Furthermore it is a subject of intense satisfaction that both explorers, after training for long years, have earned success while travelling on camels and using Beduins as their guides. Finally, it is remarkable that Southern Arabia, which is described in the motto from the book of Genesis, should have been the last country in the world to be explored.

CHAPTER XXXIV

THE EXPLORERS OF THE ARCTIC

"Beyond this flood a frozen continent
Lies dark and wild, beat with perpetual storms
Of whirlwind and dire hail, which on firm land
Thaws not, but gathers heap, and ruin seems
Of ancient pile; all else deep snow and ice,
A gulf profound as that Serbonian bog
Betwixt Damiata and Mount Casius old,
Where armies whole have sunk; the parching air
Burns frore, and cold performs th' effect of fire."

MILTON, *Paradise Lost.*

THE heroic attempts of English and Dutch navigators to discover the North-East and North-West Passages to the Spice Islands during the sixteenth and seventeenth centuries have been described in Chapter XVI. The commercial and political necessity for these efforts ceased with the decay of Spain and Portugal and the consequent opening up of the ocean routes to India and the Spice Islands by England and Holland. However, the discovery by Bering in 1728 that the continents of America and Asia were divided by the Strait referred to in Chapter XIX, reawakened British interest in possible Arctic routes.[1]

Consequently Captain Cook in his third voyage was instructed to continue the quest for the North-West Passage, and he penetrated beyond Bering Strait eastwards to Icy Cape. Later, towards the end of the eighteenth century, Vancouver's surveys proved that there was no North-West Passage to be found below the Arctic Circle.

The final victory of Great Britain in the Napoleonic Wars released a number of highly experienced naval officers, and, thanks to the support of the far-sighted Secretary of the Admiralty, Sir John Barrow, the quest of the North-West Passage was resumed as a scientific exploration to be conducted on systemmatic lines. Frobisher, Davis, Hudson and Baffin had already penetrated far into the Arctic and pointed the way. The latter navigator, more especially, sailing across

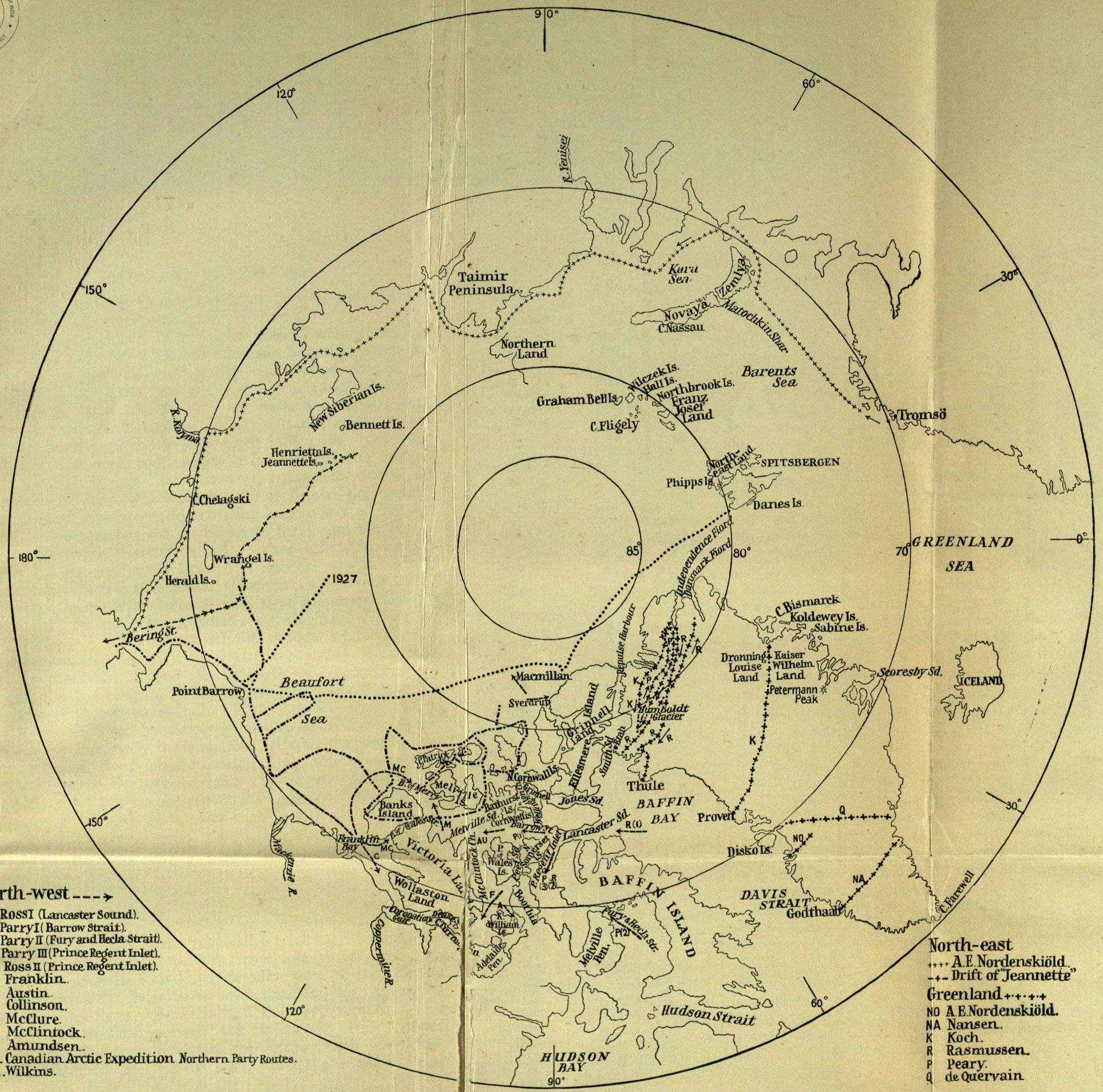
[1] The author has merely crossed the Arctic circle as a passenger, and consequently Mr. J. M. Wordie's help in this chapter has been especially valuable.

Baffin Bay, had discovered Lancaster Sound, and had thus marked out the true route to be followed.

The first explorers of this great period were John Ross and Parry. The latter reached Lancaster Sound in 1818; and Ross had concluded, without due examination, that it was landlocked, but Parry did not agree. In 1819, selected to command a new expedition in the *Hecla* and *Griper*, Parry reached Lancaster Sound in August and discovered a wide channel leading to the west between lofty cliffs. Discovery followed discovery, and, naming a great strait after Barrow, the explorers, sailing ever westwards, coasted the south edge of Melville Island, where the bounty of £5,000, promised by the British Government for crossing longitude 110° W., was won. In September the ice began to form, and the expedition wintered at Melville Island. In the following summer Parry led the first naval land party with its supplies loaded on a cart which broke down. However, unlike the lifeless Antarctic, game was abundant and, after a journey lasting a fortnight, the explorers returned to their base. When the ice broke up, Parry continued his voyage westwards but, meeting with impenetrable ice-fields, he returned to England, having practically proved the existence of a connection between the two oceans. This expedition ranks among the greatest of Arctic voyages.

It was followed by almost annual voyages to the Arctic, and slowly but surely the huge area lying to the North-West was explored, Parry himself making three more voyages. In 1829, Ross and his nephew James Clark Ross—the latter had accompanied Parry—penetrated to Prince Regent Inlet, and, sailing southwards towards an unexplored land, named it Boothia. There winter quarters were established, and, by the help of Eskimos, who supplied him with dog teams, James Ross made a great journey. He first crossed the Isthmus of Boothia, and then, turning northwards across unexplored country, which was named King William Land, he termed its northern point Cape Felix. On a second journey he hoisted the British flag at the magnetic pole. Unable to extricate the ships, after spending four winters in the Arctic, the party made their way to Lancaster Sound, where they were rescued by the *Isabella* whaler. John Ross thus retrieved his reputation, while James Ross won distinction and promotion.

To turn to land journeys, the exploration of the Coppermine and Mackenzie Rivers to the Arctic Ocean has already been described in Chapter XXI. In 1819 Franklin, with



North-west ---→

- R1 Ross I (Lancaster Sound).
- P1 Parry I (Barrow Strait).
- P2 Parry II (Fury and Hecla Strait).
- P3 Parry III (Prince Regent Inlet).
- R2 Ross II (Prince Regent Inlet).
- F Franklin.
- AU Austin.
- C Collinson.
- MC McClure.
- M McClintock.
- A Amundsen.

—·—·— Canadian Arctic Expedition. Northern Party Routes.
.....Wilkins.

North-east

++++ A.E. Nordenskiöld.
-+- Drift of "Jeannette"

Greenland +·+·+·+

- NO A.E. Nordenskiöld.
- NA Nansen.
- K Koch.
- R Rasmussen.
- P Peary.
- Q de Quervain.

THE NORTH POLAR REGIONS—1 : THE NORTH-EAST AND NORTH-WEST PASSAGES, AND GREENLAND
(From J. N. L. Baker's *History of Geographical Discovery and Exploration*, by permission of Messrs. George G. Harrap & Co.)

[face p. 312

Richardson as naturalist and Hood and Back as midshipmen, sailing from England in a merchant-vessel, landed at York Factory in Hudson Bay, and proceeded to Fort Chipewyan early in 1820. Thence, following in Hearne's track, the party reached the mouth of the Coppermine River, and in their frail bark canoes explored the coast eastwards for nearly 500 miles to Cape Turnagain. Franklin decided to land at a river, which he named Hood River, and, after a tragic struggle with starvation, the lives of Franklin and Richardson were saved by Back, who met some Indians and sent them to rescue his comrades.

In 1825 the intrepid Franklin, Richardson and Back undertook a second expedition. Starting their land journey from New York they made for the Great Slave Lake and then proceeded to the Mackenzie River. Descending it to Fort Norman, situated in latitude 65°, Back went east to build winter quarters on the Great Bear Lake, while Franklin followed down the Mackenzie to its mouth and then returned to Fort Franklin for the winter. Starting off again in June 1826, the party descended to the delta of the Mackenzie River, where Franklin and Back explored the coast westwards for some four hundred miles.

At this time Beechey, following Cook, had reached Point Barrow, about 150 miles beyond Icy Cape. The two explorers were 160 miles apart, and consequently did not meet. Meanwhile Franklin's second party under Richardson travelled eastwards to the Coppermine River, sighting Wollaston Land to the north. The expedition returned to England in 1827, after an absence of over two years, during which they had surveyed more than 1,000 miles of coast-line. No other explorer has two such magnificent journeys to his credit.

In 1833 Back led a party to succour the Ross expedition, of which there had been no news for some years. From the Great Slave Lake the explorers proceeded down the Great Fish River, with its numerous falls and cascades involving constant portages. Back built two boats, to meet the special conditions, and reached the estuary of the river, which is also known as Back's River. Hearing the good news that the Ross expedition had been rescued, he explored the coast westwards to Cape Richardson, thus completing the exploration of that section of the coast of Northern Canada.

Such was the position in the Arctic when, in 1845 Franklin, no longer young, was appointed to lead an expedition of about 120 men in the *Erebus* and *Terror* to complete the task of pre-

vious explorers, and navigate the North-West Passage. The winter of 1845–6 was spent on Beechey Island, and, when free from the ice, he sailed south down Peel Sound. To quote Markham:

> "It was all open to the south. If they had continued on their southerly course, the two ships would have reached Bering Strait. . . . But alas! the chart-makers had drawn an isthmus (which only existed in their imagination), connecting Boothia and King William Island. . . . They altered course to the west and were lost, for they were soon beset in that mighty ice-pack which flows down from the great polar ocean and impinges on the north-west coast of King William Land." [1]

After spending two winters locked in the pack ice, in the spring of 1847 a land party under Graham Gore advanced to Cape Herschel and thus forged the last link in the North-West Passage. Franklin's expedition ended in tragedy; the ships were abandoned, and the parties which decided to march south and make for Back's Fish River all perished.

The nation was moved at the disaster when it was too late. Expeditions were sent out, and returned to report failure in their search for their lost comrades. But the quest, mainly thanks to the efforts of Lady Franklin, was not abandoned, and in 1850 no less than twelve vessels were searching for the Franklin expedition. Among them were the *Assistance* and *Resolute* under Austin's command, with the tenders *Princess* and *Intrepid*. Wintering in Cornwallis Island, sledge journeys were organized along the southern and western coasts of Melville Island, and along the eastern coast of Bathurst Island. During these expeditions, McClintock came to the front, travelling 770 miles in eighty days and exploring a large area. Clements Markham, who served as a midshipman, gives an account of the experiences of the *Intrepid* in the following year:

> "She was making a rendezvous in August when the ice closed round, and she was obliged to make fast to a floe. Soon the floe was in motion and moving rapidly towards a large grounded iceberg. Before the vessel could be extricated, she was driven with a frightful crash against the berg. The vessel rose to the heavy pressure and soon the vessel's taffrail was forty feet and her bow thirty feet up the side of the berg, the masses of ice rising nearly ten feet above the bulwark. Then the pressure ceased, the piled-up masses sank from alongside, and the ship was left suspended on the side of the berg. It seemed inevitable that she must fall over on her broadside and be smashed. . . . The pressure began again, but ceased quite suddenly, and the ship shot down into the water, and was safe."

Such are the risks of Arctic explorations!

[1] *The Lands of Silence*, by Sir Clements Markham, 1921.

In 1854 definite news of Franklin's fate was received from Dr. Rae of the Hudson Bay Company, who had been surveying the West coast of Boothia. He had met Eskimos, who had seen thirty men dragging a boat southwards over the ice, and later they had seen several dead bodies near the mouth of a great river. The Eskimos had picked up silver plate and other articles belonging to officers of the *Erebus* and *Terror*. In 1857 a final search expedition was sent out under McClintock, who commanded the screw yacht *Fox* of 177 tons. He wintered in Bellot Strait. Eskimos were met with, many of whom had acquired articles from the ill-fated expedition. Travelling in winter the great explorer completed the discovery of the coast-line of North America. He also discovered the only possible north-west passage for ships between Boothia and King William Island. In a second year's journeys, complete success was obtained. A letter was found at Point Victory in King William Land, which contained the information that the *Erebus* and *Terror* had been abandoned in April 1848 and that the objective of the survivors was Back's Fish River. An Eskimo woman reported that "they fell and died as they walked". Thus these heroic British explorers "forged the last link of the North-West Passage with their lives".

During the search for Franklin, in 1850 Collinson in the *Enterprise* and M'Clure in the *Investigator*, after sailing through Bering Strait, separated. Collinson explored the Beaufort Sea, and reached the Prince of Wales Strait in 1851. In the following year he passed through Coronation Gulf to Cambridge Bay and made a sledge journey across Victoria Strait, between Victoria Land and King William Island. M'Clure reached Prince of Wales Strait and his land parties discovered the insularity of Banks Island. In 1853, after having been frozen in for eighteen months, the party was rescued, "and the crew crossing the ice of Melville Sound by sledge was the first party to make the North-West Passage".

Collinson's voyage is one of the most remarkable and successful in Arctic records. To quote Greely: "He sailed the *Enterprise* for more than ten degrees of longitude through narrow straits along the northern shores of Continental North America, which never before or since has been navigated, save by small boats and with excessive difficulty." [1]

The first explorer who actually sailed a ship through the

[1] *The Polar Regions in the Twentieth Century*, by Major-General A. W. Greely, 1929.

North-West Passage was Amundsen.[1] Starting in the summer of 1903, the winter was spent on King William Island, where the exact position of the magnetic pole was determined. During the summer of 1904, survey and other scientific work was undertaken, while the explorers made friends with the Eskimos and learned much about their customs. "We were suddenly brought face to face here with a people from the Stone Age: we were abruptly carried back several thousand years."

In August 1905 Amundsen resumed his voyage through the North-West Passage. Queen Maud's Sea was full of ice, and there were dangerous shallows: "It was just like sailing through an uncleared field." There were many ice floes in Victoria Strait, and the coast was flat and monotonous, but on August 17 the explorer wrote: "We had now sailed the *Gjoä* through the hitherto unsolved link in the North-West Passage". He had now reached waters charted by Collinson, and finally the North-West Passage was accomplished.

* * * * *

In Chapter XVI an account is given of early attempts to discover the North-East Passage. Willoughby, Chancelor, Burrough, Barents and Hudson all joined in this quest, but penetrated no further than the River Ob by sea. During this period Russia was rapidly crossing Asia to the Pacific, and her explorers not only reached the Arctic Ocean at more than one river-mouth, but Deshnev sailed from the mouth of the Kolyma River round the extreme north-eastern point of Asia. Consequently there were known rivers and explored portions of the coast when in 1875 Nordenskiöld, who was already a noted explorer of Greenland, made a voyage to Novaya Zemlya. His next voyage was to the mouth of the Yenisei in 1876; he was the first navigator to reach this river from the Atlantic, being followed in the same year by Captain Wiggins. These were pioneer voyages.

In July 1878 the Swedish explorer started on his great voyage of discovery in command of the *Vega*[2] and the *Lena*. Fog hindered their progress after passing the Yenisei, and the explorers anchored off Taimur Island, but scientific investigations of the contents of the dredger, of the dust on the ice and of all forms of life never ceased in this truly scientific expedition. On August 19 Nordenskiöld fired a salute off Cape Chelyuskin where "for the first time a vessel lay at

[1] *The North-West Passage*, by Roald Amundsen, 1908.
[2] *The Voyage of the "Vega" round Asia and Europe*, by A. E. Nordenskiöld, 1881.

anchor off the northermost cape of the old world". Continuing the voyage eastwards, fog and ice again hindered progress and a northerly course was steered for an opening. They were sailing over what was marked as land on the map, and were able to make very important corrections. On August 27 the *Lena* parted from the *Vega* and sailed up the River Lena to Yakutsk. The *Vega* now steered for the New Siberian Islands, which had been discovered by Russian explorers in the eighteenth century. The weather was beautiful until September 3, and the Bear Islands off the mouth of the Kolyma were reached. Here the explorers had their first fall of snow, and ice forced them to make towards the mainland, where a narrow channel was found.

There were no signs of any inhabitants until, off Cape Shelagskoi, they were boarded by two large skin boats loaded with "chattering natives, men, women, and children, who indicated by cries and gesticulations that they wished to come on board . . . they acknowledged the name of *Chukch*". Upon landing, the explorers were able to secure some walrus tusks and various articles and dresses from these friendly natives. At the end of September the *Vega* was somewhat unexpectedly frozen in while anchored in Kolyuchin Bay, which is situated at a short distance from Cape Deshnev.

During the winter an expedition was made to a reindeer camp, where in the morning "we saw all the reindeer advancing in a compact troop. At the head was an old reindeer with large horns, that went forward to his master, and bade him good morning by gently rubbing his nose against his master's hands. While this was going on, the other reindeer stood drawn up in well-ordered ranks . . . and the owner saluted every reindeer."

On July 18, 1879, the *Vega* steamed clear of the ice, and two days later Nordenskiöld wrote: "These were the mountain summits of the easternmost promontory of Asia, East Cape, an unsuitable name, for which I have substituted on the map that of Cape Deshnev, after the gallant Cossack who for the first time 230 years ago circumnavigated it." And again: "Thus finally was reached the goal towards which so many nations had struggled, all along from the time when Sir Hugh Willoughby . . . ushered in the long series of North-East voyages." Thus ended the quest for the North-East Passage, the achievement of which has given the gallant Swede Nordenskiöld a place among the great explorers of the world.

* * * * *

The discovery and colonization of a part of South-West Greenland has been described in Chapter VI, and its sighting by Frobisher and Davis is mentioned in Chapter XVI. In the latter part of the nineteenth century the interior of Greenland, an unexplored area of 700,000 square miles, exceeding that of the "Empty Quarter" of Arabia, was considered to constitute one of the greatest Arctic problems. During the nineteenth century, Polar explorers added to the knowledge of the coast. Among them was Inglefield,[1] who, in his screw yacht *Isabel* of 149 tons, passed Baffin's "Farthest North" in 1852. He was the first explorer to enter Smith Sound and named Ellesmere Land (now Ellesmere Island).

On the east coast, Scoresby the younger roughly charted some 300 miles north from Scoresby Sound in 1822, while Clavering a year later surveyed from latitude 73° to 75° N. on the same coast. In 1870, and again in 1883, Nordenskiöld attempted to cross Greenland from the West.

It was however reserved for Nansen,[2] who had first visited the east coast in 1882, to accomplish this difficult task. He was accompanied by five companions, including Otto Sverdrup, all of whom were good skiers and accustomed to the use of snowshoes. Starting from Umivik in the middle of August 1888, the general direction followed was north-west, but the hauling of the sledges uphill, the danger of breaking through the snow-bridges and the storms made the adventure a perilous one. Crevasses also were so numerous that the direction had to be changed time and again, to avoid them. The highest elevation to be crossed was 8,250 feet, and, after forty strenuous days, the explorers, who finally turned towards the south-west, reached the head of the Ameralik Fjord. There they were some sixty miles to the north of Gotthab, which they reached after a journey altogether of some 350 miles.

Exploration in the north was carried on by Rasmussen, who, in 1912, crossed Greenland to Danmark Fjord and recrossed it to the west. He added to geographical knowledge by this and by later journeys, as was also done on two other crossings, De Quervain in 1912, and by Koch in 1913.

Large areas, however, remained to be discovered, and the Cambridge Expeditions of 1923, 1926 and 1929, under the leadership of Wordie,[2] explored in East Greenland. After

[1] *A Summer Search for Sir John Franklin*, by Commander E. A. Inglefield, 1853. I have to thank his son, Rear-Admiral Sir Edward Inglefield, who has reproduced the frontispiece of this book as a memorial to his distinguished father.

[2] *G.J.*, Vol. LXX, p. 225, and Vol. LXXV, p. 481.

conducting pendulum experiments on Sabine Island, to verify and add to those made by Captain Sabine in 1823, an intensive study was made of the island. On the mainland this intensive study, geographical, geological and archaeological, was continued and an expedition was made inland with Mount Petermann, the highest mountain in Greenland, as its ultimate objective. This virgin peak was conquered after a very difficult climb in a raging gale, with considerable risk of frostbite, and its height was finally settled to be 9,650 feet.

An account must now be given of the Canadian Arctic Expedition led by Stefansson, who depended almost entirely on game for his food and thus obviated the necessity of transporting heavily laden sledges. Commencing operations in 1913, for five years the Beaufort Sea and the Arctic Ocean to the east and west of Prince Patrick Island were surveyed, while new islands were discovered to the north of Melville Island. All this was accomplished after a preliminary disaster. The *Karluk*, under Captain Bartlett, which had been caught in the sea and was drifting westward, was suddenly caught in the ice and sank in January 1914. Wrangel Island, distant some eighty miles, was reached with much difficulty. Bartlett then started off with a sledge and one Eskimo on a hazardous journey to Siberia to arrange for the shipwrecked party to be rescued. It says much for Stefansson that he achieved so much in the next four years with seriously diminished resources.

We now come to Spitsbergen. In Chapter XVI the discovery of this island in 1596 was described. Other voyages followed, but "the Basques were then the only people who understood whaling", and the English had, at first, to be content themselves with walrus, bears and deer. However, in 1612 the Muscovy Company engaged a Basque, and "there was not one whale killed with one boat alone, save ours, with all English, save the Baske aforesaid, which slue three without the helpe of any other boate".[1] None of these whale hunters left the coast, and consequently the interior of the island remained unknown until the late nineteenth century.

In 1896 Conway, who has won fame as an explorer in three continents, appeared on the scene. Accompanied by Gregory and Garwood, he started inland from Advent Bay on the west coast and found the whole country covered with thawing snow, beneath which lay a bog. However, nothing daunted by the bad going or unsuitable equipment, the explorers

[1] *No Man's Land*, by Sir Martin Conway, 1906, p. 48.

"crossed overland from Advent Bay to Klok Bay, from Klok Bay to Sassen Bay, and from Sassen to Agardh Bay, on the east coast, and back to Advent Bay".[1] This was the first crossing of Spitsbergen.

An honoured place in the history of Spitsbergen must be given to Isaachsen and Hoel, who have spent twenty years surveying the coast; and also to the Scottish explorer, W. S. Bruce, who made nine visits in all to explore the country and its coal resources.

In 1924 Binney[2] led an Oxford University Expedition to examine neighbouring North-East Land. He conceived the idea of utilizing a seaplane for survey and photography and, after being nearly drowned owing to engine breakdown, he was able to make considerable use of it. The achievements of the expedition include the east to west crossing of North-East Land by a sledging party in face of unfavourable weather conditions, while not only was much valuable survey work accomplished, but many of the technical difficulties of carrying out a survey with the assistance of an aeroplane were overcome.

Expeditions to the west of Greenland had hitherto been despatched mainly to find the North-West Passage, but in the search for Franklin, Inglefield explored the coast and was followed by Kane who penetrated to Cape Fraser in Ellesmere Island. In 1875 Nares was appointed to command a British naval expedition, and following Hall, who had penetrated to the Polar Ocean in 1871–3, the *Alert* reached her winter quarters at 82° 27′ N., near a low beach facing the Polar Ocean. The North Pole was now the main objective.

Sledge expeditions were despatched, but, most unfortunately, scurvy broke out and Albert Markham was obliged to return after reaching "Farthest North" in 83° 20′ N. Pelham Aldrich's party explored the north coast of the Grant Land portion of Ellesmere Island, while Beamont explored the north coast of Greenland. In spite of failure to reach the North Pole, the expedition discovered much new country and made important discoveries, together with magnetic, meteorological and tidal observations.

In 1881 Lieutenant Greely,[3] of the United States Army, was despatched to Lady Franklin Bay with the object of

[1] *The First Crossing of Spitsbergen*, by Sir Martin Conway, 1897.
[2] "The Oxford University Arctic Expedition", by F. G. Binney, *G.J.*, Vol. LXVI, p. 9.
[3] *Three Years of Arctic Survey*, by Adolphus W. Greely, 1886.

establishing a station for scientific observations, and for geographical discovery. In the following spring, Lockwood led an expedition along the north coast of Greenland and reached Lockwood Island in latitude 83° 24′ N. The relief vessel failed to reach the expedition which, in August 1883, left the ship and retreated southwards in boats towed by a steam launch. Upon reaching Cape Sabine it was ascertained that the relief ship had foundered. The English food depot was found and the expedition settled down to a winter of starvation. Greely describes one tragedy after another until, upon the arrival of relief in June 1884, "the seven survivors—out of a party of twenty-four—realized that the agony was over, and the remnant of the Lady Franklin Bay Expedition saved".

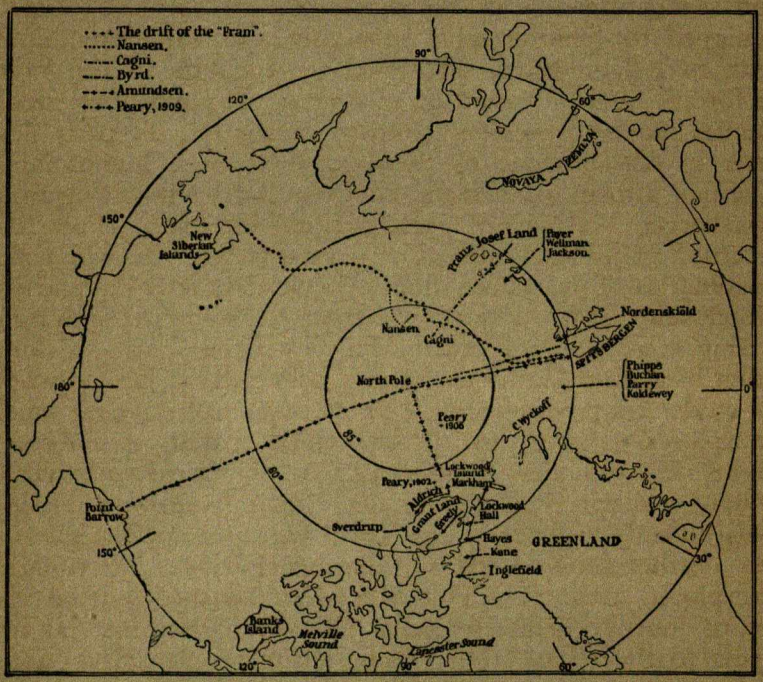
In 1893, Nansen sailed north with the deliberate intention of allowing his ship, the *Fram*, to be frozen in and drift towards the Pole. This actually occurred north of the New Siberian Islands. After drifting to latitude 85° 57′ N., the *Fram* under Sverdrup as captain remained in the ice for nearly three years, and finally emerged north of Spitsbergen. Nansen himself meanwhile had attempted to reach the Pole with sledge and *kayak* and actually reached 86° 12′ N. He then entered Franz Josef Land, where Jackson was exploring, and had the good fortune to meet Jackson, who brought him home. The voyage of the *Fram* made the most important discovery that the North Pole was a deep ice-covered sea, and, without doubt, Nansen's voyage in the *Fram* is the greatest of all Arctic voyages.

The conquest of the North Pole was claimed both by Dr. Cook and by Peary.[1] Cook's claim, however, has never met with general acceptance. Peary, like the majority of great explorers, had trained himself for the task by long years of endeavour, gaining experience alike in success and failure. After preliminary journeys in North Greenland, during which he conclusively proved its insular nature, Peary determined to devote his life to the great quest. He realized that his only chance of success was to live among the Eskimos, to learn their methods of hunting and fishing, on which they entirely depended for their existence, and their other arts; to make friends with them and thereby to secure their willing service. In short, with their help and that of their dogs, he hoped to reach the North Pole.

Sailing in 1908 in the s.s. *Roosevelt*, commanded by Captain Bartlett, the noted Newfoundland navigator, the explorer

[1] *The North Pole*, by Robert E. Peary, 1910.

reached Cape York in August. Continuing the voyage northwards, Eskimos were recruited making a total of sixty-nine men, women and children; there were also 250 dogs. Parting from the *Erik* at Etah, which served as an advance base, the *Roosevelt* "was kicked about by the floes as if she had been a football", but at last Cape Sheridan in Grant Land —the winter quarters of the *Alert*—was reached, and the *Roosevelt* was unloaded of its sledges, coal and stores. During the autumn a depot was formed at Cape Columbia, the most



THE NORTH POLAR REGIONS—II: THE ADVANCE TO THE NORTH POLE.

northern point of Grant Land, some ninety miles to the northwest. At the same time a large number of musk oxen, with a few deer and bear, provided fresh meat and healthy excitement. On February 22, 1909, Peary, who had sent Bartlett on a week ahead with the advance parties to Cape Columbia, started on his march to the North Pole. The greatest difficulty consisted in the lanes of open water, which caused a delay of six days early in March. But, upon the weather clearing up, the open water froze over and the journey was resumed. Peary was favoured by the weather, so much

so that one of his Eskimos sagely remarked that the devil must be asleep or having trouble with his wife!

Bartlett made the trail up to 87° 47′ N., and Peary then pushed on with four Eskimos and a negro till his record shows that on April 6, 1909, he reached the North Pole, a distance of 540 miles from the *Roosevelt*. He thereby accomplished the dream of Arctic explorers, and his name will never be forgotten.

The year 1914 saw the first aeroplane flights in the Arctic, and, as mentioned above, Binney used the first seaplane specially equipped for photographic surveying. In 1925 Amundsen, with two flying-boats, attempted to reach the North Pole. A forced landing was made in 87° 43′ N., and after superhuman efforts to prepare a runway on the ice, the party flew back in one machine to Spitsbergen about a month later. The first airman to reach the Pole was Byrd, who, flying from Spitsbergen on May 9, 1926, reached the North Pole and returned in fifteen hours, thus demonstrating the wonderful possibilities of mechanical flight. Two days later Amundsen, Nobile and Ellsworth left Spitsbergen in the Italian semi-rigid airship *Norge* and reached the Pole in sixteen hours, making Point Barrow in Alaska some thirty hours later. Ever aspiring to outdo his predecessors, Wilkins, who had covered much unexplored country in Alaska, while making preliminary flights, in 1928, flew from Alaska to Spitsbergen in twenty hours—a distance of 1,200 miles. In this year the airship *Italia* under Nobile flew to the North Pole *via* Cape Bridgeman, the northernmost point of Greenland, traversing a large unexplored area. The Pole was safely reached, but on the return journey a disaster occurred. Amundsen lost his life flying to the rescue, thus closing a career which Baker aptly terms "an epitome of Polar exploration".

Owing to the development of flying, it was decided in 1930 by Watkins, then a Cambridge undergraduate, to examine the possibility of organizing an air route from London to Canada *via* Iceland and Greenland. The main settlement of Eskimos on the east coast of Greenland was at Angmagssalik, and it was decided to despatch an expedition which should have its base within fifty miles of this settlement and study the country by means of land journeys across Greenland. It was also especially important to study meteorological conditions.[1] The work of this expedition was remarkable. Long

[1] "The British Arctic Air Route Expedition", by H. G. Watkins, *G.J.*, Vol. LXXIX, pp. 353 and 466.

land journeys were undertaken, aeroplanes were employed for the reconnaissance of unknown country and for the support of sledging parties, while Watkins himself led a voyage in boats round the south coast of Greenland. In order to hunt alone with reasonable safety, Watkins and his companions learned to roll right round with the *kayak* and come up on the other side, an accomplishment rare among Europeans.

Alas! after receiving the Gold Medal of the Royal Geographical Society in 1932, Watkins returned to Greenland and lost his life while hunting from a *kayak*. Thus, in the flower of his youth, perished the greatest of the younger generation of Arctic explorers. To him the poignant lines of Sir Thomas More especially apply:

> "He that hath no grave
> Is covered by the sky."

CHAPTER XXXV

THE EXPLORERS OF THE ANTARCTIC

"Had we lived, I should have had a tale to tell of the hardihood, endurance, and courage of my companions which would have stirred the heart of every Englishman. These rough notes and our dead bodies must tell the tale."

ROBERT FALCON SCOTT.

THE great pioneer of Antarctic exploration was Captain Cook, and it was not until the second decade of the nineteenth century that the *Siege of the South Pole*,[1] as Mill aptly describes his classic, was resumed by the despatch of a Russian Antarctic expedition under Admiral Bellingshausen in 1819. Calling at Rio de Janeiro, the first objective was South Georgia, where a running survey was undertaken to complete Cook's survey of the north coast. Resuming the voyage to the south, three small islands, one of which was an active volcano, were sighted to the north of the Sandwich group. After passing this group and identifying islands seen by Cook from the west, Bellingshausen crossed the parallel of 60°, where his way was barred by a solid ice-pack. Again and again attempts were made to force a passage southwards, but with scant success. Supplies ran low, and the gallant Russian, who, since leaving the Sandwich Islands had kept south of Cook's track, shaped his course for Sydney.

The winter of 1820 was spent in exploring the South Pacific, where Bellingshausen Island marks his route. After revisiting Sydney, Antarctic exploration was resumed, and the parallel of 60° was crossed in longitude 163° E. in December 1821. Icebergs and later pack ice barred the further progress of the explorers, who cruised along its edge south of New Zealand, and on January 1, 1822, the "Farthest South" was reached at 69° 52′ S. in longitude 92° 10′ W. The heroic efforts of Bellingshausen under the most trying conditions were finally rewarded by the discovery of Peter I Island, the first land to be discovered within the Antarctic Circle. Farther

[1] Lady Hilton Young has not only read through this chapter and made valuable suggestions, but has selected the illustration, which shows her late husband, Captain Scott, preparing to start on his journey to the South Pole. Dr. Hugh Mill has also given me much valuable help.

east a distant island was viewed and named after Alexander I. Reaching the South Shetlands, the Russian Admiral met British and American sealers at anchor, and completed his remarkable voyage of circumnavigation at South Georgia. "The voyage", wrote Mill, "was a masterly continuation of that of Cook, supplementing it in every particular, competing with it in none."

We now come to Weddell, a sealer, who in 1819 commenced the exploration and survey of the South Shetlands in his own ship. On a second voyage he surveyed the South Orkneys. By a happy chance in open water he reached latitude 74° 15′ S. and longitude 34° 16′ W., which area is known as Weddell Sea.

The Enderby brothers were ship-owners interested in exploration, and, in 1831, under exceptionally trying conditions, Captain Biscoe in one of their ships discovered Enderby Land. A year later he saw Adelaide and Biscoe Islands off Graham Land. Another important discovery was made by Captain John Balleny, who, sailing from New Zealand in 1839, reached the islands named after him, the first land to be discovered within the Antarctic Circle south of Australia.

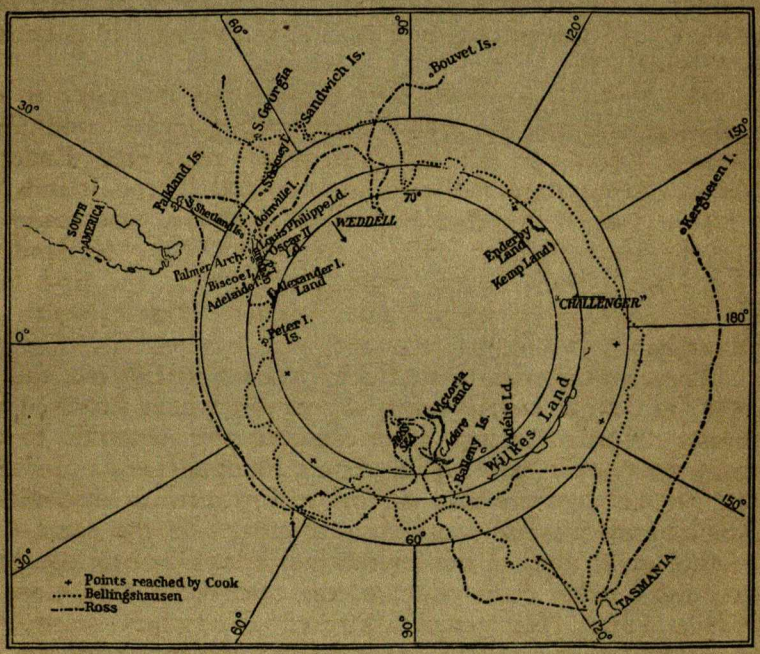
These discoveries excited deep interest in Europe, and, in 1838, D'Urville led a French expedition which surveyed the Straits of Magellan and then explored the Antarctic to the south of Cape Horn, finding Louis Philippe Land. In 1840 the French explorer was still more fortunate in discovering Adélie Land to the south of Australia. At the same time Lieutenant Wilkes of the United States led a poorly equipped expedition with great courage, and discovered land close to Adélie Land. He actually sighted D'Urville's ships, but through a regrettable misunderstanding the two explorers did not meet. His name is commemorated in Wilkes Land, and he deserved more credit than he received at first either in America or in Europe.

We now come to Captain James Ross, whose services in the Arctic have already been mentioned.[1] His main object on this expedition was to improve the knowledge of magnetism, in which science he was already an expert; he also made most important discoveries. In September 1839 the *Erebus* and *Terror* sailed for the Antarctic, setting up magnetic observatories at St. Helena, the Cape of Good Hope, and Kerguelen Island, where simultaneous obser-

[1] *Voyage in the Antarctic Regions*, by Captain Sir James Ross, 1847.

vations proved that " every movement of the needle at Kerguelen was simultaneous with a similar movement in Toronto almost at its antipodes ".

In July 1840 the explorers sailed to Hobart Town, where they were welcomed by Sir John Franklin. Here Ross heard of the discoveries of D'Urville and Wilkes in the very regions to which he was bound. He promptly decided to avoid these areas and to follow the 170° E. meridian for his attempt to reach the magnetic pole. The report of Balleny, who had mentioned an open sea at 69°, influenced this wise decision.



THE SOUTH POLAR REGIONS—I: NINETEENTH CENTURY.

Ross was the first explorer in the Antarctic whose ships had been especially strengthened to resist ice pressure. Consequently, in January 1841, his ships both crossed the Antarctic Circle and were steered into the pack ice. Land was sighted, and soon two great ranges were distinguished, with peaks ranging up to 10,000 feet. The first notable promontory of the new coast-line was named Cape Adare, and, landing on a neighbouring island with considerable difficulty, the Union Jack was hoisted in the presence of innumerable penguins who were ranged along the ledges. The country was named Victoria Land, and the island Possession Island. Sail-

ing south, snow-clad mountains rising to 14,000 feet were sighted and named, while to complete the voyagers' amazement, two great volcanic peaks, aptly named Erebus and Terror, were sighted. The highest latitude was reached at 78° 4′ S. After following the great Southern Barrier for a continuous length of 250 miles, Ross, unable to find a possible site for a winter camp, or indeed for a landing-place, decided to sail north, and, passing within sight of Balleny Islands, he reached Tasmania, after accomplishing a very great feat of exploration.

Ross had been fortunate in his first voyage into the Antarctic, but in the second luck was against him. In January 1842—

> "a violent gale from the northward compelled us to reduce our sails to a close reefed main-top-sail and storm-stay-sails, the sea quickly rising to a fearful height. Breaking over the loftiest bergs, we were driven into the heavy pack under our lee. Our ships were involved in an ocean of rolling fragments of ice, hard as floating rocks of granite, which were dashed against them by the waves with so much violence that their masts quivered, and the destruction of the ships seemed inevitable from the tremendous shocks they received."

This storm was successfully weathered, but an even greater danger was the collision of the two ships, which, but for a display of magnificent seamanship, must have ended in utter disaster. Finally, in 1843, the expedition returned to England. Ross, apart from his scientific observations, had made far greater discoveries than any other explorer, and deservedly occupies a leading position among the heroes of the Antarctic.

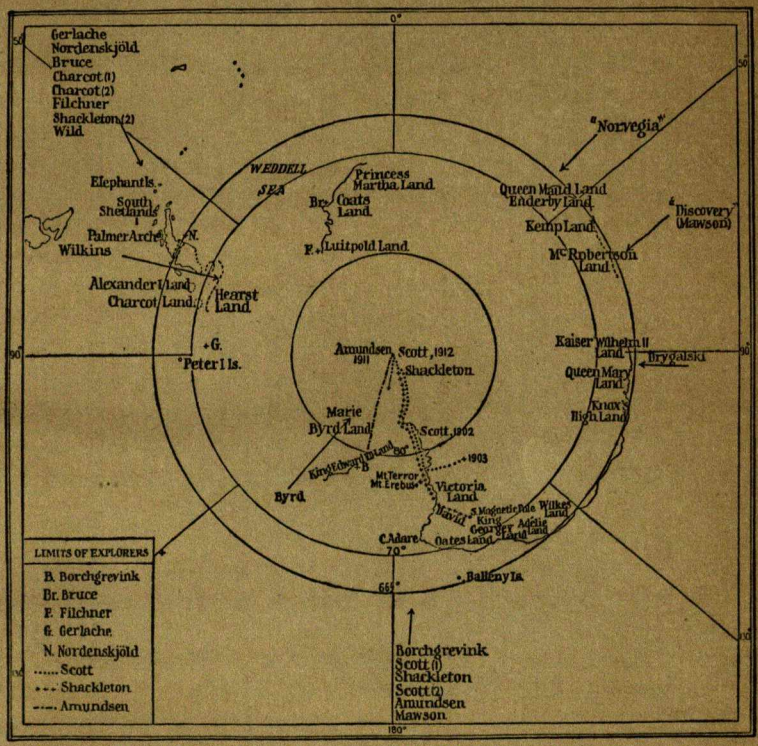
This great period of exploration was followed by one which Mill terms an era of "averted interest", the quest of the North-West Passage again turning the eyes of the world to the Arctic regions. Valuable work was however accomplished by Larsen, who in 1895 made the first landing in the Antarctic Continent. In 1898 Gerlache organized a Belgian expedition, which included several scientists. From the South Shetlands he sailed south, and discovering the Strait that separated Palmer Archipelago from the mainland, collections of geological and natural history specimens were made. Gerlache was caught in ice in 71° 30′ S. and drifted about with it during the first winter that was spent in the Antarctic. From 80° 30′ W. to 102° W. longitude and about a degree of latitude were covered during the thirteen months of imprisonment, but, when the ship escaped, the expedition returned to Europe where the importance of the duration and regularity

THE *EREBUS* PASSING THROUGH THE CHAIN OF BERGS, 13th MARCH, 1842
(From Voyage in the Antarctic Regions, by Sir James Ross)

[*face p.* 328

of the routine scientific observations and the completeness of the collections won great credit for all concerned.

In 1898 Borchgrevink, a member of Larsen's expedition, thanks to the financial support of Sir George Newnes, sailed south to Hobart and succeeded in getting through the pack. He landed a hut, stores, and instruments, and, despatching the ship to winter in New Zealand, a party of ten settled down to scientific work, no land exploration being found possible.



THE SOUTH POLAR REGIONS—II: TWENTIETH CENTURY.

In the spring the *Southern Cross* came back and, after making the first landing on the Barrier and setting up a "Farthest South" record, the expedition returned to Europe, having accomplished a valuable piece of work.

The twentieth century produced great explorers, and, thanks mainly to the personality and untiring efforts of Sir Clements Markham, an expedition to the Antarctic was organized to follow up the work of Sir James Ross and winter on the coast of Victoria Land. Commander Scott, R.N., was appointed leader, with Armitage as second in

command and Koettlitz, who had served on the Jackson-Harmsworth expedition; Wilson, who was later to share in the tragedy of the *Terra Nova* expedition, Charles Royds as First Lieutenant, Shackleton and Bernacchi. The *Discovery* was specially built to cope with ice conditions in all circumstances.

Scott sailed from England in August 1901, and, after coasting the great Barrier eastwards, and discovering King Edward VII Land, anchored at the south of Ross Island in February 1902, where the ship was frozen in for two years. Huts were erected on shore and short excursions were made.

In the spring long sledge journeys were undertaken. Scott, Shackleton and Wilson, travelling south and then south-west, reached 82° 17′ S., at a distance of 380 miles from their winter quarters. The return journey was a terrible effort for the half-starved party. The dogs collapsed, and gallant Shackleton, who, like the others, suffered from scurvy, broke down but struggled on. The smoke of Mount Erebus was sighted at a distance of over a hundred miles, and the final food depot was reached, with its abundant store of food. At last the pioneer journey ended, and the entry runs: "If we had not achieved such great results as at one time we had hoped for, we knew at least that we had striven and endured with all our might." Scott's motto to this chapter runs:

> "How many weary steps
> Of many weary miles you have o'ergone
> Are numbered to the travel of one mile."

The results of this voyage were of great importance. Two sledge-journeys into the interior had revealed the existence of a great plateau rising to nearly 10,000 feet beyond the coast mountains, and had afforded experience of value to future explorers. The work of the scientific staff was also fruitful.

In 1901 Professor von Drygalski headed a German expedition to the Antarctic, co-operating with that in the *Discovery*, during the course of which Kaiser Wilhelm II Land was discovered and valuable scientific results were obtained. At the same time Nordenskiöld led a Swedish expedition to the east of Graham Land (later proved to be a group of islands), while Bruce in the *Scotia* explored the Weddell Sea and passing Weddell's "Farthest South", discovered Coats Land.

In 1903, and again in 1908, Charcot, an enthusiastic French

From a photograph by Herbert G. Ponting

SCOTT AND HIS COMPANIONS STARTING FOR THE SOUTH POLE
(With Mount Erebus in the background)

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yachtsman and scientist, made important discoveries on the west coast of Graham Land and further to the south-west, naming new lands after his father and after presidents of the French Republic.

The siege of the South Pole was continued by another great explorer, Ernest Shackleton,[1] who in 1907 started from England in the *Nimrod* as leader of an expedition, which included an exceptionally good staff of scientists. Landing at Cape Royds on Ross Island, in February 1908, winter quarters were established and the active volcano of Mount Erebus was scaled at a height of 13,700 feet. On the ascent the explorers were caught in a blizzard, but it cleared up on the second day, when they reached the summit, to find themselves on the "brink of a precipice of black rock, forming the inner edge of the old crater".

By October 29, supplies had been laid out and Shackleton started on his adventurous attempt to reach the South Pole, using ponies for transport. The weather conditions were extremely good upon the whole, and, on November 26, Shackleton writes: "A day to remember, for we have passed the 'Farthest South' previously reached by man." Early in December a great glacier was reached in the Western Mountains, and on December 7 the last of the four ponies fell into a fathomless crevasse, but the sledge was most fortunately saved. On December 16 the record runs: "We have now traversed nearly 100 miles of crevassed ice and risen 6,000 feet on the largest glacier in the world." Their position was 84° 50′ S. Upon reaching 88° 7′ at a height of 10,000 feet on the plateau, the explorers were overtaken by a raging blizzard, but, when it cleared on January 9, 1909, they marched to 88° 23′, where they hoisted the Union Jack and a brass cylinder containing documents. The Pole could easily have been reached if provisions had sufficed. The return journey looked like disaster owing to dysentery, but at last the heroic explorers with "death stalking from behind", reached their ship, just as approaching winter compelled her to leave. They had accomplished a great land journey in the Antarctic and proved that the South Pole could be reached. Nor was this the only result, for Professors David and Mawson had made their way with infinite difficulty to the magnetic pole which, as calculated by Mawson, was reached in latitude 72° 25′ S., longitude 155° 16′ E., with the temperature exactly at zero Fahrenheit. Their journey was a great feat.

[1] *The Heart of the Antarctic*, by E. H. Shackleton, 1909.

The South Pole was conquered, but not by a British explorer.[1] Amundsen, who first sailed a ship through the North-West Passage, as described in the last chapter, left Norway in August 1910 with the intention of reaching it. On the voyage he was favoured by climatic conditions, the pack being sighted on January 2, 1911, and traversed in what he termed a "four days' pleasure-trip". Ross Sea was also free of icebergs, and, reaching the Great Barrier, the members of the expedition landed at the Bay of Whales and had the courage to make winter quarters on the ice. The laying out of supplies was executed with much promptitude and, before the arrival of winter, three tons had been collected in depots, the farthest of which was situated in latitude 82° S.

On October 19 the start for the great enterprise was made, Amundsen having four companions and four sledges, each drawn by thirteen dogs. From latitude 85° S. it was decided to make the final attempt to reach the Pole—a distance there and back of 683 English miles. On November 17 the explorers began the passage of the Western Mountains south of Shackleton's pass; the peaks rising to 15,000 feet. But, favoured by the perfect weather, they made good progress until a blizzard forced them to rest for five days. Their onward progress was then hindered by crevassed ice, but once on the plateau the South Pole was reached on December 14, 1911, by Amundsen, who thus accomplished one of the greatest feats of world exploration. All honour to the splendid qualities displayed by the Norwegian explorers, who traversed entirely unknown country all the way.

We now come to Scott's second expedition. After a farewell luncheon given by the Royal Geographical Society, in June 1910 the explorers shaped their course for New Zealand and then sailed south to the Antarctic. Entering the pack, after weathering a dangerous storm, the *Terra Nova* forced her way through 370 miles of ice, and on January 4, 1911, winter quarters were established at Cape Evans, on Ross Island, fourteen miles north of the *Discovery's* winter quarters. On November 1, 1911, after supplies had been laid out, Scott started on his last great journey. On November 15, One Ton Camp was reached, situated 130 geographical miles from Cape Evans, and a day's halt was decided upon. As the journey progressed, the ponies were killed to feed the explorers and the dog teams, but Scott wrote: "Our luck in the weather is preposterous." On December 5, a blizzard

[1] *The South Pole*, by Roald Amundsen.

necessitated a halt of four days. When the journey was resumed, the deep soft snow made the situation serious. The remainder of the ponies were slaughtered on December 9 at the entrance of the Beardmore Glacier. The ascent of the glacier proved terribly difficult, as Shackleton had found it, and on December 14 the diary runs: "We are just starting our march with no very hopeful outlook." It was on this day that Amundsen reached the South Pole! On December 22, the plateau had practically been reached, and the third stage of the journey opened with good promise after an affecting farewell to the last returning supporting party. Crevasses constituted a danger until the top of the plateau was reached, as Shackleton had also found, and on Christmas Day an Alpine rope had to be requisitioned to pull a member of the party out of a crevasse 50 feet deep and 8 feet across.

On January 4 1912 the explorers reached latitude 87° 32′ at an altitude of 10,000 feet, and the party, consisting of Scott, the naval officer, Wilson, doctor and artist, Bowers, the officer of the Indian Marine, Oates, the cavalry officer, and Petty Officer Evans, R.N., said good-bye to the second party and started on the last stage to the South Pole, distant 140 miles. On January 9 Shackleton's "Farthest South" was passed; new ground was entered, and on January 16, 1912, the South Pole was reached, but a black flag tied to a sledge-bearer proved that the Norwegians had forestalled them. Small wonder that Scott wrote: "Great God! this is an awful place, and terrible enough for us to have laboured to it without the reward of priority."

The return journey of 800 miles was commenced, and, on February 9, some thirty-five pounds weight of fossils were collected, which shed important light on the geology of the continent. On February 16 Evans collapsed in mind and body, dying the following day. The survivors reached the Middle Barrier depot on March 6, but were faced with a shortage of oil. The tragedy deepened when, in the middle of March, Oates, realizing that he was an encumbrance to the survivors and was lessening their chance of winning through to safety, said: "I am just going outside and may be some time." Thus died a very gallant British officer. The three survivors struggled on to within a few miles of One Ton Depot and there died. Scott's Message to the Public, quoted at the head of this chapter, is graven on his statue, and is one of the most moving ever penned by a dying

explorer. It will stimulate unborn generations of his race to deeds of adventure and to knightly unselfishness.

In the space at my disposal I cannot do more than mention the valuable work accomplished by other parties, which in the face of extraordinary difficulties executed a geological survey extending some thirty miles inland, and made important observations.

The next great explorer to appear on the scene of the Antarctic was Mawson, who had gained experience and signal distinction when, serving under Shackleton, he not only reached the Magnetic Pole, but wrote many of the scientific reports. In 1911 he led an expedition to examine the area between Victoria Land and Kaiser Wilhelm II Land.[1] Four bases were to be established, expeditions were to be made inland and scientific research of every description was to be undertaken. The expedition started in December 1911, and, a month later, Mawson's party established the main base at Cape Denison. Journeys inland were then undertaken. That of Mawson himself with two companions reached a distance of 300 miles, when Ninnis, one of his companions, fell into a deep crevasse and was killed. On the return journey, Mertz was too ill to move, and Mawson risked all reasonable chances of safety by nursing his comrade until he died. He then, endowed with superhuman strength, which enabled him to climb out of a crevasse and to continue on his course, reached Cape Denison. As he wrote: "The long journey was at an end—a terrible chapter of my life was finished." The Mawson expedition added to the map King George V and Queen Mary Land, which was explored by his western party under Wild, and accomplished especially valuable oceanographic work.

In 1913 Shackleton decided to attempt a journey across the entire Antarctic, a distance of 1,800 miles. His plan was to establish a main base on the Weddell Sea and to travel to the geographical pole, and thence, following Scott's route, to McMurdo Sound. This main party, which he would lead in person, would be supported by a party which would, from a base in the Ross Sea, lay out supplies for the main party from Beardmore Glacier to the coast.

The expedition spent a month at South Georgia in November 1914, and in January 1915 Shackleton reached unexplored land, which he named Caird Coast. The *Endurance* was then caught in the ice, and for eight months was transformed

[1] *The Home of the Blizzard*, by Sir Douglas Mawson, 1914.

"into a wintering station". The ship had drifted ninety-five miles in a north-westerly direction by March 31, 1915, and on August 1 the ice pressure was serious. The danger passed, but only temporarily, and finally, on October 27, Wordie wrote: "The floes, with the force of millions of tons of moving ice behind them, were simply annihilating the ship." After this disaster, Ocean Camp was established on a thick floe and the wreck was salvaged for supplies and equipment with considerable success, until, on November 21, the good ship *Endurance* sank. The expedition then camped on a floe keeping three boats ready to be launched. With the disintegration of the ice pack, the crisis approached; on April 10, 1916, the whole party embarked, and on April 13 they made a course for Elephant Island, where they landed on April 15, everyone being worn out from thirst and lack of sleep.

Shackleton, whose power of rising to the most difficult situations was amazing, realized that it would be impossible to transport the entire party to South Georgia. He thereupon decided to lead a forlorn hope and to sail some 840 miles to that island with a picked party of five sailors. On April 24 Shackleton started. The seas were so rough that nearly everyone was seasick, while they were constantly soaked and cold. Apart from the raging seas, they now suffered from thirst, the second breaker containing brackish water. A fortnight after starting on their hazardous voyage, South Georgia was sighted. A gale then nearly drove the boat on to the rocks, but at last they were able to land in a cove with a stream of fresh water.

It now remained to cross the island to Stromness, a dangerous task for the tired men, across unknown mountains and glaciers, but it was successfully accomplished. To quote Mill's eulogy:[1] "If his return to the *Nimrod* on the Plateau, the Glacier and the Barrier, seven years before, had been a race with death on his pale horse, Shackleton's return from the *Endurance* over the Floe, and the Ocean, and the Mountains, had been one long wrestling bout with the same grim adversary." The three men left with the boat were promptly fetched in a whaler while, after more than one failure, "the party of twenty-two men was rescued and found all well", after spending over four months on Elephant Island. The supporting party in the Ross Sea accomplished their assigned task of transporting supplies to the Beardmore Glacier. The effort was tremendous and cost three lives. The *Aurora* also,

[1] *The Life of Sir Ernest Shackleton*, p. 227.

after being frozen in, was carried out to sea in a blizzard and was nearly lost, but just managed to reach New Zealand, in a battered condition, in April 1916. Finally the supporting party was rescued by the *Aurora* in December 1916.

Thus this ambitious adventure ended in failure, but it was an heroic failure. Shackleton has been greatly honoured by the Royal Geographical Society, his statue being placed in a niche in the exterior wall of their premises. There, clad in his Antarctic clothing, he stands as a symbol of the spirit that has made the British Empire first in the field of exploration.

We now come to the use of aeroplanes in the Antarctic. Wilkins, as already stated, had a splendid record in the Arctic. As a result of two seasons' work, his most important discovery in the South was that Graham Land, instead of being a peninsula, was in reality a series of islands. He had also added Hearst Land to the map. After Wilkins came Admiral Byrd, who had also won fame in the Arctic. Leading a splendidly equipped expedition, Byrd, on Amundsen's recommendation, selected the Bay of Whales, and with teams of dogs speedily formed his base inland and erected his well-found station with its wireless permitting communication with New York, its three houses, its aeroplanes and its gymnasium.[1] Byrd's main objective was the South Pole, a distance of 800 miles, and by way of preparation a depot of petrol was laid out, the range of his aeroplane not exceeding 1,700 miles.

On November 28, 1929, having received a message from an advance aeroplane that the weather conditions in the mountains were excellent, Byrd started at 3.29 p.m. The chief difficulty was the crossing of the pass in the Queen Maud Range, which rose to about 10,000 feet. This was only effected by the sacrifice of 250 pounds of food, which gave the necessary gain in altitude, and the aeroplane duly reached the plateau. As Byrd wrote: "It was difficult to believe that in recent history the most resolute men who had ever attempted to carry a remote objective, Scott and Shackleton, had plodded over this same plateau, a few miles each day, with hunger—fierce, unrelenting hunger—stalking them every step of the way." Byrd, on the contrary, reached the South Pole in a few hours, and having circled over it recrossed the range, refuelled, and in nineteen hours the flight to and from the South Pole had been safely accomplished. Apart from this spectacular flight the expedition did useful exploring work

[1] *Little America*, by Rear-Admiral Richard Evelyn Byrd, 1931.

by air to the east of King Edward VII Land, and brought in an important geological collection by dog-sledge.

The work of exploration in the Antarctic continues steadily. The *Norvegia* under Riiser-Larsen, while primarily concerned with the whaling industry, has discovered Queen Maud Land to the west of Enderby Land; in 1931, it completed the circumnavigation of the Antarctic. The *Discovery* has also added new lands to the map, including Princess Elizabeth Land to the east of McRobertson Lands. Both expeditions have carried out oceanic research of great value.

There still remain more than 2,000 miles of unexplored coast to be charted, and it is just possible that Antarctica may be severed by a broad channel connecting the Weddell and Ross Seas, those two huge gulfs which point towards each other. By the use of aeroplanes this problem can be solved without a tithe of the risk or toil involved in the old heroic days.

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In this work I have attempted to describe the course of exploration down the ages. But what of the future? In a recent lecture Mason said: "I have hinted that the world is discovered, but I doubt whether a hundredth part of the land surface of the globe is surveyed in sufficient detail for modern requirements. If the pioneer's day is nearly over, the specialist-explorer's dawn is only breaking." [1] This clearly indicates that in the future, expeditions with specialists intensively studying a limited area will be the order of the day.

Richard Hakluyt, the leading geographer of the sixteenth century, wrote: "I have greatly wished there were a Lecture of Navigation read in this Citie for the increase and generall multiplying of sea-knowledge in this age, wherein God hath raised so general a desire in the youth of this Realme to discover all parts of the face of the earth, to this Realme in former ages not knowen."

Could he return to earth, Hakluyt would surely be delighted with the progress that has been effected since generation after generation of explorers have gone forth to discover, each generation, generally speaking, being better trained and having benefited by the experience of its predecessors. And what of the future? I firmly believe that the youth of to-day are as adventurous as their forbears, and they are certainly

[1] *The Geography of Current Affairs*, an Inaugural Lecture delivered by Kenneth Mason, Professor of Geography in the University of Oxford, on November 15, 1932

better educated and better equipped. There is thus every hope that they will ever hand on the torch; and, on this note, I conclude my task with a verse of Robert Browning:

Then welcome each rebuff
That turns earth's smoothness rough,
Each sting that bids nor sit nor stand but go!
Be our joys three-parts pain!
Strive, and hold cheap the strain,
Learn, nor account the pang; dare, never grudge the throe.

FINIS

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