

## TIBET

BY SVEN HEDIN

NOT BEFORE the middle of the thirteenth century did the first knowledge of the existence of a country called Tibet reach Europe. At least 1500 years earlier the people of India had some scanty notions of Tibet which, however, chiefly consisted of epic songs, legends, and tales of Mount Kailas and the sacred Lake Manasarovar. In the Buddhistic world system Mount Meru or Sumeru rises like a venerable Olympus from the axis of the earth and forms the center and foundation of the universe. But only as glimpses or mere names do the eternal mountains of Himalaya, Meru and Kailas, and Lake Manasarovar light up the interminable and dull stories of the Rāmāyana and other sacred scriptures of the Indians. In the Bhagavata and Vāyu Purāna eight mountains are enumerated of which Humboldt and Ritter recognized the Altai, Mustagh or T'ien-shan, Kunlun, and Himalaya. The farther north, east, and west from the sacred mountain and lake, the more foggy and fictitious became the knowledge about Tibet in Indian antiquity. This is quite natural, for Manasarovar was probably, already in a very remote antiquity, an important "tirtha," and the pilgrims wandered to its shores to bathe in the sacred waters, as they still do, persuaded as they are that the sacred Kailas is Siva's paradise and the abode of gods. The sacred lake was supposed to give rise to four great rivers, among them the Indus and the Sutlej.

Both Lake Manasarovar and Mount Kailas are sacred to the Tibetans as well as to the Hindus. In Tibetan the mountain is called *Kang Rimpoche* and is surrounded by four monasteries; the lake is called *Tso Mapang* and is surrounded by eight monasteries.

Herodotus who had heard of the great gold production of India does not mention the existence of mountains in this part of Asia. But he has heard the strange story about the gold-digging ants which has been so much discussed and so well explained by Laufer.

An immense step forward in geographical knowledge was made by Alexander and his generals which embraced the land of the Paropamisadae or Kabulistan and India to the Ganges. Himalaya was called Emodus and regarded as a part or rather continuation of the Paropamisus or Indian Caucasus. All writers agree in placing the sources of the Indus in the Emodus. Eratosthenes (born 276 B.C.)

believed that a great range, under different names in different sections, Taurus, Paropamisus, and Imaus, traversed the whole of Asia from west to east. Strabo describes the mountain range that served as a boundary of India to the north. His geographical knowledge is remarkable for his time. He places the source of the Indus not far above the Ganges and mentions its tributaries. It took centuries before Europe acquired such a correct conception of the hydrography of India as that given by Strabo. Pliny's hydrography is not as good as that of the Greek geographers, who knew India and the mountain barrier to the north, but never had heard a word about Tibet.

The greatest among the ancient geographers was Ptolemy, who used the best sources of his time (about A.D. 160). His representation of the Indus, Sutlej, and Ganges is wonderful. On maps of 1800 the source of the Sutlej is not improved on Ptolemy.

Tibet was called by Arabic geographers Tobit or Tobbat. The greatest, Masudi (died 956), tells a good deal about Tibet. Istakri and Ibn Haukal also mention Tibet. Alberuni has even heard of Lake Manasa, but he derived his information from the Purānas. He places the source of the Jehlum and Ganges in the same mountain range behind which China is situated, but the Indus comes from another range in Turkish territory. Idrisi (born 1100) tells both of the mountains and rivers. His and the other Arabs' Tibet is in reality identical with Ladak. Abulfeda (born 1273) mentions Tobbat, but only quotes Istakri. Like most other travelers and geographers, Ibn Batuta (1304-77) avoided Tibet, the inaccessible country beyond the mountains. Of the Indus he says that "it is the greatest river in the world," and of the mountains of Kamru, north of Bengal: "These are extensive mountains, and they join the mountains of Tibet, where there are musk-gazelles. The inhabitants of these mountains are, like the Turks, famous for their attention to magic." Sherefeddin from Yesd (died 1446), the historian of Tamerlane, mentions Tibet in his *Zafar Nama* or Book of Victory. Tamerlane, who had drenched half Asia in blood, did not care for the uninhabited country north of India, but he probably knew something about it; for he sent special expeditions and scouts all over the interior of Asia. In his autobiography the great Baber (1482-1530) makes a short reference to the mountains in the north.

Mirza Haidar, who in 1533 was sent by the Khan of Yarkand upon a campaign against Ursang (Lhasa) to destroy the temples and their idols, is the first reliable traveler from Leh along the up-

per Indus and the upper Brahmaputra. He mentions a lake that must be Manasarovar.

It is surprising that the great Shah Akbar knew so little about Tibet. His historians and geographers had a very detailed knowledge of the tributaries of the Indus, but the source of the main river they placed either "between Kashmir and Kashgar" or "in China." As to the mountains north of India, the old Hindu orography was adopted. In Shah Jahangir's time Tibet embraced only Baltistan and Ladak. Himalaya was called the mountains of Jammu and Kangra. On European maps of the same time Himalaya was called "the mountains of Nagracot."

The first European to mention Tibet (Buri-Tabet) was Friar John of Pian de Carpine who started from Lyons in 1245 and delivered a letter from the Pope to Kuyuk Khan.

Of much greater importance was the journey of the Flemish Franciscan, William of Rubruk, who started in 1252 and returned three years later. He made a series of great geographical discoveries and was the first to describe the Lamas, their temples, ritual, living Buddhas, their use of the prayer-wheels and of the famous formula *Om mani padme hum*. He found out the true peculiarities of writing of Tibetan and other languages. Even the animals did not escape his keen observation, and he is the first to tell us of the wild ass or kiang of Tibet, and of the wild sheep which later on became so celebrated with Marco Polo's name (*Ovis poli*).

In his admirable narrative the great Marco Polo mentions Tibet three times. He traveled through Asia in 1273 and remained in China for some twenty years. His account is the first reliable one on Tibet ever written by a European. As he approached much nearer to the inaccessible country than Pian de Carpine and Rubruk, and probably got information from natives on the trade route between Tibet and western China, he has more to tell of the inhabitants, their customs, and their country. Though he visited only the eastern borderland, his description of Tibet is in many respects very characteristic, and certain portions of it could well have been written in our own days. He knew that Tibet was a new country of very great extent, embracing eight kingdoms, subject to the Great Khan, a fact that was completely unknown to cartographers even some four hundred years later.

It is curious that Marco Polo does not mention the Himalayas or the Kunlun, though he traveled along the northern foot of the

latter from Kashgar to Lop. But he knew that Tibet contained lakes in several sections. He told something of corals, woolens, enchanters, and astrologers, mastiff dogs and musk, all things that agree with later observations. He even observed that the Tibetans used salt instead of money, which now, six hundred and seventy years later, is still the case. When Marco Polo speaks of Tibet, he does not mean Ladak and Baltistan as do nearly all other travelers, even four hundred years after his time; for he had come in contact with Tibetans in western Szechuan, and he knew that it bordered upon Kashmir and that it was subject to the Great Khan.

From the year 1328 we have to remember Friar Odoric di Pordenone who had nothing of Marco Polo's perspicacity or intelligence. Even such great experts on Asiatic exploration as Klaproth and Sir Henry Yule accepted him as being the first European who ever traversed the whole of Tibet and reached Lhasa. His kingdom of Rybot or Tybot was supposed to be Tibet proper, for he tells us that the inhabitants live in black tents, their capital is very beautifully built of white stone and the streets well paved. Its name is Gota. It is forbidden to shed blood of human beings or animals by reason of an idol who is worshiped there. There lives their *obassy* or pope. Then follows the old story of the treatment of the dead, the head being cut off the dead father and given to the son who eats it, while the body is cut to pieces and given to eagles and vultures. Regarding Odoric's narrative, however, Dr. Laufer has arrived at the following conclusion: "Odoric of Pordenone has never traversed Tibet proper, has never been at Lhasa—a feat with which he has been unduly credited for so long a time, and to which he himself lays no claim." Odoric's definition of Tibet "which is on the confines of India proper" indicates that he means Ladak, and his Gota may indicate *kotta* or *kot* which means "fort" or "castle," a term widely spread in the western Himalayas.

The East India travelers of the seventeenth century practically knew nothing about Tibet. In 1610 William Finch had heard of Kashmir and Kashgar and the musk trade and that "upon these mountains keeps a small king called Tibbot." J. B. Tavernier also found out that the best musk comes from the kingdom of Bhutan (Tibet), which is situated "beyond the Ganges towards the north." Thevenot, in 1666, knew that Kashmir had "to the east a part of Tibet," and to the north Tartary. In the seventeenth century Ptolemy was still regarded as the greatest authority on these re-

gions. Even after the journeys of Andrade and Grueber and Dorville, the mysterious country remained hidden behind impenetrable clouds and insurmountable mountains.

None of these European travelers had ever heard the name of the famous lake Manasarovar. The first who mentioned it was Father Antonio Monserrate (1536-1600) who called it Mansarüor and even offered a small map of the lake. Much later (1638); Johann van Twist has some notion of Purbet (Kailas), Jankenckhaer (Sutlej), and Maseroor (Manasarovar). Walter Schouten, who traveled 1658-65, speaks of "a great sea" Massrout, which he identifies with the Black Sea! Later on it happened that Manasarovar was confounded with Koko-nor, and Lago di Chiamay, that for a hundred years was shown northeast of India on all European maps, is certainly nothing but the famous Lake Manasarovar.

European exploration in Tibet had a brilliant start through the wonderful journey of the Portuguese Jesuit, Father Antonio de Andrade, the founder of the first Catholic mission in Tibet. His journey to Tsaparang or Chaprang on the Sutlej and the ten years of missionary work at that place have been ably recited by C. Wessels, who also has rediscovered a score of other missionaries to Tsaparang and other parts of Tibet. It would take us too far to mention them all. In 1624 Andrade and Manuel Marques crossed the Mana Pass and arrived at Tsaparang. During his second stay in that city 1625 Andrade heard of the great country Utsang, and the next year the two Jesuit missionaries Cacella and Cabral were sent to Tibet. In the beginning of 1627 they went to Bhutan. Cacella continued to Shigatse. In 1628 Cabral joined him. The same year Cabral returned to India by way of Nepal to Katmandu, he being the first European to set foot in this Himalayan state. He regarded Shigatse as "the gate to the whole of Tartary, China, and many other pagan countries." Cacella also returned to India, and on his way back to Tibet died at Shigatse in 1630. After a visit in Shigatse by Cabral the Utsang Mission was given up. Thus, this early Jesuit mission had entered Tibet by three roads. The geographical results were meagre, for these missionaries crossed the highest mountain system in the world without having a word to say about it.

The journey undertaken (1661-62) by the two Jesuit fathers, Grueber and Dorville, from Peking by way of the Koko-nor through Tibet to Lhasa and thence to India was a brilliant achievement for



its time. They were the first Europeans who ever reached the capital of Tibet. Though Father Gerbillon, who in 1688-98 made several journeys in eastern Mongolia, never was in Tibet himself, the description he gives of the roads from Koko-nor to Lhasa is much better than that of Father Grueber. Gerbillon tells more of the gigantic mountains and the accentuated plastic features of the highlands than Grueber. The French Jesuit, friend of the great emperor K'ang-hi, heard that the Dalai Lama resided in a palace on a mountain, Poutala. "At the foot of this mountain one sees a rather great river flowing, which is called Kaltjou muren. It is said to be a very nice place, and in the middle of the mountain is the pagoda with its seven stories."

In the beginning of the eighteenth century the scientifically trained Jesuits in Peking accomplished the famous imperial map of China. The order to make this work was given in 1708 by the emperor K'ang-hi. The Jesuits Bouvet, Régis, Jartoux, Fridelli, Cardosa, Mailla, and Henderer undertook the work. After long preparations the emperor ordered two Lamas to make a map of the countries subject to the Great Lama from Sining to Lhasa and thence to the sources of the Ganges. In 1717 the material of the Lamas' survey was delivered to Father Régis, who found it good and mapped it out into three sheets. In 1773 these were published in Paris by D'Anville. Some parts of these maps are rather good, others are far from reality. We find Mount Kailas and Lake Manasarovar, and they had gained the erroneous idea that the Ganges originated there. Mount Everest is to be found under its Tibetan name Chomo-lungma. The source of the Tsangpo-Brahmaputra is far better than Nain Sing's a hundred and fifty years later.

At the same time European missionaries were at work in Tibet. In 1707 and 1709 Capuchin missionaries founded a station at Lhasa, and in 1716 three more arrived. Half a year before their arrival the most brilliant and intelligent of all missionaries in Tibet, Ippolito Desideri, had made his entrance into the holy city. Accompanied by Emanuel Freyre, he started from Ladak in June, 1715, and as the first European traveled along the upper Indus to Manasarovar and then in the valley of the Tsangpo to Lhasa. Desideri remained five years in Tibet and left Lhasa in April, 1721. He was the last missionary of the Jesuits in Tibet.

Dr. De Filippi has just published Desideri's manuscripts with an introduction by C. Wessels. Here full justice has been done to

this admirable Jesuit father who knew "the wide plains called Ciang Tang (Chang-tang), Trescij-Khang (Tashi-kang), Cartoa (Gar-tok), Mount Ngnari-Giongar (Kailas), and the plain, Retoa, with a great lake, of which Desideri says: "It is believed to be the source of the Ganges. But from my own observation and from what I heard from various people who knew this country and the whole of Mogol, it seems that the above mentioned mountain Ngnari-Giongar (Kailas) must be regarded as the fountain-head not only of the river Ganges, but also of the Indus, Mount Ngnari-Giongar being the highest point of this region the water drains off on two sides." He tells us that the Indus drains to the west. "On the eastern side another large body of water flows into Lake Retoa and eventually forms the river Ganges." There is such a river falling into the lake, though Desideri could not see it in the beginning of December.

Desideri is the first European traveler who ever visited Manasarovar, as he is also the discoverer of Mount Kailas and tells about the *korle* or "pilgrimage" around the sacred mountain. He started the controversy about the location of the source of the Indus, and his own view comes very near the truth. He is also the first who ventilated the question as to the source of the Ganges. He was told that the sacred river originated from the Manasarovar, but in his own opinion it was situated on the Kailas and then entered the lake, a problem which he could not solve as he did not go sufficiently far south and southeast. At the same time the Lamas confounded the Sutlej with the Ganges. Desideri discovered the water-parting between the Sutlej and the Brahmaputra in Maryum-la, and he is the first European to follow the Tsangpo from Maryum-la to Chetang. His description of the people of Tibet and its religion is surprisingly clear and correct.

On his way to Kutti he crossed "the high and difficult mountain called Langur." Wiser than other travelers of the time, who believed that the mountain sickness was due to exhalations from poisonous plants or minerals, Desideri gives an excellent description of his symptoms and says, "Many believe such discomforts are caused by exhalations from some minerals in the bowels of the mountains, but as until now no trace of these minerals has been discovered, I am inclined to think the keen penetrating air is to blame; I am the more persuaded of this because my chest and breathing became worse when I met the wind on the top of Langur."

For a hundred years after Desideri no European, as far as we know, visited the sacred lake and the region of the sources of the great rivers. In 1812 William Moorcroft made his interesting journey to the lakes and stated that no river flowed out of Manasarovar and Rakas-tal.

In the following years the region was visited by James B. Fraser, Alexander Gerard, J. D. Herbert, Francis Hamilton, and Henry Strachey (1846), who found no superficial effluence from Rakas-tal, but a stream a hundred feet broad and three feet deep going out of Manasarovar and emptying itself in Rakas-tal. In 1848 Richard Strachey traveled to the lakes and found an effluence from Manasarovar to Rakas-tal.

Alexander Cunningham, the brothers Schlagintweit, and many other travelers have visited these parts of Tibet. About 1861, Captain T. G. Montgomerie began to send pandits, British subjects, who were trained for exploration, into the unknown parts of Tibet. One of the most famous of these, Nain Sing, went to Lhasa through central Tibet and through the whole valley of the Tsangpo, the same road as Desideri. From their reports Montgomerie published excellent narratives and maps.

In 1897-1903 the Japanese priest, Ekai Kawaguchi, made his interesting journey through southern Tibet. He says that all Europeans who have visited Manasarovar represent it too small. In reality, he says, its circumference is about 200 miles, though as a matter of fact it is only 45 miles. He also says that the Rakas-tal is the higher of the two lakes, though Manasarovar in reality is thirteen meters higher than Rakas-tal.

In 1904 four British officers, Major C. H. D. Ryder, Captain C. G. Rawling, Captain H. Wood, and Lieutenant F. M. Bailey, traveled the same way from Lhasa to Manasarovar as Desideri, though in opposite direction. Ryder found "the lakes being now entirely disconnected at all times of the year from the Sutlej river," and he therefore places the source of the Sutlej in the hills west of the lake.

In 1907 I reached the sources of the Tsangpo-Brahmaputra and the Indus and located the source of the Sutlej approximately. At that time there was no connection between the two lakes, nor were they connected with the Sutlej, but in 1911 I received information that water again flowed from the Manasarovar to the Rakas-tal, but not from the latter to the Sutlej.



In 1864 Thomas W. Webber made a hunting trip in the region around the upper Tsangpo without penetrating to its source, nor did Nain Sing on his journey (1865) through the Tsangpo valley reach the source of the famous river. Kawaguchi has some valuable information about its source. Desideri is as usual the most perspicacious of the old travelers and even tells us that the Tsangpo is the upper course of the Brahmaputra. This settled a problem that took nearly 200 years for European geographers to solve.

Fra Cassiano Beligatti, who in 1741 traveled from Nepal to the Capuchin station in Lhasa, gained the curious impression that the Ki-chu, the river of Lhasa, was the upper course of the Tsangpo.

Still in 1906 a patch of 65,000 square miles to the north of the Tsangpo was unknown. The mountain system filling this region and stretching from west to east I have called the Trans-Himalaya. Its eastern continuation had in 1661-62 been crossed by the Jesuit fathers, Grueber and Dorville. They went from Koko-nor by the pass of Tang-la to Reting-gompa and Lhasa and continued by Shigatse to Katmandu. The Capuchin father, Orazio della Penna, has written a good description of the Chang-tang or Northern Plain and other parts of Tibet, but he only traveled to and from Lhasa himself and therefore quotes the Dutchman, Samuel van de Putte, who in 1738 traveled from Lhasa to Peking and back and who shortly before his death at Batavia burnt all his notes. Nearly two hundred years elapsed until the famous journey of the French Lazarist fathers, Huc and Gabet, along the same route as Grueber and Dorville and van de Putte. They crossed the Trans-Himalaya at Tang-la.

A little before that time three great German geographers, Julius Klaproth, Carl Ritter, and Alexander von Humboldt, with all available material tried to construct the main features of the orographical backbones of Asia. Brian Hodgson in 1857 made a similar attempt, though less successful than the Germans. Such able and learned scholars as Joseph Hooker, Thomas Thomson, A. Campbell, and Alexander Cunningham could possibly see some parts of the Trans-Himalaya at a distance, but had no real conception of its existence as a gigantic mountain system. In the years 1867 and 1873 a few pandits were sent by Major Montgomerie into the interior of Tibet, but none of them crossed the white patch of unknown land. One of them in 1871-72 crossed the Trans-Himalaya at Khalamba-la which is situated east of my easternmost pass, Sela-la. In 1873-74 Nain

Sing made his important journey along the northern foot of the Trans-Himalaya, on which he discovered several of the great central lakes, Dangra-yum-tso, Ngangze-tso, and Kyaring-tso.

Sarat Chandra Das traveled in Tibet in 1879-1881 and made many important observations, most of them with reference to the people and their religion.

From 1870 to 1885 General N. M. Prshevalsky carried out a series of epoch-making journeys in eastern Tibet. His pupils, Ro-borovsky and Kosloff, continued his brilliant work.

In 1877 Baron Ferdinand von Richthofen, who was thoroughly familiar with the geography and geology of China, published his magnificent work, *China*, which shows an enormous increase in our knowledge since Ritter and Humboldt.

Gabriel Bonvalot and Prince Henry of Orléans crossed Tibet from Lop-nor in 1889 and reached the Trans-Himalaya at Dam-la whence they were forced to turn east. The same was true of Dutreuil de Rhins and Fernand Grenard in 1893-94; in the course of this journey Dutreuil de Rhins was murdered. From the north shore of Tengri-nor they were forced east by the Tibetans. St. George R. Littledale, in 1895, made a similar attempt and crossed the Trans-Himalaya at Goring-la, and was turned west. The following year I crossed northern Tibet between Arkatagh and Kokoshili at the same time as Captain Wellby crossed the country south of Kokoshili.

Captain Bower crossed the whole of Central Tibet from west to east in 1890, and in 1896 Captain C. Deasy explored, in western Tibet, a region which was the object of Captain C. G. Rawling's exploration in 1903, the same year as the American, O. T. Crosby, and the Frenchman, Fernand Anginieur, traveled a little farther north.

In eastern Tibet the American, W. W. Rockhill, has conducted two very important expeditions which he has described with the knowledge and perspicacity of a real oriental scholar. Approximately on Huc's route Tibet was crossed in 1905 by Count de Lesdain. In the same region we have also to remember General George Pereira who went on foot to Lhasa (1921-22) with only six native followers. There also, Professor Nicolai Roerich made his journey, and two other travelers have penetrated into Lhasa in recent years, Mme David Neel and William MacGovern. In northeastern Tibet the most important work was done by Dr. Albert Tafel. Two jour-

neys were made by Dr. Wilhelm Filchner, one in the northeast and the other (1925-28) from east to west through Central Tibet on which he touched a couple of the central lakes. Jebbu and Chone on the boundary of northeastern Tibet to Kansu have been visited by the American scientists, Dr. Rock and Dr. Berthold Laufer, and by the Swede, Dr. Daird Hummel, a member of my last expedition.

Sir Henry Hayden and Cesar Cosson, in 1922, proceeded from Lhasa to Dangra-yum-tso. It was a great loss to science that Sir Henry was killed in the Alps before he had elaborated his very important geological results. So far, his is the only expedition that has crossed the great white patch after my journey in 1906-08. In 1900-02 I crossed Tibet in several directions.

It would take us too far would we try and remember all the travelers in westernmost Tibet. Less than a century has passed away since the Karakorum first was looked upon as an individual mountain system. One of the first travelers to get some information of these regions was François Bernier in 1664, but all he knew was that a caravan road joined Kashmir and Ladak with Kashgar and Khotan. Lieut. Macartney of the Kabul Mission of 1808 is probably the first European to use the name "Karra-Koorrum."

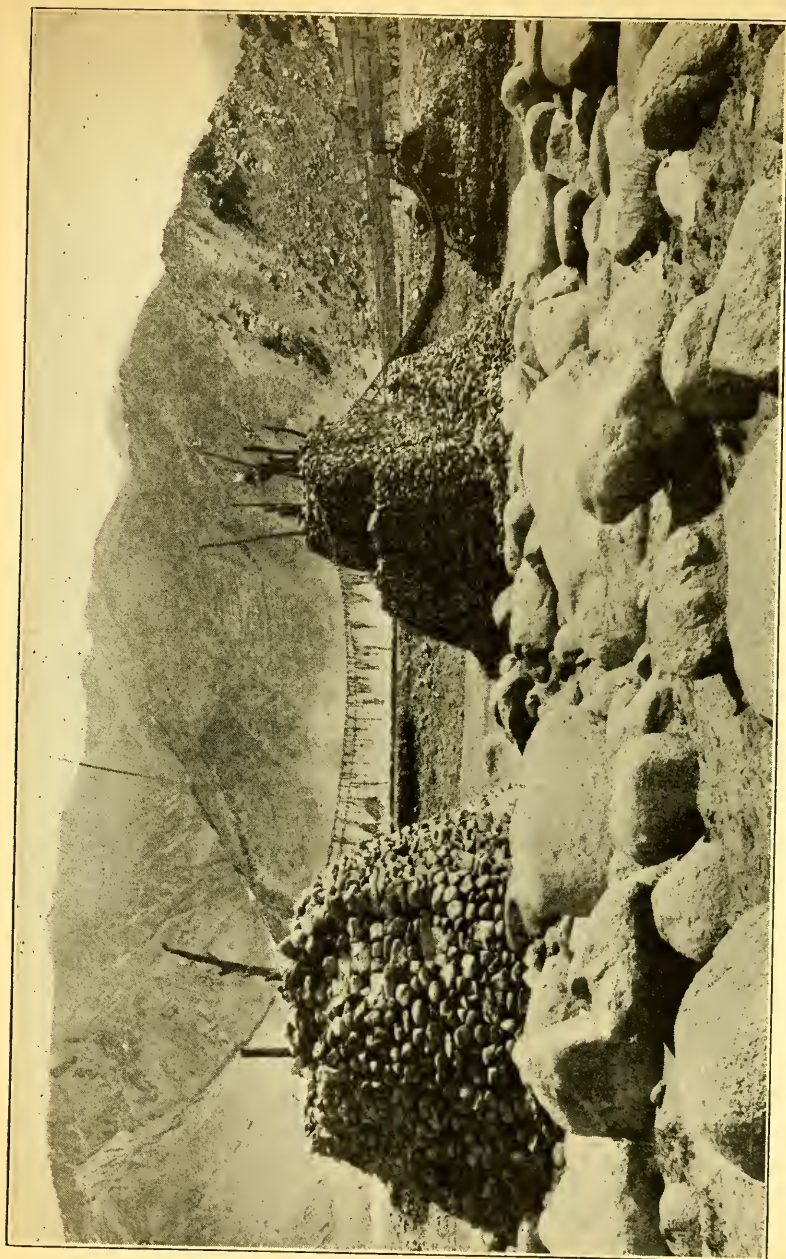
Herman and Robert Schlagintweit in 1856 gave Europe very valuable scientific knowledge of these parts of Tibet, and so did Adolph Schlagintweit who was murdered in Kashgar in 1857. W. H. Johnson, in 1865, was the first to cross the highland to Khotan. In western Tibet and the Karakorum we have to remember K. H. Godwin-Austen, Robert Shaw, J. W. Hayward, and T. Douglas Forsyth's two important expeditions in 1870 and 1873, the latter with a great staff of scientists, most able among them the geologist, Dr. Stoliczka. During the Great War Dr. Filippo de Filippi's well-organized scientific expedition in the Karakorum advanced our knowledge of these regions. And in 1927-29 Dr. Emil Trinkler and Dr. de Terra did excellent work in western Tibet. Just now, in 1932, Dr. Erik Norin, geologist of my expedition, has crossed northern and western Tibet from the region of Lake Lighten to Ladak, while my astronomical member, Dr. Nils Ambolt, is on his way through northern Tibet to Temirlik and Astintagh. He has carried out a great number of pendulum observations for determination of gravity. In 1928 two other members of my staff, Folke Bergman and Lieut. H. Haslund, traveled in northeastern Tibet.

Thus, our geographical knowledge of Tibet has grown gradually through centuries. Every new expedition has contributed more or less, and since Fra Mauro's first entry of the name Tebet on his map of 1459, our conception of the country has increased step by step. In later years some political and sporting expeditions have given their valuable share to our knowledge; for instance, Sir Francis Younghusband's campaign in 1903-04, and the Mount Everest expeditions of 1921, 1922, and 1924, which cost Mallory, Irvin, and several natives their lives. A very valuable contribution has been given, also, by Burrard's and Hayden's *Sketch of the Himalaya Mountains and Tibet*, and nobody has more thoroughly studied the Tibetans in their daily and religious life than Sir Charles Bell who spent a year in Lhasa.

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Tibet is the highest and the greatest mountainous upheaval of the earth's crust. At its southern edge is Mount Everest, the highest peak in the world, rising 29,002 feet. Since the middle of the Tertiary epoch and during the following geological periods, strong tangential movements in the earth's crust forced the bottom of the sea, which then covered most of Europe and Asia, to rise. Against the resistance of Indo-Africa, the whole southern part of Eurasia was raised into enormous earth-waves, and the ridges of these folds, the tops of the future mountain ranges, were, in the course of ages, gradually rising above the sea. The oldest folds, Kunlun, were located in the north, after them Karakorum, Trans-Himalaya, and finally Himalaya were formed, the last-mentioned being the southern edge of the magnificent region of upheaval. The wall that was strong enough to offer resistance to the continued formation of folds farther south was the Indian peninsula and the mountain masses in it which are hidden below the surface of the earth. Toward the end of the Pliocene and before the beginning of the Pleistocene, the folding activity ceased after having definitely built up the great mountain systems, in which the atmospheric agencies were active as they still are to this day—denudation, weathering, erosion, and deposition. According to Anders Hennig, who has worked out and published the interpretation of the collection of specimens of rocks which I brought home in 1909, the latitudinal valley which separates Trans-Himalaya from Himalaya and through which the upper courses of the Indus and the Brahmaputra flow, is mainly an erosive formation, even if this valley originally was of tectonic or





THE BRIDGE BETWEEN CHAGA AND PINDSOLING

Photograph by Dr. Sven Hedin



orogenetic character. The other latitudinal valleys in central and northern Tibet may, on the other hand, be regarded as tectonic fold-valleys.

Some sixty years ago knowledge of the plastic of the Tibetan highland was very scanty. When the Indian Pandit, Nain Sing, in 1873 told us that one could drive in a car from Panggong-tso to Dangra-yum-tso without crossing a single pass, one got the impression of a rather even plateau. On his journey (1876-77) Prshewalsky showed that the Tibetan highland with very high mountain ranges stretched the whole way to the neighborhood of Lop-nor, a fact of which even the able Jesuits had been ignorant. Since then the expeditions to the interior of Tibet have proved that several great mountain systems, somewhat diverging to the east, are filling up the whole interior of Tibet, the Kunlun, Karakorum, Trans-Himalaya, and Himalaya being the principal ones.

We know also that the whole interior of the Tibetan highland is self-contained, i.e., has no outlet either to the sea or to Central Asia. I have calculated that this self-contained portion occupies an area of 718,000 square kilometers, nearly as much as Sweden and Norway together. In the west, south, and east the boundary of the triangular self-contained region coincides with the continental water-parting, outside of which the peripheric regions are situated with their accentuated relief, their vertical lines, and their deep-cut valleys occupied by the source branches of the Indus, Ganges, Tsangpo-Brahmaputra, Mekong, Salwen, Yangtse-kiang and Hwang-ho. The self-contained interior of Tibet consists of some hundred and fifty large and several thousand small individual basins. The largest of all, that of Selling-tso, has an area of 33,000 square kilometers. In the lowest part of each basin there is a salt lake. Very often fresh water lakes are connected with them. The lakes are formed by three different causes—by the damming up of a main valley, by the gravel scree from a tributary valley, and by glacial erosion or differential movements in the earth's crust.

All lakes of Tibet are in a state of dessication, and old beach-lines may very often be seen around them. At Poru-tso I found them at 108 meters and at Lakor-tso at 133 meters above the present level of the lake. Both are situated in western Tibet.

It has been suggested that the lakes are drying up because of the still continued rising of the Himalayas by which the water-carrying cloud masses of the southwest monsoon in constantly increasing de-

gree are prevented from crossing the mountain ranges. On the other hand, the dessication proceeds much quicker than the upheaval of the mountains. The drying-up of the lakes seems rather to be due to the periodical changes of climate. In the famous pair of lakes, Manasarovar and Rakas-tal, it is easy to observe a double period, one of higher order on which the outflow of the Sutlej from the Rakas-tal depends, and one of lower order that influences the channel between the two lakes. Two hundred years ago, when Desideri traveled there, the Sutlej flowed out of Rakas-tal, but since then both lakes have been cut off from the river. In the years 1819, 1846, 1848, and 1910 the channel between the lakes was in function, but during other years it has been dry. These two lakes constitute the best instrument for studying the two periods one of which embraces centuries, the other decades. However, Sir Sidney Burrard is perfectly correct in saying that both lakes still belong to the drainage of the Sutlej.

In the interior of Tibet the leveling is still going on. As there is no vegetation, except scanty grass, and as the differences of temperature between day and night, summer and winter, are so great, the weathering is very effective. Wind and running water constantly carry the fine material down to the central parts of the basins. In the course of thousands of years the mountain ridges are lowered, and the bottoms of the basins are gradually filled. The relative altitudes decrease and the surface becomes more and more even. The absolute altitudes above the sea are enormous, in the north 16,000 feet, in the valley of the Tsangpo-Brahmaputra 14,000.

An interesting geographical homology is the following. At the northern foot of the Gurla-mandata is Lake Manasarovar, at the northern foot of Targo-gangri is Dangra-yum-tso, and at the northern foot of Nien-chen-tang-la is Tengri-nor. Each of the three highest mountains of Tibet thus has at its northern foot one of the largest lakes of the country, and all three are sacred in the eyes of the Tibetans. Here, of course, the differences of altitude are great. As Burrard shows, it is also a curious fact that the great ocean-going rivers have cut their valleys through the Himalayas in the immediate neighborhood of the highest mountain peaks.

The climate of Tibet is very hard. In winter I experienced  $-39.8^{\circ}$  C. The summers are pleasant, especially in the southern parts. In the north one encounters hail-storms and snow even in midsummer. Very trying are the hard storms, generally coming from

the southwest and west. As a rule the snowfall in winter is not very heavy, though occasionally one must travel through deep snow. The summer is the rainy season, and the rains in the east and the south-east may be rather heavy and continuous. The abundant precipitation in these parts of the country gives rise to the great rivers. Wild animals abound, especially in the northern and the central parts of Tibet. The wild yaks roam about in herds of many hundreds, and the kiang or wild asses by thousands, though occasionally in small herds or even alone. The antelopes and gazelles are very numerous, and in rock regions the wild sheep. The Tibetan bear is mostly living on hares; the wolves, on antelopes. Foxes are seldom seen.

In the southeast barley, mustard, wheat, radishes, turnips, peas, and other vegetables are cultivated. A good deal of arable ground is to be found in the lower valleys. Only there trees are seen. The apricot and walnut are not rare, and even forests grow in valleys and on mountain slopes. Hail-storms and frosts are the most dangerous enemies of the crops. In the interior there is not one tree, and even bushes are extremely rare. Only in the Indus valley from Gartok to Ladak and not far from the southern shore of Dangrayum-tso did I find scanty bushes. Otherwise even grass is very rare in the interior, though quite sufficient for the flocks of sheep and yaks of the nomads and for the wild animals.

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The name Tibet as used in the western world is unknown to the Tibetans themselves. They call their country Bod-yul or Pö. Tö-pö or Upper Tibet may have created the form Tobbot used by the Arabic geographers. Pian de Carpine introduced the name Thabet to Europe whereas Rubruk and Marco Polo used the form Tebet which also appears on Fra Mauro's and many other maps. The Chinese called it by different names at different periods—T'u-fan, Hsi-fan, and Wu-tsang. Barontola is a Mongol appellation of Lhasa which found its way to many old European maps.

Tibet is situated between 27° and 39° N. latitude and 78° and 100° E. longitude. It is about one seventh of the area of the United States and seven times the area of the British Isles.

On the Leh-Gartok trade route, the boundary between Ladak (Kashmir) and Tibet is very well demarcated, but north of that road the boundary is very much imaginary, and this is to a still higher degree the case in the north, in the system of the Kunlun

mountains where nobody can tell where the boundary line between Sin-kiang and Tibet runs. If the extent of the wanderings of the Tibetan yak-hunters, to about 33° or 34° N. latitude, should be regarded as signifying the extension of Tibet, this country would not even reach as far as the Kunlun system. In the east the Chinese provinces of Kansu, Szechuan, and Yünan are neighbors of Tibet; of several districts it is difficult to say whether they belong to China or to Tibet, as they are in dispute between both countries. British India shares a boundary of some two thousand miles with Tibet, which is generally demarcated by the Himalayas.

According to Dr. Laufer, Tibet was uninhabited some two thousand years ago, and we cannot speak of a state of Tibet as a national and political unit before the beginning of the seventh century A.D. We know nothing of an ancient culture within its boundaries. Before that time numerous tribes, who were not aborigines, but immigrants from western China at a very early date, lived amid the mountains. Thus the expansion has gone from east to west, and Tibet has been its limit. The only struggles these immigrants engaged in were to press the Himalayan tribes southward which must have taken place not earlier than the fourth or fifth century of our era.

According to their own tradition, the Tibetans are descended from a monkey who was an incarnation of the compassionate Bodhisattva, Chen-re-zi (Avalokitesvara).

The early history of the "Snowland" is hidden in clouds, and not before the seventh century do we meet a real historical personage, the great king, Song Tsen Gampo (written Srong btsan sgampo), who was converted to Buddhism by his two queens, a Chinese and a Nepalese princess, in allusion to the fact that Tibetan civilization came from both China and India. Song Tsen Gampo organized the priesthood, built monasteries, and introduced writing, laws, and religious spirit, though much of the old animistic Bon religion with its shamanistic worship of nature, its good and evil spirits of earth, sky, rivers, and lakes, its sacrifices of human beings and animals, its sorcerers and soothsayers, and magical drums remained, and was adopted into the new religion. In eastern and southeastern Tibet survivals of the old Bon religion and even Bon monasteries still exist. Every traveler in Tibet has observed many superstitious features among the people, obviously survivals of their old primitive faith.

King Song Tsen Gampo was also the victorious warrior who conquered great parts of Burma, Nepal, and western China. Where Potala is now situated he built his royal palace. The civilization he gave Tibet was strongly influenced by China, while the religious influence came from Nepal and India.

In the latter half of the eighth century King Ti-Song Detsen (written K'ri Srong ldeu btsan) made himself famous by summoning the Tantric Buddhist, Padma Sambhava, from northwestern India to Tibet, where he became the real founder of the new religion. He built the first famous monastery, Samye, southeast of Lhasa, and is the chief saint of the original Buddhism of Tibet, the sect of the Red Hats. Padma Sambhava is much venerated and is worshiped in the Lamaistic world.

During the reign of Ralpachan (ninth century), the religion developed more and more, and several temples were built. Tibet was a power in those days and included great parts of China, Nepal, and Turkistan.

As an enemy of Buddhism King Langdarma was hated by the Lamas who wrote Tibetan history. He was therefore assassinated by a priest.

When in 1270 Kublai Khan invited the high priest of Sakya and gave him the sovereignty of Tibet, the first step was then taken in establishing a series of priest-kings.

King Changchub Gyaltzen was a supporter of Buddhism and approached China. He was the founder of the Sitya dynasty which in 1635 was ousted by the king of Tsang who soon afterwards was beaten by Gushi Khan and his Ölot Mongols.

While the existing priesthood was called the Red Hats, a new sect, the Yellow Hats or the "Virtuous," was founded by Tsongkhapa, a native of Amdo (1356-1418). He was a great reformer, introducing a more severe code of morals and forbidding the priests to marry and to drink wine. Black art and magic were abolished to a great extent. He also was the founder of the two great monasteries, Galdan and Sera, which, together with Drepung, are called "the three pillars of the State." All three are situated near Lhasa. Tsongkhapa is buried at Galdan. His image is found in almost every temple of Tibet and Mongolia, and is as much honored and worshiped as Buddha himself. The no less famous monastery, Tashi-lhunpo, was founded by Ganden Truppa, and became later the residence of the Tashii-Lama.



Ganden Truppa died in 1474, and after him the belief in the system of reincarnation was diffused all over the country. At the present time it is estimated that nearly one thousand incarnate Lamas live in Tibet.

Sönam Gyatso spread the new religion both over Tibet and Mongolia, and was honored by the Mongol chieftain with the title Dalai Lama Vajradhara, "the all-embracing Lama, Holder of the Thunderbolt."

The famous fifth Dalai Lama, Lobzang Gyatso, in 1641, called on the Ölöts for help against the old church. The Ölöts came and subdued the Red Hats, whereupon the Dalai Lama became sovereign of Tibet and took up his residence in the Potala palace. His teacher became Grand Lama of Tashi-lhunpo and an incarnation of Amitābha, god of Boundless Light and lord of the Western Paradise. The Dalai Lama was and is an incarnation of Avalokitesvara. The Tashi Lama (Panchen Rinpoche or Panchen Bogdo) is regarded as occupying a higher spiritual standing than the Dalai Lama.

Lhasa was made the seat of the central power by the prime minister of the fifth Dalai Lama. The fifth Dalai Lama died in 1680. His death, for political reasons, was kept secret for some time. His successor, Tsangyang Gyatso, led a frivolous life. China now grew more powerful in Tibet and conquered Tachienlu. In 1718 the emperor K'ang-hi made war against Tibet, took Lhasa, and left a strong Manchu garrison there. His grandson, the emperor Ch'ien-lung, strengthened China's power in Tibet and installed two Ambans in Lhasa (1750).

The great Governor General of India, Warren Hastings, in 1774, sent George Bogle to Tashi-lhunpo for the purpose of opening the country to trade with India and studying its possibilities and wealth. Five years later the emperor Ch'ien-lung invited the third Tashi Lama, Palden Yeshe, to Peking where he died in 1780.

In 1783 Samuel Turner was sent to Tashi-lhunpo with the same commission as Bogle. In 1811 Manning traveled to Lhasa.

After some trouble on the boundary the Gurkhas of Nepal attacked Shigatse and Tashi-lhunpo in 1791. The next year the emperor Ch'ien-lung sent a Chinese-Tibetan army the whole way through Tibet and Himalaya against the Gurkhas who were beaten one day's journey from Katmandu, capital of Nepal. Thereupon the power of China and the Ambans increased in Tibet, and Chinese officials were posted in Shigatse, Tingri, Chamdo, and Traya. The

Chumbi Valley and Phari came under Tibetan rule. The Ambans also became influential in the elections of Dalai Lamas and Tashi Lamas.

The following Dalai Lamas all died young as victims of political and religious intrigues. The present Dalai Lama, Ngawang Lobzang Tupden Gyatso, was born in 1876 of humble parentage from Takpo. He is the thirteenth of the dignity, and has occupied his high position since 1903. He can therefore look back upon a very long and, on the whole, happy reign. The occupant of the divine throne in Potala is a Bodhisattva, and as such he is entitled to enter Nirvana, though he consents to be reborn for the benefit of humanity.

The Dalai Lama's power is absolute, though he depends upon the Council, the Lord Chamberlain, and the Chief Secretary. After the death of a Dalai Lama, the Tashi Lama, the abbots of Sera, Drepung and Galdan, the state oracle at Lhasa and the oracle at Samye gather and select a successor. Among several boys they decide as to who is the right one; this is revealed by signs and miracles. For the final decision the golden urn given by the emperor in 1793 may be used.

In the Dalai Lama's surroundings the Lord Chamberlain is the head of all ecclesiastical officials in Tibet, whereas the Chief Secretary is responsible for the communication between the Dalai Lama and the outer world; he may be more powerful even than the Council, and he has ten assistants. Further, there are a Master of the Bed Chamber, a Court Chaplain, a Chief Butler, and others.

A few important dates in the modern history of Tibet may be of interest, the more so as the present Dalai Lama has proved to be an able statesman and a clever politician. In 1890 the British took a step approaching Tibet on the treaty that recognized a British protectorate over Sikkim, and three years later a new treaty established Yatung as a trade mart on the Tibetan side. After some frontier disputes in 1899, the Dalai Lama returned letters from Lord Curzon unopened. At the same time he seemed to be in negotiations with Russia through the assistance of his old tutor, the Buriat Dorjjeff, who was sent with rich presents to the czar. Lord Curzon regarded a strong Russian influence in Tibet as a danger to India, and in 1903, therefore, sent a military expedition under Sir Francis Younghusband by way of Gyantse and Tuna to Lhasa, where it arrived in the spring of 1904. Shortly before its arrival

the Dalai Lama had fled to Urga, capital of Mongolia and seat of the Gegen Hutuktu.

Among the paragraphs of the treaty of Lhasa were the following: Two new marts to be opened for British trade—Gyangtse and Gartok. No duties on British merchandise. Half a million pounds to be paid in 75 annual installments. The Chumbi Valley to be occupied by the British until the whole amount be paid. Tibet to have no intercourse with other powers.

After Russian protests in London the British Government disavowed a good deal of what Younghusband had accomplished. The indemnity was cut down to 166,000 pounds, and the Chumbi Valley was to be evacuated within three years. The main result of the mission to Lhasa was a great increase of China's power in Tibet. The Chinese paid the sum of 166,000 pounds, and in 1907 the Chumbi Valley was restored to Tibet.

After the convention between Great Britain and China in 1906, which granted China the exclusive right to concessions in Tibet, Chang Yin Tang was appointed High Commissioner for Tibet. He controlled the intercourse between India and Tibet and lessened British influence.

In 1907 Great Britain and Russia made an agreement to prevent friction in Asia. It concerned Persia, Afghanistan, and Tibet. The two powers decided to abstain from interference in Tibetan affairs. Negotiations in Tibet should be carried out only through China as intermediary. No representatives should be allowed in Lhasa. No concessions for roads or mines should be made. During three years no scientific expeditions should be allowed—as if the scientific exploration of Tibet had not sufficient difficulties to overcome even without the assistance of European powers!

The Chinese lost face by not taking part in the agreement, by which, however, their power in Tibet increased considerably. In 1908 trade regulations signed by Great Britain, China, and Tibet prohibited British subjects from traveling in Tibet beyond the new marts, Gyangtse and Gartok. Therefore the old Hindu pilgrimages to Manasarovar could not be undertaken without breaking the law. In a few years Tibet had come under Chinese domination, a direct consequence of the strange policy of Great Britain, Younghusband's mission, and the treaties. Chang Yin Tang made energetic propaganda in Tibet. Through Tachienlu Chinese troops were sent into the country, and great parts of eastern Tibet were occupied.

The Dalai Lama, who had fled in 1904, was deposed by the emperor. In 1908 the Tibetan hierarch went to Peking where he performed rites at the burial of the emperor Kuang-sü and the old Empress Dowager. In December of the same year he left Peking and returned to his capital a year later. On February 12, 1910, Chinese troops entered Lhasa. The following night the Dalai Lama with all his ministers again fled from his capital, taking the seals of office along. At Chaksam Ferry on the Tsangpo he left a detachment of soldiers to hold back his Chinese pursuers. After a nine-day journey he crossed the frontier of Sikkim and a few days later arrived in Darjeeling, where he was very well received. A second time the Chinese deposed him, an action ridiculed by the Tibetans.

China had some three thousand soldiers in Tibet, and her power was absolute. Great Britain was prevented by treaties from helping Tibet. She had to abandon Tibet to China. The Ambans were absolute despots in Lhasa, and China now turned her attention to Nepal and Bhutan as feudatory states, though without success. The Chinese revolution of 1911 suddenly changed the situation. In November the garrisons mutinied, and during the summer of 1912 China lost her power in Central Tibet. After spending two years in Darjeeling as guest of the British with Sir Charles Bell as interpreter, the Dalai Lama returned to Lhasa. The Chinese troops were expelled by way of Sikkim and India. At the same time the governor of Szechuan sent troops to restore Chinese power in Tibet.

Far north of Tibet other political moves took place. At the end of 1912 Russia made an agreement with Mongolia in Urga, agreed to preserve Mongolia's autonomy, and obtained economical and political privileges which gradually led to complete control over Outer Mongolia. The next year an agreement was concluded between Russia and China in which Russia acknowledged the suzerainty of China over Mongolia, and China recognized Mongolia's autonomy. The same year a treaty was concluded between Mongolia and Tibet to aid each other in case of danger. Autonomy in Tibet was a British interest as a strong Tibet would mean a protection to India in the north.

In October of 1913 a conference took place in Simla, and in April of the following year a convention was concluded in which China's suzerainty was recognized. China was not to convert Tibet into a Chinese province. Great Britain was not allowed to make any

annexations. Autonomy was accorded to outer Tibet (Lhasa, Shigatse, etc.). Chinese troops were not allowed in outer Tibet. But China was not forbidden to send troops to inner Tibet (Litang, Batang, etc.). A Chinese Amban in Lhasa was granted a guard of three hundred men. The British trade agents were allowed to have an escort.

Despite the mistakes made by British statesmen Tibet gradually approached Great Britain. The Tibetan army should be organized according to British principles, and British assistance was desired for mining purposes.

In eastern Tibet the situation was unsettled as both China and Tibet were up in arms there. During the great war the sympathy of Tibet was shown by the Dalai Lama's offer to send one thousand soldiers and by the great monasteries praying for a British victory.

Sir Charles Bell, in 1920, obtained the Dalai Lama's permission for the Mount Everest Expedition, and was in constant contact with the Dalai Lama, his Prime Minister, the Grand Council, and the National Assembly.

The great Manchu emperors were very keen to establish China's power in Tibet for the sake of Mongolia. The two countries were closely connected by the same religion. If China lost her grasp on Tibet, Mongolia would also be lost. Now everything has changed. Outer Mongolia is under Russian control, and the old trade route from Urga to Lhasa is completely cut off. In 1923 I could easily get permission to travel from Peking to Urga. When I asked for the same favor in 1929, it was refused. Before the revolution a great Mongol caravan was twice a year sent to Lhasa. For a long period a Tibetan mission was sent to Peking once in three years, and a Nepalese mission once in five years. This practice also came to an end in 1911. The political situation of Tibet has improved despite the ties with Mongolia being broken. The administration is better, and brigandage is disappearing. The Tibetans still have great religious sympathy with the Mongols. Hitherto some seven hundred Lamas in Tibet have been Mongols, a figure which probably will decrease on account of the political barriers.

We have recited the history of the present, the thirteenth, Dalai Lama. It may not be amiss to say a few words about the Tashi Lama, the Panchen Rinpoche, the sixth who has played a less important part in the history of Tibet, but whose great religious authority and influence and whose charming personality make him



worthy of special attention. In 1905 the Tashi Lama was in India to visit the sacred places of Buddhism. In 1907 when I was his guest in Tashi-lhunpo for forty-seven days, he was twenty-five years old, and had occupied his high position for nineteen years. In 1924 hostilities, as so often before, broke out between Lhasa and Tashi-lhunpo, not so much between the two hierarchs as between the high priests of the principal monasteries. The Dalai Lama followed a policy approaching India-England, while the Tashi Lama adhered to China. Many high priests were on his side, especially the Lamas of Drepung, the headquarters of the Chinese party in Tibet. The Dalai Lama was the stronger of the two, the Tashi Lama fled by way of Koko-nor to Suchow with the intention to continue to Urga. The military chief of Suchow presented to him the invitation of the Chinese government to come to Peking. There he was received with royal honors and established his residence in the palace of the late emperor Kuang-sü in the Nan Hai of the Forbidden City, where I visited him several times in December, 1926.

Afterwards he traveled in Manchuria and Mongolia. During the summer 1929 he was for a long time the guest of the Sunit Wang, blessing pilgrims by the thousands and visiting the greater monasteries. Finally he traveled to Mukden, where he still resided in 1930. In October 1932 he returned to Peking.

Why is he tarrying so long in China, Manchuria, or Mongolia? Is he waiting for some new important political change that may open for him the rocky gates to his beloved Tibet and allow him to return to Amitābha's throne in Tashi-lhunpo? What really happened in Tibet in 1924 is not clear. Ever since Lhasa and Tashi-lhunpo became the two great centers of Lamaism there has been a rivalry between them. Lhasa has officials in Shigatse to watch events in Tashi-lhunpo, as I was very well aware in 1907. Despite the British mission to Lhasa in 1904, the Dalai Lama has turned his sympathy entirely to India-England, and it seems possible that the Tashi-Lama would not go so far in pro-British politics. Therefore he had to leave the country. That the Chinese Government forced him to go to Peking instead of to Urga is easy to understand. Only a few years previously Mongolia had belonged to China. An independent Mongolia or to a still higher degree, a Mongolia in the hands of Soviet Russia could easily be a danger to China, and the highest spiritual authority in the Lamaist world could possibly become dangerous if he used his influence for po-



THE TARGO-GANGRI TO THE NORTHWEST FROM CAMP 150

Photograph by Dr. Sven Hedin

litical aims. Therefore he was forced to go to Peking and to be under Chinese control. Since then the political situation has changed again. Manchuria has been transformed into the state of Manchukuo, and there the Tashi Lama would be free. The Russians would probably not allow him to go to outer Mongolia, the Mongolian republic with its capital, Ulan Batur Khoto ("The Red Hero's City"), as Uрга is now called.

What is going to happen in the future? Nobody knows. It is hazardous to prophesy. Everything that happens is surprising. If China should come again under the iron hands of a T'ang Tai Tsung or a K'ang-hi, she would probably extend her power over Tibet as during two hundred years of Manchu rule, and then the Tashi Lama would no doubt be allowed, and might even wish to return to Amitābha's throne. Under such circumstances Great Britain will try as hitherto to maintain cordial relations with both the Lamaist hierarchs, whose relations with China probably will remain friendly.

As could be expected, the highest mountain land in the world is very sparsely populated. The population is estimated by some as about three or four million, by others as only one million and a half.

As to Tibet proper I would divide it into four belts stretching from west to east. The northernmost embracing the Kunlun and Arka-tagh, the Kokoshili, Dungeure and Buka-magna's nearly parallel mountain systems, and the latitudinal valleys between them, is uninhabited and uninhabitable on account of its tremendous altitude. Only in those parts of this belt which open to eastern Turkistan and where the altitude is moderate are there small communities of East-Turkish tribes, Kirghiz and Tagliks, nomads, and occasionally natives from the southern oases of eastern Turkistan going farther south to dig for gold and called Altunchis or Gold-diggers. In the southern outskirts we sometimes come across a few Tibetan yak hunters, usually possessing a small number of sheep and yaks, but mainly living on the meat of the wild yak and the Orongo antelope (*Pantolops*).

South of this belt and all the way to the northern foot of the Trans-Himalaya we find the country of the nomads (Drokpa). They are far from being numerous. Sometimes one may travel for several days without seeing a single tent. The Drokpas are wandering shepherds living on the milk, butter, and cheese of their sheep and yaks. Some of these shepherds are also hunters. In the southern regions of this belt there are also sedentary people; for instance, at the shore of Dangra-yum-tso, Kyaring-tso, and Tengri-nor, and there are even a few temples, as Sershik-gompa, Mendong-gompa, Lunkar-gompa, and Selipuk-gompa, and several places where gold dust is dug out from sand deposits, as for instance Thok-jalung. The two northern belts together are called Chang-tang or the Northern Plain, and the inhabitants are called Changpas or Northerners.

The third belt is Trans-Himalaya, which may be subdivided into two halves, the boundary between which coincides with the continental water parting. The southern half is much more densely populated than the northern. In the transverse valleys opening to the south and carrying tributaries to the Brahmaputra there are a number of villages of stone huts and small houses, and there are a good many temple monasteries or gompas. The population increases from west to east, as I found on my eight crossings of the Trans-Himalayan system. Still farther east, in the valley of the Ki-chu

where Lhasa is situated, the country is, of course, well populated. There are numerous nomads who live in black tents the whole year round, and half-nomads who during the summer live in stone huts and cultivate barley, but otherwise graze their flocks in the surrounding mountains. In the valley of Mü-chu there are many small villages. Tong is quite a group of villages. Barley, peas, and some wheat are cultivated. As a rule the villages are placed in the mouths of the tributary valleys to make use of the water for irrigating purposes. But even here you may travel a day without seeing a single tent. In the region Tsaruk-gunsa there were thirty tents near together. In the district of Bongba-kyangrang some forty tents remained over winter. The inhabitants of sixty tents have to provide the monks of Selipuk with fuel and water and to take care of their flocks. The district Rundor had a hundred and fifty tents, and at the uppermost Indus I counted thirteen tents. Along the shores of the lakes one never sees a tent. At Ngangtse-tso, for instance, there are fifty or sixty tents, all of them in the lower parts of valleys opening to the lake.

The southernmost belt includes the broad valley of the Tsangpo and the land to the southern boundary of Tibet. As a rule the region of the Tsangpo and eastern Tibet are the most densely populated parts of Tibet.

The Tibetans have several trade routes to China and India. Tachienlu on the eastern border is the greatest trade depot between China and Tibet. The old trade route to Urga in Mongolia does not exist any more. From Kalimpong through Sikkim a very important road enters the Chumbi Valley, by Jelep-la to Phari, Gyangtse, and Lhasa, and there are other roads from Assam to Tibet. From Ladak a road passes along the upper Indus and Tsangpo, but there trade is insignificant. The most important import article is Chinese brick tea, and the principal export articles are wool, hides, musk, and medical herbs. Yaks, ponies, and donkeys are used as beasts of burden, and sheep are used for the transport of salt.

As said before, the whole northern part of Tibet is called Changtang. U is the central province with Lhasa as capital, Tsang is a province of southern Tibet whose capital is Tashi-lhunpo. Ngari khorsum is western Tibet, and central Trans-Himalaya is Bongba. Kham is the name of the eastern part, and the easternmost district of Kham is Nyarong. Considerable parts of Kham are under Chinese control. There are other tribes than Tibetans in eastern Tibet:



for instance, the Derge who are clever metal workers, the Goloks, nomads and brigands, and others; in northeastern Tibet on the borderland of Kansu there are Tanguts who practically are Tibetans. In the south are the Lepchas and Buthias.

The whole country is for the sake of administration subdivided into a great number of districts, whose chiefs have the title of dzongpön.

The population of Tibet is slowly decreasing, the most important causes being polyandry and the celibacy of the Lamas. In the same way the manly warlike qualities of the people of Jengis Khan have deteriorated. As this development was in the interest of the great Manchu emperors, they encouraged Lamaism by all means and built the famous temples of Jehol.

Traveling in Tibet is and has always been a serious undertaking, far more difficult than in most other parts of the globe outside the poles. Therefore our geographical knowledge of the country has developed so slowly, and the scientific exploration has just begun. This is natural by reason of the enormous altitude of the highlands and of the still higher mountain ranges and their passes. As an example I may mention the Trans-Himalayan passes I have crossed and of which seven were unknown before:

Sela-la .....	5506 meters
Chang-la-Pod-la .....	5572 meters
Angden-la .....	5643 meters
Sangmo-bertik-la .....	5820 meters
Samye-la .....	5527 meters
Surnge-la .....	5276 meters
Lhamo-latse-la .....	5426 meters
Jukti-la .....	5825 meters

Thus the highest, Jukti-la, has an altitude of 19,100 feet, and the lowest one Surnge-la 17,300 feet which is very low for Trans-Himalaya.

Every expedition through Tibet proper must therefore be very well equipped with good ponies and mules, and at the start from Ladak or Chinese Turkistan take with them a hundred donkeys or more carrying maize for the beasts of burden. The donkeys have to be sent back when the supply of maize is exhausted, and on the way they have to pick up the dung of yaks and wild asses to keep alive. The most difficult task is to start from the north where

I once had to march two months and four times three months before meeting the first nomads. During these three months through the highest part of the country, about three quarters of the caravan was lost by starvation, fatigue, storms, and cold, and the survivors were in a miserable state when the first nomads were reached and new pack animals, usually yaks and sheep, could be bought.

The journey therefore becomes a continuous fight against natural difficulties, and the traveler has to look out for comparatively favorable places for camping; that is, where some grass is to be found. As a rule he has no difficulty in finding water and fuel, which nearly always consists of yak dung. As soon as he has reached nomads, the worst difficulties are behind him. Usually he finds guides who may show him the best grazing grounds. The marches are very short, thirteen or fourteen miles a day, in winter even less, as it is hard to expose oneself to the terrible cold and the biting wind. Quiet days without a storm or a heavy wind are very rare.

Despite all these hardships a journey through Tibet is very fascinating and full of exciting interest, especially in unknown country, where every mountain, glacier, lake or river and every village, monastery, or nomad's camp is a new addition to human knowledge. The landscape is nearly always majestic in the great solitude of mountain desert, where only the wild yaks, kiangs, and antelopes roam in undisturbed peace. Every evening the cloud formations are modeled in fantastic beauty, and the sunsets are brilliant. As a rule it is easier than in other parts of the world to see the shadow of the earth just after sunset, slowly rising above the eastern horizon.

Approaching the high mountains, Trans-Himalaya and Himalaya, a pilgrim from the western world will enjoy the increasing interest of deep-cut valleys, imposing ridges, and chains, gigantic mountain peaks, considerable rivers, nomads in black tents or sedentary agriculturists in simple stone huts, or the Lamas in their picturesque gompas or monasteries. There he will be captivated by the color and pomp of the religion of Tibet with its mysterious ceremonies and its survivals of spirits and demons of which earth, water, and air are supposed to be full. A westerner who has been fortunate enough to pass some years in Tibet will feel a constant longing to return to the fascinating beauty of a magnificent alpine world and to the mysterious tinkling of golden temple bells.



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