

THROUGH ASIA

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THROUGH ASIA

BY

SVEN HEDIN

WITH NEARLY THREE HUNDRED ILLUSTRATIONS FROM SKETCHES
AND PHOTOGRAPHS BY THE AUTHOR

Vol. I.

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TO
HIS ROYAL HIGHNESS
THE PRINCE OF WALES
THIS RECORD OF
NEARLY FOUR YEARS' TRAVELS
IS
BY HIS PERMISSION
RESPECTFULLY AND GRATEFULLY
DEDICATED

PREFACE

THIS work does not claim to be anything more than a plain account of my journeys through Asia during the years 1893 to 1897. It has been written for the general public, and presents nothing more than a description of my travels and the more memorable of my experiences—not by any means the whole of my experiences. To have recorded everything that I set down in my note-books would have swelled out the book to twice its existing length. Nevertheless those portions of my journey which I have merely touched upon, or have passed over altogether in silence, will not, I trust, be altogether lost. If this book is received with the indulgence which I venture to hope for it, I propose to issue a supplementary volume, to contain a multitude of matters of varied interest and of not less importance than those contained in these pages.

For these reasons the great bulk of the scientific observations I made find no place in the present volumes. All the same I believe the geographer will be able to discover in them something or other that will be of interest to him.

In this place I will content myself with a bare mention of the scientific labours, upon which the chief part of my time, energy, and attention were constantly expended—the drawing of geological sections of the meridional border ranges on the east side of the Pamirs and of the mountain-chains of the Kwen-lun system; the collecting

of anthropometrical measurements from a number of Kirghiz; an inquiry into the periodical migrations of the nomads; a study of the etymology of the geographical nomenclatures; measurement of the volume of every river I crossed; bathymetrical soundings in the lakes; and the collection of botanical specimens, more especially of algæ from the lofty alpine regions of the Pamirs and Tibet. Moreover I devoted special attention to the taking of meteorological observations regularly three times a day. These Dr. Nils Ekholm has kindly undertaken to work out for me. Another important task was the collection of voluminous materials dealing with the geographical character and extent of the Desert of Gobi, as also with the complicated river-system of the Tarim, which I was enabled to study at many different points all the way from the Pamirs and the highland regions of Tibet down to the termination of the stream in the far-distant lake of Lop-nor. Further, I noted the periodical fluctuations in the volumes of the Central Asiatic rivers; how during the summer they swell to flood-like dimensions, and then during the winter dwindle away to, in many cases, paltry rivulets, or even dry up altogether; and how these fluctuations occur with unvarying regularity—the ebb and flow, as it were, that accompany the heart-beats of the mighty continent.

The astronomical observations, which I made for the purpose of checking and controlling my instrumental calculations, consisted of determinations of latitude and time in seventeen several places. The instrument I employed was a prismatic circle, and the object I observed the sun or failing that the moon. Mr. Rosén, who has kindly calculated my results, is satisfied that the errors in the latitudinal observations are in every instance less than fifteen seconds, and in the temporal determinations in all cases under one second. The longitudes of

certain of the stations were already known with scientific exactitude; these data I employed as bases for the determination of the longitudes of the remaining places. By this means too I was enabled to check more effectually the accuracy of my chronometers, a circumstance the more needful seeing that these latter were frequently subjected to the rough vicissitudes of travel through difficult regions. I brought home latitudinal observations for seven fresh places, and longitudinal observations for six.

As soon as I passed beyond the fairly well-known regions of the Russian Pamirs, I took up, in the summer of 1894, the strictly topographical division of my labours, and with dioptra, plane-table, and calculation of paces measured the environs of the lake Little Kara-kul; next I mapped the glaciers of that king of the Central Asiatic mountain-giants, Mus-tagh-ata. After that I surveyed every route I travelled over during the years 1894, 1895, 1896, and the early part of 1897. These important labours were never for a single day remitted. Throughout the whole of the long red line, which marks my travels through Asia, there is not a single break right away to the day (2nd March, 1897) when I rode in at the gate of Peking, and recorded my last entry on the five hundred and fifty-second sheet of my field-book or surveying journal.

In making these measurements I used only a compass and a base-line. The latter varied from 200 (656 feet) to 400 ($1312\frac{1}{2}$ feet) metres, and was in every case accurately measured with the metre-measure. After measuring my base-line, I carefully noted the time it took the caravan, properly laden and travelling at its ordinary average pace, to traverse it from the one end to the other; at the same time I was scrupulous to make all due allowance for the inclination of the ground and other inequalities of the surface.

As a rule I laid down my maps on the scale 1 : 95,000. Across the level expanses of the deserts, however, I worked to the scale 1 : 200,000; and in mountainous regions, where the road wound through defiles, where numerous side-valleys joined the main valley, and where the morphological character of the surface underwent frequent and varying changes, I used the scale of 1 : 50,000. The aggregate distance of the route I mapped in this way amounts to 1049 Swedish miles, or 6520 English miles; that is to say, nearly four and a half times the distance from London to Constantinople, two and a half times the distance from New York to San Francisco, and one and a half times the distance from Cairo to Cape Town, in other words, more than one-quarter of the earth's circumference. If to this be added more than 8000 miles which I travelled by carriage or rail in the better known portions of the continent, we get for the entire extent of my travels a grand total of 14,600 miles, or more than the distance from the North Pole to the South Pole. The rate of travel of my caravans, calculated from the results of the whole of the journey, averages a little over two and three-quarter miles an hour.

Out of the above-mentioned 6520 miles no less than 2020 were through regions which no European had ever before visited. Over certain portions of the remaining 4500 miles one traveller had preceded me, over other portions two travellers, but in no case more than three. Despite that, my observations along even those stretches may claim to possess a certain degree of originality; for being able to speak Jagatai Turki with fluency, I was independent of the errors and wilful deceits of interpreters, and consequently was in a position to gather a good deal of information of a more or less important character which will be new to most readers. For one thing, I was able to record a vast number of geographical names, none of

which had hitherto appeared on any map, European or Asiatic.

As a curiosity, I may mention that the 552 sheets upon which my route is laid down measure 121 yards in length; and this does not include the maps I made of the glaciers of Mus-tagh-ata. For the present these sheets and such other cartographical materials as I brought home with me are lodged at the famous geographical institute of Justus Perthes in Gotha, where they are all being worked out in detail; and the results will be eventually published in *Petermann's Mitteilungen*.

Although fully conscious of the mistakes of my journey, and of the shortcomings of this my book, and whilst aware that a more experienced traveller would have reaped a richer and a more valuable harvest from the fields upon which I laboured, I nevertheless comfort myself with the reflection that I believe I really did my best as far as lay in my power.

A word or two as to the accessories of the book. The two principal maps have been prepared at the Lithographical Institute of the (Swedish) General Staff, under the superintendence of Lieut. H. Byström; my original place-determinations being embodied upon Curzon's map of the Pamirs, and Pievtsoff's map of Central Asia, as foundations for the two maps respectively. Their primary purpose is to illustrate and make clear the routes I followed. Hence they do not claim to be accurate in matters of minute detail; indeed they could not be so, seeing that my cartographical data have not yet been completely worked out.

In consequence of the generosity of my publishers, I am fortunately enabled to impart a fuller measure of life and reality to certain exciting and characteristic incidents of my story by means of pictures drawn by

Swedish artists. The illustrations to which I allude must not however be regarded as mere products of the artistic imagination. For each of them I supplied sufficient material in the nature of sketches and photographs, and where such were wanting I furnished precise and detailed descriptions. In a word, each individual picture has come to life as it were under my own eye and under my own controlling hand; and I cannot help expressing my admiration of the quickness of apprehension and the lively interest which the several artists have manifested in their work.

For the original calculation of the altitudes, which occur throughout these pages, I am indebted to the kindness and skill of Dr. Nils Ekholm. For the conversion of the metric heights and other measurements into feet, miles, etc., and for the conversion of the Celsius scale into the Fahrenheit scale, as well as for the transliteration of the place-names, the translator is responsible.

Finally, it gives me pleasure to acknowledge a special debt of thanks to Mr. J. T. Bealby, B.A., sometime of the editorial staffs of the *Encyclopædia Britannica*, *Chambers' Encyclopædia*, etc., for the ability and experienced and conscientious care with which he has rendered my original Swedish into English. In the translation of a portion of the book Mr. Bealby was assisted by Miss E. H. Hearn.

SVEN HEDIN.

STOCKHOLM, 1st May, 1898.

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