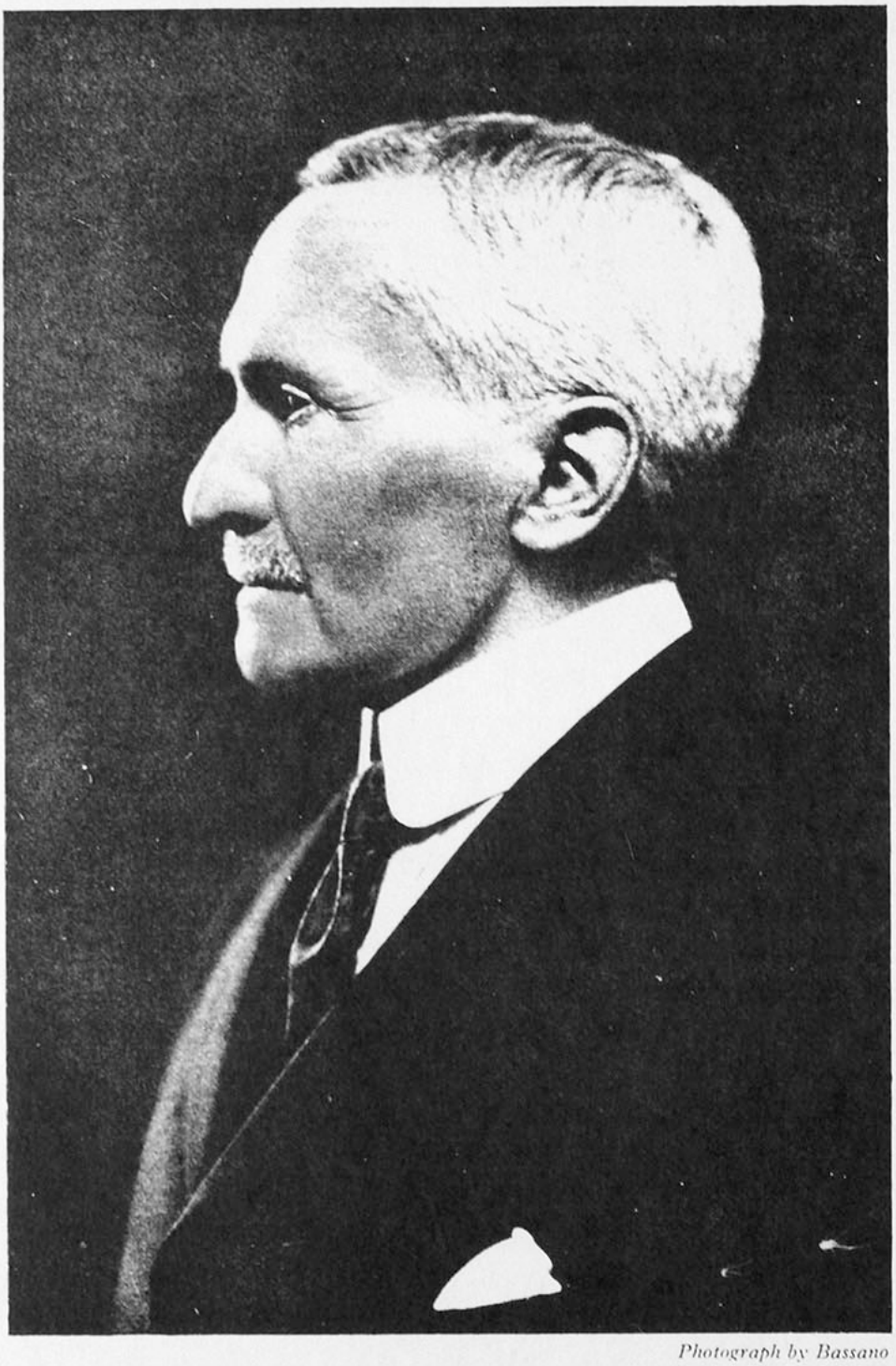

Photograph by Bassano

SIR AUREL STEIN

1862–1943

MARC AUREL STEIN, second son of Nathan and Anna Stein, was born at Budapest on 26 November 1862. As a sister had been born twenty-one years, and a brother, Ernst Eduard, nineteen years earlier, another child had not been expected. His father and mother, who adored him, being elderly, the direction of his education fell chiefly upon his elder brother, helped by his maternal uncle, Professor Ignaz Hirschler. Since childhood he spoke both Hungarian and German. At the age of ten he was sent to the Kreuzschule in Dresden, where he was taught Greek, Latin, French, and English, and a foundation laid for his exceptional linguistic attainments. It was at this school that the Eastern campaign of Alexander the Great first attracted his attention, awakening the ambition of being able one day to explore in ancient Baktria, an ambition which was on the eve of being fulfilled when he died some seventy years later at Kabul. While inheriting from his father's and his mother's side an interest in travel, exploration, and archaeology, he was introduced in his early years to Arminius Vambéry, then famous for his travels in the Central Asian Khanates, and his attention was drawn to the adventures of that great pioneer Tibetan scholar, Csoma de Kőrös. It was the call of the East that inspired him to concentrate on Oriental studies. His abiding interest in the East has been shown by his will, which makes the British Academy his ultimate legatee to form a fund for the promotion of research in Central and Further Asia.

After completing his secondary education at the grammar school in Budapest he went to the universities of Vienna and Leipzig, and then, with the object of advancing his Indian and Iranian studies, to Tübingen, where he worked under the celebrated R. von Roth. In 1884 he went to Oxford and London to complete his linguistic studies. In 1885 he had to return to Budapest to undergo his year's volunteer training. This was completed at the Ludovica, where he also underwent a course of instruction in geography and surveying, which, as he often acknowledged, proved invaluable in after years. In 1886 he returned to London and pursued research in the British Museum, which was destined to house so many of his precious finds. In England he fell under the influence of Lord Reay, Sir Henry Yule, and, in particular, Sir Henry Rawlinson. It was characteristic

of Stein's never-failing gratitude for help rendered that he always cherished the memory of Rawlinson, who was largely instrumental in securing for him employment in India.

His first important, and still valued, contribution to Oriental studies, 'Zoroastrian Deities on Indo-Scythian Coins', appeared in the *Oriental and Babylonian Record* in 1887, at the end of which year he started for India. In February 1888 he was appointed Principal of the Oriental College at Lahore and Registrar of the Panjab University. At Lahore he made the acquaintance, which was to develop into lifelong friendship and collaboration, of F. H. Andrews, then Vice-Principal of the School of Art, but soon to become Principal in succession to Rudyard Kipling's father. There also he renewed acquaintance, first made in Oxford in 1886, with E. D. (now Sir Edward) Maclagan, then in the Panjab Secretariat, another lifelong friend, for whom he had the deepest affection. Sir Edward has recorded[1] a vivid description of Stein's boundless enthusiasm for archaeological exploration, how he was always straining at the collar, constantly asking for periods of special duty or extensions of leave, and how he became a 'real expert in manipulating the mysterious processes of officialdom'.

At Lahore Stein was soon to meet two other men to whom he remained devotedly attached till their deaths. These were P. S. Allen, afterwards President, C.C.C., Oxford, and well known in scholastic circles as editor of the letters of Erasmus, who became Professor of History at the college in 1897, and T. W. (afterwards Sir Thomas) Arnold, who joined the college from Aligarh as Professor of Philosophy in 1898. Whenever he came to England in the intervals between his many expeditions Stein was a welcome guest of Mr. and Mrs. Allen in Oxford or at their charming retreat in the Cotswolds. Of Allen he wrote, after receiving the news of his death in 1933, that he had been 'as dear to me as ever a brother could be for the last 35 years'. Arnold he has called his 'incomparable friend'; and in the provisions of his will conveying his property to the British Academy for the establishment of a fund for Central Asian exploration he desired that the fund should be known as the Stein-Arnold Fund, in memory of this friend.

Toilers on the Panjab plains ordinarily resorted, like some Mughal Emperors of old, to Kashmir for rest and change of climate. Stein fell a victim to the charms of the 'valley'. He became interested in the chronicle of its kings, the *Rājataraṅgiṇī*

[1] *The Hungarian Quarterly*, vol. iv, No. 2.

of Kalhana, the only work so far known of a truly historical character in the vast mass of classical Indian literature. His first vacations and short periods of leave were devoted to strenuous antiquarian research among its hills and valleys for the elucidation of topographical details in the history. Working with the help of a Kashmiri scholar and friend, Pandit Govind Kaul, his masterly edition of the original Sanskrit text was published in 1892. His translation, with notes, geographical memoir, and maps, appeared in two volumes in 1900. This work gave unmistakable proof of his abilities and fine scholarship. During the last few years of his life he gave much time and labour to the preparation of a revised edition of the work, with emendations, additional notes, and illustrations, making many trips to secure photographs of sites mentioned. The question of publication by the Oxford University Press is understood to be under correspondence with the Kashmir Darbar. All orientalists will look forward to its appearance.

Fascinated by the alpine scenery of Kashmir, Stein selected a sequestered site on a meadow-like plateau 11,000 feet above sea-level whereon to pitch tents and retire when compiling his reports. This was Mohand Marg, his 'beloved mountain camp', which he spoke of as his 'only true home', where he stayed after each of his expeditions and could concentrate, undisturbed, on the preparation of the detailed accounts of his travels and discoveries. The cold at that altitude was so intense at times that several letters told of his sitting in his 'fur bag'. High above the Marg was a rocky eminence, with still grander views of the distant snows and intervening forest-clad slopes, to which he used to climb with his friend Andrews, referring to it as his 'tomb'. In the summer of 1943 Andrews received from him a packet of flowers, including edelweiss, with a slip of paper inside inscribed 'a few flowers picked on the climb to my "tomb"': but he was destined to rest elsewhere.

Early in 1898 Stein obtained permission to accompany the Malakand Field Force into Buner, when he succeeded in carrying out a rapid archaeological survey of that hilly area. His report, which was printed by the Panjab Government, may be said to have presaged his future career. In 1893 he contributed a paper on the Shahi Kings of Kabul to the *Festgruss an Rudolf von Roth*. In 1899 he published his *Memoir on the Ancient Geography of Kashmir*, embodying the results of his topographical inquiries in that State. In the same year he was appointed Principal of the Calcutta Madrasa, a post in some respects

uncongenial. His holidays that year were spent on an archaeological tour in the Gaya and Hazaribagh districts, in the course of which he showed his discernment by correcting previously accepted identifications of some ancient sites mentioned by the Chinese Buddhist pilgrims (*Indian Antiquary*, 1901).

His plans for that exploration in Chinese Turkestan which made him world-famous were now matured, and when laid before the Government of India received the cordial and active support of Lord Curzon and his advisers. Of special importance was the assistance rendered, as in all his later journeys, by the Survey of India Department in the deputation of a trained Indian surveyor. In the spring of 1900 he started on the first of his memorable Central Asian expeditions, travelling by the route through Gilgit and Hunza and over the Pamirs to Kashgar. Thence he moved to Khotan and along the southern fringes of the Taklamakan desert, returning to India late in 1901. His discoveries near Khotan, at Dandan-oilik, Niya, and Endere revealed in a remarkable state of preservation, due to the extreme aridity of the area, abundant relics of Indian, Chinese, and Hellenistic cultures that had met and mixed there for almost a thousand years. Near Niya were found hundreds of documents in Kharoshthi, Chinese, and other scripts on wedge-shaped or rectangular wooden tablets or bamboo slips. At Endere he found remains of the oldest Tibetan Buddhist manuscripts yet known. The fascinating story of these discoveries was first told in *Sand-buried Ruins of Khotan* (1903), while the scientific results of the expedition were described in *Archaeological Exploration in Chinese Turkestan* (1901) and in *Ancient Khotan* (2 vols., 1907).

Stein acquired British nationality in 1904. His formal association with the Archaeological Department had already begun by his appointment as Archaeological Surveyor, NW. Frontier Province and Baluchistan, but from 1906 he was engaged in special duty.

In order to explore the widest extent of country he purposely avoided following the same path, unless this were inevitable or necessary for further inquiry. On his second Central Asian expedition he started from Peshawar and travelled over the Malakand pass, through Swat, Dir, Chitral, and Mastuj, over the Darkot and Baroghil passes past the head-waters of the Oxus, over the Wakhjir pass and the Taghdum-bash Pamir, and by the side of the great Mustagh-ata massif down to Kashgar. On his way through the Hindukush and Pamirs he verified the accuracy of the account given in the old Chinese annals of the

military expedition under Kao-Hsien-chih, who with an army of 10,000 in A.D. 747 crossed the Baroghil (12,000 feet) and the difficult Darkot (15,400 feet) passes to invade Yasin and Gilgit—a feat, as Stein noted, which may well be held to surpass the great Alpine feats of Hannibal, Napoleon, and Suvorow. From Kashgar he moved south to the K'un-lun, to secure anthropometric measurements of the Pakhpo tribe, who in their present isolation preserve the main physical features of the *Homo Alpinus* race. He identified Yotkan, seven miles west of the present town of Khotan, as the site of the ancient capital. Re-excavating at Dandan-oilik, which had been abandoned at the end of the eighth century, a rich harvest was reaped of wall-paintings, stucco relievos, painted wooden panels representing legendary scenes or showing Persian and Hellenistic influence, and a quantity of folia, partly in Indian Brahmi script and partly in a then unknown language but subsequently found to have been the indigenous tongue (Saka-Khotani) of the Khotan people.

Nearly 500 miles to the east, at the Miran site, which had been abandoned after the close of the third century A.D., he recovered most interesting wall-paintings, many of unmistakable classical design. A succession of trying marches led to the ruins of ancient Lou-lan, where a Chinese administrative headquarters had stood in the second century B.C. at one of the stages on the earliest route to the west. Here and at a site in the vicinity documents of the third and fourth centuries in Chinese and Kharoshthi script were found, as well as carved panels, textiles, fragments of a woollen-pile carpet (possibly the earliest known), and a torn paper inscribed in an unknown script, after identified as Sogdian. Many more exhausting marches, trying to the utmost the endurance of both men and animals, led across the steeply terraced salt-encrusted bed of the dried-up Lop Sea. That an old route used from ancient to historic times had been struck was proved by the finding of neolithic implements and, besides metal objects and beads, a quantity of Han type coins looking as if fresh from the mint, that had evidently fallen from a receptacle in which they were being carried. Greatly impressed by the organization that could alone have enabled vast traffic to be transported across 120 miles of such formidable desert, Stein pushed on past 'Jade Gate' to Tun-huang, Su-chou, the Nan-shan ranges, and the Etsin-gol basin. It was on this expedition that he traced the ancient Chinese *limes*, or line of wall and fortified posts, which had been built at the close of the second

century B.C. to safeguard the passage of political and military missions and trade caravans. Stein traced this line for about 400 miles from Jade Gate in the west to the Etsin-gol in the east. Digging along it and at the watch-towers he found abundant documents, not only of linguistic importance but also of historical value as throwing light on the political, military, and economic organization of those early times. Among the many interesting objects recovered was a small box inscribed 'The medicine case belonging to the Hsien-ming company'. From the construction and location on vantage points of the towers he inferred, no doubt correctly, how they had served to flash signals by day and night along the route, recalling, I may add, the semaphore towers built for this purpose before the introduction of the telegraph along the Grand Trunk Road from Calcutta to North-West India.

It was on this expedition also that Stein made his perhaps most widely known discovery at the 'Caves of the Thousand Buddhas' at Ch'ien-fo-tung near Tun-huang. Here was made what may be described as his most sensational find of an enormous cache of documents in various languages and scripts, temple banners and paintings on gauze-like silk walled up in a rock-hewn recess since the eleventh century. The story of the infinite patience, tact, and diplomacy by which he ultimately induced the reluctant priest-custodian to disclose, and afterwards part with, these priceless records forms one of the most thrilling romances in the history of archaeological discovery. A popular account of this second expedition appeared in *Ruins of Desert Cathay* (2 vols., 1912), while the detailed scientific record, now much prized and long out of print, was published in five handsome quarto volumes in *Serindia* (1921). Specimens of the art treasures from Ch'ien-fo-tung were illustrated and discussed in the portfolio *The Thousand Buddhas* (1921).

The third and longest Central Asia expedition, made during the years 1913–16, carried Stein much farther afield. This time he chose another line of approach to the desert passing through the hill territories of Darel and Tangir, which had never before been visited by a European, and thence over a succession of difficult snowy passes across the Taghdum-bash Pamir. Journeying along the southern edge of the Taklamakan and the Lop Sea to Kan-chou, the Nan-shan mountains, and Su-chou, he turned northwards down the Etsin-gol basin to Khara-khoto. Later on he traversed for some 500 miles the rugged and sterile Pei-shan, then unsurveyed—a wonderful feat—and passing

through the eastern Karlik-tagh reached Dzungaria, so full of associations with the movements of the Yüeh-chih, Huns, Turks, and Mongols. From Dzungaria he visited Turfan and Bezeklik, and, besides making important finds, surveyed accurately the Turfan depression, which in one part attains a depth of 980 feet below sea-level. From Turfan he went westwards along the skirts of the T'ien-shan to Kashgar, through the Alai Pamir, and crossing the high meridional barrier, the Imaos of Ptolemy, that separated his Inner and Outer Scythias, down Karategin by the route the silk caravans must have followed in classical days, to Samarqand. He then moved southwards to Persian Baluchistan, where he made fresh discoveries in the Helmund basin of Sistan.

Looking back to the reception given by orientalists to the momentous discoveries made on these three expeditions, perhaps the most striking effect, apart from their value in the sphere of linguistics, lay in the opening of a new and unexpected vista of the history, cultural, economic and political, of Central Asia, and the revealing of prolonged intercourse of Indian, Iranian, Hellenistic, and Chinese civilizations in regions which, for many centuries before the sea-route came to be fully used, had provided a corridor of communication between the West and the Far East. Stein succeeded in establishing beyond doubt the lines that had been followed from Kansu to Sogdiana. The spread of Buddhist teaching from north-western India towards China and its paramount influence on the life of the people were abundantly disclosed throughout the area.

The next few years were mostly occupied in seeing *Serindia* through the press and in the preparation of the detailed record of the third expedition, which was published in *Innermost Asia* (3 large 4to vols. with portfolio of maps, 1929). In 1926 a rapid tour of nine weeks, prolific in archaeological and other results, was made throughout the Swat valley, the ancient Udyana of many Buddhist associations, when Stein followed the tracks of Alexander to Mt. Pir-sar, the 'Rock of Aornos', the capture of which had been regarded by the old historians as a feat worthy of Herakles. Many suggestions had been made as to the site of this mountain fastness for a century back, all unsatisfying; and the episode had almost relapsed into the region of myth. Stein had kept the solution of the puzzle in view for nearly thirty years, and had already demonstrated that Mt. Mahaban, the latest favourite, did not fulfil the description of the historians. The manner in which he finally discovered the real site and

established beyond question the correctness of his identification is a striking example of his genius for such topographical inquiry.

Meanwhile epoch-making discoveries made in 1923–5 by Sir John Marshall's assistants at Mohenjo-daro in Sind of an advanced civilization dating back to the third and fourth millennia B.C. had revolutionized our conceptions of the history of Indian culture. Stein, who was familiar with the results of de Morgan's excavations at Susa, as well as with the little known researches of Major Mockler on the Makran coast, and had himself found suggestive material in Sistan in 1916, saw the possibility of tracing vestiges of this prehistoric culture from the Indus valley westwards to the basin of the Tigris. It was the hope of being able to do this, as he told me, that led him to undertake a succession of tours between 1927 and 1936 extending from the Panjab frontier through Waziristan, Baluchistan, Makran, south-eastern, southern, western, and north-western Iran as far as Lake Urumia. In 1927–8 in Waziristan, Baluchistan, and Makran he discovered numerous prehistoric sites, and, making such excavations as the paucity of local labour permitted, recovered abundant remains of the so-called 'chalcolithic' period. Detailed accounts of the results, with illustrative plates and maps prepared from the surveys carried out, have been published as *Memoirs of the Archaeological Survey of India*, under the auspices of which these journeys were made.

In 1929 Stein visited America and delivered at the Lowell Institute, Boston, a series of lectures dealing with his three long expeditions into Central Asia. These lectures formed the basis of a volume entitled *On Ancient Central-Asian Tracks* (1933), which gave a condensed account of the geographical and archaeological exploration made in the years 1900–1, 1906–8, and 1913–16. He had arranged to make a fourth expedition in the following year into Hsin-chiang and Inner Mongolia, and after visiting Nanking and obtaining the official sanction of the Central Chinese Government, he once more crossed the Himalayan passes, full of zest and plans for further achievement. Unfortunately the attitude of the Chinese Government had meanwhile changed, and, to use his own words, 'obstructive tactics imposed by the unreasoning nationalist jealousy of irresponsible elements necessitated the abandonment of that fresh effort after the loss of ten precious months'. The time had not, however, been entirely lost, for Stein pressed on from Khotan and, though thwarted at every stage by the local officials and

delayed by illness, by dint of dogged perseverance and infinite tact and restraint managed to get as far as Charchan, where he turned north and then west, completing a tour of some 2,000 miles round the Taklamakan, and making important survey observations *en route*.

Next year, after making a tour through the Salt range in the Panjab to the Jhelum in order to trace Alexander's route from Taxila to that river, he resumed his 'reconnaissances' towards the Tigris from the point in western Makran which he had reached in 1928. From the little port of Gwadar he travelled in a north-westerly direction through the Makran ranges, the Bampur valley, Rudbar, and Jiruft, eventually halting at Kerman. On this trip, made in greater part on camel-back, he explored the ruins of Polo's 'city called Camadi', and also satisfied himself that Alexander when retreating into Karmania had turned inland from the Kej valley and reached the Bampur area by a fairly easy passage through the hills. Again many prehistoric sites were discovered with chalcolithic remains. After spending the summer in England, he rejoined his camp at Kerman in October 1932, and made another long tour of exploration passing through Minab, Hormuz, Bandar Abbas, and the coastal area of Laristan to Bushire. On this expedition several useful surveys were made of little-known tracts on the fringe of the Persian Gulf, 'tribal unrest' precluding travel farther inland. Near Tahiri he made a thorough examination of the ruins of the once busy port of Siraf, frequently mentioned by the Arab geographers as a centre of trade between Persia and India and China in the ninth and tenth centuries. Except at Haraj, where remains of a prehistoric, possibly neolithic, settlement were found, most of the sites visited dated from Muhammadan times.

In 1933–4 Stein explored widely in the province of Fars, where he discovered numerous remains of chalcolithic settlement, and some of neolithic age, besides many interesting monuments of Sasanian times. In May 1935 he was back in Shiraz, arranging for his last and longest tour in western and north-western Iran, which took him through Khuzistan, the Bakhtiari country, Luristan, Kermanshah, and Ardelan to Lake Urumia. In the earlier stages, some fifty miles north-west of Shiraz, between Ardekan and Fahliun, he explored and surveyed the area of the defiles called the 'Persian Gates' by Alexander's historians, where the Macedonian forced a hard-won passage on his way from Susiana to Persepolis when held up temporarily by the Uxian hillmen, who demanded their

'tribal allowances' before allowing his army to pass. With his wonted thoroughness he reconciled details given by the historians with the local topographical features. Rennell, he found, had indicated the site with wonderful accuracy on one of the sheets of his *Map of Western Asia* drawn in 1809, before Kinneir's visit (1813–14). Valuable surveys were made of tracts in the Kohgalu hills, the Zagros range, and the Pish-i-koh and Delfan areas. Structures and sculpture of Sasanian, Parthian, and earlier times were examined and described. Many bronze figures showing unmistakable Hellenistic influence were found, more particularly in the Shami valley. In the short time at his disposal Stein was unable to solve the puzzle of how these objects of Hellenistic-Iranian worship had been set up in this secluded valley. Besides the rock sculpture and cuneiform inscriptions previously seen and studied by Layard and other experts, a quantity of painted pottery was found in the Malamir valley, proving that it had been the site of a chalcolithic settlement; similar remains were discovered in many other localities. In the Lur country the opportunity was taken of looking into the question of the age of the rather notorious 'Luristan bronzes'. Judging from the associated finds Stein regarded it as difficult to ascribe them to a period much earlier than the beginning of the first millennium B.C. In the hilly country of western Iran he liked to feel that he was often passing over ground trodden nearly a century before by his esteemed patron Sir Henry Rawlinson. Farther north three days were spent in making a detailed survey of the vast halls and passages excavated with immense labour in the caves of Karafto hill, and in taking estampages of the inscription in ancient Greek characters of the third or fourth century B.C. with its reference to 'Herakles'. He was satisfied that this was the Mt. Sanbulos mentioned by Tacitus as the shrine where the Arsacid king Gotarzes sought oracles from Herakles when awaiting the attack of Mihirdates and the Romans. Full reports of the four tours in Iran, or reconnaissances as he preferred to call them because he had 'only been blazing the trail' for others with more time and means at their disposal, have appeared in *Archaeological Reconnaissances in NW. India and SW. Iran* (1937) and *Old Routes of Western Iran* (1940).

Having now accomplished to his own satisfaction the tracing of that prehistoric civilization so unexpectedly revealed by the excavations in Sind all the way from India to the edge of the Tigris basin, Stein felt free to direct his energy to fresh fields

and pastures new. His experience in discovering the old Chinese *limes* in Kansu enhanced his already keen interest in the researches of Fr. Poidebard in respect of the Roman *limes* in Syria, and he resolved to make similar investigation in Iraq and Transjordan. With this object he had made preliminary reconnaissances by plane in 1929 and 1935. He had long been alive to the great value of survey from the air, and had contemplated the use of a man-carrying balloon when searching for sites in the Taklamakan in 1906–8. His detailed examination and surveys were made from the air and on the ground in 1938 and 1939 from the Tigris in north-eastern Iraq to the Gulf of Aqaba. Numerous remains of Roman highways, fortified posts, aqueducts, barrages, cisterns, and milestones were discovered. The results were briefly described in two papers published in the *Geographical Journal* (1938, 1940), but the full scientific report has yet to appear. As always, accurate surveys were carried out, and Stein expressed the hope that the map sheets, which he carefully checked, 'will some day be of use for the British share in the International Atlas of the Roman Empire'.

In the cold season of 1940–1 he commenced a survey, continued a year later, of the dried-up course of the Vedic river Sarasvati, the 'lost river' of the Panjab, through the desert parts of the Bikaner and Bahawalpur States. Trial excavations disclosed the existence of numerous prehistoric sites, the fuller examination of which at some future date may yield important information. A short account of these surveys appeared in the *Geographical Journal* (1942).

There was still an unexplored region between Darel and Swat that Stein had set his heart on visiting, where the Indus winds through stupendous gorges on its way to the Panjab plains. It had been traversed in the fifth and seventh centuries by the intrepid Chinese Buddhist pilgrims by 'the route of the hanging chains', as it was called in the Chinese annals; but the area was tribal territory beyond the administrative control of the Indian Government, and so entry was not permitted. Welcome news, however, had come in 1939 from his staunch friend the Wali of Swat that he had occupied all the hill territory up to the Indus on the west side of the gorges, and the road was thus far clear for him. Stein took the earliest opportunity of availing himself of this invitation. He first made a flight in an R.A.F. plane over the area, which he described in a letter thus:

> The views obtained from a great height of those high snow-covered spurs of the Kohistan and the deep valleys between them were most

impressive. No mountain scenery in Asia, or perhaps on this globe, could be more grand than the one presented by those huge ranges, including Nanga Parbat and Haramukh, on either side of the Indus.

Towards the end of 1941 he ascended the Kohistan and explored and surveyed the western side of the gorges. The following extract from a letter written from a high mountain camp in his eightieth year illustrates his amazing physical energy and his abiding affection for old friends.

> It has meant much hard travel on foot, including the crossing of a high pass now closed by snow, which cost us 16 hours. But I have been able to face it all and enjoy the interest presented by the wonderful scenery and the quasi-archaic conditions of life. . . . The scrambles along precipitous mountain sides are a bit fatiguing, the tracks still impossible for any laden animals or for riding. . . . I am trying to collect specimens of Kohistani speech; but, alas! there is no Grierson[1] any more to make use of them. His loss is ever felt by me.

In July–September 1942 he made a longer trip to the gorges, this time on the eastern side of the Indus, but unfortunately his movements were hampered by the preaching of *jihād* by a *faqīr* in Jalkot. However, he managed to map some parts of unsurveyed tribal territory, and to examine a number of Buddhist sgraffiti of relatively early date. 'It was interesting ground', he wrote, 'but meant much hard climbing over a succession of passes 14,000–15,000 feet'—an astounding feat for a man of his years. It was most unusual for Stein to refer to fatigue in his letters; but he was evidently beginning at last to feel the strain of arduous climbing.

His last expedition was made in the early months of 1943, chiefly with the object of establishing Alexander's route through Las Bela State and 'Gedrosia' on his disastrous retreat from the Indus delta to Persia. He was satisfied that he had succeeded in settling this long-discussed question. This lengthy tour through parched tracts and rugged sandstone ridges must have been particularly trying. However, refreshed by the mountain air of his 'beloved mountain-camp' in Kashmir, he wrote in great spirits on the 6th of October of his preparations for visiting Kabul and of 'the chance of work desired since boyhood in *Ariana antiqua*'. He had many times sought permission to work in Afghan territory, but, in spite of the efforts of three Viceroys, this had not been granted. The chance had at length come through the intervention of an old Harvard friend, Mr. C. Van H. Engert, who had been appointed United States Minister at Kabul. On

[1] Sir George Grierson had died on 7 March 1941.

the 13th of October he wrote from Peshawar, full of projects of work, that he felt very fit. He reached Kabul on the 19th. On the 21st he visited the museum, where he seems to have caught a chill. Bronchitis developed a day or two later; he had a stroke on the night of the 24th/25th, and, despite unremitting medical attention, passed away on the 26th. He was buried in the Christian cemetery on the 29th in the presence of representatives of the King, the chief Afghan officials, and members of the various embassies. One of his last utterances to his friend Mr. Engert was: 'I have had a wonderful life, and it could not be concluded more happily than in Afghanistan which I have wanted to visit for sixty years.'

Throughout his explorations in Central Asia and the north-western frontiers of India Stein was frequently guided in his identification of sites by the accurate record of travel left by the Chinese Buddhist pilgrim Hsüan-tsang, who had journeyed through those regions in the seventh century A.D. This explains why Hsüan-tsang was often referred to as his 'patron saint'. With the accounts of all other travellers he was intimately familiar. He followed Marco Polo's tracks for long stretches, elucidated his reference to 'Balas rubies' in his account of Badakshan, and identified his 'Pein' with Uzun-tati and his 'Etzina' with Khara-khoto. But even greater interest perhaps attaches to his tracing of stages and routes in Alexander's Eastern campaign: the crossing of the Tigris and features of the battle of Arbela; his passage through the 'Persian Gates'; his march through the Swat valley and storming of the famous 'Rock of Aornos'; his route through the Panjab across the Salt range to the Jhelum, and the exact site of the decisive battle in which he defeated Poros; the line taken in his retreat through Las Bela and Makran into Karmania—all these were identified by Stein with his habitual thoroughness. Another identification may be mentioned as being of special importance to historians. The Khyber Pass is popularly known as the north-western 'Gate of India'. Stein's unerring geographical sense convinced him that this conception must be modified. He devoted a trip across the frontier to tracing the ancient caravan route which led from Dakka through Shilman to the Kabul river and then across it to Charsadda, the early capital of Gandhara. 'It was this route', he wrote, 'and not the one through the difficult defiles of the Khyber which was used, I believe, by the early invaders.'

The enormous mass of material of archaeological and linguistic importance recovered during nearly half a century of

intensive exploration is now treasured in museums in London, New Delhi, Calcutta, the U.S.A., and Iran. It has engaged, and still engages, the attention and study of the foremost scholars in different parts of the world. Much of it had to be referred for identification or elucidation to specialists in languages, painting, ceramics, numismatics, anthropology, &c. Stein acknowledged profusely his obligations to the experts who readily and gladly devoted time to this work, such as—to name but a few out of many—É. Chavannes, A. F. R. Hoernle, E. J. Rapson, Abbé Boyer, É. Senart, Sir G. Grierson, F. W. Thomas, Sir F. Kenyon, Sir J. Marshall, Sir G. Hill, L. Binyon, R. L. Hobson, and J. Allan. He ever recorded his special indebtedness to his lifelong artist friend and collaborator F. H. Andrews for the classification, arrangement, and descriptive cataloguing of his finds and for the elucidation of many problems. He took scrupulous care to name and thank every person, official or private, who had helped him on his travels. He secured for his surveyor assistants, who worked so splendidly for him, the recognition of the Indian Government by the grant of promotion or titles. Three of these were awarded the Back Grant, one the Murchison Grant, and one the Gill Memorial by the Royal Geographical Society. Lal Singh, Ram Singh, Afraz Gul Khan, and M. Ayub Khan, these devoted and trusted companions, who shared his hardships and perils, would have followed him anywhere.

That hundreds of cases—the proceeds of two only of the expeditions filled nearly 400 cases—should all have been safely transported through trackless desert and over high mountain passes must be regarded as a marvel of skill in packing and organization of carriage. The value of his archaeological finds from the historical and cultural points of view has been recognized by the most competent judges. The vast mass of manuscript material recovered, all of the highest importance linguistically, calls for more particular notice. The Kharoshthi documents, in a north-west Indian Prakrit and some in Sanskrit, are invaluable for the study of the dialect and for the history of the area from Khotan to Lop-nor; they also reveal official and social conditions as early as the third and fourth centuries A.D. The late Prof. Rapson (one of many scholars who have worked at them) spent some twenty years on their study and editing. The Tibetan manuscripts, largely official, comprise some of the earliest written examples of that language, and are of special value for its history and for the spread of Tibetan influence in the region. Dr. F. W. Thomas has been busily engaged for many

years, and is still engaged, on these, as well as on two yet unknown Tibeto-Burman languages. Of special value among the Chinese documents may be mentioned early editions of texts not otherwise available and the oldest specimen of a block-printed book, besides Manichaean texts in Chinese. Among languages classed as 'unknown', Sogdian is represented by some early correspondence and long Buddhist texts; Tokhari, which presents an interesting linguistic puzzle and seems to have been indigenous to the north of the Tarim basin, by fragments only in an Indian Brahmi script; Saka-Khotani by numerous documents and translations from Sanskrit, which throw light on the long-forgotten kingdom in which it was spoken, and on the little-known period of Turkish intrusion from the north about the tenth century. Professor H. W. Bailey has been working for several years on the Saka-Khotani manuscripts. We have also specimens of Hsi-hsia, the old Tangut language, and Buddhist texts and documents in Uigur Turkish.[1]

The very exceptional range of his own linguistic knowledge helped Stein to decide on the spot what should be preserved. He was familiar with the current speech of most of the areas visited, so that he was able to converse directly with the local folk and obtain promptly the information he required. He always regretted he had not taken his father's advice to learn Arabic. He made efforts to master it, once while at Delhi, and once at Shiraz; but more urgent work intervened. In 1935 he wrote: 'I have felt this great gap in my philological equipment all along.' In 1938, while at Beirut, he spent some weeks in a quiet hill retreat learning the colloquial speech for use when searching for remains of the Roman *limes* in Iraq and Syria.

Stein also availed himself of any opportunity of collecting in secluded tracts vocabularies of local languages or dialects hitherto unstudied. These he used to send to Sir G. Grierson. From material obtained in 1915 in the high Oxus valleys, and in 1926 in northern Swat, Grierson compiled two manuals, *Ishkashmi, Zebaki, and Yazghulami* (1920), and *Torwali* (1929). Another of his activities was the recording of anthropometric data in respect of little-known races or tribes, such as the people of Pakhpo in the K'un-lun, the Dards of Chitral, the Ghalchas of Roshan, the Wakhis of Wakhan, and the Afridis of the Afghan frontier.

Stein's contributions to our geographical knowledge of many parts of Asia were unsurpassed. On each of his expeditions he

[1] I am indebted to Dr. F. W. Thomas and Prof. H. W. Bailey for help regarding these languages.

had accurate surveys made of the areas visited by trained surveyors deputed by the Indian Survey Department, whose work he was able to supervise by reason of his own early training. Most of these areas had never been surveyed, and some never visited before. An idea of the vast extent of these surveys may be had by reference to his *Memoir on Maps of Chinese Turkestan and Kansu* (1923), bearing in mind that this deals only with his first three expeditions in Central Asia, and that more than a dozen lengthy expeditions were made by him thereafter. In one region alone, that of the northern Nan-shan ranges, nearly 50,000 sq. miles were surveyed. It would be difficult to estimate the total milage of all his journeys, two of which alone covered almost 25,000 miles. In the spheres of physical and historical geography his views on the vexed question of 'desiccation' and on the changes that have led to the recession of the desert oases towards the surrounding high mountain ranges are of special value. His unequalled acquaintance with the conditions of Chinese Turkestan combined with the archaeological evidence convinced him that the abandonment of sites now covered by arid desert has been gradual, and not due, as so often imagined, to sudden physical catastrophes. He believed that the most likely cause of the diminished water-supply from the rivers was the shrinkage of the glaciers on the high ranges left behind in the last glacial period, which have become gradually reduced under milder climatic conditions. His notes on the probable age to be assigned to the *gabarbands* (dams) and to irrigation by *karez* or *qanāt* (underground water channels) in the dry regions of Baluchistan, Makran, and Iran are also important. Had he never made the more sensational finds that have so overshadowed his other activities, Stein's geographical work alone would have earned him lasting fame.

Prolonged travel, often under conditions of extreme heat or cold, through trackless deserts and over snow-covered passes and glaciers amid the loftiest mountains on our globe must inevitably involve hardship and danger. Stein had his share of both. In 1908, when scaling in foul weather at a height of 20,000 feet a snowy col on the watershed of the main K'un-lun with a view to determining the position of Johnson's 'Yangi-dawan', his feet were badly frostbitten. His hardy hill porters carried him by forced marches 300 miles down the mountains to the Moravian Mission hospital at Leh, where all the toes of his right foot had to be amputated to save the leg. In 1914, on the high Nan-shan, his horse reared and fell backwards on him, severely in-

juring the muscles of his left thigh. This confined him to bed for a fortnight and crippled his movements for some months; but borne in a litter he carried on, and directed his little party for some 500 miles across the dread Pei-shan. Elsewhere he broke his left collar-bone on three occasions. In 1933 he narrowly escaped shipwreck in a gale in the Persian Gulf when, failing road transport, he attempted to reach Daiyir from Tahiri in an open and leaky country boat. In 1937, when in north-western Iran, he had to stop work and hasten to Vienna to undergo a serious operation. These misadventures were treated lightly—as part of the day's work—in his letters; they did not for a moment 'cloy the hungry edge' of his appetite for work.

By nature unassuming and retiring, but with the wide sympathies that high culture breeds, Stein had a very warm and generous heart, and a genius for making, and keeping, friends. Reference has already been made to some of his oldest and closest friendships. There were numerous others in different lands of whom he always spoke in terms of affectionate regard. It was wonderful how he managed to maintain regular correspondence with them all, even under the most trying conditions of travel, letting them share in his thrilling experiences, and making them feel his lively interest in all their doings. Mrs. Allen has told us[1] how her husband's letters were carefully preserved in packets and answered with never-failing regularity. F. H. Andrews has preserved forty-five yearly bundles of his letters, numbering between two and three thousand. It is the more astonishing when we realize that after each day's toil, in addition to making systematic notes and labelling all his finds, he always wrote a full 'personal narrative', as he called it, to form a foundation for his detailed reports. That he was able to do all this was due to his methodic habits and to the fact that he wrote very rapidly in a clear hand, acquired, it may be added, with characteristic resolution, at the suggestion of one of his professors, who warned him that his script at that time was illegible. A defect of style, less noticeable in his private letters, was a tendency to prolixity, attributable perhaps to meticulous regard for the minutest detail. His broad sympathies were not confined to human beings; he was also much devoted to animals. The dog that shared his travels and his tent was provided with a specially made fur coat for low temperatures; baggage camels, mules, donkeys, and his horse or pony were all treated with

[1] *Letters of P. S. Allen*, 1939.

every possible care. He was keenly sensible of natural scenery, whether of the grander type of towering snow-clad peaks and forested slopes or the soft landscape of rural England; he constantly referred to the beautiful flowers he had seen by the way.

Stein was specially fitted by study and personal qualities for his life work. Rare linguistic attainments; acquaintance, confirmed by a remarkably retentive memory, with all previous descriptions of the areas to be visited; careful planning beforehand and masterly organization in every detail; economizing of labour, expenditure, and time; an almost uncanny flair for grasping topographical features influencing human movement and settlement; tenacity of purpose that often enabled him to overcome obstacles that might seem insurmountable to others; infinite patience and tact in dealing with men of all classes and races; a wiry physique and inexhaustible energy of body and mind; the power of quick and accurate observation; discernment in inference; meticulous attention to the recording of details; and lastly, the faculty of inspiring his helpmates with his own fervid enthusiasm—all these qualities he may be said to have possessed in exceptional measure: they combined to contribute to his pre-eminent success. His mobility was never hampered by a large staff; ordinarily he was accompanied by a surveyor, a 'handy-man', a cook, and porters and animals sufficient to carry equipment and food. In parts of Iran 'unrest' necessitated a military escort, occasionally involving delay. His grasp of topographical detail was exemplified when, in 1899, he visited the district of which I then held charge. When showing him the chief sites of interest in and about the old city of Gaya which he had never seen before, I was astonished by his knowledge of their relative positions, memorized from descriptions given in certain archaeological reports. 'Then that must be the Prapitamaheshvar temple, and that the Rukmini tank.' 'So the Akshaya-vata must be over there' he would say: and he was correct in every case.

Short of stature, but fairly broad-shouldered, he had a frame of iron. Many instances might be cited of his amazing physical energy and endurance. After a most exhausting march of thirty-six miles over the hot sandy desert, he pitched his tent and sat down to write up the day's work, and then he penned a closely written letter of six quarto pages to one of his old friends! A story was told me of how, when preparing for a tour across the north-west frontier of India, he applied to Government for the deputation as orderly of a hardy young soldier. The request

was passed on to the local military commander. A particularly active young Pathan, bred in the hills, was specially selected. After completion of the tour the commanding officer sent for the young man and asked him how he had got on with Sir Aurel. The reply was: 'Stein Sahib is some kind of supernatural being, not human; he walked me off my legs on the mountains; I could not keep up with him. Please do not send me to him again, Sir.' Stein was then between sixty and seventy years old. In fifty-five years of unremitting travel and research it is hardly an exaggeration to say not an hour seemed to have been wasted. The programme for each day, whether of travel or of other tasks, was mapped out beforehand, and strictly observed. He worked till late in the night, but always rose early.

His most important publications have been mentioned above. All these were models of erudition and scientific accuracy, with admirable maps and plans, and illustrated from his own photographs, which he took in great abundance. In addition he wrote many brochures and contributed numerous papers to the journals of various societies in this country and abroad. To the *Geographical Journal* alone about twenty-five major contributions were made. His lectures, of which he delivered many, were more adapted to a scholarly than to a popular audience. Accuracy was his guiding principle; the only occasions on which I noticed signs of annoyance or impatience on his part were when some reputed scholar erred in this respect.

Stein was awarded the C.I.E. in 1910, and the K.C.I.E. in 1912. Honours were showered upon him by learned societies in this and other countries of Europe and in America. He received the Back Grant in 1904 and the Founder's Gold Medal of the Royal Geographical Society in 1909, the Gold Medal of the Royal Asiatic Society in 1932, and that of the Society of Antiquaries in 1935. He was awarded the Campbell Memorial and Flinders Petrie medals and the Huxley medallion. Other medals were received from Sweden, France, Hungary, and the U.S.A. Hungary conferred on him the order of the Croix de Mérite, and struck a medallion in his honour. Honorary degrees were conferred by universities, and academies enrolled him as a Fellow. He was elected a Fellow of the British Academy in 1921.

As Marco Polo is regarded as the greatest traveller of medieval times, so Marc Aurel Stein is likely to be considered in many respects the greatest traveller and explorer of modern times. In him we see perhaps an outstanding, if not unique, example

of the combination of a great scholar and a great man of action. Scholar and explorer, archaeologist and geographer, he lived a long and laborious life, full of great accomplishment. He has written his name—*nomen praeclarum et venerabile*—large across the continent of Asia, and left behind fragrant memories in the hearts of a host of friends of many races in many lands.

C. E. A. W. OLDHAM