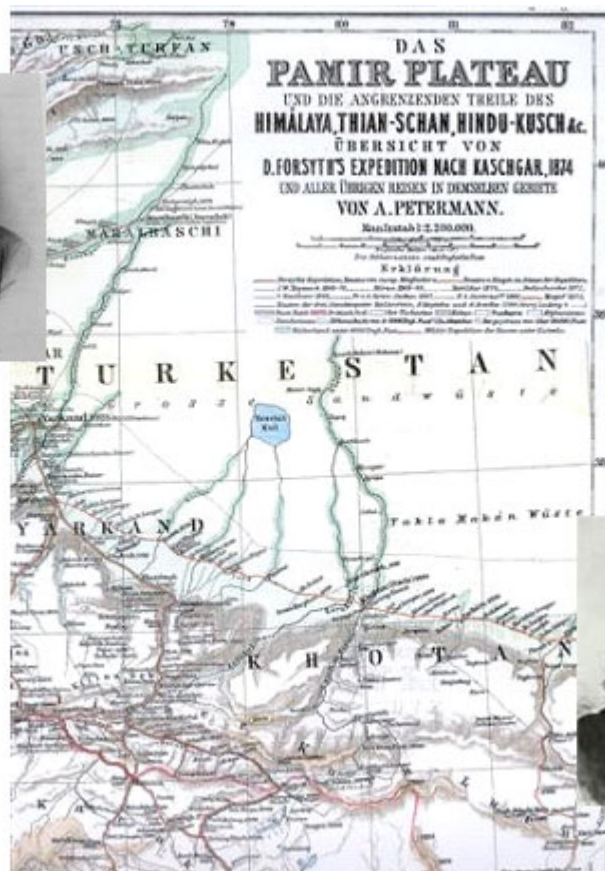


**Early Modern European Explorers
at the
Mountain *Jade* Quarries
in the
Kun Lun Mountains in Xinjiang, China**



Hermann Schlagintweit and Ferdinand Stoliczka next to a map of ancient Turkestan by A. Petermann, printed 1877 in Gotha, Germany

by

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Part I

1.0 Introduction

The Kun Lun Mountains in Xinjiang, the westernmost province of China, are the source, since the earliest Chinese Dynasties, of the famous white Nephrite Jade for the Chinese kings and emperors.

Jade was collected as water worn boulder material near Khotan from the Karakax or Hei Yu (Black Jade), the Yurungkax or Bai Yu (White Jade Picking) and the Yangi Darya or Lü Yu (Green Jade) River and their alluvial fans. The extraction of in-situ jade in the surrounding mountains started much later once the alluvial deposits started to play out. This "Mountain or Shan Liao" jade was however considered inferior to the "River or Zi Yu" jade because of the likely presence of hidden fractures raised the danger that, after months of toiling labor, a Jade object would break before its completion.

These fractures were either natural or caused by the crude extraction method consisting in heating the jade veins with big fires and then letting them cool down rapidly. The jade cracked and pieces could be pried off it. In "River" jade only stress- and fracture-free boulders survived the jarring river transport over hundreds of Km carried by the melt waters of the glaciers and snow fields of the Kun Lun mountain to the gravel deposits around Khotan.

A first reference to Jade mining was made in 1133 by Du Wan in his lapidary encyclopedia the Yun li shi bu, but probably more intensive "Mountain jade" mining initiated only in the 15th century when the increased tribute payments to and the Jade hunger of the Imperial Court in Beijing required to tap also the more difficult accessible mountain deposits.

The Jade collection in the region of Kothan was described, next to numerous Chinese envoys and texts, by different Europeans travelers such as Marco Polo (1272-73) and the Jesuit priest Benedict Goes (1602) as they and others were on their way, on the southern leg of the Silk Road, to Cathay and the Imperial China.

Abel Remusat (*Histoire de la Ville de Khotan*, Paris 1820) and Carl Ritter (*Erdkunde Asien*, 1838) made a summary of the Khotan Jade information from ancient literature just before a new breed of explorers reached the area and was able to give us first modern eyewitness reports.

These modern explorers reached Khotan however now from the South. Their steps followed the ancient merchant caravan road from Leh in Ladakh to Yarkand in Turkistan crossing the Himalaya chain over the Karakorum pass.



Reproduction of an ancient incense vessel in Kothan jade

Part II

2.0 The First Report on the Jade Quarries in Modern Times.

.....We left Sumgal, August 29th and followed for three marches the valley of the Karakash river, which flows from Sumgal to Sujet, in a westerly direction; then takes a sharp turn to the north, and then flows for the most part in an East north easterly direction.

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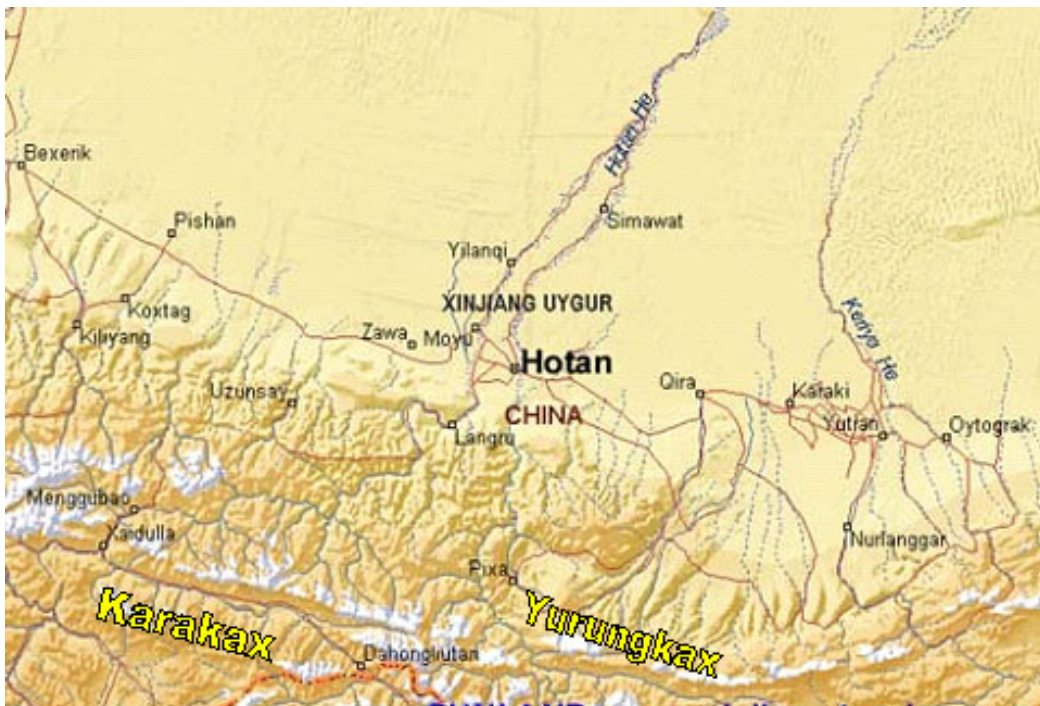
Handwritten copy of Herman Schlagintweit notes (Courtesy of the Royal Geographic Society London)

.....We met on this road with very large quarries and mines from which is dug the Yashen stone, and which are resorted to by people living at great distances.

We were enabled to procure for future analysis, a good supply of this stone, which is very much valued throughout Central Asia. Suget, a halting place on the winter road to Yarkand, is six ordinary marches distant from Karakorum, from Suget to Karakash, another town of Khotan, is six marches. After due deliberation we started on the 1st of September with Mohammed Amir, and only two laden horses, leaving every thing we could do without, including our little tent.

Hermann and Robert Schlagintweit
in Leh, Ladak, September 26th 1856.

Extract from a handwritten document in which the German explorers Hermann and Robert Schlagintweit give a "Report on the proceedings of the magnetic Survey of India from July to September 1856. An account of a journey across the Chains of the Kuen-Luen from Ladak to Khotan. General Remarks on the observations made during this Journey" (R.G.S/IBG Archives London England)



Actual map of the Hotan (Khotan) region in Xinjiang, China showing the Karakax Valley with Xaidulla on the Karakax or Black Jade River und Pixa on the Yurungkax or White Jade Picking River flowing north toward Hotan and disappearing as Hotan River in the Takla Makan desert. The Yangi Darya or Lü Yu (New or Green Jade) River is actually a side arm of the Karakax River forming just south of Hotan.

3.0 The Great Period of Geographical Expeditions and the Schlagintweit's Mission in India.

The beginning of the 18th century saw, with the echo's of James Cook explorations of the South Pacific still lingering on, great many explorers like Darwin with the Beagle on the world oceans, v.Humboldt in South America, Parry at 82°45' North on the Polar ice, Stanley, Livingstone, Speke and Burton in Africa all seeking to erase the white spots from the geographical maps of their time. At the same time the great colonial powers were assessing the precise extension of their possessions and surveying the territories with modern trigonometric methods. In the British Empire, Lambton and Everest initiated and carried out, from 1799 to the late 1840's, the famous "Grand Trigonometrical Survey" of the Indian Subcontinent for the East India Society.

Physical geography science dealing with the measurements of atmospheric pressure, air temperature and humidity, wind directions and speed as also magnetic inclination and declination measures became an integral part of the scientific activity of these explorers.

The German explorer Alexander von Humboldt traveled 1829, on invitation of the Russian government, through Southern Russia and Siberia to the Chinese Border and on his return suggested to Czar Nicolas 1st the establishment of a Russian chain of observatories for the collection of physical geography data and specifically of earth magnetism.

Such stations were immediately established in Russia in a fashion similar than those already existing in America and Germany. In 1836 v.Humboldt contacted the president of the Royal Society, the Duke of Sussex with the suggestion that the territories of the British Empire be also included in such a chain of such observatories.

In 1839 the Royal Society (R.S) gave through Colonel Edward Sabine, nominated for this purpose Chief Magnetic Surveyor, a favorable advice and the British Government agreed in the financing of the project for which engineers of the East Indian Company were selected. The project however did not find the interest of G. Everest, now the Chief Land Surveyor of India and the established stations were closed and dissolved few years later.

Lieutenant C. Elliot, an engineer of the E.I.C, was able, on the suggestions of the R.S, to resuscitate the project 1849 and carry it out vigorously until his untimely death in Madras, India in 1853. Once more the survey was halted.

v.Humboldt, now in his eighties and seeing his dream to reach the Himalayas and the Kun Lun slowly dissolve, wanted to have his protégées, the Schlagintweit brothers, to explore the area by proxy. He convinced the King of Prussia Friedrich Wilhelm IV, that the Schlagintweit brothers should replace Elliot in the Magnetic Survey of India and thus might be able to reach the Himalayas and the Kun Lun's.

The King, having met Adolph and Herrmann and seen their sketches and aquarelles, responded favorably and instructed the Ambassador of Prussia in London, Christian Carl Josias v. Bunsen on the 27th of February, 1853 to make contact with Sabine.



Christian C.J. Bunsen



King Friedrich Wilhelm IV



Alexander v.Humboldt

On the 18th of April 1853, v. Bunsen wrote to E. Sabine, now Vice President of the R.S, that v.Humboldt had convinced the King of Prussia to take the initiative to continue and complete the magnetic survey of India up to the Himalayas.

As however only 200£ could be made available by Prussia, a joint project with the E.I.C was essential to assure the 400£-per-year financing needs.



Eduard Sabine



William Pearson



Roderick Murchison

Ambassador v.Bunsen, on the suggestion of E. Sabine, submitted on 27th of April 1853 to the president of the R.S., William Pearson, the 3rd Earl of Rosse, a formal request which starts:

„...My Lord, Baron Humboldt has submitted to my King (Friedrich Wilhelm IV of Prussia) a request of great importance which would benefit a mission to the Himalaya Mountain chain and an investigation of the area by the two brothers Hermann and Adolphus Schlagintweit (now living in Berlin) for extensive information about the phenomena of earth magnetism and may other areas of terrestrial physics“.

He then extols their scientific competence and mentions their (Schlagintweits's) hope that

.....a sojourn of three years in these regions would give them the opportunity to carry out many other investigations useful for Science.“

The Schlagintweit brothers were known in the scientific and social circles of England, as on 19th of December 1851, Hermann had presented to a session of the R.S. his scientific study on the *“Results of the observations of the temperature distributions in the Alps“*.

The Royal Society transmitted the letter to the E.I.C which replied favorably on the 18th of May 1853 and declared to be ready to continue to carry out the Magnetic Survey in India if an appropriate engineer could be found, otherwise they would instruct the Government of India to ask the Schlagintweit brothers if one of them would be willing to continue the work of the defunct Elliot.

The fact that an expedition jointly financed by Prussia and England into a geopolitical sensitive area became possible was due to concordant interests of v.Humboldt and the members of the R.S. like Murchison, Sabine, Christie and Sykes. The latter were all members of a scientifically progressive circle within the R.S. bent on improving the scientific quality of the natural science research. The foundation of the Royal Geographical Society in 1830, which called for an intensive international collaboration in the realm of Geography, further enhanced such collaboration.

In June 1853 the E.I.C instructed their administrative offices in Madras to return to England, for repair and calibration, the scientific equipment left by Elliot. In March 1854 Adolph Schlagintweit submitted to the R.S the work plan for the completion of the Magnetic Survey in India and in summer 1854 the three brothers traveled to London for the completion of the preparation of their expedition. They left by ship from Southampton to Bombay in September the same year. Adolph was directly employed whereas the two other brothers were just sponsored by the E.I.C.

Adolph Schlagintweit stated in his draft of operations to the India House:

...It will be very essential to ascertain the elevation of many important points by barometrical or in part by trigonometrical observations and to work out accurate sections of the different routes and geological maps of where we may be able to make any longer stay.

We shall endeavor as much as possible to collect fossils, for the accurate determination of the different sedimentary strata to ascertain their order of superimposition.

Starting December 1854, the work concerned initially the completion of the investigations of Elliot in central and southern India. Adolph and Robert explored in this context the northwestern provinces of India and the sources of the Indus. Then the long term goal of v.Humboldt, the exploration of the Himalayas and the Kun Lun's was next on the schedule.

They explored, as extension of their practice in the Alps, mountain passes and glaciers of the Himalayas and reached, as first scientists, a height of 6766m on the Ibi-Gamin (Kamet) glacier in Tibet. Hermann set the sights on the Eastern Himalayas, Nepal, Assam and the course of the Brahmaputra River. Hermann and Robert reached 1856, disguised as local merchants, over the ancient caravan routes Kashmir, Ladakh and the Balti region, and then, over the Karakorum Pass, Chinese Turkestan, the Kun Lun range and the Karakax valley.

All together the three brothers traveled from 1854 to 1857 for over 29.000 Km, filled 46 volumes with scientific data, 22 volumes with sketches, painted and draw 749 landscape views, collected over 14700 specimens of which over 9000 of geological nature. The plant collection amounted to 1800 specimens and 650 tree cross-sections. 750 zoological specimens, 400 human skulls and skeletons as also 1400 ethnological specimens completed their scientific bounty.

Robert and Hermann left with their collections India in spring 1857 and reached Europe, at the port of Trieste on the Adriatic Sea, the 7th of June 1857 and Berlin the 17th of the same month.

Adolph stayed behind as he wanted to study the mountain ranges north of Afghanistan and reach Russia through Central Asia.

When he reached the border of Chinese Turkestan in the Karakax region bad news started to accumulate. Part of his party mutinied because of the stresses and difficulties of high altitude travel and then also local peoples informed him about the onset of the rebellion of Wali Khan, a Chieftain from the Chodhsa clan in Kasghar against the Chinese Government.

Adolph persisted in his travel plans through Chinese Turkestan but was captured on the 26th of August 1857 near Yarkand by Wali Khan and beheaded in Kasghar as a spy.

His local guide, Mohammed Amin from Yarkand, managed to escape and brought the bad news of the gruesome details of the execution, the scientific data and the specimen collections back to India.

4.0 The Schlagintweit Brothers.

Hermann (13.5.1826 - 19.1.1882), Adolph (09.1.1829 - 26.8.1857), Eduard (23.3.1831 - 10.7.1866), Robert (27.10.1833 - 6.6.1885) and Emil (07.7.1835 - 20.10.1904) were sons of Dr. Joseph Schlagintweit from his first marriage to Rosalie Seidel. Dr. Schlagintweit was a famous Bavarian ophthalmologist and instrumental in directing his sons toward science by having the first professor of Egyptology of the University of Munich, Franz Lauth, as their private tutor. Their artistic talent was influenced by their mother, an avid art lover, which they lost in 1839 at childbirth and by the teaching of the landscape painter Anton Zwengnauer. From a second marriage two further brothers Alois (1845 - 1918) and Maximilian (1887 - 1935) were born.

Descendants from Maximilian Schlagintweit live in Bavaria, Germany. (See also www.schlagintweit.de)

One of the descendants, Dr. Stefan Schlagintweit provided the author with copies of original aquarelles painted in the Karakax valley by Hermann.



Robert, Adolph and Hermann Schlagintweit in a Daguerrotypy of 1847
(Courtesy St.Schlagintweit)

Hermann studied initially medicine and then turned to natural sciences getting his degree in 1848 with a work on a triangulation instrument. He becomes 1851 professor of physical geography and meteorology in Berlin. Adolph followed 1849 with a work on earth science and became professor of physical geography in Munich. Robert studied science in Erlangen and then joined his brothers for the survey in India. Eduard became an officer and died 1866 in the Prussian-Austrian war at Kissingen.

Emil, the youngest brother, become doctor of law and a specialist of Tibetan, acting then as the curator of the extensive scientific collections and legacies of his brothers.

Both Adolph and Hermann got their first geographical field research experience between 1846 and 1848 as 18 and 20 year old boys in the Grossglockner Mountain region in Austria.

In August 1851 they climbed the still unconquered highest mountain of Switzerland, the Monte Rosa (4634m) and had to stop just 7m short of the summit. From this research they completed three-dimensional models of the Monte Rosa and the highest German mountain, the Zugspitze, on a scale of 1:50.000.

Their scientific work caught the eye of the German explorer Alexander v.Humboldt which, now at the age of 80, was looking for scientists which could carry out his planned expedition into the High Mountains of Central Asia. He was instrumental in arranging their Asian expedition in collaboration with the East India Company as reported above.

The results of the expedition to India and the Himalayas were duly honored by over 30 scientific academies and societies as also by Kings and Governments of that time. The Literary Society of Kazan (Russia) conferred to Hermann the title "Sakünlünski" or "the climber of the Kun Lun mountains" which he was able to carry in his name by a Royal Bavarian decree.

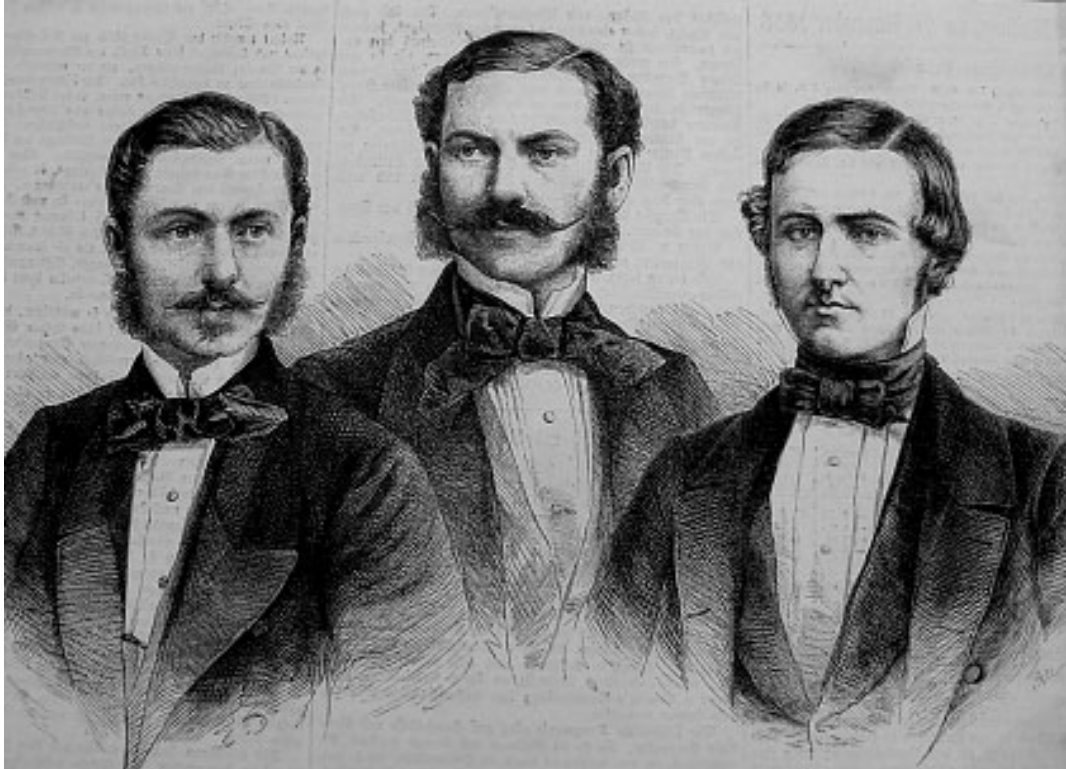
The Bavarian King Maximilian II conferred 1859 to the brothers Hermann and Robert the title of nobility with the brothers now signing "Hermann von Schlagintweit-Sakunlunski" and "Robert von Schlagintweit". The scientific collections were stored by Hermann in his newly acquired castle Jägersburg in Frankonia/Germany.



Nobility Blazon of Hermann and Robert von Schlagintweit (Courtesy St.Schlagintweit)



Schloss Jägersburg in 2002 in Eggolsheim-Bammersdorf, Germany



Xylographic portrait of Robert, Hermann and Adolph Schlagintweit in the edition of the 27th of November 1858 of the Newspaper "Illustrirte Zeitung" of Leipzig, Germany relating the expeditions of the brothers in India and High Asia

However the publication of the scientific results of their expedition was delayed and complicated by the death of their brother Adolph in Kashgar and finally only 4 of the planned 9 volumes were published.

Hermann published a four volume summary of his mission under the title "Travels in India and High Asia" before meeting an early death (1882) in Munich, due to sequels of malaria.

Robert, initially appointed assistant professor of Geography at the University of Giessen could not adjust to the dull academic life and become a successful professional conferencier reporting on his travels to large audiences in Europe and the United States of America. At his last trip there he caught pneumonia in San Francisco and died 1885.

The youngest brother Emil inherited the Jägersburg but has not been able to keep the castle in his property. When he finally inspected the stored plant collections and the scientific correspondence he discovered them moulded over so that they had to be destroyed in a nearby paper mill.

The mayor part of legacy of the Expedition went to via the E.I.C, to the British Library and to the Bayrische Hof- und Staatsbibliothek and the Graphische Sammlung in Munich.

Other dispersed material was collected and bought back by the descendants of their half brother Maximilian and of which Dr. Stefan Schlagintweit of Bad Wiessee Germany, is now the acting curator.

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