

Copyright © 2010 Daniel C. Waugh. All rights reserved.

Note: As indicated below in n. 1, this is a somewhat revised version of the article which first appeared in *The Silk Road* 5/1 (2007): 1-10. The illustrations which may be found there are not included here.

Richthofen's 'Silk Roads': Toward the Archaeology of a Concept¹

by

Daniel C. Waugh

University of Washington (Seattle)

How the important pioneers in the modern study of the Silk Roads have been remembered has changed substantially with each generation and very much been influenced by politics, nationalist discourse, the vagaries of academic fashion, and appeals to popular taste. The noted pioneer of Silk Road archaeology, Aurel Stein, came

¹ This article was originally published as the editor's introductory essay to *The Silk Road* 5/1 (2007): 1-10 (on-line at: http://www.silkroadfoundation.org/newsletter/vol5num1/srjournal_v5n1.pdf). Revisions of substance for the current publication include rewriting of the introductory paragraphs in order to add material on Richthofen's career and some of the interpretations of Richthofen's broader contributions to geography in the nuanced articles published in *Die Erde* 138/4 (2007), which I received when my article was already in print. The substance of my analysis of Richthofen's discussion of the Silk Roads remains unchanged. The author is grateful to Dr. Susan Whitfield, Director of the International Dunhuang Project at the British Library, for her suggestions, including some key bibliographical references. Prof. Dr. Hermann Kreutzmann of the Freie Universität Berlin (who obtained for me a copy of Jäkel 2005 and the issue of *Die Erde* cited above), Dr. Helen Wang, Curator of East Asian Money in the Department of Coins and Medals, British Museum, and Dr. Philippe Forêt, now of the University of Nottingham, have also provided me with valuable suggestions. I am indebted to Prof. Dr. Hermann Parzinger, President of the Prussian Cultural Heritage Foundation, and Justin Jacobs for sharing with me their then unpublished papers, cited below. Of course none of these individuals bears any responsibility for errors of commission or omission in my article.

A few comments on the evolution of my article and its relationship to other work which is underway are in order here. During the May 2007 Dunhuang centennial conference in London, I discussed briefly with Prof. Tamara T. Chin of the University of Chicago our mutual interest in studying the inception of the ideas about the Silk Road. As she had to remind me after my Richthofen article appeared (e-mail correspondence of November 30 and December 1, 2007), she told me in that conversation about her plans to write a book on 19th and early 20th century perceptions of the Silk Roads. To date I am not aware that any portions of that study have appeared. What prodded me to delve into the Richthofen material was an invitation I received in September 2007 to give a paper in a symposium on Sven Hedin in Stockholm in November. This then led to my reading of Hedin's publication of his correspondence with Richthofen and back into Richthofen himself. Coincidentally, in late October I received a query from Dr. Whitfield concerning Richthofen's first use of the term. This query then led to a substantial exchange of messages with her between October 29 and November 3, in which I received some encouragement to finish my piece. Dr. Whitfield continues to study how interest in the Silk Roads developed from the late 19th century down to the present, a subject on which her expertise far exceeds my own.

to be seen as a 'Foreign Devil' in China only with the development of nationalist concerns over Chinese culture amongst those who had little concern about his discoveries of non-Chinese artifacts in Inner Asia (Jacobs 2009).² The famous Swedish explorer Sven Hedin, better loved than Stein in China for reasons that still need to be examined, and venerated especially in Germany where his books were best-sellers, found himself increasingly shunned by scholars in other European countries due to his political empathy first with Imperial Germany during World War I and then with the National Socialist regime.³

In the pantheon of the 'pioneers of the Silk Road' Ferdinand Freiherr von Richthofen (1833-1905), the noted German geographer, occupies a distinct niche. He is cited in almost any work on the 'Silk Roads' for having coined that term (die Seidenstrasse), even if few of those who mention him have ever bothered to explore what he meant. Ironically, just as his somewhat casual use of that phrase in the first volume of his monumental study of China published in 1877 has earned him a perhaps undeserved place in the history of Silk Road studies, a sentence he wrote in that same work disparaging Chinese intellectuals understandably so angered Chinese nationalists that for a long time, they totally ignored the substance of his academic contributions.⁴ Every Richthofen anniversary celebration over the last century has tended to serve as excuse for German geographers to agonize over what their field of study is or should be.⁵ Post-colonial discourse devised new terms (if not really any new ideas) with which to flog the

² Jacobs' analysis, based on extensive use of Chinese sources, is an essential corrective to the somewhat simplistic and inaccurate treatment in the well-known book by Peter Hopkirk 1980, which, however, retains some value as a very readable overview of the major foreign explorations of the early 20th century.

³ On Hedin, see Hopkirk 1980, Ch. 4, and Meyer and Brysac 1999, Chs. 13, 21. I have examined Hedin's contributions to the re-discovery of the Silk Roads in as yet unpublished papers, 'Deconstructing Sven Hedin: Great Explorer, Feckless Adventurer, or Self-Promoting 'Foreign Devil on the Silk Road'?' a presentation in 2001 at the Center for East Asian Studies, Stanford University, and 'Sven Hedin and the Silk Road', delivered at the symposium 'Sven Hedin and Eurasia: Adventure, Knowledge, and Geopolitics' in Stockholm, November 10, 2007. Several of the papers from the symposium, but not mine, have been published in a special 2008 number of *Östbulletinen* available on line at http://www.sallskapet.org/ostbulletinen/Proceedings_Hedin.pdf. Apart from reading Hedin's own memoirs (Hedin 1996/1925), those wishing to know more about his explorations might well start with the recent, extensively researched biography, which I have not yet consulted, by Axel Odelberg 2008.

⁴ On the Chinese response, see Hsieh 2007, esp. pp. 361-362.

⁵ See Wardenga 2005, 2007b for an overview and 2007a for a more detailed assessment of his impact on German geography. Schultz 2007 provides a broader assessment of Richthofen's contribution to geographical science.

man for what he could not help but be as a product of Imperial Germany.⁶ Even those with a more nuanced appreciation of his life and work will undoubtedly continue to disagree over his legacy to modern scholarship.

Long curious about the context in which von Richthofen formulated his famous phrase, ‘The Silk Road (s)’, I was inspired in the year marking the 130th anniversary of its publication to undertake what we might term a preliminary archaeological investigation. The goal here is to dig a test pit to discover what is in the layer containing Richthofen’s original formulation. Readers should be warned that, like Heinrich Schliemann at Troy, I ignore most of the intervening layers, which also merit close attention, and try to focus on the one that contains the gold. However, unlike Schliemann, I do not risk digging right through it and destroying other interesting evidence. My tentative conclusion is that Richthofen meant something both narrower and broader than what those who invoke him have tended to suggest. Delimiting the rest of the stratigraphy of Silk Road studies, both above and below, is a project for future research, as is any broader reassessment of the good Baron’s legacy.

Trained and for years employed as a geologist, Ferdinand von Richthofen became a scholar of impressive breadth and depth and a prominent figure in the German academic establishment.⁷ His early fieldwork took him to East and Southeast Asia, and then between 1862 and 1868 he worked for mining interests in the American West. Today a 3944 m peak in Colorado bears his name. Between 1868 and 1872, he spent much of his time traveling in China, initially sponsored by the American mining companies which hoped to exploit resources there. It was apparently during this stay in China that he broadened his initial focus on physical geography. His descriptive writing, first published in an English edition in Shanghai in 1872, contained many observations on daily life and economic activity. On his return to Germany, his initial academic position was as a geologist, but in 1886 he became chair of the Geography Department at the University of Berlin, where he later rose to become Vice-Chancellor. An advocate of

⁶ Notably Osterhammel 1987, whose article does, however, provide very insightful comments on other aspects of Richthofen’s work. While his main focus is not really Richthofen, Hermann Kreutzmann (2007) makes an important point about the need to understand Richthofen’s work in the context of the so-called “Great Game,” the European competition for control of Inner Asia.

⁷ The best introduction to his life and work is Wardenga 2007a, esp. p. 315f. On his contributions regarding the geology of China, see Jäkel 2005 and Hsieh 2007.

German Imperial expansion, he served as a consultant, even if his opinions then were not always followed, when Germany joined the other European powers in imposing their presence in China.

Despite the fact that he never learned more than rudimentary Chinese, Richthofen earned the reputation of being an expert on China, an expertise embodied in his massive five volume study published between 1877 and 1912 which he never lived to complete, the separate atlas volumes, and his two-volume travel diary.⁸ Opinions vary regarding the degree to which his focus in this work earns him a place as the founder of regional geography as an emphasis within the broader academic field (Wardenga 2007a: 319-322; Schultz 2007: 340-341). Furthermore, whether he really deserved his reputation as a China expert came to be questioned early in the 1880s by Friedrich Hirth, who was long resident in China and is known to students of the Silk Road for his translations of Chinese sources (Hsieh 2007: 356-360).⁹ Later Richthofen probably bore some of the responsibility for Hirth's being denied an appointment at the University of Berlin.

Despite differences of opinion about his lasting contributions to the development of academic geography as a discipline, there is consensus about Richthofen's importance in a field of study that was still in its infancy in the late 19th century. At very least, his focus on geomorphology (which incorporates the expertise of a geologist) is surely significant. A recent careful assessment of his legacy concludes that probably his most lasting contribution to the field was his textbook manual for those undertaking field work (Wardenga 2007b: 323-326). This is somewhat ironic, since, after his return from China, Richthofen himself did not undertake fieldwork, a fact which at least one of his prominent students noted critically in a later memoir. While Richthofen's dealings with

⁸ Of these, I have examined closely only vol. 1 and skimmed vol. 2 of *China* (Richthofen 1877-1912) and one of the early editions of his travel diaries. The standard edition of the travel diaries seems now to be that edited by Tiessen 1907.

⁹ Whether or not a foreign scholar knew Chinese obviously played a significant role in the attitudes toward them by Chinese intellectuals. Stein and Richthofen suffered in this regard, although Hedin, oddly enough, did not. One reason Chinese opinion of Paul Pelliot remained largely very positive, even though he, like Stein, had carted off to Europe massive quantities of antiquities, was his superb knowledge of Chinese and his obvious empathy for Chinese culture. An interesting connecting link between Richthofen and Stein is that both used the services of a Belgian Paul Splingaerd, who worked for the Chinese customs service. Richthofen would recommend him to Hedin as a translator, a recommendation which the latter apparently never pursued. There is reason to think Splingaerd's advice influenced Stein's fateful decision to go to Dunhuang in 1907. On Splingaerd, see the picture reproduced in Wardenga 2007a: 319, where he stands behind Richthofen, and the biography recently published by his great-granddaughter, Anne Splingaerd Megowan 2008.

another of his most famous students, Sven Hedin, requires separate treatment, it is noteworthy that Richthofen and Hedin had a falling out in part precisely over the issue of fieldwork. Richthofen told Hedin he would never make it as an academic geographer unless he undertook practical training in the field in Europe. Rather than sit in Europe, Hedin preferred to go off pretty much on his own into Inner Asia to explore, always hoping to describe territories previously untrodden by Europeans. While Richthofen felt this impulse was premature, given the level of Hedin's training, ultimately the Swede would overshadow his erstwhile mentor and in fact accomplish some of what Richthofen himself had hoped to do but never accomplished in the exploration of Xinjiang. As Ute Wardenga (2007b: 323) has put it, Hedin, 'with his epoch-making studies of Central Asia, most consistently carried out what Richthofen had dreamed of achieving himself in the 1860s'. Political disturbances (the Yakub Beg rebellion) had prevented Richthofen from going there, although as kind of a consolation prize, for a long time the mountain range running along the southern edge of the Gansu Corridor leading into Xinjiang, today the Qilian Shan, was named the Richthofen Range.

An examination of how Richthofen's interests in Inner Asia developed explains how he came to be so identified with the 'Silk Roads'. At first acquaintance, his 1877 introduction to his *China* (1877-1912, vol. 1: 7) came as a surprise to me, since it opens with a chapter on Central Asia, by which he meant approximately what we now call Xinjiang — that is, the area bounded by the Altai Mountains in the north, Tibet in the south, the watersheds of the major Chinese rivers in the east and the Pamir Mountains in the West. In other words, this 'East Turkestan' was central, whereas that which lay west of the Pamirs, and even the loess plains to the east, the heart of agricultural China, were to him periphery.¹⁰ Most of the maps in the book are centered on the Tarim Basin and extend from the Caspian to Chang'an. Indeed the Inner Asian emphasis of much of the book provides the context for his development of the concept of the Silk Roads. We can also see in Richthofen's emphasis the embryo of what in Halford Mackinder's formulation several decades later became the geopolitical Eurasian 'Heartland'.

In an era today when desiccation of the steppe lands seems to be proceeding apace, we can especially appreciate his ideas about the importance of wind-blown sediment

¹⁰ On Richthofen's contributions to Central Asian geography, see Chichagov 1983.

from Central Asia contributing to the buildup of soil in the eastern plains of China. His understanding of wind erosion was a key to the development of Sven Hedin's ideas regarding the changing location of Lake Lop Nor. Richthofen's ideas about the impact of climate change on human settlement are directly relevant to any history of what we as a matter of course today label 'The Silk Roads'.

As Richthofen himself makes clear (1877-1912, vol. 1: 1, 722ff), among the most important influences on his thinking about Asian geography was the account of Alexander von Humboldt's travels in 1829, *L'Asie Centrale*. The young Richthofen had attended lectures by Gustav Rose, a mineralogist who had participated in Humboldt's expedition (Zögner 1998). Richthofen also had the highest praise for the massive compilation by Carl Ritter, *Asien*. He seems initially to have subscribed to Ritter's idea that Inner Asia was the original home of humans, even if later he abandoned that speculation.¹¹ The new archaeological discoveries in that region about which he learned in the last years of his life, even if they were not shedding light on earliest man, could have reinforced his original ideas about the centrality of Central Asia. Arguably his indebtedness to Humboldt and Ritter might be worth closer examination if we wish to probe the origins of the Silk Road concept.

The second surprise for me about vol. 1 of Richthofen's *China* is his interest in human geography. I expected his focus to be physical geography, which he treats only in the first half of this volume although in greater detail in vols. 2 and 3, where he weaves into his analysis the observations made during his travels. In the conclusion to vol. 1 he is quite explicit about what he considers the correct approach to the study of geography. One must start with studying geology and the physical landscape, but then a geographer should move on to a second stage of analysis, focusing on human interaction with a changing environment (1877-1912, vol. 1: 726ff.).¹² Not surprisingly then, we discover that a significant part of his introduction to *China* is really a history of human activity across Eurasia, a history of travel, exploration, and the exchange of

¹¹ On Ritter's influence, see Osterhammel 1987: 162-166, and Schultz 2007: 339-341; regarding the response to Ritter on the place of human origins, Hedin 1933: 83. As Prof. Ulla Ehrensvärd pointed out in her presentation at the November 2007 symposium, Ritter's cartographic techniques were very influential in Berlin, were emulated by Richthofen and, through him, Hedin.

¹² The assessments of whether Richthofen was really serious about human geography vary, as Schultz suggests in his review of the literature (2007: 341-342). Cf. Osterhammel 1987: 180-181.

cultural information. In short, even though he barely employs the term, it is a history of the Silk Roads. His letters to Hedin in 1890, 1892 and 1893, repeat his earlier advice. He chides Hedin for wanting to go off to explore without acquiring first sufficient academic training in geology, at the same time that he writes of the significance of the Tarim Basin and Aral Sea region for human history (Hedin 1933: 74-75, 83, 95-96).

We can see where some of the themes in *China* lead by looking ahead to the course of lectures Richthofen offered twice in the 1890s on patterns of human settlement (*Siedlung*) and communication or transport (*Verkehr*) in their relationship to physical geography (Richthofen 1908).¹³ He drew on examples of human activity from early to modern times and ranging around the globe. While his views in these lectures regarding levels of culture of various peoples might raise some eyebrows today (see Osterhammel 1987), we can appreciate his emphasis on the importance of human interaction across space and time. Human settlement (broadly conceived) is not static. Geographical conditions change, and political and cultural factors come into play. To a considerable degree, human development from more ‘primitive’ to higher cultural stages is a response to the challenges of the surrounding environment but is also influenced by exchange between areas of human settlement. Thus Richthofen is taking a ‘geosystems’ approach to writing human economic geography, in which exchange creates conditions for the development of more complex societies. The emergence of nodal points for exchange is a direct consequence of their occupying key positions on the routes of communication. Communication invariably involves the intersection of routes, the points of intersection often joining land routes with water routes. As Jürgen Osterhammel has suggested (1987: 189), in certain ways Richthofen’s ideas about socio-economic development anticipated ‘modernization theory’ as it would emerge in the writings of Max Weber.

Of particular interest here is the fact that for Richthofen in the longer historical view communications by water seem, if anything, to have been more important than communications by land. He admits though that we lack sources to say anything concrete about those routes in East Asia before the time of Ptolemy, whose evidence is difficult to interpret and seems in fact to reach only as far as the Gulf of Tonkin. The initiative in

¹³ For a brief assessment of this work see Schultz 2007: 338, where *Verkehr* is translated as ‘transport’.

using the sea routes seems to have come from the West, not from China, although in the fourth and fifth centuries, Chinese ships made their way into the Indian Ocean. The sea trade blossomed in the Islamic period and in Mongol times, but seems to have been controlled largely by the westerners. It is perhaps indicative of Richthofen's priorities that, when he delivered lectures to the German Geological Society anticipating some of the themes of the first volume of his *China*, the lecture on communication by sea (Richthofen 1876) preceded the one on communication over the Silk Roads (Richthofen 1877).¹⁴ The father of the 'Silk Road' concept was also the founding director (1902-5) of the Institut für Meereskunde (Institute for the Study of the Seas) in Berlin.

The specific context for Richthofen's use of the term 'Seidenstrasse' in his *China*, vol. 1, is his examination of the history of geographic knowledge in the West with regard to China and conversely, in China with regard to the West. He devotes particular attention to the earliest acquisition of this geographic knowledge in the relatively narrow period encompassing the Han Dynasty and Imperial Rome. In this large section of his book, Richthofen analyzes the evidence in Greek and Roman sources which first speak of the *Serer*, those connected with the trade in silk, or *Serica*, the land of silk. He examines as well the evidence in the Chinese annals concerning the first missions to the Western Regions and the consequent Han campaigns leading to expansion into Central Asia. Much of this is the now familiar story of the beginnings of the 'Silk Road'. In citing some of the pioneering analyses of exchange with China (notably by Joseph de Guignes and Jean Baptiste Bourguignon d'Anville in the 18th century), Richthofen acknowledges that much of what he has to say about the trade routes is not new (1877-1912, vol. 1: 460-462, 476). He also drew heavily upon the publication a decade prior to his own book of *Cathay and the Way Thither* by Henry Yule, whose engraved portrait occupied a place of honor in Richthofen's Berlin apartment (Hedin 1933: 33), and the translations of early

¹⁴ He delivered his lecture on the sea routes on May 6, 1876, half a year before he dated the preface to his *China* volume and sent it to the printer. A note indicates that the lecture is an excerpt from the book, where the corresponding material begins on p. 503. Richthofen begins his talk with a brief consideration of the 'Periplus of the Erythraean Sea', which of course is well known for being the first work to describe the impact of the monsoon winds and provides a detailed itinerary of the route from the Red Sea to the west coast of India, culminating in a mention China as a source of the silk which comes overland to Bactria and to the Ganges. Most of the lecture is on the location of Ptolemy's Kattigara, which Richthofen argues must refer to a city in the Gulf of Tonkin. Earlier scholars had posited other locations more closely connected with inland China.

Chinese sources by Emil Bretschneider. Richthofen's sources were textual, not archaeological, and he was further limited by having to rely on translations of the Chinese texts. Richthofen noted that following the establishment of a Han presence in Inner Asia in the second century BCE, references by the western sources to the Serer increased in frequency. After a period of decline toward the end of the former Han, under the latter Han the trade revived to flourish for about a century down to ca. 150 CE. As we now know, subsequent publications of additional primary source texts and especially the new archaeological discoveries would soon substantially revise many details of Richthofen's analysis (see especially Herrmann 1910, 1938). The revision of the 'standard' history of the Silk Roads continues today.

Of particular importance in Richthofen's narrative (1877-1912, vol. 1: 477ff) are the geography and world map of Marinus of Tyre, known to us only indirectly through Ptolemy. Marinus' information about the overland route from the Mediterranean to the borders of the land of silk derived from an account by the agents of a Phoenician merchant Maës Titianus. While Richthofen admitted the difficulty of matching Marinus' and Ptolemy's place names with ones known from the Chinese sources, he nonetheless identified 'Issedon Serica' with Khotan and 'Sera Metropolis' with Chang'an, and concluded that the route described was that passing south of the Taklamakan desert. Where Richthofen differed from some earlier commentators was in his questioning whether the route through the Pamirs went via Samarkand and the Ferghana Valley. On the basis of the latest Russian geographical explorations, he felt there was reason to think that the early silk merchants had traveled in a more direct line from Bactria to the east through the Pamir-Alai.

While this discussion introduces the term 'Seidenstrasse' in the singular specifically with reference to Marinus' route, it also uses the term in the plural for routes both east and west of the Pamirs.¹⁵ He takes pains to emphasize that 'it would be a mistake to consider that it [Marinus' route] was the only one at any given moment or even the most important one'. In general, rather than 'Seidenstrassen', Richthofen prefers

¹⁵ Parzinger 2008 emphasizes that Richthofen used the plural but in his article is not really concerned with Richthofen at all. Parzinger's article is based on his paper delivered as a keynote address at the Richthofen symposium in Berlin in 2005. A selection of other papers from that symposium constitute the number of *Die Erde* cited above.

the terms ‘Verkehr’ (communication), ‘Strassen’ (roads or routes), ‘Hauptstrassen’ (main routes) or ‘Handelsstrassen’ (trade routes), even as he stresses that it was the trade in silk which fueled the development of the Inner Asian contacts.¹⁶ When he later discusses the overland trade routes in the Islamic period and Pegolotti’s 14th-century description of the route to China, Richthofen (1877-1912, vol. 1: facing 566 and 672) mapped them respectively as the ‘Hauptverkehrsstrasse’ and ‘Haupt-Handelsstrasse’, the latter running from north of the Caspian, south of the Aral Sea and then north of the Tien Shan to Barkol, Hami, and the Gansu Corridor.

This is not to say that in focusing on the routes beginning in the Han period Richthofen is oblivious to interactions across Eurasia earlier, but he portrays the earlier trade contacts as episodic exchange from hand to hand, not as something organized and involving long distance travel and large quantities of goods (458). Only with the extensive results of modern archaeology across Inner Asia are we now fully appreciating how widespread were those earlier contacts which moved in a great many directions (for a good overview, see Parzinger 2008). For Richthofen it is important that, during what he considers was the relatively brief flourishing of the Eurasian trade under the Han, Chinese merchants (presumably he means ethnic Chinese) were traveling all the way into Central Asia. However, he does not claim that merchants traveled the whole breadth of Eurasia from China to the Mediterranean. Clearly the idea of trade in stages fits within his scheme.

¹⁶ A subsection of his discussion beginning on p. 442 concerns the Seidenhandel (silk trade), anticipated in his earlier statement (403): ‘Die Seide ist das treibende Moment, welches durch ein Jahrhundert den Verkehr aufrecht erhält’. ‘Mit der Seide wanderte das Wort, mit dem die Chinesen sie bezeichneten’ (443; also 474). His first use of the term ‘Silk Roads’ is this: ‘Ergänzende Nachrichten über den westlichen Theil einer der früheren Seidenstrassen erhalten wir wiederum durch Marinus, die hier ganze seinem Berichterstatte dem Agenten des Macedoniers Maës folgt’ (496). After specifying Marinus’ route, he makes it clear it was not the only one (‘Die andere Strassen, welche das Tarym-Becken in verschiedenen Richtungen durchschnitten, kamen hier nicht in Betracht’ [497]; ‘Der Weg des Agenten von Maës war einer der damaligen Handellstrassen...Aber es wäre ein Irrthum, sie für die einzige in jener Zeit, oder auch nur für die wichtigste zu halten’ [500]). He readily admits that new geographical discoveries may make it possible to specify more precisely the ancient routes: ‘Eine sichere Aufklärung über den bisher betrachteten interessanten Theil des alten Seidenstrasse von Maës darf erwartet werden, wenn Fedschenko einen Nachfolger finden, und das ganze Strassensystem jener Gegend eingehender untersucht worden sollte’ (500). His index contains only a single (and erroneous) page reference to ‘Seidenstrasse’ and a crossreference to ‘Sererstrasse’. The running head on p. 499 reads ‘Seidenstrasse des Marinus’ even though there is nothing about it on the given page. The map facing p. 500 delineates in red ‘die Seidenstrasse des Marinus’.

At first blush, we might be puzzled by Richthofen's assertion that, for several centuries after the Han withdrew from Central Asia in the second century CE, overland exchanges of any consequence ceased. His own evidence seems to contradict this, where he takes up (granted, in a rather compressed way) developments such as the spread of Buddhism into China, the rise of the Türk Empire, and evidence in the Sui annals and in accounts such as those of Faxian and Xuanzang. In fact, when he talks of cessation of exchanges (1877-1912, vol. 1: 523) he seems specifically to be referring to the trade, if diminished, now being in the hands of merchants other than the Chinese. The other important factor in his view was that the transmission of the secret of silk to Byzantium in the 6th century and consequent rise of a silk industry there diminished significantly in the West demand for Chinese silk.

He thus justifies his assertion that when the Tang Dynasty reconquered Central Asia, the very nature of the silk trade had changed. By this time, silk was not just a form of luxury textile, it was also a form of currency, in central China and in the Chinese northwest. The changes in turn affected Chinese interest in geographical knowledge. While new information about the West was being acquired under the Tang, there was no longer an effort to integrate it with the old into a larger picture of world geography. Even though there was a concerted government effort to gather information, especially about Inner Asia, Chinese horizons shrank to that which immediately adjoined their borders, and with the Tang withdrawal from Central Asia after the middle of the eighth century, those horizons themselves diminished (547, 578).¹⁷ The rise of Islam capped this fundamental shift away from the kind of interaction across Eurasia that had taken place centuries earlier. In short, as he concluded in his presentation to the Geological Society in Berlin (1877: 122), 'The concept of the transcontinental Silk Roads had lost its meaning'.

At very least we might point out that Richthofen's analysis for the Tang era ignores the overwhelming evidence of pervasive foreign influences and contacts in that period. He is simply wrong about an absence of evidence for cultural interaction between Persia and China in the pre-Mongol period (1877-1912, vol. 1: 556). Yet at the same time, he makes it clear that the sea trade flourished, and evidence in the Chinese annals

¹⁷ As Helen Wang has reminded me, Richthofen could have fleshed out his account with reference to the An Lushan rebellion, which nearly toppled the Tang, and the Tibetan occupation of Central Asia.

indicates Chinese vessels made it all the way to Siraf in the Persian Gulf. Idrisi (12th century) even has them visiting Aden (568). For the most part though, this trade was in the hands of Arabs and Persians (578).

It may be easier to agree with Richthofen that during the post-Han period, the West in effect forgot what it had known about China.¹⁸ Indeed the establishment of an Eastern Christian presence in China under the Tang seems to have left no trace in Western geographical knowledge (555). While Islamic geographical works would eventually include much new information about Central and East Asia, little of this became known in medieval Europe.

Even though the conditions for travel and cultural exchange changed dramatically under the Mongol Empire the impact of this on geographical knowledge was far more pronounced in the West than in China. Richthofen expresses disappointment in not finding a conceptual change in the Chinese understanding of the world. Instead, he finds geographical inquiry limited to traditional kinds of compilation, despite the evidence for the significant presence of Chinese in western parts of the Mongol Empire where they must have had ample opportunity to learn about the wider world (587).

Finally, regarding Richthofen's treatment of the East-West exchange of geographical knowledge, I might note the oddity of his sweeping comments about Ming isolation (619). He himself understands that such was not the case in the early 15th century, when there were embassies exchanged with the Timurids. Even though he is acquainted with Clavijo, he ignores what the Spaniard tells us about the Chinese in Samarkand. And there is only a passing mention in Richthofen's account concerning one of the great Chinese fleets in the Indian Ocean during the first third of the 15th century.

Richthofen's use of the term 'Silk Roads' is really quite limited. He applies it, sparingly, only to the Han period, in discussing the relationship between political expansion and trade on the one hand and geographical knowledge on the other. The term refers in the first instance to a very specific east-west overland route defined by a single

¹⁸ '...So verlor sich doch im Westen allmählig die Kunde von der Existenz eines Volkes der Serer; denn die Chinesen waren aus den Bazars verschwunden, der Seidenhandel zu Lande nahm wahrscheinlich bedeutend ab, und gelangte in die Hände von Völkern, die man unter ihren eigenen Namen kannte. Man fragte nicht nach ihrem weiteren Ursprung und brauchte daher keine Serer mehr...' (523). Note, of course, that this is not an indication that there was no silk trade whatsoever, but simply that it was no longer being carried by Chinese merchants.

source, even though he recognizes that at that time there were other routes in various directions (459-462) and at least to some extent appreciates that silk was not the only product carried along them. If the Silk Road of Marinus was a Hauptstrasse, it is only because that is the route which his lone informant used.

This limited use of the concept served Richthofen's immediate purpose of explaining the transmission of geographical knowledge and the evidence of a few ancient sources. In fact he never uses the term in discussing the later part of that history, nor did he intend that the concept be extended to other periods and an unlimited range of economic and cultural exchanges across Eurasia. While the title of his lecture to the Geological Society included the term 'Silk Roads', the substance of the lecture reiterated the arguments of the book.¹⁹ By the time he read his general lectures on settlement and communication a number of years later, he did not even use the term 'Seidenstrasse'. Indeed, trade in silk occupied less than a page in that narrative, where, in his discussion of ancient human 'Handelsverkehr', gold, precious stones and spices merited more attention. Nor did Richthofen use the term 'Seidenstrasse' in his correspondence with Hedin, the last letters of which date from the time when Hedin's discoveries and those of Aurel Stein and the German archaeologists under the sands of the Tarim Basin were becoming known. So Richthofen both denied that the concept of transcontinental 'Silk Roads' had any broader application at the same time that he never subscribed to a narrow concept of an ancient East-West superhighway where the central part of the route was of little consequence except as a transmission belt between the civilizations of East and West. His narrow interest pertained to analysis of specific written sources, whereas his

¹⁹ The 1877 presentation begins with allusions to how recent geographical discoveries were now making it possible and desirable to re-examine the ancient texts in order to identify places they mentioned. After a compact overview of the physical geography of Inner Asia, he moves quickly through nomadic confrontations with sedentary societies and then takes up trade, in which the key product was silk. He reviews briefly the earliest mentions of silk, starting in Chinese sources, and then focuses on what he sees as the dramatic consequences of Han expansion into Inner Asia. While there is evidence of silk getting to the West and to India prior to the Han (via Khotan), the advent of direct Han trade across the Tarim Basin beginning in 114 CE with the first attested caravan, was a quantitative leap. Direct trade across Inner Asia was possible historically only when a single political power controlled much of the route — obviously under the Mongols, and to a lesser degree during the period of Tang control of the Western Lands. He summarizes the argument in his book concerning Han expansion and the evidence in the Chinese annals that the southern route around the Tarim Basin antedated in importance the northern one. In support of the book's arguments that the Western merchants might have taken more direct route from Balkh through the Pamirs, he cites in his paper new reports on explorations which he had received while his book was already in press.

concept of human geography was in fact much broader than those who invoke his ‘Silk Road’ seem to have understood.

Once he had enunciated the idea of ‘Silk Roads’ though, did it catch on? This is a subject for a separate study, but let us look quickly at some evidence. Reviewers of his *China* seem to have been little interested in the phrase, focusing their attention instead on whether or not he was correct in his discussion of dating and precision of the information contained in the ancient texts (e.g., Gutschmid 1880). There is no indication that Hedin in his early books paid any attention to the concept. In fact when he went off to Central Asia, he evinced little understanding of the cultural history and human geography which was so important to Richthofen. This, despite the fact that Hedin had been introduced to *China*, vol. 1, before he went to study in Berlin in 1889, and despite Richthofen’s urgings that he pay attention to Inner Asian human history. As we shall see, Hedin eventually invoked his mentor’s phrase, albeit incidentally to other priorities.

The scholar who seems first to have done something with ‘Seidenstrasse’ was Albert Herrmann, a proper analysis of whose work cannot be my task here. Herrmann’s 1910 book was the first to use ‘Seidenstrasse’ in its title. Its use of the term, as in Herrmann’s subsequent writings, seems to have been consistent with Richthofen’s limited original intent. That is, the task Herrmann set himself was to review the earliest evidence concerning East-West geographical knowledge, the emphasis being on the relatively short period embracing the Han Dynasty. Herrmann had in hand a good many texts which had not been available to his predecessor, incorporated new information from exploration and archaeology, and seems, by and large, to have had a much deeper knowledge of Greek and Roman geography than did Richthofen. Only in passing did Herrmann comment (1910: 10) on Richthofen’s formulation ‘Seidenstrasse’, suggesting (not entirely accurately) that Richthofen had confined it to describing the Chinese route into Central Asia, even though it might also be extended to describe as well the route westwards to Syria. Herrmann justified his ‘correction’ with reference to work published by Friedrich Hirth in 1889 regarding the eastern trade. Following the appearance of his monograph, Herrmann published in 1915 an essay on ‘The Silk Roads from China to the

Roman Empire'.²⁰ He continued to work on the early sources, reconstructing (somewhat controversially, I believe) the ancient Chinese maps and including in his still useful *Historical and Commercial Atlas of China* (1935) several maps on which the quite numerous branches of the 'Silk Roads' are illustrated.²¹

Herrmann's work culminated in a second 'silk road' volume (1938) which left only shreds of the original detail of Richthofen's scheme intact and presented at least the illusion that one might really be able to quantify distances in the ancient texts. In particular, following on the first reviews of Richthofen, Herrmann emphasized how his predecessor had misconstrued the reference points used by Ptolemy and failed to understand that Ptolemy had arbitrarily halved the distances on the eastern part of his map.²² Marinus, his source, had committed the opposite mistake of overextending them. Herrmann thus set about to reconstruct more accurately Marinus' lost map. Probably the most significant conclusion he reached was that Marinus' route was not the southern one around the Taklamakan but rather the two intersecting northern ones. According to Herrmann, Issedon Serica referred not to Khotan, but to the region farther east, Shan-Shan/Kroraina (i.e. including Charchlik and Lou-Lan), even though, somewhat illogically it seems, Sera Metropolis was not Chang'an, as Richthofen had it, but Wu-Wei, farther to the west. By 1938 Herrmann was using the term *Seidenstrassen* (plural) quite freely in his text. Probably the only reason he did not do so in the title of the monograph — where he used 'Land der Seide' to refer to the ancients' China — was the fact that his colleague Sven Hedin (who wrote a brief preface to Herrmann 1938) had published two years earlier his own book entitled *The Silk Road*.

It is a bit difficult to imagine that Herrmann's dense analyses of the Silk Roads sparked an interest in the broad reading public. If not Herrmann then, what about Hedin or Stein? Any analysis of their impact will need to take into account what seems to have been an insatiable appetite of large audiences in the late nineteenth and early twentieth centuries for lectures and books on exploration, adventure travel, and archaeological

²⁰ 'Die Seidenstrassen von China nach dem Römischen Reich', *Mitteilungen der Geographischen Gesellschaft in Wien*, 1915: 472ff. (cited in Herrmann 1938: 3, n. 2).

²¹ See especially: <http://map.huhai.net/24.jpg> and <http://map.huhai.net/37.jpg>, the first showing the Han routes in Central Asia; the second the situation in Central Asia ca. 660.

²² Herrmann's painfully detailed attempt to make sense of Ptolemy certainly needs to be re-considered, as Étienne de la Vaissière (2009) suggests, following a methodology suggested by Claude Rapin.

discovery. We may well ask whether the explorers and academics invented the ‘Silk Road’ as a popular phenomenon or whether, instead, the impetus was public demand. Stein’s explorations were often reported in the London *Times* (Wang 2002); Hedin’s collection of newspaper clippings concerning his exploits extends over several meters of archival shelving.²³ In the days before television, the lecture tour was a significant form of public entertainment. Hedin had the ability to mesmerize audiences with tales about his foolish escapade of trying to cross the Taklamakan in 1896. Stein, I think much more reluctantly, also lectured.

From his earliest days as an explorer, Hedin was successful in finding good publishers for his narratives. Richthofen expressed amazement at how quickly the young Swede could write up his travels and have them in print (e.g., Hedin 1933: 82); producing the books became kind of a Hedin family business enterprise. Both Hedin and Stein produced rather bulky ‘popular narratives’ of their explorations as well as dense scholarly compendia with technical details. Modern readers often find themselves put off by even the ‘popular narratives’. I happen to like Stein for his detail about excavating ancient garbage dumps and dislike Hedin for his tiresome reminders of temperatures, stream flow, altitude and bad weather. I have heard exactly the opposite opinion from others. Hedin was a publishing sensation in Germany after he was taken on by the firm of Brockhaus in Leipzig, which issued long, intermediate length and short versions of the same books and reprinted them in large numbers (Hedin 1933: 43; Waugh 2001). There was some competition between Stein and Hedin in terms of publication.²⁴

Of course much of the Hedin material had little to do with the ancient silk roads, but by the 1920s there were compactly written popularizations (not the earlier so-called ‘popular narratives’) which would have led readers to the subject, if not necessarily to the specific term ‘Silk Road’. Among them was Hedin’s autobiography (1996/1925: 188), with its colorful verbal excess about his discovery of Dandan Uiliq, where he ‘won, in the heart of the desert, a new field for archaeology’ and stood ‘like the prince in the

²³ I owe the information about the clippings on Hedin to Axel Odelberg, who discussed his then still forthcoming biography of Hedin at the symposium in Stockholm in November 2007.

²⁴ As Helen Wang indicates, in order to fund their expeditions, they had to prove they were worthy of support, and get financial backing. The press picked up on this. See for example, the illustration to Wang 2007: 230, in which the *Illustrated London News* of 30 January 1909 shows portraits of 15 ‘men who fill in the gaps, the great explorers of the moment’, with Stein at No.1 and Hedin at No.15.

enchanted wood, having wakened to new life the city which has slumbered for a thousand years'. Von Le Coq (1928) produced a decent overview of the German Turfan expeditions, mixing ethnographic and archaeological material, and Stein's Lowell Institute (Boston) lectures appeared as *On Ancient Central Asian Tracks* (1974/1933). All of these books have been reprinted and are still available.

By the 1930s, Richthofen's original formulation was barely more than a footnote. Hedin, in fact, may have been the first to invoke his 'Silk Road' for its romantic aura as a means of marketing a book which had little to do with what his mentor had said. The book in question, *The Silk Road* (first published in Swedish as *Sidenvägen* in 1936) was soon translated into English and German, and the German edition within a few short years had been reprinted at least ten times. For the first three-fourths of the book Hedin barely mentions the Silk Road. Then he pastes in a perfunctory 10-page overview of its history, mentioning both Richthofen and Herrmann.²⁵ Otherwise, but for a few photographs and sketches of parts of the Great Wall and watchtowers and a paragraph or two on the Sino-Swedish discoveries, there is nothing. The book is really about Hedin's extended motor journey from 1933-35 in the last stages of the multi-year expedition he had organized. The book is typical Hedin, largely a travel tale involving occasional exciting adventures during the period of civil unrest in Xinjiang. The mirage of the title notwithstanding, it is hard to imagine that with this focus the book could have served as the catalyst for the more modern overblown enthusiasms for the Silk Road. The modern developments include such excesses as the NTK-CCTV multimillion yen 30-part television spectacular of the 1980s, full of blowing dust, the quickly stultifying music of Kitaro, and often inane commentary, even if some of the footage is quite inspiring. 'Silk Road Studies' now may mean modern geopolitical and security studies of oil pipelines, Central Asian transportation and ethnic unrest.²⁶

²⁵ Even though he mentions Richthofen in only one sentence, Hedin correctly pointed out that his mentor had used 'Silk Road' specifically in mapping the route transmitted by Marinus of Tyre: 'I texten till sitt berömda verk China, I, talar han om 'Die Seidenstrasse' och på en karta om 'die Seidenstrasse des Marinus'' (Hedin 1936: 310).

²⁶ I have in mind here the Silk Road Studies Program, based in Uppsala, Sweden, a joint undertaking with the Johns Hopkins University Central Asia-Caucasus Institute. See the website at <<http://www.silkroadstudies.org/new/>>, accessed November 9, 2007.

So in its inception Seidenstrasse was a convenient shorthand, auxiliary to a specific treatment of ancient written sources. Does this then mean that we should ignore the good Baron who invented the term? On the contrary, I would argue that we can benefit from reading him, not for the details which in so many cases are now obsolete or to club him for his 'orientalist' and 'imperialist' views, but for his breadth and depth of understanding of the interaction between man and the environment and for his appreciation of the significant role of communication in human exchange across the centuries and in various parts of the globe. He certainly is one of those who shared with other pioneering scholars in the nineteenth century an understanding of the centrality of Central Asia. Even though he never extended his neologism to later periods, his vision encompassed much of what we find in the more expansive definitions of 'Silk Roads' today. He wrote well and his magisterial pages breathe a willingness to tackle large ideas. True, his lectures on settlement and communication are textbookish, an accurate reflection of their genre. To a degree though that impression derives from the fact that what we find in them is ideas that we now take for granted, even if when first enunciated they may have stuck his listeners as new. In contrast, his *China* is anything but simplistic. For its time, despite its biases, internal contradictions and the limitations of its source base, it tells the story of the Silk Roads amazingly well. Possibly rereading Richthofen would encourage us to excavate in the lower layers of the cultural deposit, which conceal the works of his eminent predecessors who, like Richthofen, are nowadays little read. We just might discover that their vision too in many ways anticipated that of our reputedly more enlightened and better informed times.

Of course another response to Richthofen might be to follow the advice of Warwick Ball and dismiss the concept of the Silk Road as a meaningless neologism which bears little relationship to the realities on the ground in early Eurasia (Ball 1998). Certainly the main point in his ex cathedra pronouncements about the modern popularization of the concept has its merits, even if he has not read his Richthofen, gets some of his facts wrong, and misunderstands important aspects of how Eurasian exchange operated in earlier times. I would readily admit the concept of the Silk Roads is lacking in analytical value, especially if it includes under its umbrella almost any and all forms of human exchange across all of Eurasia and over two or more millennia. Yet to

interpret it this broadly seems consistent with Richthofen's vision of what human geography was all about, even if to do so ignores the limited use he made of the specific phrase. As Richthofen understood, the routes were indeed many, ideas may have been more important than material goods, and as with any history, there was change over time.

References

- Ball, W 1998, 'Following the mythical road', *Geographical Magazine* 70/3: 18-23.
- Chichagov, VP 1983, 'Ferdinand von Richthofen und die Geographie Zentralasiens', *Petermanns Geographische Mitteilungen* 127: 221-230.
- Gutschmid, A von 1880, Review of: Richthofen, *China*, Bd. 1, in: *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 34: 188-213.
- Hedin, S 1996/1925, *My Life as an Explorer*, tr. A Huebsch, Kodansha, New York, etc. (first published 1925, a translation from the Swedish *Mitt liv som upptäcktsresande*).
- Hedin, S 1933, introd. and annot., *Meister und Schüler. Ferdinand Freiherr von Richthofen an Sven Hedin*, Reimer, Berlin.
- Hedin, S 1936. *Sidenvägen. En bilfärd genom Centralasien*, Bonniers, Stockholm (Eng. tr. 1938: *The Silk Road*, Dutton, New York; Ger. tr. 1942, *Die Seidenstrasse*, 10th ed., Brockhaus, Leipzig; Jap. tr. 1966: *Chûô Ajia: Tanken kikô zenshû*, Tokyo).
- Herrmann A 1910, *Die alten Seidenstrassen zwischen China und Syrien. Beiträge zur alten Geographie Asiens. I. Abteilung. Einleitung. Die chinesischen Quellen. Zentralasien nach Ssema Ts'ien und den Annalen der Han-Dynastie. Quellen und Forschungen zur alten Geschichte und Geographie. Heft 21*, Weidmannsche Buchhandlung, Berlin.
- Herrmann, A 1935, *Historical and Commercial Atlas of China*, Harvard-Yenching Institute, Monograph series, vol. 1, Harvard University Press, Cambridge, Mass. The maps (not text) may be found on-line at <<http://map.huhai.net/>>, accessed November 9, 2007.
- Herrmann, A 1938, *Das Land der Seide und Tibet im Lichte der Antike*, Quellen und Forschungen zur Geschichte der Geographie und Völkerkunde, vol. 1, K. F. Koehler, Berlin.
- Hopkirk, P 1980, *Foreign Devils on the Silk Road: The Search for the Lost Cities and Treasures of Chinese Central Asia*, Univ. of Massachusetts Press, Amherst.
- Hsieh, C-N 2007, 'The Reception of Western Geoscience in China during the Age of Early Modernisation — Ferdinand von Richthofen (1833-1905): a Case Study', *Die Erde* 138/4: 353-368.
- Jacobs, J 2009, 'Confronting Indiana Jones: Chinese Nationalism, Historical Imperialism, and the Criminalization of Aurel Stein and the Raiders of Dunhuang, 1900–1944', Ch. 5 in: *China on the Margins*. Ed. S Cochran and PG Pickowicz, Cornell University Press, Ithaca, NY (forthcoming).

Jäkel, D 2005, 'Ferdinand von Richthofen's contributions to Chinese geology and geosciences', *Disiji yanjiu/Quaternary Sciences* 25: 409-431.

Kreutzmann, H 2007, 'Geographical Research in Chinese Central Asia: Aims and Ambitions of International Explorers in the 19th and 20th Centuries', *Die Erde* 138/4: 360-384.

La Vaissière, É de 2009, 'The Triple System of Orography in Ptolemy's Xinjiang', in: *Exegisti monumenta. Festschrift in Honour of Nicholas Sims-Williams*. Ed. W Sundermann, A Hintze and F de Blois (= Iranica, Bd. 17), Harrassowitz, Wiesbaden: 527-535.

Le Coq, A von 1928/1926, *Buried Treasures of Chinese Turkestan: An Account of the Activities and Adventures of the Second and Third German Turfan Expeditions*, tr. A Barwell, Allen & Unwin, London (German ed., 1926, *Auf Hellas Spuren in Ostturkistan*).

Megowan, AS 2008, *The Belgian Mandarin*, XLibris.

Meyer KE and Brysac SB 1999, *Tournament of Shadows: The Great Game and the Race for Empire in Central Asia*, Counterpoint, Washington, D. C.

Odelberg, A 2008, *Äventyr på riktigt. Berättelsen om upptäckaren Sven Hedin*, Norstedts, Stockholm.

Osterhammel, J 1987, 'Forschungsreise und Kolonialprogramm. Ferdinand von Richthofen und die Erschließung Chinas im 19. Jahrhundert', *Archiv für Kulturgeschichte* 69: 150-195.

Parzinger, H 2008, 'The 'Silk Roads' Concept Reconsidered: About Transfers, Transportation and Transcontinental Interactions in Prehistory', *The Silk Road* 5/2: 7-15.

Richthofen, F von 1876. 'Über den Seeverkehr nach und von China im Altertum und Mittelalter', *Verhandlungen der Gesellschaft für Erdkunde zu Berlin*, 1876: 86-97.

Richthofen, F von 1877. 'Über die zentralasiatischen Seidenstrassen bis zum 2. Jh. n. Chr.', *Verhandlungen der Gesellschaft für Erdkunde zu Berlin*, 1877: 96-122.

Richthofen, F von 1877-1912, *China. Ergebnisse eigener Reisen und darauf gegründeter Studien*, 5 vols., Reimer, Berlin; here vol. 1.

Richthofen, F von 1908, *Vorlesungen über Allgemeine Siedlungs- und Verkehrsgeographie*, ed. O Schlüter, Reimer, Berlin.

Schultz H-D 2007, 'Ferdinand von Richthofen: The True Founder of Modern Geography?' *Die Erde* 138/4: 333-352.

Stein, A 1974/1933, *On Ancient Central-Asian Tracks: Brief Narrative of Three Expeditions in Innermost Asia and Northwestern China*, University of Chicago Press, Chicago and London (1st ed., 1933, Macmillan, London).

Tiessen, E 1907, *Ferdinand von Richthofens Tagebücher aus China*, Berlin.

Wang, H 2002, ed. and introd, *Sir Aurel Stein in The Times: a collection of over 100 references to Sir Aurel Stein and his extraordinary expeditions to Chinese Central Asia, India, Iran, Iraq and Jordan in The Times newspaper 1901-1943*, Eastern Art Pub., London.

Wang, H 2007, 'Sir Aurel Stein, the next generation', in: E Errington and VS Curtis, eds., *From Persepolis to the Punjab: Exploring the Past in Iran, Afghanistan and Pakistan*, British Museum Press, London: 227-234.

Wardenga, U 2005, 'Ferdinand von Richthofen. Zum 100. Todestag am 6. Oktober 2005', on-line at <<http://www.uni-leipzig.de/campus2009/jubilaen/2005/richthofen.html>>, accessed November 6, 2007.

Wardenga U 2007a, 'Ferdinand von Richthofen and the Development of German Geography', *Die Erde* 138/4: 313-332.

Wardenga, U 2007b, 'Ferdinand von Richthofen – Then and Now. An Introduction', *Die Erde* 138/4: 301-311.

Waugh, DC 2001, 'A Sven Hedin Bibliography', on-line at <<http://www.silkroadfoundation.org/bibliography/hedinb3.html>>, accessed November 9, 2007.

Zögner, L 1998, 'Ferdinand von Richthofen — Neue Sicht auf ein altes Land', in catalogue: 'Tsingtau. Ausstellung im Deutschen Historischen Museum vom 27. März bis 19. Juli 1998', on-line at <http://www.dhm.de/ausstellungen/tsingtau/katalog/auf1_4.htm>, accessed November 6, 2007.