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Abstract

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An itinerary is presented of the 1841-42 expedition to southern Iran by the Silesian botanist Theodor Kotschy (1813-66), together with a short biography, a discussion of specimen numbering and a gazetteer containing variant spellings of places visited, with their geographical coordinates.

Key words: biography, expedition itinerary, Zagros Mts, herbarium, history of botany.

Introduction

The plant collections of Theodor Kotschy (1813-66) from southern Iran laid the foundations of our knowledge of the flora of the Zagros Mts and their southern foothills, and of the Gulf islands of Khark and Khargu. At least 276 of the more than 800 gatherings subsequently became the types of new species, most being first described by Edmond Boissier (1810-85) in his series *Diagnoses Plantarum Orientalium Novarum* (Boissier 1843-59) and in *Flora Orientalis* (Boissier 1867-84).

Biography

Kotschy's brother Otto wrote the most complete biography, published in "Reliquiae Kotschyanae" (Kotschy p. vii-xl in Schweinfurth 1868). It is not necessary to reiterate here the whole life-story of this remarkable explorer, but in order to appreciate the productiveness of his visit to southern Iran we must make a brief reference to the experience gained on his earlier travels. His collections from Sudan, in particular, included many species new to science.

His first oriental journey took place from 1836 to 1838 in the company of Joseph Russegger in Turkish Cilicia, Syria, Egypt and Sudan (Kordofan). In 1839 he revisited Kordofan, in 1840 he went to Cyprus and in 1841 he returned to Asiatic Turkey before travelling south through Iraq to begin his explorations of the hitherto botanically unexplored Zagros Mts of southern Iran in the spring and summer of 1842. In 1843 he explored the area north of Tehran before returning to Europe.

At the age of 34, in 1847, he was finally granted a salary as assistant at the Imperial Cabinet of Curiosities in Vienna. The following year he made a visit to the Cilician Taurus in southern Turkey, his third visit to that country. In 1854 he visited the elderly Alexander von Humboldt and Karl H. E. Koch in Berlin.

His later travels included a trip to Egypt, Palestine and Lebanon in 1855, to Turkey, Cyprus and Kurdistan in 1859 and (with Unger) to Cyprus and northern Syria in 1862, narrowly avoiding capture by outlaws in the Amanus. Further biographical information is provided by Riedl-Dorn (2001).

Outline of the 1842 expedition

Kotschy arrived in Iran after travelling down the Euphrates from Mosul to Baghdad on a raft supported by animal skins, then went by ship to Basra. He set off for the island of Khark, located in the Gulf (Khalij-e Fars), on 12 December 1841, where he made his first collections on 30 December. The British garrison provided him with accommodation. He then visited the adjoining island of Kharku on 7 January 1842 before crossing to the mainland at Bushehr.

While in Khark he discovered the square or four-cornered crab, *Epixanthus kotschyi* and reportedly also collected marine algae from the waters of the Gulf, though these were not included with his 'Plantae Persiae australis' distribution.

After a lengthy stay in Bushehr, presumably spent gaining the necessary travel permits, he headed inland via Kazerun to the regional capital of Shiraz, arriving on 12 February 1842, before making a collection of around 80 gatherings around Jereh from 13-25 March and visiting the tar springs near Dalaki. The first two weeks of April were spent in Shiraz, and the next ten days involved a short trip north to the ruins of the ancient Iranian city Persepolis (Takht-e Jamshid) and the nearby Achaemenian tombs (Naqsh-e Rostam).

May was spent searching for plants in the mountains near Shiraz, where ascents of three quite lofty peaks (Barfi, Sabz Pushan and Ayob) gave Kotschy his first contacts with the rich, and previously unknown, alpine flora of the Zagros chain. At the beginning of June he made a short excursion to the Maharlu salt lake east of Shiraz and around the middle of the month he investigated Kuh-e Delu.

The last ten days of June were presumably spent in preparation for future fieldwork, as no collections were recorded; at that time he is known to have run short of money and the next phase of his journey was accomplished with the help of a loan from Prince Farhad Mirza. At the beginning of July he travelled northwest into the central Zagros, a loosely administered area mainly inhabited by nomadic tribespeople.

On 6 July he set out from the village of Dozdkurd at the foot of Kuh-e Dena to make his most extensive exploration of the High Zagros. For the rest of that month and on until early August he camped out on the upper slopes, sometimes on "alps where the nomads pitch their tents" and amassed numerous sets of more than 240 separate collections, many of which were of previously undescribed species. He finally reached the summit of Kuh-e Dena on 2 August.

Kotschy also made freshwater fish collections from around Shiraz, including the streams of the Maharlu basin in the Shiraz valley, the Kor River basin north of Shiraz, the Mond River (=



Fig. 1. Portrait of Kotschy [from Schweinfurth 1868].



Fig. 2. Map of Iran by Dower (1836) showing area of study.



Fig. 3. Different styles of numbering on printed labels (taken from specimens at LIV).

Qarah Aqaj), which drains to the Persian Gulf and Lake Perishan (= Famur) near Kazerun. These were numbered independently of the plant specimen series, were subsequently named and published by Heckel (1846-49). Further details are provided by Coad (see References).

After concluding his explorations of the Zagros, Kotschy dispatched his collections, along with his Sudanese servant Ali (whose broken leg had prevented him from accompanying Kotschy on his recent explorations) to Basra on 13 October. He then travelled north, leaving Shiraz for Tehran on 15 November with an escorted convoy, and collected more plants in the mountains of Mazandaran province, north of Tehran, in 1843, during which he ascended Iran's highest mountain, Kuh-e Damavand, before returning to Vienna via Erzurum, Trabzon and Istanbul. His 1843 collections from Iran are numbered sequentially, paralleling those from southern Iran, and have sometimes therefore been cited in error from the province of Fars. Both series of exsiccatae are listed by Buser (1888).

Disposition of the collections

After being identified and named by Edmond Boissier, Kotschy's collections were arranged and distributed by the German missionary Rudolf F. Hohenacker (1798-1874), who at the time was based in Esslingen. Up to 1842 he was associated with the Esslinger Reiseverein, an association dedicated to promoting plant collecting expeditions; from 1843 onwards he operated independently. Kotschy's collections, which were divided into sets of very many duplicates, were dispersed to a large number of herbaria. The Index of Botanists (Harvard University Herbaria 2001-) merely states "widely distributed". Some are now accessible online, such as those at Göttingen (GOET) and Zürich (Z).

Characteristics of the labels

The printed labels issued by Hohenacker are numbered in several different ways (Fig. 3A-I). Numbers up to 793 follow (with a few exceptions) a chronological sequence, starting at Khark Island on 30 December 1841 and finishing at the foot of Kuh-e Dena on 6 August 1842. There is also a sequence of higher numbers "hors serie", which appear to have been generated at random. There is no obvious explanation for why such numbers were allocated, unless they were used to make up sets with a fixed number of specimens and there were too few duplicate specimens available to the distributor. The reason for the suffix letters is clearer: they usually occur where a mixed gathering was made by Kotschy and serve to differentiate the two named species.

In *Flora Iranica* (Rechinger 1963-), Kotschy gatherings are sometimes cited with two numbers separated by a decimal point. The reason for this is unclear, though the second number is usually higher than 800 and therefore belongs to the supplementary sequence. Occasionally the double numbering appears on the printed specimen label (Fig. 3B). Occasionally, a label may even bear three collection numbers (Fig. 3F).

Acknowledgements

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in den Jahren 1837 bis 1839 als Begleiter Joseph's von Russegger in den südlich von Kordofan und oberhalb Fesoglu gelegenen Bergen der freien Neger gesammelt hat ... Nebst einer biographischen Skizze Theodor Kotschy's. – Berlin.

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Appendix 1. Theodor Kotschy's itinerary in southern Iran, 1841-42

Place names in square brackets and double quotes are as spelled by Kotschy & Hohenacker, the collection numbers are in italics.

December 1841

30: Jezireh-ye Khark ["insula Karek"], no. 7-9.

January 1842

4: Khark, no. 14

7: Khark, no. 15-22

7-13: Kharku ["insula Korgo"], no. 15a-26

February

no collections

March

13-25: near Jerih ["Gere"], between Bushehr and Shiraz, no. 13, 28-115

[n.d.]	{	Dalaki ["Dalechi"], no. 108-211
		Rahdar ["Radar"], no. 127-131
		At petroleum springs near Dalaki, no. 142, 158, 193
		Kazerun ["Kaserun"], no. 144-146
		Kotal-e Malu ["Kuh Malo"] near Dalaki, no. 138, 153, 163-164

April

12-23: in and near the ruins of Persepolis, no. 216-290

29: near Shiraz ["Schiras"], no. 291-302

30: at the monument of Naqsh-e Rostam ["Nakschi Rustam"], 13 km NW of Persepolis, no. 303-305

30 (-3 May): near Shiraz ["Schiras"], no. 306-323

May

3-4: Kuh-e Barfi ["Kuh-Barfi"] near Shiraz, no. 324-346

[5-9: no collections]

10-11: near Shiraz, no. 347-363

13-14: Kuh-e Sabz Pushan ["Sabst-Buschom"] near Shiraz, no. 364-380

[15-17: no collections]

18: near Zarqan ["Zergun"] near ruins of Persepolis, no. 381-387

19-20: Kuh-e Ayub ["Kuh-Ajub"] near Persepolis, no. 390-409

24-31: Kuh-e Sabz Pushan ["Sabst-Buschom"] near Shiraz, no. 411-451

30: near Shiraz, no. 437-442

June

1: near Kurbal ["Korwar"] village, no. 453

1: Namak Darya ["Nemek-Derja"] near Shiraz, no. 454-464

[2-9: no collections]

10-21: Kuh-e Delu ["Kuh-Delu"], no. 465-563

17, 20: Darengun ["Deremgun"] at foot of Kuh-e Delu, no. 538-548, 554-557

22: "Kuh-Barchdschi" near Kuh-e Delu, no. 560-561

[23 June - 6 July: no collections]

July

6-31: (& August 1-10): Kuh-e Dena ["Kuh-Daëna"], no. 564-795

6: at Dozdkurd ["Dusekurd"] village at foot of Kuh-e Dena, no. 566-568

10: Cheshmeh Piaz ["Dscheschme-Pias"], no. 612

10, 13: "jugo Kosche Sirch" [or "Zirch"], no. 614-617a

15: "Posan-Pir" ridge, no. 657

16: Kuh-e Dow Shakh ["Kuh-Doschek"], one of the peaks of Kuh-e Dena, no. 663-665

17-19: Kakan plateau on Kuh-e Dena, no. 671-689

20: Kuh-e Dena, "Posan Pir" and S side, no. 693-710

21: Kuh-e Dena, W-side, no. 712-721

21: "Kosche Sirch" [or "Zirch"], no. 716, 721

22: Kuh-e Dena, S side, no. 724

foot of Kuh-e Dena, no. 725-729

23: Kuh-e Dena, W side, no. 732

23-29: Cheshmeh Piaz on Kuh-e Dena, no. 732-759

27: Dozdkurd ["Dusekurd"] village at foot of Kuh-e Dena, no. 735

29: summit of Kuh-e Dena, no. 758, 765-770

31: Cheshmeh-Piaz, no. 771-772

Kuh-e Dena, no. 773-774.

August

1: Kuh-e Dena, no. 778-781

Cheshmeh-Piaz, no. 782-786

6: Foot of Kuh-e Dena, no. 788-793

Appendix 2. Alphabetical gazetteer of place-names, with modern spellings, geographical coordinates and sub-sites

Spellings in bold have been standardised by reference to the US Board of Geographic Names (USBGN 1956) or the Getty Thesaurus of Geographical Names (TGN 2000-). Additional sites on Kuh-e Dena were checked on Tal-i Khusrovi sheet H-39J, 1:253,440, 4th edition, GSGS.

Abuschir	see Bushehr
Ajub, Kuh	see Kuh-e Ayyub
Barchdschi, Kuh	see Kuh Barchdschi
Barfi, Kuh	see Kuh-e Barfi
Bererus	unlocalised; near Kuh-e Sabz Pushan
Bonaser, Berg Gasser Bonasir	unlocalised; near Shiraz
Borj-e Yakki Sangar	30°18'N, 51°26'E (near Kuh-e Delu) (Borj = tower, san-gar = fort)
Buschom, Kuh	see Kuh-e Sabz Pushan
Bushehr (Abuschir, Buschier)	28°59'N, 50°50'E
Daëna, Kuh	see Kuh-e Dena
Cheshme-Piaz	see Kuh-e Dena, Cheshmeh-ye Piaz
Dalaki (Daleki or Dalechi)	29°26'N, 51°17'E
Dalaki Rud (Dalechi / Daleki Fluss)	tributary of Hilleh Rud; fed by Shirin Rud
Dalaki naphtha springs	29°24'N, 51°17'E
Delu, Kuh-e	see Kuh-e Delu
Darengun (Deremgun)	29°24'N, 52°21'E (NE of Kuh-e Delu)
Darreh (Dare) Kele	see Kuh-e Dena, Darreh Kele
Diz-e Kurd	see Kuh-e Dena, Dozdkurd
Dscheschme-Pias, Dschischm Pias (Zwiebelquelle)	see Kuh-e Dena, Cheshmeh-ye Piaz
Dusekurd	see Kuh-e Dena, Dozdkurd
Gere	see Jereh
Gere, Kaffar Ali	near Jereh ; not precisely localised
Gulfin, Kuh	unlocalised
Jereh (Gere, Jireh)	29°15'N, 51°58'E
Jereh, Konar Paria	see Konar Takhteh

- Kara Agatsch Fluß (near **Jereh**)
 Karak, Karrak, Karek, insula
 Kakan, Kakun
 Kargu, insula
 Kaseroum, Kaseroun, Kaserum
 Katyr Satee des Posan Pir
Kazerun (Kaserum, Kaseroum, Kaseroun)
Kharku, Jazireh-ye
Khark, Jazireh-ye
 Konar Paria
Konar Takhteh
- Korgo
 Korwar
 Kosche Syrch (Kosche Zyrch)
Kotal-e Malu (Kotele Malo, Kuh Malo)
 Kotal-e Pire Zan (Pire-zen)
 Kuh-Ajub
 Kuh Barfi
 Kuh Barchdschi
 Kuh Buschom
 Kuh-Daëna
 Kuh Delu, Ave sende
 Kuh Delu, Deremgun
 Kuh Delu
 Kuh Delu, Berg Borchudschi
 Kuh-Doschek
Kuh-e Ayyub (Ajub)
Kuh-e Barfi
- Kuh-e Delu**
Kuh-e Dena [in **Ostan-e Kohgiluyeh va Buyer Ahmad**]
Kuh-e Dena, Cheshmeh-ye Piaz (Dscheschme Pias)
Kuh-e Dena, Darreh Kele (Dere Kele)
Kuh-e Dena, Dozdkurd (Dez Gerd)
Kuh-e Dena, Kakun
 Kuh-e Dena, Kosche Syrch (Zyrch)
 Kuh-e Dena, Posan Pir (Posem Pir)
Kuh-e Dow Shakh
 Kuh Malo
 Kuh Mortas Ali gegen Baba Koi bei Schiras
- Kuh-e Qasr ‘Ali**
Kuh-e Sabz Pushan (Sabst Buschom)
- Qara Aqaj**, tributary of **Shirin Rud**, runs NE to Dalaki Rud
 see **Khark, Jazireh-ye**
 see **Kuh-e Dena, Kakun**
 see **Khargu**
 see **Kazerun**
 see **Posan Pir**
29°37'N, 51°38'E
- 29°19'N, 50°21'E** (island)
29°15'N, 50°20'E (island)
 see **Konar Takhteh**
29°32'N, 51°24'E between Dalaki and Jereh (Takhteh = plain)
 see **Kharku, Jazireh-ye**
 see **Kurbal**
 see **Kuh-e Dena**
29°29'N, 51°23'E (Kotal = pass), NE of **Dalaki**
- unlocalised; near **Shiraz** (Pire zan = old lady)
 see **Kuh-e Ayyub** (Kuh = mountain)
 see **Kuh-e Barfi**
 near Kuh-e Delu, **29°22'N, 5°19'E**
 see **Kuh-e Sabz Pushan**
 see **Kuh-e Dena**
 unlocalised; near **Kuh-e Delu, 29°22'N, 5°19'E**
 see **Darengun**
 see **Kuh-e Delu**
 see **Borj-e Yakki Sangar**
 see **Kuh-e Dow Shakh**
30°00'N, 52°40'E, near **Persepolis**
29°42'N, 52°46'E (Barfi = snowy), between **Shiraz** and **Zarqan**
29°22'N, 5°19'E
30°57'N, 51°27'E (approx.), altitude of summit 4409 m.
- on **Kuh-e Dena, 30°55'N, 51°30'E** (Cheshmeh = spring, Piaz = *Allium*)
 by **Kuh-e Dena** (Darreh = stream, valley, gorge)
- 30°45'N, 5°56'E**: village E. of **Kuh-e Dena**
30°39'N, 51°48'E: plateau on **Kuh-e Dena**
 one of the peaks of **Kuh-e Dena**
 ridge on **Kuh-e Dena**
 peak on **Kuh-e Dena** (Dow = two, Shakh = horn)
 see **Kotal-e Malu**
 grave of Baba Kuhi on Kuh-e Mortaza Ali, a small mountain at entrance to Shiraz from Isfahan road (Baba = father), **29°23'N, 52°40'E**
 near Dalaki, **29°26'N, 51°17'E**
29°28'N, 52°27'E (Sabz = green, Pushan = covered)

Kurbal (Korwar)	29°11'N, 52°44'E (SE of Kuh-e Sabz Pushan)
Lora, Tengi	see Tang-e Lirab
Maharlu, Daryacheh-ye	29°25'N, 52°50'E (Daryacheh = small sea, i.e. lake)
Malo, Kuh	see Kotal-e Malu
Menuki Daria	unlocalised (Darya = lake) – possibly an error for Nemoki (Namak), i.e. salt
Nagschi Taimur	Naqsh-e Taimur (tomb of Taimur); unlocalised, near Ka-zerun
Nakschi Rustam	see Persepolis, Naqsh-e Rostam
Nemek Darja pr[o]pe Korwar	see Kurbal
Nemek-Derja, Nemeki Daria	see Maharlu
Nemoki Deria	see Maharlu
Persepolis	29°57'N, 52°54'E ; in Persian, Takht-e Jamshid (throne of Jamshid)
Persepolis, Nakhsh-e Rostam	Achaemenid tombs and monuments NW of Persepolis , 29°59'N, 52°51'E
(Nagschi Rustam)	Persepolis, 29°57'N, 52°54'E
Persepolis, "Tscha Mana"	see Zarqan
Persepolis, Zergun	ridge on Kuh-e Dena , q.v.; not precisely localised
Posan Pir , Katyr Sattee	see Kuh-e Qasr 'Ali
Qasr 'Ali, Kuh	see Rahdar
Radar	29°20'N, 51°16'E
Rahdar (Radar)	see Kuh-e Sabz Pushan
Sabst Buschom, Kuh (Buschon, Buschoon)	
Sadye	see Shiraz , Saadi (tomb of)
Shiraz (Schiras)	29°36'N, 52°32'E
Shiraz , Bonaser; Berg Gasser	see Bonaser
Bonaser	
Shiraz , Deremgun	see Darinjan
Shiraz , Pire Zan	unlocalised, near Shiraz (Pir = old, Zan = woman)
Shiraz , Sadye	Tomb of Saadi, Shiraz (famous Iranian poet)
Shirin Rud (Fluss Kara-Agatsch)	approx. 52°05'E, 55°12'E
Takht-e Jamshid	see Persepolis
Tang-e Lirab (Tengi Lora)	unlocalised (Tang = gorge)
Tscheschme-Piaz	see Kuh-e Dena, Cheshmeh-ye Piaz
Zarqan , Gardaneh-ye	29°46'N, 52°45'E (Gardaneh = pass)
Zergun	see Zarqan