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## Plant Collectors in Afghanistan

by

*Mohammad ALAM<sup>1</sup>*

*Abstract.*—ALAM M., 2009. Plant Collectors in Afghanistan. *Bull. Soc. vaud. Sc. nat.* 91.3: 301-340.

Records of plant collecting in Afghanistan date back to the early 19<sup>th</sup> century (1833). After that time collecting expeditions continued with varying regularity until 1979, the year of the Russian invasion. The first collections were made mainly in the border regions or around large cities served by main roads. Later expeditions gradually extended to other parts and progressively covered almost all of the country. The collected material has been preserved in many world famous botanical gardens and museums, one of which is the Conservatoire et Jardin Botaniques de la Ville de Genève (G).

These plant collections are valuable proof of the identity and distribution of the indigenous species. Documents concerning the various botanical expeditions and the plants collected are widely dispersed. The purpose of this paper is to bring together all the existing information in a form that will aid those studying the flora of Afghanistan.

*Keywords:* plants, collectors, collections, Afghanistan.

*Résumé.*—ALAM M., 2009. Collectionneurs de plantes en Afghanistan. *Bull. Soc. vaud. Sc. nat.* 91.3: 301-340.

L'histoire de la récolte des plantes en Afghanistan remonte au début de la 3<sup>e</sup> décennie du 19<sup>e</sup> siècle. Les collectionneurs de plantes ont continué à voyager en Afghanistan, quoique de manière irrégulière, jusqu'en 1979, année de l'invasion du pays par l'armée russe. A l'exception de Bamyan (Afghanistan central), les premières collections ont été faites dans les régions frontalières du sud, du sud-est, de l'ouest et du nord-ouest du pays, ou autour des grandes villes, le long des routes principales. Ce n'est que plus tard que les expéditions ont été étendues à d'autres endroits, couvrant peu à peu presque tout le pays. Lors de ces expéditions, un assez grand nombre des plantes a été recueilli: environ 110'000 spécimens ont été récoltés, soit environ 20 plantes par 100 km<sup>2</sup>, selon BRECKLE (1977). Ces collections sont conservées dans les principaux musées et jardins botaniques du monde, parmi lesquels figure les Conservatoire et Jardin botaniques de la Ville de Genève (G).

Ces collections sont des bons indicateurs de la flore indigène afghane et de sa répartition.

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Les informations concernant les collecteurs et leurs collections sont très dispersées, nous avons donc essayé de les réunir à l'intention de ceux et celles qui sont intéressés par l'étude de la flore afghane.

*Mots clés:* plantes, collecteurs, collections, Afghanistan.

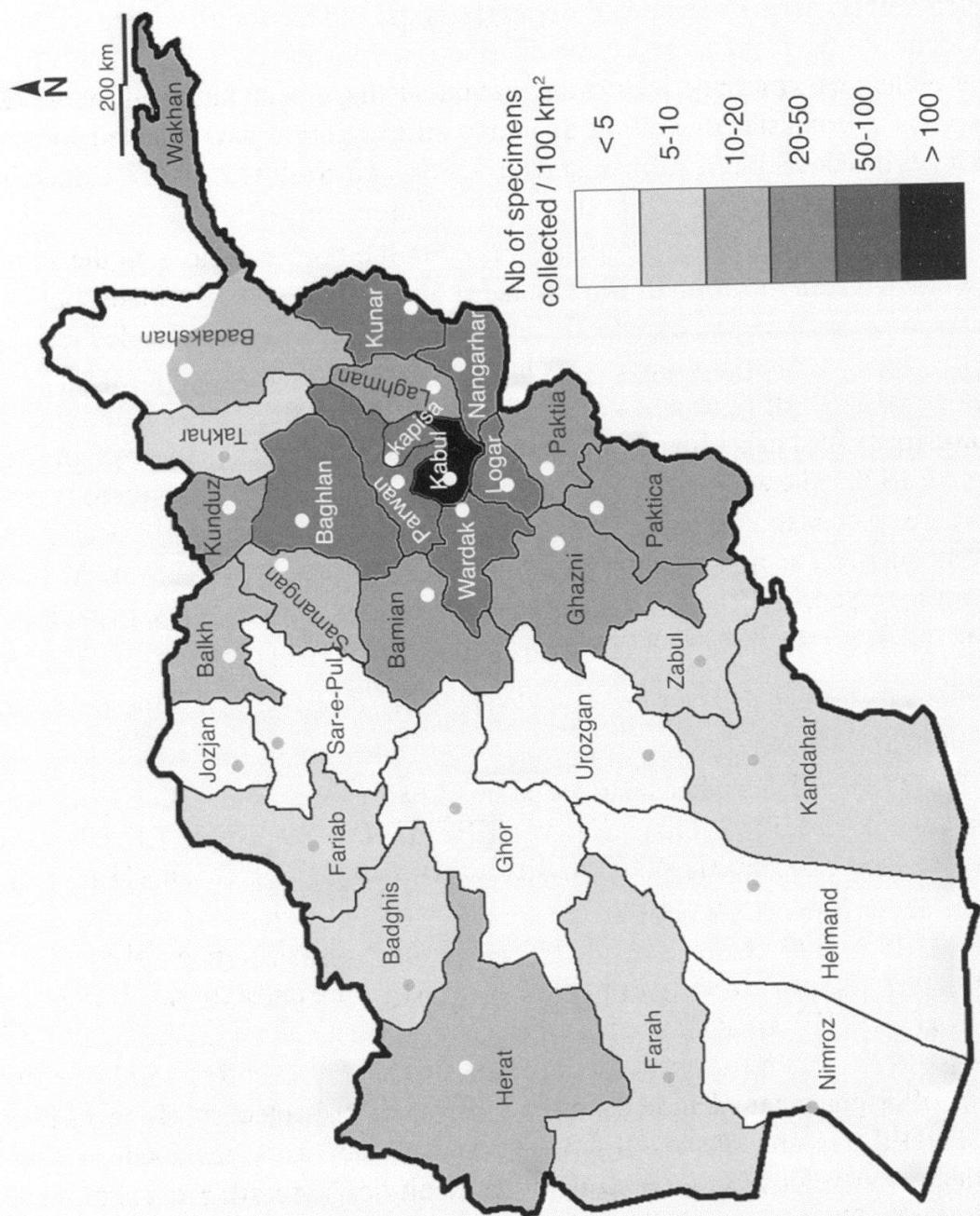
## INTRODUCTION

For many years plant collectors and naturalists have been attracted by the rich flora of Afghanistan. The first documented expedition was that led by J.M. HONIGBERGER in 1833, (BOISSIER 1867-1888 and STEWART 1982). Collecting continued with varying regularity until the Russian invasion in 1979.

The first collections were made mainly in the border regions in the south-east, west and north-west or around large cities served by main roads, but also in the central area like Bamyan. Later expeditions gradually extended to other parts and progressively covered almost all of the country. BRECKLE (1977) has estimated that approximately 110'000 plants have been collected, i.e. 20 plants per 100 km<sup>2</sup>. This does not include the collections made by PODLECH in late 1978. The acquisition of plant specimens varies from region to region. As shown in Map. 1, most plants were collected in the province of Kabul and around the capital and later in the east and south-east. The regions of Urozgan, Ghor and Badakhshan (Darwaz), Helmand and Nimroz were less explored, although later PODLECH tried to reach these areas (BRECKLE 1977). Almost all of these materials are kept in the world's botanical gardens and museums. (table 1).

We have had the chance to be able to examine some of the specimens collected by J.E.T. AITCHISON, W. GRIFFITH, A. BUNGE, T.F. HEWER, W. KOELZ, H. PABOT, P. WENDELBO, D. PODLECH, D. DIETERLE, O. ANDERS and K.H. RECHINGER in the herbarium of the Conservatoire et Jardin Botaniques de la Ville de Genève (G) which were in very good condition. We have also received certain photos of Afghan plants of the Herbarium of R.H. RICHINGER and the collections of J.M. HONIGBERGER from Naturhistorisches Museum Wien (W), which are very useful to us in studying flora of Afghanistan. Duplicates of the material collected by H. FREITAG, D. PODLECH and O. ANDERS probably remain in Afghanistan as these collectors were visiting professors in the faculty of Natural Sciences of Kabul University. The only material which we have found from Afghan collectors is that of Y.M. NOORI and M.N. ASLAMY (KABA, HOLMGREN *et al.* 1990) and <http://207.156.243.8/ih/herbarium.php> ?)

According to this source the herbarium was stored in boxes following the partial destruction of the building where it was housed and it is not known how much is saved. Y.M. NOORI and M.N. ASLAMY were both professors in the Faculty of Agriculture of Kabul University.



Map 1.—The approximate number of plants collected in the different provinces of Afghanistan (BRECKLE 1977).

It is known that at least two collections existed in Kabul during the visit of PABOT in 1958, one in the Faculty of Science and another in the Ministry of Agriculture, but he found that the species representation was poor, most were not identified and the specimens had been damaged during the change of storage place.

However, when considered together, these collections provide valuable evidence of the plant diversity and distribution. Existing documents concerning the collectors and their specimens is widely dispersed. The purpose of this paper is to bring together all the available information to assist those interested in studying the flora of Afghanistan.

Table 1.—Museums where Afghan plants are conserved.

Abbreviation	Name of the Museum
A	Harward University, Massachusset, U. S .A.
B	Botanischer Garten und Botanisches Museum Berlin-Dahlem
BG	University of Bergen
BLAT	St. Xavier's College, Maharashtra, Mumbai, India
BM	Natural History Museum of London
C	University of Copenhagen
CAL	Botanical survey of India, West Bengal, Kolkata
DD	Indian Council of Forestry Research and Education, Dehra Dun, Uttar Pradesh, India
E	Royal Botanic Garden of Edinburgh
G	Conservatoire et Jardin botaniques de la Ville de Genève
H	University of Helsinki
HAL	Martin-Luther Universität, Halle
K	Royal Botanic Garden of Kew
KABA	University of Kabul, Faculty of Agriculture
KYO	Kyoto University
L	National Herbarium Nederland, Leiden University
LE	V. L. Komarov Botanical Institute of Saint-Petersburg
M	Botanische Staatssammlung, Münich
MO	Missouri Botanical Garden
MSB	Ludwig-Maximilians-Universität, Münich
NA	United States National Arboretum
NY	Arnold Arboretum, New York Botanical Garden
O	Botanical Museum of Oslo
P	Muséum National d'Histoire Naturelle de Paris
RAW	Forest Research Institute, Pakistan Agricultural Research Council, Islamabad
TARI	Research Institute of Forest and Rangelands, Iran, Tehran
TUB	Eberhard-Karls-Universität, Tübingen
W	Naturhistorisches Museum Wien
WIR	N. I .Vavilov Institute of Plant Industry of Saint-Petersburg

## METHOD

This study is primarily based on the works of AITCHISON (1881, 1882, 1888-1894), GRIFFITH (1842, 1847), BOISSIER (1867-1888), KOEIE and RECHINGER (1954-1965), RECHINGER (1989), KITAMURA (1960), PABOT (1959), HEDGE and WENDELBO (1964), LAMOND (1966, 1970), HEWER (1971, 1973), BRECKLE, FREY and HEDGE (1969), BRECKLE (1977), STEWART (1982), LANJOUW and STAFLÉU (1954-1988), HOLMGREN *et al.* (1990) and website. For the itinerary of certain collectors in the absence of such precise records, our information is from *Flora Iranica* (1963-2008). As for collections present in Afghanistan, our information is based on the HOLMGREN *et al.* (1990), PABOT (1959) and on website: <http://207.156.243.8/ih/herbarium.php?>.

## WRITING CONVENTION

In the discussion, the chronological order of the expeditions has been maintained. Collectors who travelled more than once to Afghanistan, are arranged, according to their first journey. In the description of itineraries, the parentheses indicate the view of the same author in different words or of another author concerning the name of the place, while those in brackets are our corrections. Itinerary of certain collectors have been simplified and shown on the maps, which are original or are redrawn from the original ones. On the maps, the locations of the visited sites are not indicated.

## COLLECTORS

**1833 HONIGBERGER, Johann Martin (1795-1869) (Portrait 1).**

With his collections in 1833, (BOISSIER 1867-1888, STEWART 1982), HONIGBERGER is perhaps the first foreigner who collected plants in Afghanistan. He was born in Kronstadt (Russia), but seems to have been of Austrian nationality. He supported himself as a doctor in Turkey, Egypt and elsewhere, finally found his way to Lahore and became a physician at the court of Maharaja Ranjit Singh. In 1833 he decided to visit his homeland and did so via Kurrum and Kabul. He collected plants in the vicinity of Kabul and between Kabul and Dara Ghazi Khan (south of Afghanistan). Only four species of this collection were studied in detail by ENDLICHER and FENZEL and presented in a fascicle named "Sertum Cabulicum", as has been mentioned by BOISSIER (1867-1888). According to STEWART (1982), much of his material remained unidentified for 140 years until rescued by RECHINGER, who published the names of some of them in his *Symbolae Afghanicae* and later on in *Flora Iranica*.

Materials: W

**1839, 1840 GRIFFITH William (1810-1845) (Map. 2) (Portrait 2)**

British colonial physician and botanist, he collected plants in Afghanistan in the following years:

1839 March 25 to April 5 Quetta and environs

April 13 Afghanistan via Chumman [Chamman]

May-June Surrounding of Kandahar including Arghandab

July 1 Turnuk

2 Toot

4 Khilat-i-Gilzii (Kilat-i-Ghiljii, in Lamond) [Qalat, Kalat, Provincial capital of Zabul Province]

8 Tazi

11 Chushmi Shadii [Chashm-e Shadi !]

14 Mookhloor (Mookur in Lamond) [Moqor], Cheshm-e Turnuk

18 Karabagh [Qara Bagh]

20 Nanee [or Nanai]

21 Ghazni

30 Shasgao [Shashgao]

31 Haftasia, village [where T. F. Hewer also camped]

August 1 Haidarkhel

2 Shekhabad

5 Maidan

6 Urghundee [Arghandeh]

12 Kabul- visited Babor's tomb

24 Left Kabul for Bamyan

27 Sir-i-Chushme (Seer-i-Chushm in Lamond) [Sar Chushma]

September 1 Crossed Hajeeguk [Hajigak] Pass to Bamyan, where he stayed till 5<sup>th</sup> of September

17 Returned to Kabul from Bamyan, through Sar Chushma, Julraiz [Jalrez], Urghundee

October 7 Kabul to Jalalabad

7 Bhootkhah (Bootkah, Bootkhah in Lamond) [Bootkhak]

8 Koord Kabul valley [Khord Kabul valley]

9 Tazeen (Taizeen) [Taizin]

10 Barikab to Lataband

12 Jugdullack [Jagdalak]

13 Soorkhab  
 21 Jalalabad  
 31 Lalpore [Lalpura]

1840

January 8 Having come from Peshawar via Khyber [Khaybar]  
 9 Ali Baghan via Gundikuss  
 10 Bussout river [Behsud river]  
 12 Via Chunar Bukkeen to Sha-i-wa (Shauva) [Shewa]  
 15 Kunar via Noorgul [Nurgal]

March 2 Chugur Serai [Chagha Sarai, near to Asad Abad, Kunar Province]  
 4-16 Around Otipore, Shingan [above Chigha Sarai]  
 17-29 Chugur Pair, Pushut [Pashat], Koonar [Kunar], Dhurrah Bader and Choak [Chawky]

April 6 Chugur Serai [Chagha Sarai]  
 7 Otipore and around Pironi  
 28 Barowl and around Shinegam  
 29 Chugur serai [Chagha Sarai]

June? 5 Arrived Kabul via Jalalabad, Khuggur, Neemla, Futthabad [Fatehabad], Gundamuk [Gandumak], Soorkhab, Jugdullack [Jagdalak], Barikab, Koord Kabul [Khurd Kabul] and Huft Kotal [Haft Kotal ?]

July 17 Kabul to Shah Bagh  
 28 Koti-Ashraf [Kot-e-Ashru] via Khak-i-Sofaid Pass and Urghundy [Arghandeh]  
 29 Julraize [Jalrez] to Sir-i-Chushme [Sar Chushma]  
 30 Girdun Dewar [Gardendewal] via Yonut  
 31 Kurzar via Siah-Sung

August 2 Kaloo [Kalu], (Kotul Kaloo) [Kotal-e-Kalu] over Hajigak  
 3 Topehee  
 4 Bamyan  
 13 Akrobat [Aq Ribat], excursion to Sygab [Sayghan] river, Byani [Bayani], and Soorooth Dhurrah [Surkh Darrah?]  
 24 Kurzar via Erak Kotal

September 23 Cabul [Kabul]

October 2 Seh-Baba via ravine near the road from Tezeen [Taizin] valley to Khubur [Khak-i-Jabar]  
 14 Peshawar



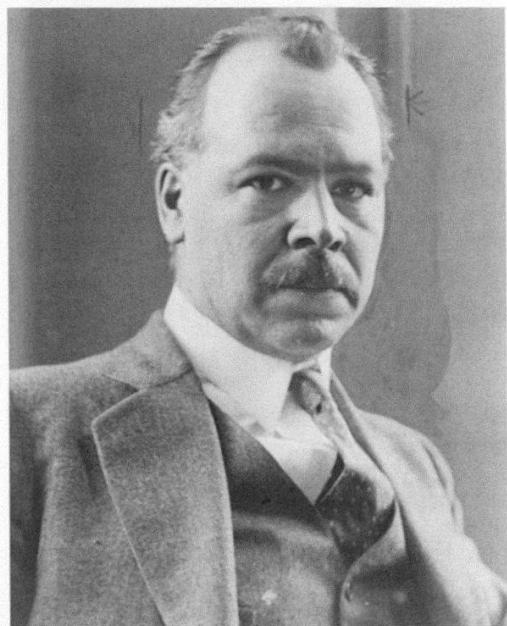
Portrait 1.—HONIGBERGER  
Johann Martin (1795-1869)



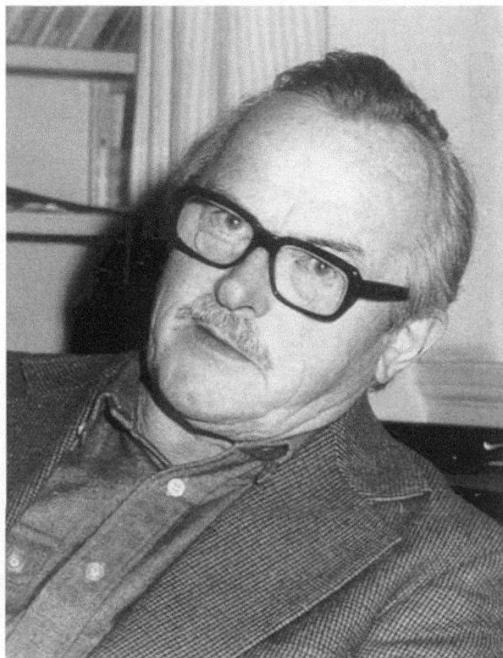
Portrait 2.—GRIFFITH William  
(1810-1845)



Portrait 3.—BUNGE Alexander von  
(1803-1890)



Portrait 4.—VAVILOV Nikolai Ivanovich  
(1887-1943)



Portrait 5.—KOEIE Morgen



Portrait 6.—WENDELBO Per  
(1927-1981)



Portrait 7.—RECHINGER Karl Heinz  
(1906-1998)



Portrait 8.—PODLECH Dieter  
(1931- )

During these expeditions, he collected about 1500 plant species, and a great number of duplicates. As has been mentioned by KITAMURA (1960), the excellent collection of GRIFFITH has been distributed widely in the European Herbaria and has been studied by many botanists, especially by BOISSIER whose results were published in *Flora Orientalis* (1867-1888).

Material: K, E; duplicate: G, G-BOISS

**1839** GRANT J.W.

North of Bamyan.

Specimens: few

Materials: K

**1858-1859** BUNGE Alexander von (1803-1890) (Portrait 3)

A Russian baron, as a member of the Russian Scientific Expedition to Persia and Afghanistan, collected plants in Iran and the western part of Afghanistan. He herborized near Herat during the dry season 1859. His specimens were studied by himself and also mainly by E. BOISSIER and published in *Flora Orientalis* (1867-1888).

Materials: LE, HAL, W, B, P, K; duplicate: G, G-BOISS

**1858** BELLEW Henry Walter (1834-1892).

Materials: CAL

**1865-1870** JAESCHK Heinrich A.

Materials: K

**1871-1880** CATTEL William

**1878** SANDERS (Major), E.

Materials: CAL, K?

**1879** JOHNSTON J.

SE Afghanistan.

Materials: E

**1879, 1880** AITCHISON James Edward Tierney (1836-1898) (Map. 2).

A British colonial physician and botanist. In April-August 1879 he made large collections in the region of the Kurram Valley and southeast of Afghanistan, Ali Khel. In May 1880 he again botanised in Kurram Valley and visited Shinak, Badesh Khel, valleys of Zeran and Malana, valley of Darban river, and Tal, Badish Khel and Hariab.

**1884-1885 AITCHISON James Edward Tierney (Map 2).**

Travelled in the southern and western part of Afghanistan with the following itinerary:

September 22 Quetta  
 23 Spangoli  
 24 Khanak  
 25 Panj-Pai  
 26 Chaman  
 27 Kaisar  
 28, 29 Nushki  
 30 Sandori

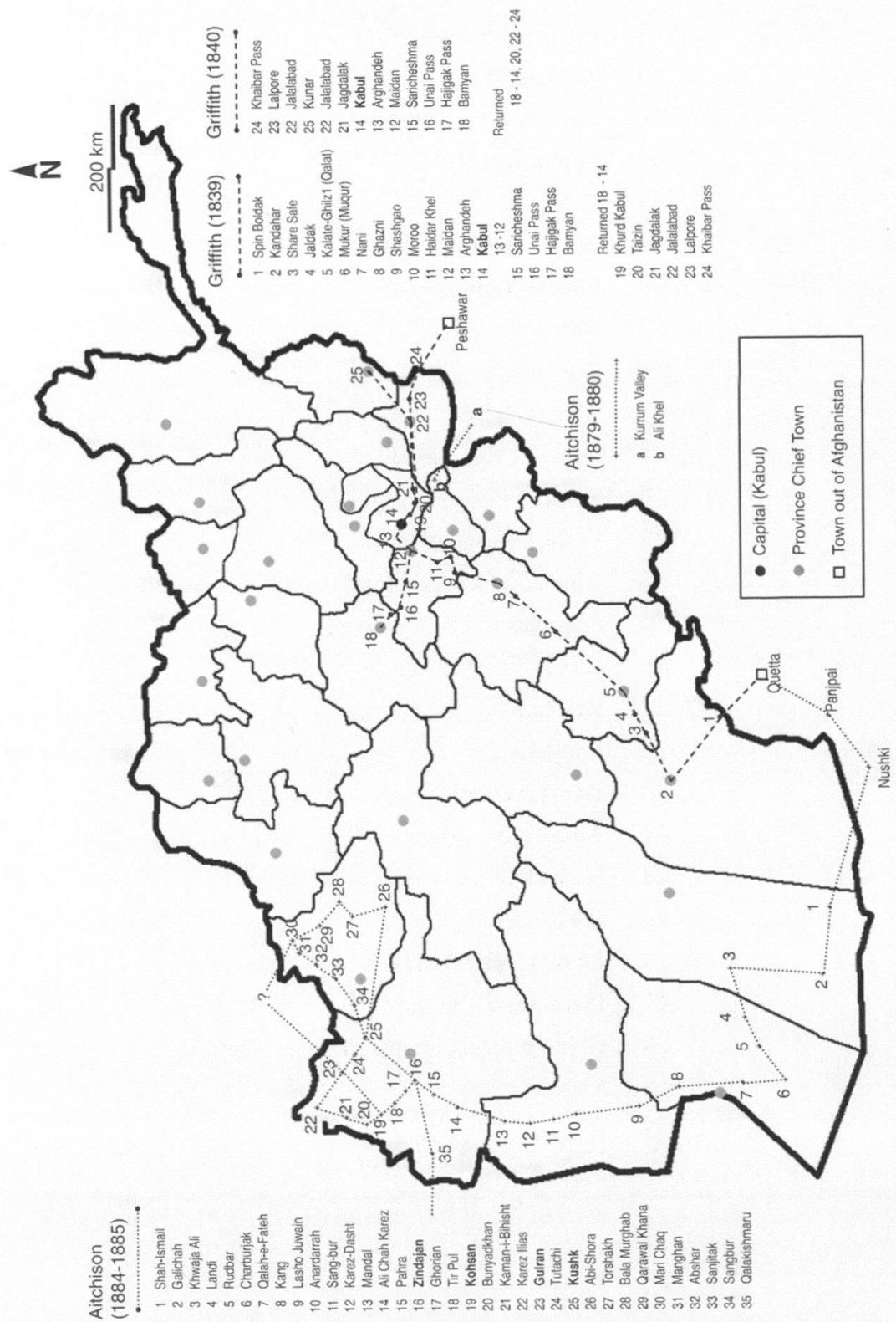
October 1, 2 Band  
 3, 4 Omar-Shah  
 5 Zaru  
 6 Kani  
 7 Gaz-i-Cha  
 8 Safia  
 9 Sha-Ismail  
 10 Salian  
 11 Boz.dan (Muzh-dan)  
 12 Mannu (Mamu)  
 13, 14 Galich [Galichah?]  
 15 Gar. Nushk [Garmushki]  
 16-19 Hadj-Ali (Khwaja-Ali) [Khwaja Ali Ulia]  
 20 Lundi [Landi]  
 21 Rudbar Koh-haja (Khaja)  
 22 Chakr-burja [Char Burjak]  
 24-25 Kalifat [Qal'eh-i-Fateh]  
 26 Pada-sultan  
 27 Deh-kerman  
 28 De-doda (Deh-dadeh)  
 29-30 Ibrahim-abad  
 31 Mak-bar-a-habil

November 1 Takh-i-Rustam [Takht-e-Rustam]  
 2 Jowain [Lash-Joveyn]  
 3 Kusk-rud [Khash-rud]

4 Kin  
 5 King [Kang]  
 6-7 Zagin  
 8 Sang-bar [Sang-bur]  
 9 Karez-dasht  
 10 Ser-mandel  
 11 Sher-baksh  
 12, 13 Gaz-i-cha (Gaz-ak-cha) [Ali Chah Karez]  
 14 Pahir (Parah)  
 15, 16 Zindjan [Zindajan]  
 17 Roznak  
 25 Kuhsan  
 27 Chashma-Sabz  
 28 Asia-deh (Asir-deh)  
 27 Kar-o-bagh [Qara bagh]  
 28 Tuti-chi [Tutachi]

December 1 Aftao (Haftu)  
 2 Kara-Kainta (Kara-Ghaitu)  
 5 Kushk  
 6 Palounda  
 7 Karez-Darra  
 8 Pada (Paddai-Paj)  
 9 Ab-i-Kamara  
 10 Ab-i-shora [Abshar]  
 11 Tor-Shakh  
 12 Marjan [Manghan?] 15<sup>th</sup> of Feb.  
1885  
 13 Bala-Morghab  
 14 Bal-Morghab (Fort), halted here until the 15<sup>th</sup> of Feb.  
 1885

February 16 Karaol-Khana [Qarawl Khana]  
 17 Mara-chak [Mari Chaq]  
 17 Ab-i-Goshan  
 19, 20 Kalla-i-maur  
 21 Haman-i-bed  
 22 Islim  
 23 without name



Map 2.—Griffith's (1839, 1840) and Aitchison's (1879-1880, 1884-1885) travels in Afghanistan.

24 Gulran, (New Fort) halted until 14<sup>th</sup> March

March 15 Gulran (Old Fort) halted till 1<sup>st</sup> of April

April 2 Ao-safed Pass

3 Chashma-e-Sabz

4 Tirphul [Tirpul], halted till 25<sup>th</sup> April

26 Kuhsan

27, 28 Tuma-Agha

29 Gal-i-cha

30 West of Kambao Pass

May 1-3 East of Kambao Pass

5 Gulran

6-7 Sabz Pass to Tirpul

8 Tirpul

11-11 Opposite Kuhsan

12 Kuhsan village

13 Buniad-Khan

14 Kumani-best [Kaman-i-Bihisht]

15 Chil-gaz

16 Karez-Illias

17 Chil-gaz

18-19 Sim-Koh

20 Kambao Burj

21 Sang-Haji

22 Ao-safed

23 Baba-Furk

24 Kohtal-Sangi (Pass) [Kotal-e-Sangi?]

27 Dana-Sanjet [Sinjidi?]

28 Chinkilok, halted till June 3<sup>rd</sup>

June 4 Shekewan

5 Roznak

6 Shabad

7 Tirphul [Tirpul] (opposite Kohsan)

8 Kalla-i-Dast Dargarii

9 Karez

10 Hauz-i-Safed

11 Turbat-i-Shaikh Jami [Torbat-e-Jam], halted till June 15<sup>th</sup>

16 Bezd, halted till June 19<sup>th</sup>  
20 Turbat-i-Shaikh Jami, [Torbat-e-Jam], halted till June 29<sup>th</sup>  
29 Langar {Iran}

July 1 Khairabad  
2 Alanderabad  
3 Farrah-gird  
4 Sang-bast  
5 Turukh  
6 Meshed, halted here to 15<sup>th</sup> July  
16 Turukh  
17 Sang-bast  
18 Fareh-man  
19 Karez-badak  
20 Abdullabad  
21-23 Turbat-i-Shaikh-Jami [Torbat-e-Jam]  
24 Rud-I-Rabask  
25 Karez  
26 Kafir-Kala  
27-28 Khusan (left bank)  
29 Rubat-i-kalch  
30 Ghorian  
31 Zindajan

August 1-3 Zindajan  
6 Cha-dlermu  
5 Kishmaru [Qal'eh Kishmaru]  
6 Do-shakh [mont. Doshakh]  
7 Puza-gish  
8 Kilki, halted to 16<sup>th</sup> August  
17 Puza-gish  
18 Do-cha-Ibrahim khan  
19 Robat-i-Turk  
20 Musard  
21 Burj-i-Ayubi  
22 Khal-i-Khurdian  
23 Sangun  
24 Madrassa

25 Rui-Khauf, halted till 31<sup>st</sup> August

September 1 Salami

2 Malkat

3 Sangan

4 Nasarabad

5 Turbat-i-Haidari, halted till 9<sup>th</sup> of September

September 10 Maimabad

11 Kishatabad

12 Robat-i-Safed

13 Sharifabad

14 Robat-Turukh

15 Meshed, halted here until 1<sup>st</sup> October, from where he left for England.

His collection amounts to about 500 species and 10,000 specimens, of which he estimated that probably 100 are new to science.

He studied his own collection at Kew and reported his results in the *Journal of the Linnean Society, Botany, Vol. VIII.*, pp.1-113; *Vol. XIX*, pp. 139-200, and *Transaction of the Linnean Society of London, Second Ser., Botany, Vol. III*, 150 p.

Materials: K, E; duplicate: G, G-BOISS

**1879-1893 COLLET H.**

Materials: LE

**1880 PETERS Charles Thomas**

Specimens: 15.

Materials: K, L

**1883 REGEL A.**

NE Afghanistan (Lac de Chiva [Shiva]).

Materials: LE

**1884-1885 GILLES C.M.**

Nuristan. Some listed in DUTHIE (1989) in *Records Bot. Survey of India, 1, 9*: 140-181. Specimens: 1200.

Materials: K, E

**1893 de PONCINS E.**

Wakhan

Materials: P

**1923** McMAHON A.H.

SW Afghanistan, Sistan Arbitration Commission.

Materials: B, L.

**1923-1929** LEYDA.

Nuristan.

Materials: B

**1923-1929** MANGER Constantin

Collected plants in Afghanistan mainly in vicinity of Kabul (KOEIE and RECHINGER 1954-1965) and Jalalabad (RECHINGER 1963-2005). According to KOEIE and RECHINGER (1954-1965), some of these materials were lost. The remainder, mostly weeds from cultivated lands were listed and described by J. BORNMÜLLER (1934) in *Aus der Flora Afghanistan* in *Engler Bot. Jahrb.* 66.

Materials: B

**1924** and **1926-1927** VAVILOV Nikolai Ivanovich (1887-1943), and D.D. BUKINICH (Portrait 4).

Travelled through Afghanistan, gathering many seeds of cultivated plants. They visited Afghan Turkistan, Gaimag, Bamyan, Hindukush, Badakhshan, Nuristan, Jalalabad, Kabul, Kandahar, Helmand, Farah and Sistan. In 1929, VAVILOV published the interesting results of his expeditions. But his work was chiefly of cultivated plants. According to KITAMURA (1960), some grasses were described by ROCHVITZ (1928).

Material: WIR

**1933** MEINERTZHAGEN Richard (1878).

N. Afghanistan.

It is a private collection.

**1935** SCHIEB, member of German Hindukush Expedition.

Materials: H

**1935** KERSTAN Gerard, member of German Hindukush Expedition.

Collected plants in Nuristan in June - August of 1935. A few plants were also taken from Kandahar and Girishk. Some of the plant groups are named and published by HAECKLE and TROLL (1938), *W. Botanische Ergebnisse der Deutsch Hindukusch-Expedition, 1935, Repert. Spec. nov. regni veget., Beiheft, 108, 1, 1-72.* Berlin. (KOEIE and RECHINGER 1954-1965, LINCHEVSKY and PROZOROVSKY 1950). List see *Feddes Rep. Beiheft 108, 1: HAECKLE and TROLL.1-72 (1938).* Incorporated in *Symbolae Afghanicae.*

Materials: HAL

**1935, 1936 HAY W.R.**

Number of specimens: 550.

Materials: K

**1937 GABRIEL A.**

SE Persia and Afghanistan (Kandahar). Materials encountered 363. *Beih. Bot. Centralbl.* 59 B. 287 (1939) (List).

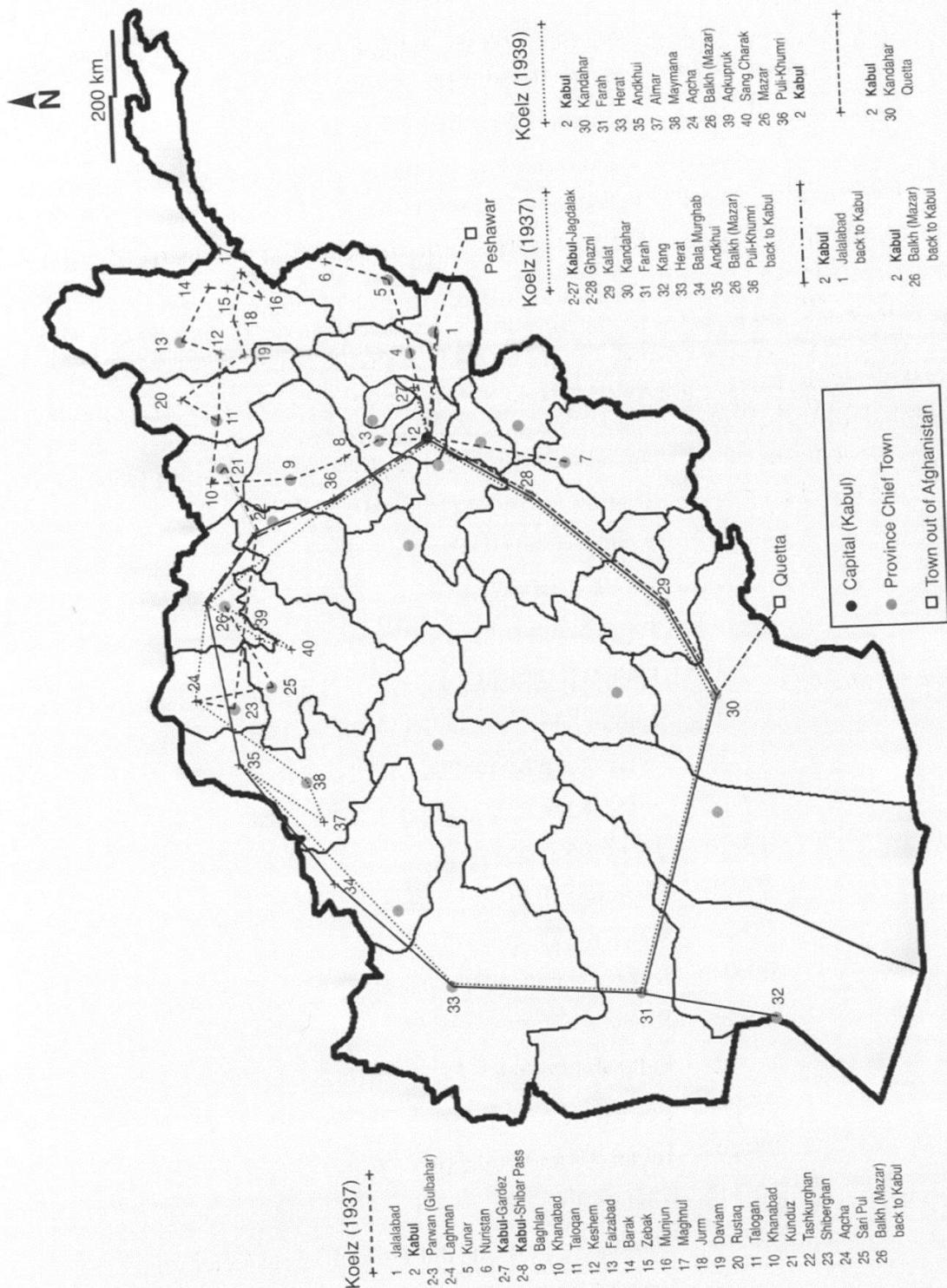
Materials: W

**1937, 1939 KOELZ Walter (1895-1989) (Map 3)**

Travelled in Afghanistan to collect plants for the Plant Industry Station, Beltsville, Maryland, U.S.A.

KOELZ'S itinerary in Afghanistan (1937, 1939) is described by Charles VAURIS from information given to him by Walter KOELZ himself. According to him the dates and localities have not been checked against the UMMZ database, and some of the localities do not appear on the accompanying map. The original list and map are in the Field Museum of Natural History, Chicago.

1937	May 9	Jalalabad
	10	Turok Ful, Kulali
	12	Paghman
	14	Gulbar [Gulbahar]
	16-18	Kabul
	20	Giri, above Mama Khel (or Hashem Khel)
	21-22	above Khudi Khel (Kudi Khel)
	23-24	above Mama Khel
	25-28	Laghman, Saighal, Kalaigulama
	29	Najil, Nullu
	June 1	Najil, Daulatshah (Dulat Shah) [Dawlat Shah]
	2-3	Kail
	4	Nilkhans, Paitak
	5-6	Gumandru, Farajghan
	7-9	Tagan, Chandan, Ishpi
	11	Charikar, Kabul
	15-16	Gardez, Pulayalam [Pul-i-Alam], Tesa Kotai
	17-19	Sirotai (Saroti)
	20	Gardez, Sarotai
	21-23	Nozi, Kulangar



Map 3.—Koeltz's (1937-1939) travels in Afghanistan.

27	Paghman
30	Shibar Pass
July 1	Baghlan, Aliabad
2-5	Khanabad, Talikan (Tiloqan) [Taloqan] Chunzi
6	Akhbulak, Takia (Kishm), Farkhar
7	Gumbaz (Kishm) [Gunbad]
8	Atinjalao (Atin Jilao), Garao
9-10	Ganda Cheshma, Gurgao, Khaksari (Gorgan, Karchi)
10-13	Faizabad
14-16	Khairabad, Basak [Barak]
17-19	Chakaran, Sufian, Tirgaron (Tirgaran)
20-23	Zebak, Chaltan, (Chihiltan) Bebak, [probably Zebak], Iskatul
26-28	Zebak Pass, Sanglich
29-30	Robatikrum, (Tagao) Munjan, Magnaul [Maghnul]
30-31	Iskarzir (Skarzir) [Skorzar]
August 2	Rubat (Ribat), Hazratsaid
3, 4	Iskan
5-8	Jurm, Kargasi Pass
9-10	Darain [Dariam]
11	Tapaki Pass, Moghultai (Mughul Tai)
12, 13	Teshkan Pass, Saidan
13-15	Takia
15-16	Tuti Pass
17-20	Rustak
20-23	Chai Ab [Chah-e-Ab]
23-24	Ikatut (Yakatut) [Yaka Tut]
25-26	Rustak
27	Lala Maidan
26-29	Bagh (Hazar)
28-29	Talighan (Taligan) [Taloqon]
30-31	Khanabad
September 3	Kunduz
4	Tashkurghan [Tashqurghan]
5	Shibarghan, Belkh [Balkh]
7-9	Aq Cha

10-13	Sari Pul
15-17	Aq Cha
18-22	Balkh
26	Shibarghan
27	Aq Cha
28-30	Bagram (East and near Kabul)
October 1-2	Bagram
3	Tigdalak [Jagdalak]
4-5	Bagram
7-8	Ghazni
10-12	Mukur [Moqor], Qarabagh
13-15	Kalat i Ghilzai [Qalat or Kalat]
17-27	Kandahar
28	Girishk
29	Dilaram
30	Farah
November 1-5	Kang
6	Salyan
7-9	Farah
11-13	Herat, Sabzwar
14	Zarmast Pass
15-19	Maimana, Bala Murghab
20-25	Andkhui
27-30	Balkh
December 1-4	Balkh
5-6	Mazar-i-Sharif
8	Dani Ghori
9	Pul-i-Khumri
10	Tala, Bulola
13-15	Kabul
18-19	Jalalabad
27-31	Balkh
1939	August 23 Dashti Safed, Doab
	24-25 Kamard
	26-27 Lorinji (Loranji)
	27-29 Sabz Pass, Aoikhurak (Aoi Khorak Aokhkorak), Sarasia

30-31	Shanbashak Pass, Baligali (Balaghli) Pass
September 1	Shanbashak Pass, Biniman
2-5	Terak (Tirak)
6	Chaharaolia (Chahar Aulia)
7-8	Kala Sarkar (Qala Sarkari)
9	Chachmaigawan (Chashma)
10	Chigzar
11-12	Aq Kuprak, Allanghan
15-16	Tukzar, Dehmiana (Deh Miana), Kata Kala, Sangcharak
17-18	Bai
19-25	Safedsang
26-28	Sufak, Zehnadir, Kota-i-Bedak
29-30	Khami Deh, Alinji, Kalashahr (Qala Shahar)
October 1-3	Mak, Gharchi
4-6	Gurzan, Malur Pass, Aehashtamin, Du or Dakansha
7	Laorla
7-8	Shorak
9-10	Bandar
10-14	Burchao Pass
16-17	Gaojan (Gauzan)
18	Kwajaebichagalak
19-20	Almar
20-21	Maimana
25	Andkhui
26-27	Aq Cha
28-31	Balkh
November 4-7	Pul-i-Khumri
11-20	Kabul
24	Spinbaldak [Spin Boldak], Takhti Pul
26-28	Quetta

List and itinerary in *Symbolae Afghanicae*.

Materials: U. S. National Arboretum NA, formerly at the Plant Industry Station, Beltsville, Maryland; duplicate: G

**1938-? AKHTAR S.**

Around Kabul.

Materials: DD

**1939 CHAWORTH-MUSTER G.**

Collected plants in vicinity of Kabul. Collections are incorporated in *Symbolae Afghanicae*.

Material: BM, MO

**1942 CORINGTON K.**

Tavelled to Afghanistan in 1942 for plant collection. His collections are incorporated in *Symbolae Afghanicae*.

Materials: BM

**1947 LINDBERG Knut, a medical doctor and zoologist.**

First collection of plants in Afghanistan was in 1947. Later (1957-1962), he made further expeditions. His collection of plants is in the vicinity of Kabul, Chekhcharan (Ghor Province), Obeh, Orozgan, Panjsher, Badakhshan, Maimana, etc.

Materials: W

**1948, 1949 EDELBERG Lennart, member of the third Danish Expedition to central Asia**

Travelled in Afghanistan between 1948 and 1949. He set out in late February 1948 at Gusalak on Pech River and continued to collect plants in Nuristan. On the 29<sup>th</sup> June he crossed the Munjan Pass toward Faizabad. On 19<sup>th</sup> February 1949, Edelberg together with Koeie travelled via Kandahar to Herat. In the latter half of March they worked in the tracts north and north-east of Herat toward Kushk, Bala Murghab and Maimana. He returned to Nuristan in July 1949, from where he travelled to Kunar Province. He continued to collect materials in the tracts of the Pech and Vaigel Rivers.

Before his last trip to Nuristan, Edelberg made an excursion to Deh-Kundi in the upper reach of Helmand River.

Specimens: 2500

Materials: C, W

**1948, 1949 KOEIE Morgen and Mrs Ase KOEIE members of the third Danish Expedition to central Asia (Portrait 5).**

Made their collection of plants in 1948-1949. They started in the west of Kandahar just before the middle of May 1948. Then they continued via Farah to Herat and to the Sauzak Pass north of Herat. They returned to Kabul by way of Kandahar and arrived in Kabul in late June. On the 9<sup>th</sup> of July they set out on a one-month journey through central Afghanistan, crossing the Unai Pass to Panjao, proceeded west to Dawlatyar. In the last half of August they collected along the route further north i.e. Kabul - Shiber Pass - Bamyan - Band-i-Amir - Doab. In the beginning of October

Koeie went to the Panjsher valley. In November he made short excursions to Jalalabad and to Gardez.

**1949 KOEIE M. and EDELBERG L.**

On 19<sup>th</sup> February, travelled back via Kandahar to Herat, 12<sup>th</sup> March. In the latter half of March they worked in the tracts north and north-east of Herat between that town and Kushk, Bala Murghab and Maimana. They returned to that area for about one week in late April. From the 5<sup>th</sup>–14<sup>th</sup> April they worked between Herat and Farah, and 15<sup>th</sup>-23<sup>rd</sup> April between Herat and Chisht on the Hari Rud west of Obeh. In the beginning of May they set out on the journey back to Kabul where they arrived on 12<sup>th</sup> of May. In the area Kandahar - Farah - Herat plants have been collected during the whole vegetation season; it is thus the area most intensively investigated by Koeie.

Materials: C, W

**1949 MORGENTIERNE G.**

Bamyan. List in *Blytta*, 9: 120-122 (1951) (wheatfield weeds).

Materials: O

**1949-1951 GILLI Alexander**

His plant materials from Afghanistan is from Jalalabad, Laghman, Kamdesh, Kunar, Barikot, Kabul, Koh-i-Korogh, Gulbagh, Gulbahar, Ghazni, Chak-e-Wardak, Logar, Sarobi, Maipar, Bamyan, Band-i-Amir, Balola, Doab, Jabal Saraj, Nijrao, Panjsher, Zebak, Farah, Girishk, Herat, Koh-i-Baba, Balkh, Mazar-i-Sharif, etc.

*Feddes Rep.* 61: 86 (1958) itinerary.

Materials: W

**1949-1951 NAUBAUER Johanne Hans**

1949	May 6-12	Katawas [Katawaz], Ghazni, Mokur [Moqor]
	30-June 5	Kandahar
	18-21	Katawaz
	July 5-8	Ghazni, Mukur [Moqor] and then to Djaghori
	August 10-19	Khost and Katawaz
	September 25-	
	October 14	Shibar Pass, Pul-i-Khumri, Khanabad, Faizabad, Kunduz, Hazrat Imam, Tash Kurghan and Pul-i-Khumri
1951	August 4-17	Nuristan, from Asmar (on the Kunar river) to Vaigal and Pech rivers
	31	Bamyan, Band-i-Amir

During this period he made additional short excursions around Kabul, i.e., Unai Pass, Chak-e-Wardak, Paghman, Ghorband Valley, and Panjsher. According to BRECKLE *et al.* (1969), NEUBAUER made additional trips to Afghanistan between 1960-1965.

List and early itineraries incorporated in *Symbolae Afghanicae*.

Materials: W, duplicate: G

#### 1950, 1953 VOLK Otto Henrich (1903-2000)

Collected plants mainly in western part of Badakhshan, Kunduz, Kabul, Sarobi, Lataband, Panjsher, Nijrao, Gulbahar, Pul-i-Khumri, Bamyan, Doab, Logar, Wardak, Jalalabad, Nuristan, Khost, Yakubi, Gardez, Tani, Jaji, Zarghun Shahr, Urgun, Kandahar, Girishk, Helmand, Farah, Herat, etc.

Material: W, M

#### 1952-1953 GENTRY H.S.

He collected in Persia and Afghanistan. Specimens numbered 300.

It is a private collection.

#### 1952-1955 JAPANESE EXPEDITIONS

##### 1952 SUZAKA O.

The first Japanese botanist who travelled to Afghanistan of Nippon-Shinyaka Company, Kyoto. He studied *Artemisia maritima*.

##### 1954 IWAMURA S.

A member of Japanese expedition in 1955, was collecting some plants at Ashtalai, Hazarajat (central Afghanistan).

1955 The botanical branch of Kyoto University's Scientific Expedition, consisted of four members: H. KIHARA, K. YAMASHITA, S. KITAMURA, S. NAKAO. Other members of the expedition H. KIHARA, K. YAMASHITA, T. UMESAO and T. YAMAZAKI (Humanistic Science) also collected wild plants in Afghanistan.

June 6-7	Kandahar – Kihara, Yamashita and Kitamura
5-8	Kandahar – T. Umesao, T. Yamazaki and Kitamura
9-11	Kandahar-Kabul – T. Umesao, T. Yamazaki and Kitamura
15-18	Kabul-Sarobi, Jalalabad-Kabul – Yamashita and Kitamura
19-22	Kabul – Kitamura

23-27	Kabul-Shibar Pass-Bamyan-Mazar-i-Sharif – Yamashita and Kitamura
28-30	Mazar-i-Sharif – Kitamura
July 1-4	Mazar-i-Sharif, Pul-i-Khumri Pul-i-Khumri, Kunduz, Pul-i-Khumri-Shibar, Kabul – Kitamura
July 5	Mazar-i-Sharif, Zarmast Pass, Herat – Yamashita
21-24	Kabul, Paghman – Kitamura
25-27	Kabul, Jalalabad, Chagha Sarai, Kandi – Kitamura
August 6	Kandi, Seprigal, Voma [Wama], Trokikorl, Pawata, Chatrass, Kushimaicit, Pushiki, Pronz-Eschtaway, Shabul Gul – Kitamura
6-14	Shabul Gul, Eschtaway, Pushki, Voma [Wama], Kundai – Kitamura
15-20	Kandai-Morachal, Chagha Sarai, Jalalabad, Kabul – Kitamura
21-29	Kabul – Kitamura
September 2, 8	Taiwara and Zerni, Hazarajat – Umesao

Materials: KYO

#### **1954 FERNAND**

Central Afghanistan

Materials: A, BLAT

#### **1956 AMSEL H. G. member of Deutsch-Afghan Expedition**

Materials: W

#### **1956 THESIGER Wilfred**

Materials: BM

#### **1958 PABOT Henri (Map 4)**

In his journey to Afghanistan in 1958 travelled to the following areas:

April 10-18	Kabul, Ghazni, Mokur [Moqor], Kandahar, Girishk, Lachkargah [Lashkargah], Helmand valley and borders of the deserts of Margo and Registan
April 28 - May 6	Kabul, Shibar Pass, Pul-i-Khumri, Mazar-i-Sharif, Chibarghan [Sheberghan], Andkhoui, Maimana
June 15-17	Mountainous region of west of Ghazni (Nawor)
June 28- August 8	North of Kabul, Shibar Pass, Pul-i-Khumri, Mazar-i- Sharif, Kunduz, Kataghan, Baghlan
August 25-28	Bamyan

October 14-27 Hazaradjat et North of Panjao, Harirud Valley, Herat, Zarmast Pass, Murghab, Maimana, Andkhui, Chibarghan [Sheberghan], Mazar-i- Sharif, Pul-i- Khumri, Shibar, Kabul

Materials: G, TARI

**1960** BALLEY E. and DUNSHEATH  
Panjsher valley. Collected 67 plants.  
Materials: K

**1960** FREITAG Helmut

During his stay in Afghanistan in 1960s, made collections of Afghan plants mainly from Kabul, Nangarhar, Kandahar, Ghorband, Maimana, Bamyan, Urgun, Khost, Ghazni, etc.

He was visiting professor in the Faculty of Natural Science, Kabul University.

**1962, 1969** WENDELBO Per (1927-1981) and HEDGE Ian C. (Map 4) (Portrait 6).

1962 April 25- May 18 Kabul, Koh-i-Asmai, Tang-i-Gharu, Mahi Par, Darah Gazak, Paghman, Sarobi, Sher Darwaza, Charikar, Jabul-us Saraj, [Jabal Saraj], Gulbahar, lower part of Panjshir Valley, Lataband, Gulbagh, Koh-i-Nanagak, Pol-i-Charkhi, Bala Hissar, Farza, Darul Aman, Qal-i- Islam, Morghab.

May 19- June 14 Northwest of Kabul, Charikar, Ghorband Valley, Shibar Pass, Dushi, Samangan, Asya Bad, Doab, Ajar valley, Tashqurghan, Mazar-i-sharif, Aqcha, Sheberghan, Andkhui, Tagab-i-Sherin, Maymana, Naranj, Belcheragh, Darrah Abdullah, Darrah Zang, Darrah Belcheragh. On return journey to Kabul, collections were also made at Balkh, Pul-i-Imam Burki, Chushma Shafa, Koh-i Elburz, Aq Kupruk. From June 1<sup>st</sup> to June 14<sup>th</sup>, they were accompanied by Prof. Rechinger.

17-21 Kabul to Tang-i-Gharu, and Mahi Par, Sher Darwaza, Paghman.

June 23- July 4 Koh-i-Baba, and Band-i-Amir region, Kotal-i-Takht, Maidan, Sar-i-Cheshma, Unai, Koh-i-Qalandaran, Sarai Sarkharit, Siasang, Hajigak Pass, Paimuri Gorge, Bamyan, Darrah Kalu, Gulgola (Ghulghula), Baraki, Cheidan, Karaganu-tu, Band-i-Amir, Nayek, Yakaulang, Kotal-i-Devali, Panjao, Kotal-i-Narges, Kotal-i-Akhsarat, Band Shoi, Godar, Aogardan, Bisut [probably Behsud], Abdullah, Unai, Darrah Masjed, Kabul

10-13 Kabul, Tang-i-Gharu, Paghman.  
 15-27 Panjshir Valley, and Mount. of Hindukush, Kabul, Gulbahar, Mars (Sinsh), Mukini, Darrah Rastagal, Safed Jir, Dasht-i-Revat, Khauvak, Shanez, Jista, Chimar, Shalzur, Anjuman Pass, Auz Anjuman, Return to Kabul by the same road

1969- WENDELBO and HEDGE travelled again to Afghanistan, where on April 22 they met HEWER in Kabul (Map 3).

Materials: BG, E, W, O, and that of Hedge in E, W; duplicates: G.

**1962, 1963 and 1967 RECHINGER Karl Heinz (1906-1998) (Map 5)**

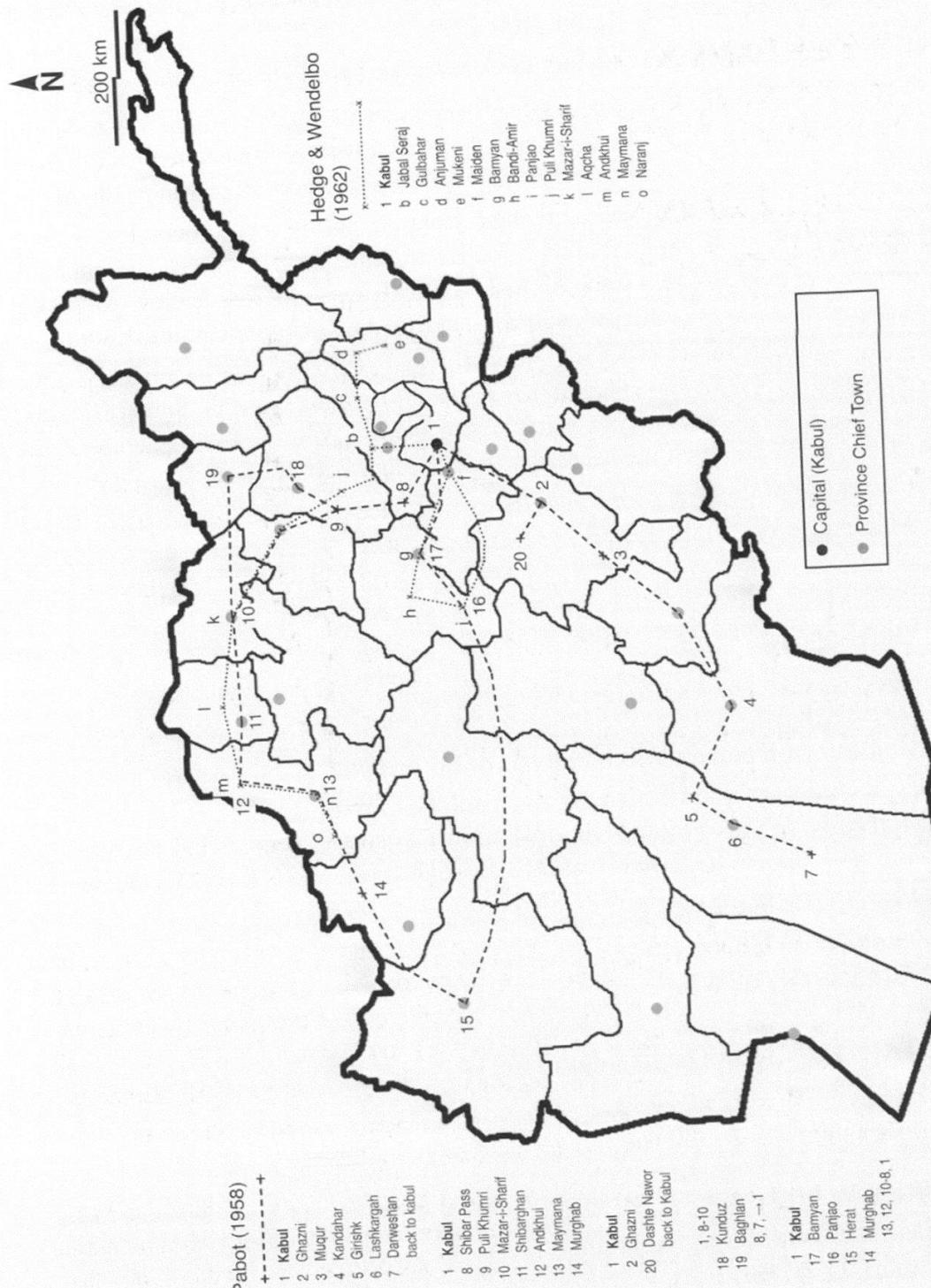
(Portrait 7)

1962

May 20	Left Vienna by air to Kabul, where he met HEDGE, WENDELBO and LINDBERG.
25	Tashkurghan, Mazar-i-Sharif. Stayed for several days because of sickness. Then went to Balkh, Aqcha, Shibarghan and Andkhui and there near the Kara Kum desert south of Andkhui he met again WENDELBO and HEDGE and travelled toward Mazar-i-Sharif. They made few excursions, including Balkh Gorge, Chashma Safal and Akupruk. On the way to Kabul they visited Doab and Ajar Valley and returned to Kabul.
June 25- July 8	With LINDBERG, to Ghazni, Karabagh, Sang-i-Masha, Kotal-e-Kechru, Mirdan, Dasht-i-Nawar, Okak, Lake Djalgat Shahr Kawat, Sabzab, Behzud [Behsud], Kabul.
12-17	They visited Bamyan, Band-i-Amir,
22	They left Kabul to Panjao via Maidan and Unai Pass. They passed Lal-i-Sar Jangal and Shutur Khan Kotal to Taiwara, Parjuman.
August 2	They left Parjuman and returned to Qala Sharak. Here he left LINDBERG who took the route towards Shindand, Tulak and Farsi. Rechinger continued to the west across the mountain range of to Chisht, Obeh, Herat. It took six days to return to Kabul via Farah and Kandahar.
20	Rechinger left Kabul via Sarobi and Jalalabad to Torkham for Pakistan.

1963

June 17	Left Peshawar for Afghanistan through Khaibar Pass, reached Kabul the same evening. From Kabul he made several small excursions around the capital. After that he visited Altimur (Tera Kotal), Sata Kandao Pass [Sato Kandao], Shinkai, and the areas near Gardez and Khost. Another trip was made to Jalalabad and southern Nuristan in the lower parts of the Pech and Kunar valleys.
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Map 4.—Pabot's (1958) and Hedge and Wendelbo (1962) travels in Afghanistan.

June 21 He left Kabul to Kandahar and Herat for Mashhad.

1967 April 4 Left Vienna. On 14<sup>th</sup> April he reached Tehran, from here, he continued to Herat and along the main road by Farah Rud, Dilaram, Grishk to Kandahar. He visited Dasht-i-Margo and Registan. Via Ghazni he returned to Kabul (April 25).

May 3-11 Salang Pass, Khinjan, Puli Khumri,

12-15 Tangi Gharu, and the Kabul Valley all the way to Sarobi and beyond. With FREITAG, he travelled to Kandahar and Girishk. Lashkargah, Darweshan, Safar, Baghat.

June 7-10 He travelled from Kabul to Logar, Gardez, Khost, Yakubi, Narai Kotal, Kurrum Valley between Chakmani and Ahmad Khel, Khost, Matun Valley, Domandi [probably Dobandi], Khost, Urgun, Gardez, Kabul.

June 20- July 4 Kabul, Maidan, Siah Sang, Behsud, Panjao, Shahtu, Shahtu Kotal, Kotal-i-Naiak, Sauzak Sumaj, Serdak, Sad Barak Pass, Panjao, Warass Pass, Khonak Pass, Shahrestan area, Panjao, Behsud, Kabul.

Collected plants for *Flora Iranica*.

Materials: W; duplicate: G

### 1963 PRIEMER

Materials: M

### 1964 ROEMER H.

Member of Deutsch Wakhan expedition in 1964.

Collected plants in north-east and central Afghanistan.

Materials: W; his collections of lichens are famous: M.

### 1964, 1966 FURSE J.P.W.

Persia and Afghanistan.

Materials: K, E, W

### 1965 STAINTON John David Adam (1921- )

Afghanistan.

Materials: BM, E, RAW.

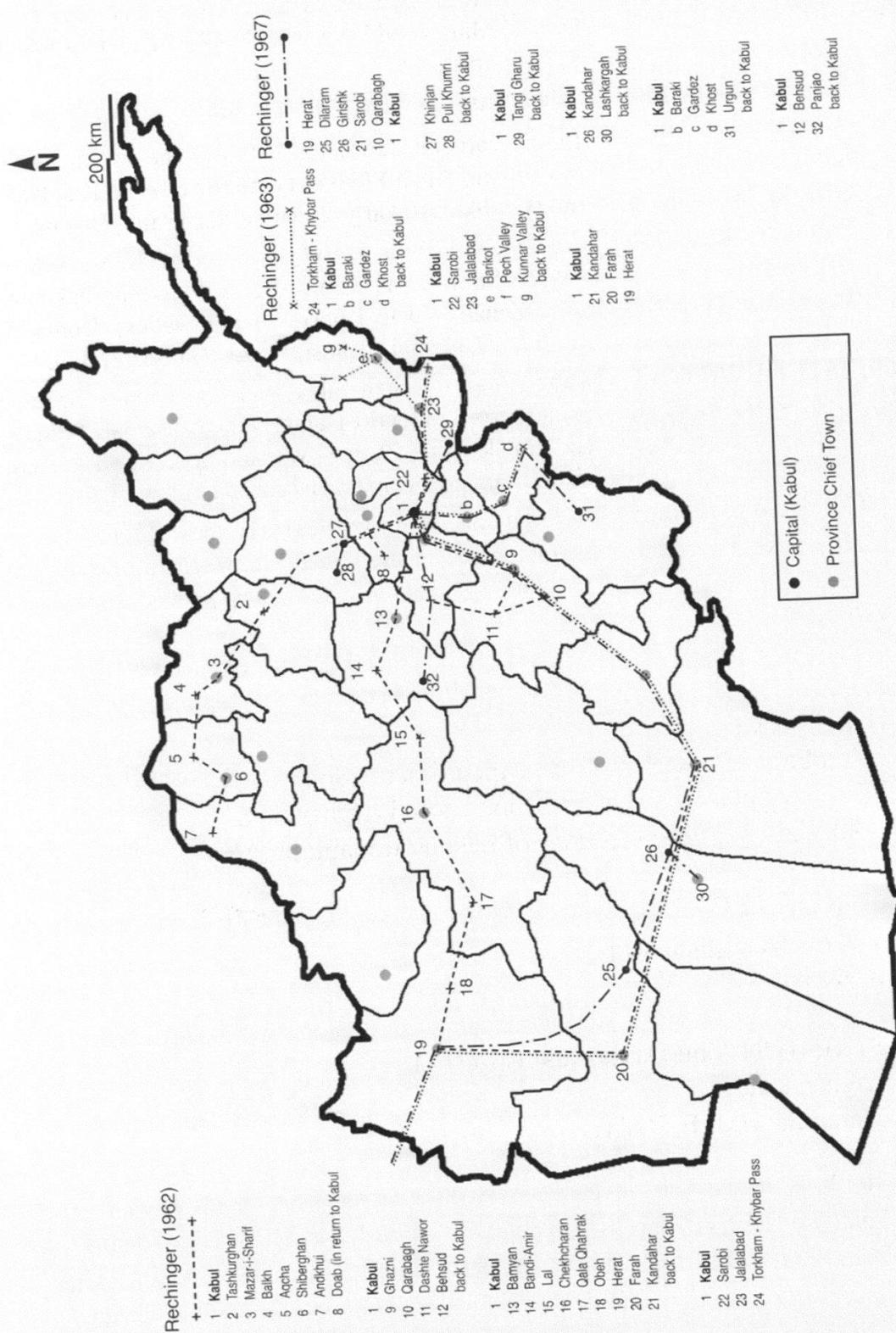
### 1965 FREY W.

East and Central Afghanistan.

Materials: TUB

### 1965 KAZI F.

Materials: W



Map 5.—Rechinger's (1962, 1963, 1967) travels in Afghanistan.

**1965 JOHANSTON G.**

Nuristan.

Materials: K

**1965- 1978 PODLECH** Dieter (1931- ), O. ANDERS and D. DIETERLE (Portrait 8).

In above mentioned period, made important plant collections in Afghanistan. They are from Wakhan, Takhar, Doab, Baghlan, Samangan, Kunar, Nuristan, Farah, Helmand, Kandahar, Kabul, Parwan, Paktia, Ghazni, Wardak, Bamyan, Ghor, Orozgan, ...

Podlech and Anders were German visiting professors in Kabul University.

Materials: M, MSB; duplicate: G

**1969, 1971 HEWER T. F. (Map. 6)**

1969                    April 9    Kandahar, from where he took the main road to Kabul. He passed Ghazni and camped at the village of Haft Asiab (Wardak Province). According to him it was the best botanical site. Next day they climbed to the mountain east of the village, from where towards the north he could admire the snow capped Hindukush view.

                          22    Arrived in Kabul, met WENDELBO and HEDGE, who were on another expedition. He explored the country around the capital.

                          30    He made excursions along the Lotherban [Lataband]-Saprobe road. He found it a bare, treeless country.

May 2                    North of Kabul, Salang, and then Mazar-i-Sharif

May 13                  Koh-i-Alburz, Mazar-i-Sharif, they left for Bamyan, through Balola Gorge, Hajigak Pass, and then Unai Pass.

May 20-               

June 4                  Khanabad, did not succeed to reach Badakhshan.

                          15    Hajigak Pass toward Lal.

                          29    Bashgal, Barikot, Kamdesh, Barg-i-Matal (July 4)

July 25                Left Kabul for Iran.

1971                    January 31    Again he set off for Afghanistan. On his way on February 7<sup>th</sup> he met Prof. RECHINGER at Vienna.

                          April 13    He entered Herat. There, he travelled to Kushk. After that he continued south toward Delaram, Gulistan, Asfang. From here he travelled toward Kabul, where he arrived on April 28<sup>th</sup>.



Map 6.—Hewer's (1969, 1971) travels in Afghanistan.

May North of Kabul, Khinjan, Pul-i-Isar, Anjuman Pass in Nuristan.

May 12 Mazar-i-Sharif, Alburz Mountain, Pul-i-Khumri, Samangan, Bamyan, Kabul.

June 4 Left Kabul for Sarobi, Tigari, Laghman, Alisheng.

16 Left Kabul for Jam, Hari Rud, Panjao, Chikhcharan, Shahrak, Shindand, Herat, Maimana, Andkhui, Mazar (July 2).

July 3 Salang, Kabul.

16 Left Kabul for North, Kunduz, Taloqan, Faizabad, Badakhshan.

July 18-20 Reached Ishkashem and Wakhan.

August 16 Left Kabul for Iran.

Materials: K; duplicate: G

#### 1976 JACQUEMOUD Fernand

As a member of Genevese Climbing Expedition to Mir Samir (Panjsher). 250 Nos collected mainly in July during the trek in Panshir. Some from Bamyan, Band-i-Amir, Unai and Hajigak. Most of them however destroyed during return trip in Iran. About 50 specimens saved.

Materials: G; duplicate: W

AFENDI, AGAKHANJANC, AKRAM, AMIN, BALFOR, BENDEKT, BLIGNY, BOWDEN, BUKINICH, CARTER, DOBSON, DUCKELMANN, FOHLEN, FRUMKIN, GIBBONS, GRATZL, GRÖTZBACH, GYSEL, HAGER, HARLAN, HAYON, JAKES, JÖRGENSEN, KASIMIR, KASY, KUKKONEN, LALANDE, MARTINICIC, Mc ARTHUR, NUSHEIM, ALUDAN, PELT, PIERSON, RASOUL, RODIN, SHAW, SHERBENOVSKII, SMITH, TONCEV, UNGER, UOTILA, VOGT, WALD, WHEELWER, WRABER, YARMAL (JARMAL) and YOUNOS, are also among the collectors of Afghan plants. Materials of almost all of them are incorporated in *Flora Iranica*.

#### CONCLUSION

Plants collecting in Afghanistan has a long history (1833-1978). These expeditions have been carried out by more than 100 collectors, either alone or in groups.

With the exception of two collections, which are private, all other material is kept in about 26 Botanical Museums and Gardens dispersed around the world.

As for Afghan botanists and their collections our information is limited to the work of PABOT (1959), HOLMGREN *et al* (1990) and Website which seems to be incomplete.

Concerning the Afghan collections, W seems to be the richest (17 collections), followed by K (15 collections), then G and G-BOISS (13 collections) and E (9 collections), etc. (table 3, annexe)

The documents show that after 1978, no collections have been made, either by Afghans, or by foreigners, which is very unfortunate. It is the time that Afghan institutions take more seriously the studying of the Flora of Afghanistan, and encourage UN organisations as well as Plant Museums and Gardens of foreign countries to invest in this field.

#### ACKNOWLEDGEMENT

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Herbarium of Naturhistorisches Museum Wien (W), Austria.

<http://207.156.243.8/ih/herbarium.php?>

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## ANNEXE

Table 2.—Collectors of Afghan plants, date (s) and Museums where their collections have been stored (in brief).

Name of collectors	Year (Years)		Material in
AITCHISON	1879	1880	1884-1885 K, E, G, G-BOISS
AKHTAR	1938?		DD
AMSEL	1956		W
ANDERS	1965-1978		M, MSB, G
BACON			NY
BALLY	1960		K
BELLEW	1858		CAL
BUKINICH	1924	1926-1927	WIR
BUNGE	1858-1859		LE, G, G-BOISS, HAL, W, B. P. K.
CATTEL	1871	1880	
CHAWORTH-MUSTER	1939		BM, MO
CORINGTON	1942		BM
DIETERLE	1965-1978		M, MSB, G
DUNSHEATH	1960		K
EDELBERG	1948	1949	C, W
FERNAND	1954		A, BLAT
FREITAG	1960		
FREY	1965		TUB
FURSE	1964	1966	K, E, W
GABRIEL	1937		W
GENTRY	1952-1953		Private collection
GILLES	1884-1885		K, E
GILLI	1949-1951		W
GRANT	1839		K
GRIFFITH	1839	1840	K, E, G
HAY	1935	1936	K
HEDGE	1962	1969	BG, E, W, O, E, W, G
HEWER	1969	1971	K, G
HONIGBERGER	1833		W
HUTTON			K
JACQUEMOUD	1976		G, W

Name of collectors	Year (Years)			Material in
JAESCHK	1865-1870			K
JAPANESE EXPEDITIONS	1952	1954	1955	KYO
JOHHSTON G.	1965			K
JOHNSTON J.	1879			E
KAZI	1965			W
KERSTAN	1935			HAL
KOEIE, Mrs. KOEIE	1948	1949		C, W
KOELZ	1937	1939		NA, G
LEYDA	1923-1929			B
LINDBERG	1947			W
MANGER	1923-1929			B
McMAHON	1923			B, L
MEINERTZHAGEN	1933			Private collection
MORGENSTIERNE	1949			O
NAUBAUER	1949-1951			W, G
PABOT	1958			G, TARI
PETER	1880			K, L
PODLECH	1965-1978			M, MSB, G
PONCINS	1839			P
PREIMER	1963			M
RECHINGER	1962	1963	1967	W, G
REGEL	1883			LE
ROEMER	1964			W, M
SANDERS	1878			CAL, K?
SCHIEBE	1935			H
STAINTON	1965			BM, E, RAW
THESIGER	1956			BM
VAVILOV	1924	1926-1927		WIR
VOLK	1950	1953		W, M
WEATHERHEAD				BM
WENDELBO	1962	1969		BG, E, W, O, E, W, G
<b>Afghan Collectors</b>				
NOORI				KABA
ASLAMY				KABA

Table 3.—Museums where the collections of Afghan plants have been stored (in brief).

Abbréviation	Full Name of the Museum	Collectors of Afghan plants
A	Arnold Arboretum, Harward University, Massachusset, U. S. A.	J. Fernand
B	Botanischer Garten und Botanisches Museum Berlin-Dahlem, Zentraeinrichtung der Freien Universität Berlin	A. von Bunge, A. H. MacMahon, Leyda, C. Manger
BG	University of Bergen	P. Wendelbo, J. C. Hedge
BLAT	St. Xavier's College, Maharashtra, Mumbai, India	J. Fernand
BM	The Natural History Museum of London	G.M-. Chaworth, K. Corington, W. Thesiger, J.D.A. Stainton
C	University of Copenhagen	L. Edelberg, M. Koeie
CAL	Botanical survey of India, West Bengal, Kolkata	H. W. Bellew, (Major) Sanders
DD	Forest Research Institute, Indian Council of Forestry Research and Education, Dehra Dun, Uttar Pradesh, India	S. Akhtar
E	Royal Botanic Garden of Edinburgh	W. Griffith, (Major) Sanders, J. Johnston, J.E.T. Aitchison, C. M. Gilles, P. Wendelbo, I. C. Hedge, J. P. W. Furse, J. D. A. Stainton
G	Conservatoire et Jardin botaniques de la ville de Genève	W. Griffith, J.E.T. Aitchison, A. von Bunge, W. Koelz, H. Pabot, P. Wendelbo, I. C. Hedge, K.H. Rechinger, D. Podlech, O. Anders and D. Dieterle, T. F. Hewer, F. Jacquemoud
H	University of Helsinki	Schiebe
HAL	Martin-Luther Universität, Halle	A. von Bunge, G. Kerstan
K	Royal Botanic Garden of Kew	W. Griffith, J.E.T. Aitchison, J. W. Grant, A. von Bunge, A.H. Jaeschke, (Major) Sanders?, J.W. Edward, Ch. T. Peters, Hutton, C. M. Gilles, W. R. Hay, E. Bailey and Dunsheath, J.P.W. Furse, G. Johanston, T.F. Hewer
KABA	University of Kabul, Faculty of Agriculture	Y.M. Noori, M.N. Aslamy
KYO	Kyoto University	Japanese Expeditions
L	Nationaal Herbarium Nederland, Leiden University	Ch.T. Peters, A.H. McMahon
LE	V. L. Komarov Botanical Institute of Saint-Petersburg	H. Collet

Abbreviation	Full Name of the Museum	Collectors of Afghan plants
M	Botanische Staatssammlung Münich	Priemier, H. Roemer, O. H. Volk, D. Podlech, O. Anders and D. Dieterle
MO	Missouri Botanical Garden	G. M. Chaworth
MSB	Ludwig-Maximilians- Universität Münich	D. Podlech, O. Anders and D. Dieterle
NA	United States National Arboretum	W. Koelz
NY	New York Botanical Garden	Miss Bacon
O	Botanical Museum of Oslo	G. Morgenstierne, P. Wendelbo, I. C. Hedge
P	Muséum National d'Histoire Naturelle de Paris	A. von Bunge, E. de Poncins
Private Collection		H.S. Gentry, R. Meinertzhagen
RAW	Pakistan Agricultural Research Council, Islamabad	J.D.A. Stainton
TARI	Research Institute of Forest and Rangelands, Iran, Tehran	H. Pabot
TUB	Eberhard-Karls-Universität Tübingen	W. Frey
W	Naturhistorisches Museum Wien	J.M. Honigberger, A. von Bunge, A. Gabriel, K. Lindberg, M. Koeie, A. Gilli, J. M. Naubauer, O. Volk, J. H. Amsel, P. Wendelbo, I. C. Hedge, K.H. Rechinger, F. Jacquemoud, J.P.W. Furse, F. Kazi, H. Roemer
WIR	N. I .Vavilov Institute of Plant Industry of Saint-Petersburg	N.I. Vavilov and D.D. Bukinich

