

Det Kongelige Danske Videnskabernes Selskab

Biologiske Skrifter, bind 8, nr. 1

Dan. Biol. Skr. 8, no. 1 (1954)

M. KØIE AND K. H. RECHINGER

# SYMBOLÆ AFGHANICAE

Enumeration and Descriptions of the Plants Collected by  
L. EDELBERG and M. KØIE on "The 3rd Danish Expedition to Central Asia"  
and by W. KÖELZ, H. F. NEUBAUER, O. H. VOLK,  
and others in Afghanistan.

I.

K. H. RECHINGER: LABIATAE



København 1954

i kommission hos Ejnar Munksgaard

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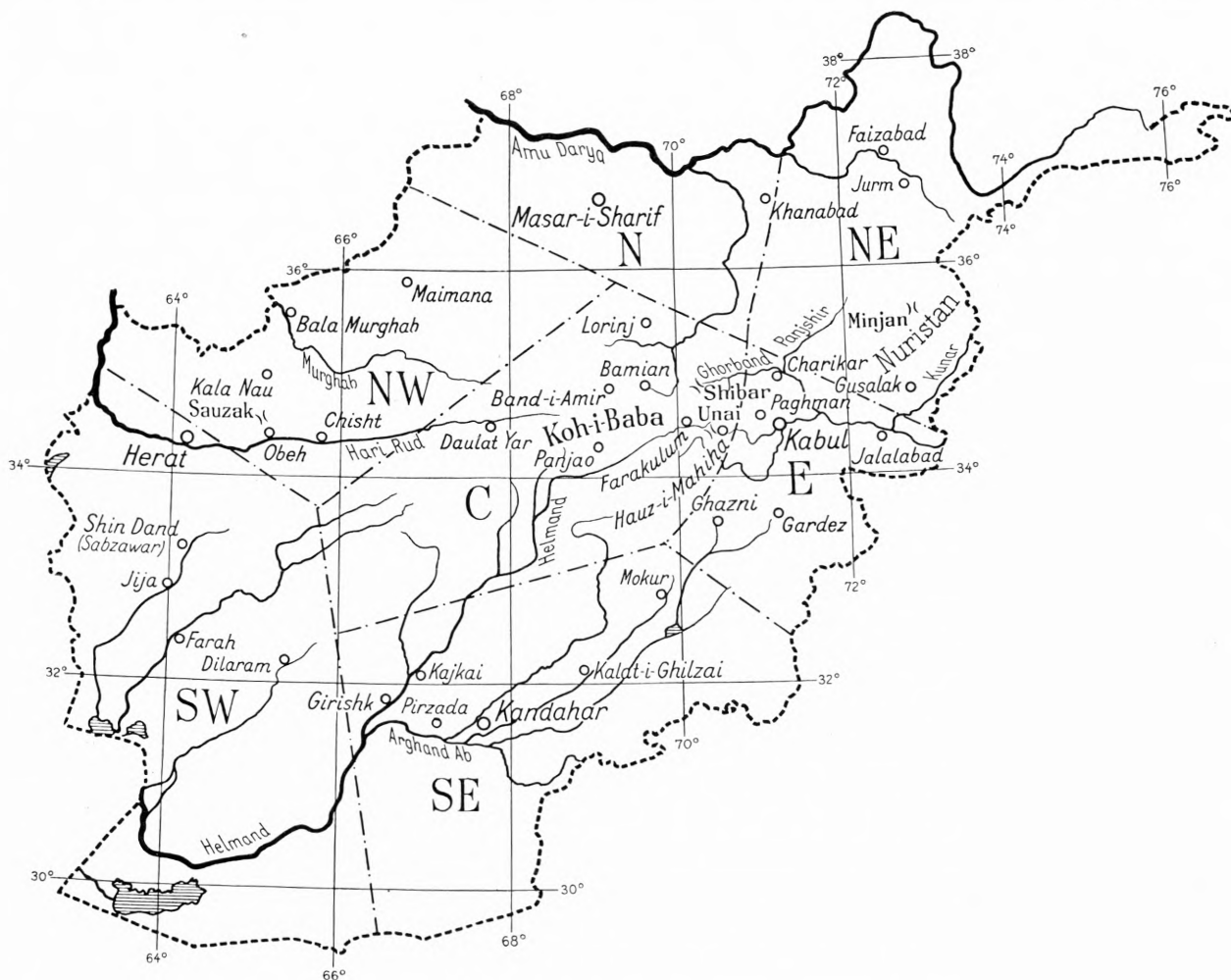
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### Introduction.

As members of the Third Danish Expedition to Central Asia L. EDELBERG and M. KØIE collected plants in Afghanistan in 1948—49. The collections comprised about 5,000 numbers. Dr. K. H. RECHINGER of the Naturhistorisches Museum, Vienna, undertook the systematic treatment of a large part of the material. At the same time, Dr. RECHINGER received a large material (2,600 numbers) collected in Afghanistan by W. KOELZ in 1937 and 1939. It was therefore decided that the whole of this material should be made the subject of a common taxonomic treatment and publication. To this material was also added a large number of plants collected by H. F. NEUBAUER and smaller collections by G. CHAWORTH-MUSTERS, CODRINGTON and K. LINDBERG. Furthermore, plants which had been lying untreated or only provisionally named in various museums were included in this general survey, for instance plants collected in May and June 1833 by M. HONIGBERGER and some of GRIFFITH'S and AITCHISON'S materials. Some plant groups collected in recent years by A. GILLI are also included in the survey. Finally, a plant collection of about 2,800 numbers by O. H. VOLK has recently been added to the material.

These additions have brought the total up to more than 11,000 numbers. It will be seen from the survey of plant-collecting in Afghanistan (p. 7 et seq.) that this material represents by far the greater part of all specimens collected since GRIFFITH and AITCHISON introduced the Afghanistan flora to the scientific world in the last century. A substantial part of the material originates from regions which previously were terra incognita from a botanical point of view.

Many of the localities referred to in this work are not shown on any map. Others will be difficult to identify because of considerable discrepancies in orthography. In the absence of established orthographic rules, we have given the localities in the spelling used by the collector, because this is the spelling that will be found on the labels. A complete list of more exact geographical locations cannot be prepared until the treatment has been completed because new material has been coming in all the time. For preliminary orientation we have divided Afghanistan into seven parts: N, NE, E, SE, SW, NW and C as indicated in the map. These geographical abbreviations are placed in front of the localities given. Nuristan has been segregated from the north-east part of the country, mainly because it is a well-defined area from which a particularly large number of plants has been collected, but also because the monsoon



Map of Afghanistan with the divisions used in the text and the localities most commonly mentioned.

rain renders the vegetation of Nuristan different from that of most of the other parts of Afghanistan. Otherwise, no attempt has been made to divide the country by plant geography.

All numbers are kept at the herbaria for which the plants were collected; thus, plants collected by EDELBERG and KØIE are kept in Copenhagen; those collected by KOELZ are in Beltsville, and NEUBAUER'S are in Vienna. In most cases, however, there are duplicates of the numbers collected by EDELBERG, KØIE and KOELZ. Of such numbers there is also a specimen in the museums with which the respective taxonomists are associated. For new species that specimen will generally be the type. The museums where the new species are kept is given in the text; the first museum indicated contains the herbarium where the type specimen is to be found.

Data on habitats, etc. have been cited in the language used by the collector on the label.

The following abbreviations have been used for herbaria: C is the Botanical Museum, Copenhagen; BM: British Museum; BPI: Beltsville, Plant Industry Station, Maryland, U.S.A.; W: Naturhistorisches Museum, Vienna.

The names of the collectors are abbreviated as follows: E is L. EDELBERG; K: M. KØIE; Kz: W. KOELZ; N: H. F. NEUBAUER; V: O. H. VOLK.

The habit figures have been drawn by Dr. FRIDA RECHINGER, in by far the most cases after the type specimens. From the Rask-Ørsted Foundation we have received a grant for this purpose, for which we wish to express our sincere gratitude. The flower dissections have been drawn by ALOIS PATZAK.

The plant families will be published in the sequence in which the treatment is completed, and in the language (German or English) used by the author. It is intended to conclude the work with a survey of Afghanistan's vegetation.





## Survey of Plant-Collecting in Afghanistan.

By MOGENS KØIE.

In the following survey a brief review will be given of the explorers who have collected plants in Afghanistan, their itineraries and the times when they visited the various regions.

We owe our first knowledge of the Afghan flora to W. GRIFFITH. Before he went to Afghanistan he had travelled in India as an explorer for several years. In the middle of April 1839 he crossed the present frontier of Baluchistan at Chaman on the road from Quetta to Kandahar. From the end of June he followed the caravan road through Khilat-i-Gilzee (Qualat-i-Ghilzai, 5th July) and Ghuznee (Ghazni, 21st July) to Kabul where he arrived on the 10th August, 1839.—On the 24th August he left Kabul and travelled via Sir-i-Chusme (Sar-i-Chasma, the sources of the Kabul River) through Koh-i-Baba to Bamian. After a couple of days' stay at Bamian he went back to Kabul by almost the same route, arriving at Kabul on the 17th September.—A few collections were made during the subsequent journey from Kabul to Lalpore (Lalpura, on the frontier of Pakistan) in October, 1839.

Of the 1,273 numbers enumerated by GRIFFITH (1848, p. 205—323) as collected in Afghanistan the first 526 are from regions which are now part of Pakistan.

In January—May, 1840 GRIFFITH travelled along Kooner (Kunar River) to Chugur Serai (Chiga Serai) in south-east Nuristan (then Kafiristan) and thence to Kabul where he arrived on the 5th June. The 206 numbers collected during this journey are listed in the above-mentioned book, p. 324—367.

GRIFFITH's last collections in Afghanistan were made during a journey which lasted from the end of June to the end of September, 1840. He followed his previous route to Bamian and went on to Koh-i-Baba where he collected 200 (mostly alpine) species which, however, are not included in his lists of plants.

In April—August, 1879 Surgeon-Major J. E. T. AITCHISON made large collections in the region of the Kuram Valley, but only a comparatively small part of them came from Afghanistan, being from the areas around the Karaia River and the Hazar-Darakht River, which he called the Hariab District.—The following year AITCHISON returned to the Kuram Valley, but he probably did not reach the north side of the Safed Koh Range which now forms the frontier between Afghanistan and Pakistan.

AITCHISON's next journey in 1884—85, when he travelled in the southern and western parts of Afghanistan, made a greater contribution to our knowledge of Af-

ghanistan's flora and vegetation. He gave a detailed itinerary of this journey (1888, p. 27):

On the 22nd September, 1884 he left Quetta, travelling westward along the Registan Desert, north of the Chagai Hills on the frontier of Baluchistan, and met the Helmand River near its southmost bend. From there he followed the Helmand to where it flows into the Hamun Marshes. He went on to Jowain (Djuwain) and along Harud (i. e. Adraskand River) and turned north to Hari Rud, following the course of this river from about 38 kilometres (24 miles) west of Herat to Khusan (Kuhsan) on the Persian frontier (where he arrived on the 18th November) and went on to Badghis, the land north of the Paropamissus Range which drains into the Murghab River and its tributary Kushk Rud. After a couple of months' stay in Kala-Bala-Murghab he traversed the south-east corner of Turcmenistan and proceeded along Kushk Rud back to Kuhsan where he arrived on the 26th April, 1885. Until early June he then collected plants in the western part of the Paropamissus Range.

After a trip in Khorasan he made another journey in Afghanistan: At the end of July he set out on his home journey travelling south and east of Kuhsan, with a stop at Kilki near Mt. Do-Shakh (Doshah) before he crossed the Persian frontier about the 18th August, 1885.

The collections amounted to about 800 species, a large part of which came from Khorasan where AITCHISON spent most of June and July, 1885.

N. I. VAVILOV and D. D. BUKINICH made long journeys in Afghanistan in 1924 and in 1926—27. Their main purpose was to collect cultivated plants. Some of the grasses collected during these journeys have been described by ROSHEVITZ (1928).

During 1923—29 C. MANGER collected plants in Afghanistan, especially in the vicinity of Kabul. Some of his material was lost. The remainder, mostly weeds from cultivated land, was listed and described by BORNMÜLLER (1933).

G. KERSTAN, a member of the German Hindukusch Expedition, collected plants in Nuristan in June—August, 1935. A few plants were also taken near Kandahar and Girishk in early May. Some of the plant groups are named and published (HAECKEL und TROLL, 1938).

A considerable part of the material to be dealt with in this work was collected by WALTER KOELZ who went to Afghanistan in 1937 and 1939 in the course of his travels to collect plants for the Plant Industry Station, Beltsville, Maryland, U.S.A. KOELZ' itineraries had to be reconstructed on the basis of his labels; this was done by CHARLES VOURI, New York, and ANDREW ARCHER of the Herbarium of U.S. National Arboretum, Washington, D.C. The following survey is based on their deductions:

KOELZ arrived at Jalalabad on the 9th May, 1937, reached Kabul on the 13th May and until the 27th June he worked within a triangle approximately delimited by Jalalabad—Gardez—Charikar (Nos. 11,377—12,154).

On the 30th June, 1937, KOELZ crossed the Shibar Pass into the north-east

part of the country, and made collections on various routes between Khanabad, Faizabad and the Minjan Pass in July and August. In September he collected plants in the northern part of Afghanistan, striking west as far as Balkh (Nos. 12,156—13,194).

During October—November, 1939 KOELZ went from Kabul by way of Kandahar—Girishk—Farah—Herat—Zermast Pass to Andkhui in the northern lowland, collecting 70 numbers.

KOELZ' second journey in Afghanistan extended from the middle of August to the end of October, 1939. He began collecting plants near Kabul, crossed the Shibar Pass going northwest and west through the northern mountainous area to the Maimana region, turned back to Balkh where he ceased collecting (Nos. 13,474—14,151).

A large part of L. EDELBERG's collections were brought together in Nuristan. He set out in late February 1948 at Gusalak on the Pech River (tributary of Kunar River). Up to the middle of June he collected a large number of specimens in the regions around this river, striking north as far as Shtive (north of Pashki) and along the Vaigel River east of Shtive. On the 18th—23rd June he made an excursion to the area around Kamdesh on the Bashgal River. On the 29th June he crossed the Weran Pass (i. e. Minjan Pass) and during the following three weeks collections went on in Minjan along a route which followed the Weran River via Jurm to Faizabad and back by way of Zebak and Sanglich (where KOELZ collected plants in 1937, about six weeks later in the year).—From the 22nd July to the 4th August EDELBERG supplemented his previous collections from the Pech River area.

He returned to Nuristan in early July 1949; this time he went to the Kunar Valley. The following month he gathered material 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 reaches of the Helmand River.

M. KOÏE, together with Mrs. A. KOÏE, started west of Kandahar just before the middle of May 1948. In the first half of June they went via Farah to Herat and on to the Sauzak Pass north of Herat. They returned to Kabul by way of Kandahar, arriving in Kabul in late June.

On the 9th July they set out on a one-month journey through the central plateau, crossing the Unai Pass to Panjao, proceeded west to Daulat Yar on the upper Hari Rud, (with a northward detour to Koh-i-Baba). In the last half of August they collected along a route farther north: Kabul—Shibar Pass—Bamian—Band-i-Amir—Doab. In the beginning of October KOÏE went to the Panjshir Valley. In November he made short excursions to Jalalabad and to the cedar woods near Gardez.

On the 19th February, 1948 M. KOÏE—this time together with L. EDELBERG—travelled back via Kandahar to Herat, arriving there on the 12th 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.

In the period 5th—14th April they worked between Herat and Farah, and 15th—23rd April between Herat and Chisht on the Hari Rud west of Obek. In the beginning of May they set out on the journey back to Kabul where they arrived on the 12th 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 KOEHLER.

H. F. NEUBAUER, during 1949—51, made comprehensive journeys in Afghanistan, notably in the eastern and northern parts of the country, and collected considerable amounts of material. In addition to making several excursions in a wide circle centered on Kabul (Unai Pass, Tschak Wardak, Paghman, Ghorband Valley, Panjshir Valley, etc.), NEUBAUER travelled from Kabul to the following regions in 1949: 6th—12th May to Katawas east of Ghazni—Mokur; 30th May—5th June to Kandahar; 18th—21st June to Katawas; 5th—8th July to Ghazni—Mokur and thence north to Djaghori; 10th—19th August to Khost and Katawas; 25th September—14th October to North Afghanistan along the following route: Shibar Pass—Pul-i-Khomri—Khanabad—Faizabad—Kunduz—Hasrate Iman (on Oxus River)—Kunduz—Pul-i-Khomri—Tash Kurgan—Masar-i-Sharif—Shibarghan—Sar-i-Pul—Andkhui and back via Tash Kurgan and Pul-i-Khomri.—In 1951: 4th—17th August he travelled to Nuristan from Asmar (on the Kunar River) to the Vaigel and Pech Rivers; 24th—31st August to Bamian and Band-i-Amir.

O. H. VOLK (Würzburg) collected during 1950—1953 in many places, mainly in the western part of the province Badakhshan and east of a line between Kabul and Gardez.

All the above-mentioned botanists collected plants in the vicinity of Kabul where also I. M. HONIGBERGER, G. CHAWORTH-MUSTERS, CODRINGTON and K. LINDBERG worked. In addition, CODRINGTON collected a few specimens from Bamian and Band-i-Amir and LINDBERG from Northwest Afghanistan.

The largest continuous area from which there are no collections at all is delimited approximately by the Hari Rud and Helmand River and the towns Girishk, Farah and Herat. Many localities within that area reach altitudes of 4,000 metres (13,000 ft.); nearly all the specimens collected along its southern and western perimeter have been taken at altitudes below 1,500 metres (5,000 ft.). The flora of this south-western mountainous area is likely to be rather different from the flora found in the more rainy mountains north of Hari Rud, but from the latter area, too, our knowledge of flora and vegetation is relatively scarce. Only KOEHLER has collected here, and his material proved to be comparatively rich in species new to science.

A survey of Afghanistan's vegetation was published by LINCHEVSKY and PROZOROVSKY (English translation 1949), based on the very scant literature and on inferences from the knowledge of the vegetation of surrounding countries.

**Literature cited.**

- AITCHISON, J. E. T., 1881: On the flora of the Kuram Valley, &c., Afghanistan. — Journ. Linn. Soc. 18, 1—113.
- 1882: On the flora of the Kuram Valley, &c., Afghanistan. — Part II. — Ibid. 19, 139—200.
- 1888: The botany of the Afghan delimitation commission. — Trans. Linn. Soc. Ser. 2 (botany) 3, 1—139.
- BORNMÜLLER, J., 1933: Aus der Flora Afghanistans. — Bot. Jahrb. 66, 216—248.
- GRIFFITH, W., 1847: Journals of travels in Assam, Bootan, Affghanistan and the neighbouring countries. — Calcutta.
- 1848: Itinerary notes of plants collected in the Khasyah and Bootan mountains, 1837—38, in Affghanisthan and neighbouring countries, 1839 to 1841. — Calcutta.
- HAECKEL, J. und TROLL, W., 1938: Botanische Ergebnisse der Deutschen Hindukusch-Expedition 1935. — Repert. spec. nov. regni veget., Beihefte 108, 1—72.
- LINCHEVSKY, I. A. and PROZOROVSKY, A. V., 1949: The basic principles of the distribution of the vegetation of Afghanistan. — Kew Bulletin 1949, 179—214. (Translated from Russian).
- ROSHEVITZ, R., 1928: Nouveaux matériaux sur la flore des graminées de l'Afghanistan. — Bull. Appl. Bot., Gen. & Plantbreeding 19, I, 121—126.
- VAVILOV, N. I. and BUKINICH, D. D., 1929: Agricultural Afghanistan. — Ibid., Supplement 33.
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## LABIATAE

VON K. H. RECHINGER, Wien.

*Ajuga bracteosa* Benth. — **NE:** Nilkhan, 8000 ft. (Kz. 11696). — **Nuristan:** Gusalak, 1000 m (E. 1552), 1200 m (E. 1497), Vama 1300 m (E. 454), Dshanda 1650 m (E. 894).

Unter obigem Namen fasse ich hier die durch folgende Merkmale gekennzeichneten Exemplare zusammen: Rhizom verholzend, Blätter dicklich, Indument weiß, relativ kurz, Blattnervatur undeutlich, Tragblätter breit, oft gelappt, Blüten blaß, Stamina knapp exsert.

*A. parviflora* Benth. ap. Hooker, Fl. Brit. Ind. 4: 703 (1885). — **Nuristan:** Gusalak, 1000 m (E. 35, 36, 153, 259, 304).

Unter diesem Namen fasse ich die Exemplare zusammen, die durch folgende Eigentümlichkeiten gekennzeichnet sind: Wurzel nicht verholzend, Blätter dünn mit deutlicher Nervatur, Indument relativ lang und rauh, Blüten noch in getrocknetem Zustand leuchtend blau, Stamina eingeschlossen.

Meine Identifikation der vorliegenden Pflanzen mit *A. parviflora* stützt sich vor allem auf die blauen Blüten mit eingeschlossenen Stamina. Die vorliegenden Exemplare haben jedoch im Gegensatz zu den vom Autor zitierten Exemplaren WAWRA no. 1463 glatte, kahle Grundblätter.

***Teucrium Edelbergii*** Rech. fil., n. sp. — Fig. 1 und 2.

Sect. nov. ***Pseudoscorodonia*** Rech. fil. — Flores in ramis axillaribus multifloris abbreviatis subcorymbose dispositi, bracteis subulatis herbaceis suffulti. Calycis labium superius tridentatum, dente intermedio longissimo latissimo ovatoacuminato, lateralibus brevissime triangularibus, labium inferius profunde bifidum dentibus lanceolatis divergentibus. Corolla flava. Habitu *T. Scorodoniae* L. similis sed inflorescentia, calyce, corolla diversissima. — Species unica:

Rhizoma tenue stolones subterraneos radicanes caules floriferos proferentes emittens. Caules 20—30 cm longi stricte erecti, internodiis mediis 4—5 cm longis, herbacei, tenues, obtuse quadranguli, pilis brevibus recurvis eglandulosis laxe obsiti, subsimplices, ex axillis plurimis ramulos tenues abbreviatis minute paucifolios proferentes, regulariter foliati. Folia omnia in sicco tenuiter membranacea, supra intense subtus pallidius viridia, pilis brevibus eglandulosis supra laxissime subtus laxe obsita, laxiuscule tenuiter pennato- et reticulato-nervosa, petiolo tenui  $\pm$  1 cm longo suffulta, patentia; inferiora e basi  $\pm$  oblique truncata ovata,  $\pm$  crenata, 2—3 cm



Fig. 1. *Teucrium Edelbergii* (E. 887).  $\frac{3}{4}$ .

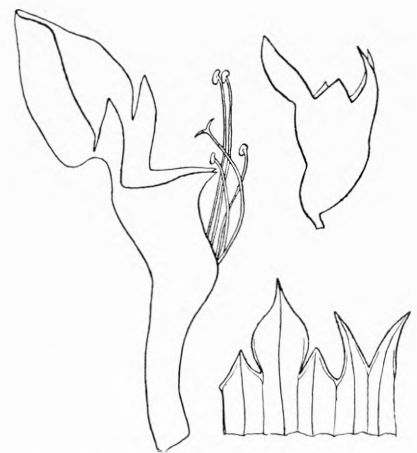


Fig. 2. *Teucrium Edelbergii* (E. 887). ca. 5 $\times$ .



longa,  $\pm 1$  cm lata; folia superiora paulo increscentia, 4 cm longa, 2—2.5 cm lata, basi  $\pm$  cordata, apicem versus sensim longe attenuata, irregulariter interdum subduplicato-vel sublobato-dentata vel crenato-serrata; folia summa lanceolata, argute inciso-serrata. Axillae foliorum superiorum cymas pedunculatas (usque 1 cm) multifloras proferentes. Bracteae inferiores lanceolatae, argute serratae, pedunculatae, superiores subulatae, integrae, omnes herbaceae; inflorescentia pilis brevibus partim eglandulosis partim glanduliferis breviter hirsuta. Calyx  $\pm 5$  mm longus, oblique oblongo-campanulatus, herbaceo-membranaceus, tenuiter 10-nervius, hirsuto-glandulosus, bilabiatus, labio superiore tridentato dente intermedio longissimo latissimo ovato-acuminato, lateralibus brevissime triangularibus, labio inferiore profunde bifido dentibus lanceolatis acutis divergentibus. Corolla  $\pm 11$  mm longa, in vivo ut videtur pallide flava, breviter glanduloso-pilosa; labii lobus medianus rotundato-dilatatus  $\pm$  deflexus, laterales lanceolati acuti. Stamina et stylus longe exserti.

**Nuristan:** Vaigel, 1500 m, along stream, 31.V.1948 (EDELBERG 887, Typus, hb. W., C.). Darimtal ab Ort Darim aufwärts, 1900—2400 m (N. 51/1024). Aschpi-Pass (N. 51/1046).

*T. Polium* L. — **SW:** Jija, 900 m (K. 3373). — **SE:** Girishk, 1000 m, rocks along stream, frequent (K. 2149).

*T. serratum* Benth. — **NW:** Obeh, 1600 m (K. 4069). — **Nuristan:** Nishei, 1300 m (E. 815). — **E:** Mamakhel, 4000 ft., along stream, fl. pale rose (Kz. 11585). Ghorband, 1700 m, river edge (K. 2777). Bagrami, Nedjerou-Tal, an einer feuchten Mauer (N. 51/270). Kabul (N. 51/359). — **SE:** Girishk, 900 m (K. 2144).

*T. Stocksianum* Boiss. (e descr.). — **Nuristan:** Vaigel, ca. 1500 m (E. 888). Barikot (E. 1795). — **E:** Kabul (HONIGBERGER, hb. W.). — **Baluchistan:** Quetta (K. 3374).

***Scutellaria Edelbergii*** Rech. fil., n. sp. — Fig. 3.

Sect. *Lupulinaris* Hamilt. — Suffrutex ramosissimus, ramis inferne tortuosis ramosis longiuscule lignescentibus decumbentibus, superne herbaceis arcuato-ascendentibus, ad 20 cm longis, pilis patulis vel retrorsis brevibus diametro caulis multo brevioribus eglandulosis canescentibus; internodia media ad 3 cm longa. Folia omnia discoloria, supra laete viridia laxe breviter eglanduloso-pubescentia, subtus canescentia breviter tomentello-puberula, nervis lateralibus utrinque  $\pm 4$  supra tenuiter immersis subtus tenuiter prominentibus; lamina ad quartam vel quintam partem crenata, in foliis superioribus crenato-dentata, crenis utrinque  $\pm 5$ . Folia inferiora petiolo laminam  $\pm$  aequante suffulta; lamina ad 15 mm longa et lata, late subrhombico-triangularis, basi plerumque perlate sinuato-cuneata, rarius subhorizontaliter truncata; folia superiora brevius petiolata decrescentia, latitudine circiter sesquilingiora, basi magis cuneata apice acuta, margine angustius et acutius crenato-dentata. Inflorescentia densiuscula interdum inferne laxiuscula, 3—5 cm longa; axis inflorescentiae pilis numerosis axis diametrum ad summum aequantibus hispida, pilis brevioribus glanduliferis paucis immixtis. Bracteae herbaceae flavido-virides, integrae, calycem floriferum superantes, oblanceolato-subrhombicae, acutae



Fig. 3. *Scutellaria Edelbergii* (E. 1140).  $\frac{5}{6}$ .

hispidulae et patule longiuscule glanduloso-pilosae. Calyx florifer vix 3 mm longus herbaceus hispidus eglanduloso-pilosus, fructifer ignotus. Corolla  $\pm$  20 mm longa, tubus rectus, labium inferius in vivo violascens, in sicco expallescentis concolor, pilis brevibus pluribus glanduliferis imprimis in labio superiore obsita. Nuculae ignotae. — Inter species *S. orientali* L. affines combinatione characterum sequentium insignis: habitu decumbenti-ascendente, foliis inferioribus latitudini aequilongis superioribus ad summum sesquialongioribus non profunde crenatis, indumento brevi e pilis eglandulosis consistente subtus densiore discoloribus, nervis subtus distincte prominentibus.

**Nuristan:** Chetras, 2800 m, 30.V.1948 (EDELBERG 846, Typus, hb.W.,C.). Pashki, 2600 m (E. 739). Kamdesch (E. 1140). — **E:** Above Kudikhel, 8000 ft. (Kz. 11558).

Das letztgenannte Exemplar ist von zwerghaftem Wuchs mit niedergestreckten Aesten, knapp 1 cm langen etwas schmäleren, z. T. reichlicher und kleiner gekerbten Blättern, relativ größeren breiten purpur-violett überlaufenen Brakteen und stellt wahrscheinlich eine besondere Rasse dar.

*S. Heydei* Hook. — Kurrum valley, from Habibkalla to Pewarkotal and Alikhel (AITCHISON 201, hb. Boiss.).

Das Exemplar ist ursprünglich unter der Bezeichnung *S. glutinosa* Benth. var. veröffentlicht worden.

***Scutellaria Koelzii*** Rech. fil., n. sp. — Fig. 4.

Sect. *Lupulinaria* Hamilt. — Suffrutex basi longe et crasse lignosus caespitosus 15—20 cm altus. Caules rami foliaque minute pruinoso-papilloso regione inflorescentiae excepta eglandulosi. Rami floriferi tenues arcuato-erecti simplices vel subsimplices, internodiis mediis 2—3 cm longis laxe foliati. Folia caulina inferiora petiolo laminae latitudine breviora usque eam aequante suffulta, lamina  $\pm$  1 cm longa,  $\pm$  5 mm lata, ambitu ovato- vel late lanceolata, prope basin latissima, basi late cuneata vel subrotundata, apicem acutam versus sensim attenuata, margine leviter  $\pm$  remote irregulariter crenato-dentata vel rarius  $\pm$  integra, nervatura pennata supra immersa subtus prominente, concolor in sicco laete flavescenti-viridis, consistentia crassiuscule membranacea. Folia superiora paulo decrescentia breviter petiolata vel sessilia proportionem angustiora subargutius dentata vel subserrata. Inflorescentia stricta, ab initio valde laxa, internodiis infimis 2—3 cm longis, axis pilis longis numerosis glanduliferis et setis axis diametro longioribus eglandulosis hispidula. Bractee  $\pm$  anguste ovato-lanceolatae vel lanceolatae, acutae, integerrimae, calycem floriferum  $\pm$  aequantes. Pedicelli rigidi axi principali paralleli vel ei appressi, fructiferi incrassati ad 5 mm longi. Calyx herbaceo-membranaceus, florifer ca. 15 mm longus, fructifer auctus, scutello late rotundato incluso ad 5 mm longus et latus, antice coerulescens. Corolla 20—22 mm longa, flava, tubo tenui superne parum ampliato recto axi parallelo, labiis in vivo purpureis, in sicco atro-violascentibus. — Inter species gregis *S. multicaulis* Boiss. notis sequentibus memorabilis: colore totius plantae laete flavescenti-viridi, indumento caulium foliorumque brevissimo papilloso-pruinoso, foliis concoloribus ovato-lanceolatis remote interdum indistincte paucidentatis, axi in-



Fig. 4. *Scutellaria Koelzii* (Kz. 11947).  $\frac{5}{6}$ .

florescentiae patule glanduloso-hispida, bracteis ovato-lanceolatis sat parvis, corollae tubo tenui superne parum ampliato.

**E:** Sirotai, 10,000 ft., dry slopes, clumps, flowers yellow and purple, 18.VI.1937 (KOELZ 11947, Typus, hb. W., BPI.). Paghman, 8000—9000 ft., 2. and 10.VI.1939 (CHAWORTH-MUSTERS s. n., hb. BM.). Paghmantal (N. 50/703). Kabul, 2100 m (K. 2316, hb. C., floribus desideratis).

Die Exemplare von CHAWORTH-MUSTERS haben etwas reichlicher und deutlicher gezähnte Blätter und nicht so sehr gestreckte Infloreszenz wie der Typus, stimmen aber im übrigen, so im schlanken Korolltubus und im charakteristischen, kaum sichtbaren, kleinpapillösen Indument vollkommen mit dem Typus überein.

*S. leptosiphon* Newski, det. K. FITZ. — **C:** Kala Sarkari, 7000 ft., dry earth, cliff face, fl. pale rose, center deeper (Kz. 13921). Binimang, 8000 ft., (Kz. 13882). — **E:** In der Schlucht zwischen Botkhak und Kord-e-Kabul, Polster bildend aus Felswandritzen, trocken, doch Schattenseite (N. 51/371).

*S. Litwinowii* Bornm. & Sint. (Syn. *S. multicaulis* Aitch., Journ. Linn. Soc. 19: 184 [1882] non Boiss.). — Badghis (AITCH. 474, hb. Boiss.).

Stimmt mit dem Typus, SINTENIS no. 1726 aus Kisil-Arwat, Karakala, Kutenak, genau überein. Auffällig durch die sehr stumpf gekerbten bis ganzrandigen, kurzgestielten Blätter und große, breite, abstehehend behaarte Blüten.

***Scutellaria lorinjensis*** Rech. fil. & Fitz, n. sp. — Fig. 5.

Sect. *Lupulinaria* Hamilt. — Suffrutex ca. 30 cm altus multicaulis, ramis e basi arcuata erectis subsimplicibus vel prope basin virgato-ramosis, internodiis mediis ad 3 cm longis. Tota planta inflorescentiae regione excepta pilis brevibus eglandulosis copiosis canescens. Folia inferiora petiolo lamina brevior suffulta; lamina ambitu late lanceolata infra medium latissima, basi cuneata usque abrupte attenuata, apice acuta, margine remote breviter paucilobato-dentata, consistentia crassiuscula, nervis paucis supra immersis subtus crasse prominentibus, pilis brevibus eglandulosis glandulis sessilibus pallidis immixtis utrinque aequaliter canescens. Folia superiora paulo decrescentia, brevius petiolata usque sessilia, basi subtruncata brevius et minus distincte dentata. Inflorescentia stricta, ad 15 cm longa, ab initio laxissima, internodiis infimis ad 4 cm longis; axis crassa valida, pilis eglandulosis axis diametro paulo brevioribus vel eum aequantibus patentibus et pilis glanduliferis brevioribus crassioribus numerosissimis hispidulo-villosa. Bractee herbaceo-membranaceae flavescenti-virides, late obovato-rhombicae, breviter acuminatae, elevate nervosae, calycem floriferum involucrantes, indumento ut in axi inflorescentiae. Pedicelli axi appressi,  $\pm 4$  mm longi. Calyx florifer scutello incluso  $\pm 4$  mm longus longe laxe hispidulus et brevius glanduloso-pilosus, fructifer paulo ampliatus bracteas paulo superans, tenuiter membranaceus pallide viridis, superne atro-violascens. Corolla 16—18 mm longa, tubo sursum valde ampliatus, in sicco flava, labio inferiore atrato (in vivo vide indicationes collectoris infra relatas). Semina immatura ellipsoidea, 1.5 mm longa, grisea, sublaevia. — In affinitatem *S. multicaulis* Boiss. pertinet, combinatione characterum sequentium insignis: indumento cinerascens brevi eglanduloso



Fig. 5. *Scutellaria lorinjensis* (Kz. 13741).  $\frac{2}{3}$ .



Fig. 6. *Scutellaria macrochlamys* (K. 2640).  $\frac{1}{1}$ .

foliorum et caulium, foliis angustis paucidentatis vel dentato-sublobatis, bracteis calycem floriferum involucrantibus latis breviter acuminatis elevate nervosis, axi inflorescentiae hispido-villosa et glanduloso-pilosa, corolla bicolore sursum valde ampliata.

**C:** Lorinj pass, 10000 ft., dry slope, standard deep purple, center reddish, lip yellowish, 27.VIII.1939 (KOELZ 13741, Typus, hb. W., BPI.). Same locality (Kz. 13742, hb. W., BPI.). — **E:** Gulbahar, Blüte gelb, Unterlippe blau (N. 50/714).

Außer durch *S. lorinjensis* und durch *S. Koelzii* ist der Formenkreis der *S. multicaulis* Boiss. in Afghanistan noch durch mindestens zwei weitere Sippen vertreten, über deren Abgrenzung und systematische Bewertung ich bisher keine hinreichende Klarheit erlangen konnte.

Die erste Form liegt mir von folgenden Fundorten vor: Zentral-Afghanistan (KÖIE 3392). — Deh Kundi, oberes Hilmend-Tal, Hezarajat (EDELBERG 1909). — "Burchao Pass, 9000 ft., dry slope, semidecumbent, fl. purple and yellow" (KOELZ 14113). — "Pulalam, 7000 ft., desert, in clumps, plant 12 inches high, fl. yellow and purple" (KOELZ 11851). Von *S. Koelzii* unter anderm auffällig verschieden durch reichlich mit kurzgestielten Drüsen bekleidete Blätter und teilweise auch Stengel.

Von der zweiten Form sah ich nur ein Fragment im Hb. BOISSIER von folgendem Fundort: "Kurrum valley, Hariab Dist., 7500—8000 ft." (AITCHISON 537). Wuchs zart und niedrig, mit abstehenden dünnen Aesten, Blüten im trockenen Zustand dunkel; in dem aus kleinen Papillen bestehenden Indument stimmt die Pflanze mit *S. Koelzii* überein.

***Scutellaria macrochlamys*** Rech. fil. & Fitz, n. sp. — Fig. 6.

Sect. *Lupulinaria* Hamilt. — Dense caespitosa humilis, tenuiter lignescens, ramis brevibus inferne ramosissimis diffusis dense foliatis sterilibus decumbentibus floriferis ascendentibus. Tota planta indumento hirsuto-tomentello canescens. Rami filiformes flexuosi, in parte superiore herbacei, pilis albis rectangulariter patentibus caulis diametrum aequantibus eglandulosis hirsuto-villosi. Folia petiolo tenui lamina usque duplo longiore suffulti; lamina minutissima 3—5 mm longa, longitudine saepe latior, palmato quinque- usque septemsecta vel pinnato-lobata, lobis saepius rotundatis, ambitu late flabellato-cordata usque late ovato-elliptica, margine revoluta, nervis supra valde impressis subtus prominentibus rugosa, ut petioli pilis albis patentibus eglandulosis dense villosopubescens cinerascens. Inflorescentia 4—7 cm longa, in statu compresso 2 cm lata, internodiis valde abbreviatis, bracteis permagnis imbricatis. Bracteae 10—14 mm longae, 6—11 mm latae, obtusiusculae vel acutae, inferiores irregulariter leviter late paucicrenatae usque sublobatae, superiores  $\pm$  integrae, basi late cuneatae, tenuiter herbaceo-membranaceae, pallide virides, nervis violascentibus palmato-pennatis percursae, longe nitenter candide villosae, flores fere omnino occultantes. Pedicelli 3—4 mm longi, axi appressi. Calyx florifer minutus, fructifer valde auctus, scutello incluso  $\pm$  5 mm longus, tenuiter membranaceus, virescenti-flavescens, dense longe hispido-villosus. Corolla 10 mm longa, tenuis, erecta, in sicco basi flavescens superne purpurascenti-violascens, pubescens. Nuculae vix 2 mm longae, ellipsoideae nigrae appresse albo-lepidotae. — Species habitu dense caespitoso, foliis minutissimis pluribus palmatilobis, inflorescentiis densissimis bracteis permagnis pallide viridibus violaceo-venosis imbricatis, corollis proportionem minutis valde insignis, vix cum specie alia comparanda.

**C:** Koh-i-Baba, 2400 m, along stream (KÖIE 2640, Typus, hb. W., C.). — **E:** Oberes Paghmantal (N. 50/702).

***Scutellaria Neubaueri*** Rech. f., n. sp. — Fig. 7.

Sect. *Vulgares* Benth. Subsect. *Peregrinae* Boiss. — Verosimiliter suffrutescens multicaulis. Caules arcuato-erecti, 10–15 cm longi, inferne obtuse, superne acutius



Fig. 7. *Scutellaria Neubaueri*  
(N. 1951/737).  $\frac{2}{3}$ .

quadranguli, paucinodi, internodiis mediis 3–4 cm longis, simplices, toto longitudine superne densius hispido-villosi, pilis longioribus eglandulosi diametrum caulis fere aequantibus pluri-articulatis acutis copiosis, brevibus crassioribus glanduliferis crebre immixtis; caulis spicastro denso plerumque simplici 2–3 cm longo terminatus. Folia omnia in sicco membranacea, nervatura tenuiter pennato-reticulata vix prominente, lamina utrinque subtus densius hispido-villosa, pilis eglandulosi longioribus et glanduliferis brevioribus immixtis, ut in caule; folia caulina inferiora delapsa; media ad 3 cm longa et lata, basi profunde cordata, apice acuta vel obtusiuscula, margine late breviter crenata, crenis utrinque 4; petiolus 1.5–2 cm longus; foliorum par summum plerumque tantum diminutum sed forma et proportionibus a foliis mediis vix diversum; folia caulina in bracteas non transientia. Axis inflorescentiae bractearum et calycis indumentum longe hispide et brevis glanduloso-villosum. Bracteae latius vel angustius lanceolatae, breviter petiolatae, acutae, in sicco bruneo-purpurascens, calycem aequantes. Calyx 2.5 mm longus. Corolla ca. 16 mm longa, colore in vivo?, in

sicco pallide bruneo-purpurascens, tubo tenui e basi eximie curvato erecto, indumento mixto. Nuculae ignotae. — Inter affines caulibus humilibus, indumento denso hispido villosoglanduloso, foliis superioribus vix diminutis, corollae tubo tenui valde curvato insignis.

**Nuristan:** Zwischen Ort Waigel und Nischai. 12.VIII.1951 (NEUBAUER 51/737, hb. W.).

***Scutellaria nuristanica*** Rech. f., n. sp. — Fig. 8.

Sect. *Vulgares* Benth. Subsect. *Peregrinae* Boiss. — Basis caulis deest sed certe perennis. Caulis 60 cm altus, stricte erectus, obtuse quadrangulus, internodiis omnibus elongatis, mediis  $\pm$  6 cm longis, simplex, folia in sicco brunescens, laxissime minutissime papilloso-puberula, subtus pallidiora secus nervos breviter antrorse pubescenti-scabrida; folia inferiora et media ad 5 cm longa, ad 4.5 cm lata, basi profunde cordata, apice  $\pm$  acuta, margine late breviter subirregulariter crenatodentata, dentibus utrinque 10–12; petiolus brevis, emarginatura laminae plerumque non vel vix longior, crassiusculus, 5–8 (–10) mm longus; folia superiora decrescentia



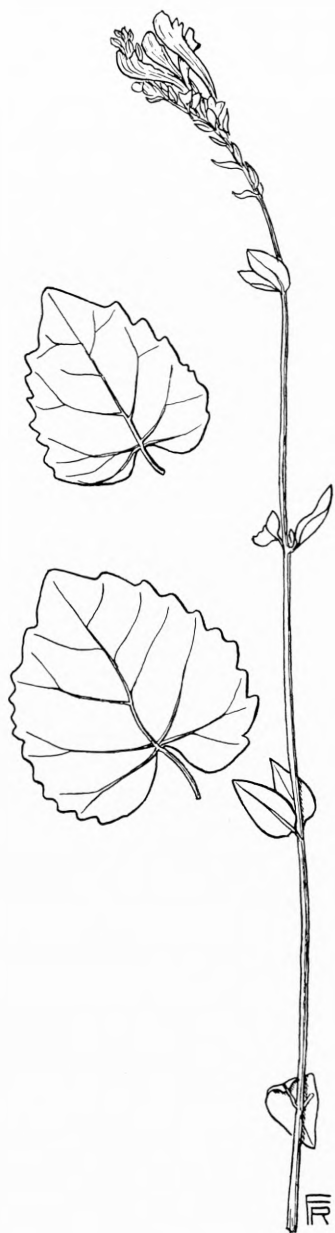


Fig. 8. *Scutellaria nuristanica* (N. 1951/971).  $\frac{2}{3}$ .



Fig. 9. *Scutellaria poliochlora* (E. 1792).  $\frac{1}{2}$ .

brevius petiolata proportione longiora, acutiora, subintegra usque integerrima. Axis inflorescentiae cum bracteis et calycibus pilis albis brevibus pubescens, pilis glanduliferis brevissime crasse stipitatis immixtis. Bracteae ovato-lanceolatae acutae brevissime petiolatae integrae, calyce plerumque breviores vel eum ad summum aequantes, flavescenti-virides. Calyx florifer ad 4 mm longus, fructifer ignotus. Corolla ad 2 cm longa, in vivo pulchre cyanea (e collectore), in sicco purpurascens, e basi curvata tubo erecto axi inflorescentiae subparallelo, pilis longiusculis crispulis pro maiore parte non glanduliferis immixtis. Nuculae ignotae. — Inter affines caule elato stricto subglabro, internodiis elongatis, foliis profunde cordatis subglabris, inflorescentia valde abbreviata insignis.

**Nuristan:** Zwischen Ningalam (1300 m) und Darim Ort (ca. 1900 m). Blüte schön blau. 5.VIII.1951 (NEUBAUER 51/971, hb. W.).

***Scutellaria poliochlora*** Rech. f. et Edelberg, n. sp. — Fig. 9.

Sect. *Vulgares* Benth. Subsect. *Peregrinae* Boiss. — (Basis deest). Caules verosimiliter plures, ad 80 cm alti tenues, erecti, obtuse quadranguli, internodiis omnibus valde elongatis, mediis 6 cm longis, in tertia vel quarta parte tenuiter ramosi; rami oppositi, tenues, divaricati, aphylli, in spicastro abeuntes; indumentum caulis e pilis numerosis brevissimis eglandulosis et e glandulis perminutis brevius quoque stipitatis consistens, subpruinoso-canescens. Folia omnia in sicco membranacea, nervatura subpalmato-pennato-reticulata subtus aliquantum prominente, bicoloria, supra viridia laxè breviter pubescentia et minutissime glandulosa, subtus cinerea, densius et sublongius pubescenti-tomentosa et breviter glanduloso-pilosa; lamina foliorum mediorum 4–6 cm longa et lata, basi profunde cordata, apice obtusiuscula vel subacuta, margine late cuneata, crenis utrinque  $\pm 10$  saepe  $\pm$  irregularibus, interdum minute obtuse cartilagineo-apiculatis; petiolus 15–25 mm longus; folia superiora sensim decrescentia, proportione longiora, brevius petiolata, apice acutiora, margine minus distincte crenata. Inflorescentia primaria et rameales florendi tempore quoque inferne laxiusculae; axis cum bracteis et calycibus pilis longioribus eglandulosis patentibus hispidula, pilis brevioribus glanduliferis sat crebre immixtis. Bracteae ovato-lanceolatae saepe longiuscule acuminatae, herbaceae, calycem ad summum aequantes. Calyx florifer 4–5 mm, fructifer membranaceus paulo auctus ad 7 mm longus. Corolla  $\pm 2$  cm longa, in vivo cyanea fuisse videtur, in sicco bruneo-purpurascens, tubo basi paulum curvato, patula, pilis longioribus eglandulosis et brevibus glanduliferis laxè obsito. Nuculae ignotae. — Affinis *S. nuristanicae* Rech. f. habitu elato, foliorum forma, corollae longitudine, sed differt ab ea: caule ramoso, indumento cinerascens densiore, foliis bicoloribus, corolla patula nec erecta.

**Nuristan:** Kamdesh-Barikot, VIII.1949 (EDELBERG 1792, hb. W., C.).

***Scutellaria polyadenia*** Rech. fil., n. sp. — Fig. 10.

Sect. *Lupulinaria* Hamilt. — Suffrutex ramosissimus, ramis in parte inferiore decumbentibus lignosis, superne herbaceis arcuato-ascendentibus, 10–20 cm longis, pilis longis eglandulosis rami diametrum  $\pm$  aequantibus hispidis, pilis bre-

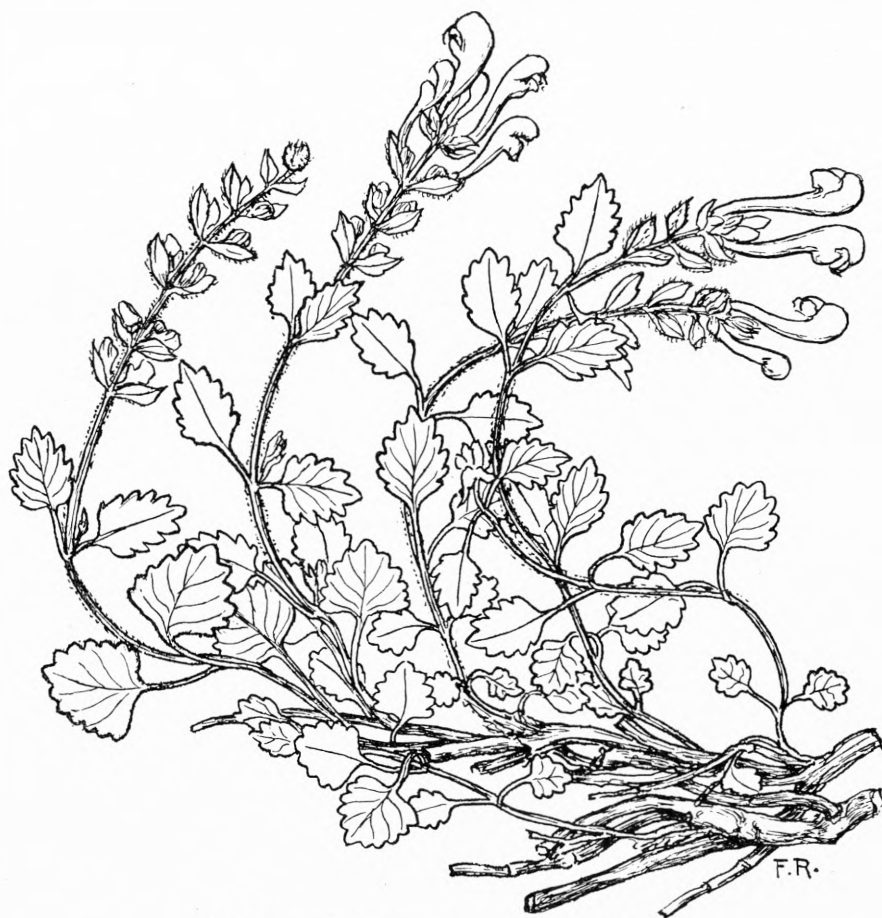


Fig. 10. *Scutellaria polyadenia* (Kz. 11641).  $\frac{1}{4}$ .

rioribus glanduliferis copiose immixtis; internodia media  $\pm 2$  cm longa. Folia omnia utrinque laete viridia subconcoloria; nervatura supra tenuiter distincte immersa, subtus tenuiter prominens, nervis lateralibus utrinque  $\pm 4$ , infimis valde approximatis; lamina ad tertiam circiter partem inciso-crenata, crenis utrinque  $\pm 5$ , utrinque pilis longis patentibus eglandulosis hispidula pilis brevioribus glanduliferis copiosissime immixtis. Folia inferiora longe tenuiter petiolata, petiolo laminam aequante vel paulo superante; lamina 10–14 mm longa et lata, late triangularis vel ovato-triangularis, basi horizontaliter truncata usque late sinuato-attenuata. Folia superiora sensim paulo brevius petiolata, proportione paulo longiora angustiora, basi distinctius cuneata crenis apiceque subacutioribus. Inflorescentia 4–8 cm longa laxiuscula; axis inflorescentiae pilis axi diametro longioribus rectangulariter patentibus eglandulosis hispidissima, pilis brevioribus glanduliferis copiose immixtis. Bractea herbaceae, inferiores quoque calycem fructiferum superantes, ovato- vel rhombico-

ovatae vel lanceolatae, acutae, irregulariter dentatae rarius subintegrae, omnes dense hispidae et glanduloso-pilosae; bractee superiores sensim decrescentes  $\pm$  integrae. Pedicelli axi appressi rigiduli, ad 5 mm longi. Calyx florifer ca. 3 mm, fructifer ca. 6 mm longus, herbaceo-membranaceus, superne interdum violaceo-suffusus. Corolla 20—22 mm longa, tubo subrecto, in vivo flava labio inferiore purpurascens breviter glanduloso-pilosa. Nuculae maturae ignotae. — In affinitatem remotiorem *S. orientalis* L. pertinet; basi longe et crasse lignescens, foliis brevibus saturate viridibus concoloribus, indumento longo denso hispido et longe patule glanduloso insignis.

**NE:** Daulatshah, 7000 ft., in stream bed, plant 6 inches high, flowers yellow and purple, 21.V.1937 (KOELZ 11641, hb. W., BPI.).

*Thuspeinantha brahuica* (Boiss.) Briq. — **NW:** N. of Herat, 900—1100 m (K. 4059). — **SW:** Jija, 1200 m (K. 3574).

*Marrubium alternidens* Rech. fil., Oesterr. Bot. Zeitschr. 99:38 (1952). — **SW:** Herat, 1400 m (K. 2271). — **C:** Hauj-i-Mahiha, 2500 m (K. 2359). — **E:** Paghman, 8—9000 ft. (CHAWORTH-MUSTERS). Tagau, 6000 ft. (Kz. 11788). — **NE:** Khash Distr., 8000 ft., (Kz. 12931). — **Jurm,** 1600 m (E. 1418). — **SE:** Kalat — Mokur, 1800 m (K. 3843). — **Kamard,** 6000 ft., in field (Kz. 13567).

Differt a *M. vulgari* L. dentibus calycinis alternatim longioribus et brevioribus, apice nunquam hamato-incurvis, longioribus tubum plus quam dimidio superantibus, plerumque etiam calycibus longioribus et nuculis magis atratis.

*M. procerum* Bge., e descr. — **C:** Upper Hari Rud, 2500 m (K. 3394). Lorinj Pass, 10000 ft., dry slope (Kz. 13748).

*M. vulgare* L. — **E:** Mamakhel, 4000 ft., along stream (Kz. 11578). Jagdalek, 5000 ft., open dry soil (Kz. 8245).

Entspricht durch die zehn gleichartig ausgebildeten, an der Spitze stark eingebogenen Kelchzähnen dem *M. vulgare*, doch sind die Kelche durchschnittlich etwas kleiner als bei der europäischen Pflanze. In der dichten, weißwolligen Behaarung besonders des unteren Stengelteiles erinnern die afghanischen Belege an die mediterrane var. *lanatum* Benth.

*Sideritis montana* L. — **C:** Lorinj, 8000 ft. weed in field, 2 ft. high fl. yellow, tipped brown (Kz. 13697). — **E:** Kabul, Aliabad, am Bewässerungsgraben in den Versuchsfeldern (N. 50/193). — **E:** Paghman (N. 50/718).

***Nepeta brachyantha*** Rech. fil. et Edelberg, n. sp. — Fig. 11.

Sect. *Cataria* Benth. — Basi lignescens laxae caespitosa. Caules floriferi ascendentes, tenues, 10—15 cm longi, ramulosi vel  $\pm$  simplices, foliati, a medio circiter ex axillis floriferi, inferne longe hirsuto-villosi indumento caulis diametro longiore, superne breviter  $\pm$  appresse lanato-villosi, internodiis in regione florifera elongatis 2—4 cm longis. Folia inferiora et media aequalia, minuta, petiolo longo tenui (8—14 mm) hirsuto-lanato suffulta, lamina 7—9 mm longa, longitudini aequalata vel latior e basi sinuato-truncata vel leviter cordata breviter reniformi- vel cordato-triangularis, apice rotundata, margine dense profunde usque laxae leviter crenata rarius subsinuata, nervatura pennato-reticulata, supra tenuiter impressa subtus vix prominens  $\pm$  rugulosa, indumentum supra laxius subtus subdensius lanato-tomen-

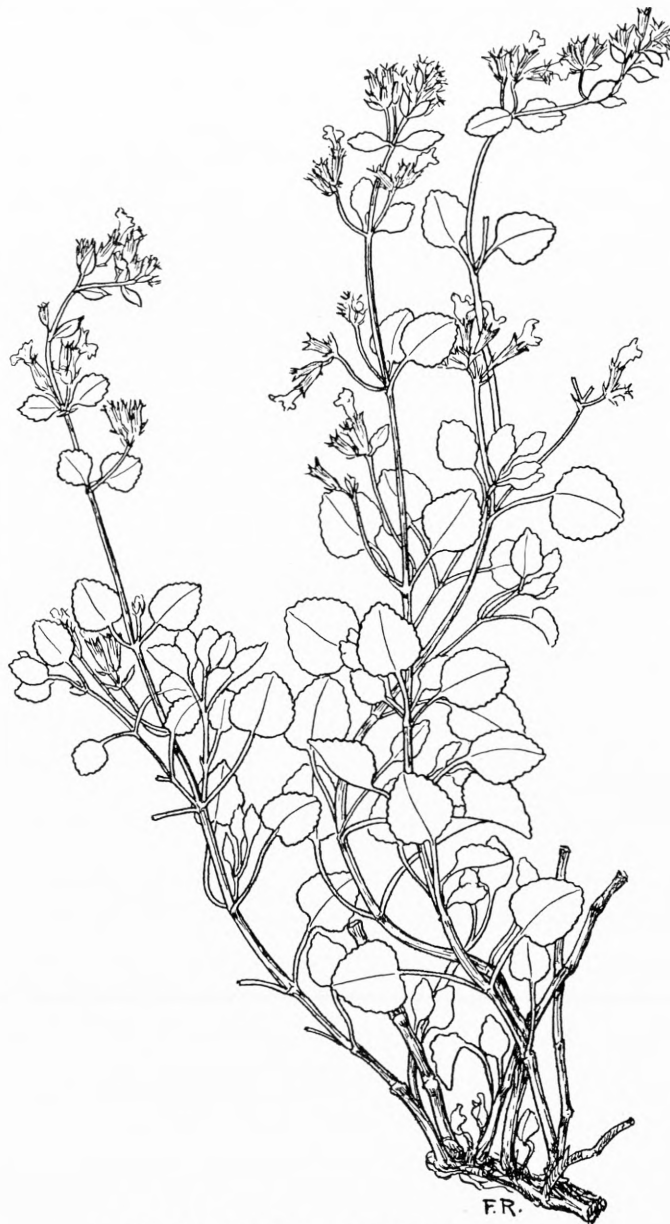


Fig. 11. *Nepeta brachyantha* (E. 619).  $\frac{5}{6}$ .

tellum subcanescens. Cymae pauciflorae (3–5), in pedunculis filiformibus arcuato-ascendentes axillaribus inferioribus usque 2 cm longis. Bractae lanceolato-subulatae, laxiuscule lanato-villosae, ad 2 mm longae. Pedicelli subnulli usque 1 mm longi, flores inde  $\pm$  glomerato-approximati. Calyx 5–6 mm longus, tubuloso-campanulatus,

tenuiter herbaceo-membranaceus, nervis violascentibus tenuiter prominentibus, ore obliquo, dentibus jam in statu juvenili patentibus e basi late triangulari lanceolatis, tenuiter acuminatis  $\pm 1.5$  mm longis. Corollae tubus in calyce inclusus, limbus breviter exsertus bilabiatus, labio superiore brevi emarginato, inferiore longiore deflexo trilobo, in sicco sordide albida intense coerulesco-maculata et marginata. Nuculae ignotae. — Differt a *N. graciliflora* Benth. habitu suffrutescenti-caespitoso, indumento totius plantae densiore inferne longiore, foliis brevibus longitudini aequilatis vel latioribus, petiolo longo quam lamina saepe longiore, calycis crassioris dentibus latioribus ab initio patentibus, floribus brevissime pedicellatis, cymis inde densioribus.

**Nuristan:** Pashki, 2300 m, 17.V.1948 (EDELBERG 619, Typus, hb. W., C.). Gusalak, 1000 m (E. 1569). Jshauda Pass, 31.VII.1949 (E. 2046). Im Tal und um den Ort Kurder, Seitental des Petsch, 1600—1700 m, (N. 51/758. — **E:** Bagrami, Nedjeru-Tal, an einer feuchten Mauer (N. 51/271).

*N. bracteata* Benth. — **NW:** Chisht, 1700 m (K. 3676, 3677). — **SW:** Jija, 900 m (K. 4060). — **E:** Kabul (N. 50/720, 50/725, 51/46). Kabul, Scher Darwasa, südexpionierte Berglehne (N. 51/64). Basarak, Pandschirtal (N. 50/726). Tscharikar (N. 50/727). Gulbahar (N. 50/728). Jagdalek, 7000 ft., on dry slope (Kz. 11483). — **Baluchistan:** Quetta, 1900 m (K. 3383).

Köie no. 3676 ist durch ziemlich dichtes, kurzes, weiches Indument der Blattunterseite auffällig.

*N. cabulica* Rech. fil., Ann. Nat. Mus. 51:421 (1941) Wien. — Fig. 12. — **Nuristan:** Vama, 3000 m (E. 963). — **E:** Above Khudikhel, 8000 ft., along stream (Kz. 11561). Gulbahar (N. 50/711). Gulbahar (N. 50/712). Paghman-Tal (N. 50/715). Kabul (HONIGBERGER, hb. W.).

Inter species sect. *Psilonepetae* calycibus brevibus, dentibus calycinis brevibus, foliis ovatis subcoriaceis grosse obtusiuscule serrato-dentatis insignis.

*N. cabulica* ist, wie die neueren Aufsammlungen zeigen, eine ziemlich variable Art. Schon die beiden oben angeführten Nummern von KOELZ 11561 und EDELBERG 963 weichen vom Typus in einigen Punkten ab. In höherem Maß gilt dies von den beiden folgenden Aufsammlungen: Panjshir (K. 3991) und "Giri, 7000 ft., dry slope, 18 in. high, fl. blue-purple" (KOELZ 11496). Sie zeigen zarten, niedrigen Wuchs, sitzende Zymen, kleinere Kelche, im Verhältnis zum Tubus kürzere Kelchzähne, die an der Oberlippe nur ein Sechstel nicht ein Viertel der Tubuslänge, an der Unterlippe ein Drittel, nicht zwei Fünftel der Tubuslänge erreichen. Möglicherweise ist *N. cabulica* auf zwei Arten zu verteilen oder sie setzt sich aus mehreren Lokalrassen zusammen. Weiteres Material ist abzuwarten.

*N. cataria* L. — **NW:** Zehnadir, 8000 ft., along stream (Kz. 14017).

*N. ciliaris* Benth. — 'Afghanistan' (GRIFFITH 4006 in hb. W. sub nom. aff. *N. salviaefoliae*).

*Nepeta cinereo-violacea* Rech. fil. & Köie, n. sp. — Fig. 13 und 14 a.

Sect. *Macrostegiae* Boiss. — Suffrutescenti-caespitosa multicaulis. Caules floriferi 15—25 cm alti, tenues simplices erecti, internodiis mediis ca. 4 cm longis, omnino tenuiter appresse velutino-tomentelli cinerascetes. Folia inferiora petiolo ad 5 mm longo suffulta, lamina ad 7 mm longa, 4 mm lata, basi subcordata



Fig. 12. *Nepeta cabulica* (HONIGBERGER s. n., Habitus Kz. 11496).  $\frac{3}{5}$ .



Fig. 13. *Nepeta cinereo-violacea* (K. 2438).  $\frac{2}{3}$ .

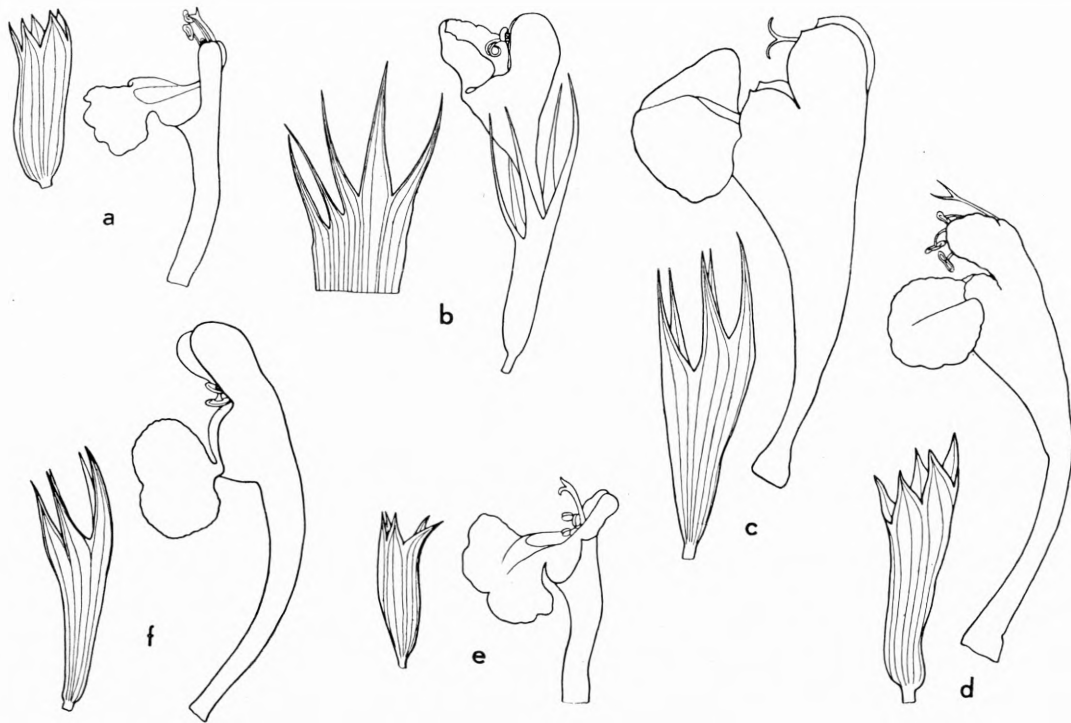


Fig. 14. a. *Nepeta cinereo-violacea* (K. 2438). b. *N. eriosphaera* (K. 3599). c. *N. leucocyanea* (E. 1273). d. *N. Mussinii* Henk. v. Donn. (zum Vergleich). e. *N. lavandulacea* (K. 3393). f. *N. oblanceolata* (E. 1739).

apice rotundata, margine crenata, florendi tempore plurima emarcida. Folia caulina media breviter (1—3 mm) petiolata usque subsessilia, e basi rotundata vel late cuneata oblongo-ovata usque oblongo-lanceolata, apice anguste rotundata vel acutiuscula, margine minutissime regulariter crenata, plerumque prope basin latissima, nervatura dense reticulata supra argute immersa, subtus paulum vel vix prominens, supra laxius subtus dense appresse velutino-tomentosa, indumento crassiuscula; folia superiora omnia sessilia, sensim decrescentia acutiora proportione angustiora. Folia floralia lanceolata valde diminuta. Inflorescentia laxiuscule appresse cinereo-tomentella; verticillastra  $\pm 6$ , plurima  $\pm$  remota. Cymae  $\pm 3$ -florae, infimae interdum brevissime pedunculatae vel omnes  $\pm$  sessiles. Bracteae ovato-lanceolatae acutae membranaceae tomentellae, quartam circiter partem calycis aequantes. Calyx  $\pm 5$  mm longus tubulosus, basi rotundatus, ore rectus, imprimis superne laete violaceo-suffusus, ad quartam circiter partem in dentes triangulares aequales acutos porrectos fissus. Corolla  $\pm 9$  mm longa, extus albo-puberula, tubo vix exserto, labio superiore brevi recto profunde inciso, labio inferiore deflexo  $\pm 3$  mm longo valde dilatato late rotundato, lateraliter constricto. Stamina posteriora labium superiorem superantia, anteriora eum aequantia. — Valde affinis *N. lavandulaceae* Rech. fil. & Köie, ab ea caulibus floriferis tenuioribus humilioribus, foliis minoribus,



verticillastris omnibus  $\pm$  remotis  $\pm$  sessilibus, calyce et corolla paulo longiore, staminibus posterioribus exsertis diversa.

**C:** Hauz-i-Mahiha, 2600 m, stream bed, (KÖIE 2438, Typus, hb. W., C.). — **E:** Sirotai, 9000 ft., field border, clumps, fl. lavender, spotted darker (Kz. 11940).

*N. Clarkei* Hook. fil. e. descr. — **Nuristan:** Zwischen Kotal-e-Agok und Waigel (N. 51/929). Pashki, 2500 m (E. 708, 1008).

*N. daënsis* Boiss. — **C:** Deh Kundi, 2700—3000 m, oberes Helmand-Tal (E. 1837, 1866). — **E:** Sirotai, 9000 ft., dry slope, fl. rose-lavender (Kz. 11962).

*N. distans* Royle, e. descr. — **NE:** Kash Distr., 8000 ft., along stream, large clumps, fl. blue-purple, mint scented (Kz. 12916). **Nuristan:** Pashki, 2600 m (E. 1316). Netshin, 2600 m (E. 1097), 3300 m (E. 1987). Zwischen Kotal-e-Agok und Waigel (N. 51/904).

Die vorliegenden Pflanzen stimmen mit der Originalbeschreibung und der Beschreibung in HOOKER, Fl. Brit. Ind., in den wesentlichen Punkten überein. Vergleichsmaterial ist mir nicht zugänglich.

*N. erecta* (Royle) Benth. — **Nuristan:** Nishei, 2000 m (E. 790). Jshauda Pass (E. 2045).

ROYLE's Typus habe ich nicht gesehen. Die vorliegenden Exemplare variieren bezüglich der mehr oder minder stark schiefen Kelchmündung, Breite der Kelchzähne und Blütengröße, stimmen aber in den meisten Punkten mit indischen Exemplaren von HOOKER gut überein.

***Nepeta eriosphaera*** Rech. fil. & Köie, n. sp. — Fig. 15 und 14 b.

Sect. *Micranthae* Boiss. — **Annua**, 5—9 cm alta, simplex vel saepius prope basin ramis rectangulariter abeuntibus divaricatis arcuatis provisa, omnino dense longe molliter lanato-villosa. Caulis erectus paucinodus, internodiis 1.5—3 cm longis; rami basales saepe elongati, ad 5 cm longi, ut caulis primarius inflorescentiis sphaericocapitatis densi- et multifloris 1.5—3 cm diametro terminati. Folia basalia minuta integra glabrescentia, longiuscule petiolata, orbiculato-spathulata, florendi tempore plerumque jam emarcida. Folia caulina increscentia, inferiora petiolo tenui 1—1.5 cm longo suffulta, lamina ad 1.5 cm longa et lata, basi truncata vel subcordata, infra medium latissima, apice rotundata, margine subintegra vel obsolete grosse crenata, utrinque villosa glabrescens, nervatura indistincta; folia caulina superiora inflorescentiam fulcrantia breviter petiolata vel sessilia, ad 2 cm longa et lata, orbiculata, supra  $\pm$  glabrescentia, subtus dense villosa, indumento secus nervos densiore nitente. Bractee subulatae herbaceae villosolanae, calyces plerumque superantes. Calyx 9—10 mm longus, tubulosus, herbaceus, tenuiter nervosus, villosus et glanduloso-punctatus, ore paulum obliquus, dentibus anguste lanceolato-subulatis, longioribus calycis longitudinem subaequantibus; dentes calycini et bractee purpureo-violaceo-suffusae. Corolla in sicco intense coerulea, calyce vix tertia parte longior, tubo in calyce incluso in limbum sensim ampliato, extus villosula et glanduloso-punctata. — Inter affines indumento longissimo mollissimo, inflorescentiis magnis capitatis dense longe villosis, calycis dentibus longis, corolla brevi insignis.

**SW:** Jija, 900 m, 7.IV.1949 (KÖIE 3599, Typus, hb. W., C.). — **SE:** Pirzada, 900 m (K. 3381).

Es scheint mir, daß manche annuelle *Nepeta*-Arten zu ausdauernden nähere verwandtschaftliche Beziehungen haben als untereinander, so etwa *N. eremophila* Bornm. zu den *Capituliferae*, *N. Straussii* Bornm. und *N. Pravitziana* Rech. fil. zu *Oxynepete* etc. Verzweigung, Anlage der Infloreszenz, Gestalt der Brakteen u. s. w. liefern entsprechende Hinweise. Bei einer Neugruppierung der *Nepeta*-Arten wären entweder innerhalb dieser Sektionen Parallelreihen ausdauernder und annueller Arten zu unterscheiden oder die annuellen Arten wären

zu besonderen, den einzelnen aus ausdauernden Arten bestehenden Sektionen entsprechenden Sektionen zu vereinigen.



Fig. 15. *Nepeta eriosphaera* (K. 3599).  $\frac{2}{3}$ .

paucifoliati, omnino appressissime albido-tomentosi, prope basin ramulos numerosos steriles breves tenues minute foliatis emittentes. Ramuli steriles cum foliis longe patule fere gossypino-villoso-lanati. Folia petiolis tenuibus 3—9 mm longis suffulta, minutissima, 3—7 mm longa, 2.5—4 mm lata, e basi truncata vel late cuneata ovata usque oblonga, apice rotundata, margine subinciso-crenulata, nervis pennato-reticulatis supra tenuiter impressis subtus prominentibus. Folia ramorum floriferorum similia sed brevius petiolata et indumento appresse tomentoso praedita. Verticillastra 5—10, plerumque omnia  $\pm$  remota, multiflora, inferiora sine floribus ad 15 mm diametro, cymis in verticillastris inferioribus quidem breviter pedunculatis. Bracteae ad 2.5 mm longae, ovato-lanceolatae, apice sensim breviter acuminatae, albido-membranaceae, nervo unico subcarinato percursae, tomentosae, glabrescentes. Calyx 4—5 mm longus, tubulosus, ore leviter obliquo, membranaceus, nervis approximatis tenuiter sed distincte prominentibus, lanato-tomentosus; dentes calycini 1.5—2 mm longi, porrecti, anguste lanceolati, valde acuti, longe subplumoso-villosi. Corolla ignota. Nux 1.2 mm longa, 0.6 mm lata, pallide brunea, sublaevis. — Differt a *N. juncea* Benth.: indumento in ramulis sterilibus longe patulo-villoso-lanato, in caulibus floriferis appressissime tomentoso, foliis omnibus minutissimis, bracteis brevibus saepe vix dimidium calycem aequantibus.

C: Polat, 9000 ft., on dry slope in clumps, 18 inches high, flowers lavender, 10.IX.1939 (KOELZ 13945, hb. W., BPI.).

*N. floccosa* Benth. s. l. — C: Panjao, ca. 3000 m (K. 2705). — NE: Sanglech, 11500 ft., dry slope (Kz. 12605).

*N. glutinosa* Benth. — NE: Kash Distr., 10000 ft., in clumps, fl. blue-purple (Kz. 13015). Minjan, 3700 m (E. 1435).

***Nepeta heterotricha*** Rech. fil., n. sp. — Fig. 16.

Sect. *Macrostegiae* Boiss. — Suffrutex caespitosus multicaulis. Caules floriferi 30—45 cm alti, ascendentes vel erecti, tenues fragiles flexuosi, obtuse quadranguli, in parte inferiore

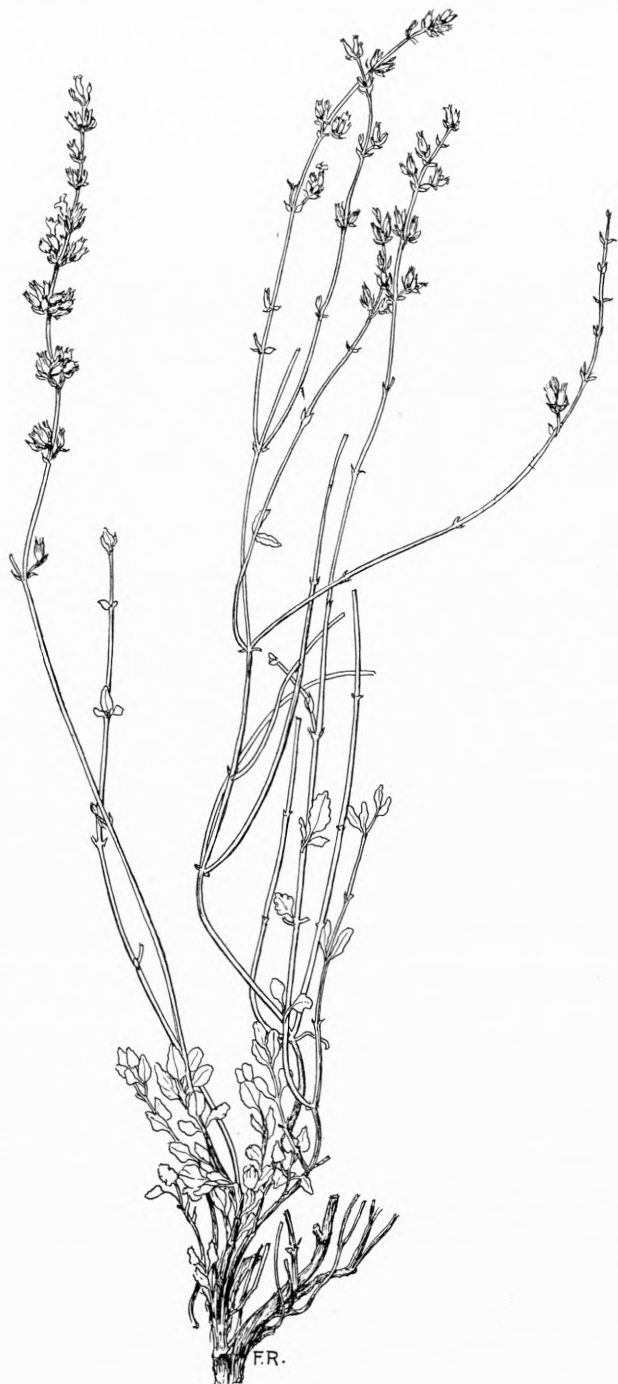


Fig. 16. *Nepeta heterotricha* (Kz. 13945).  $\frac{3}{5}$ .



Fig. 17. *Nepeta Honigbergeri* (CHAWORTH-MUSTERS s. n., Habitus HONIGBERGER s. n.).  $\frac{1}{2}$ .

*N. Honigbergeri* Rech. fil., Ann. Nat. Mus. Wien 51: 420 (1941). — Fig. 17. — **E:** Kabul (HONIGBERGER, Typus, hb. W.). Paghman, 2100 m (K. 2303). Paghman, 8000—9000 ft. (CHAWORTH-MUSTERS, hb. BM.). — **C:** Hauz-i-Mahiha, 2600 m (K. 3391). — **NE:** Gulbahar (N. 50/706).

Affinis *N. oxyodontae* Boiss. quae a *N. Honigbergeri* indumento brevi griseo foliorum multo minorum, cymis remotis paucifloris, calycibus ad summum 7 mm longis, dentibus calycinis 2—2.5 mm tantum longis differt.

*N. juncea* Benth. — **E:** Kabul, 1700 m (K. 4014). Pandscheschan bei Kabul (N. 50/705). Chandau, 8000 ft., dry ground, clumps, fl. lavender, spotted darker, 3 ft. high (Kz. 11762).

***Nepeta Koelzii*** Rech. fil., n. sp. — Fig. 18.

Sect. *Spicatae* Boiss. — Perennis, basi ut videtur lignescens. Caulis 60—80 cm altus, erectus vel ascendens, validus, obtuse quadrangulus, internodiis mediis 3—5 cm longis, subsimplex vel in parte superiore breviter stricte ramosus, atropurpureo-suffusus, papillis minutissimis scabridus. Folia inferiora jam emarcida; media 4—5 cm longa, 4—8 mm lata, anguste lanceolata, basi in petiolum ad 5 mm longum sensim cuneato-attenuata, apicem acutam versus subaequaliter attenuata, margine remote argute serrata, nervis partim subparallelis subtus crasse prominentibus supra immersis, in sicco crasse membranacea subcanescenti-viridia, imprimis subtus papillosa et glanduloso-punctata, ex axillis ramulos abbreviatis paucifolios proferentia. Folia superiora decrescentia, angustiora, minus distincte serrata usque subintegra. Verticillastra 7—11, multiflora, infima remota, media et superiora in spicastrum densum conferta. Bractee 5—6 mm longae, anguste subulatae, tenuiter membranaceae, pilis longis eglandulosis et brevibus glanduliferis obsitae. Calyx ore subrecto, tubus membranaceus tenuiter elevate nervosus,  $\pm$  5 mm longus, breviter glanduloso-papillosus, pilis longis articulatis eglandulosis crispis imprimis in parte superiore immixtis; dentes calycini subaequales,  $\pm$  4 mm longi, e basi dilatata abrupte in aristam subulatam attenuati, breviter glanduloso-papilloso et longe eglanduloso-ciliati. Corolla in vivo coerulea-purpurea (e collectore), in sicco valde expallens, tubo angusto curvato e calyce exserto. Nuculae bruneae nitidae. — *N. Moricandiae* Bge. mihi e descriptione tantum notae affinis videtur, sed ab ea caule foliisque papilloso-scabridis, foliis angustioribus, bracteis brevibus calycem nunquam aequantibus, corollae tubo exserto diversa.

**NE:** Daraim, 8500 ft., clumps, 3 ft. high, flowers blue-purple, 9.VIII.1937 (KOELZ 13039, Typus, hb. W., BPI.). Pahin Shahr, 8000 ft., flowers lavender, spotted darker, 15.VII.1937 (Kz. 12419, hb. W., BPI.).

*N. laevigata* (Don) Hand.-Mzt. (Syn. *N. spicata* Benth.). — **NE:** Ruka, 1800 m (K. 2949). — **Nuristan:** Papruk, 2350 m (E. 1059). Aschpi-Pass (N. 51/1040).

Die Art ist von Südwest-China über die Südabdachung des Himalaya und große Teile Indiens bis Afghanistan verbreitet und variiert in mehreren Punkten. Das mir augenblicklich zugängliche Material ist nicht ausreichend zur Entscheidung, ob eine geographische Differenzierung vorhanden ist. Die Behaarung der Kelche und Brakteen ist im allgemeinen bei den

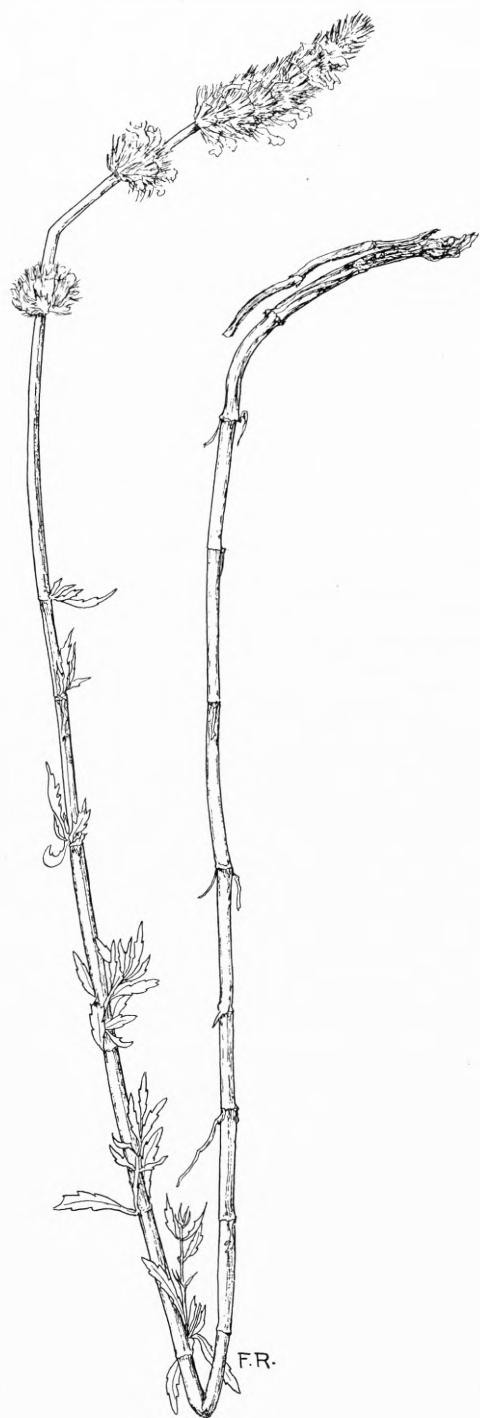


Fig. 18. *Nepeta Koeltzii* (Kz. 13039).  $\frac{1}{2}$ .



Fig. 19. *Nepeta lavandulacea* (K. 3393).  $\frac{2}{3}$ .

afghanischen Exemplaren etwas dichter und mehr seidenartig, in einzelnen Fällen sind auch die Kelchzähne etwas stärker borstenartig verlängert, auch ist die Serratur der Blätter im allgemeinen schärfer und die Oberlippe der Korolle etwas schmaler als an chinesischen Exemplaren. Aber auch die indischen Exemplare variieren stark in der Länge und Breite der Brakteen, Länge der Kelchzähne und Schärfe der Blattserratur.

***Nepeta lavandulacea*** Rech. fil. & Köie, n. sp. — Fig. 19 und 14 e.

Sect. *Macrostegiae* Boiss. — Suffrutescens pluricaulis. Caules floriferi 30–40 cm alti erecti vel ascendentes, internodiis mediis 4–5 cm longis, simplices vel inferne breviter tenuiter pauciramiosi, omnino tenuiter appresse velutino-tomentelli cinerascens. Folia inferiora petiolo 10–14 mm longo tenui suffulta, lamina ad 15 mm longa, 10 mm lata, e basi truncata ovata vel oblongo-ovata, apice rotundata, florendi tempore plerumque  $\pm$  marcescentia. Folia caulina media breviter (3–6 mm) petiolata, e basi truncata vel subcordata vel subsinuato-rotundata oblonga, apice rotundata, margine regulariter minute crenata, plerumque prope basin latissima, nervatura dense reticulata supra argute tenuiter immersa, subtus paulum vel indistincte prominens, utrinque dense appresse velutino-tomentosa, indumento crassiuscula; folia superiora sensim decrescentia, brevius petiolata usque subsessilia, proportione angustiora, acutiora. Folia floralia valde diminuta lanceolata acuta subintegra. Inflorescentia omnino breviter appresse velutino-tomentella cinerascens; Verticillastra  $\pm$  10, inferiora 2–4 remota, media et superiora  $\pm$  approximata. Cymae multiflorae, inferiores breviter (2–3 mm) pedunculatae, superiores brevius pedunculatae usque subsessiles. Bracteae minutissimae lanceolatae tomentellae acutae membranaceae, nervo mediano tenuissimo interdum violascente percursae, quartam vel ad summum tertiam partem calycis aequantes. Calyx  $\pm$  4.5 mm longus, tubulosus basi breviter attenuatus, ore rectus, vix ad quartam partem in dentes lanceolato-triangulares acutos subaequales fissus. Corolla ca. 7 mm longa extus albo-puberula, tubo breviter exserto, labio superiore recto leviter inciso  $\pm$  1.5 mm longo, labio inferiore ca. 2.5 mm longo deflexo valde dilatato late rotundato antice inciso, prope faucem albido-barbulato, in sicco intense coeruleo-maculato et -punctato. Stamina omnia quam labium superius breviora. — Bracteis membranaceis latiusculis ad interim inter *Macrostegias* inseranda, sed affinitas propter bracteas brevissimas adhuc dubiosa, forsan cum valde affini *N. cinereo-violacea* Rech. fil. & Köie sectionem propriam efficiens.

C: Farakulum, 2800 m, 21.VII.1948 (KÖIE 3393, Typus, hb. W., C.). Shibar, 2500 m, 15.VIII.1948 (K. 2797, hb. W., C.). Shibar Pass, 10000 ft., dry slope, clumps, flowers lavender, scented, 30.VI.1937 (Kz. 12159, hb. W., BPI.).

***Nepeta leucocyanea*** Rech. fil. & Köie, n. sp. — Fig. 20 und 14 c.

Sect. *Stenostegiae* Boiss. — Caespitoso-suffruticosa, pumila, appresse floccoso-lanata. Caules floriferi 5–10 cm longi, deflexi vel ascendentes, inferne ramulosi, internodiis mediis 1–2(–3) cm longis. Foliorum paria infima in squamas lanceolatas membranaceas bruneo-purpurascens mutata. Folia caulina brevissime petiolata basi sinuato-truncata usque late cuneata, ambitu late ovato-triangularia vel ovata,

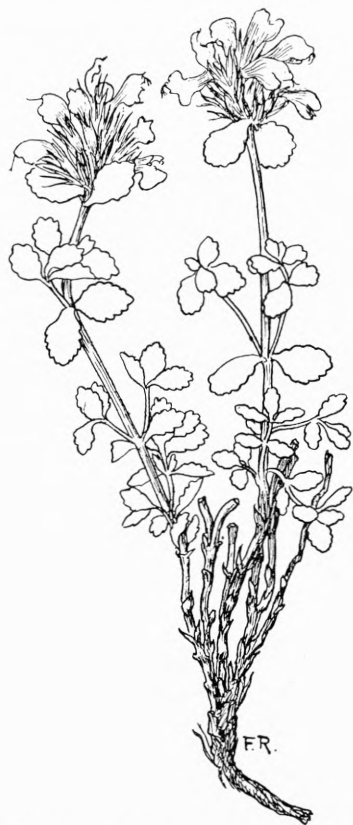


Fig. 20. *Nepeta leucocyanea* (K. 2622).  $\frac{3}{4}$ .

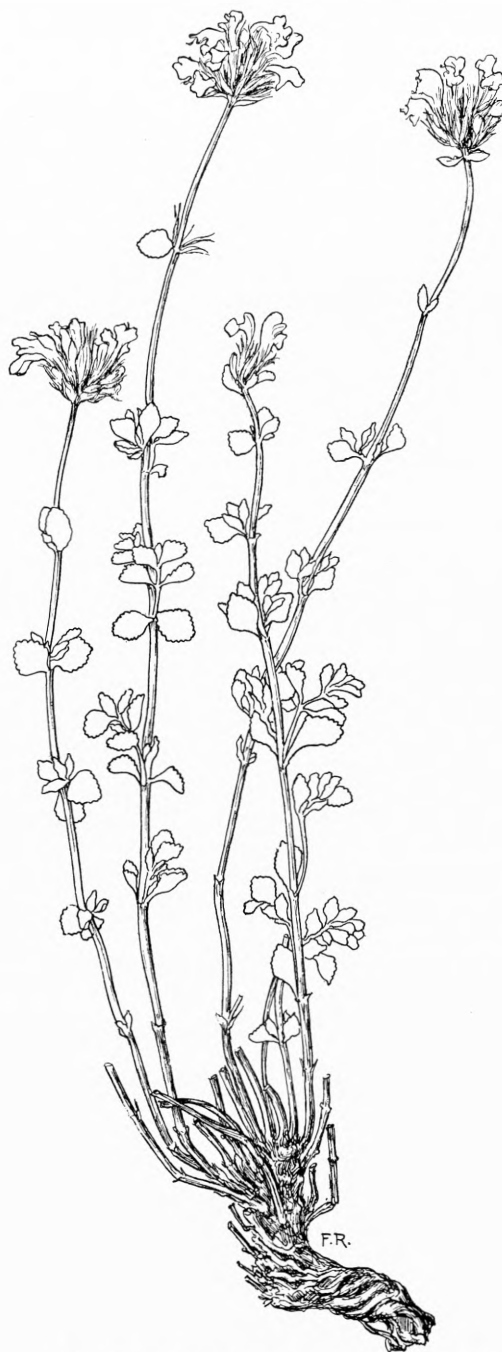


Fig. 21. *Nepeta minjanensis* (Kz. 12664).  $\frac{3}{5}$ .

vel orbiculata vel subflabellata, anguste regulariter crenata, apice rotundata, indumento appresse floccoso-lanato albida crassiuscula, nervatura tenui reticulato-rugulosa. Folia summa ab inferioribus vix diversa inflorescentiam fulcrantia. Inflorescentia multiflora capitata. Bracteae numerosae anguste lineari-subulatae, herbaceae, quam calyces subbreviores usque sublongiores, lanato-villosae, Calyx  $\pm$  9 mm longus, ore obliquo, tenuiter albido-membranaceus, nervis tenuibus viridibus, laxe villosus, ad tertiam circiter partem in dentes anguste lanceolato-subulatos fissus. Corolla in sicco intense coeruleo-violacea, 16—18 mm longa, subglabra, tubo angusto curvato superne subito valde ampliato. Nuculae ignotae. — Differt a *N. Mussinii* Henk. habitu pumilo, foliis latitudine non vel vix longioribus appresse albo-floccoso-lanatis anguste crenatis, bracteis lineari-subulatis, calyce ad tertiam partem in dentes anguste lanceolato-subulatos fisso, corollae labio superiore quam inferius brevior, staminibus inclusis.

C: Koh-i-Baba, 3900 m, snow bed, 24.VII.1948 (KÖIE 2622, Typus, hb. W., C.). — NE: Parun — Minjan-Pass, 23.VII.1948 (E. 1273, hb. W., C.).

*N. longibracteata* Benth. — NE: Sanglech, 13000 ft., alpine meadow among rocks, fl. purple-blue, plant scented (Kz. 12637).

***Nepeta minjanensis*** Rech. fil., n. sp. — Fig. 21.

Sect. *Capituliferae* Boiss. — Suffruticoso-caespitosa, basi crasse lignescens. Caules floriferi numerosi 20—25 cm longi, subsimplices quadranguli, internodiis mediis 3—4 cm longis, omnino appresse albo-tomentelli, imprimis inferne paulum glabrescentes. Folia breviter (1—4 mm) petiolata, e basi late vel anguste cuneata ovata vel rhombico-ovata, crenulata obtusiuscula, indumento brevi tomentello utrinque canescentia crassiuscula, minuta, 6—11 mm longa, 5—8 mm lata, superiora subsessilia, longitudine aequilata vel sublatis, rhombico-flabellata, nervatura saepe indistincte reticulato-rugosa, omnia quam internodia semper multoties breviora, inferiora ex axillis ramulos tenues abbreviatos parvifolios proferentia. Flores in capitula densa multiflora depresso-globosa terminalia congesta. Bracteae subulatae herbaceae numerosae villosa-tomentellae, quam calyces plerumque paulo breviores. Calyx 8—10 mm longus, ore obliquus, tenuiter albido-membranaceus, nervis tenuibus viridibus, laxe villosus, ad tertiam partem vel paulo ultra bilabiatus, dentibus e basi paulo dilatata longissime tenuissime subulatis. Corolla in vivo coeruleo-purpurea (e collectore), in sicco expallens, extus villosula glabrescens, calyce circiter duplo longior, tubo tenui curvato, antheris exsertis. — A ceteris speciebus sectionis indumento brevi, foliis minutis, calycis forma ac indumento diversa.

NE: Minjan Pass, 12000 ft., clumps, flowers blue-purple, 26.VII.1937 (KÖELZ 12664, hb. W., PBI.).

***Nepeta oblanceolata*** Rech. fil. & Edelberg, n. sp. — Fig. 22 und 14 f.

Sect. *Spicatae* Benth. — Suffruticoso-caespitosa. Caules floriferi ca. 25 cm longi, e basi decumbente valde arcuato-ascendentes simplices, internodiis numerosis brevibus inferioribus vix 1 cm, mediis  $\pm$  1.5 cm longis, superioribus sensim paulo longioribus, pilis brevibus patulis vel  $\pm$  retrorsis papilloso-puberuli et glandulis





Fig. 22. *Nepeta oblanceolata* (E. 1739).  $\frac{3}{4}$ .

breviter stipitatis obsiti. Folia omnia in sicco crassiuscule membranacea laete viridia, nervis secundariis valde antrorsis non numerosis parum ramulosis supra paulum impressis subtus leviter prominentibus percursa, imprimis margine et subtus secus costam medianam pilis brevibus papilloso-scabrida et subtus inter nervos copiose glanduloso-punctata, margine apicem versus remote breviter serrato-crenata, omnia ex axillis fasciculos foliorum linearium vel anguste lanceolatorum proferentia, omnia basi sensim in petiolum longiusculum ( $\pm 5$  mm) attenuata; basalia apice rotundata, 5—7 mm lata, superiora sensim paulo angustiora, apice acuta, summa linearia valde acuta, ad 1.5 mm lata. Verticillastra numerosa contigua, in spicastrum 4—5 cm longum, floribus exclusis ad 12 mm latum congesta. Bracteae subulatae  $\pm \frac{2}{3}$  calycis longitudinis aequantes. Flores plurimi brevissime tenuiter pedicellati. Calyx  $\pm 7$  mm longus, anguste tubulosus, basi valde attenuatus, superne sensim paulo ampliatus, ore paulo obliquo, ad  $\frac{2}{5}$  vel fere ad medium in dentes lineari-subulatos breviter irregulariter plurimum glanduloso-ciliatos divisus, tenuiter herbaceo-membranaceus, omnino breviter glanduloso-papillosus. Corolla ad 12 mm longa, in sicco albida brunescens, tubo tenui valde curvato e calyce longe exserto; labium superius ca. 4 mm longum leviter curvatum, antice profunde incisum; labium inferius ad 3 mm longum  $\pm$  deflexum. Stamina inclusa, thecae atrocyaneae. Nux ignota. — Differt a *N. lineari* Benth. habitu humili caespitoso-suffruticoso, caulibus floriferis valde arcuatis, internodiis valde abbreviatis numerosis, foliis oblanceolatis antice crenato-serratis, omnibus in petiolum longum sensim attenuatis, indumento regionis inflorescentiae sparsa breviter glandulifero, dentibus calycinis breviter glanduloso-ciliatis nec longe plumosis.

**Nuristan:** Derin, 11.VII.1949 (EDELBERG 1739, hb. W., C.).

*N. persica* Boiss. — **SW:** Herat, 1400 m. (K 2272).

*N. podostachys* Benth. — **C:** Farakulum, 2800 m (K. 2562). Sabz Pass, 10000 ft., spring meadow (Kz. 13820). Unaipass (N. 51/534 & 542). — **NE:** Minjan, 2600 m (E. 1603). — **E:** Paghman, 8000—9000 ft. (CHAWORTH-MUSTERS). Paghman, 2200 m (K. 2312). Mittleres Paghmantal (N. 50/695). Sirotai, 9000 ft., in fields (Kz. 11925).

Die unter diesem Namen im weiteren Sinn zusammengefassten Pflanzen variieren in mehreren Hinsichten beträchtlich, ohne daß ein Parallelgehen bestimmter Merkmale erkennbar wäre. So hat z. B. EDELBERG no. 1603 stark verholzende Basis, niedrigen Wuchs, kleinere, besonders scharf gesägte Blätter, relativ langen Kelchtubus und relativ breit lanzettliche, bis drei Millimeter Breite erreichende Brakteen. KÖIE no. 2562 hat weniger stark verholzende Basis und kürzeren Kelchtubus, ist sonst der vorigen ähnlich. KOELZ no. 11925 ist kaum verholzend, hochwüchsig und hat schmal pfriemliche, meist 1 mm, selten bis 2 mm breite Brakteen. KOELZ no. 13820 hat schlaffen Wuchs, stumpf, fast gekerbt-gesägte Blätter und schmal pfriemliche Brakteen.

*N. Prainii* Duthie. — **E:** Kurram valley, slopes of Safed Kuh-range (HARE s. n., Isotypos in hb. DELESSERT).

*N. pubescens* Benth. (e descr.). — **C:** Hauz-i-Mahiha, 2500 m, damp ground (K. 2354).

*N. raphanorhiza* Benth. — **NE:** Daulatash, 7000 ft., on damp slope, 6 in. high,

fl. blue-purple, bulbous root (Kz. 11652). Forajghan Pass, 10000 ft., damp ground (Kz. 11727). — **Nuristan**: Nishei, 2500 m (E. 777). Chetras, 2800 m (E. 837). Pashki, 2300—3000 m (E. 571, 755, 937). Vama, 1400 m (E. 362, 416, 461).

Auch diese Art variiert erheblich in der Höhe des Wuchses, Form und Umriß der Blätter und im Indument. KOELZ no. 11727 hat an Stengel und Blättern winzige bald verschwindende Papillen. EDELBERG no. 937 und KOELZ no. 11652 haben längeres, abstehendes Indument. Auch die Korollengröße variiert einigermaßen.

*N. satureioides* Boiss. — **NW**: Nördl. von Herat, 1100 m (K. 4057). — **E**: Kord-Kabul, Gul-Tara (N. 51/360).

*N. Sewertzovii* Regel. — **NW**: Murghab—Kala Nau, 700 m (K. 3526). Kishlik, 700 m (K. s. n.). — **SW**: Jija, 900 m (K. 4058). — **NE**: Kail, 8000 ft., dry slope, fl. blue-purple (Kz. 11682). — **NE**: Gulbahar (N. 50/709). — **E**: Kabul, Aliabad (N. 51/94). Tscharikar (N. 50/710).

REGEL in Acta Hort. Petrop. 6: 360 (1880) erwähnt in seiner Beschreibung der *N. Sewertzovii* nicht, ob die Kelchmündung gerade oder schief ist. Eine bessere Beschreibung und gute Abbildung der Art findet sich bei AITCHISON & HEMSLEY in Trans. Linn. Soc. 2. ser. 3: 96 (1888). Tatsächlich ist die Kelchmündung bei dieser Art gerade, nur selten ganz schwach schräg. Dadurch unterscheidet sie sich von der habituell ähnlichen *N. micrantha* Bge., die immer eine deutlich schräge Kelchmündung hat. — SINTENIS no. 811 aus Aschabad in Turkmenien ist ebenfalls *N. Sewertzovii*.

***Nepeta xylorhiza*** Rech. fil., n. sp. Fig. 23.

Sect. *Macrostegiae* Boiss. — Suffrutex crasse lignosus caespites magnos densos efficiens. Rami steriles numerosi filiformes ± abbreviati densiuscule foliati. Caulis floriferi 8—15 cm longi, erecti vel ascendentes, tenues simplices, internodiis ad 4 cm longis, subaphylli vel minute paucifoliati, subacute quadranguli, appresse canescenti-tomentosi. Folia ramorum sterilium petiolo tenui ± 1 cm longo suffulta; lamina parva, 8—12 mm longa, 7—9 mm lata, ambitu ovato- usque oblongo-triangularis, basi sinuato-truncata vel subcordata, apice rotundata, margine minutissime regulariter crenulata, nervatura indistincte pennata et densissime reticulato-rugulosa, utrinque dense appresse canescenti-tomentosa crassiuscula. Verticillastra 5—8, multiflora, infima ± remota, media et superiora ± approximata, floribus exclusis 7—9 mm diametro. Bractee membranaceae ovato-lanceolatae acutae numerosae, maiores 4(—5) mm longae, tomentellae, ± distincte purpurascanti-plurinervulosae. Calyx ± 5 mm longus, tubulosus, purpurascens, lanato-tomentellus, ore leviter obliquo; dentes subinaequales, longiores e basi dilatata subito subulato-attenuati lanato-villosi vix 1 mm longi. Corolla calyce circiter duplo longior, roseo-lavandulacea atrius maculata (e collectore), tubo curvato, extus lanatula et glanduloso-punctata, labiis brevibus subaequilongis, superiore profunde inciso, inferiore trilobo. Nuculae (submaturae) bruneae, laeves, ± 1.1 mm longae. — Inter affines basi crasse lignosa, habitu dense caespitoso, foliis minutis inferioribus quidem longe petiolatis, caulibus floriferis tenuibus, glomerulis bracteis calycibus floribus minutis, dentibus calycinis brevissimis insignis.



Fig. 23. *Nepeta xylorhiza* (Kz. 14125).  $\frac{3}{4}$ .

**NW:** Burchao Pass, 9000 ft., dry slope, shrub one feet high, flowers rose-lavender, dotted darker, plant scented, 12.X.1939 (KOELZ 14125, Typus, hb. W., BPI.). — **E:** Kabul, 7000 ft., 11.VIII.1939 (Kz. 13486, hb. W., BPI.).

Die Nummer 13486 weicht vom Typus durch etwas höhere blühende Sprosse mit zahlreicheren Stengelblättern ab; der Wuchs ist ebenso zart und die Blätter sind ebenso klein wie beim Typus.

***Dracocephalum Aitchisonii*** Rech. fil., n. sp.

— Fig. 24.

† Sect. *Buguldea* Benth. — Basi lignescens ramis longe repentibus. Rami floriferi  $\pm 10$  mm longi ascendentes simplices, internodiis mediis 1.5–2 cm longis, quadranguli, brunescens, breviter retrorso-puberuli. Folia ad 20 mm longa, ad 14 mm lata, inferiora breviter petiolata, superiora  $\pm$  increscentia, sessilia, omnia ad medium fere inciso-lobata, lobis utrinque 4–5, apice rotundatis sinibus angustis acutis separatis, in sicco membranacea viridia imprimis subtus subglaucescentia, subglabra vel subtus secus nervos  $\pm$  pubescenti-scabra; folia summa inflorescentiam capitata densam fulcrantia. Bracteae quam calyces breviores, e basi anguste cuneata obovatae vel obovato-spathulatae, utrinque inciso-serratae, dentibus angustis antrorsis et apice in aristas  $\pm 5$  mm longas attenuatis. Calyx  $\pm 15$  mm longus, rigidule herbaceo-membranaceus, leviter curvatus. Tubus anguste tubulosus  $\pm 6$  mm longus; labium superius integrum,  $\pm 7$  mm longum, anguste ovatum, subito in aristam tenuem fere 2 mm longam attenuatum; labii inferioris dentes (4–)5 mm longi lanceolati, sensim in aristam ca. 1.5 mm longam excurrentes. Corolla in vivo coerulea fuisse videtur, in sicco brunescens, extus hirsuto-puberula,

labio superiore recto  $\pm 4$  mm longo, antice truncato et  $\pm$  emarginato, labio inferiore 5–6 mm longo deflexo profunde trilobo. Nuculae ignotae. — Differt a *D. noduloso* Rupr. caulibus floriferis brevibus, foliis profundius lobatis subglaucescentibus, in-



Fig. 24. *Dracocephalum Aitchisonii*  
(AITCHISON 573).  $\frac{1}{2}$ .



Fig. 25. *Dracocephalum nuristanicum*  
(E. 1672).  $\frac{2}{3}$ .

florescentia capitato-congesta, bracteis et dentibus calycinis longius aristatis, calycis labio superiore apice minus late rotundato.

**E:** Kurrum Valley, Biankhel, Sikaram and Seritagh, 9000—12000 ft., VI.—VII. (AITCHISON 573, Typus, hb. Boiss. sub nom. affine *D. origanoidi*).

***Dracocephalum nuristanicum*** Rech. fil. & Edelberg, n. sp. — Fig. 25.

Sect. *Idiodracontes* Briq. — Basi leviter induratum, caespites parvos formans. Caules floriferi (7—)12—14 cm longi, crassiusculi, ascendenti-erecti, interdum leviter flexuosi, simplices, internodiis  $\pm$  1.5 cm longis, tota longitudine regulariter foliati, herbacei quadranguli, brevissime retrorse puberuli. Folia omnia in sicco tenuiter membranacea, supra atroviridia subtus pallidiora, nervis tenuibus subflabellato-parallelis parum ramulosis, apice rotundata, margine anguste basin versus profundius crenata; inferiora petiolo longo (ad 2 cm) tenui suffulta, ovato-triangularia basi cordata, ad 12 mm longa, ad 8 mm lata, subtus secus nervos papillosa ceterum glabra; superiora sensim brevius petiolata et decrescentia, basi sinuato-truncata vel  $\pm$  late cuneata, imprimis ad petiolum et subtus secus nervos puberula ceterum  $\pm$  glabrescentia; summa verticillastra infima fulcrantia quam flores evidenter breviora, e basi cuneata ovato-lanceolata acuta serrata. Verticillastra 7—10, in spicastrum  $\pm$  abbreviatum saepe subcapitatum congesta. Bractee ovatae usque ovato-lanceolatae,  $\frac{1}{2}$  usque  $\frac{2}{3}$  calycis longitudinis aequantes, basi subrotundatae vel

late usque anguste cuneatae, apice acutae mucronulatae, margine serrulatae usque subintegrae, herbaceae, antice  $\pm$  violaceo-suffusae, omnino tenuissime pennato-reticulato-nervosae. Calyx  $\pm$  8 mm longus, tenuissime tubulosus, herbaceus, laxiuscule villosus-hirsutus, labio superiore  $\pm$  3.5 mm longo, 2—2.5 mm lato, mucronulato, inferiore in dentes 4 anguste subulatos  $\pm$  3.5 mm longos fissos. Corolla 12—14 mm longa valde curvata, in vivo ut videtur coeruleo-violacea, extus puberula. Stigma profunde bilobum exsertum. Stamina exserta thecis atrovioleaceis. — Differt a *D. nutante* L. habitu humili, inflorescentia subcapitato-congesta, calycibus minoribus herbaceis, floribus minoribus, foliis minutis mediis et superioribus basi truncatis vel cuneatis.

**Nuristan:** Elasoön, 7.VIII.1949 (EDELBERG 1672, Typus, hb. W., C.). Ibidem (E. 1713, hb. C.). Chetras, 30.V.1948 (E. 835, hb. C.). Parun — Kamdesh, 19.VI. 1948 (E. 1091, hb. C.). Urura Pass, 3000 m, in der Umgebung der Alm ober Kushtes (N. 51/607).

*Lallemantia Royleana* (Wall.) Benth. — **NW:** Kishlik, 700 m (K. 3982). N. of Herat, 900—1100 m (K. 4056). — **SW:** Jija, 900 m (K. 3567, 3568, 4055). — **NW:** Minjan (E. 1498). Pandschirtal, Basarak (N. 50/713). — **Nuristan,** Gusalek, 1100—1200 m (E. 1501, 1562). — **E:** Begram, near Chariker, 5000 ft. (CODRINGTON, hb. BM.). Tscharikar, (N. 50/716). Kabul, südexponierte Berglehne zwischen der Altstadt und Guzar Gah (N. 51/60). Kabul, Fels bei Aliabad (N. 51/108). Kabul (N. 50/719). Chandau, 8000 ft., dry ground (Kz. 11763). Pulalam, 7000 ft., in desert (Kz. 11861).

*Hymenocrater argutidens* Rech. fil., Fedde Rep. 48: 160, Taf. 104, Fig. 1 (1940). — **NW:** Chisht, 1600 m (K. 3618). — **E:** Bagrami, Nedjerou-Tal, am Bach (N. 51/325).

*H. elegans* Bge. (ad interim). — **E:** Nozi, 9000 ft., dry slope, clumps, fl. purple (Kz. 12030).

Die Bestimmung sämtlicher *Hymenocrater*-Arten ist als provisorisch zu betrachten. Die Gattung ist dringend einer Revision bedürftig, welche aber nur bei Vergleich der BUNGE'schen Typen möglich ist. — Die vorliegenden Exemplare unterscheiden sich von den persischen als *H. elegans* bestimmten u. a. durch spitzere Kelchzähne, die nur am Rand rotviolett überlaufen sind.

*H. sessilifolius* Benth. — **NW:** Safedsang, 10000 ft., dry slope (Kz. 13995). — **C:** Deh Kundi, 2700 m (E. 1910). Bamian valleys (CODRINGTON, hb. BM.). Hauz-i-Mahiha, 2500 m (K. 2375, 3389). Panjao, 2700 m (K. 2694).

*Prunella vulgaris* L. — **Nuristan:** Aschpi Pass (N. 51/1047). Shtive, 2600 m (E. 1308). — **E:** Begram near Charikar, 5000 ft. (CODRINGTON 60 a, hb. BM.). Tagau, 6000 ft., damp ground (Kz. 11797). Unteres Paghmantal (N. 50/699).

*Eremostachys acaulis* Beck ex Rech. fil., Fedde Rep. 48: 161, Taf. 103, Fig. 1 (1940). — **C:** Koh-i-Baba, 3100 m (K. 2654). — **E:** Kabul (HONIGBERGER s. n., Typus, hb. W.). Paghman, 8000—9000 ft. (CHAWORTH-MUSTERS, hb. BM.). Sirotai, 9000 ft., dry slope (Kz. 11964).

*E. laciniatae* Bge. affinis videtur sed caule omnino deficiente vel brevissimo insignis. Folia divisione valde variabilia.

*Eremostachys bamianica* Rech. fil., n. sp. — Fig. 26 und 27 a.

Grex *Laciniatae* Pop. — Partes subterraneae ignotae, collum gossypino-lanatum. Caulis 20—40 cm altus, simplex, internodiis paucis elongatis, inflorescentia quartam partem usque dimidium caulis occupante, lanato-villosus demum valde glabrescens, brunescens vel purpurascens. Folia basalia non numerosa parva erecta; petiolus  $\pm$  5 cm longus, lanato-villosus; lamina 5—7 cm longa,  $\pm$  2 cm lata, ambitu lanceolata, infra medium latissima, apice acuta, in sicco crasse membranacea, supra glabrescens, subtus villosa-lanata, nervatura laxa reticulata supra immersa subtus prominente, irregulariter inciso-lobata, lobis angustis  $\pm$  acutis antrorsis, inferioribus ultra 1 cm longis, superioribus sensim brevioribus dentiformibus. Foliolorum caulinarum par unicum plerumque evolutum; lamina breviter petiolata anguste lanceolata acuta internodia aequans, irregulariter sinuato-serrato-lobata. Folia verticillastra fulcrantia inferiora caulinis similia verticillastra superantia, sensim breviora, superiora basi dilatata minus distincte serrato-lobata usque subintegra, densius lanato-villosa. Verticillastra 3—6 multiflora sessilia, inferiora valde remota, superiora  $\pm$  approximata usque contigua. Bractee numerosae lineari-subulatae rigidae subpungentes,  $\frac{1}{3}$ ( $-\frac{2}{3}$ ) calycis longitudinis aequantes, dense longe lanato-villosae. Calyx 20—25 mm longus, rigide coriaceo-membranaceus, 10-nerviis, nervis indumento denso villosa-lanato et breviter glandulifero  $\pm$  occultis saepe indistinctis. Dentes calycini 5, in mucrones inaequales subpungentes  $\pm$  2 mm longos excurrentes, late subcontinue alati, alis paulum usque vix incis. Corolla calyce plerumque plus quam duplo longior, in sicco brunescens; labium superius  $\pm$  16 mm longum, depresso-galeatum, extus laxe villosum et breviter glandulosum, intus longe strigoso-barbatum; labium inferius vix brevius, ad 2 cm latum, late trilobum, lobo mediano laterales tegente, omnibus antice late rotundatis vel fere truncatis. — Differt ab *E. cabulica* Beck ex Rech. fil. imprimis bracteis lineari-subulatis calyce tertia parte usque dimidio brevioribus (nec late elliptico-lanceolatis calycem subaequantibus), calycibus floribusque maioribus, indumento densiore longiore magis persistente, foliis verticillastra infima fulcrantibus



Fig. 26. *Eremostachys bamianica* (CODRINGTON S. N.).  $\frac{2}{5}$ .

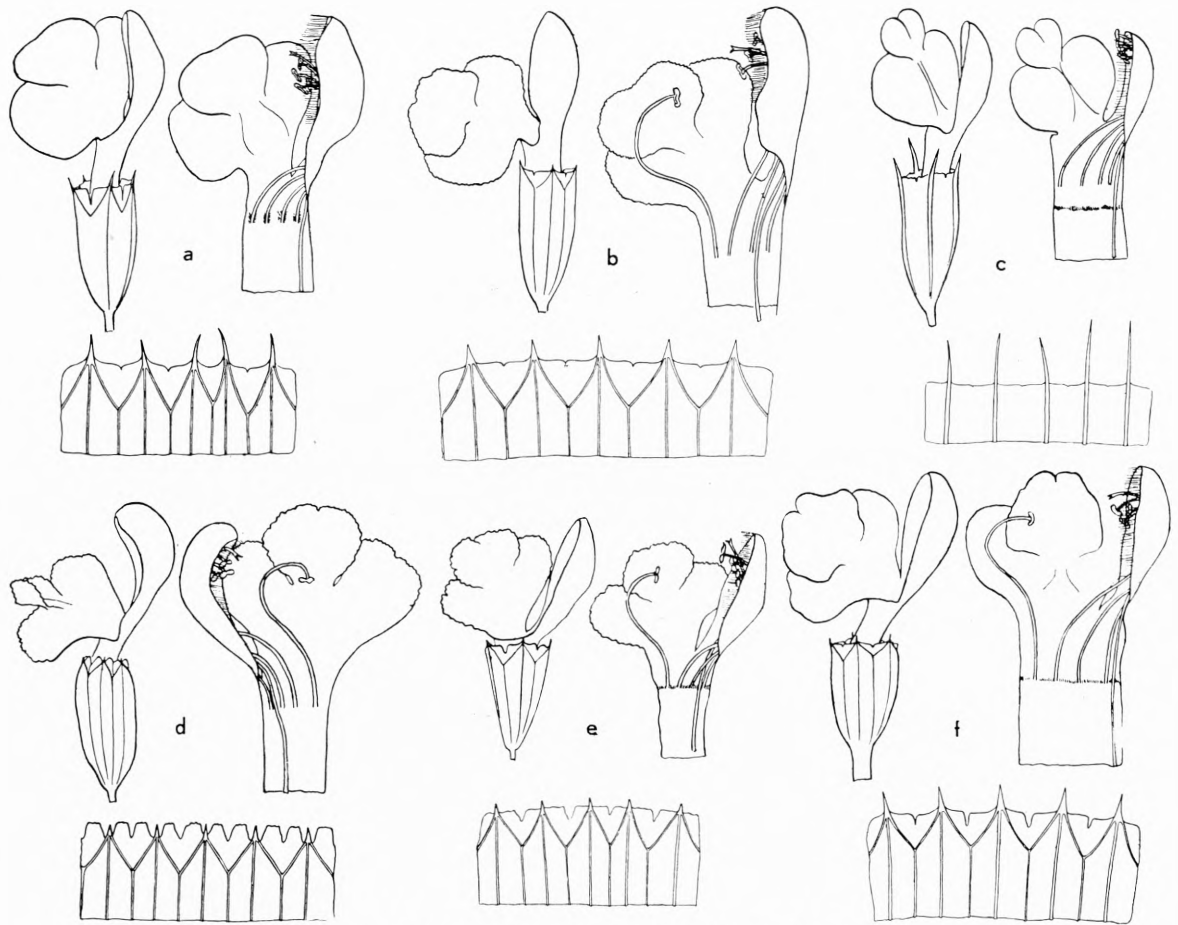


Fig. 27. a. *Eremostachys bamianica* (CODRINGTON s. n.). b. *E. Edelbergii* (E. 947). c. *E. gymnoclada* (K. 3861). d. *E. sanglechensis* (Kz. 12640). e-f. *E. vacillans* (e Kz. 11698, f CHAWORTH-MUSTERS s. n.).

multo angustioribus et longioribus. — *E. cabulica* et *E. bamianica* ambae foliis pro sectione parum divisiss excellunt.

C: Bamian valley, 8000 ft., 2.VII.1940 (CODRINGTON s. n., Typus, hb. BM.).

*E. cabulica* Beck ex Rech. fil. Fedde Rep. 48: 161, Taf. 103, Fig. 2 (1940).

E: Kabul (HONIGBERGER s. n., hb. W.). Kabul, 6000 ft., dry slope, 3 ft. high, fl. gold (Kz. 11415).

Affinitas adhuc subdubia, dentibus calycinis ovatis subrecurvis non alatis nec transversaliter truncatis insignis.

***Eremostachys Edelbergii*** Rech. fil., n. sp. — Fig. 28 und 27 b.

Grex *Speciosae* Pop. — Rhizoma lignescens fibroso-corticisum. Caulis ca. 60 cm altus simplex valde obtuse quadrangulus purpurascens, omnino pilis crispulis densiuscule hirsuto-villosus non glabrescens, internodiis perpaucis elongatis. Folia





Fig. 28. *Eremostachys Edelbergii* (E. 947).  $\frac{1}{2}$ .

basalia rosulata petiolata, petiolus  $\pm$  10 cm longus laminam aequans hisuto-villosus; lamina 10–15 cm longa, 5–7 mm lata, ambitu oblongo-ovata, plerumque infra medium latissima, utrinque pilis magna pro parte  $\pm$  fasciculatis vel substellatis hirsuta, in sicco crassiuscula fragilis canescenti-viridis, nervis subtus pallidis pro-

minentibus, bi- vel incomplete tripinnatifida, segmentis utrinque  $\pm 5$  liberis, supremis tantum  $\pm$  confluentibus, infimis 4–5 cm longis petiolulatis, superioribus sessilibus vel axi oblique adnatis, lobis ultimi ordinis omnibus rotundatis crenato-lobatis. Folia caulina paribus 1–2 evoluta valde decrescentia, breviter petiolata, ceterum basalibus similia. Folia verticillastra inferiora fulcrantia sessilia, verticillastra superantia, anguste pinnata usque bipinnata, segmentis utrinque  $\pm 7$ , superiora sensim breviora minus divisa densius villosa. Verticillastra 4–5, infima remota, superiora  $\pm$  contingua, omnia multiflora. Bracteae herbaceae lanceolatae mucronulatae,  $\pm$  dimidios calyces aequantes, dense longe villosae, 2–3 mm latae. Calyx 18–22 mm longus, sessilis, basi breviter attenuatus superne paulo ampliatus, dense longe nitide albo-villosus eglandulosus, rigide herbaceo-membranaceus, nervis tenuiter tantum prominentibus; dentes calycini recti brevissimi, in mucronulum  $\pm 1.5$  mm longum stramineum rigidulum excurrentes, perlate alati horizontaliter truncati, incisuris minimis aequalibus saepe vix 1 mm profundis separati. Corolla calyce circiter duplo longior, labium superius 12–15 mm longum, 5–8 mm altum, in sicco sordide pallide roseum, extus  $\pm$  breviter sericeo-villosum depresso-galeatum, intus antice longe strigoso-villosum; labium inferius deflexum, 15–18 mm longum, in sicco ochraceum, longitudine plerumque latius latissime trilobum, lobis sese tegentibus, mediano antice late leviter emarginato; tubus intus exannulatus. Filamenta subaequilonga ad basin leviter papillosa, thecis valde divaricatis.

**Nuristan:** Pashki, 2600 m, 10.VI.1948 (EDELBERG 947, hb. C.).

***Eremostachys gymnoclada*** Rech. fil. & Köie, n. sp. — Fig. 27 c.

Grex *Integrifoliae* Pop. (?). — Partes subterraneae ignotae. Planta valde elata valida, certe ultra 1 m alta; caulis erectus, internodiis mediis ca. 20 cm longis, a medio longe pauciramosus rarius simplex, obtuse quadrangulus glaberrimus laevis pallide bruneus. Folia omnia glaberrima, in sicco crassiuscule membranacea, laete usque obscure viridia concoloria, nervatura laxe pennato-reticulata subtus brunescente prominente. Folia basalia petiolo laminam subaequante suffulta. Lamina ad 13 cm longa, ad 7 cm lata, irregulariter grosse lyrato-pinnatifida, segmentis inferioribus utrinque 1–2 liberis ad 6 cm longis, 3 cm latis, basi rhachidi late oblique adnatis, apice rotundatis irregulariter grosse crenato-serratis usque-lobatis, segmentis superioribus  $\pm$  confluentibus valde irregulariter grosse crenato-lobatis vel incis. Folia caulina basi attenuata sessilia, ad 17 cm longa, ad 5 cm lata, in tertia parte superiore latissima, basin versus subintegra, in parte superiore grosse irregulariter sinuato-lobata usque subruncinato-serrata. Folia floralia inferiora calyces  $\pm$  duplo superantia, oblonga, apice paucidentata, basi late cuneata vel subrotundata vel sessilia, nervis  $\pm$  parallelis; folia floralia superiora sensim breviora, proportione angustiora, acutiora, integra. Verticillastra 6–10, pauci- (2–4-)flora, inferiora subremota, superiora approximata spicastrum formantia. Bracteae herbaceae, ad 6 mm longae, calycibus appressae, anguste lineari-subulatae, non pungentes. Calyx  $\pm 20$  mm longus, tubuloso-campanulatus, herbaceo-membranaceus, flavescenti-viridis, subnervius vel in parte superiore valde indistincte quinquenervius, basi paulum

attenuatus, antice vix ampliatus, ore transverse truncatus, dentium alis omnino contiguus vel interdum incisionibus minimis separatis, dentibus duobus inferioribus in mucrones flavidos erecto-patulos ad 3 mm longos, dentibus tribus superioribus in mucrones paulo breviores abrupte excurrentibus. Corolla in vivo aurea, in sicco immutata vel brunescens, calyce duplo circiter longior; labium superius  $\pm$  17 mm altum, leviter convexe galeatum, extus glabrum, intus longe strigose albo-barbatum; labium inferius multo longius, ad 21 mm longum, glabrum, trilobum, lobis lateralibus late rotundatis, intermedio multo minore antice inciso. Stamina 4, subaequalia. Nux ignota. — Affinitas adhuc subdubia; glabritie *E. glabrae* Boiss. similis a qua autem foliis magis divisus, corollae et calycis structura valde diversa.

**NW:** Kishlik, 700 m, 5.V.1949 (KÖIE 3861, hb. W., C.).

*E. labiosa* Bge. — **NW:** Qala Nau, 800 m, frequent on the hills (K. 3964). Obeh, 1700 m (K. 3667). — **SW:** Jija, 900—1200 m (K. 3898, 4063).

*E. regeliana* Aitch. & Hemsl. — **NW:** Qala Nau—Sauzak, 1400 m (K. 3926). Chisht, 1600 m (K. 3708). — **SW:** Herat, 1100 m (K. 3932). Jija, 1200 m (K. 4062).

***Eremostachys sanglechensis*** Rech. fil., n. sp. — Fig. 29 und 27 d.

Grex *Speciosae* Pop. — Partes subterraneae desunt; planta collo squamis latis membranaceis longe villosis obsita et longe gossypino-lanata. Caulis humilis 13—16 cm altus, simplex, longe albide lanato-villosus, inflorescentia  $\frac{1}{3}$ — $\frac{2}{3}$  caulis longitudinis occupante. Folia basalia numerosa rosulata caulem subaequantia; petiolus laminae subaequilongus, longe villosus-lanatus; lamina 6—9 cm longa, 2—3 cm lata, in medio vel paulo infra latissima, in sicco crassiuscule membranacea rugulosa canescenti-viridis, nervatura subtus brunescente prominente crebre reticulato-anastomosante, pinnatifida, segmentis utrinque usque 8 oblongo-obovatis crebre minute inciso-crenatis usque crenato-dentatis, saepe basi  $\pm$  oblique attenuatis sessilibus, segmentis summis saepe  $\pm$  confluentibus. Folia caulina non evoluta. Folia verticillastra infima fulcrantia longiscule petiolata basalibus similia, verticillastra superantia, superiora multo minora minus divisa, summa valde reducta. Verticillastra usque 3,  $\pm$  approximata vel subcontigua, densissima multiflora sessilia. Bractae e numerosae herbaceae non rigidae, ad  $\frac{1}{2}$  usque  $\frac{2}{3}$  calycis longitudinis aequantes, anguste lineari-lanceolatae vel fere lineares valde acutae, densissime longe lanato-villosae eglandulosae. Calyx ad 23 mm longus, a basi sensim paulo ampliatus vel interdum e basi attenuata fere cylindricus, rigide coriaceo-membranaceus, decemner-vius, omnino dense candide lanato-villosus eglandulosus; calycis limbus dentibus 5 breviter rigidule mucronulatis utrinque truncato-bialatis; limbus incisuris omnibus subaequalibus quasi 15-dentatus. Corolla calyce circiter sesquialongior; labium superius ca. 13 mm longum valde convexe galeatum, dense breviter tomentellum, latere interno longe strigoso-barbatum, in sicco violascenti-purpurascens, saepe valde incurvum; labium inferius superiore plerumque paulo tantum brevius, valde dilatatum, perlate profunde trilobum, lobis antice rotundato-truncatis non vel indistincte emarginatis, in sicco flavescenti-ochraceum. Filamenta subaequalia thecis divaricatis. Nuculae ignotae. — Inter affines caule pumilo, indumento longo denso, foliis



Fig. 29. *Eremostachys sanglechensis* (Kz. 12640).  $\frac{2}{3}$ .

crebre reticulato-rugosis, imprimis autem calycis dentibus omnibus regulariter bialatis, limbo inde quasi 15-dentato insignis.

NE: Sanglech, 13000 ft., flowers gold, 25.VII.1937 (KOELZ 12640, hb. W., BPI.).

***Eremostachys vacillans*** Rech. fil. & Edelberg, n. sp. — Fig. 30 und 27 e—f.

Grex *Laciniatae* Pop. — Rhizoma crassum lignescens, collo gossypinolanato. Caulis valde elatus, fragmentarie tantum obvis, certe ultra 1 m altus, internodiis paucis elongatis saepe ultra 20 cm longis, superne pauciramosis, pallide bruneus, obtuse quadrangulus, glaber. Folia rosularia numerosa petiolata; petiolus 6—9 cm longus, dimidiam circiter laminam aequans, longe crispe villosus; lamina 15—30 cm longa, 7—14 cm lata, ambitu oblongo-ovata, saepius infra medium latissima, herbaceo-membranacea, laete viridis, secus rhachidem et subtus secus nervos pilis longiusculis crispis simplicibus sparse hirsuto-villosa, nervatura pennato-reticulata subtus tenuiter prominente, irregulariter pinnata vel pinnato-lobata, segmentis in-

fimis utrinque 1—4 liberis,  $\pm$  distincte petiolulatis grosse irregulariter lobato-dentatis, mediis rhachidi oblique adnatis, superioribus in segmentum terminale irregulariter laciniato-lobatum confluentibus. Folia caulina valde decrescentia glabrescentia, segmentis angustioribus acutioribus basi plerumque omnibus conjunctis, breviter petiolata usque subsessilia. Folia verticillastra inferiora fulcrantia ea superantia oblonga vel lanceolata, irregulariter inciso-lobata, valde glabrescentia. Verticillastra 5—12,  $\pm$  6-flora, inferiora valde (usque 20 cm) remota, summa approximata vel fere contigua. Bracteae lineari-subulatae, herbaceae, vix pungentes, dimidios calyces ad summum aequantes, crispule pilosae glabrescentes. Calyx 13—16 mm longus, sessilis, basi attenuatus superne paulo ampliatus,  $\pm$  sparse crispule villosus glabrescens et glandulis sessilibus obsitus, rigide herbaceo-membraneus, nervis tenuiter prominentibus; dentes calycini brevissimi, primum subrecti deinde  $\pm$  extus curvati, in mucronulos rigidulos stramineos saepe  $\pm$  inaequales, in dentibus inferioribus ad 3 mm, in superioribus ad 1.5 mm longos excurrentes, perlate alati horizontaliter truncati, incisuris minutis separati. Corolla calyce circiter duplo longior, in vivo aurea (?), in siccio brunescens vel ochracea; labium superius 12—14 mm longum, 3—5 mm altum, depresso-galeatum, extus laxiuscule pubescens, intus longe strigoso-villosum; labium inferius subaequilongum deflexum, trilobum, lobis late rotundatis; tubus intus ad basin filamentorum tenuiter piloso-annulatus. Filamenta subaequalia, thecis valde divaricatis. — Species nova notis sequentibus insignis:



Fig. 30. *Eremostachys vacillans* (E. 521).  $\frac{2}{5}$ .

statura valde elata, planta saepe valde glabrescens, calyces pro sectione parvi, bractee dimidios calyces ad summum aequantes.

**Nuristan:** Vama, 1400 m, 4.V.1948 (EDELBERG 521, Typus, hb. W., C.). — **NE:** Nilkhan, 8000 ft., dry slope, flowers gold, 4.VI.1937, (Kz. 11698, hb. W., BPI.). — **E:** Paghman, 8000–9000 ft., 2.VI.1939 (CHAWORTH-MUSTERS s. n., hb. BM.). Begram near Charikar, 5000 ft., 4.VI.1940 (CODRINGTON 55, hb. BM.).

Die neue Art variiert in mehreren Merkmalen ziemlich stark. Der Typus ist großblättrig, die Blatteilung ist an den größten Blättern tief und stark, die Behaarung relativ reichlich, die Kelchzähne sind relativ kurz und untereinander gleich lang. Die Pflanze von CHAWORTH-MUSTERS ist relativ zart, unverzweigt, die Blätter sind relativ klein, deren Behaarung ziemlich stark, der obere Stengelteil und die Infloreszenz sind fast völlig verkahlt, die Kelchzähne wie beim Typus. CODRINGTON no. 55 ist ein Fragment einer hochwüchsigen, fast völlig verkahlten Pflanze, die Brakteen sind etwas breiter als beim Typus. Ähnlich ist KOELZ no. 11698, aber blühend.

***Eremostachys vulnerans*** Rech. fil. & Köie, n. sp. — Fig. 31.

Grex nova *Vulnerantes* Rech. fil. & Köie. — Dentes calycini valde inaequales rigidissimi vulnerantes. Bractee lineari-subulatae rigidissimae pungentes, quam calyces longiores. Folia cordata crenata. Caulis elatus validus. — Species unica:

Partes subterraneae deficientes. Collum residuis petiolorum comosum et longe gossypino-lanatum. Caulis 60–120 cm altus, simplex, validissimus, obtusissime quadrangulus usque subteres, omnino villosus, in parte superiore quidem substrigoso-lanatus, eburneus usque pallide bruneus, internodiis paucis valde elongatis, inflorescentia dimidium usque tertiam partem superiorem caulis occupante. Folia basalia rosulata non numerosa, petiolo villosolano laminam subaequante suffulta. Lamina 12–16 cm longa, ad 5 cm lata, in medio vel paulo infra latissima, basi truncata vel leviter cordata, apice ± rotundata, margine grosse interdum sublobato-crenata, supra brevius subluxius tomentella flavescenti-viridis, subtus densius longius tomentosa albescens, nervatura supra tenuiter immersa, subtus prominenter pennata et crebre reticulato-anastomosante. Foliorum caulinarum paria 1(–2) plerumque tantum evoluta, breviter petiolata, basi attenuata, elliptico-lanceolata, latitudine 3–4 plo longiora, ceterum basalibus similia. Folia verticillastra infima fulcrantia basi late rotundata vel subcordata sessilia, ambitu ovata, apice acuta, margine crenato-subserata, quam verticillastra paulo usque subduplo longiora; folia fulcrantia superiora sensim breviora, minus distincte crenata usque subintegra. Verticillastra 6–11, omnia plerumque valde remota, sessilia multiflora compacta. Bractee numerosae rigidissimae calyces superantes, lineari-subulatae, in mucronem validum vulnerantem glabrescentem excurrentes, pilis patulis elgandulosis villosae, pilis brevioribus glanduliferis copiose immixtis. Calycis tubus fructifer ± 16 mm longus, basi ± attenuatus sursum paulo ampliatus, rigidissime coriaceus decemnervius, indumento e pilis longis villosis et brevioribus glanduliferis consistente, dentibus valde inaequalibus, brevioribus tribus in mucronem rigidum erectum vulnerantem 3–4 mm longum, longioribus duobus in mucronem validissimum patentem valde vulnerantem

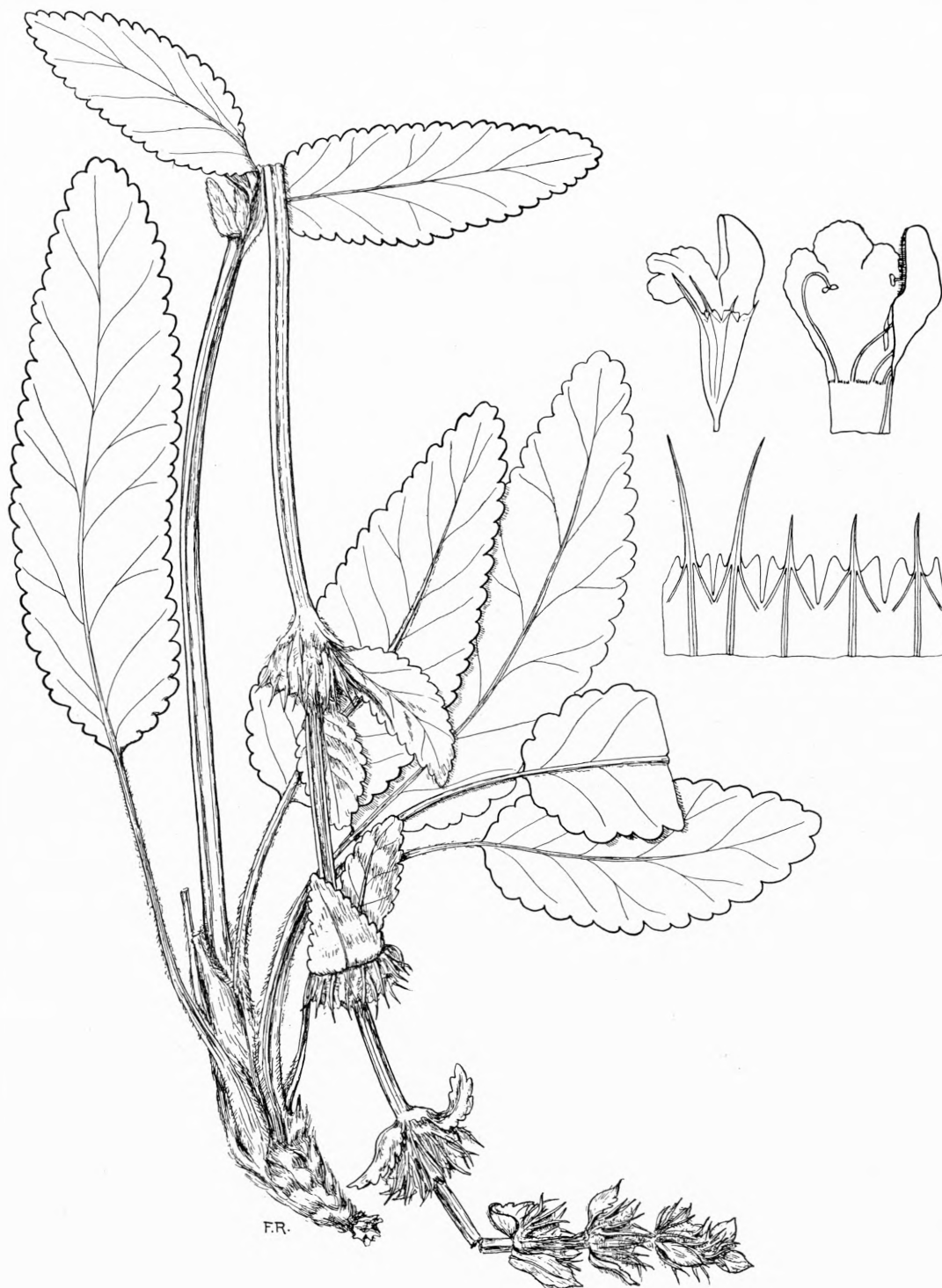


Fig. 31. *Eremostachys vulnerans* (Habitus K. 2307, Blüten Kz. 12078). Habitus  $\frac{1}{2}$ .

usque 12 mm longum excurrentibus, omnibus late alatis, ala antice transverse truncata vel subsinuata incisionibus angustis  $\pm 3$  mm profundis separatis. Corolla in vivo roseo-purpurea (e collectore), in sicco brunescens, calyce circiter sesquilongior; labium superius applanato-galeatum, extus villosum et breviter glandulosum, intus strigoso-barbatum; labium inferius paulo brevius rotundato-trilobum, lobo mediano lateralibus longiore et latiore. Nuculae (submaturae) nigrae,  $\pm 4$  mm longae, quadrangulae, apice barba candida 1.5–2 mm longa provisae.

**E:** Paghman, 2200 m, 8.VII.1948 (KÖIE 2307, Typus, hb. W., C.). Paghman, 7500 ft., flowers rose-purple, 26.VI.1937 (Kz. 12078, hb. W., BPI.). Paghmantal (N. 50/717).

*Phlomis bracteosa* Royle — **Nuristan:** Shtive, 2600 m (E. 1290). Ashpei, 2300 m (E. 1658).

Die afghanischen Exemplare sind von der Mehrzahl der im Hb. Mus. Wien vorhandenen himalayischen und chinesischen durch folgende Merkmale verschieden: 1. dichte abstehende, fast borstige Behaarung, besonders der Infloreszenzregion; 2. verhältnismäßig lange Blätter, die z. T. zwei- bis dreimal so lang wie breit sind; 3. lang zugespitzte Kelchzähne; 4. schmal pfriemliche Brakteen. Die von Afghanistan durch den Himalaya bis Südwest-China verbreitete Art ist nach dem mir augenblicklich vorliegenden, nicht sehr reichlichen Material sehr variabel und wird sich möglicherweise an Hand von reichlicheren Belegen in mehrere geographische Rassen gliedern lassen.

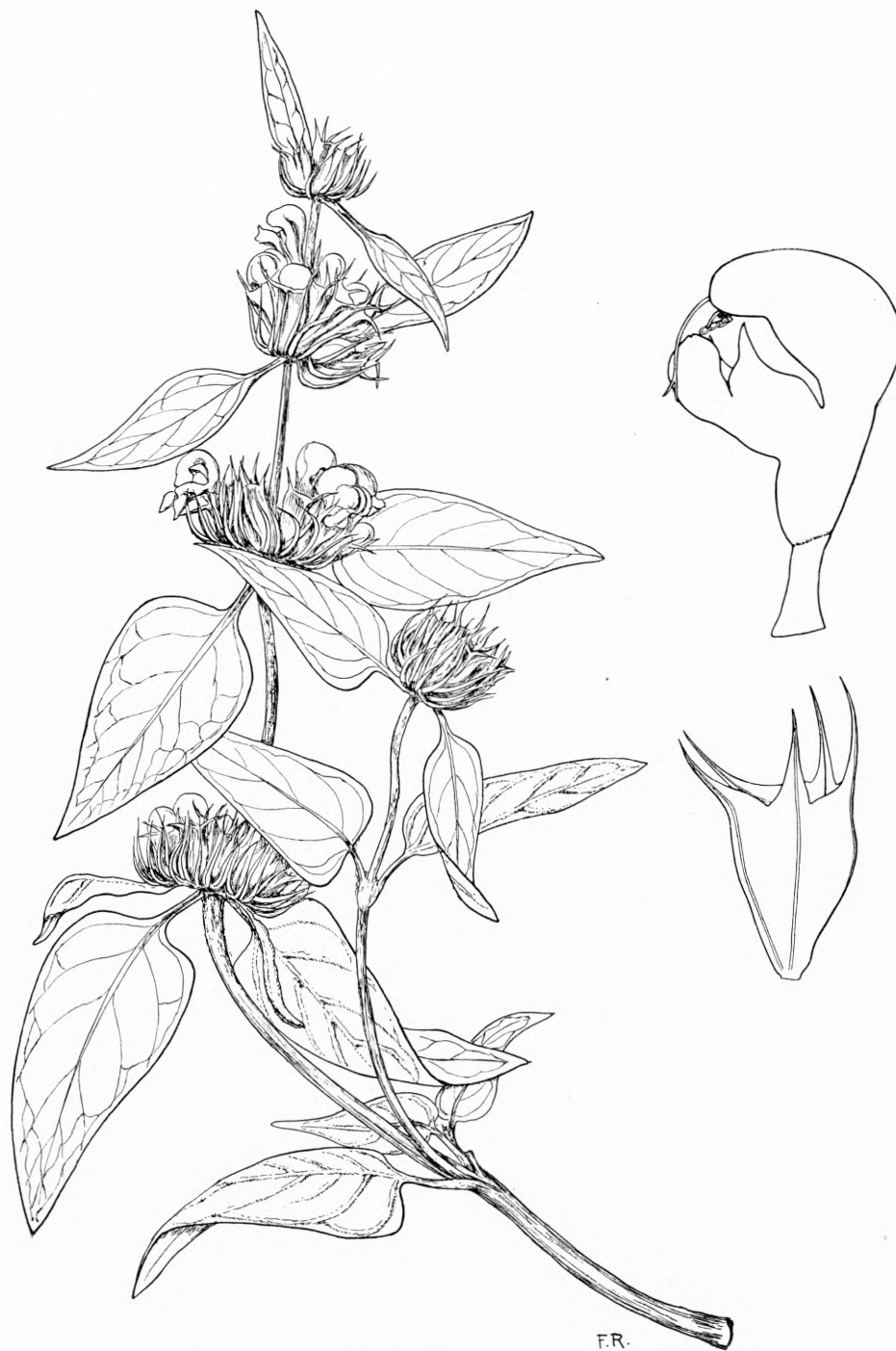
*Ph. cancellata* Bge. — **NW:** Ardewand, 1500 m (K. 2249).

*Ph. cashmeriana* Royle — **Nuristan:** Ashpei, 2300 m (E. 1665). — **E:** Kurram valley (HARSUKH 14694, hb. W.).

***Phlomis dichroa*** Rech. fil., n. sp. — Fig. 32.

Sect. *Oxyphlomidis* Benth. — Partes subterraneae deficientes. Caulis 50–70 cm altus, arcuatus vel subrectus  $\pm$  flexuosus, prope basin  $\pm 5$  mm crassus, internodiis mediis ca. 10 cm longis, inferne longe aphyllus, superne remote foliatus, infra medium pauciramosus, ramis ca. 15 cm longis erecto-patentibus foliatis et floriferis, obtuse quadrangulus, dense breviter stellato-tomentosus inferne teres valde glabrescens. Inflorescentia tertiam vel quartam partem caulis occupans. Folia caulina media ad 11 cm longa, prope basin ad 5.5 cm lata, petiolo latiusculo  $\pm 1$  cm longo vel longiore suffulta, basi late sinuato-cordata et in petiolum attenuata, apicem acutam versus sensim attenuata, integerrima, in sicco crasse membranacea, discoloria, supra laxe scabride stellato-tomentosa sordide atro-viridia, subtus dense intertexte stellato-tomentosa albida, nervatura crebre pennato-reticulata supra immersa subtus crasse prominens. Folia caulina superiora sensim minora proportione angustiora, basi late rotundata vel acuminata in folia floralia transientia. Verticillastra (2–)4, 3–4 cm diametro, omnia remota dense multiflora. Bractee numerosissimae subulatae, quam calyces paulo longiores, stellato-tomentosae, in mucronem tenuem glabratum non vulnerantem excurrentes, calycibus appressae. Calyx 10–14 mm longus, basi dense breviter stellato-tomentosus, nervis vix prominentibus, dentibus latissime





F.R.

Fig. 32. *Phlomis dichroa* (Kz. 12918). Habitus  $\frac{3}{5}$ .

rotundatis brevissimis incisione minuta separatis, ore quasi horizontaliter truncatus, dentibus in mucrones rigidos pungentes glabrescentes patentes abrupte contractis. Corolla in vivo roseo-purpurea (e collectore), in sicco valde expallens, dense stellato-tomentosa, calyce vix duplo longior; tubus in calyce inclusus intus annulo piloso praeditus; labio superiore 12—15 mm longo ca. 6 mm alto valde convexo-galeato; labio inferiore subaequilongo trilobo, lobo mediano rotundato subemarginato, lateralibus valde acutis. Nux ignota. — Differt ab affinibus, imprimis a *Ph. thapsoides* Bge. foliis magnis discoloribus, calyce maiore ore quasi transverse truncato, dentibus calycinis in mucrones longiores patentes excurrentibus.

**NE:** Khash District, 8000 ft., dry ground, fl. rose-purple, 8.VIII.1937 (KOELZ 12918, Typus, hb. W., BPI.). Khash District, 10000 ft., in clumps, 9.VIII.1937 (Kz. 13000, hb. W., BPI.). — **E:** Bagrami, Nedjerau-Tal, 3000 m, haufig in der oberen Waldzone, (N. 51/221, hb. W.).

*Ph. thapsoides* Bge. — **NE:** Rustak, 4000 ft., dry ground, bushy, fl. yellow (Kz.13124).

***Phlomis trineura*** Rech. fil., n. sp. — Fig. 33.

Sect. *Oxyphlomidis* Benth. — Partes subterraneae deficientes. Caulis 45 cm altus erectus subflexuosus simplex, internodiis mediis ca. 3 cm longis, a basi fere regulariter foliatus et florifer, teres dense breviter stellato-tomentosus, prope basin tantum glabrescens. Folia inferiora petiolo brevi a lamina vix distincto incluso ad 10 cm longa, ad 0.8 cm lata fere linearia, basi apiceque subaequaliter attenuata, apice rigide mucronulata integerrima, in sicco rigida subcoriacea, nervis tribus parallelis tota longitudine percursa, lateralibus margini approximatis, irregulariter tenuiter anastomosantibus omnibus supra profunde immersis subtus crasse prominentibus, indumentum ubique aequaliter breviter stellato-tomentosum canescenti-flavescenti-virens. Folia media et superiora vix decrescentia omnia verticillastra fulcrantia, summa quidem verticillastro duplo usque subtriplo longiora, 0.5 cm lata. Verticillastra 5—8-flora, numerosissima, sessilia conferta, spicastrum subcontiguum formantia. Bractee ternae basi connatae calyces aequantes vel superantes, rigidissime mucronatae squarroso-patentes pungentes stellato-tomentosae imprimis in parte superiore glabrescentes. Calyx 13—15 mm longus tubuloso-campanulatus basi attenuatus, superne paulo ampliatus, elevate plicato-quinquennervius, omnino dense breviter stellato-tomentosus, dentibus subaequalibus 2—3 mm longis late rotundatis incisionibus angustissimis acutis separatis omnibus rigide mucronatis, superioribus 3 in mucrones  $\pm 1.5$  mm, inferioribus 2 in mucrones  $\pm 3$  mm longos excurrentibus. Corolla calyce vix duplo longior, dense breviter stellato-tomentosa, in vivo ut videtur sordide roseo-purpurascens (“magenta” e collectore), labio superiore  $\pm 1$  cm longo,  $\pm 4$  mm alto, regulariter curvato-galeato inferiore sublongiore trilobo. Nuculae fere 5 mm longae crasse ovato-ellipsoideae atrobrunee, minute rugulosae, glabrae apice breviter acuminatae. — *Ph. persicae* Boiss. habitu aliquantum similis sed foliis omnibus aequalibus linearibus trinerviis, caule a basi fere florifero, corollis maioribus, bracteis longis pungentibus squarroso-patentibus diversissima.



Fig. 33. *Phlomis trineura* (Kz. 13965). Habitus  $\frac{1}{2}$ .

**N:** Akupruk, 8000 ft., dry slope, pl. 2 ft. high, flowers magenta, 11.IX.1939 (KOELZ 13965, hb. W., BPI.).

***Eriophyton afghanicum*** Rech. fil., n. sp. — Fig. 34 und 37 a. Zum Vergleich *E. Wallichianum* Benth., Fig. 37 b.

Partes subterraneae et bases caulium desunt sed planta verosimiliter perennis pluricaulis. Caules floriferi ut videtur 15—30 cm longi, ad 6 mm crassi, simplices, internodiis inferioribus et mediis ad summum 8 cm longis, in tertia circiter parte superiore floriferi, internodiis superioribus abbreviatis, omnino molliter lanati. Folia inferiora petiolo lato ad 1 cm longo suffulta; lamina transversaliter dilatata, late reniformi-flabellata, ca. 2 cm longa, 3 cm lata, antice late obtuse crenata; folia superiora sensim increscentia, brevius petiolata usque sessilia, floralia maxima ad 6 cm longa, 7 cm lata, basi sinuato-subcordata vel truncata vel late cuneata, late obtuse crenata, nervis palmatis profunde furcatis superne  $\pm$  parallelis et crebre reticulato-anastomosantibus, subtus tenuiter distincte prominentibus, consistentia in sicco crasse molliter herbacea, indumento denso albo lanato-villoso nitente. Folia superiora ex axillis flores singulos, (rarius 2—3-nos) proferentia. Calyx  $\pm$  15 mm longus, tenuiter herbaceo-membranaceus, ore rectus ad  $\frac{2}{5}$  circiter in dentes aequales e basi triangulari subito tenuiter subulato-mucronatos non pungentes fissus, dense molliter lanato-villosus. Corolla magnitudine variabilis 3—4 cm longa, consistentia tenuissima, in vivo roseo-purpurea (e collectore), tubo superne sensim ampliato; labium superius applanatum leviter curvatum antice truncatum extus laxe villosus; labium inferius quam superius plus quam duplo longius, lateraliter constrictum, lobo mediano late obcordato, antice profunde inciso. — Differt ab *E. Wallichiano* Benth. corollae labio superiore brevi applanato, antice truncato, labio inferiore quam superiore duplo longiore, ejusque lobo mediano late obcordato, calycis dentibus brevioribus, indumento calycino brevioris  $\pm$  2 mm (nec 4—5 mm) longo, foliis magis rotundatis obtusius crenatis, distinctius reticulato-rugosis.

**NE:** Magnaul, 11000 ft., clumps, fl. rose-purple, 29.VII.1939 (KOELZ 12782, hb. W., BPI.).

*Lamium album* L. — **Nuristan:** Nishei, 2900 m (E. 775). Chetras, 2900 m (E. 842). Aschpi Pass (N. 51/1051). Zwischen Nischai und Ningalam (N. 51/791).

*L. amplexicaule* L. — **NW:** Murghab, 500 m, in fields (K. 3510). — **C:** Farakulum, 2800 m (K. 3385). — **Nuristan:** Gusalak, 1000 m (E. 108, 118, 233, 299). — **E:** Paghman, 7500 ft., fields (Kz. 12077).

*Leonurus cardiaca* L. s. l. — **C:** Hauz-i-Mahiha, 2500 m (K. 2425). — **Nuristan:** Nishei (E. 778). Pashki, 2500 m (E. 1317). Shtive, 3000 m (E. 1281). Netchingel, 3300 m (E. 1988). Zwischen Kotal-e-Agok und Waigel (N. 51/880). — **E:** Unteres Paghmantal (N. 50/692).

*Lagochilus cabulicus* Benth. — **E:** Kabul (HONIGBERGER, hb. W.).

***Lagochilus nuristanicus*** Rech. fil. & Edelberg, n. sp. — Fig. 35 und 37 c.

Partes inferiores desunt sed planta certe suffruticosa pluricaulis. Caules floriferi ultra 30 cm longi, erecti, simplices vel superne pauci-ramosi, eburnei glabri laeves



Fig. 34. *Eriophyton afghanicum* (Kz. 12782).  $\frac{4}{5}$ .

quadranguli  $\pm$  sulcati. Folia petiolo 1—1.5 cm longo latiusculo albo anguste herbaceo-marginato suffulta, lamina ambitu cordato-triangularis, 2—3 cm longa et lata, laete viridis herbacea utrinque crebre glanduloso-punctata, margine scabridula ceterum glabra, bi- usque tripinnatifida, lacinulis 1—2 mm latis saepe supra medium latioribus, inferioribus rotundatis superioribus  $\pm$  acutis. Folia verticillastra fulcrantia inferioribus similia, superiora sensim paulo minus dissecta. Spinae subhorizontaliter patentes vulnerantes 10—15 mm longae. Verticillastra  $\pm$  4, plerumque 6-flora. Calyx 24—28 mm longus, tenuiter rigidule membranaceus pallide flavescenti-viridis, ad medium circiter in dentes late oblongo-lineares subaequales apice rotundatos et minutissime mucronulatos fissus, glaber laevis glanduloso-punctatus, dentibus margine scabridulis, nervis 5 principalibus in dentium mucrones excurrentibus et 5 commissuralibus tenuissimis interdum evanescentibus; laciniis tenuiter crebre reticulato-nervosis. Corolla ad 4 cm longa, in sicco albida, nervis carneo-brunescentibus; labium superius subrectum ca. 2 cm longum, extus pubescens antice truncatum crenulatum longe barbatum; labii inferioris lobi lateral recti antice emarginato-truncati, medianu deflexu flavescens incisus. Filamenta inclusa. — Differt ab affini *L. Paulsenii* Briq. imprimis dentibus calycinis tubum aequantibus nec eo 2—3-plo longioribus.

**NE:** Minjan, Iskan, 2700 m, 15.VII.1948 (EDELBERG 2199, hb. W., C.).

*Stachys arvensis* L. — **SE:** Pirzada, 1000 m (K. 3384).

Das Vorkommen bei Kandahar liegt völlig außerhalb des Areals dieser Art, das nach BOISSIER, Fl. or. Europa nördlich bis Schottland, östlich bis Mittelrußland, das Mittelmeergebiet von Portugal bis Dalmatien, Makaronesien und Nordafrika umfaßt. In Amerika wurde die Art adventiv beobachtet.

*St. hissarica* Regel (? e descr.) — **NE:** Najil, 4500 ft., on dry slope, 3 ft. high, fl. rose-purple (Kz. 11628).

*Stachys maleolens* Rech. fil., n. sp. — Fig. 36 und 37 d.

Partes subterraneae et bases caulium floriferorum desunt, sed planta verosimiliter perennis pluricaulis; in vivo foetida (e collectore). Caules floriferi quadranguli arcuato-ascendentes, internodiis superioribus  $\pm$  5 cm longis, breviter pauciramosi foliati, pilis brevibus patulis vel  $\pm$  retrorsis simplicibus eglandulosis hirsuto-puberuli praeterea minutissime glanduloso-papilloso. Folia ramealia breviter ( $\pm$  3 mm) petiolata, ovato-lanceolata, basi anguste rotundata vel cuneata, apice acuta, margine grosse irregulariter serrata usque subintegra, laxe pennato- et reticulato-nervosa, utrinque breviter hirsuto-pubescentia et copiose minutissime glanduloso-papillosa, consistentia in sicco molliter membranacea. Folia florum glomerulos fulcrantia sessilia latiora subintegra. Florum glomeruli  $\pm$  3, omnes remoti multiflori, ad 3 cm diametro. Bracteae lineari-subulatae, quam calyces paulo usque tertia parte breviores. Calyx  $\pm$  11 mm longus, infundibuliformis, rigidule herbaceo-membranaceus, 10-nervius, hirsuto-villosus et minutissime glanduloso-papillosus, ultra tertiam partem in dentes patulos rigidulos e basi lata sensim valde subulato-acuminatos fissus. Corolla calyce circiter duplo longior, sordide rosea (e collectore),

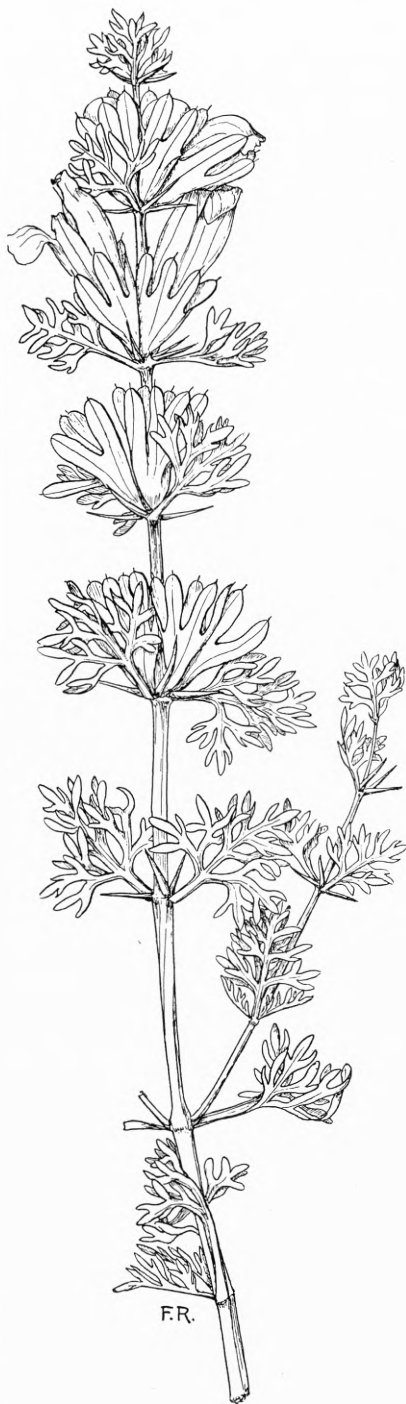


Fig. 35. *Lagochilus nuristanicus* (E. 2199).  $\frac{3}{5}$ .



Fig. 36. *Stachys maleolens* (Kz. 13014).  $\frac{2}{3}$ .

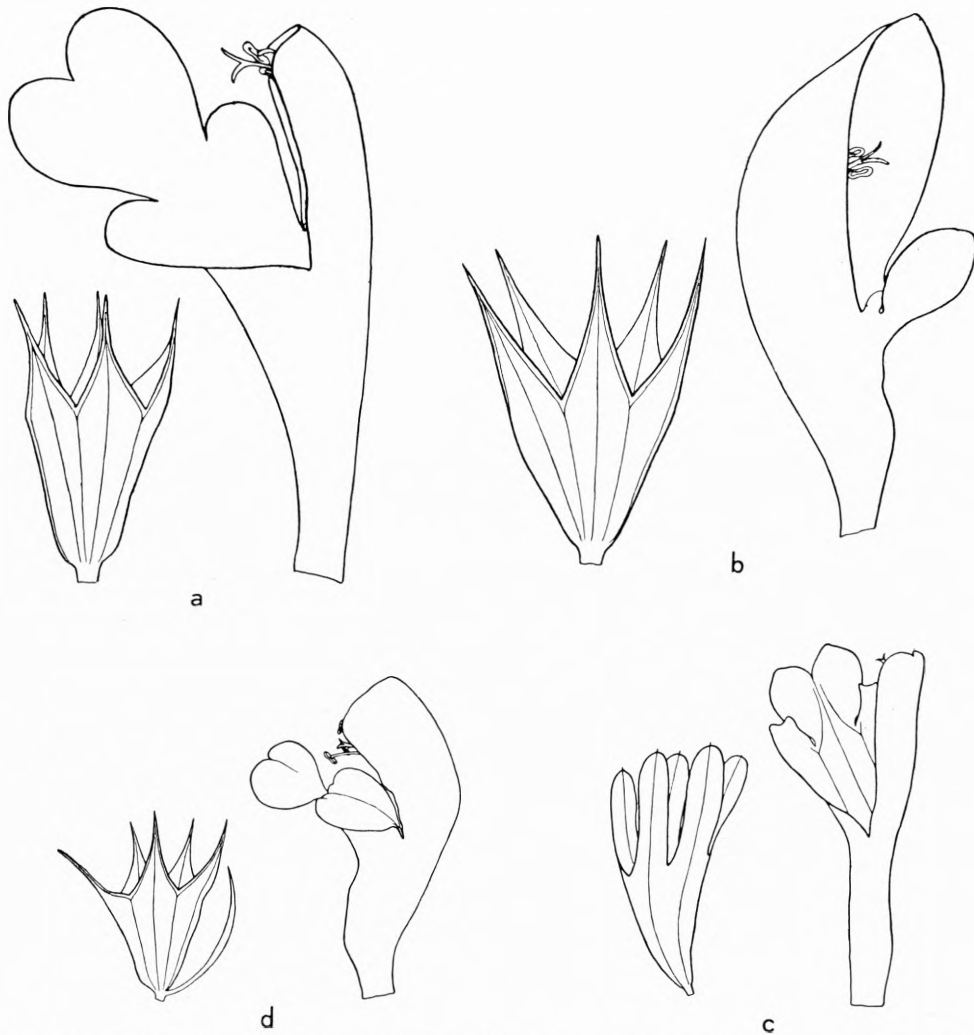


Fig. 37. a. *Eriophyton afghanicum* (Kz. 12728). b. *E. Wallichianum* Bth. c. *Lagochilus nuristanicus* (E. 2199). d. *Stachys maleolens* (Kz. 13014).

tubo crasso in calyce incluso superne sensim ampliato, labio superiore subgaleato, antice truncato et inciso, extus valde villosus, labio inferiore sublongiore lateraliter panduriformi-inciso, antice rotundato-emarginato. Stigma bifidum lobis subaequalibus. Stamina subexserta. Nuculae ignotae. — Affinitas speciei adhuc imperfecte notae dubia; corollae labio superiore subgaleato *Phlomidem* in mentem revocans, sed ab hoc genere calycis forma foliorumque non rugosorum indumento abhorrens.

NE: Khash District, 10000 ft., in clumps, flowers old rose, malodorous plant, 9.VIII.1937 (KOELZ 13014, hb. W., BPI.).



*St. parviflora* Benth. — 'Afghanistan' (GRIFFITH 4032, hb. W.). — NW: Obeh, 1700 m (K. 4065). Sauzak, 2000 m (K. 2192). — C: Deh Kundi, 3000 m (E. 1845). Aoi Khurak, 9000 ft., dry slope (Kz. 13784). — NE: Gulbahar (N. 50/608). Jagdalek, 5000 ft. (Kz. 8249). — E: Kabul (HONIGBERGER, hb. W.). Kabul, 6000 ft., dry slope, (Kz. 11406). Kabul (LINDBERG). Kabul, 1700 m (K. 4066). Paghman, 17 miles west of Kabul, 8000—9000 ft. (CHAWORTH-MUSTERS, hb. BM.). Begram near Charikar, 5000 ft. (CODRINGTON 8, hb. BM.). Sirotai, 9000 ft., dry ground, clumps, fl. lavender (Kz. 11929). — SE: Girishk, Kajkai, 1000 m, in fields (K. 2152).

*St. trinervis* Aitch. & Hemsl. — NW: N. of Sauzak, 1600 m (K. 3909). Nördlich Herat, 1200 m (K. 4068). — SW: Jija, 1300 m, frequent on the plains in the South-west (K. 2288, 3592).

*Salvia compressa* Vahl — SW: Jija, 1000 m (K. 3826).

*Salvia Edelbergii* Rech. fil., n. sp. — Fig. 38 und 43 a.

Sct. *Aethiopsis* Benth. subsect. *Gongrosphace* (Bge.) Boiss. — Perennis. Caulis ca. 40 cm altus, internodiis mediis ca. 6 cm longis, herbaceus, quadrangulus, usque ad medium foliatus, a medio florifer, in medio breviter pauciramosus, omnino dense breviter glanduloso-pilosus, inferne insuper  $\pm$  lanato-villosus. Folia infima petiolo 1—2 cm longo glanduloso-piloso et lanato-villoso suffulta, e basi cordata ovato-triangularia, ad 9 cm longa, 5.5 cm lata, apice acuta, margine crenata usque  $\pm$  obtuse subsinuato-dentata, nervis arcuato-pennatis et crebre minute reticulatis, juniora discoloria supra villosa valde glabrescentia viridia, subtus primum dense appresse albo-tomentosa deinde valde glabrescentia. Folia superiora basi late cordata sessilia, latitudine non vel vix latiora. Folia verticillastra fulcrantia late rotundato-cordata, 6—8 mm longa et fere aequilata, apice subito acuminato-mucronulata, horizontaliter patentia, tenuiter subpellucide albo-membranacea, inferiora pro maiore parte herbacea, omnes imprimis marginem versus laxiuscule villosa  $\pm$  glabrescentia et sparse glanduloso-punctata, margine pilis longioribus crispulis eglandulosis et pilis brevioribus glanduliferis ciliata. Pedicelli 1(—2) mm longi erecti usque arcuato-deflexi. Verticillastra 3—4-flora, inferiora internodiis  $\pm$  3 cm longis separata, superiora  $\pm$  approximata. Calyx  $\pm$  8 mm longus, campanulatus, tenuiter herbaceo-membranaceus, inferne albescens, superne viridis nervis coerulescentibus tenuibus vix prominentibus, imprimis secus nervos et ad dentes calycinis laxe breviter setulosus, praeterea dense minute glanduloso-papillosum et glandulis sessilibus maiusculis obsitus, leviter bilabiatus labiis divergentibus; labium inferius in dentes 2 triangulari-lanceolatos sensim in mucrones  $\pm$  1 mm longos attenuatum; labium superius  $\pm$  coerulescens brevissime tridentatum. Corolla calyce fere triplo longior, in sicco albida leviter brunescens; tubus e calyce breviter vel vix exsertus, intus squamula ciliata provisus, contractus et distincte inflato-ampliatum; labium superius  $\pm$  15 mm longum, ca. 5 mm altum, falcato-curvatum, inferiore plus quam duplo usque triplo longius; labium inferius  $\pm$  5 mm longum deflexum lobis lateralibus anguste lanceolatis, mediano transverse dilatato late rotundato concavo. Stamina inferne



Fig. 38. *Salvia Edelbergii* (E. 1300).  $\frac{1}{2}$ .



Fig. 39. *Salvia Honigbergeri* (HONIGBERGER s. n. fruchtend, CHAWORTH-MUSTERS s. n. blühend).  $\frac{1}{2}$ .

cohaerentia, connectivo perlongo curvato, crure inferiore valde abbreviato omnino sterili, abrupte unilateraliter dilatato.

NE: Minjan; Ptili, 2700 m, 20.VII.1948 (EDELBERG 1300, hb. W., C.).

*S. glutinosa* L. — NE: Ruka, 1800—2100 m (K. 2957). — Nuristan: Pashki, 2300 m (E. 1321). — E: Kurrum valley (AITCH. 594, hb. W.).

Das letztgenannte Exemplar ist durch länger zugespitzte Blätter mit spitzeren, stärker abstehenden Basalzipfeln und durch feinere Randkerbung der Blätter auffällig.

*S. Honigbergeri* Rech. fil., Ann. Nat. Mus. Wien 51: 48 (1941). — Fig. 39. — **C**: Hauz-i-Mahiha, 2500 m (K. 2336). — **E**: Jagdalek, 5000 ft., open dry slopes, 14 in. high, fl. rose-purple, bracts and calyx of similar tone, clumps (Kz. 11480). Arbarp, 11 miles west of Kabul, 7000 ft. (CHAWORTH-MUSTERS, hb. BM.). Kabul (HONIGBERGER, Typus, hb. W.). Begram (CODRINGTON 54, hb. BM.). In den Felsen am Hang zum Munar Schakrie (N. 51/389).

Differt a *S. Hydrangea* DC. calycibus maioribus lobis late rotundatis obtusis, bracteis late cordatis vel rhombicis membranaceis intense purpureo-suffusis apice herbaceis, verticillastrorum superiorum foliolis terminalibus late ellipticis obtusis. Differt a *S. Sheilei* Boiss. cui bracteis praeter apicem membranaceis similis, calycibus floribusque et foliorum forma.

*S. leriaefolia* Benth. — Fig. 40. — **NW**: Herat, Ardewand, 1200 m (K. 3387). — **SW**: Herat, 1000 m (K. 3556). — **E**: Begram near Charikar (CODRINGTON 46, hb. BM.). Tsharikar (N. 50/698). Kabul, 1700 m (K. 4017). Giri, 7000 ft., on dry plain, 1 ft. high, fl. white tipped rose (Kz. 11499).

*S. macilenta* Boiss. — **SW**: Farah, 700 m (K. 4067).

*S. Moorcroftiana* Wall. — **E**: Mamakhel, 4000 ft., on dry plain, 10 in. high, fl. pale blue-purple (Kz. 11575).

***Salvia polychroma*** Rech. fil. & Edelberg, n. sp. — Fig. 41 und 43 b—d.

Sect. *Aethiopsis* Benth. subsect. *Gongrosphace* (Bge.) Boiss. — Partes subterraneae et pars inferior caulis desunt. Caulis ca. 120 cm altus, stricte erectus, ad  $\frac{2}{3}$  circiter regulariter foliatus, internodiis mediis ad 10 cm longis, in tertia parte superiore paniculato-ramosus et florifer, herbaceus quadrangulus, breviter glanduloso-pilosus, pilis longioribus eglandulosis in parte inferiore raro, in regione inflorescentiae  $\pm$  crebrius immixtis. Folia caulina inferiora longe (8—10 cm) petiolata; lamina ad 20 cm longa, ad 5 cm lata, basi cordata, apice acuta, margine subsinuato- usque sublobato-crenata, a basi ad medium fere aequilata, a medio apicem versus sensim attenuata; folia caulina media basi profunde cordata semiamplexicaulia, ad 15 cm longa, prope basin 6 cm lata, apice producta valde acuta, margine acuta et  $\pm$  minute duplicate sinuato-dentata; folia omnia concoloria, supra atroviridia glabrescentia subpapilloso-rugosa, subtus vix pallidiora valde glabrescentia, secus nervos tenuissime tomentosa et glandulis sessilibus obsita, nervatura dense pennato-reticulata subtus tenuiter prominente. Folia summa et ramealia similia sed minora. Bractee late rotundato-cordatae integerrimae breviter molliter mucronatae tenuiter albido-membranaceae, tenuiter subparallele viridi-nervosae, inferiores  $\pm$  herbaceae, superiores violaceo- vel purpureo-suffusae, calyces adultos subaequantes usque eis quarta parte breviores, lamina subglabrae margine minute ciliatae. Verticillastra omnia remota. Calyx 12—14 mm longus, late campanulatus, breviter bilabiatus, labiis valde divergentibus, membranaceo-herbaceus, superne et nervis pallide viridis, margine setulosus praeterea glanduloso-punctatus; labio superiore saepe coeruleo-suffuso, breviter tridentato dentibus lateralibus breviter mucronulatis intermedio multo



Fig. 40. *Salvia leriaefolia* Bth. (Kz. 11499 blühend, CODRINGTON 46 fruchtend).  $\frac{2}{3}$ .

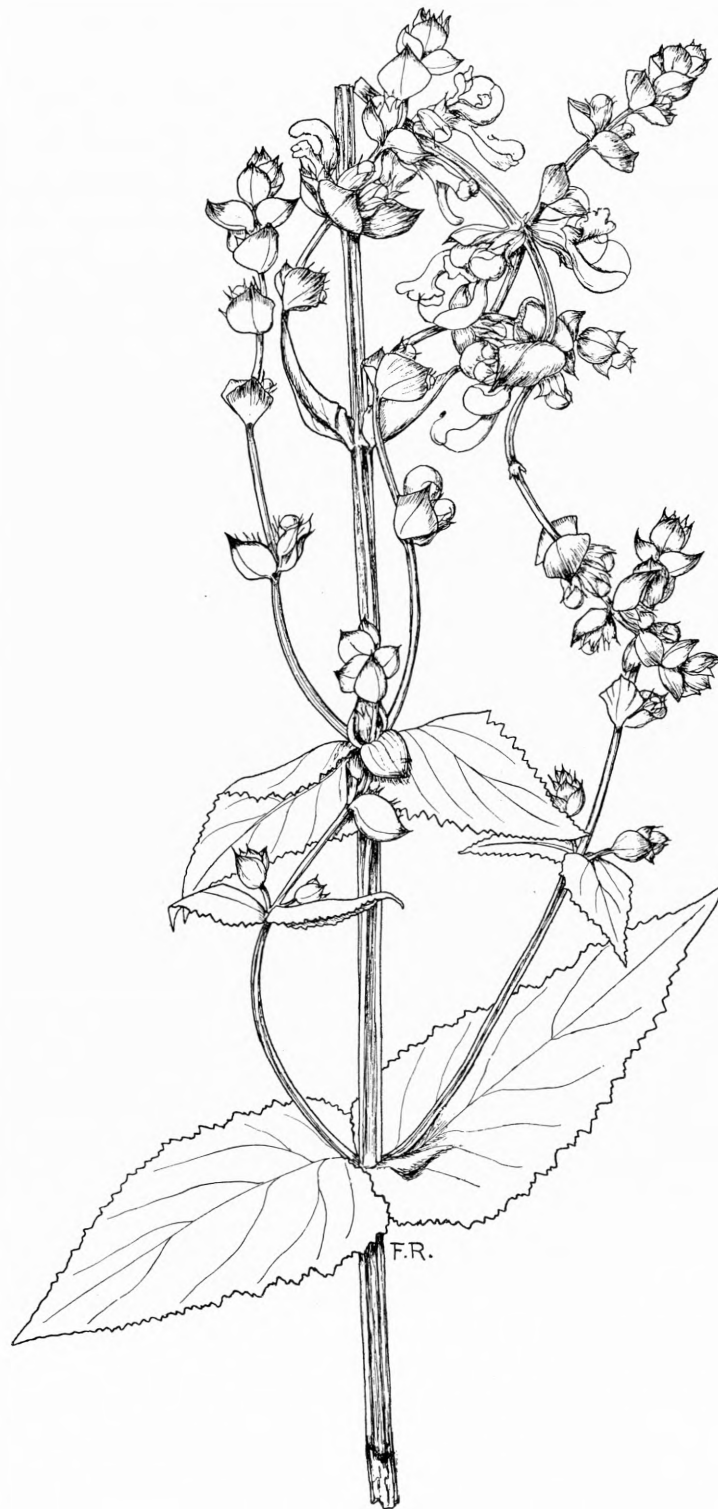


Fig. 41. *Sabia polychroma* (E. 1437).  $\frac{3}{5}$ .

breviore submutico; labio inferiore in dentes 2 lanceolatos sensim in mucrones ad 2 mm longos excurrentes fissum. Corolla calyce circiter triplo longior, in vivo coerulescenti-purpurea (e collectore), in sicco expallescens-brunescens; tubus in calyce inclusus superne antice incisus et inflate dilatatus, labium superius 12—15 mm longum, falcatum, ca. 5 mm altum; labium inferius basi attenuatum deflexum trilobum in sicco brunescens atrius maculatum. Stamina inferne coherentia, connectivo perlongo curvato, crure inferiore abbreviato sterili, asymmetricè ± dilatato.

**NE:** Minjan, Nau, 2700 m, field border, 30.VI.1948 (EDELBERG 1437, Typus, hb. W., C.). Daulatshah, 7000 ft., in stream bed, plant strongly scented, 31.V.1937 (Kz. 11633, hb. W., BPI.). — **E:** above Gardez, 8000 ft., field borders, in clumps. 2½ ft. high, blue-purple hood, lip white, edged broadly yellow, 20.VI.1937 (Kz. 11971, hb. W., BPI.). Tera Kotal, 8000 ft., in clumps, plant 4 ft. high, 15.VI.1937 (Kz. 11888, hb. W., BPI.).

Bei der letztgenannten Pflanze ist die Behaarung sehr kurz und spärlich und die Brakteen sind ungewöhnlich groß.

***Salvia polyclada*** Rech. fil., n. sp. — Fig. 42 und 43 e.

Sect. *Aethiopsis* Benth. subsect. *Gongrosphace* (Bge.) Boiss. — Partes subterraneae desunt. Caulis ca. 90 cm altus (e collectore), ut videtur a basi fere iteratim copiose paniculato-ramosus, internodiis mediis 6—10 cm longis, tota longitudine foliatus, herbaceus quadrangulus, omnino dense breviter appresse tomentosus, imprimis in regione florifera pilis glanduliferis brevibus copiose, longioribus eglandulosis sparse immixtis. Folia caulina inferiora breviter (1.5—3 cm) petiolata, superiora sessilia ad 15 cm longa, ad 8 cm lata, prope basin vel in tertia parte inferiore latissima, oblongo-ovata usque late ovato-triangularia, apice obtusiuscula vel ± acuta, margine ± acute sinuato-lobata et insuper ± indistincte crenato-dentata, concoloria utrinque indumento brevi aequali canescenti-flavescenti viridia, glandulis sessilibus ± sparse immixtis, nervatura pennata et copiose tenuiter reticulata subtus tenuiter prominens, supra tenuiter rugoso-immersa. Folia superiora et ramealia similia sensim decrescunt. Bractee albido-membranaceae rotundato-cordatae integerrimae, breviter molliter mucronato-acuminatae, dimidios calyces circiter aequantes, ± virescenti-vel purpurascens-suffusae et -nervosae. Verticillastra inferiora ± remota, media et superiora ± approximata. Pedicelli 1(—2) mm longi, erecti usque patuli vel ± nutantes. Calyx 8—10 mm longus, late campanulatus, breviter bilabiatus, labiis valde divergentibus, rigidule herbaceo-membranaceus, superne ± purpurascens-suffusus, nervis tenuiter sed distincte prominentibus, pilis longioribus eglandulosis et brevioribus glanduliferis et glandulis sessilibus obsitus; labium inferius in dentes 2 ovato-lanceolatos ± abrupte breviter acuminatos fissum; labium superius in dentes 3 brevissime acuminatos conniventes intermedio valde reducto fissum. Corolla calyce circiter duplo longior, breviter hispidula et glanduloso-punctata; tubus in

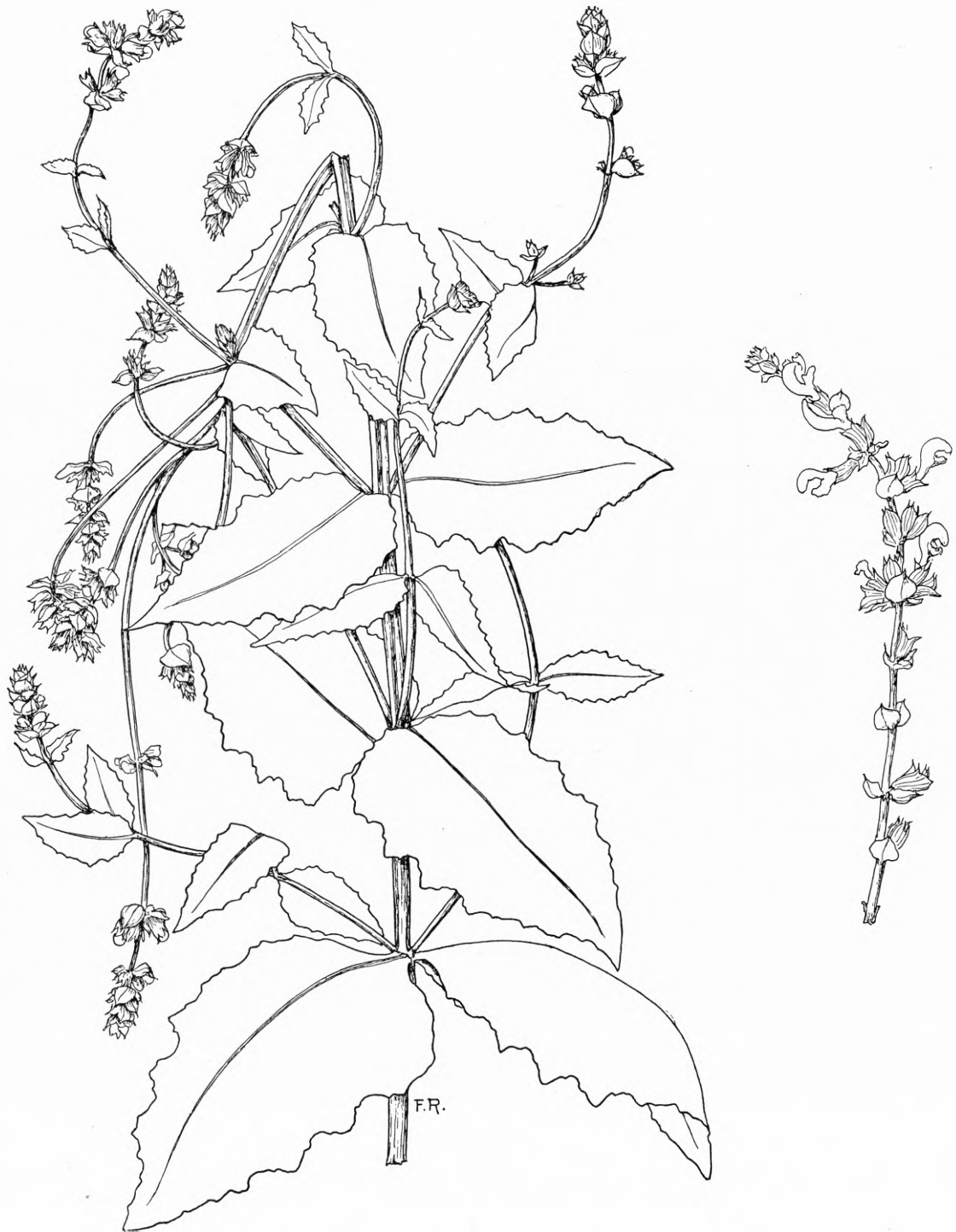


Fig. 42. *Salvia polyelada* (Kz. 12160 und Kz. 13507a, Typus)  $\frac{3}{5}$ .



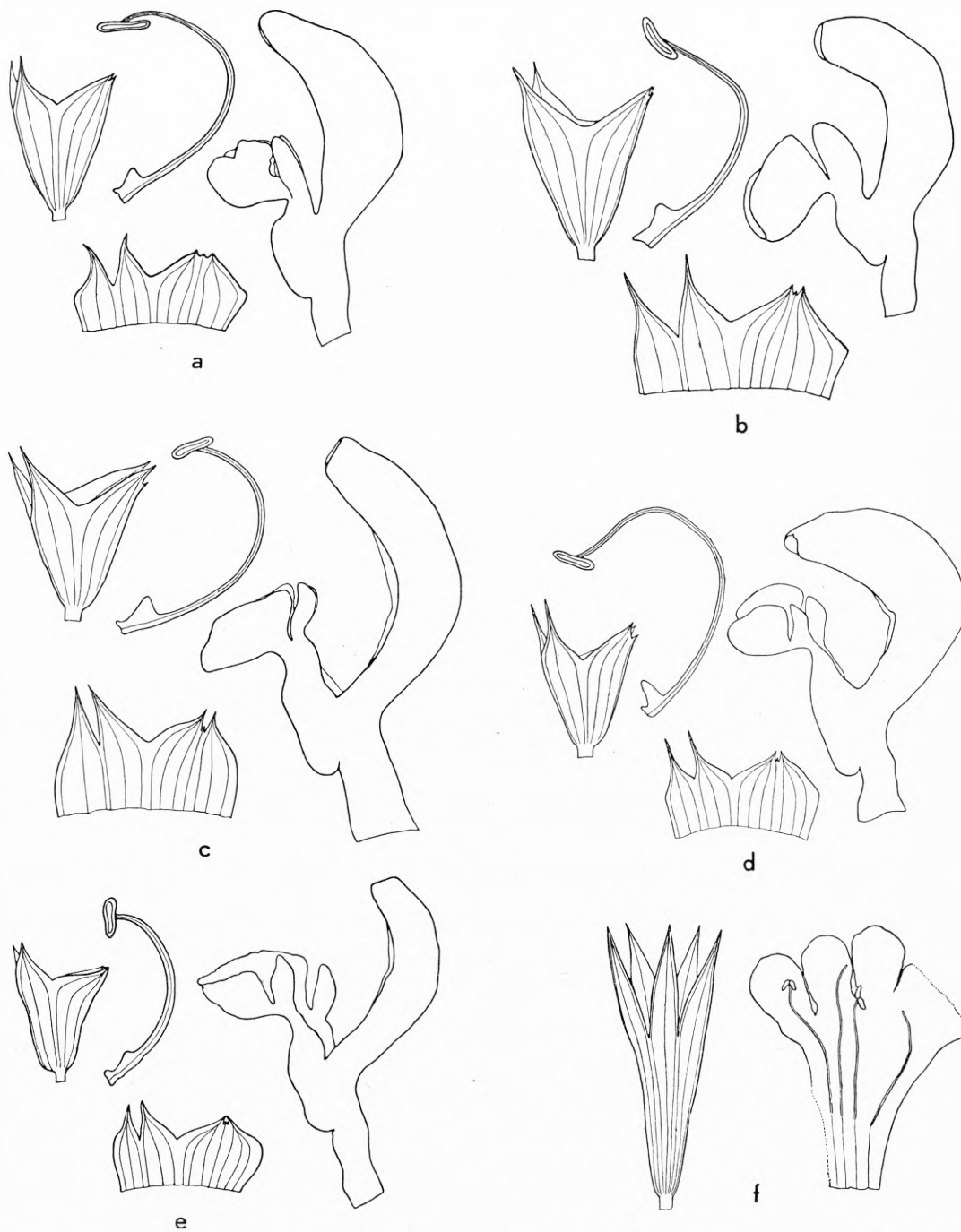


Fig. 43. a. *Salvia Edelbergii* (E. 1300). b—d. *S. polychroma* (b E. 1437, Typus, c Kz. 11888, d Kz. 11971). e *S. polyclada* (Kz. 13507a). f. *Micromeria subulifolia* (Kz. 13857).

calyce fere complete inclusus, superne abrupte inflato-dilatatus; labium superius in vivo coerulescenti-purpureum (e collectore), in sicco expallens brunescens, falcatum, 7—8 mm longum, 2—2.5 mm altum; labium inferius in vivo flavum, basi intensius maculatum (e collectore), basi attenuata concavum, lobis lateralibus lanceolatis incisionibus angustis profundis a mediano separatis, mediano rotundato-dilatato. Stamina inferne coherentia, connectivo perlongo curvato, crure inferiore valde abbreviato, omnino sterili paulum unilateraliter subsinuato-dilatato.

**C:** Shibar Pass, 8000 ft., plant 3 ft. high, hood blue-purple, lip yellow, dotted darker in the throat, 22.VIII.1939 (KOELZ 13507 a, Typus, hb. W., BPI.). Same place, 10000 ft., dry slope, clumps. 3 fr. high, 30.VI.1937 (Kz. 12160, hb. W., BPI.). Lorinj, dry slope, 8000 ft., plant 3 ft. high, 26.V.1939 (Kz. 13651, hb. W., BPI.). Unaipass (N. 51/502).

*S. rhytidea* Benth. — **C:** Farakulum, 2800 m, common (K. 3390). — **E:** Paghman (N. 50/697).

Zu dieser Art gehört auch GRIFFITH 3989 in hb. W., die weder von BENTHAM noch von BOISSIER zitiert wird. Die Art gehört nach dem Blütenbau unbedingt zur Sektion *Gongrosphace* und ist wohl zunächst mit *S. sahendica* Boiss. & Buhse verwandt, wie bereits BENTHAM vermutet.

*S. santolinaefolia* Boiss. — **SE:** Pirzada, 900 m (K. 2033). — **Baluchistan:** Quetta, 1600 m (K. 3377).

*S. Sclarea* L. — **NE:** Khash Distr., 8000 ft., field border (Kz. 12917). Faizabad, 1100—1200 m (E. 1608). — **E:** Kabul (HONIGBERGER, hb. W.). Paghman, 2100 m (K. 2305). Paghman (N. 50/696).

*S. spinosa* L. — **NW:** Herat-Sauzak, 1200 m (K. 3912).

*Perowskia abrotanoides* Karel. — **N:** Rabatak, Passhöhe zwischen Taschkurgan und Pol-e-Khomri (N. 50/229). — **C:** Binimang, 8000 ft., dry plain (Kz. 13883). — **Baluchistan:** Quetta, 1800 m (K. 3375).

*P. atriplicifolia* Benth. — **E:** Kabul, 1800 m (K. 2328). Paghman, 7500 ft., on dry slope (Kz. 12084). Paghman (N. 50/693). Paghman (N. 50/694). Jagdalek, 8000 ft., dry ground, bushy, 3 ft. high, fl. purple, plant scented (Kz. 13198).

Die Pflanze unter KOELZ' 13198 hat schmalere, weniger gelappte Blätter.

*Ziziphora afghanica* Rech. fil., Phyt. 3:169 (1951). — Fig. 44. — **C:** Hauz-i-Mahiha, 2500 m (K. 2342). — **NE:** Faizabad, ca. 1900 m (E. 1362). Urura Pass, ca. 3000 m in der Umgebung der Alm ober Kuschtos (N. 51/625). — **Nuristan:** Jshauda Kotal, (E. 2024). — **E:** Paghman, 2100 m (K. 2320). Paghman (CHAWORTH-MUSTERS, hb. BM). Paghmantal (N. 50/704). Sirotai (Kz. 11955). Mamakhel (Kz. 11527, Typus).

Basi crasse lignescens. Rami floriferi crassi validi humiles ascendentes, fasciculati vel ramosi, infra inflorescentiam saepe dense breviter villosi. Folia elliptico-usque late lanceolata, latitudine 3—4-plo longiora, infra medium latissima, consistentia crasse membranacea, folia superiora increscentia, basi ciliata, plerumque omnino glabra, omnia nervis subtus valde prominentibus provisa. Capitula foliis



Fig. 44. *Ziziphora afghanica* (Kz. 11527).  $\frac{5}{6}$ .

summis involucrata. Flores, longe pedicellati. Calyx 6 mm longus. Indumentum calycis longiuscule sed laxe hispidulum papillis immixtis.

Die Art ist ziemlich variabel; das charakteristische Stengelindument ist nicht an allen Exemplaren gleich deutlich ausgeprägt. EDELBERG 1310 hat ungewöhnlich schmale Blätter, die bis fünfmal so lang wie breit sind; auch EDELBERG 1362 ist nicht typisch.

*Z. pseudodasyantha* Rech. fil., *Phyton* l. c. 167. — C: Farakulum, 3100 m (K. 3386). Hauz-i-Mahiha, 2500 m (K. 2344). Lorinj Pass (Kz. 13738). Band-e-Amir, unterster See (N. 51/467). Band-e-Amir, obere und mittlere See (N. 51/452). Band-e-Amir, an trockenen, sandigen Stellen am Bach (N. 51/483). — E: Kabul (HONIGBERGER, hb. W.)

Differt a *Z. dasyantha* M. B. s. str. (Kaukasus) basi valde lignosa habitu non repente ramis floriferis in parte superiore non patule pilosis, calycibus brevioribus ad summum 5 mm longis brevius pilosis, foliis consistentia crassioribus.

*Z. tenuior* L. — NW: Kishlik, 700 m (K. 4054). — SW: Jija, 1200 m (K. 3571). — NE: Kail, 8000 ft., dry slope (Kz. 11675). — Nuristan: Kantivo, 2300 m (E. 733). Gusalak, 1000 m (E. 1499, 1500). — E: Kabul (N. 50/722, 723, 724). Kabul (N. 51/40). Kabul (LINDBERG). Tscharikar (N. 50/721). Begram near Charikar, 5000 ft.

(CODRINGTON 3). Paghman, 17 miles west of Kabul, 7000—9000 ft. (CHAWORTH-MUSTERS). Gulbahar, 5000 ft., dry slope (Kz. 11439). — 'Afghanistan' (GRIFFITH 3998, hb. W.). — Baluchistan: Quetta, 1600 m (K. 3382).

*Calamintha repens* (Don.) Benth. — E: Paghmantal (N. 50/701).

*C. umbrosa* (M. B.) Benth. — 'Afghanistan' (GRIFFITH 3980, hb. W.).

*C. vulgaris* (L.) Druce — Nuristan: Nishei, 1600 m (E. 786).

***Micromeria subulifolia*** Rech. fil., n. sp. —

Fig. 45 und 43 f.



Fig. 45. *Micromeria subulifolia*  
(Kz. 13857).  $\frac{1}{1}$ .

Suffrutex pumilus caespitosus, caudicibus abbreviatis foliis anni praecedentis persistentibus imbricatis obsitus, surculis sterilibus hornotinis abbreviatis. Caules floriferi 3—7 cm alti, stricti, tenues, internodiis numerosis infimis valde abbreviatis superioribus sensim paulo elongatis ad 4—10 mm longis, simplices, a medio vel a tertia vel quarta parte superiore in spicatum abeuntes. Folia omnia anguste lanceolato-subulata crassa rigida saepius  $\pm$  complicata, dorso nervis crasse prominentibus 3(—5) percursa, infima imbricata, rigide erecto-patentia, flavescensiviridia, ut caules minutissime papillosa, interdum  $\pm$  glabrescentia; infima ca. 2 mm, superiora increscentia 3—4(—5) mm longa, in folia flores fulcrantia abbreviata proportione latiora abruptius acuminata sensim transientia. Cymae omnes ad ramulos unifloros reductae; ramuli floriferi inferiores 3—7 mm longi, superiores valde abbreviati. Flores singuli, bracteolis minutis singulis foliis similibus suffulti. Calyx post florendum  $\pm$  7 mm longus, anguste tubulosus, tenuiter elevate 15-nerviis, membranaceus, ore rectus, ad tertiam circiter partem in dentes lanceolatos subulatos aequales por-

rectos vel leviter patentis fissus, minute glanduloso-puberulus. Corolla ("probabiliter coeruleo-purpurea" e collectore) fragmentarie tantum obvia (vide iconem). Filamenta omnia inclusa, dua posteriora longiora, thecis valde divaricatis. — Species valde peculiaris, cum nulla alia comparanda; foliis rigidis anguste lanceolato-subulatis, caulibus floriferis pumilis strictis, cymis unifloris, calycibus 15-nerviis longissime tubulosis probabiliter sectionem propriam nisi genus proprium sistit.

C: Baligali Pass, 9000 ft., dry cliff-face, clumps, flowers prob. blue-purple, 30.VIII.1939 (KOELZ 13857, hb. BPI., W. fragm.).



Fig. 46. *Origanum glaucum* (E. 1198).  $\frac{1}{2}$ .

*Origanum glaucum* Rech. fil. & Edelberg, n. sp. — Fig. 46 und 47.

Sect. *Eu-Origanum* Benth. — Suffrutescens multicaule. Caules 20—30 cm alti, internodiis mediis  $\pm$  3 cm longis, tenues, purpureo-violascentes, pilis brevissimis curvatis sparse puberuli glabrescentes, praeter inflorescentiam non ramosi. Folia caulina inferiora longiuscule (ad 5 mm) tenuiter petiolata; lamina ovata, ad 18 mm longa, ad 12 mm lata, basi late cuneata usque fere rotundata, in tertia parte inferiore latissima, apice obtusiuscula vel subacuta, omnino integerrima, minutissime scabridula praeterea glabra, utrinque glauca subtus pallidiora ibique sparse impresse glanduloso-punctata, consistentia in sicco tenuiter membranacea; nervi tenues arcuato-

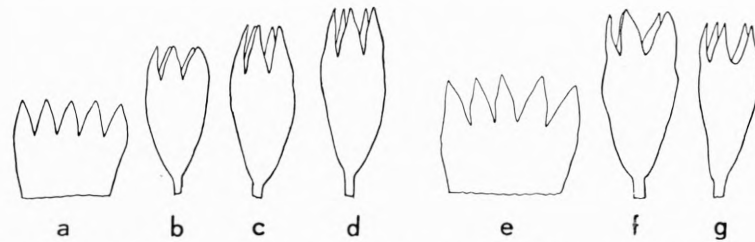


Fig. 47. a—d. *Origanum glaucum* (a—b E. 1198, c Kz. 12926, d E. 1393). e—g. *O. vulgare* (e—f Hallstadt, STAPP, g "Finland 333").

pennati vix anastomosantes. Folia superiora similia, sensim minora, brevius petiolata. Inflorescentia e spicastris brevibus tenuibus paucifloris densiuscule subcorymboso-dispositis composita. Bracteae 3(—4) mm longae obovato-lanceolatae breviter acuminatae pallide virides, glandulis flavis sessilibus obsitae, glabrae, obsolete nervosae. Calyx  $\pm$  2.2 mm longus, anguste infundibuliformis, fere ad quartam partem in dentes 5 acutos triangulares aequales divisus, tenuiter nervatus, extus glaber sparse glanduloso-punctatus pallide viridis, intus ore albo-villosus. Corolla calyce vix duplo longior, in vivo certe alba, in sicco flavescenti-brunescens. — Species nova in affinitatem remotiorem *O. vulgari* L. spectans, ab eo caulibus gracilibus, foliis minutis glaucis glabris, bracteis et calycibus pallidis glabris minutis, dentibus calycinis proportionem paulo brevioribus, floribus minutis diversa.

**Nuristan:** Chetras, 2000 m, 29.VII.1948 (EDELBERG 1198, Typus, hb. W., C.). Darimtal ab Ort Darim aufwärts, ca. 1900—2400 m (N. 51/988). — **NE:** Faizabad (N. 51/1961).

*Origanum glaucum* Rech. fil. & Edelberg var. nova ***laxius*** Rech. fil. & Edelberg.

Differt a type caule jam infra medium ramoso et florifero, inflorescentia ampla laxa, spicastris non corymboso dispositis. — **NE:** near Faizabad, ca. 1900 m (EDELBERG 1393, Typus, hb. W., C.). Khash District, 8000 ft., dry ground, flowers rose, mint-scented (Kz. 12926, hb. W., BPI.).

*O. laxiflorum* Royle (e descr.) — **Nuristan:** Zwischen Ningalam, 1300 m bis Darim Ort, ca. 1900 m (N. 51/948).



Fig. 48. *Thymus afghanicus*  
(Kz. 12981).  $\frac{1}{4}$ .



Fig. 49. *Thymus coriifolius* var. *Edelbergii*  
(E. 1026).  $\frac{1}{4}$ .

***Thymus*<sup>1</sup> *afghanicus* Ronniger, n. sp. — Fig. 48.**

Basi valde lignescens, ramosus. Rami floriferi 6—7 cm longi, quadranguli, circumcirca pilis brevibus (0.1 mm) rigide patentibus obsiti. Surculi steriles procumbentes evoluti. Folia glabra, basi non ciliata, petiolata, obovata, antice rotundata, sursum increscentia, media 10—13 mm longa, 3—5 mm lata, infima minuta anguste elliptica (7 × 2 mm) a superioribus valde diversa, nervi laterales etiam supra medium folii abeuntes, omnes valde prominentes. Inflorescentia capitata. Pedicelli pilis brevibus rigide patentibus obsiti. Calyx 5 mm longus, ventre pilosus, dentes superiores subglabri, minute triangulares, 0.4 mm longi. Corolla calyce 3 mm longior, roseo-purpurea, extus glabra. Folia utrinque, calyx et corolla omnino

<sup>1</sup> Gattung *Thymus* bestimmt von † K. RONNIGER, Wien.

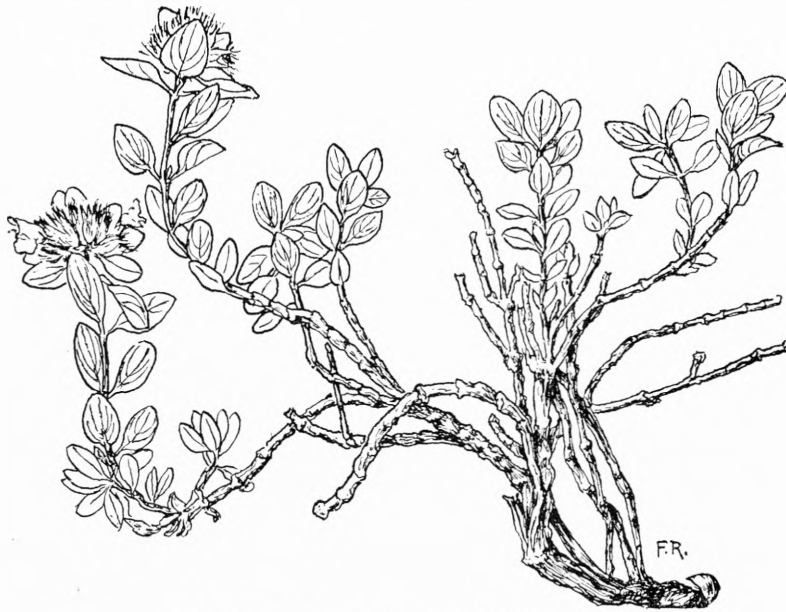


Fig. 50. *Thymus Koeieanus* (K. 2205).  $\frac{1}{1}$ .

glandulis minutis nitentibus dense punctata. — *Th. afghanicus* *Th. collino* M. B. affinis videtur, ab eo surculis sterilibus procumbentibus evolutis, foliis incre-scentibus ciliis basalibus deficientibus, calycibus magnis diversus.

**NE:** Khash District, 10000 ft., 9.VIII.1937 (KOELZ 12981, hb. W., BPL.).

*Thymus coriifolius* Ronniger, Fedde Rep. 31:147 (1932). — Fig. 49. — **Nuristan:** Parun-Minjan Pass, ca. 3500 m (E. 1280). Pashki, 2300 m (E. 912 a). Nishei, 2500 m (E. 773). Elason, 3000 m (E. 1673). Weran, ca. 3800 m (E. 1251). — **E:** Sirotai, 3000 m (Kz. 11945, planta partim anomala, inflorescentia elongata, foliorum fasciculis terminata).

*Th. coriifolius* Ronniger var. nov. **Edelbergii** Ronn.

Ciliae dentium calycinorum superiorum eas inferiorum aequantes, 0.56 mm longae, tubus calycis circumcirca pilis similibus obsitus (in planta typica dentes calycini superiores papillis brevissimis 0.09 mm longis obsiti).

**Nuristan:** Shtive, 2550 m, 15.VI.1948 (EDELBERG 1026, hb. W., C.).

***Thymus Koeieanus*** Ronniger, n. sp. — Fig. 50.

Basi valde lignescens copiose ramosus, surculis sterilibus procumbentibus nullis. Rami floriferi ca. 7 cm longi, subglabri, pilis brevissimis retrorsis sparsissime obsiti. Folia sursum valde incre-scentia, partim surculos axillares breves emittentia; folia omnia glabra, petiolata, ciliis basalibus nullis, infima minuta (5 × 2 mm), in parte inferiore caulis approximata, mediana 10–12 mm longa, plerumque 5 mm lata, oblongo-ovata, in tertia parte inferiore latissima, nervis lateralibus infra medium abeuntibus paulum prominentibus. Inflorescentia capitata. Calyx magnus, 7 mm



longus; dentes superiores triangulares ciliati, inferiores quam superiores longiores; tubus ventro pilosus. Corolla rubra calyce 5 mm longior, extus puberula. Folia utrinque, calyx et corolla omnino copiose minute glanduloso-punctata. — *Th. Koeianus* *Th. Kotschyano* Boiss. et Hoh. affinis, ab eo caulibus subglabris, foliis increscentibus, basi non ciliatis, corollis rubris diversus.

NW: Sauzak, NW. of Herat, 2500 m, 10.VI.1948 (KÖIE 2205, hb. W., C.).

*Thymus pseudalbanus* Ronniger, n. sp.

Humilis, longe repens (innovatione *Eurepentium* Velen). Rami floriferi seriatim dispositi, 2—2.5 cm alti, internodium summum holotrichum, cetera goniotricha, pilis retrorsis obsita. Folia sursum valde increscentia, omnia glabra, in tertia vel quarta parte inferiore ciliata, elliptica usque anguste elliptica, basi cuneata, petiolo non distincto, in tertia parte superiore latissima, non glanduloso-punctata; nervi laterales utrinque tres, omnes subtus valde prominentes. Folia infima 4 mm longa, 4 mm lata, in tertia parte inferiore latissima. Folia surculorum sterilium 10 mm longa, 4 mm lata, late elliptico-cuneata, fasciculos foliorum angustiorum axillares proferentia, glandulis stipitatis nullis. Calyx 4 mm longus, ventro pilosus, dorso glaber; dentes calycini superiores breviter triangulares, 0.65 mm longi, ciliis nullis. Corolla lilacina (e collectore), gynodynamica, 5 mm longa, glabra.

Nuristan: Ururapass, in der Umgebung der Alm oberhalb Kuschtos, ca. 3000 m, 6.VIII.51 (NEUBAUER 642, hb. W.).

*Thymus pseudoalbanus* var. *angustifrons* Ronniger, var. nov.

Folia tantum 1—2 mm lata.

Nuristan: Ururapass, beiderseits oberhalb der Waldgrenze, ca. 3900 m, 9.VIII.51 (NEUBAUER 590, hb. W.).

*T. pseudalbanus* ist habituell dem *T. albanus* H. Braun in LUERSEN, Bibliotheca Botanica, Heft 26: 86 (1892) sehr ähnlich; die unterscheidenden Merkmale sind folgende:

	<i>T. albanus</i>	<i>T. pseudalbanus</i>
Blühende Aeste:	durchaus goniotrich,	oberstes Internodium holotrich, sonst goniotrich;
Blätter:	wenig inkreszierend, bis $\frac{1}{2}$ oder $\frac{2}{3}$ bewimpert,	stark inkreszierend; bis $\frac{1}{3}$ bewimpert;
Seitennerven:	jederseits 2,	jederseits 3;
obere Kelchzähne:	lang und schmal, gewimpert,	kurz, dreieckig, ungewimpert;

*Zataria multiflora* Boiss. — Baluchistan: Quetta, ca. 1700 m (K. 3387).

*Lycopus europaeus* L. — N: Khanabad, 2000 ft., along stream (Kz. 12207). — C: Doab, 1400 m (K. 2879). Kamard, 6000 ft., along stream, 2 ft. high (Kz. 13615). — NE: Takia, 4500 ft., damp ground, 3 ft. high, fl. white (Kz. 13095). — E: Kabul, an einem Bewässerungsgraben (N. 50/46).

*Mentha*<sup>1</sup> *longifolia* (L.) Huds. s.l. — NE: Hazratsaid, 8000 ft., stream edge (Kz. 12863). Minjan, 2300 m (E. 1442). — Nuristan: Im Tal und um den Ort Kurder (N.

<sup>1</sup> Gattung *Mentha* bestimmt von F. PETRAK, Wien.

51/773). Gusalak (N. 51/828). — **E**: Kabul, Guzar Gah, an Bewässerungsgräben (N. 50/45). Jalalabad (N. 51/850). — **SE**: Kandahar, Pirzada, 900 m (K. 2079).

*M. longifolia* (L.) Huds. var. *Royleana* Benth. — **C**: Kala Sarkari, 5000 ft., stream bank (Kz. 13900). Hauz-i-Mahiha (K. 3378).

*M. longifolia* (L.) Huds. var. *stenostachya* Boiss. — **NW**: Safedsang, 10000 ft., along stream (Kz. 13991). — **NE**: Ruka, 1800 m (K. 3379). — **C**: Doao, 5000 ft., along stream (Kz. 13513). — **E**: Paghman, 7500 ft., meadow (Kz. 12062). — **SE**: Pirzada, 900 m (K. 3380).

*Mentha viridis* L. — **E**: Kabul, kultiviert (N. 50/44).

*Plectranthus rugosus* Wall. — **Nuristan**: Vama, 1400 m (E. 1219). Derin (E. 1777). Kamdesh (E. 1154). Zwischen Ningalam (1300 m) bis Darim Ort (ca. 1900 m) (N. 51/970). Aschpi pass (N. 51/1045). Im Tal und um das Ort Kurder, 1600—1700 m (N. 51/771). — **E**: Chandau, 8000 ft., dry slope, fl. lavender (Kz. 11770).

*Ocimum basilicum* L. — **NE**: Jurm, 7000 ft. (Kz. 12912).

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