

TAXONOMIC REVIEW OF TURKISH SPECIES OF HERACLEUM

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The present paper is based on collections of *Heracleum* made in Turkey by Dr. P. H. Davis as well as on collections kept in the Herbarium of the V. L. Komarov Botanical Institute of the Academy of Sciences of USSR (Leningrad) and in the Herbaria of the Botanical Institute of the Academy of Sciences of the Georgian SSR and the Museum of Georgia (both in Tbilisi).

As a result of this revision, I have been able to enlarge considerably the number of species of *Heraclea* known to grow in Turkey. Three new species of *Heracleum* are described and the following species have been added to the Turkish flora: *H. ternatum* Vel., *H. trachyloma* Fisch. & Mey., *H. persicum* Desf., *H. transcaucasicum* Manden. and *H. lasiopetalum* Boiss. A new monotypic section (Sect. *Lasiopetala*) is described and a complementary description of Sect. *Pseudotragium* Boiss. is given.

In the citation of sections and species I have followed the system adopted in my monograph of the Caucasian species of *Heracleum* (I. P. Mandenova, *Kavkazskie vidi roda Heracleum*, 103 pp. Monographs, Ser. A: Systematics and Plant Geography. Tbilisi, 1950). All cited material has been examined unless otherwise indicated.

In conclusion I should like to thank Dr. P. H. Davis for editing the manuscript, and Miss Rosemary Smith for illustrating the fruits of the new species.

CLAVIS ANALYTICA

1. Vittae anguste-filiformes per totam longitudinem septatae 2
- Vittae claviformes, angustae vel latae, haud septatae 4
2. Folia simplicia cordato-suborbiculata palmatim subquinciloba. folia caulina subtriloba, lobis rotundatis. Petala alba dorso dense tomentosa, exteriora non radiantia. Fructus 16 mm. × 10 mm., obovato-retusi, aculeolato-papilloso 20. *H. lasiopetalum* Boiss.
- Folia pinnata 3
3. Umbella 2–3–radiata. Petala alba vel rosea, exteriora non radiantia. Fructus 6–7 mm. × 4–5 mm., obovato-subretusi, vittis angustefiliformibus interdum vix conspicuis. Planta humilis 10–15 cm. longa 21. *H. pastinaca* Fenzl
- Umbella 7–15 (20)–radiata. Petala alba, exteriora valde radiantia profunde bilobata. Fructus elliptici, 5–7 mm. × 4–6 mm., vittis filiformibus manifeste conspicuis. Planta elatior 10–30 cm. longa 19. *H. apiifolium* Boiss.
4. Vittae dorsales basin versus plus minus abrupte et valde saccato-dilatatae, vittae commissurales late-clavatae 5
- Vittae dorsales basin versus sensim clavato-dilatatae, vittae commissurales late-clavatae, interdum nullae 9

5. Folia trisecta, supra scabridula, subtus arachnoideo-cana, segmentis subpetiolatis, amplis, ovatis, lobis ovatis obtuse denticulatis. Fructus suborbiculati, retusi, 10–11 mm. $\times$ 8–9 mm., setis minimis sparsim obsiti 5. *H. spathyphyllum* C. Koch ex Boiss.
- Folia pinnatisecta, glabra vel pubescentia, subtus non arachnoideo-cana 6
6. Fructus 12 mm. $\times$ 4 mm., elongato-elliptici, utrinque perspicue attenuati, alis angustissimis ad 1/3 mm. latis. Folia bi-trijuga, segmentis lateralibus inferioribus petiolatis plus minus profunde tripartitis, folia supra glabriuscula (ad nervos sparsim puberula), subtus tenuissime puberula ad nervos et margines minute aspera 4. *H. paphlagonicum* Czecczott
- Fructus obovati, ovati vel elliptici, alis aliquantum latioribus 7
7. Folia viridia utrinque sub lente puberula, subtrijuga, segmentis inferioribus petiolatis, iterum pinnatisectis ceteris pinnatipartitis, laciniis oblongo-lanceolatis obtusiusculis obtuse crenatis. Fructus valde retusi, setulis brevissimis adpressis obsiti 6. *H. crenatifolium* Boiss.
- Folia minus profunde secta, laciniis acuminatis dentatis 8
8. Folia supra glabra, subtus breviter pubescentia. Fructus obovato-oblongi, basi valde cuneato-attenuati, 13–15 mm. $\times$ 6–7 mm. 8. *H. persicum* Desf.
- Folia subtus minute et dense pubescentia. Fructus ovati vel elliptici, 7–11 mm. $\times$ 5–7 mm. 7. *H. trachyloma* Fisch. et Mey.
9. Vittae dorsales anguste-clavatae 10
- Vittae dorsales late-clavatae 12
10. Folia ternata vel pinnata bijuga, caulina inferiora interdum simplicia. Petala flavovirescentia, exteriora vix radianta. Fructus 7 mm. $\times$ 5–6 mm., vittis commissuralibus dorsalibus latioribus 3. *H. ternatum* Vel.
- Folia simplicia plus minus profunde lobata. Petala alba, exteriora radianta 11
11. Folia utrinque cinereo-pubescentia, subtus fere tomentosa, inferiora ambitu late-ovata sublobata, folia caulina superiora trilobata. Fructus 8–9 mm. $\times$ 7–8 mm., suborbiculati, pilis aculeolatis minimis sat dense obsiti, vittis commissuralibus valde divergentibus 2. *H. arvinense* Manden.
- Folia supra laete viridia, sparsissime pubescentia, subtus cinereo-viridia, pilis minimis patentibus dense pubescentia, interdum folia utrinque glabra (var. *glabrescens* Boiss.), folia caulina inferiora ambitu suborbiculata profunde palmati-lobata, lobis oblongis. Fructus 8–9 (11) mm. $\times$ 6–7 (9) mm., subrotundi, nitidi, glabri, interdum pilis minimis papillosis punctiformibus sparse obsiti, vittis commissuralibus subdivergentibus fere parallelis 1. *H. cyclocarpum* C. Koch
12. Vittae commissurales bene evolutae 13
- Vittae commissurales nullae 16
13. Folia inferiora simplicia, ambitu subrotunda, pinnatiloba, lobis late-obovatis leviter pinnato-incisis, vaginis valde dilatatis folia supra viridia, subtus dense albo-tomentosa. Fructus 13–15 mm. $\times$ 10–13 mm., late obovati emarginati 9. *H. antasiaticum* Manden.*

- Folia inferiora ternata vel pinnata 14
- 14. Folia inferiora ternata, segmentis cordatis petiolatis late et obtusissime palmatilobis, supra glabrescentibus subtus dense albo-tomentosis. Fructus 12–13 mm. $\times$ 10–11 mm., late obovati retusi
10. *H. platytaenium* Boiss.
- Folia inferiora pinnata, jugis 2–3 15
- 15. Umbellae et umbellularum radii minute scabridi. Fructus ovato-orbiculati, 13 mm. $\times$ 10 mm., vittae commissurales dorsalibus manifeste angustiores; stylopodium anguste-conicum
11. *H. amanum* Boiss.
- Umbellae et umbellularum radii glabri. Fructus 7 mm. $\times$ 6 mm., late obovati, vittae commissurales dorsalibus subangustiores; stylopodium late conicum 12. *H. davisii* Manden.
- 16. Folia trisecta, segmentis majusculis ovato-orbiculatis cordatis late et breviter 3–5-lobatis, lateralibus binis subsessilibus, terminali dissito. Umbellae 10–12-radiatae 18. *H. argaeum* Boiss.
- Folia pinnati-vel bipinnati-secta 17
- 17. Umbellae 15–25-radiatae 18
- Umbellae 2–10-radiatae 19
- 18. Folia utrinque velutino-cinerea, bipinnatisecta, vaginis foliorum caulinarum subdilatatis. Umbellae 20–25-radiatae, radiis parum inaequalibus. Petala alba vix radiantia. Fructus elliptici 8 mm. $\times$ 5 mm. vittis 1/2 mericarpii sublongioribus 13. *H. incanum* Boiss. et Huet
- Folia haud velutino-cinerea, vaginis foliorum caulinarum valde dilatatis. Petala radiantia 14. *H. transcaasicum* Manden.
- 19. Planta glaberrima. Umbellae 8–9-radiatae. Fructus obovato-elongati, 8–9 mm. $\times$ 4–5 mm., vittis ad 3/4 mericarpii attingentibus
16. *H. anatolicum* Manden.
- Planta plus minus pubescens, vittis brevioribus mericarpii dimidium aequantibus 20
- 20. Petala exteriora manifeste radiantia. Fructus elliptici vel rotundati-elliptici. Umbellae 5–10-radiatae 15. *H. albovii* Manden.
- Petala exteriora vix radiantia. Fructus obovati, retusi. Umbellae 2–7-radiatae 17. *H. humile* Sibth. et Sm.

Sect. HERACLEUM

1. *H. cyclocarpum* C. Koch in Linnaea, 16, 361 (1842).
Syn.: *H. palmatifidum* Fisch. et Lallemand, Index sem. hort. Petrop. 9, 73 (1843).
Typus: In Carthalia, Imerethia boreali nec non in Ossia, C. Koch (B, destroyed?)
N.E. Anatolia. Prov. Rize, distr. Hemşin: Ortaköy-Çat, 2700 m., 2 Sept. 1952, Davis & Dodds (D. 21208). Prov. Çoruh (Artvin), Şavval Tepe above Murgul (igneous), 1700 m., 11 Aug. 1957, Davis & Hedge (D. 32257). Inter Tbeti et Chevi, 5 Aug. 1910, N. Popov.
var. *glabrescens* Boiss. Fl. Or. 2, 1041 (1872).
Typus: in sylvaticis Ponti Lazici prope Khabakhar, 1706 m., Balansa (G, n.v.).
Lazistan, July, Massalsky. Scharista, 8 Aug. 1917, Schischkin. Artvin, inter Salalet et Chinsart inferior, 6 Jun. 1911, Woronov.

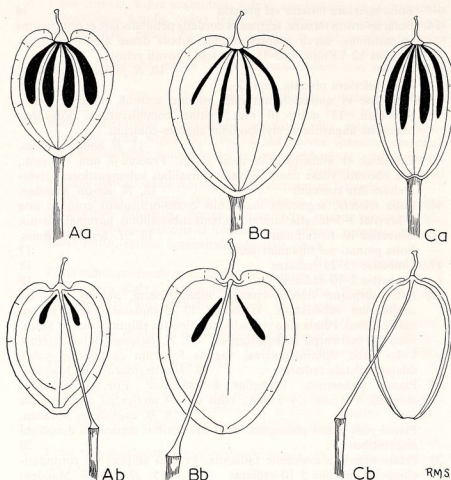


FIG. 1. Fruits of *Heracleum*. A, *H. davisii*. B, *H. artvinense*. C, *H. anatolicum*. a, dorsal view of fruit; b, commissural face of mericarp. All $\times 4$.

2. *Heracleum artvinense* Manden. sp. nov.

Affinis *H. cyclocarpo* sed foliorum forma, indumento, vittis commissuralibus valde divergentibus differt.

Caulis 30–50 cm. altus, rotundus, striato-sulcatus pilis brevibus dense tectus. *Folia* utrinque cinereo-pubescentia, subtus fere tomentosa, simplicia, lamina foliorum caulinorum inferiorum ambitu late ovata, 20 cm. longa, 15 cm. lata, sublobata, margine inaequaliter dentata, petiolus 5 cm. longus in vaginam dense tomentoso-pubescentem dilatatus, folia caulina superiora subtriloba. *Umbellae* multiradiatae, radiis valde inaequalibus 16–12 cm. longis, pilis patulis paleaceis pubescentibus, radiolis 10–15 mm. longis, minute asperulo-pubescentibus, foliola involucri lineari-lanceolata, foliola involucelli linearia pilis paleaceis patulis dense pubescentia. *Petala* alba. *Ovarium* dense adpresse pubescens. *Fructus* suborbiculati, 8–9 mm. longi, 7–8 mm. lati, pilis minutis aculeolatis sat dense obsiti, vittis dorsalibus anguste clavatis mericarpium $1/2$ aequantibus,

vittis commissuralibus valde divergentibus ad 1/2 mericarpii attingentibus; stylopodium conicum, stylis divergentibus stylopodio aequalibus.

Typus: Turkey. Prov. Çoruh (Artvin): Şavval Tepe above Murgul 2800 m., rocky slope of gully, 12 Aug. 1957, *Davis & Hedge* (D. 32324). Holo. E.

3. *H. ternatum* Vel. in Sitzungsber. Boehm. Gess. Wiss. 2, 46 (1890).

Syn.: *H. flavescens* Boiss. in Ann. Sci. Nat. ser. 3, 1, 331 (1844) non Bess. (1822).

H. sibiricum L. subsp. *ternatum* (Vel.) Briq. in Candollea, 2, 25 (1924).

Ex Bulgaria descripta.

Ex agro Byzantino secus Bosphorum, Therapia (Europe), *J. Ball* in 1877. Ankara, in Hacikadun valley near Keciören, 9 July 1947, *Davis* 13182.

H. ternatum is vicarious with *H. sibiricum* and replaces it in the Balkan peninsula and Anatolia.

Sect. PUBESCENTIA Manden.

4. *H. paphlagonicum* Czeaczott in Acta Societatis Botanicorum Poloniae, 9, 38 (1932).

Typus: Paphlagonia, ad latera borealis montis Ilgaz-Dagh, 1750 m., Czeaczott 383 (WA, destroyed?).

Prov. Kastamonu: Ilgaz-Dağ at 1524 m. on N. side, 9 June 1954, *Davis* 21721.

5. *H. spathyphyllum* C. Koch ex Boiss., Fl. Or. 2, 1042 (1872).

Typus. In collibus Ponti Lazici prope Djimil, 1829 m. *Balansa*, sub. *H. villosa* (G, n.v.).

N. Anatolia. Paphlagonia (Prov. Kastamonu), Inebolu, 7 June 1954, *Davis* 21719. Prov. Giresun, Tamdere, Yavuzkemal nr. Karınca, 1500 m. 13 Aug. 1952, *Davis, Dodds, Çetik* (D. 20747). Prov. Trabzon: N. slope of Soğanlı dağ above Çaykara, 1500 m., 4 Aug. 1957, *Davis & Hedge* (D. 32088).

6. *H. crenatifolium* Boiss., Fl. Or. 2, 1045 (1872).

Typus: Hab. in Ponto ad margines sylvae ad Mačka supra Trapezuntum [Trabzon], *Bourgeau*, sub *H. persico* (G, n.v.).

7. *H. trachyloma* Fisch. et Mey., Index sem. hort. Petrop. 1, 29 (1835).

Typus: In glareosis ad Schikar prope Nakitschevantschai, *Szovits* 35 (LE).

Prov. Kars: Yağmurlu Dağ above Karaorgan, 2100 m., 23 Aug. 1957, *Davis & Hedge* (D. 32612).

8. *H. persicum* Desf., Cat. Hort. Par. ed. 3, 452 (1829).

Syn.: *H. glabrescens* Boiss. et Hoh. in Boiss., Diagn. ser. 1, (10), 41 (1849).

H. pubescens Boiss., Or. 2, 1044 (1872) p.p., non M.B. (1819).

?*H. pubescens* M.B. var. *laeve* Freyn & Sint. in Oest. Bot. Zeitschr. 42, 123 (1892).

Ex Irania descripta.

S.E. and S. Anatolia. Prov. Maraş, distr. Göksun: Binboğa dağ, in ravine on N.E. side of Işık dağ, 1900 m, 16 July 1952, *Davis, Dodds*,

Çetik (D. 20079). Prov. Muş: ad radices australes Bingoell montis ad Gumgum in districtu Warto lectae, 22 Aug 1859, *Kotschy* 383 (Boissier det. sub *H. pubescenti*). Prov. Bitlis: Reşadiye-Kotum, 2000 m, 6 Aug. 1954, *Davis & O. Polunin* (D. 22391). Prov. Hakkari: Cilo Dağ at Sua, 2134 m., 11 Aug. 1954, *Davis & O. Polunin* (D. 24260).

Sect. *VILLOSA* Manden.

9. *H. antasiaticum* Manden., Kavkazskie vidi roda *Heracleum*, 64 (1950). *Typus*. Prope urb. Tbilissi ad ripam dextram fl. Dabachanka, 6 Aug. 1942, *Mandenova* (TBL; photo. E.).

N.E. Anatolia. Prope p. Gurdjan, 10 Jun. 1914, *Turkewicz*; prope p. Gurdjan, 26 July 1911, *Woronov*; prope p. Merna, 17 July 1911, *Vvedensky* Ardanoucz, 22 Mai 1911, *Turkewicz*; prope p. Kuczen, 6 July 1911, *Vvedensky*. Prov. Kars: Yalnizçam Dağları above Yalnizçam, 2200 m, 19 Aug. 1957, *Davis et Hedge* (D. 32488); distr. Kagysman, fauce Demir-Kapu, 8 Jun. 1909, *Michailowsky*. Prov. Çoruh (Artvin): Yalnizçam Dağları between Ardanuç et Kütül 1700 m., 18 Aug. 1957, *Davis et Hedge* (D. 32474).

10. *H. platytaenium* Boiss. in Ann. Sci. Nat., ser. 3, 1, 331 (1844). *Syntypus*. Anatolia: In regione montana Lydiae, parce in vallibus montis Coracis ad occasum Smyrnae, *Boissier* (G), in Tmolò supra Philadelphiam, *Boissier* (G), *Sypilo*, *Aucher* 3605 (G)—non vidi.

Lydia: Mont Sipyle au dessus de Magnesie, 17 Jul. 1854, *Balansa* 39.

11. *H. amanum* Boiss. et Ky. in Boiss. Fl. Or. 2, 1045 (1872). *Typus*. Turcia: hab. ad confinia Abietum in monte Akmadagh (Amano) alt. 1524 m. 21 juni, *Kotschy* 46. (G. n.v.; iso. LE).

12. *Heracleum davisii* Manden., sp. nov.

Appropinquat ad *H. amanum* Boiss., sed fructibus minoribus, stylopodio late conico, radiis radiolisque glaberrimis differt.

Caulis 150 cm altus, rotundus, sulcatus, superne ramosus. *Folia* pinnata bi-trijuga, segmentis lateralibus inferioribus petiolatis, petioli 3 cm longi, ceteris sessilibus, omnibus ambitu ovatis haud profunde pinnatim sectis, segmento terminali trilobato, folia supra glabra solum ad nervos pilis minutis obsita, margine ciliata, subtus dense minute pubescentia. *Umbella* principalis multiradiata (25–30), radiis valde inaequalibus 4–9 cm. longis, radiolis ad 1 cm. longis cum radiis glaberrimis, foliola involucri deficientia, foliola involucelli minuta scariosa decidua. *Dentes* calycini vix conspicui, *Petala* alba. *Ovarium* dense adpresse pubescens. *Fructus* late-obovati, retusi, 7 mm longi, 6 mm lati, pilis minuti aculeolati sat dense obsiti, vittis dorsalibus late-clavatis 1/2 mericarpii vix longioribus, vittis commissuralibus subangustioribus ad 1/3–1/4 mericarpii attingentibus; stylopodium late conicum, styli reflexi stylopodio sublongiores.

Typus. Turkey. Prov. Bitlis: Reşadiye-Pelli, 2000 m, 6 July 1954, *Davis & O. Polunin* (D. 22382). Holo. E.

Sect. *WENDIA* (Hoffm.) Manden.

13. *H. incanum* Boiss. et Huet in Boiss., Diagn. ser. 2, (2), 93 (1854). *Typus*. Hab. in monte Tech Dagħ Armeniae Turcicae supra Erzerum, 2338–2743 m, *Huet du Pavillon* (G, n.v.).

Prov. Van: distr. Başkale, İspiriz Dağ, 2800 m, 31 July 1954, *Davis & O. Polunin* (D. 23749); distr. Hoşap, Kepir Dağ, 2700 m, 30 July 1954, *Davis & O. Polunin* (D. 23360a). Prov. Bitlis: Süphan Dağ above Adilcevaz, 3505 m, 26 Aug. 1954, *Davis & O. Polunin* (D. 24647).

14. *H. transcaucasicum* Manden., Kavkazskie vidi roda *Heracleum*, 74 (1950).

Typus. Prov. Tiflis: distr. Achalkalaki (Dzhavakhetia) prope p. Gorelovka, 1700 m, 31. VII, 1924, *A. Grossheim* (TBI).

Prov. Kars: Ardahan-Yalnızçam, 1900 m., 16 June 1957, *Davis & Hedge* (D. 29606); S.W. slope of Kisir dağ, 2300 m, 3 July 1957, *Davis & Hedge* (D. 30550).

15. *H. alбовii* Manden., Kavkazskie vidi roda *Heracleum*, 83 (1950).

Syn.: *H. incanum* Boiss. et Huet var. *lazicum* Boiss. Fl. Or. 2, 1048 (1872).

Typus. Georgia, Guria: Bachmaro, 7 Sept. 1920, *A. Grossheim* (TBI).

N.E. Anatolia. Région alpine supérieure du Lazistan au dessus de Khabakhar vers 3300 m. d'altitude, pente des rochers, 27 Aug. 1866, *Balansa* 1384. Prov. Rize, distr. İkizdere: Baltaş Tepe, 3200 m., 30 Aug. 1952, *Davis et Dodds* (D. 21110); distr. İkizdere, Cermanin Tepe above Cimil, 2900 m, 29 Aug. 1952, *Davis et Dodds* (D. 21054); Armenia turcica, Szandschak Gümüşchkhane, Karagoelldag, 25 July 1894, *Sintenis* 7270. Prov. Bayburt: Kara-Kaya Dağ N. of Bayburt, 3505 m. 24 July 1934, *E.K. Balls* 1828.

16. *H. anatolicum* Manden., sp. nov.

Affinis *H. alбовii* Manden., sed glabritate et vittis longioribus ad 3/4 mericarpii attingentibus bene differt.

Caulis 25 cm altus, rotundus, sulcatus, glaber e basi ramosus, rami interdum caule longiores ad 30 cm alti. *Folia* glabra pinnata 3-4 juga, folia caulina inferiora ad 25 cm longa, petiolis 4-5 cm longis, segmentis lateralibus inferioribus ternatis longe petiolatis, petiolis ad 4-5 cm longis, ceteris integris, sessilibus vel breviter petiolatis, omnibus ovatis 3 cm longis, 2 cm latis, crenato-dentatis. *Umbella* principalis 8-10-radiata, radiis valde inaequalibus 5-9 cm longis, radiolis ad 1 cm. longis, cum radiis glabris, foliola involucri deficientia, foliola involucelli minuta, ovata, rotundata, decidua. *Petala* alba, radiantia. *Dentes* calycini vix conspicui. *Fructus* oblongo-obovati, glabri, 8 mm longi, 5 mm lat., vittis dorsalibus late-clavatis ad 3/4 mericarpii attingentibus, vittis commissuralibus nullis; stylopodium late conicum, styli reflexi stylopodio 2-3 plo longiores.

Typus. Turkey. Prov. Giresun: Balabandağları (Kilinc Tepe) above Tamdere, 2700 m., rocky slopes, 7 Aug. 1952, *Davis, Dodds, Çetik* (D. 20556). Holo. E.

17. *H. humile* Sibth. et Sm., Fl. Gr. Prodromus, 1, 193 (1806).

Syn.: ?*H. massyciticum* Stapf et Wettst. ex Stapf, Beitrage der Flora von Lycien, Carien and Mesopotamien, 2, 27 (1886).

Typus: In monte Olympo Bithyno, *Sibthorp* (OXF, n.v.).

Bithynia (Prov. Bursa): Olympi excedis, Aug. 1842, *Boissier*; in Olympo,

25 July 1912, *B. Fedtschenko*, 112–113; *ibidem*, 152; Ulu dağ, 2300 m., 13 Sept. 1947, *Davis* 14821B; *ibidem*, 2400 m. *Davis* 14859. Pisidia: in m. Davros dagh, Aug. 1845, *Heldreich*; *ibidem*, May 1845; Dedegöl Dağ, 2300 m., 3 Aug. 1949, *Davis* 16031. Isaurian Taurus (Prov. Antalya): Geyik Dağ, W. side, 2286–2338 m., 31 Aug. 1947, *Davis* 14499; *ibidem*, E. side, *Davis* 14552; Prov. Mersin: Çamurla Yayla–Olucak, (Ermenek to Anamur), 2000 m., 18 Aug. 1949, *Davis* 16296. Lycian Taurus (Prov. Muğla/Antalya): Girdev Dağ, 4 Aug. 1947, *Davis* 13740. Lycaonia, in schistosis m. Anemas, Aug. 1845, *Heldreich*. Cilician Taurus (prov. Niğde): Bulgar Dağ, 2700 m., 2 Sept. 1949, *Davis* 16562; Bulgar Dağ (Prov. Adana), near Meydan yayla, 2 Sept. 1949, *Davis* 16549; Cilicia, Kizil Depe, Aug. 1895, *Siehe* 277. Anti-Taurus (Cataonia): prov. Maraş distr. Çardak: Berit dağ above Arpa Çukuru yayla, 2500 m., 26 July 1952, *Davis*, *Dodds*, *Çetik* (D. 14821B).—Chiefly in the Mediterranean region of Turkey.

18. *H. argaeum* Boiss. et Bal. in Boiss. Diagn., ser. 2, (6), 87 (1859). *Typus*. Anatolia: hab. in regione alpina montium Argaeus et Aslandach Cappadociae alt. 1829 m., *Balansa* (G, n.v.).

Sect. APIIFOLIA Manden.

19. *H. apiifolium* Boiss. in Ann. Sci. Nat., ser. 3, 1, 332 (1844).

Syn.: *H. intermedium* Ledeb., Fl. Ross. 2, 328 (1844–1846).

H. apiifolium Boiss. var. *dissectum* Freyn et Sint. in Oest. Bot. Zeitschr. 42, 123 (1892).

H. pachyrhizum Somm. et Lev. in Nuov. Giorn. Bot. Ital. (1895), 43 & 82.

Typus. Armenia circa Erzerum, *Aucher* 3699 (G, n.v.).

N.E. Anatolia. Prov. Giresun: Balabandağları (Kilinc Tepe) above Tamdere, 2500 m., 7 Aug. 1952, *Davis*, *Dodds*, *Çetik* (D. 20594). Prov. Trabzon: N. slope of Soğanlı dağ above Çaykara, 2000–2200 m., 4 Aug. 1957, *Davis* & *Hedge* (D. 32166); Zigana Dağ 2011 m., 12 July 1934, *E. K. Balls* 1686. Prov. Rize: Djimil (Lazistan), 30 July 1843, *C. Koch*; Djimil, 1866, *Balansa* 1379. Armenia turcica, Szandschak Gumuschkhane, Karagoellidagh, in alpe Schadachlar, 3 Aug. 1894, *Sintenis* 7272. Mt. Mereti, 24 July 1910, *N. Popov*; m. Kartschal, 30 July 1911, *Vvedensky*; Sary-schair, 20 July 1914, *Kikodze*; inter Tbeti et Chevi, 15. VII. 1910, *N. Popov*; supra p. Schloban, 16 Aug. 1911, *Woronov*. Prov. Çoruh (Artvin), Şavval Tepe above Murgul, 2100 m., 13 Aug. 1957, *Davis* & *Hedge* (D. 32366); *ibidem*, 2500 m., 12 Aug. 1957, *D. 32297*; *ibidem*, 2100 m., 12 Aug. 1957, *D. 32318*; distr. Artvin, m. Arsian, 6 Aug. 1911, *Sosnovsky*; ad fontes Murgul-su supra Tavisort, 5 Jun. 1902, *Alexeenko* & *Woronov*.

Sect. LASIOPETALA Manden., Sect. nova

Petala alba, tomentosa non radiantia. *Styli* pubescentes. *Vittae* per totam longitudinem septatae, dorsales, filiformes, commissurales sublatores. *Involucrum* nullum, foliola involuelli minuta, lanceolata.

Species unica (*Heracleum lasiopetalum* Boiss.) Iraniae occidentali et australi atque Turciae orientali propria.

20. **H. lasiopetalum** Boiss. in Ann. Sci. nat., ser. 3, 1, 332 (1844).

Typus. Persia, monte Zerdkou, *Aucher* 3603. (G, n.v.).

Prov. Hakari: Cilo Dağ, in gorge between Cilo yayla and Diz deresi, 2338 m., 11 Aug. 1954, *Davis & O. Polunin* (D. 24263).

Sect. PSEUDOTRAGIUM Boiss. emend. Manden.

Petala alba vel rosea, elliptica, non radiantia. *Vittae* dorsales commissuralesque per totam longitudinem septatae, anguste-filiformes, interdum vix conspicuae. *Foliola involucris* et involucelli nulla.

Species unica (*Heracleum pastinaca* Fenzl) Turciae australi propria.

21. **H. pastinaca** Fenzl in Russegg., Reise, 1, (2), 965 (1843).

Syn.: *Pastinaca fenzlii* Briq. nom. nov. in Candollea 2, 57 (1924).

Typus. In regione alpina Tauri Cilicici, *Kotschy* (W, n.v.).

S. Anatolia. In monte Tauro, aestate, *Kotschy* in 1836; Iter Cilicicum in Tauri alpes Bulgar Dag, in jugis argillosis montis Gisyl Deppe alt. 2338 m., Jul. 1853, *Kotschy* 126 & 219; Iter Cilicicum in Tauri alpes Bulgar Dag, ad nives deliquescentes prope Kar Goell, 2338 m., Jul. 1853, *Kotschy* 145; région alpine du Taurus, au-dessus de Bulgarmaden, 28 Aug. 1855, *Balansa* 577; Taurus Cataonicus (Prov. Maraş): Beritdag, *Hausknecht* in 1865.

ADDENDUM

Heracleum cuneatilobatum Hausskn. et Bornm. in Fedde Repert. Beih. 89, (2), 287 (1941).

Neither the description nor specimens of this species were available to the author. It was described in flower from Ak Dag near Amasya (*Bornmüller* 2879), and related to *H. argaeum* Boiss.