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Genus *Cionura* Grisebach — distribution, history, and application

INTRODUCTION

In 1844 A. Grisebach [17] described a new genus from the *Asclepiadaceae* family and named it *Cionura*. This name was formed by uniting two words of Greek origin: „*kion*” = pillar (post), and „*urá*” = tail. Some authors and collectors wrote it wrongly, *Cyonura*.

Among the genus *Cionura* Grisebach classed only one species, namely *C. erecta*. It was, however, no new species. It had been described much earlier under different names, the name *Marsdenia erecta* R. Br. being most often employed and in common use down to the present day. It was mentioned for the first time in 1809 by Robert Brown [6] in the list of species of the genus *Marsdenia*, newly created by him. This generic name was given in honour of William Marsden (1754—1836) who had spent many years in Sumatra and published a thorough description of the island (“History of Sumatra”). In this work Marsden mentions a number of plants, among others “Tarram Akkar”, of which an excellent indigo is made in Sumatra. Later Brown defined the plant as *Marsdenia tinctoria* [7].

Brown distinguished 8 species in the genus *Marsdenia* and divided them into two groups. Among the group termed “*Marsdeniae verae*”, marked by bluntly terminated stigma (*stigma mutica*) Brown reckoned 6 species, vi. *M. tinctoria* from Sumatra, *M. clausa* from Jamaica, and *M. velutina*, *M. viridiflora*, *M. suaveolens* and *M. cinerascens* from tropical Australia. In the other group with a rostrate stigma (*stigma rostrata*) we can find *M. rostrata* from Australia and *M. erecta* from the east region of the Mediterranean.

With years the number of species of the genus *Marsdenia* increased distinctly, and in 1912 C. K. Schneider, [34] estimated it at about 70, while A. Rehder [30], in 1927, at about 80. They are found mainly in subtropical regions of both hemispheres: in Africa, Asia, Australia, Central and South America. According to J. M. MacFarlane [26] the geographical distribution of the species is as follows: West Africa —

8 species, Central Africa — 3, East Africa — 4, Madagascar — 7, India and Ceylon — 15, South China — 2, Japan — 1, Assam-Indo-China — 8—10, Malayan Peninsula — 3—4, Souda Isles — 9, Philippines — 4, New Guinea — 17, northern Australia — 15, western Australia — 1, New Caledonia — 10, Brasil — 15, Guinea — 2—3, Paraguay — 5, Venezuela — 3, Peru — 3, Columbia — 3, Equador — 1, Jamaica and Cuba — 15, Central-America — 5, Mexico — 12. This list shows clearly that the greatest concentration of species is met in south-east Asia, north Australia and South America. The area of the genus *Marsdenia* (fig. 1) was drawn by R. Good in 1952 [16].

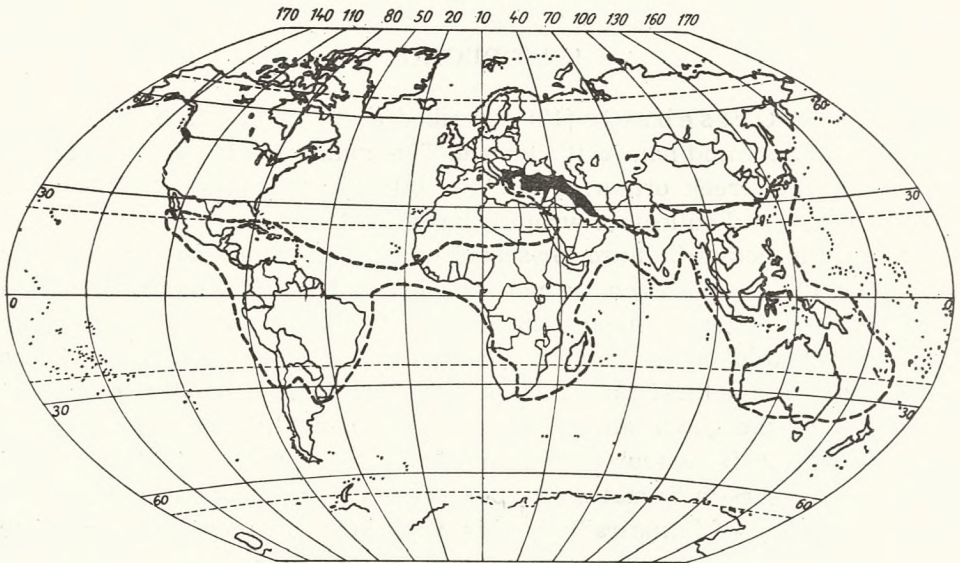


Fig. 1. Distribution of genus *Marsdenia* R. Br. (s. l.) acc. to R. Good (broken line) and genus *Cionura* Griseb. (dark area)

It is not surprising that, with such an immense area, *Marsdenia* is a heterogeneous genus, therefore, as A. A. Bullock suggests [7], it should be treated in narrower, than hitherto, taxonomic limits. So it is necessary to choose the lectotype-species, the features of which could give the basis for defining the essential diagnostic characters of the genus *Marsdenia* thus understood (s. str.). Brown failed, however, to indicate such species. According to Bullock. *M. tinctoria*, which is most strongly united with Marsden's name, may be such a one. Bullock writes: "It belongs to a very small group of Asiatic species characterised by the presence of a dye, which causes them to dry bluish-black, and by a narrow, elongated thyriform inflorescence of very small and numerous flowers. Such inflorescences do not occur in any Australian, African or American species and it seems advisable to limit the genus severely". Basing upon this con-

clusion Bullock reasons that the African, Australian and American species should be transferred to other genera. It is rather hard to determine now what genera these should be, as *Marsdenia* (s. 1.) has not had any monograph until now; an exception being the work of W. R o t h e [32]. Bullock himself resuscitated, therefore, the former genus *Dregea* E. Mey. (18 species from Africa, Madagascar, Arabia and tropical Asia), re-established the genus *Leichardtia* R. Br. (Australia, New Caledonia), transferred some species of *Marsdenia* to the genus *Anisopus* N. E. Br., and separated Grisebach's genus *Cionura*, with one species *C. erecta*.

As has been mentioned *M. erecta* was, beside *M. rostrata*, included by Brown to the group of species with a beak-shaped stigma and for this reason Brown judged that they were remarkably near to one another in affinity. K. S c h u m a n n [35] acted in the same way, too, including these two species in the *Eumarsdenia* Hook. f. section. *M. rostrata* differs significantly from *M. erecta*, in the structure of corolla, which is ascidiform in the one species and rotate in the other; there are also considerable differences in the structure of the stigma.

These characters, as well as the immense distance separating the area of *M. erecta* from that of *M. rostrata* (east Australia), fully call for maintaining the genus *Cionura*. Biochemical data, acquired by T. B a y t o p, M. T a n k e r, N. Ö n e r, S. T e k m a n [3] may be a further proof as well. They compared the glycoside marsdenin*, isolated by T. Baytop and M. Tanker [2] from the roots of *C. erecta* with the glycoside condurangin obtained from the other species of the genus *Marsdenia*; the authors, however, failed to mention what species it was taken from — probably south-American species were concerned (especially *M. condurango* Rehb. f. from Equador and Columbia). The sugar of these glycosides is identical chromatographically, but their aglycone fractions are quite different. The works of M. Tanker [37] and C. Zerlentis [15, 42] are given to further studies in this field. The latter defined the glycoside substance isolated from the leaves of *C. erecta* as erectin; presumably it is identical with marsdenin.

SYSTEMATIC TREATMENT

Cionura Grisebach, Spicil. Fl. Rumel. 2: 69 (1844); Koch C., Dendrologie 2,1: 285 (1872); Boissier, Fl. Or. 4: 62 (1875); Post, Fl. Syria Palest. Sinai 527 (1896); Bullock, Kew Bull. 11,3: 510 (1957).

Calyx 5 partitus. *Corolla* rotata, limbo 5 partito erectiusculo. *Stamina* 5 connata, tubo extus squamis 5 distinctis indivisis exappendiculatis co-

* Regarding the distinctness of the genus *Cionura* the name of glycoside should be replaced by cionurin.

ronato, pollinis ceraceis "demum erectis" antheris membrana terminatis. Stigma rostratum, rostro exserto bifido. Ovaria 2, stigmatate conjuncta. Folliculi distincti, laeves, seminibus comatis.

Suffrutex erectus, foliis cordatis, plerisque oppositis glabris, cymis divisivis axillaribus.

Typus familie orientalis, a Marsdenia corolla rotata, stigmatate rostrato bifido et habitu Cynanachi removendus (acc. o Grisebach).

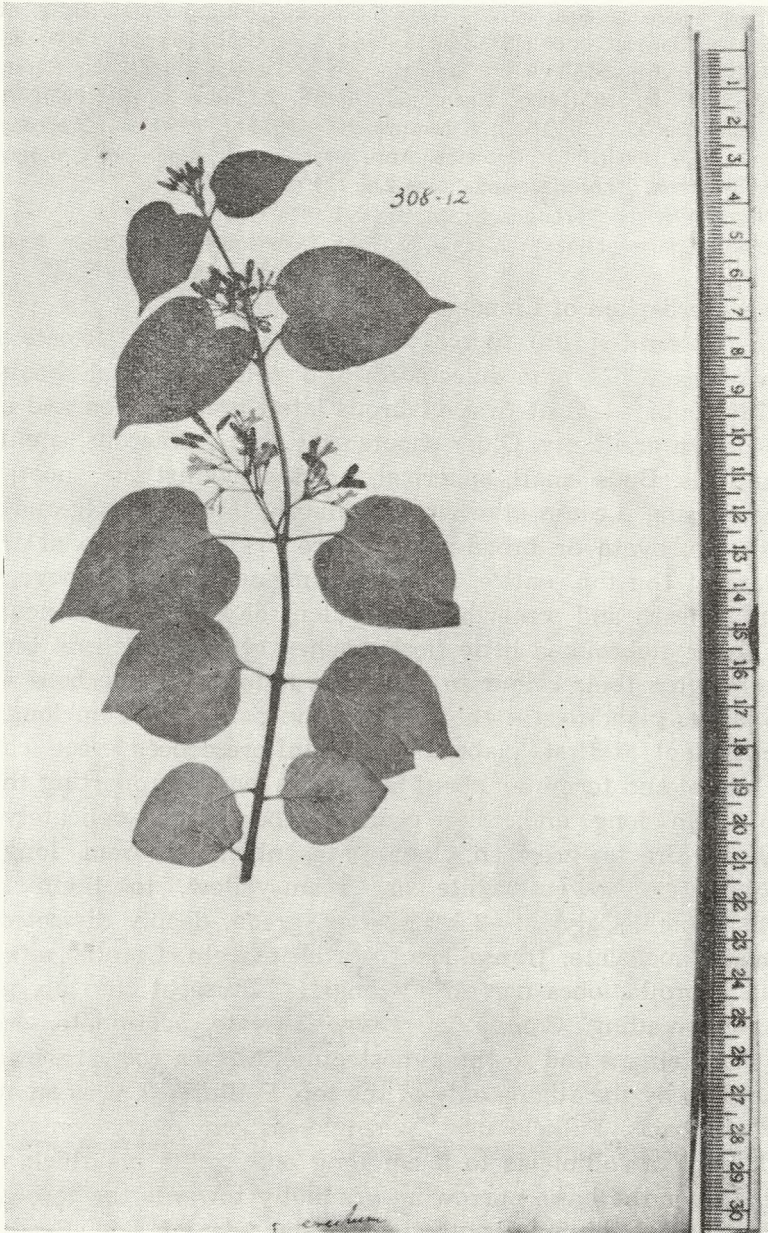
Genus monotypicus

Cionura erecta (L.) Grisebach, Spicil. Fl. Rumel. 2 : 69 (1844); Koch C., Dendrologie 2,1 : 286 (1872); Boissier, Fl. Or. 4 : 62 (1875); Stapf, Fl. Lycien, Carien, Mesopot. 1 : 33 (1885); Halacsy, Verh. Zool.-Bot. Ges. Wien 38 : 760 (1888); Candagry, Fl. Lesbos 38 (1889); Halacsy, Österr. Bot. Zeitschr. 42 : 419 (1892); Post, Fl. Syria, Palest. Sinai. 527 (1896); Candagry, Bull. Soc. Bot. Fr. 45 : 190 (1898); Toch, Rohlena, Sitz.-Ber. Böhm. Ges. Wiss. 4 (1902); Halacsy, Consp. Fl. Graec. 2 : 292 (1908); Maire, Petitmengin, Etud. Pl. Vasc. Grèce 4 : 152 (1908); Bornmüller, Florula Lydiae (Mitt. Thür. Bot. Ver. 24) 86 (1908); Halacsy, Suppl. Consp. Fl. Graec. 73 (1908); Halacsy, Suppl. sec. Consp. Fl. Graec. 61 (1912); Bornmüller, Feddes Repert. 25 : 296 (1928); Rechinger, Ann. Naturh. Mus. Wien 43 : 321 (1929); Bouloumoy, Fl. Liban. Syrie 226 (1930); Ade, Rechinger, Feddes Repert. (Beih.) 100 : 134 (1938); Bullock, Kew Bull., 11,3 : 510 (1957).

Syn.: *Cynanchum erectum* L., Sp. Pl. 213 (1753); Jacquin, Hort. Vindob. 2 : 14 (1772); Jacquin, Misc. Austr. Bot. 1 : 20 (1779); Lamarck, Encycl. Méth. Bot. 2 : 235 (1786); Urville, Plant. Archipel. Ponti-Euxini 1 : 283 (1822); Chaubard, Saint-Vincent, Exped. scient. Morée 3,2 : 78 (1832); Gandoger, Fl. Cret. 72 (1916).

Cynanchum rectum Sibthorp, Fl. Graec. Prodr. 1 : 166 (1806); Fraas, Synops. pl. fl. classicae 160 (1845).

Marsdenia erecta (L.) R. Brown, Mém. Werner: Nat. Hist. Soc. 1 : 28 (1809); Decaisne in DC. Prodr. 8 : 616 (1844); Tchihatcheff, Asie Mineure 2 : 70 (1860); Heldreich, Nutzpfl. Griechlands 31 (1862); Raulin, Descr. phys. ile Crete 4 : 504 (1869); Weiss, Verh. Zool.-Bot. Ges. Wien 19 : 744 (1869); Dippel, Handb. Laubholzkunde 1 : 162 (1889); Garden Chronicle ser. 3., 7 : 745 (1890); Baillon, Hist. d. Plant. 10 : 229 (1891); Koehne, Deutsch. Dendr. 493 (1893); Ricardou, Contrib. étud. Asclepiad. 63 (1893); Baldacci, Malpighia 9 : 335 (1895); Haussknecht, Mitt. Thür. Bot. Ver. 8 : 43 (1895); Schumann in Engler, Prantl., Natürl. Pflanzenfam. 4,2 : 306 (1895); Velenovský, Fl. Bulg., suppl. 1 : 191 (1898); Formanek, Verh. Naturf. Ver. Brünn 38 : 205 (1899); Vandas, Reliq. Formanek. 392 (1909); Schneider, Ill. Handb. Laubh. 2 : 853 (1912); Handel-Mazzetti, Ann. Naturh. Mus. Wien 27 : 425 (1913); Holmboe, Stud. Veget. Cyprus, Bergens Mus. Skrifter Nr. 10 bind. 1 nr. 2 : 145 (1914); Davidov, Trav. Soc. Bulg. Sci. Nat. 8 : 53 (1915); Goeze, Mitt. Deutsch. Dendr. Ges. 133 (1916); Gandoger, Bull. Soc. Bot. Fr. 64 : 120 (1917); Pau, Vicioso, Trab. Mus. Nac. Cien. Natur., ser. Bot. 14 : 36 (1918); Stojanov, Godisz. Sofijsk. Univ. 113 (1921); Urumov, Spis. Bulg. Akad. Nauk 28 : 66 (1923); Turrill, Kew. Bull. no 8 : 352 (1924); Nábělek, Itr Turc.-Pers. 3 : 11 (1926); Rehder, Manual Tress, Shrubs 771 (1927); Stojanov, Zeitschr. Bulg. Akad. Wissen. 37 : 146 (1928); Bornmüller, Engl. Bot. Jahrb. 61, Beibl. 140 : 18 (1928); Hayek, Prodr. Fl. Penins. Balcan. 2 : 432 (1930); Markgraf, Denkschr. Akad. Wiss. Math.-Nat. Kl. Wien 102 : 349 (1931); Bornmüller, Feddes Repert. 30 : 341 (1932); Hermann, Bul. Soc. Bot. Bulg. 5 : 138 (1932); Post, Dinsmore, Fl. Syria. Palest. Sinai 2 : 195 (1933); Samuelsson, Ark. Bot. 26A, 5 : 22 (1934); Rechinger, Beih. Bot. Centr. 54B : 649 (1936); Hermann, Feddes Repert. (Beih.) 87 : 70 (1936); Bornmüller, Feddes Repert. 42 : 138 (1937); Bornmüller, Notizbl. Bot. Gart. Mus. Berlin 14 : 281 (1938);



Phot. IDC microfiche edition of Herb. Linnaeus
Fig. 2. Holotype of *Cionura erecta* from the Herbarium of Linnaeus

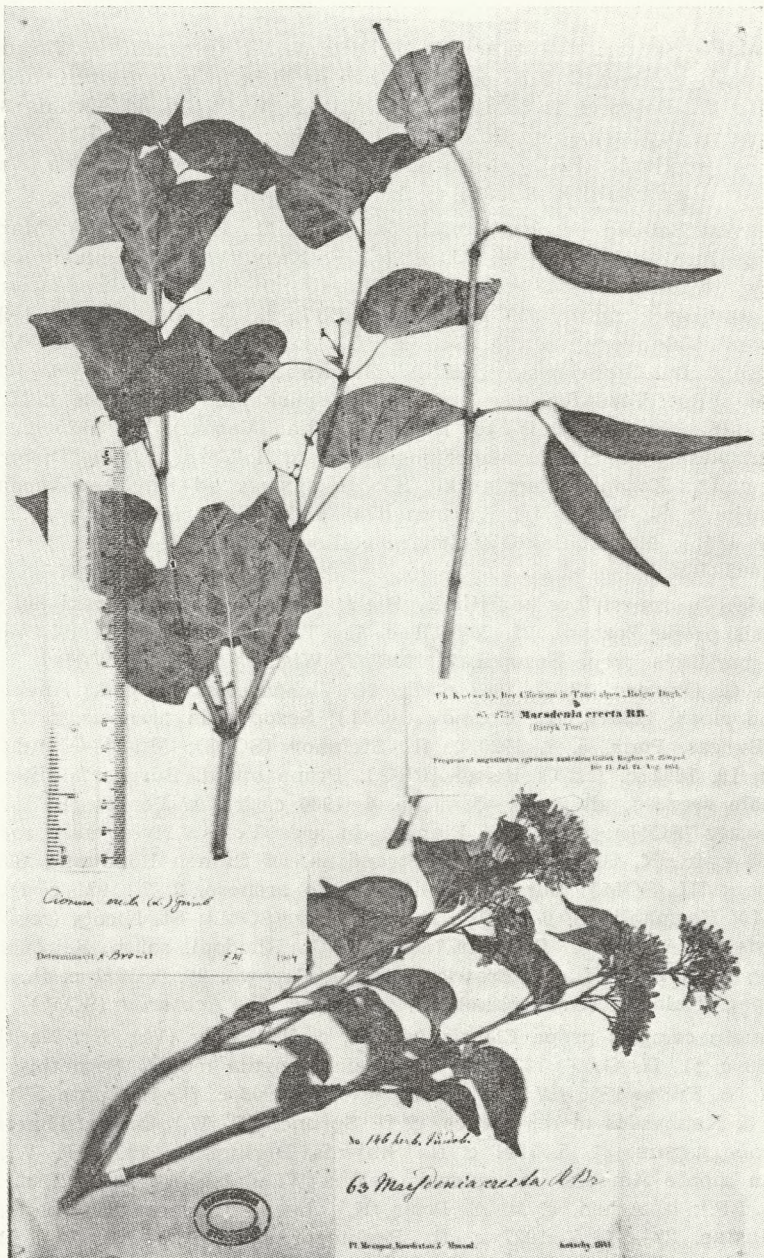
Rechinger, Feddes Repert. (Beih.) 98:47 (1938); Jordanov, Bull. Soc. Bot. Bulg. 8:93 (1939); Rechinger, Fl. Aegaea 560 (1943); Achtarov, Bull. Soc. Bot. Bulg. 9:67 (1943); Köie, Beitr. Fl. Sudwest.-Irans, Danisch Sc. Investigat. in Iran 4:34 (1945); Everett, Gard. Chron. Am. 50:220 (1946); Stojanov, Stefanov, Fl. Bulg. ed. 3., 909 (1948); Parsa, Fl. Iran 4:69 (1949); Blakelock, Kew Bull. 4,4:520 (1949); Zohary, Fl. Iraq 117 (1950); Birand, Prelim. list. spec. coll. Turkey 191 (1952); Kitanov, Bull. Inst. Bot. Sofia 3:249 (1953); Rechinger, Symb. Afghan. 4:79 (1958); Rechinger, Ark. Bot. ser. 2., 5,1:325 (1960); Kitamura, Fl. Afghan. 309 (1960); Rechinger, Engl. Bot. Jahrb. 80,4:400 (1961); Browicz, Ann. Sect. Dendr. Soc. Bot. Pologne 15:106 (1961); Krüssmann, Handb. Laubgehölze 2,9:126 (1961).

Pergularia erecta Sprengel, Syst. veget. 1:844 (1825).

Cynanchum monspeliacum Aucher-Eloy ex Decaisne in DC. Prodr. 8:616 (1844).

Type: Herbarium of Linnaeus [LINN.] (fig. 2).

Shrub (or semi-shrub) twining, with milky sap and shoots flexible, rubberlike (as in *Solanum dulcamara*) to 8 m long. Annual shoots delicately, white puberulent at first, glabrous later, grassy-green and changing to grey-brown gradually. Older shoots grey with numerous, small prominent lenticels. Buds small, spherical, pressed against the shoot, shaggy. Stipules missing. Leaves alternate, deciduous, to 10 cm long and to 8 cm wide, simple, ovate or broad-ovate, more or less cordate at the base, acuminate at the top, entire, bright green and glabrous above, slightly glaucous beneath and somewhat puberulent along the prominent nerves at first, later glabrous, a little fleshy; when crushed with an unpleasant odour; changing their colour to yellow in autumn, at the base with minute, lustrous glandules at the petiole. The petiole 0.4 cm long, delicately puberulent at first, glabrous later. Inflorescences erect, compound cymes, lateral and terminal, about as long as leaves supporting them. Rachis to 5 cm long and, like pedicels and calyx, delicately, white puberulent. Bracts greenish, lanceolate, about 1.5 mm long. Bracteoles missing. Flowers white or cream-yellow, to 1 cm long, of a sweetish smell. Calyx 2—2.5 mm long, green, deeply dissected. Calyx teeth ovate-lanceolate, translucent at the margin. Corolla rotate, pentamerous. Corolla lobes narrowly elongate, obtuse at the top, glabrous, erect and spreading. Corona lobes small, ovate, acuminate, erect, adnate to the stamens and to the gynostegium. Stigma rostrate, bifid. Ovaries 2, united, by the stigma only at the top. Pollinia 10, very small, erect, adhesive in pairs. Follicle usually single, as one ovary remains undeveloped. Such a follicle is to 8 cm long and to 1.5 cm thick, thickest somewhat over the base, narrowing gradually towards the top, glabrous, pendulous and dehiscing lengthwise on the adaxial side. Seeds numerous, flat, spatulate, 10—12 mm long and about 6 mm wide, olive-brown, narrowly winged (mainly at the top) with a coma to 2.5 cm long. Flowers from the end of IV to IX, and fruits from VII on, so that on the same shrub flowers and ripe fruits can be observed simultaneously (fig. 3).



Phot. K. Jakusz

Fig. 3. Herbarium specimens of *Cionura erecta* with flowers and fruits (Naturhistoriska Riksmuseet, Stockholm)

SPECIMENS EXAMINED

Albania: b. Skutari, 4. 7. 1929 c. fl., Schüttz (G. S.); In saxosis M. Taraboš prope Scutari, etiam in alves fl. Kiri prope Scutari et in saxosis m. Lovčit, distr. Tusit, 9. 6. 1897 c. fl., Baldacci 34 (BM. F. G. K. LE. P. W. WU.); ad Albania montenegrina, in aridis rupestribus ad Duleigno, 18. 6. 1889 c. fl., Baldacci (BM. F. W. WU.); Dulaigno, c. fl., Horák (PRC.); Nord-Albania: Umgebung von Shkodra, Am Funde der Kleinen Bardanjolt, 8. 6. 1916 c. fl., E. Janchen (WU.).

Jugoslavia: Babuna prope Veles, 1. 5. 1914 c. fl., Košanin (BP.); Mazedonien: Topolka Schlucht bei Veles, 9. 1959 c. fr., F. Kasy (W); Jenischlucht bei Veles, Kalkfelsen strauch, 6. 1918 c. fl., H. Burgeff (JE.); Veles. In faucium fluvii Topolka rupibus arietis, 200 m, 30. 5. 1917 c. fl., Bornmüller 1598 (JE.); Gebiet von Valandovo, 6. 7. 1918 c. fl., E. Biesalski (E.); ,ad Valandovo 15. 8. 1925 c. fr. Czernjowski (KRA.); Demirkau in Macedonia, 8. 1891 c. fr. Formanek (PR.); Vardaschlucht unterhalb Demirkapja. 1. 7. 1936 c. fl. et fr., O. Behr (JE.); In fruticetis ad Demir Kapija (Vardar), 10. 1925 c. fr., Košanin, Černjavski (LE. S.); In nemoribus ar ripam fl. Vardar, fauce Demir Kapija, 10. 1925 c. fr., Košanin, Černjavski (S.); In saxosis ad fluvium Wardar prope Demirkapija, 3. 10. 1925 c. fr., Košanin (O.); Lukavce in Macedonia c. fl., et fr., Formanek (PR.); Macedonia: Gjefgjeli in collibus apricis, 1—2. 6. 1927 c. fl., Re-chinger 1492 (BM.).

Bulgaria: In rupestribus maritimis, Bjela, 7. 1928, T. Wiśniewski 401 (WAR.); In arenosis prope Sozopol, 31. 5. 1931 c. fl., T. Wiśniewski 2044 (K. WAR.); In arenosis maritimis prope Sozopol, 7. 1928, T. Wiśniewski 2043 (WAR.); Harmanli, ad ripam fl. Oludere, 17. 7. 1962 c. fl., N. Vichodzewskij (SOM.); Anchialo (Pomorje), ad ripas, 1900 c. fr., Urumov (SOM.); Sozopol, in arenosis, c. fl., Toszev (SOM.); Burgas, Poda, 5. 7. 1920 c. fl., Stefanov (SOM.); Milesi—Mündung südl. Suzopolis, 10. 1891 c. fr., O. Reiser (PRC.); Prope oppid. Burgas, al litora Maris Pontici solo arenoso, alt. ca. 1—5 m, 25. 6. 1936 c. fr., A. Péntzes (BP.); Neseber, c. fl., Neiczev (SOM.); Strandsha Planina, in area Veleka river, near the mouth, 1. 10. 1958 c. fr., K. Browicz (KOR.); Strandsha, ad flumen Ropotamo, 30. 7. 1940 c. fr., Borys III (SOM.); Burgas, ad litora, solo arenoso, 2. 7. 1921 c. fl., Achtarov (SOM.); Harmanli, 14. 6. 1939 c. fl., Achtarov (SOM.); St. Nicola (reg. Burgas), in arenosis, 21. 8. 1903 c. fl. et fr.,? (SOM.); E. Rhodopi, south. Kürdzhalı, Szeroko Pole, 7. 6. 1962 r. fl., K. Browicz, (KOR.); Rezowo, 26. 6. 1921 c. fl., Achtarov (SOM.); pag. Halatshi (Ortakyjsko), 24. 5. 1932 c. fl., Achtarov (SOM.).

Greece: In campsis prope Eleusis Atticae, c. fl., Unger (W.); Nr. Xanthie, 500', 27. 8. 1933 c. fl., H. G. T. 1233 (K.); In regione media montis Parnethis, 12/25. 6. 1902 c. fl., B. Tunta 1546 (W.); In insula Scyro 6. 1908 c. fl., B. Tunta 559 (W.); an d. Ufern d. Kephyssus in der Attica, c. fl. Spruner (G. W.); Insula Thasos: Theologos. prope pagum, 31. 5. 1891 c. fl., Sintenis, Bornmüller 700 (PR. W.); Insula Samos: In monte Ambelos in lapidosis versus Wurliotes, 16—23. 6. 1932, Re-chinger 2135 (BP.); b. Athen, c. fl. A. Prior (K.); Insula Lemnos: Kastron, in glarea areis vetustae, 22—28. 5. 1927 c. fl., Re-chinger 1409 (BM. BP. W.); Beach at Amádhēs, above Kardhámyla (Karehamylla) on the way to Pitiaus (Pytios) 10. 7. 1939 c. fl., J. W. O. Platt 339 (K.); Chios, Kardhámyla, above beach, 3. 6. 1939 c. fl., Platt 543 (K.); Corcyrae, c. fl., Herb. Pittoni (W.); Panteleimon, Athos, 6. 1873 c. fl., Pichler (W.); In felsigen Orten auf der Insel Eubea 5. 1870 c. fl., Pichler (K.); Chios, c. fl., Pauli 111 (JE.); Saloniki, 5. 1891 c. fl., Nadji Effendi (S.); Samos, 17. 6. 1886 c. fl., Forsyth Major 340 (G.); Plain of Lamia (?), Herb. Lindley, CGE.); In Cylcadum ins. Naxos, Kakopyle, 18. 7. 1897 c. fl., Leonis (P. W. WU.); Larissa (Thessalie), 15. 6. 1899 c. fl., St. Lager (G.); Route de Kastri (Delphes)

à Arachova (Phocide), 23. 6. 1896 c. fl., St. Lager (G.); In Cycladum, ins. Tinos, 28. 8. 1890 s. fl., Heldreich (W. WU.); In glareosis prope Spartam, 7. 1844 c. fl., Heldreich 205 (F.); In collibus argillosis pr. Patras, 30. 5. 1894 c. fl., Heldreich (W.); Athen, 1843—44 c. fl., Heldreich (CGE. E. K.); ad Cephissi ripas 17. 6. 1873 c. fl., Heldreich (F.); In olivetis prope Amphissam, 15. 7. 1888 c. fl., Heldreich (W.); Phokis, an der Strasse von Ittea nach Chryssa, 20. 4. 1911, Hayek (GB.); Central Greek Macedonia: Struma Plain and the northern slopes of the Krusa Balkan, 6—7. 1918 c. fl., Harris 336 (K.); Salonica, 8. 8. 1917 c. fr., S. D. Symonds (K.); Salonica, 3. 7. 1917 c. fl., H. G. Greenish (K.); in locis arenosis prope Thessalonica 6. 1908 c. fl., Dimonie (W.); in dumetis Capudžilar prope Thessaloniam, solo schistoso, 8. 1908, c. fl., Dimonie (PR. PRC. W. WU.); In monte Olympo Thessaliae: Litocho et monasterium Hag. Dionysos, inter 400—800 m, 23. 6. 1928 c. fl., O. Dibowski (W.); Cyclades: Andros, in valley, 31. 10. 1939 c. fr., Lavis 1032 (E. K.); Salonique, bord de chemins, 15. 6. 1890 c. fl., Charrel (F. JE. PR. S. WU.); M. Athos, St. Paule c. fr., ?, vidi Boissier (W.); Patras, in dumetis, 1836 c. fl. et fr., Herb. Bentham. (K.); Chalcidice, in monte Athos, c. fl., N. Ballalas (S.); Levadia, 1000 m, dry hill sides, rocky ravines, 10. 1930 c. fr., S. Atchley 363 (K.); In pascuis collinis ad Thessaloniam, 6. 1906 c. fl., Adamovič (WU.); Salonique, bord des chemins, 10. 4. c. fl., 15. 7. 1889 c. fr., Abd-Ur-Rahman Nadji (W.); Versant Ossa, 16. 6. 1938 c. fl., S. Topali (G.); Scyros, c. fl., Herb. Franqueville (P); In glareosis torrentium Messiniae, 7. 1844 c. fl., Heldreich (BM. CGE. F. G. LE. P. W.); In collinis ad Voden, 6. 1903 c. fl., Adamovič (K.); In dumetis ad Voden, 12. 6. 1911 c. fl., (LE.); Ad littora maris et ad ripas Cephisi Atticae, 5. 1856 c. fl., Heldreich 258 (BM. BP. C. F. G. JE. LE. P. PR. S. W.); affluent du Cephissum pr. Dekelia, 6—9. 1928 c. fl. et fr., Guiol 287 (BM.); prope Kiephylluen flumen, 1849 c. fl., Clements (E. W.); Auf der Insel Negroponte bei Chalcida, 1875 c. fl., Pichler (W.); Stavros, 7. 1918 c. fl., M. Wilson 246 (BM. E.); Naussa, 7. 6. 1936 c. fl., Regel (G.); Thermopylae 4. 6. 1943 c. fl., G. Bickerich 15177 (BM.); Aegina, 6. 1842 c. fl.,? (C.); Aegina, c. fl., Herb. Pittoni (W.); Khios, 24. 6. 1892 c. fl., Caruel 1195 (F.); Herbier de l'Archipel et des côtes de la Mere-noire, Dumont d'Urville (P.); Prope Kourbatsi Euboeae septentrionalis 1866 c. fl., A. Wild (K.); prope Gjumjurdshina, 13. 5. 1914 c. fl., Davidov (SOM.); Athenae ad Phalerum in arenosis, 1885 c. fl., Haussknecht (JE.); sables maritimes près de Phalere, 15. 5. c. fl., 18. 6. c. fr., 1890, Heldreich 2526 (F. G. JE. P. S. W. WU.); in halepido Phaleri, 6. 1896 c. fl., Heldreich (B. BG. S.); In arenosis Phaleri (frequens), 18—30. 5. 1849 c. fl. (BM. BP. C. CGE. E. F. JE. K. LE. P. PR. PRC. O. S. W. WU.); in aren. marit. pr. Phalerum, 6. 1876 c. fl., Pichler (G.); Phaleron pr. Athenas, 8. 6. 1894 c. fl., A. Reiser (PR.); In sabul. marit. Graeciae, Phaler., c. fl. et fr., Sartori 111 (F. W.); Phaleron, on the sand heaps, 22. 6. 1890 c. fl. et fr., J. S. Walker 687 (BM.); Phaleron, in maritimis, 10. 1866 c. fl. et fr., Bornmüller (BP. PRC. W. WU.); Vallée de Tempé (Thessalie), 12. 6. 1899 c. fl., St. Lager (G. K. PR.); Gebüsche in Tempe-Tale, 29. 5. 1926 c. fl., Hayek (GB. WU.); In olivetis prope Omphipane, 15. 7. 1888 c. fl. et fr., Halácsy (E.); prope Oropos, 12. 6. 1883 c. fl. Heldreich (W.); Crissoean Plain, 5. 1862 c. fl., J. S. Mill (K.); Struma valley, 31. 5. 1918 c. fl., W. Rycroft (BM.); Insula Euboea septentrionalibus. Montes Kandili: In ascensu ab Achmet Aga versus Hagios Sotir, substr. calc., ca. 300—700 m, in faucibus, 21. 7. 1956, Rechanger 18239 (G.); Kriororisi in valle Penei, 15. 6. 1896 c. fl., Sintenis 705 (G. JE.); St. Jean, bord de la mer, versant oriental — Pélion, 1. 8. 1937 c. fl., S. Topali (G.); Greek Macedonia; Hills W. by S. of Koprva. S. of Struma Plain, 15. 5. 1917 c. fl., Turrill 244 (K.); Hills between Turica and Gumus Dere, South of Struma Plain, 25. 5. 1917 c. fl., Turrill 322 (K.); Boeotia: Copais 10. 1930 c. fr., Guiol (BM.); Mt. Mathon Hagion Oros conobium Prodrom, 300 m, 5. 1908 c. fr., Dimonie (WU.); Ematos, 1837 c. fl., Bory (F.); N. W.

Macedonia — Chakon, Lake Ostrovo, 15. 6. 1932 c. fl., 1800', limestone slopes, Alston, Sandwith 322 (BM. K.); Plants de Morée (Armiros), 1829 c. fl. et fr., Despréaud (G.); Morée, c. fl., Chaubard (P.); In Laconia: pr. Sotirianika, 6. 1895 c. fl., Jahn (W.); Crete: pr. Canea, 6. 1932 c. fl., Guiol (BM.); Sphakia, in faucibus Sphakiae, 1200', 6. 1914 c. fl., P. Cousturier (KRA); Proc. Sphakia, in faucibus, Arad hena, 900', 1014 c. fl., Cousturier (G.); Crete, région de plains basses (O—150 m). Praires autour de Kхания (La Canée), 1845 c. fl., Raulin 330 (P.); Kissamos, lieux ombragés, 19. 5. 1884 c. fl., Reverchon 108 (BP. G. GB. K. P. W. WU.); Platania, lieux arides, 12. 6. 1883 c. fl., Reverchon 108 (BP. E. F. G. JE. K. P. W.); Prov. Canée: Fré, 15. 6. 1915 c. fl., Gandoger 8463 (G. K.); Prov. Canée: Aya Marina, 13. 5. 1915 c. fl., Gandoger 7252 (G. K. P.); Prov. La Canée: Theriso, 8. 6. 1914 c. fl., Gandoger 4444 (F. K.); Prov. Canée: Parolia, 20. 6. 1915, c. juv. fr., Gandoger 7425 (G. K. P.); In alveo fl. Platenia, distr. Khanistrikas, 21. 6. 1893 c. fl., Baldacci 233 (BM. G. S. WU.); Kreta: Huro-Dalen, ca. 200 m, 24. 5. 1935 c. fl. Cyrén (GB.); Crete, 1846 c. fl., Heldreich c. fl. (CGE.); Creta, c. fl., Sieber (W.); Therisso c. fl., Sieber (BP. JE. K. LE. PR. PRC. S. W.); Therisso c. fl., Herb. Cosson (P.).

Turkey: Zonguldak, vil. Kastamouni, 24. 11. 1918, Ali-Riza (LE.); Constantinople, c. fl., Aucher-Eloy 1497 (F. G. K. P.); Dunes près Domouzdére 29. 6. c. fl., 3. 8. 1902 c. fr., G. V. Aznavour (W.); Magnésie, à la base du Mont Sipyle, 11. 6. c. fl., 17. 8. 1854 c. fr., Balansa 292 (BM. C. E. F. G. JE. K. P. S. W.); Défile des Portes Ciliciennes, Route de Tarsous à Cesareé, près du Bosaute-Tchai, 9. 1855 c. fr., Balansa (G. K. P.); Ex Maritimis Asiae Minoris, prope Smyrnam, 22. 10. 1867 c. fr., J. Ball (E. F.); Ex maritimis Lydiae prope Smyrnam, 6. 1877 c. fl., Ball (E.); Gaziantep, Kara Tash, 3300', growing in loose stone walls nad banks, non lime, 3. 5. 1935 c. fr., Balls 2225 (BM. E. K. S.); Sile, 8. 7. c. fl., 23. 8. 1952 c. fr., Baytop, Berk (G.); Fethiye, 27. 7. 1947, K. Bilger, P. H. Davis (H.U.J.); Prope Smyrnam et in Attica, 4—5. 1842 c. fl. et fr., Boissier (C. E. F. G. K. LE. P. S. W.); Bithynia, Ad Bilecik, in declivitatibus valis fluvii Kara-su, in vinetis delerictis prope stationem, 3—400 m, 17—24. 5. 1929 c. fl., J. et F. Bornmüller 13457 (LE.); Amasia: in rupestribus aridis, 4—500 m, 20. 6. c. fl., 8. 1889 c. fr., Bornmüller 348 (BM. G. JE. K. LE. P. PR. S. W. WU.); Bithynia, in regione inferiore montis Keschischdagh (Olympi) supra Brussa, 200 m, 4. 6. 1899 c. fl., Bornmüller 5283 (G. K.); Adalia, in maritimis 5. 5. 1860 c. fl., Bourgeau 247 (BP. C. E. F. G. JE. K. P. W.); Adalia, plage maritime, 5. 5. 1860 c. fl., ? 563 (LE.); Dardanelles, c. fl., Calvert (E.); Taurus cilicicus: Pozanti supra Adana, ca. 760 m, 6. 1917 c. fl., Christian (W.); Thrace, near the mouth of Marica, 18. 5. 1914 c. fl., Davidov (SOM.); Vil. Mughla, 31. 7. 1947 c. fr., Davis 13710 (K.); Vil. Antalya: Kener, sandy stone, 14. 8. 1947 c. fr., P. H. Davis 14110 (E.); Vil. Antalya (Isauria): Kargi chai, near Kozlu dere, 1000 m, 26. 8. 1947 c. fr., Davis 14274 (E.); Vil. Antalya, between Kargi chai a. Belister 1100 m, above Alanya. 26. 8. 1947 c. fl., Davis 14235 (E. K.); Prov. Antalya, distr. Gebiz (Pisidia): Bozburun dag at Penargözü yayla, 600 m, 23. 7. 1949 c. fr., Davis 15495 (E.); Prov. Ordu: Uniye-Terme, sandy shore, 5. 9. 1954 s. fl., Davis, Polunin 24952 (BM. E. K.); Tas Ocage near Derizli, 13. 7. 1947 c. fl. et fr., Davis 13243 (E.); Phrygia, c. fr., Deetz (PR.); Prov. Adana; between Feke and Belankoy, 600 m, 2. 7. 1952 c. fl., Dodds, Cetik, Davis 19534 (BM. E. K.); Prov. Adana, distr. Feke: S. Encan dere between Gurumze and Suphandere, 1000 m, 1. 7. 1951 c. fl. Dodds, Cetik Davis 19630 (E. K.); Prov. Adana; Saimbeyli, 1100 m. 11. 7. 1952 c. fl., Dodds, Cetik, Davis 19881 (BM. E. K.); Bulgardagh: Betw. Bozanti and Birdiglek, wet slopes on road sides, 1000—1100 m, 21. 8. 1931 c. fr., Eig, Zohary (H.U.J.); Bulgardagh: between Bozauli and the Ak Kopru bridge, 800—850 m, fieldborders, 21. 9. 1931 c. fl. et fr., Eig, Zohary (H.U.J.); Taurus mountain range, Bozanti, hills ca. 800 m, 21. 8. 1931 c. fr., Eig, Zohary (H.U.J.); In collibus Smyrnae 4. 1827 c. fl.,

Fleischer (BP. CGE. E. K. PR. PRC. S. W.); Gallipoli, c. fl., De Fontenay 57 (G.); Lycia, c. fl., Forbes (K.); Kurdistania: distr. Diarbekir, in declivibus siccis inter Arghana Maden et Kalender Han, subst. siliceo, 1100—1200 m, 1. 8. 1910 c. fl. et fr., Handel-Mazzetti 2636 (W. WU.); Aintab, 6. 1907 c. fl., Manoog Haradjian 1270 (E. G. K. W.); Ad sepes p. Marash, 1800', 18. 7. 1865 c. fl., Haussknecht (BM. BP. JE. K. LE. P.); In Asia Minor, 6. 1844 c. fl., Heldreich 8071 (BM.); Prov. Antalya. Selimiye (\pm 5 km S. of Manavgat) at the sea. On old wall, near tehe sea, 5. 5. 1959 c. fl., E. Hennipman... 863 (K.); Prov. Elâzig. Along the road Malatya-Elâzig. Near the bridge over the river Firat. Bank of the river, 600 m, 26. 5. 1959 c. fl., E. Hennipman 1447 (K.); Gallipoli: Helles, seems rare, 28. 5. 1923 c. fl., Ingoldby 250 (K.); Gallipoli: Suvla. 8. 6. 1923 c. fl., Ingoldby 294/2 (K.); Gallipoli: near the waterfall Suan-Dere, 11. 1923 c. fl., R. Kett 83 (K.); Alpes „Bulgar Dagh”; frequens an angustiarum egressum australem Göllek Boghas, alt 2500', 11. 7 c. fl., 24. 8. 1853 c. fr., Kotschy 85. 273a (CGE. G. K. P. PR. S. W.); Mountains of Kurdistan, c. fl., A. H. Layard (E.); Lycien; untersts Dembrethal. 20. 6. 1882 c. fr., E. Luschan (WU.); Amassia, Galatia, c. fl., Manissadjian 968 (BG. F. G. JE. K. LE. P. PRC. S.); Hadjin, Cappadocia, c. fl., Manissadjian 970 (G. JE. K. LE. P. S.); Ost-Thrazien: Strandsha-dagh: Umgebung des Tschifl.-Tschillingos (südl. Midia); Dünesand, 1. 7. 1927 c. fl., J. Mattfeld 3316 (LE.); Constantinopol, 10. 8. 1891 c. fr., K. Mergenthaler (WU.); pag. Korasakli-Odrinsko, in arenosis, 5. 1913 s. fl., Neiczev, Stojanov (SOM.); Umgebung von Constantinopol, Ium-Burun, Hügel gegen Riva, 26. 6. 1896 c. fl., J. Nemetz (WU.); In agro Bizantino, 1846 c. fl., Noë (W.); Constantinopol, sur les bords du canal vers l'emb. de la mer noir, c. fl., Olivier, Bruguière (P.); Diunes de Kila (Herb. Byzantinum), 8. 1863 c. fr., R. du Parquet (BM.); Environ d'Anamour, 1872 c. fl., A. Péronin 173 (BM. K. P.); Copiose in fruticetis circa Brussam, 5. 1874 c. f., Th. Pichler (BP. F. G. JE. W.); in muris camparum pr Brussa, Anatoliae, 7. 1873 c. fl., Th. Pichler (BP. JE. P. W.); Brussa, frequens, 1845 c. fl., Noë 1012 (JE.); Taurus, Hadjin, 1883 c. fl., Herb. Post. (BM.); Castle of Smyrna, 9. 1888 c. fr., Post (G.); Aintab, 1884 c. fl., Post (G.); Dünen am Schwarzen Meere. Kilyos, Istanbul, 24. 6. 1956 c. fl., Regel (G.); Dünnen am Meere. Sile, Istanbul, 3. 6. 1956 c. fl., Regel (G.); Smyrna, 6. 7. 1812 c. fl., (in gardens), Rennard (BM.); Dardanelli: in valle Rhodii, 23. 5 c. fl., 26. 8. 1883 c. fr., Sintenis 748 (BM. BP. E. G. JE. K. LE. P. PR. S. W.); Assos, in ruinis, 8. 6. 1883 c. fl., Sintenis 748 (S.); Kurdistania, Mardin: Senar, 6. 6. 1888 c. fl., Sintenis 999 (J.E. P.S. WU.); Paphlagonia: Wilajet Kastambuli, Tossia: Omarschukdagh, 4. 7. 1892 c. fl., Sintenis 4560 (BM. F. PR.); Prov. Malatya: Malatya—Maras, 70 km from Malatya, 9. 6. 1960 c. fl., Stainton, Henderson 5490 (E.); Anatolia, c. fl., Szovits (P.); Antalya, 30 m, 5. 5. 1936 c. fl., Tengwall 597 (K.); Brussa, Berghänge, ca. 800 m, 6. 6. 1913 c. fl., T. Tölg (W.); Smyrna, 1838 c. fl., Unger 662 (W.); Smyrne, près le Chateaufort, Webb (P.); Smyrna, c. fl., E. Whittall 491 (E.); in provincia Haumana Anatoliae, 1834 c. fl., Wiedemann (LE.); In agro Byzantino, Wiedemann (LE.); In Anatolia pr. Gemleek, 1834 c. fl., Wiedemann (LE.); Tokat et Safranbal, c. fl., Wiedemann (LE.); Tokat, Kischkindagh, 1835 c. fl., Wiedemann (LE.); Anatolia, c. fl., Wiedemann (E. F. K. P. S. W. WU.); Constantinopol, 1865 c. fl., Haussknecht (JE.); In lapidosis calcar. p. pag. Ispadrus (Aintab), 2000'. 16. 6. 1865 c. fl., Haussknecht (JE. W.); In rupestribus pr. Aintab, 23. 6. 1865 c. fl., Haussknecht (JE.); Jehan Keupri (Bridge), 2300', 17. 5. 1934 c. fl., E. K. Balls, 1104 (E. K.); Giosna. an Bachufer, 700 m, 6. 1895 c. fl., W. Siehe 192 (BM. E. G. JE. K. LE. P. WU.); Fundajak, 12. 9. 1884 c. fr., Post (BM. G.); Abydas Anatoliae, c. fl., ?, vidi Boissier (W.).

Cyprus: near Limassol, 5. 1901 c. fl., A. G. a. M. E. Lascelles (K.); Mell. Limassol og Amathus, 5. 5. 1905 c. fl., J. Holmboe 643 (O. S.); Limassol, 25. 4. — 5. 5. 1913 c. fl., Manoog Haradjian 614 (G.).

Syria: Inter urbem Aleppo et op. Antakieh (Antiochia), in rupestribus calcareis prope pagum Tell Akibrin, ca. 430 m, 29. 5. 1933 c. fl., Samuelsson 5534 (S.); inter urbem Aleppo et op. Antakieh (Antiochia) Kasr el Benat, in rupestribus calcareis, ca. 320 m, 29. 5. 1933 c. fl., Samuelsson 5518 (S.); Karet Berat: 320 m, Antiochia-Aleppo, 29. 5. 1933 c. fl., E. Wall 173 (S.); Tel Alsibirin (Antiochia-Aleppo) 29. 5. 1933 c. fl., E. Wall (BG. GB. S.); Syrien, 1865 c. fl., Knecht (K.); Env. d'Azaz, 1500—2000', 20—24. 5. 1911 c. fl. Manoog Haradjian 4427 (G.); Djebel Semaan, 2000', 20—30. 5. 1908 c. fl., Manoog Haradjian 2619 (G. W.); Dj. el Alu. (Between Alep and Antioche), 500 m, rocky mountains, 27. 5. 1932 c. fr., Eig, Zohary (HUJ.); In deserto pr. Hierapolis, 1000', 4. 1867 c. fl., Haussknecht (BM. K. P.).

Lebanon: Dry places, Cedarr of Lebanon, 1950 m, 5. 5. 1937 c. fl., J. E. Dinsmore 11961 (K. S.); Ad rivul., inter Tscharmelik et Bir, pr Kirkmagara, 17. 5. 1865 c. fl., Haussknecht (JE.).

Israel—Jordania: Jordan valley, Redhead (n. v. — acc. to Post, Dinsmore l. c.).

Egypt—Sinai: Wadi-Huwaymirat, Akabah, Redhead (n. v. — acc. to Post, Dinsmore l. c.).

Iraq: Berd Agha, Gin Valley, c. 18 km NW of Rania, 1115 m, saxatile, on mountains slope, 12. 5. 1959, Rawi, Nuri, Kass 28712 (K.); Shaik wa Shaikhan Valley, in valley, 1000 m, 5. 9. 1957 c. fr., Ali Rawi 24872 (K.); Diana, 700 m, dry ravine in low hills, locally abundant, 19. 9. 1956 c. fr., Guest, Husham 15871 (K.); Rowanduz Gorge, c. 600 m, grassy slope by stream, 25. 2. 1954 c. fr., Guest 13609 (K.); Rowanduz Gorge, on the mountain side, 2000', 25. 7. 1932 c. fr., Guest 2976 (HUJ. K.); Rowanduz-Gorge, 2500', 12. 10. 1931 c. fr., Guest 499 (K. S.); Erbil — Bekhme gorge, 500 m, limestone, 14. 5. 1947 c. fl., Gillett 8257 (K.); Erbil — Hazi Omran, 1800 m, 3. 6. 1948 c. fl., Chapman 11934 (K.); Haj Omaran, near streams, 1500 m, 23. 8. 1958 c. fr., Ali Rawi 26832 (K.) Zinte Gorge, saxatil, 700 m, 8. 6. 1958 c. fl., Chapman 26133 (K.); fruticulus in valle collina inter Beregig et Orpha, 4. 6. 1841 c. fl., Kotschy 146 (K. S. W.); Galli Ali Beg, mountain slope, 23. 8. 1957 c. fr., Ali Rawi 24252 (K.); Galli, Ali Beg. in floor of gorge near Chaikhare (?), 24. 6. 1962 c. fl., R. Wheeler-Heines (E.); Dalou Kaioter, Rd. to Kandil, 500 m, 17. 8. 1958, Ali Rawi, Serhang 26476 (K.).

Iran: Kotel Dokhter b. Kasrun, 16. 5. 1885 c. fl., Stapf (K. WU.); On steep slopes below limestone cliffs, north side of Daryacheh-ye-Famur, nr. Kazerun, c. 1100 m, 12. 4. 1959 c. fl., Merton 3802 (K.); From the sandstone rocks, nr. Kalah Reza, Dizful, 2. 5. 1851 c. fl., W. K. Loftus (BM.); 60 km NE of Dizful, 500 m, 30. 4. 1937 c. fl., Koëie 901 (BM.); Cheshmaghirin, Bakhtiari, 12. 5. 1940 c. fl., W. Koelz 15283 (E.); Persia austro-occidentalis, supra Behbahan, 5000', 1868 c. fl., Haussknecht (E. JE. W.); Ispahan, c. fl., Aucher-Eloy 4929 (BM. F. G. K. LE. P.); Perse-Shahpour 1825 c. fl. et fr., Bélanger (G. P.).

Afghanistan: Between Jija and Khosk, 900 m, K. 3901 (n. v. — acc. to Rechinger l. c.).*

DISTRIBUTION

The area of *C. erecta* comprises the Balkan Peninsula (south Jugoslavia-Macedonia, Albania, Greece, south and east Bulgaria, European Turkey), Crete, the Aegean Isles nad W. Asia (Turkey, south-west Iran, north

* Abbreviations acc. to the Index Herbariorum ed. 4; KOR = Institute of Dendrology and Kórnik Arboretum, Kórnik near Poznań, Poland.

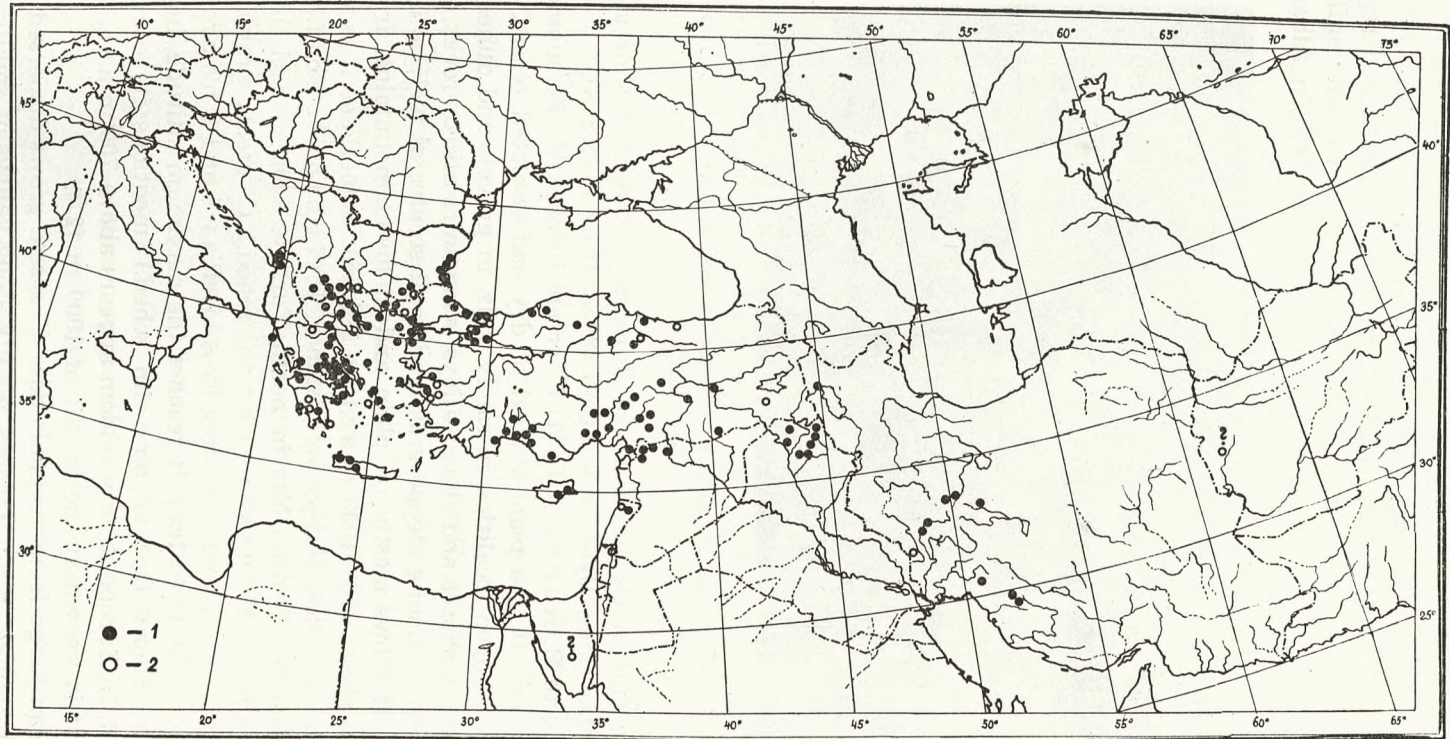
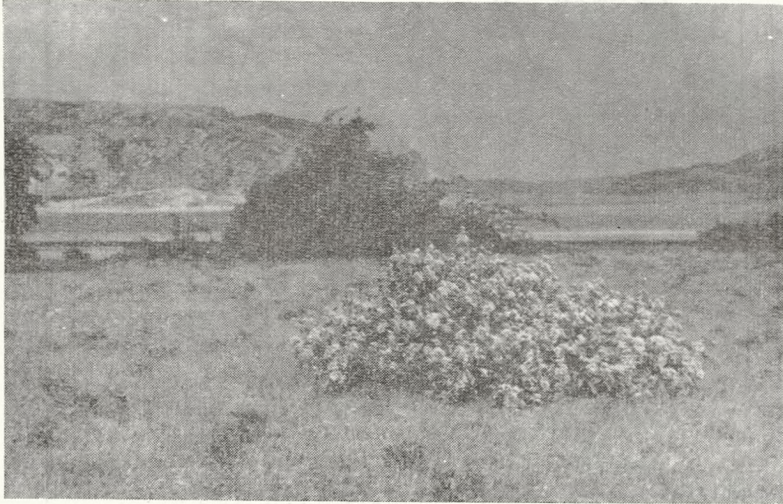


Fig. 4. Distribution of *Cionura erecta*: 1. herbarium specimens, 2. literature

Iraq, north-west Syria, Lebanon). *C. erecta* is also recorded from the Jordan valley (Israel-Jordania), from the Sinai Peninsula, and from one locality in west Afghanistan, as well; from the last mentioned regions I have been unable to see any herbarium specimen that could confirm its occurrence there. *C. erecta* extends furthest to the north in Albania up



Phot. K. Browicz

Fig. 5. *Cionura erecta* in its natural habitat in SE Bulgaria (Široko pole near Kârdžali)

to Shkodër and in Bulgaria, where it reaches along the shores of the Black Sea, the place Byala, i. e. up to $42^{\circ}53' N$ or so (fig. 4).

According to B. A c h t a r o f f [1] *C. erecta* belongs to the submediterranean element. It is a plant typical of dry and isolated places, occurring mainly in open localities, in sandy soils, in gravels and dunes, especially along sea shores and river valleys, sometimes also on rocks, mainly calcareous ones, among steppe grasslands and scrubs, as well as in clear oak-woods. It grows mostly on plain and in lower mountains, from the sea level to about 900—1000 m a.s.l. in general. Sometimes it is met on considerable altitudes, and so for instance, P. T c h i h a t c h e f f [38] records it from the Pontus Mts in north Turkey, 1400 m a.s.l. high. In Iran, according to H a u s s k n e c h t [in sched.] *C. erecta* grows up to about 1640 m (5000'), and according to A l i - R a w i and C h a p m a n (in sched.) 1500—1800 m in Iraq. It reaches the maximum altitude, however, in Lebanon where D i n s m o r e (in sched.) mentions its occurrence 1950 m a.s.l. In Europe it very seldom appears above 700 m a.s.l., though in Greece it is known at the height of 1000 m [27].

As we can judge from available data *C. erecta* grows dispersed on the whole area, though in some places, mainly along valleys of smaller rivers and streams, it forms larger, pure concentrations or in company of other

plants, as, for instance, with *Cynanchum acutum* L. Such communities, named *Marsdenietum* and described from European Turkey by F. Hermann [22], I saw also along the river Arda in Bulgaria, south of Kâr-džali. According to D. Jordanoff [23] on seaside dunes in south-east Bulgaria (Strandsha Mts) *C. erecta* is known in communities where we



Phot. K. Browicz

Fig. 6. *Cionura erecta* on the seaside dunes near Ahtopol (SE Bulgaria)

can meet mainly: *Ammophila arenaria* Link., *Elymus arenarius* L. var. *subulosus* M. N., *Cyperus schoenoides* Grsb., *Carex ligerica* Gay., *Juncus acutus* L. var. *tommasinii* Parl., and *Silene supina* M. B. var. *pontica* Brandza (fig. 5).

I saw *C. erecta* near the mouth of the river Ropotamo running to the Black Sea (Bulgaria) in quite different conditions [5]. It grows here in rocky and stony places, very often only 3—5 m distant from the bank. It grows together with different species of shrubs, among others: *Ficus carica* L., *Osyris alba* L., *Jasminum fruticans* L., *Periploca graeca* L., and even *Ephedra distachya* L. There are no certain data in reference to other communities with *C. erecta*. We can only mention that, for instance, in Iran, near Kazerun, it grows together with *Amygdalus horrida* Spach, *Zizyphus* sp., and *Astragalus* sp. (Morton, in sched. 3802).

In plant communities with *C. erecta*, especially in poor soils, there are only a few species of plants represented. As it appears *C. erecta* is characterized by a specific, synecological activity. It prevents a lot of plants from germinating. This has been stated experimentally by C. Zerlentis [40, 41], and, mainly on representatives of *Papilionaceae*, *Cruciferae*, *Papaveraceae* and other families. A water extract of dry leaves of *C. erecta*

restrains, for instance, *Lepidium sativum* L. from germinating at a concentration even. of 0,1⁰%. Different species of grasses, thistles and prickly *Borraginaceae*, as well as seedlings of *C. erecta* are not influenced by this action.



Phot. K. Browicz

Fig. 7. *Cionura erecta* in flowers

Phot. K. Browicz

Fig. 8. *Cionura erecta* in fruits

According to conditions of habitat *C. erecta* grows either in the form of a low, erect and weakly branched shrub, or in the form of a twining shrub with strongly elongated shoots (to 5—8 m long), decumbent or climbing up branches of neighbouring trees or shrubs. The two forms of

growth are the reason why *C. erecta* is described as a shrub "erect", or as a twining plant. Very interesting data are given by W. B. Turrill [39]; they are taken from the Gallipoli Peninsula. Basing on the information of Cap. Ingoldby Turrill writes that *C. erecta* "is only erect when in quite small species. When growing as fair-sized bushes, generally on the banks of narrow, steep, shady gullies, it tends to trail". As I myself stated in Bulgaria *C. erecta* grows thus not only in shady places, but also in wholly open, strongly insolated, as, for instance, on seaside dunes near the mouth of the river Veleka flowing to the Black Sea (fig 6).

It appears that these two forms of growth must not be treated as taxonomic units, and that they have no distinct areas. Similarly two known, up to now, forms distinguished by flower colour, white and yellow (or creamy), have no distinct areas, either. These forms have not been described as yet, they are, however, mentioned on herbarium labels from time to time. It seems that the form with yellow flowers is rarer. It is mentioned among others by H. Manissadjian from Turkey (in sched. 970), by W. Koelz from Iran (in sched. 15283) and by Chapman from Iraq (in sched. 11934). Dodds and Cetik (Davis sched. 19534) remark, that in Turkey, in the Adana province both forms occur side by side, in the same locality.

With the exception of forms of growth and flower colour *C. erecta* is a species variable but little, and only Haussknecht (in sched. 517a) distinguished a variety from Aintab, he called var *inodora*, but he does not give any particular data (fig. 7, 8).

HISTORICAL CONSIDERATION

Robert Brown [6] was not the first to discover *C. erecta*. This species had been mentioned already by Linnaeus in 1753 in his "Species Plantarum", but it is enumerated there among the genus *Cynanchum*, as *C. erectum*. But even this is not the earliest information, because, as it has been found, *C. erecta* was very well known to botanists of the 17th, and even 16th centuries.

The first sure mention about *C. erecta* is found in the letter of Luca Ghini, professor of botany, who in 1544—1556 lectured at Pisa university and there he founded the first botanical garden. The letter dated October 1551, written to Matthioli, then staying in Gorizia, was enclosed to some plants sent by Ghini to Matthioli [8]. Among these plants there were branchlets of two species, Ghini writes [13] about in this way "Ante quatuor annos dono mihi dedit nobilis quidam binas siliquas ex Syria allatas, quarum una inscriptionem habebat hanc, *Periploca repens*, alteri inscriptum erat *Periploca non repens*. Similes erant *Nerii*

siliquis eandem quoque habebant magnitudinem illius qui circumvolvendo ascendit, sed subtilior et non ita crassa, alteris brevior erat. Ex subtilioris similibus seminibus proveniebat planta, quae si adminiculis fuisset sustentata fulta altissimum turrim adscendere potuisset. Plantae vero quae ex altera breviori scilicet siliqua nascebatur, omnes notae quas Dioscorides Apocyno attribuit nulla reclamante conveniunt. Utraque lacte non minus est referta atque ipsius Tithimali species omnes sed illius plane candidus, huius ex albo flavescens. Utriusque ramos ad te mitto. Utrumque Apocyni esse credo, flores hactenus eorum non potui videre.” The letter was then cited by Matthioli, who just Ghini assumes that „*Periploca non repens*” corresponds to „*Apocynon*” of Dioscorides („... questa pianta non sia altro che l’Apocino. Ne sono per mutarmi d’opinione fin che non veggia altra pianta, che più gli rassembri di questa, di cui è qui il ritratto” — 1563).

The surest proof “*Periploca non repens*” is nothing else than *C. erecta* may be its illustrations in Matthioli’s works. In the Latin “Comentarii in Libros Sex Pedacii Dioscoridis” (book IV, chapter 36, p. 483) edited in 1554 in Venezia there is a small drawing of “*Apocynum*”, which can be easily recognized as *C. erecta*. It represents a leafed twig with leaves noticeably cordate at the base and acuminate at the apex, with 3 fruits resembling more a bean legume, than a follicle of *Cionura*. Matthioli could not know the fruits however, because, as Ghini’s letter shows, this plant did not bloom in Pisa then, and so it could not bear fruits. So the drawing of the fruits was only a result of Matthioli’s fantasy, a result of the comment of Dioscorides’ text when he had written that his “*Apocynon*” had fruits recalling those of beans (fig. 9).

The first drawing of *C. erecta* is not very precise, probably made in a hurry, because, as E. Chiovena writes [11], Matthioli’s work was prepared to print in 1551, that is in the year Matthioli got Ghini’s parcel. It maybe that it was made from dry material, the distance between Pisa, where Ghini was working, and Gorizia being considerable, and with the means of transport at that time the plant could get quite dry before it reached Matthioli. In a later (1565), also Latin, edition of the “Comentarii” Matthioli placed a fine illustration of “*Apocynum*” made of a fresh, flowering specimen, bearing fruit, as well. The fruits are here precisely drawn, some of them are even dehisced lengthwise on the adaxial side and with exerted seed hairs.

Though there are no doubts “*Periploca non repens*” is identical with *C. erecta* it is not very clear yet, whether it is the same as “*Apocynon*” of Dioscorides. The description of this plant in Dioscorides is as follows — translation according to J. Goodyer from 1655 [19]: “*Apocynon*, which some call *Cynanchon*, some *Pardalianches*, some *Cynomoron*, and some call it *Cynocrambe* (some *Cynoctonon*, some *Phaleos*, some *Cynanche*, some *Oligoros*, some *Hippomanes*, some *Onistis*, some *Ophioscorodon*,

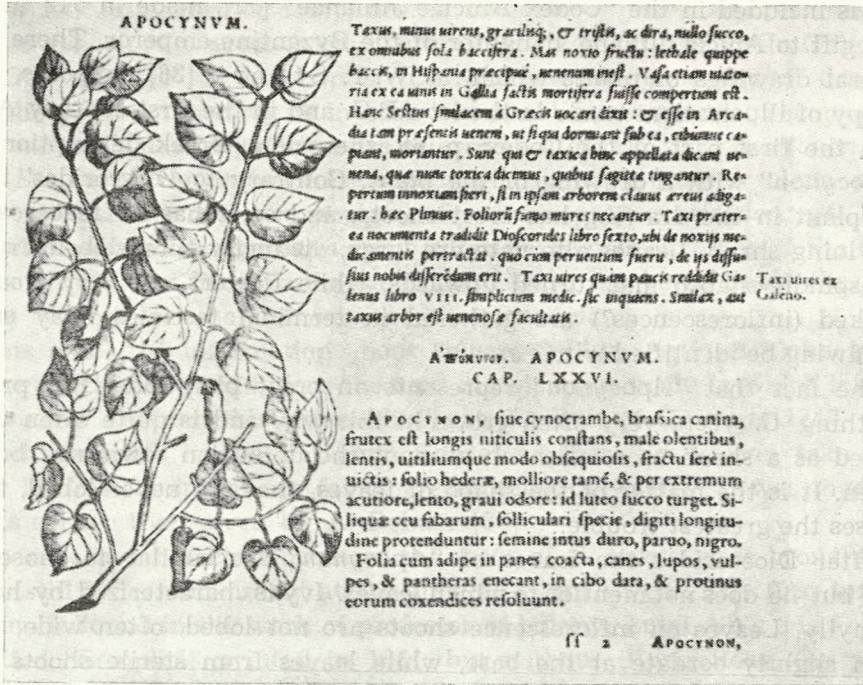


Fig. 9. Oldest illustration of *Cionura erecta* (P. A. Matthioli — Commentarii in Libros Sex Pedacii Dioscoridis, 1554)

some Cynarice, some Elaploscordon, ye Magi Paralysis, the Romans Brassica rustica, and some Canina). It is a shrub having long withy-like, rods, hard to break, leaves like to Ivy but softer and sharper towards ye top, of an heavy scent somewhat viscous, full of yellow juice: by ye fruit as a cod of beans about ye thickness of a finger, like a bladder, in which are little seeds, hard, small, black. The leaves of this being made into bread, and cast unto them doth hill dogs, wolves, foxes, panthers, and forthwith dissolves ye lipps of them”.

In this description the following characters are worth mentioning: 1. considerable number of synonyms, and this may mean that different species of plants were taken for “*Apocynon*” in Dioscorides’ times, 2. poisonous properties, 3. presence of a milky sap in the plant, 4. strongly elongate and easily bent shoots, 5. unpleasant scent of leaves (probably after crushing them), 6. leaves resembling those of ivy, 7. fruit of legume-type, 8. black seeds. Characters 2—5 fully correspond to *C. erecta*. The statement that the leaves of “*Apocynon*” resemble those of ivy, leads into mistake; therefore this feature should be considered longer.

The best help to solve the problem would be an illustration (an old one if possible), connected with Dioscorides’ text. Such an illustration exists

and is included in the "Codex Aniciae Julianae" [12], made in 512 A. D., as a gift to Anicia Juliana, daughter of the Byzantine emperor. There are several drawings of plants which, as W. T. Stearn [36] supposes, are a copy of illustrations made in the 1st c.B.C. and in the first century A.D.

In the first part of the Codex, p. 68, there is a Greek description of "Apocynon" with a drawing of the plant. Contrary to Dioscorides' text the plant in the drawing has erect shoots, and so it has no features of a twining shrub. Leaves alternate are large, distinctly three-lobed, fruits are spindle-shaped and turned upwards, while flowers not very clearly marked (inflorescences?) are gathered in terminal fascicles. May such a drawing be identified with *C. erecta*?

The fact that "Apocynon" represents an erect plant does not prove anything. *C. erecta* very often grows in this way and is quite often described as a shrub or semi-shrub without the definition "twining" being given. It is the matter of the shape of leaves, that are never lobed, that causes the greatest trouble.

After Dioscorides the leaves of "Apocynon" are similar to those of ivy, but he does not mention to which leaves. Ivy is characterized by heterophylly. Leaves on inflorescence shoots are not lobed, often wide, and even slightly cordate at the base, while leaves from sterile shoots are 3—5 lobed. In the south of Europe (and so in Greece too) where ivy usually flowers and bears fruits, the type of entire leaves is very often met with. Such leaves recall, in a high degree the leaves of *C. erecta* and are characterized by a similar consistence. It may well be that Dioscorides thought of just these leaves while the person who drew the picture of "Apocynon" might not have known the plant and, knowing the text only, drew leaves three-lobed (as in ivy from sterile shoots) and alternate. Such reasoning is stressed by the fact, that, compared with a number of other drawings of plants in the Codex, which were drawn with precision, the illustration of "Apocynon" shows to be very primitive. It may be assumed that a verbatim understanding of Dioscorides text (description of leaves) can be also traced in the name *Lobel* applied (1576, *Plantarum seu Stirpium Historia*) to "Apocynon" — i.e. "*Periploca græca foliis latioribus hederaceis*"; the illustration added to the text represents, however, in Lobel's work a plant with leaves unlobed.

Considering these conclusions we can be almost sure that *C. erecta* was already known in the Antiquity; in the time of Dioscorides (i.e. in the 1st century A.D.) may be even earlier; the great number of synonyms, which must have been formed in the course of time, seems to be quite a sufficient proof.

Dioscorides, however, was not the only author in Antiquity that wrote about "Apocynon". This species is also mentioned by Pliny and Galenus. Pliny in his „*Historiae naturalis libri XXXVII*" mentions: "*Apocyni frutex ex aqua, frutex est folio hederæ, molliore tamen, et minus*

longis viticaulis, semine acuto, divisa, lanuginoso, gravi odore. Canes et omnes quadrupes necat in cibo datum" (vol. 24, cap. 58), while Galenus in "Opera Omnia" in the chapter "De Apocyno aut cynocrambe" describes the plant interesting us in such a way: "Vocant autem quidam eam Cynomorum, quandoquidem canes celerrime interimit, sicut lycotonon lupos. Est autem hominibus veneneum herba multum graviter olens, proinde omnino calida est non sternue, non tamen proportione desiccatur. Itaque illita admodum digerentis est facultatis". The concurrence of the two texts with that of Dioscorides is clear and there can be no doubt that all these authors write about one and the same plant.

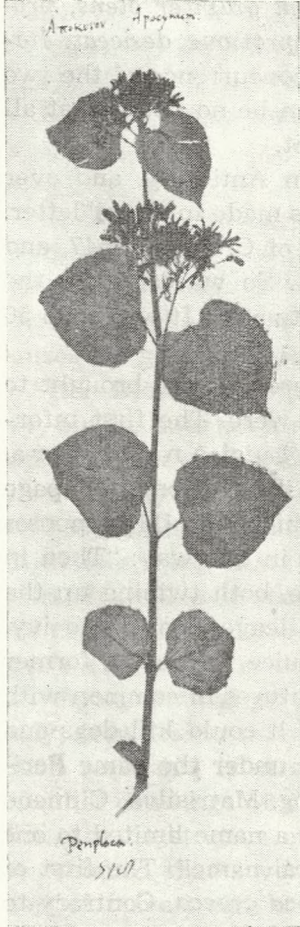
This is all the information about "Apocynon" in Antiquity, and over 1300 years had elapsed before the next mention was made in Ghini's letter. As we can see from this letter Ghini got the fruit of *C. erecta* 1547, and sowed the seeds in the Botanical Garden in Pisa. So we can take the year 1547 as the initial one for *C. erecta* being cultivated. It was thus 50 years earlier than given by A. Rehder [30].

By an odd set of circumstances the seeds of *C. erecta* were brought to Italy still twice and nearly at the time as Ghini's were. The first information is found in the work of professor of botany, Luigi Anguillara, entitled "Semplici" printed in 1561, but without illustrations. On page 274, the chapter about "Apocino" from Crete (as Chioventa [11] supposes it is *Cynanchum canescens* W.) Anguillara remarks in this way: "Then in 1549 two local plants were sent to me from Greece, both twining up the shrubs by means of long twigs. One of them has leaves similar to ivy, while the other to oleander and this has a white juice, while the former has a yellowish one. The former plant has many features in common with Apocino and perhaps it would be just this plant if it could kill dogs and send forth such small twigs. They were sent to me under the name *Periplocada*, a name given to any plant that twines, e. g. *Matrisilva*, *Climeno* and others. The name *Periplocada*, therefore, is not a name limited to one special plant, as some people think, but is a general name". The first of these species is *C. erecta*, and the latter — *Periploca graeca*. Contrary to L. Ghini who got the seeds of these species from Syria, the seed of Anguillara came from Greece, so that his information of 1561 is the first mention of *C. erecta* occurring in Europe.

In the same years 1549 Pietro Antonio Michiel, a Venetian nobleman and Ghini's disciple, who was associated with the Botanical Garden in Venezia for many years, got the seeds of *C. erecta*, too. These seeds came from the East brought by a French traveller, Pierre Belon. This reference is given by Michiel in his "I Cinque Libri di Piante, Codice Marciano", printed as late as 1940 in Venezia, commented upon by Ettore De Toni. In the book entitled "Libro Azzuro" on p. 35 under No 42 there is a description of a plant named "Asclepiade", it being *C. erecta* according to E. Francini [14] and De Toni. The seeds brought by

Belon are derived from the Sinai peninsula i.e. from the most extreme, southern place of occurrence of *C. erecta*.

The drawing of *C. erecta* given in Matthioli's works is, on the whole, quite a sufficient proof of *C. erecta* being identical with the plant which, according to Ghini and Matthioli, was described as "*Apocynon*" by Dioscorides. A much better proof, however, could be the herbarium specimen of this plant derived from the time when these Italian botanists were active. In the oldest herbarium Cibo/Petrollini kept in the Biblioteca Angelica in Roma, compiled, most probably, in the years 1530—1550 there is no such specimen [29]. Later, older herbaria: U. Aldrovandi, kept in Bologna and arranged, as Saint-Lager suggests [33], about 1554, as well as Girault's herbarium from 1558, kept in Paris, specimens of *C. erecta* are missing, too. True enough, in the first volume of the Aldrovandi herbarium the name "*Periploca*" can be found under number 553 of the index, but the herbarium sheet has not been preserved [28]. It is hard to judge whether it was *Periploca graeca* ("*Periploca repens*") or *C. erecta* ("*Periploca non repens*").



Phot. Instituto Botanico,
Firenze

Fig. 10. Oldest herbarium specimen of *Cionura erecta* — Caesalpini herbarium, ca. 1563

The oldest herbarium specimen of *C. erecta* is found in Caesalpini's herbarium, kept in Firenze, at present. This herbarium dates from 1563, most probably, and was arranged by T. Caruel [10]. Under No 517 on the same sheet as *Periploca graeca* there is a well-preserved flowering twig of *C. erecta* (fig. 10). Caesalpini writes about this plant in book 3, chapter 42, page 119 of his work "*De Plantis Libri XVI*", edited in Firenze in 1583, that it corresponds to "*Apocynon*" of Dioscorides. This herbarium specimen must have been gathered in the Botanical Garden in Pisa, where Caesalpini lectured on botany after Ghini.

C. erecta was probably also added to L. Rauwolf's herbarium, kept in Leiden and dating from the 16th c. According to Saint-Lager [33] it was in the fourth volume of this herbarium gathered by Rauwolf in the years 1573—1575 during his travel to the East (338 plants). Rauwolf's herbarium was elaborated by J. F. Gronovius [18] who under No 68 of the herbarium gives "*Apocynum asclepiade simile*" (*C. erecta*) derived

from Tripoli and Birra lying at the Euphrates; so it would be the first herbarium specimen of *C. erecta* from its habitat. The specimen is, however, not represented in Rauwolf's herbarium at present (according to the information given by Dr S. J. van Ooststroom from Rijksherbarium in Leiden).

C. erecta is also missing in the great herbarium of G. Bauhin, author of "Pinax", though this species was well-known to Bauhin [9]. *C. erecta* is only found in a further, successive herbarium of Joahim Burser, collected in the first half of the 17th c. and kept in Uppsala at present. The index of this herbarium made by H. O. Juel in 1936 [24] mentions "*Apocynum folio subrotundo*", i.e. *C. erecta* in volume 17, under No 50. This specimen just as the specimen from Caesalpini's herbarium is well preserved and represents a flowering twig.

The holotype of *C. erecta* is found in the herbarium of Linnaeus (fig. 2). It is difficult to state whether it is a wild or cultivated plant (this being more likely to be true), it may be only noted that both in "Hortus Cliffortianus" and in "Species Plantarum", Linnaeus refers to Syria as the home of *C. erecta*, quite ignoring Greece mentioned by Anguillara nearly 200 years before. During a very long period, beginning with Dioscorides and ending with 1844 when Grisebach published his diagnosis of the genus *Cionura*, the name *C. erecta* was being changed and transformed, and these changes being as follows:

- *Apocynon* (Dioscorides, 1st c. A. D.)
- *Periploca non repens* (Ghini 1551)
- *Apocynum* (Matthioli 1554)
- *Periplocada* (Anguillara 1561)
- *Asclepiade* (Michiel, 16th c.)
- *Apocynum sive Cynocrambe* (Lonicer 1565)
- *Apocynum Periploca Graeca foliis latioribus hederaceis* (Lobel, 1576)
- *Periploca prior* (Dodoneus 1583)
- *Apocynum primum latifolium* (Clusius 1601)
- *Apocynum alterum genus* (Camerarius 1611)
- *Apocynum folio subrotundo* (Bauhin 1623)
- *Periploca latifolia* (Gerard 1633)
- *Apocynum latifolium non repens* (Parkinson 1640)
- *Apocynum erectum fruticosum folio subrotundo* (Hermann 1648)*
- *Apocynum folio rotundiore flore ex albo-pallescente* (Bauhin 1651)
- *Apocynum Bithynicum* (Tournefort 1703)
- *Vincetoxicum fruticosum, folio subrotundo populneo* (Ruppium 1718)
- *Apocynum erectum, fruticosum folio subrotundo glauco* (Boerhaave 1720)

* The first use of the term "*erecta*".

Cynanchum caule erecto divaricato, foliis cordatis glabris (Linnaeus 1737)

Cynanchum erectum (Linnaeus 1753)

Cynanchum rectum (Sibthorp 1806)

Marsdenia erecta (Brown 1809)

Pergularia erecta (Sprengel 1825)

Cynanchum monspeliacum (Decaisne 1844)

Cionura erecta (Grisebach 1844)

APPLICATION

Toxic properties of *C. erecta* were already known in Antiquity, but, it seems, they do not affect animals in an equal degree. R. A. Blake lock [4] basis on the observation of E. R. Guest, from Rowanduz Gorge in Kurdistan writes, that "... appeared to have been eaten back almost to the ground by sheep or passing donkeys". As C. Zerlentis stated 8—12 g of fresh leaves of *C. erecta*, gathered during summer, when the plant is rich in milky sap, is a lethal dose to guinea pigs dying after 3—7 days [41]. As far as people are concerned the milky sap of this plant, in contact with skin, causes serious burns and blisters, while swallowed it causes fits, convulsions and even death, as H. F. Handel-Mazzetti [20] and J. M. Ricardou [31] state. *C. erecta* has been applied in popular medicine, especially in the East, where its narcotic juice has been used in different kinds of nervous diseases [31]. According to Th. v. Heldreich [21] in Greece powdered root bark of *C. erecta*, mixed with a very common species *Mylabaris*, was used as a medicine in rabies (Th. G. Orphanides, in sched. 88, as well). Even at present in Bulgaria, near Svilengrad, the infusion from fruits of *C. erecta* is drunk as "tea" in gastric colic [25].

As an ornamental shrub *C. erecta* has not been appreciated and so it is grown only in botanical gardens, and even there rather seldom. It may be that this is connected with its specific requirements, which prevent its common usage. It is a pity, because when blooming richly *C. erecta* is a very decorative plant, especially when it grows erect.

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KAZIMIERZ BROWICZ

Rodzaj Cionura Grisebach — geograficzne rozmieszczenie, historia i zastosowanie

Streszczenie

W roku 1844 A. Grisebach opisał nowy rodzaj z rodziny *Asclepiadaceae* i nadał mu nazwę *Cionura*. Nazwa ta została utworzona przez połączenie dwóch słów pochodzenia greckiego: "kion" = słup, kolumna i "urá" = ogon. Do rodzaju *Cionura* zaliczył Grisebach tylko jeden gatunek, a mianowicie *C. erecta*. Nie był to jednak nowy gatunek, gdyż opisywano go już znacznie wcześniej i to pod różnymi nazwami, z których *Marsdenia erecta* R. Br. była najczęściej stosowana i po dziś dzień jest w powszechnym użytku. Po raz pierwszy wymienił ją w roku 1809 Robert Brown w wykazie gatunków nowo utworzonego przez siebie rodzaju *Marsdenia*.

Rodzaj *Marsdenia* obejmuje obecnie około 80 gatunków występujących przede wszystkim w tropikalnych i subtropikalnych regionach obydwu półkul: w Afryce, Azji, Australii, Środkowej i Południowej Ameryce. Nic więc dziwnego, że przy tak olbrzymim wprost zasięgu (ryc. 1) *Marsdenia* jest rodzajem heterogenicznym i jak podaje A. A. Bullock (1957) można z niej wyodrębnić kilka mniejszych rodzajów (np. *Dregea* E. Mey., *Leichardtia* R. Br., *Anisophus* N. E. Br.), a między innymi monotypowy rodzaj *Cionura*. Obok cech morfologicznych, za odrębnością tego ro-

dzaju przemawiają również dane biochemiczne (patrz: T. Baytop, M. Tanker, N. Öner, S. Tekman, 1959).

Autor podaje dokładny opis morfologiczny *Cionura erecta*, pełną synonimikę tego gatunku oraz na podstawie przejranych okazów zielnikowych, wypożyczonych z licznych zielników europejskich (wykaz załączono), omawia jego geograficzne rozmieszczenie.

Zasięg *C. erecta* obejmuje Półwysep Bałkański (południowa Jugosławia, Albania, Grecja, południowa i wschodnia Bułgaria, europejska Turcja), Krete, wyspy Morza Egejskiego oraz zachodnią Azję (Turcja, południowo-zachodni Iran, północny Irak, północno-zachodnia Syria, Liban). Oprócz tego *C. erecta* podawana jest również z doliny Jordanu (Israel-Jordania), z półwyspu Sinai, a także z jednego stanowiska w zachodnim Afganistanie. Najdalej na północ sięga *C. erecta* w Albanii po okolice Shkodër oraz w Bułgarii, gdzie wzdłuż wybrzeży Morza Czarnego dociera do miejscowości Bjala, a więc mniej więcej po 42°53' szer. geogr. półn. (ryc. 4).

Jest to typowa roślina miejsc suchych i nasłonecznionych, która występuje przede wszystkim na stanowiskach odkrytych, na glebach piaszczystych, żwirowiskach i wydmach, zwłaszcza wzdłuż wybrzeży morskich i dolin rzecznych, niekiedy także na skałach (wapiennych), wśród muraw i zarośli względnie w świetlistych lasach dębowych. Rośnie głównie na nizinach i w niższych położeniach górskich, niemal od samych pobrzeży morza do około 900—1000 m n.p.m. Niekiedy jednak pojawia się nawet na znacznych wysokościach, jak np. w Turcji po 1400 m, w Iranie po 1640 m., w Iraku po 1800 m, a w Libanie po 1950 m n.p.m. W zbiorowiskach roślinnych z udziałem *C. erecta*, zwłaszcza na ubogich glebach charakteryzuje się ona specyficznym synekologicznym działaniem, wpływa bowiem hamująco na kiełkowanie nasion całego szeregu roślin, co zostało stwierdzone przez C. Zerlentis'a (1958, 1962).

W zależności od warunków ekologicznych rośnie *C. erecta* bądź to w formie niskiego, wyprostowanego i słabo rozgałęzionego krzewu, bądź też jako krzew pnący o silnie wydłużonych pędach (5—8 m), które pokładają się po ziemi lub też wspinają w górę po gałęziach sąsiednich drzew i krzewów. Te dwie formy wzrostu są przyczyną, że *C. erecta* opisywana jest bądź to jako krzew „wyprostowany”, bądź jako pnącź; nie posiadają one odrębnych zasięgów i nie mogą być traktowane jako jednostki taksonomiczne. Oprócz tego znane są u *C. erecta* dwie inne formy różniące się barwą kwiatów — białe i żółte. Formy te nie były wprawdzie dotąd opisane, lecz wymieniane są niekiedy na etykietach zielnikowych.

W części historycznej omawia autor najwcześniejsze wiadomości o *C. erecta*. Gatunek ten, jak można przypuszczać, znany był pod nazwą „*Apocynon*” już w starożytności Dioscoridesowi, Pliniuszowi i Galenowi. Najstarsza ilustracja „*Apocynon*” pochodzi z 512 roku i zamieszczona jest w greckim rękopisie tekstu Dioscoridesa zwanym „*Codex Aniciae Julianae*”. Przedstawiona na niej roślina różni się jednak bardzo od *C. erecta*, to też autor porównuje dokładnie tekst Dioscoridesa z rysunkiem i dochodzi do wniosku, że pomimo pewnych niejasności, wszystko przemawia za tym, że „*Apocynon*” to *C. erecta*.

Pierwsza, zupełnie pewna wiadomość o *C. erecta* pochodzi z roku 1551, z listu Luca Ghini, profesora botaniki w Pizie, do Matthiolo. W liście tym Ghini nazywa *C. erecta* mianem „*Periploca non repens*” i podaje, że pochodzi ona z Syrii. Dalsze informacje o tym gatunku zamieszczone są w dziełach Matthiolo, L. Anguillara i P. M. Michiela. Celem potwierdzenia tych danych przeprowadził autor poszukiwania w starych zielnikach europejskich i wymienia najdawniejsze, zachowane do dziś okazy *C. erecta* z zielnika Cesalpino (1563), J. Bursera (pierwsza połowa wieku XVII) i Linneusza.

Trujące własności *C. erecta* były już znane w starożytności. Jak to wykazały ostatnie doświadczenia C. Zerlentiś'a (1962) 8—12 gr świeżych liści *C. erecta*, zebranych w okresie lata, kiedy roślina jest zasobna w sok mleczny, stanowi śmiertelną dawkę dla świnek morskich, które giną po 3—7 dniach od daty spożycia. U ludzi mleczny sok *C. erecta* powoduje w zetknięciu ze skórą przykre oparzenia, a zażyty wewnętrznie drgawki, konwulsje, a nawet i zgon. *C. erecta* stosowana była w medycynie ludowej, a jeszcze i dzisiaj w Bułgarii napar z jej owoców pije się przy kolkach żołądkowych (Kitanov, 1953). Jako krzew ozdobny nie znalazła *C. erecta* większego uznania i można ją oglądać w uprawie tylko w ogrodach botanicznych i to raczej rzadko.