CUPRESSACEAE

Notes on Widdringtonia

In the course of a revision of the genus *Widdringtonia* Endl. for the Flora of Southern Africa, attention was given to the typification of *W. juniperoides* (L.) Endl., the name generally applied to the South African " Cedar " occurring on the Cedarberg in the Clanwilliam District of the Cape Province. As a result, the conclusion was reached that the Linnaean basionym, *Cupressus juniperoides* L., should be rejected as a *nomen dubium*, a view already expressed by Stapf in Flora Capensis 5, 2: 23 (1933). Unfortunately, Stapf did not carry his opinion to the conclusion required by the International Code of Botanical Nomenclature, and he upheld the name *W. juniperoides* Endl., Syn. Conif. 34 (1847), non (L.) Endl. Endlicher validly effected the combination *W. juniperoides* (L.) Endl., taking up the Linnaean epithet, and enlarging the concept of the species to include certain specimens from the Cedarberg.

Linnaeus described *Cupressus juniperoides* in his Species Plantarum ed. 2, 1422 (1763), basing his description on two-year-old plants, originating, according to him, from " Caput Bonae Spei ". There is no evidence that any subsequent author saw a specimen of the plant described by Linnaeus, and no specimen exists in the present Linnaean Herbarium. Judging from historical records, it is very unlikely that any collector visited the Cedarberg at such an early date. If the seed did come from the

Cape it is more probable that the species concerned would be the one readily available at the Cape, which was adequately described a few years later as *Thuia cupressoides* L., Mantissa Plantarum 125 (1767). The name *W. cupressoides* (L.) Endl. has generally been accepted as the correct one for the S.W. Cape plant. Up to the time of Endlicher, botanists had occasionally applied the epithet " juniperoides " to the S.W. Cape plant e.g. specimens collected by *Oldenland* (BM) and *Burmann* (G). The epithet " juniperoides " thus, as the oldest name, should probably be applied to the S.W. Cape plant known as *W. cupressoides*. However, this might cause confusion, so it has been decided to reject the epithet altogether, on the grounds that the epithet is inadequately described and typified, and might even belong to a genus other than *Widdringtonia*. If this course is adopted, *W. cupressoides* (L.) Endl. remains the correct name for the S.W. Cape plant, while a name other than *W. juniperoides* becomes necessary for the Clanwilliam " Cedar ". Although numerous synonyms with copious ecological and economic notes exist, none of them appears to be supplied with a botanical description. Thus the species is now redescribed and typified.

Widdringtonia cedarbergensis *Marsh*, sp. nov., *W. schwarzii* (Marloth) Mast. affinis, sed seminibus minoribus angustissimis alatis et cicatriculis minoribus differt.

Arbor vel frutex 5–20 m altus. *Folia* adulta squamiformia, appressa, decussata, ovata. *Coni masculi* parvi, 4 mm longi; squamae c.12, peltatae, late ovatae, decussatae. *Coni feminei* globosi; valvae 4, lignae, rugosae, verrucis ad margines regulariter dispositis. *Semina* ovoidea, obscure alata, trigona; seminis cicatricula c. 4·5 mm lata, 6 mm longa. *Cotyledones* post germinationem 35 mm longae, 5 mm latae.

Callitris arborea Schrad. ex Drege, Zwei Pflzgeogr. Doc. 73 (1843), nom. nud.; Dallimore in Kew Bull. 35: 222 (1913), nom. nud.; Stapf in Fl. Cap. 5, 2: 24 (1933), in synon. *C. ecklonii* Schrad. ex Pappe, Fl. Cap. Med. Prodr. ed 1: 25 (1850), nom. nud. *C. juniperoides* sensu Durand and Schinz, Consp. Fl. Afr. 5: 951 (1894); Engl., Pflzw. Afr. 2: 89 (1908); Marloth, Kapland 167 (1908).

Widdringtonia wallichii Endl., Syn. Conif. 34 (1847), nom. nud.; Stapf in Fl. Cap. 5, 2: 23 (1933), in synon. *W. juniperoides* sensu Endl., Syn. Conif. 32 (1847); sensu Stapf in Fl. Cap. 5, 2: 23 (1933); sensu Hubbard in S. Afr. Journ. Sc. 33: 572 (1937); sensu Smith in Journ. S. Afr. For. Add. 25 (1955); sensu Chapman in Kirkia 1: 138 (1960–61). *W. wallichiana* Gordon, Pinet. suppl. 107 (1875), nom. nud.

Type: Clanwilliam, Cedarberg Mts., near Middelberg West Peak, 17.6.1965, *Lückhoff* in PRE 29824 (PRE, holo.).

Tree normally 5–7 m high, occasionally attaining a height of about 20 m with stem diameter up to 2 m; crown pyramidal when young, spreading with age; bark on young trees reddish grey, thin, fibrous, flaking off annually. *Leaves* of two types; juvenile leaves on seedlings and young trees needle-like, spreading, 1–2 cm long and up to 2 mm broad; adult leaves scale-like, appressed, ovate, 2–4 mm long, usually strictly decussate, semi-circular in transverse section, adnate at the base, free portion often much shorter than adnate portion. *Male cones* 2 mm long, mostly on short, lateral branchlets; scales usually 6 pairs, decussate, coriaceous, peltate, broadly ovate, acuminate, with 4 pollen sacs at the base of each scale. *Mature female cones* subglobose, diameter about 2·5 cm, usually consisting of 4 (rarely 5 or 6) woody valves; valves rough, with regular verrucae along the margin. *Seeds* ovoid, obscurely winged, trigonous; seed scar about 4·5 by 6 mm. *Cotyledonary leaves* about 35 mm long by about 5 mm broad. PLATE 1.

Found on the Cedarberg Mts. near Clanwilliam in the Cape Province; occurs singly or in groups over some 30 miles on rocky outcrops at an altitude of between 3,000 and 5,000 feet.

CAPE.—Clanwilliam: Cedarberg Mts., *Coetzee* s.n. (PRE); *Compton* 12776 (NBG); *Drege* s.n, (BM, G, L, P, S); *Forester Bath* 5535 (FD Herb., S); *Forester* s.n. (L, PRE); *Galpin* s.n. (PRE); *Kappler* 9626 (FD Herb.); *Leipoldt* 1649 (BM, G, K, P, Z); *Lückhoff* s.n. (PRE); *MacOwan* in BOL 27689 (BOL); *Marloth* 3086 (PRE); *Mogg* 2010 (PRE); *Pocock* 522 (STE); *Wallich* s.n. (BM, K); *Ecklon & Zeyher* 74·3 (GRA, L, MO, W, Z; this gathering is attributed to *Drege* in E and G).

A detailed study of the genus revealed that the species can be divided into two main groups on the basis of the valve structure of the female cone and the shape of the adult leaves. One of these groups consists of the two species *W. schwarzii* and *W. cedarbergensis*, which differ only in their seed characteristics. The other group consists of the species *W. cupressoides* in the broad sense, which is now interpreted as including the following species which were kept separate by Stapf, l.c.: *W. stipitata* Stapf, *W. dracomontana* Stapf and *W. whytei* Rendle. Although local geographical forms in this group can sometimes be recognised, the degree of variation is such that no constant differences could be found on which separate specific or even subspecific status could be justified.

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