

A New Species of *Eucalyptus* (series *Subexsertae*) from the Northern Territory.

N.G. Walsh¹ and D.E. Albrecht²

1. National Herbarium of Victoria, Birdwood Ave, South Yarra, Victoria 3141, Australia
2. Alice Springs Herbarium, Parks and Wildlife Commission of the Northern Territory, PO Box 1046, Alice Springs, Northern Territory 0871, Australia.

Abstract

Eucalyptus gregoriensis, a new species in series *Subexsertae* Blakely, informal section *Exsertaria* of Pryor and Johnson (1971) from the Victoria River district of the Northern Territory is described and illustrated, its distribution and conservation status provided, and its affinities to other members of the *Subexsertae* in the region are discussed. Its nearest relative appears to be *E. cupularis* C.A. Gardner from which it differs most significantly in its 3-flowered, subsessile umbellasters.

Introduction

In April 1996, a collecting expedition to the Gregory National Park, a reserve of some 13000 km², situated about 400 km SSW of Darwin, was undertaken with botanists from the National Herbarium of Victoria, the herbaria of the Northern Territory in Darwin and Alice Springs, and biologists and rangers from the Parks and Wildlife Commission of the Northern Territory. The expedition was in commemoration of the sesquicentenary of the founding of the Royal Botanic Gardens Melbourne, and the centenary of the death of Ferdinand Mueller, the first Government Botanist of the colony of Victoria. The expedition was to revisit some of the ground covered by the North Australian Expedition of 1855–56, led by A.C. Gregory and on which Mueller travelled as botanist (see Cumpston 1972), and to compile an inventory of plants and animals for the western and southern sections of the National Park. In the course of the expedition, several undescribed plants were discovered (and one rediscovered after nearly 150 years; see also Bean, Craven, this volume).

Taxonomy

Eucalyptus gregoriensis N.G. Walsh & D.E. Albrecht, sp. nov.

Eucalypto cupulari C.A. Gardner et *E. herbertianae* affinis inflorescentiis floribus tribus, subsessilibus differt.

Type: Northern Territory, Victoria River District, Gregory National Park, tributary of East Baines River, 50 km SW from Bullita outstation, N.G. Walsh 4547 and G.J. Jones, 17.iv.1996 (holotype MEL; isotype DNA).

Small *tree* or mallee, usually of crooked or semi-weeping habit, to 8 m high. *Canopy* rather open with more or less weeping foliage. *Bark* smooth and white throughout, powdery. *Pith glands* absent. *Cotyledons* broadly cordate or shallowly bilobed, c. 3–4 mm long, 4–5 mm wide, reddish below. *Seedling leaves* shortly petiolate, elliptic, to c. 3 cm long, 15 mm wide, opposite for c. 10 nodes. *Juvenile leaves* alternate, ovate, to 18 cm long, 9 cm wide, slightly discolourous, dull grey-green, lightly waxy; venation reticulate, intramarginal vein 1.5–5 mm from margin;

oil glands numerous, island. *Adult leaves* alternate, narrowly lanceolate, sub-falcate, mostly 11–22 cm long, 12–30(–38) mm wide, concolorous, dull grey-green, drying yellow-green, thick-textured; venation densely reticulate, intramarginal vein 0.6–2.5 mm from margin; oil glands rather sparse, mostly intersectional, obscure; petioles flattened, (1.5–)2–3(–4) cm long. *Umbellasters* 3-flowered, axillary, or occasionally without subtending leaves or bracts; peduncles 0.5–2(–4) mm long, thick, terete or weakly 2-angled. *Buds* (when near mature) sessile, obovoid, 6–10 mm long, 3–4 mm wide, weakly to strongly 2-angled, non-waxy; operculum narrow-hemispherical, slightly shorter to (rarely) slightly longer than hypanthium, obtuse to broadly acute, outer operculum shedding early. *Stamen* filaments variously flexed in near-mature buds; anthers all fertile, versatile, thecae oblong, dehiscing longitudinally. *Ovary* 4(5)-locular; ovules in 4 rows per locule. *Fruits* sessile, hemispherical to cupular, 5–7.5 mm long, and as wide or slightly wider, usually 2-angled (slightly ribbed), at least near base; disc flat to slightly ascending or domed; valves 4 (very rarely 5), strongly exerted, triangular, 2.5–3.5 mm long, acute. *Seeds* black or very dark red-brown, 1.5–2 mm long, angular, with an irregularly dentate or denticulate flange along the angles; hilum terminal. (Fig. 1)

Specimens Examined

Northern Territory: Gregory National Park, c. 45 km SSW of Bullita outstation, *M.F. Duretto 1185* and *T.A. Davies*, 17.iv.1996 (CANB, DNA, MEL); Gregory National Park, Wickham River, c. 2 km upstream of junction with Broadarrow Creek, *M.J. Barritt 2281* and *D.E. Albrecht*, 16.iv.1996 (DNA); Gregory National Park, headwater of tributary of Snake Creek, 30 km WSW Bullita outstation, *N.G. Walsh 4437* and *C.A. Coles*, 16.iv.1996 (DNA, MEL); cultivated seedling from Walsh 4437, *C.R. Dunlop 10185* (DNA); Victoria River Downs, Gordon Ck Gorge, *P.K. Latz 10298*, 31.v.1986 (DNA).

Distribution and Conservation Status

Eucalyptus gregoriensis is known by collections from four localities in the western sector of the Gregory National Park, Northern Territory and one from the adjacent Victoria River Downs Station. Given that the area of occurrence is difficult to access and there has been limited, site-specific fieldwork, it is likely to be found in more locations within Gregory National Park (and possibly adjoining lands). Conservation status is assessed at 2RC- (Briggs and Leigh 1996).

Habitat

All collections of the new species have been made from shallow soils overlying sandstones, immediately adjacent to seasonal watercourses, or on cliffs and subtending slopes fringing watercourses. Grows in woodland dominated by *Corymbia* spp. (e.g. *C. cliftoniana*, *C. aspera*), *Eucalyptus brevifolia*, *Xanthostemon paradoxus*, *Gardenia* spp. etc.

Etymology

The epithet refers to the Gregory National Park, from where all but one collections of the species have been made to date. It also commemorates A.C. Gregory, leader of the successful North Australian Expedition (1855–56) in which the first European exploration of the area was undertaken.

Notes

Eucalyptus gregoriensis is placed in the series *Subexsertae* (Chippendale, 1988) excluding those species transferred to the series *Brevifoliae* by Brooker and Slee

(1994). The uniformly coloured bark, absence of pith glands, subequal operculum and hypanthium, fruit with strongly exerted valves, and angular dark seeds with an irregularly dentate or denticulate flange along the angles are characteristic features of the series *Subexsertae*. The broadly cordate or shallowly bilobed cotyledons of *E. gregoriensis* however appear to be anomalous within the series (*Subexsertae* members typically have reniform cotyledons). In a geographical sense, *E. gregoriensis* also fits well within the series which is almost exclusively distributed in tropical northern Australia.

In the classification system proposed by Pryor and Johnson (1971) *E. gregoriensis* would be placed in the section *Exsertaria*, series *Albae*, subseries *Herbertianae* (with *E. cupularis* and *E. herbertiana* the other members of the subseries).

Eucalyptus gregoriensis closely resembles *E. cupularis* C.A. Gardner, and to a lesser degree, *E. herbertiana* Maiden. The three taxa are similar with respect to the shape of the buds, fruit and seeds, strongly exerted valves and alternate adult leaves. The new species differs from both *E. cupularis* and *E. herbertiana* in its shorter peduncle (0.5–2(–4) mm long for *E. gregoriensis*; ≥ 4 mm long for the other species) and in its consistently 3-flowered inflorescences. It also tends to have larger fruit than *E. herbertiana* (which has fruits usually ≤ 5 mm long) that appear to be consistently sessile (pedicellate to sessile in *E. herbertiana*). Three-flowered inflorescences are atypical in the informal section *Exsertaria* and otherwise are typically found only in *E. morrisii* R. Baker and (less commonly) in *E. nandewarica* L.A.S. Johnson and K.D. Hill, both mallees or small trees of inland northern New South Wales, and both belonging to series *Exsertae* Blakely.

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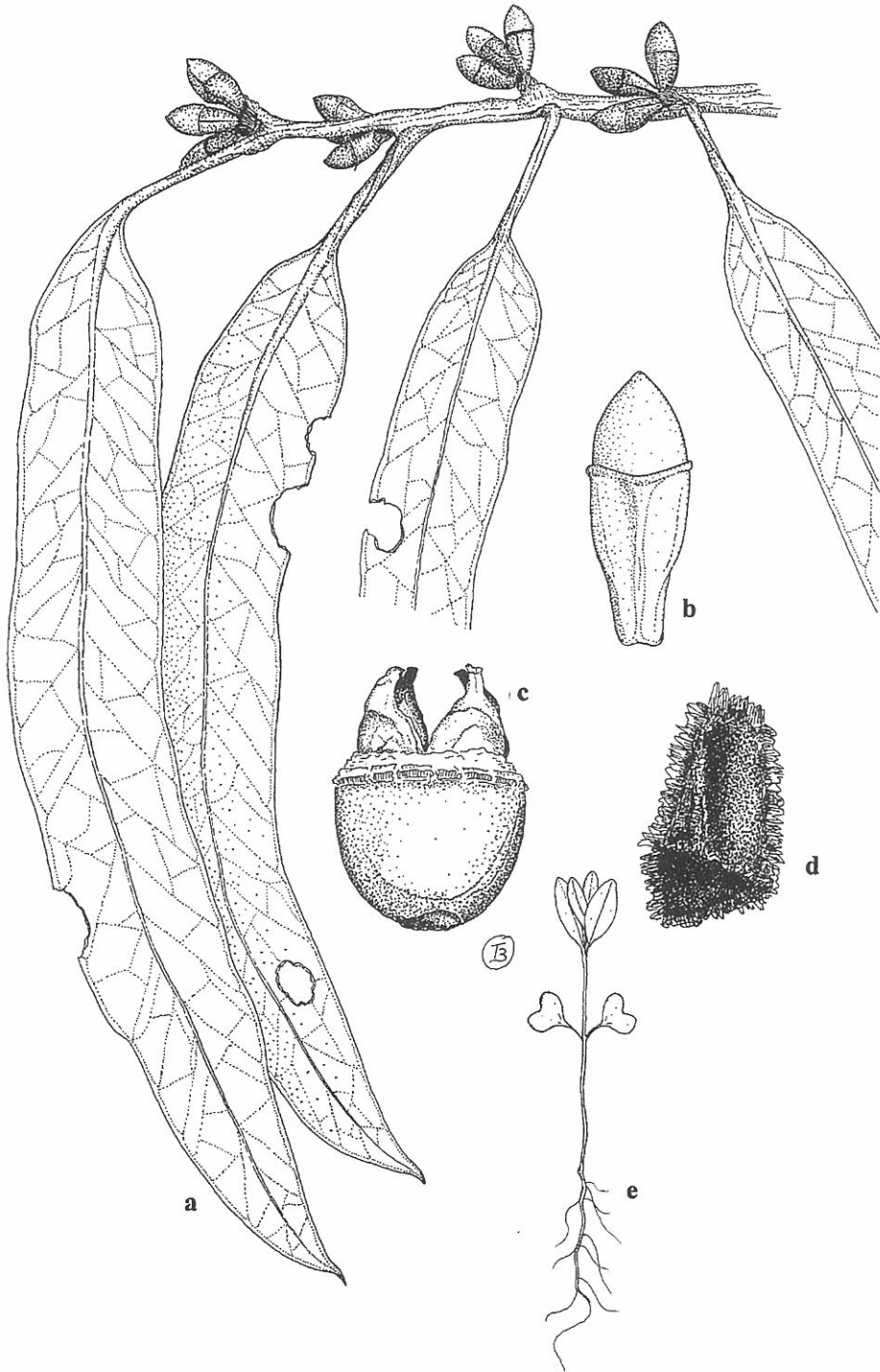


Fig. 1. *Eucalyptus gregoriense*; **a** branchlet in bud x 1; **b** near-mature bud x 4; **c** mature capsule x 4; **d** seed x 20; **e** seedling x 1 (all from Walsh 4547, MEL).