Eucalyptus ornata (Myrtaceae), a new Silver Mallet from near Kondinin, Western Australia

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Abstract

Crisp, M. D. Eucalyptus ornata (Myrtaceae), a new Silver Mallet from near Kondinin, Western Australia. Nuytsia 5(2): 311-315 (1984). A new eucalypt apparently restricted to the region around Kondinin, Western Australia, is described. It is closely related to Eucalyptus falcata Turcz., from which it may be distinguished by the prominent ribs on the buds and fruits, and by the shape of the fruits.

Introduction

In January 1979, while searching near Kondinin in the Western Australian wheat-belt for the rare and endangered species, Daviesia purpurascens Crisp, a party including myself from the Australian National Botanic Gardens discovered a grove of small silver-barked eucalypt trees with very ornate fruits. Further examination showed these plants to be closely related to Eucalyptus falcata but to differ in their conspicuously ornate fruits. At the time of their discovery, these trees bore no mature buds, so I delayed further study of them until such material could be obtained. It was not until September, 1983 that Mrs J. Taylor and Mr P. Ollerenshaw of the Australian National Botanic Gardens were able to obtain mature buds.

The material held under Eucalyptus falcata in relevant herbaria (CBG, FRI, NSW, and PERTH) was examined to determine its pattern of variation and its relationship to E. ornata. Some additional specimens of E. ornata were found among this material, plus an intermediate between E. ornata and E. falcata in the National Herbarium of New South Wales. The intermediate is discussed in the section on affinity later in this paper. Photographs of the types of E. falcata, E. goniantha and their synonyms were examined at the Herbarium of the CSIRO Division of Forest Research.

Eucalyptus ornata

Crisp, sp. nov. (Figure 1)


Tree to 10 m tall, with a straight trunk, steeply ascending branches and a high, open crown (Figure 1b); bark smooth, grey and white (Figure 1c). Cotyledons bisected (Figure 1d). Seedling leaves opposite for 10-12 nodes, petiolate, at first linear-obovate, becoming elliptic, obtuse, 12-32 x 2-10 mm (Figure 1d). Juvenile leaves alternate, petiolate, ovate
Figure 1. *Eucalyptus ornata* a—Holotype, Taylor 2244 (CBG). b—Habit. c—Bark. d—Seedling, from Crisp 5522 (CBG 8007431). e—Buds, from isotype (CBG). f—Fruits, from Crisp 5522 (CBG).
or elliptic, acute, 35-60 x 15-20 mm, dull, grey-green. Adult leaves alternate, spreading to descending, narrow-ovate, mostly curved, long acute, tapered to base, 50-150 x 10-22 mm, glossy, green; petiole 10-20 mm long (Figure 1a). Unit inflorescence axillary, solitary, (7) 11-flowered; peduncle decurved, compressed, slender, 12-20 mm long. Buds pendulous, ovoid, rostrate, 14-23 x 7-10 mm; hypa nthium and operculum prominently 7-9-ribbed; hypa nthium with ribs thickened into large knuckle-like protuberances at rim, tapered to pedicel; pedicel slightly angular, slender, 6-15 x 0.5-1 mm (Figure 1e). Stamens mostly inflexed in bud; anthers versatile, very broad ovate to square in outline, deeply notched at base. Ovary with 3 or 4 locules; ovules in 4 longitudinal rows on the lower part of each placenta. Fruit 6-11 x 9-13 mm excluding valves; hypa nthium turbinate, tapered to pedicel, ornamented as in bud; operculum scar depressed; staminophoric convex; disc collar-like, to 1 mm high; valves 3 or 4, exserted, acicular, 6-10 mm long (Figure 1f). Seed ellipsoid, compressed, dorsally rounded, ventrally concave or angular, marginally rounded or acute, c. 2.5 x c. 1.5 x c. 1.25 mm, shallowly reticulate, lustrous, grey-black; hilum ventral.

Additional specimens examined. WESTERN AUSTRALIA: Roe District: 15 miles (24 km) S of Hyden, J.S. Beard 3935 (PERTH); ibid., M.D. Crisp 5522 (CBG, FRI, NSW, PERTH); ibid., M.D. Crisp 6163, J. Taylor & R. Jackson (AD, CBG, FRI, NSW, PERTH); Kalgarin to Lake Grace, Sep. 1932, C.A. Gardner s.n. (PERTH); trig 9 km NE of Kondinin, K. Hill 649-50, L. Johnson, D. Blaxell, I. Brooker & S. Hopper (NSW); ibid., J. Taylor 2243 & P. Ollerenshaw (AD, CBG, FRI, MO).


Distribution (Figure 2). Western Australia: Roe District, east of Kondinin and south of Hyden. Eucalyptus ornata occurs at the inland margin of the distribution of E. falcata, which is also mapped in Figure 2.

Habitat. At the type locality, Eucalyptus ornata is codominant with E. gardneri Maiden (Crisp 5520, CBG 7902272) in woodland with a shrubby understorey dominated by Allocasuarina acutivalvis (F. Muell.) L. Johnson. The substrate is a yellow-brown sandy loam with ironstone gravel, derived from laterite. Specimens from other localities carry no additional habitat information.

Conservation status. Apparently endangered, coded 2A (criteria from Leigh et al., 1981). The species is known from only three localities over a range of 75 km. The single grove at the type locality extends a short distance along the verges of a road in otherwise cleared land. The status of the other two occurrences is unknown but both are within a region that is mostly cleared for agriculture.

Affinity. This species has an obvious and immediate relationship to Eucalyptus falcata, which has been placed in the informal series Cneorifoliae by Pryor & Johnson (1971). Eucalyptus falcata is a widespread species whose considerable variation is documented by Gardner (1979) and Chippendale (1973). In areas not far from the coast it is a small mallee but at some inland localities it grows into a smooth-barked tree up to 10 m tall, resembling E. ornata. These habit forms of E. falcata may include an undescribed taxon (Johnson and Blaxell, personal communication). Despite this variation, Eucalyptus falcata, is distinguished from E. ornata by qualitative characters of fruit shape and bud and fruit ornamentation.

The principal character distinguishing E. falcata from E. ornata is the nature of the ribbing on the buds and fruits. The hypa nthium of E. falcata is frequently ribbed both in bud and in fruit but the ribs are usually obscure and are never thickened into prominent knuckle-like projections at the rim, as seen in E. ornata (Figure 1e & f). Ribs are rare on the operculum of E. falcata and when they do occur, they are narrow, sharp and very slightly raised (e.g. Crisp 6476, CBG). On the type of E. falcata (Drummond coll. III no. 70, photos
seen at FRI), the hypanthium is distinctly ribbed but lacks knuckle-like projections at the rim and the operculum lacks ribs altogether.

The shape of the fruit also distinguishes *E. falcata* from *E. ornata*. In *E. falcata* the fruiting hypanthium is hemispherical or depressed-globular, with a truncate base, whereas in *E. ornata* it is turbinate and tapering at the base (Figure 2).

Leaves of *E. falcata*, both at seedling and adult stages, are indistinguishable from those of *E. ornata*. Bud size varies greatly in *E. falcata* but seems to be generally smaller than in *E. ornata*, at least in breadth. The largest I have seen are 18 x 7.5 mm (Crisp 4960, CBG). Chippendale (1973) gives a range of 14-16 x c. 6 mm for the species (figures derived by adding dimensions given separately for operculum and hypanthium). The operculum is sometimes short and obtuse, sometimes long and acute as in *E. ornata* (e.g. Maiden 1912, t.68).

Apart from the variation in habit mentioned above, *Eucalyptus falcata* also shows considerable variability in buds and fruits. Maiden (1912) established the var. *ecostata* for a form in which the buds and fruits lacked ribs, by contrast with the type of *E. falcata* (see above). However, this variant appears to be trivial, occurring at the same localities as the ribbed form and merging continuously with it. *Eucalyptus dorrienii* Domin, also a synonym of *E. falcata*, differs only in having a slightly shorter, broader operculum (photos of type seen at FRI).

A specimen at NSW from 25 km NW of Kondinin (Blaxell DFB/W75/18a) appears to be intermediate between *Eucalyptus ornata* and *E. falcata*. The buds are of similar proportions to those of *E. ornata* but the operculum is virtually smooth as in *E. falcata*, with only a hint of ribbing. The hypanthium of the bud is ribbed and tends to form projections at the rim, as in *E. ornata* but less markedly so. In fruit, the ribs become obscure as in *E. falcata*. The fruiting hypanthium is turbinate and tapers at the base like that of *E. ornata*. 
Another specimen in NSW from the same locality (Blaxell DFB/W75/18) represents typical *E. falcata* and shows no characters of *E. ornata*. Further investigation of this locality may yield typical trees of *E. ornata*, in which case the presence of the intermediate would indicate hybridisation between *E. falcata* and *E. ornata*.

*Eucalyptus goniantha* Turcz. is placed next to *E. falcata* in the classification of Pryor & Johnson (1971), and has much in common with *E. ornata*. However, it is readily distinguished from *E. ornata* by coriaceous, more broadly ovate leaves, very robust, flattened peduncles, short, thick pedicels and larger, coarser buds and fruits (photo of type, Drummond coll. III no. 71, seen at FRI). The hypanthium of *E. goniantha* is often coarsely ribbed but lacks the thickened, knuckle-like projections of *E. ornata*. Some forms of *E. goniantha*, notably the subsp. *semiglobosa* Brooker (holotype, Brooker 3613, seen at FRI) have longer, more slender peduncles and pedicels but otherwise differ from *E. ornata* in the characters given above. Other species in the informal *Eucalyptus* series *Cneorifoliae* are more distantly related to *E. ornata*.

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**References**


