

A contribution to the taxonomy of the Tiliaceae of Western Australia

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Abstract

Rye, B.L. A contribution to the taxonomy of the Tiliaceae of Western Australia. Nuytsia 9 (3): 415-420 (1994). A new species, *Corchorus laniflorus* Rye, is described and the new combination *Triumfetta clementii* (Domin) Rye is made. Lectotypes are designated for *C. elachocarpus* F.Muell. and *C. parviflorus* (Benth.) Domin. Corrections are also given for the treatment of Tiliaceae in "Flora of the Kimberley Region".

Introduction

In Western Australia, members of the family Tiliaceae occur mainly in the Kimberley and Pilbara, with surprisingly few species shared by the two regions. The family also occurs in the northern arid zone and Gascoyne region, extending south to the Wiluna area and the southern part of Gibson Desert. Of the three Western Australian genera, *Grewia* is restricted to the Kimberley region, whereas *Corchorus* and *Triumfetta* are widespread in the northern half of Western Australia. Keys and descriptions for the Kimberley taxa have been published in "Flora of the Kimberley Region" (Rye 1992). This paper gives corrections to the Kimberley treatment.

A study of the species of Tiliaceae in the Pilbara and adjacent regions was commenced in 1991, with the aim of sorting out the taxonomic problems of the group sufficiently to determine which taxa should be placed on the priority lists for conservation. This paper presents the formal taxonomic results of that study, while an unpublished report (Rye 1994) provides data on all the taxa in the study area, including keys, distribution maps, habitat descriptions, flowering times, synonyms and notes. Many of the taxa included in the unpublished report and the Kimberley flora lack formal names, but these are presently being studied by D. Halford (Queensland Herbarium), who is preparing a treatment of the family for "Flora of Australia".

New species or combinations

Corchorus laniflorus Rye, sp. nov. (Figure 1)

Corchoro parvifloro affinis a quo indumento longiore sepalis et fructis grandioribus differt.

Typus: Red Hill, Western Australia, 20 October 1941, C.A. Gardner 6384 (holo: PERTH 01526316; iso: CANB).

Related to *C. parviflorus* but with a longer indumentum, larger sepals and larger fruit.

Spreading or compact *shrub*, commonly 0.3-0.7 m but up to 1.2 m high, densely stellate-hairy on the young stems and leaves, usually also with simple glandular hairs at least on the young stems and petioles; stellate hairs whitish, soft, the largest ones 1.5-2.5 mm long including the 0.2-0.6 mm long stalk; glandular hairs yellowish to dark red-brown, 1-2 mm long. *Stipules* subulate, usually 3.5-6.5 mm long, stellate-hairy. *Leaves* spreading; petiole 8-26 mm long; lamina concolorous or slightly discolorous, usually pale grey-green, ovate or broadly ovate, 17-42 x 25-53 mm, rather prominently veined, with undulate dentate margins, usually obtuse, sometimes becoming glabrous near the margins with age; marginal teeth usually 1-2 mm long. *Umbels* usually with c. 5 flowers; peduncle 5-16 mm long; pedicels 2-9 mm long. *Flower-buds* spherical with protruding sepal points. *Sepals* narrowly ovate to ovate, 9-15 mm long, prominently acuminate, densely stellate-hairy outside with long dendritic-stellate hairs on the body and shorter hairs on both surfaces of the point, often also with simple glandular hairs, largely glabrous inside on the body but with short hairs on the base; dendritic-stellate hairs 2-6 mm long; acuminate point usually slightly incurved or slightly recurved, 3-7 mm long. *Petals* broadly spatulate, 6-11 mm long, stellate-hairy on margins of the short claw, sometimes also ciliate at base of lamina, glabrous elsewhere. *Stamens* numerous, usually 70-100, 3-5 mm long. *Annular disc* usually glabrous, rarely slightly to distinctly ciliate. *Capsule* 3-celled, narrowly ovoid or ovoid, 10-18 mm long, c. 6 mm wide including the indumentum, beaked, densely stellate-hairy, usually 1- or few-seeded but sometimes with several seeds per cell, if 1-seeded then the 2 empty cells displaced and difficult to see; indumentum sometimes or usually including some dendritic-stellate hairs and simple glandular hairs, the largest hairs c. 1.5 mm long, the beak with indumentum similar to or slightly shorter than that on body of capsule.

Specimens examined. WESTERN AUSTRALIA (all PERTH): Roy Hill, J.S. Beard 2801; Uaroo Station, J.S. Beard 3605; Red Hill Station, J.S. Beard 6166; Nullagine road, N.T. Burbidge 1183; Abydos-Woodstock road, N.T. Burbidge 5881; Woodstock Station, N.T. Burbidge 5961; TOWERA Station, R.J. Cranfield 1760; Mt Stewart-Duck Creek track, A.A. Mitchell 76/118; Nanutarra, A. Morrison, 5 Oct. 1905; Mt York, K.[R.] Newbey 10002; Lyndon Station, J.Z. Weber 4850; Cranks Well, J.Z. Weber 4873.

Distribution. Extends from Red Hill and Tabba Tabba Stations in the north to Lyndon Station in the south-west and to near Roy Hill in the south-east.

Habitat. Recorded on spinifex plains and in sandstone areas or other rocky sites.

Flowering and fruiting period. April-October.

Derivation of name. Derived from the Latin *lani* - wool, *flos/floris* - flower, referring to the woolly appearance of the flowers.

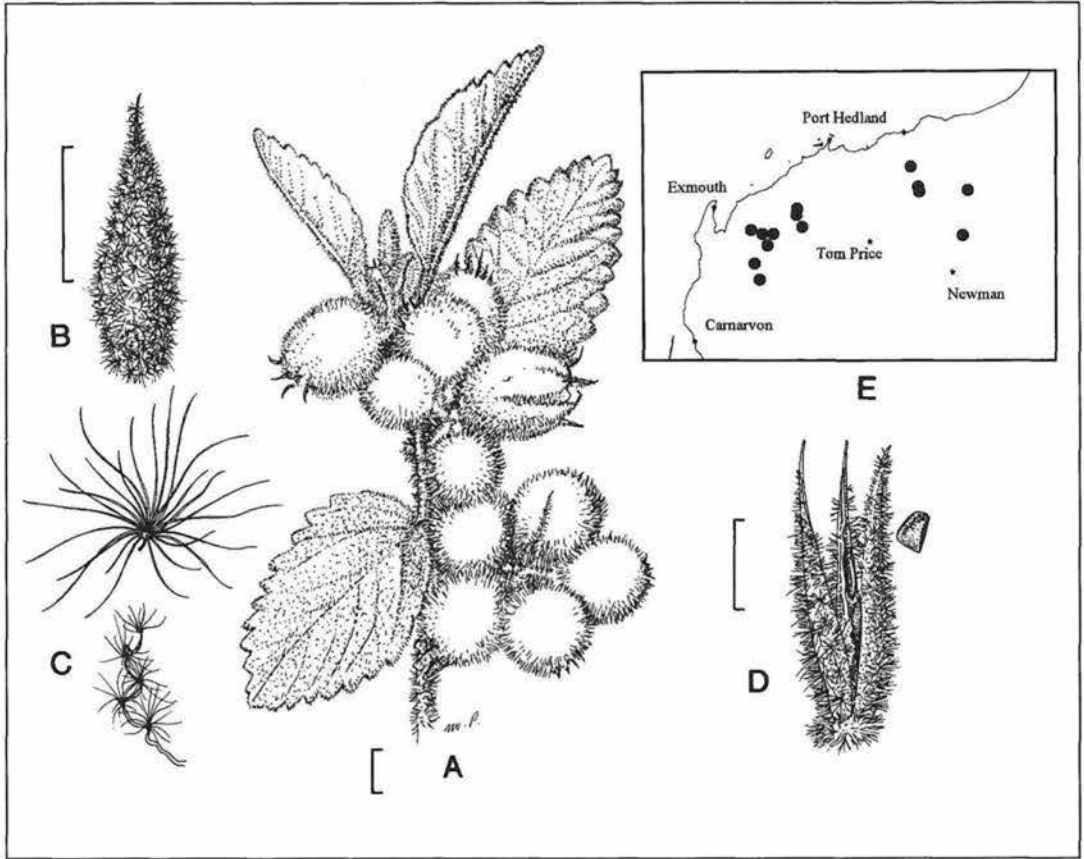


Figure 1. *Corchorus laniflorus* A - flowering stem, B - sepal, C - stellate and dendritic-stellate hairs from sepal, much enlarged, D - capsule, E - geographic distribution. A-C drawn from J.Z. Weber 4850 and D from J.S. Beard 3605. Scale bars = 5 mm.

Notes. All measurements were taken from dry material. The description of the capsule was based on only one, possibly atypical, specimen in mature fruit and a number of specimens with immature fruits.

Two specimens from the Woodstock Station area (*N.T. Burbidge* 5881, 5961) are very unusual in that they have all of the following atypical characters: glandular hairs absent, leaves up to 2.5 times as long as wide and a distinctly ciliate annular disc. Each of these characters is found separately in at least one other specimen (except that none is so obviously ciliate on the disc), suggesting that the Woodstock specimens are not sufficiently distinct to recognise as a separate taxon. However, *Corchorus laniflorus* is extremely variable as presently recognised and needs further study, particularly of specimens in mature fruit.

***Triumfetta clementii* (Domin) Rye comb. nov.**

Triumfetta bartramia var. *clementii* Domin (Domin 1928: 933). Type: between Ashburton River and De Grey River, *E. Clement s.n.* (K - photo examined).

Lectotypifications

Lectotypification was essential to clarify the application of names for *Corchorus walcottii* var. (?) *parviflorus* Benth. and *C. elachocarpus* F. Muell. In each case the two cited type collections are of different species, with a total of three species represented by the four type collections. Both Mueller (1872: 6) and Domin (1928: 937) evidently regarded the types of these taxa to be conspecific, Mueller choosing a new epithet to replace that of Bentham (1863: 279) and Domin publishing the new combination *C. parviflorus* (Benth.) Domin. One of Mueller's types is from the same locality, Nickol Bay, as one of Bentham's types, but even these are of distinct taxa.

It would have been possible to choose lectotypes in such a way as to make the taxa equivalent, but that did not appear to be the best option. The type collections that appeared to be most appropriate to use in terms of the quality of the specimens, the descriptions provided by these authors and their apparent application of the names, fortunately also corresponded to the way the names have generally been applied in Western Australia. The lectotypifications given here have therefore maintained the current usage of the names.

Corchorus elachocarpus F. Muell. (Mueller 1872: 6). Type: Nickol Bay, *P. Walcott* (lecto, here designated: MEL 223670).

The other collection cited by Mueller (1872), i.e. Dampier Archipelago, *A. Hughan* (syn: MEL 223668), is of a different species, *C. parviflorus*.

Corchorus parviflorus (Benth.) Domin (Domin 1928: 937). - *Corchorus walcottii* var. (?) *parviflorus* Benth. (Bentham 1863: 279). Type: Nickol Bay, *F. Gregory* (lecto, here designated: MEL 223669; isolecto: K - n.v., photo examined).

The other collection cited by Bentham (1863), i.e. NW Coast, *Bynoe* (syn: K - n.v., photo examined), is a different species but its exact identity is not certain from the photograph.

Corrections to "Flora of the Kimberley Region"

Many inaccuracies and new data have come to light since the flora treatment for the Kimberley Region was finalised, partly through advice from D. Halford and M. Cheek and partly through further examination of the specimens, including some types and additional collections. In *Grewia*, the species tentatively called *G. multiflora* A.L. Juss. in Rye (1992) should probably be known as *G. glabra* Blume, and *G. xanthopetala* Benth. should be added to the treatment as a synonym of *G. brevifolia* Benth. (D. Halford pers. comm.).

Corchorus capsularis L. appears to be the correct name for *Corchorus* sp. A, rather than just a related species. The species included in Rye (1992) as *C. sericeus* Ewart & O.B. Davies, based on a doubtful vague record from that region, is now regarded as an unnamed species confined to the Pilbara. True *C. sericeus*, which occurs in the Northern Territory, might extend into the Kimberley but there are no records to date. Another species, referred to in the Kimberley treatment as *Corchorus walcottii* F. Muell., is an unnamed Western Australian endemic extending from Broome south-west to Pardoo Station and Shellborough. True *C. walcottii* is restricted to the Pilbara region.

Some specimens with 20-25 stamens that were included in *Corchorus sidoides* probably belong instead to *C. vermicularis* (D. Halford pers. comm.), the stamen number in *C. sidoides* being 30-40. *C. leptocarpus* A. Cunn. ex Benth. has now been recorded from Koolama Bay and King George River in Central Gardner (CGa) District and sometimes has smaller sepals than previously indicated.

In *Triumfetta*, all the published names used have been confirmed except for *T. rhomboidea* Jacq., which was misapplied to a taxon now thought to be a new species endemic to the Kimberley Region. *T. rhomboidea* is not known from Western Australia but has been collected from other parts of Australia. The name *Triumfetta pentandra* A. Rich. has been confirmed to apply to *Triumfetta* sp. C (M. Cheek pers. comm.), and this species occurs in Queensland as well as in the Northern Territory. There are some inaccuracies in the description given for *Triumfetta micracantha*, which actually has sepals c. 5 mm long, petals c. 3 mm long and only c. 10 stamens. *Triumfetta* sp. J is no longer considered to include the variant with long-ciliate stamens and therefore does not occur in the Eremaean Botanical Province.

A major error in the treatment has been the omission of two species related to *T. plumigera* in the key and descriptions, the only mention of them being in a note under *T. plumigera*. The start of the key to species in the Kimberley flora needs to be altered as follows:

1. Sepal appendage subulate to narrowly triangular, 0.2-1.3 mm long, entire. Fruit body 1.5-2.5 mm long; bristles rather slender or very slender, about half to more than twice as long as fruit body, the apical hair stellate.
 - A. Sepals (3)4-7.5 mm long. Stamens c. 10. Fruit body 2-2.5 mm long; bristles covering body uniformly, very slender, 4.5-8 mm long **T. plumigera**
 - A. Sepals (2)2.5-4(5) mm long. Stamens 3-6. Fruit body 1.5-2 mm long; bristles often in a terminal tuft or in distinct longitudinal rows, rather slender, 1-2 mm long.
 - B. Fruit body c. 1.5 x 1.5 mm, with a terminal tuft of bristles c. 2 mm long and a few bristles below **T. sp. (L. Vernon 39)**
 - B. Fruit body 1.5-2 x 1.3-1.5 mm, with distinct longitudinal rows of bristles or rarely appearing to be more uniformly covered, the larger bristles 1-2 mm long **T. triandra**
1. Sepal appendage narrowly ovate to depressed obovate (except in *T. pentandra*), (0.1)0.5-7 mm long, tending to be toothed or lobed in many species. Fruit body 3-25 mm long; bristles slender to very stout or apparently absent, less than half as long as fruit body, the apical hair (except in *T. bradshawii* and sometimes *T. sp. F*) simple and uncinat.

Triumfetta plumigera F. Muell.

Description as in Rye (1992: 172).

Occurs in sandy plains and associated with sandstone, extending from Beverley Springs Station, Drysdale River National Park and near Wyndham southwards to Edgar Range and Mary River: WGa, CGa, EGa, Fi, Da, Ha. Extends south to Wolf Creek Crater. Also occurs in N.T. and Qld.

Flowers February-July; fruits April-August.

Triumfetta triandra Sprague & Hutch.

Sepals (2)2.5-4(5) mm long; appendage 0.2-0.8 mm long. Stamens 3-5. Fruit 1.5-2 x 1.3-1.5 mm; bristles usually in distinct longitudinal rows, often with prominent pairs of rows alternating with areas largely lacking bristles but with a few hairs at the middle, however sometimes appearing to cover the surface of the fruit body, rather slender, stellate-hairy including the apex, the larger bristles 1-2 mm long.

Widespread in the north west, from Kalumburu to the northern tip of Dampier Peninsula, and extending east to Osmond Valley Station: WGa, CGa, Fi, Da, Ha. Also occurs in N.T.

Flowers & fruits mainly April-August.

Triumfetta sp. (*L. Vernon* 39)

Sepals 2.7-3 mm long; appendage c. 0.3 mm long. Stamens 5. Fruit c. 1.5 x 1.5 mm, with a terminal tuft of bristles c. 2 mm long and a few bristles below.

Apparently endemic to the Kimberley Region, recorded from Koolan Island, near the junction of Charnley and Calder Rivers and from near Pentecost Range: WGa, Fi.

Flowers & fruits March-June.

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