

Notes on the Biology and Phytogeography of
Western Australian Plants, Part 5 : Tremandraceae.

G.J. KEIGHERY
KINGS PARK AND BOTANIC GARDEN
WEST PERTH, WESTERN AUSTRALIA, 6005.

Abstract:

The Tremandraceae of Western Australia comprise 22 species distributed in 3 genera. Two genera are endemic. The family is confined to Southern Western Australia. Little is known about the biology of the family.

To be quoted as:

Keighery, G,J, (1979 unpublished.) Notes on the Biology and Phytogeography of Western Australian Plants, Part 5 : Tremandraceae. Kings Park and Botanic Garden, West Perth, Western Australia, 6005.

INTRODUCTION:

The Tremandraceae are an endemic Australian family of flowering plants, consisting of three genera. The family is best developed in Southern Western Australia, where two genera (Platytheca and Tremandra) are endemic. The third genus Tetratheca occurs widely in Southern Temperate Australia, but has 21 species in Southern Western Australia compared with 18 in Eastern Australia.

BIOLOGY:

Members of the family are herbaceous or woody perennial shrubs, often with a woody fire resistant rootstock.

All species have flowers adapted to "squeeze" pollination by pollen collecting bees, and nectar is generally absent.

Very little is known about the breeding systems of members of the family. Keighery (unpub. data) has found that all species of Tremandra are capable of autogamy; whereas Platytheca galioides is not autogamous and is self incompatible.

PHYTOGEOGRAPHY:

The family is confined to the South Western Botanical Province and the adjacent interzonal region (figs. 1,2 and species maps). Two species (T. efoliata and T. harperi) are confined to the interzonal region.

Maps (figs. 3 a,b,c and d) of closely related species, generally demonstrate allopatric distributions, with the more "primitive" species occurring in the wetter areas. Speciation in Tetratheca, has largely occurred in the areas of transitional rainfall. However, an analysis of species diversity (fig. 4) for the family clearly indicates the highest diversity occurs in the high rainfall southern region (Pemberton sheet has 11 species recorded). This diversity is perhaps due to an accumulation of relict taxa in this region.

Research Needs on this family.

- (1) Collecting in Jarrah Forest.
- (2) Biosystematic Study - cytology - pollination.
- (3) Ecology - soil types - flowering times.

REFERENCE:

Thompson, J. (1975) "A Revision of the genus Tetratheca." Telopea 1 : 139 - 216.

PLATYTHECA

P. galioides "Stirlings Form"
Erect multistemmed shrub, to 0.7m., fls
purple, 8-10
sand, peaty stony sand.

(This taxon occurs between the Stirling
Ranges and Bremer Bay, if it is considered
specifically distinct from P. galioides
the the name P. crassifolia Steetz applies).
It differs from P. galioides in having
shorter more rigid leaves.

P. galioides Steetz.
Erect but often lax multistemmed shrub, to
0.6m., fls purple, (7)-8-11.
grey sand, peaty sands.

P. juniperina Domin.
Erect but lax, multistemmed shrub, to 0.7m.,
fls. purple, (7)-8-10-(11).
peaty stony sands on sandstone or quartzite.

P. verticillata (Hueg.) Baill. = P. galioides Steetz.

TETRATHECA

T. affinis Endl.
Multistemmed leafless shrub, to 0.6m., fls.
dark pink, 8-12-(1).
sandy or lateritic soils.

T. aphylla F. Muell.
Shrub, fls. dark pink, ?
?

T. confertifolia Steetz.
Multistemmed shrub, to 0.5m., fls. dark pink,
(4)-8-11-(12)
sand, lateritic sand, granitic sand.

T. deltoidea J. Thompson
Habit unknown, fls. dark pink, ?
?

T. elliptica J. Thompson
Small shrub to 0.6m., fls. dark pink, ?-10-?
sandy soils

T. efoliata F. Muell.

Multistemmed shrub, to 0.2m., fls dark pink, ?
?

T. fasciculata J. Thompson

Multistemmed shrub, to 0.2m., fls dark pink, ?
?

T. filiformis Benth.

Multistemmed slender shrub, to 0.5m, fls.
dark pink, 10-1
Swamps.

T. harperi F. Muell.

Multistemmed often leafless shrub, fls dark pink,
5-9 (sporadic according to rainfall.)
Jasperlite ridges

T. hirsuta Lindl.

Multistemmed shrub, to 1m., fls. dark pink,
(7)-8-11-(12)
Laterite, grey sand, granite

T. hispidissima Steetz.

Multistemmed shrub, to 0.6m., fls dark pink, 9-11
sand, lateritic sand, loam.

T. nuda Lindl.

Multistemmed leafless shrub, to 0.5m., fls.
dark pink, 9-11
granite, sand, lateritic sand.

T. parvifolia J. Thompson

Shrub, ? Multistemmed, from a woody rootstock,
to 0.3m., fls. dark pink, 10-1
sandy soils

T. pauciflora J. Thompson

Multistemmed leafless shrub, to 0.5m, fls. dark pink,
?-8-?
sand

T. pilifera Lindl.

Multistemmed shrub, to 0.2m., fls. purple, 8-9
lateritic soil

T. pubescens Turcz.

Multistemmed shrub to 0.7m., fls. dark pink,
8-11
humic stony sand, granitic sand.

T. remota J. Thompson

Multistemmed slender shrub, to 0.4m, fls. dark pink,
?-8-?
laterite.

T. retrorsa J. Thompson

Spreading shrub from a woody rootstock, to 1.5m.,
fls. dark pink, 9-10
lateritic "breakaway" country

T. setigera Endl.

Multistemmed shrub, to 0.6m., fls. dark pink,
8-10-(12).
sand, peaty sands, granite

T. similis J. Thompson

Multistemmed shrub, to 0.3., fls. dark pink,
8-10

?

T. viminea = T. hirsuta

T. virgata Steetz.

Multistemmed slender shrub, to 0.4m., fls. dark
pink, 10-11
lateritic sand or clay.

TREMANDRA

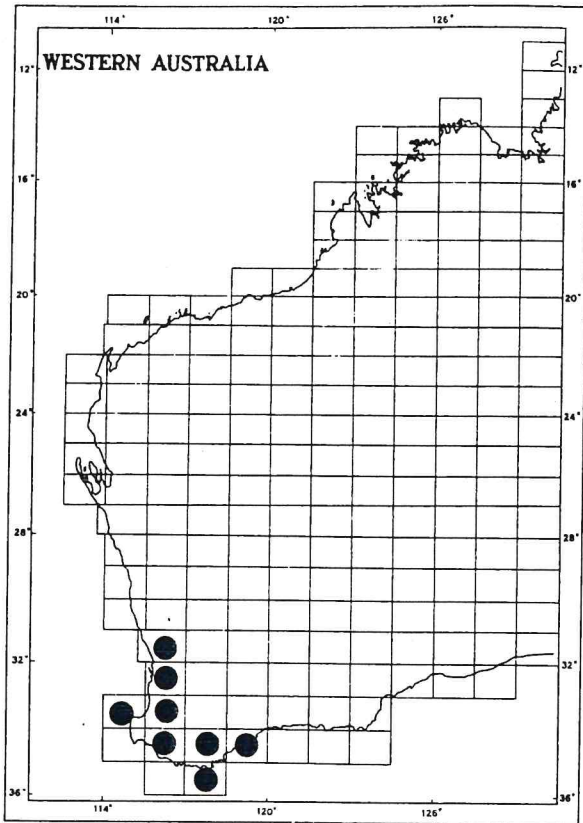
T. diffusa

Prostrate shrub, to 2m. diameter from a woody
rootstock, fls. calyx reddish - purple, petals
white, 8-12.
lateritic sand, peaty or granitic sands.

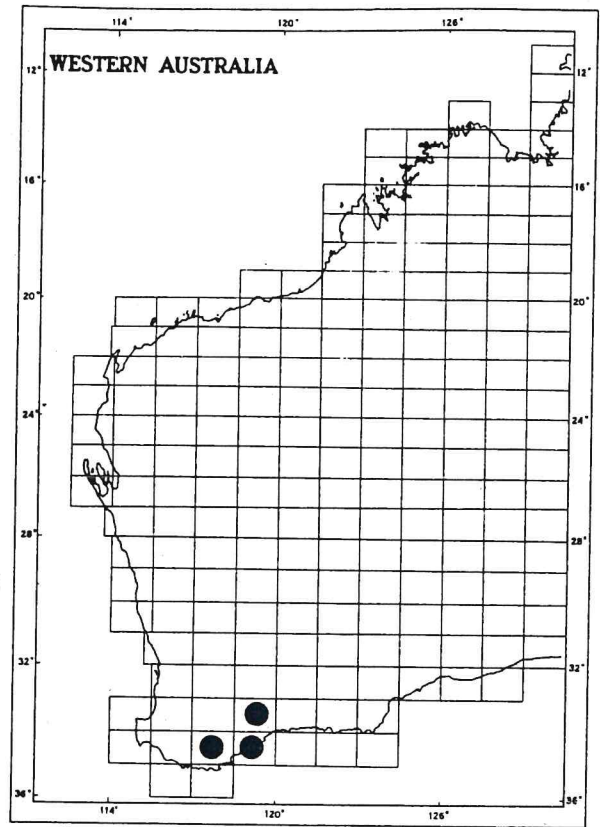
(Considerable confusion exists between this species
and prostrate forms of T. stelligera, which occur
around Albany and the Porongorups. These plants
have deep pink flowers, a cone of black anthers
and large leaves, they are ascribable to T. stelligera
not T. diffusa).

T. stelligera R.Br.

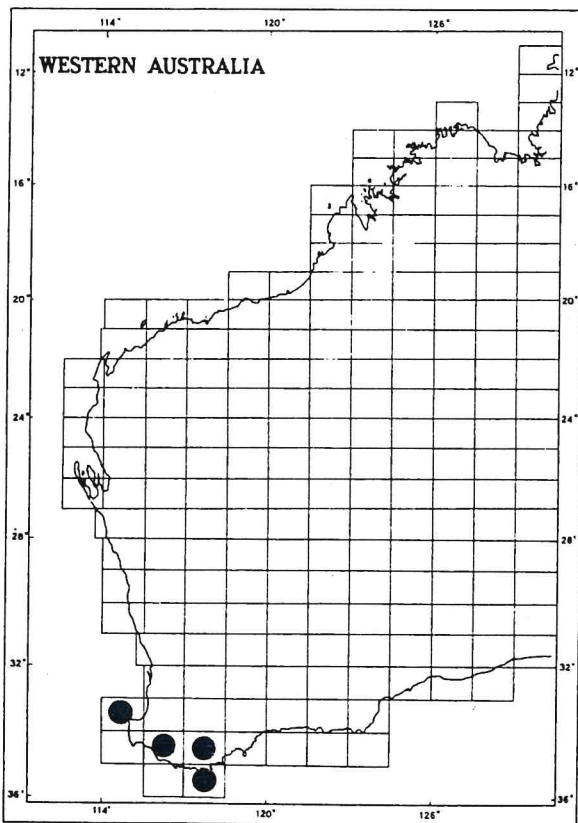
Erect (or prostrate shrub) to 4m., fls deep pink,
9-1-(5).
sand, granitic loam, coastal dunes, creek edges,
lateritic loam.



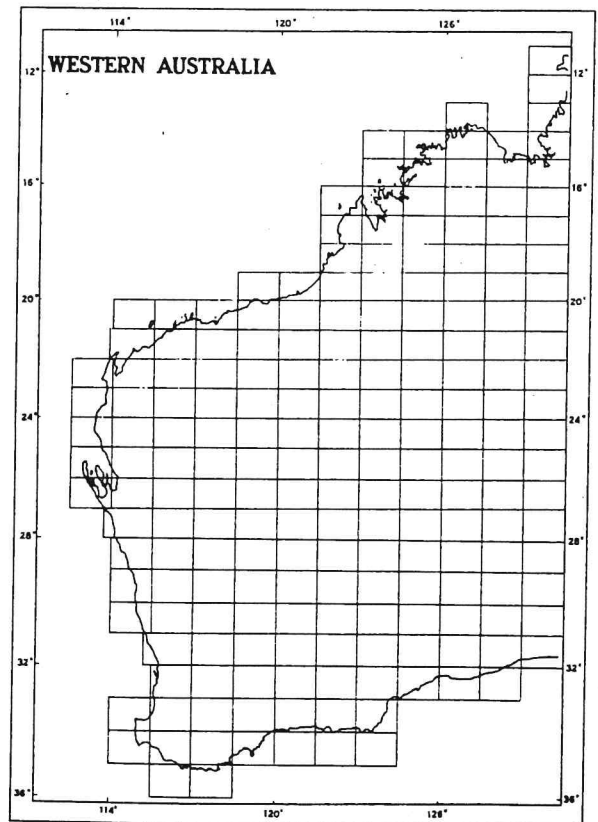
Platytheca galioides



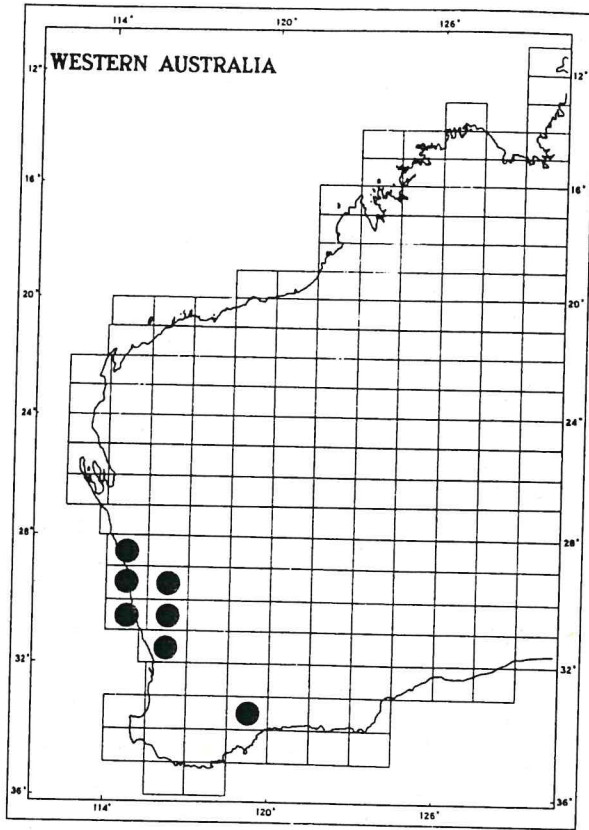
Platytheca juniperina



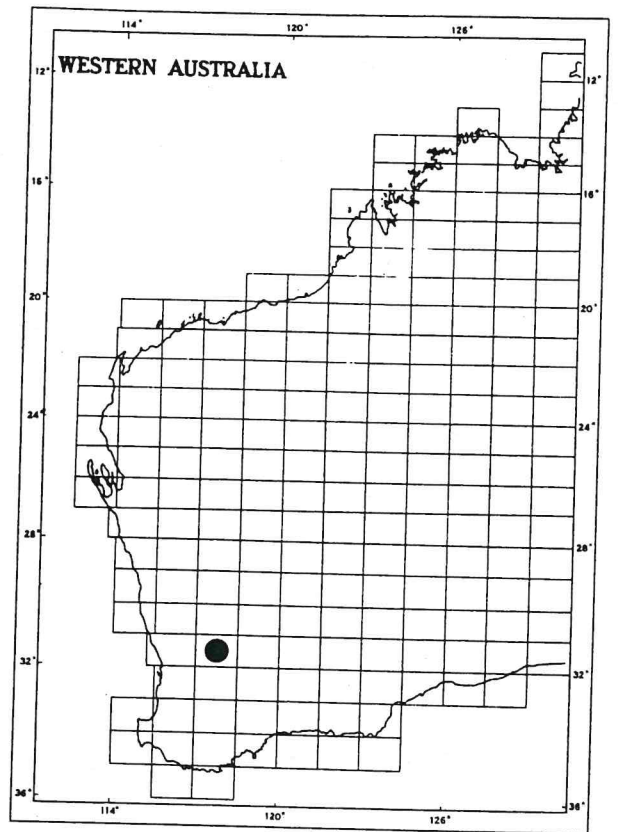
Tetratheca affinis



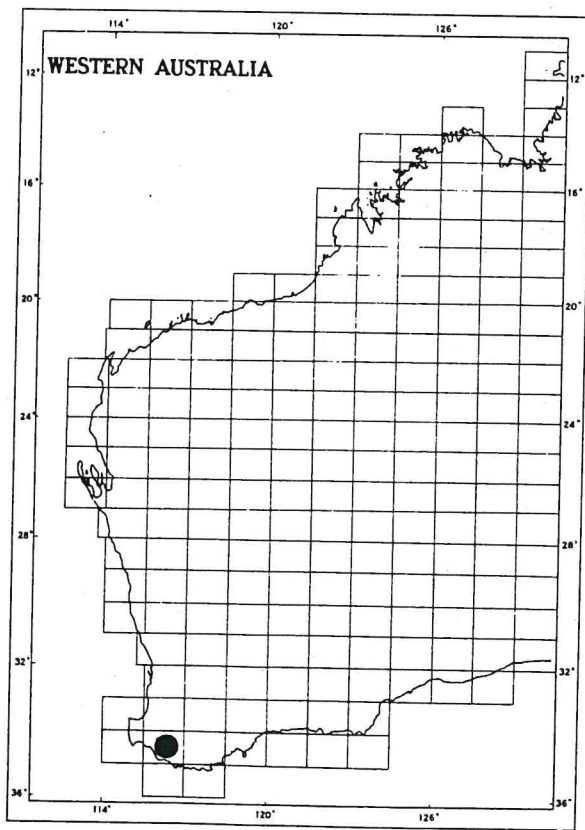
Tetratheca aphylla



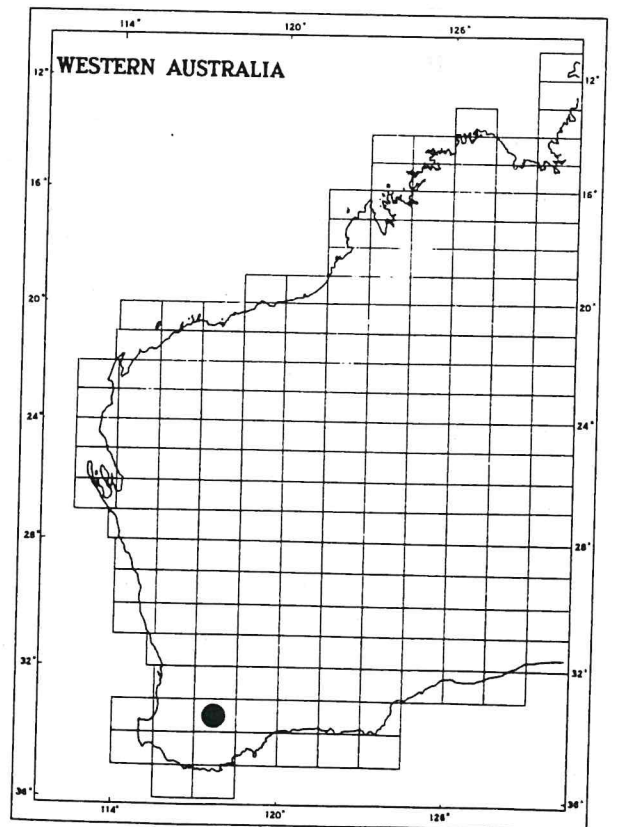
Tetratheca confertifolia



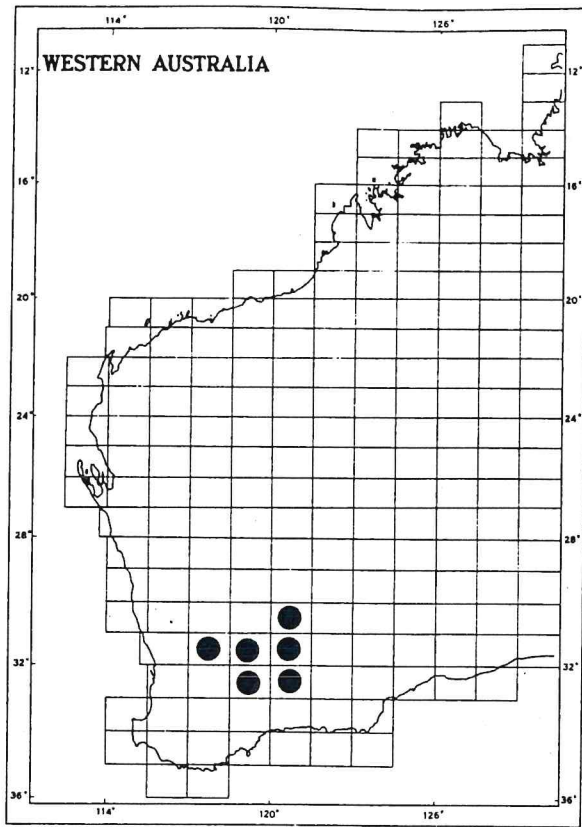
T. deltoidea



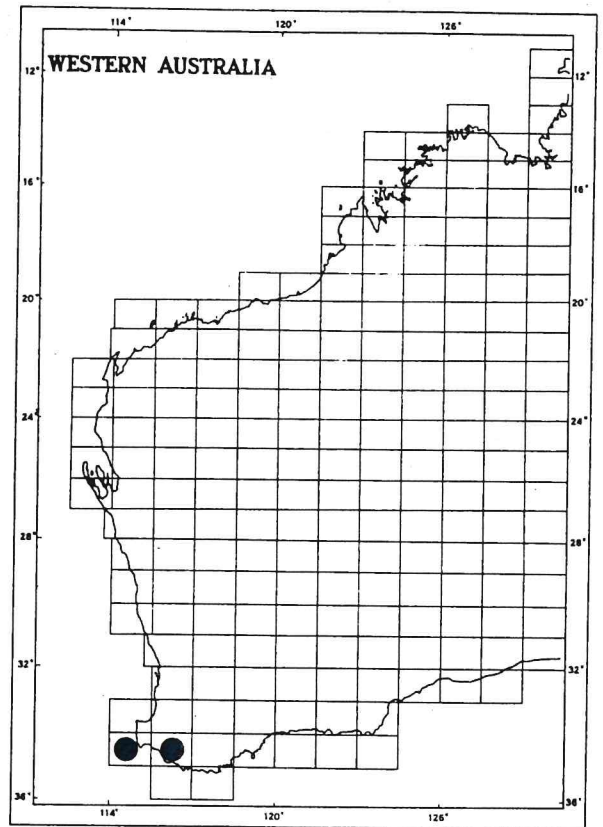
T. elliptica



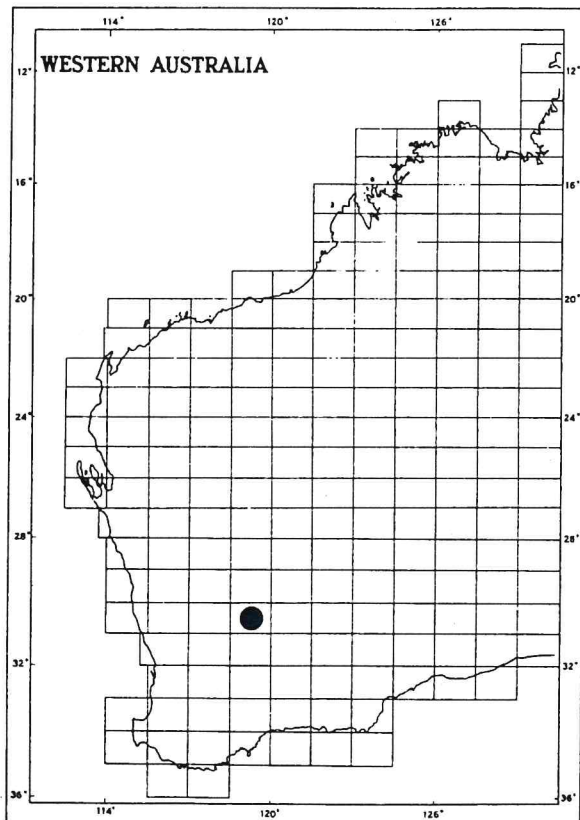
T. fasciculata



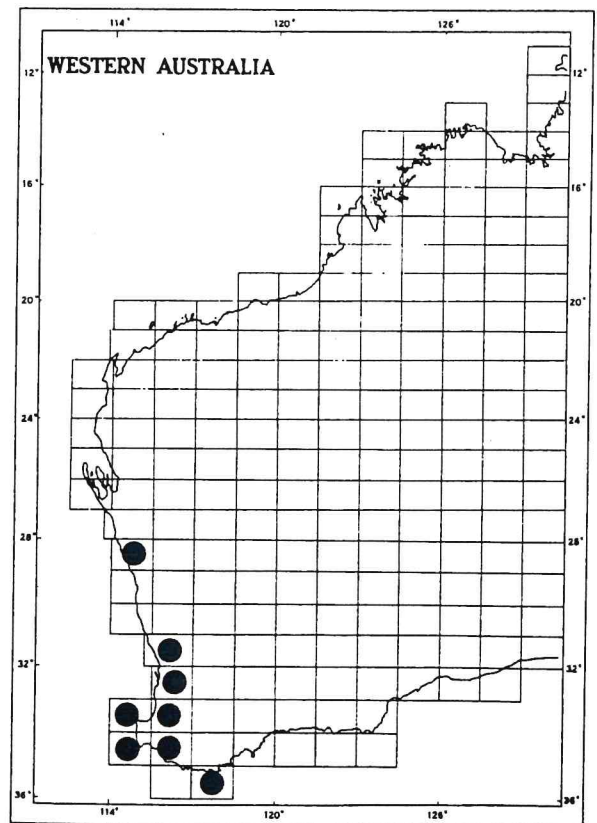
Tetratheca efoliata



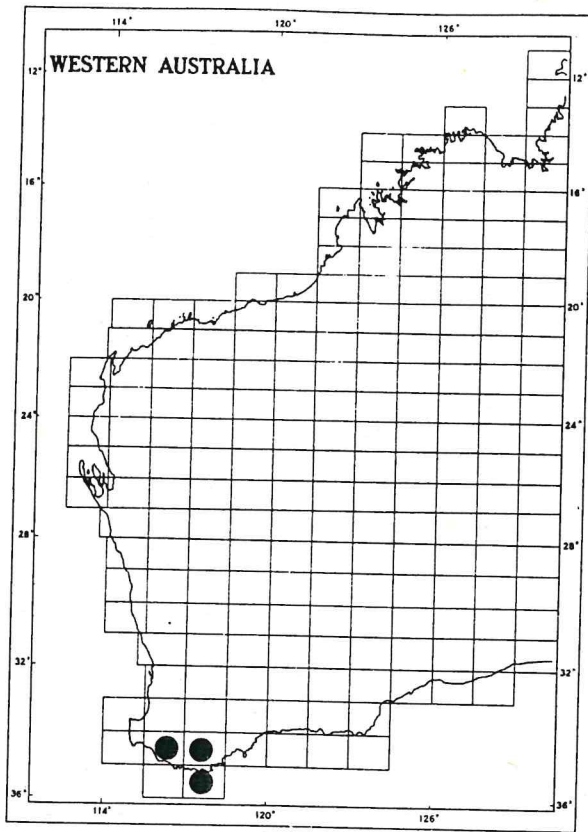
T. filiformis



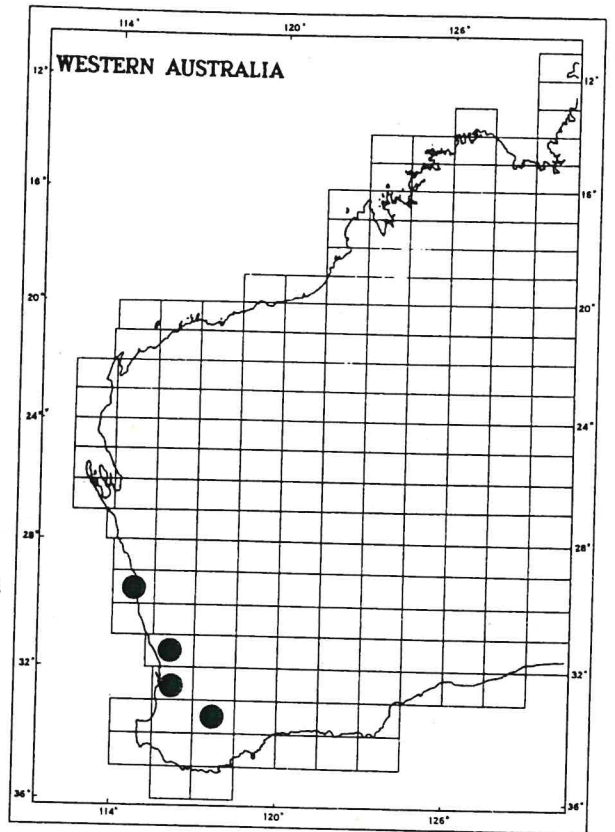
T. harperi



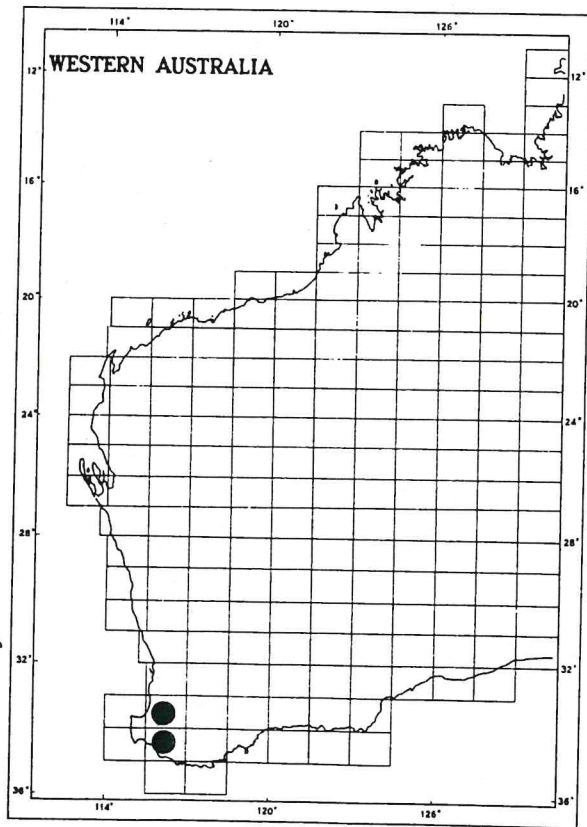
T. hirsuta



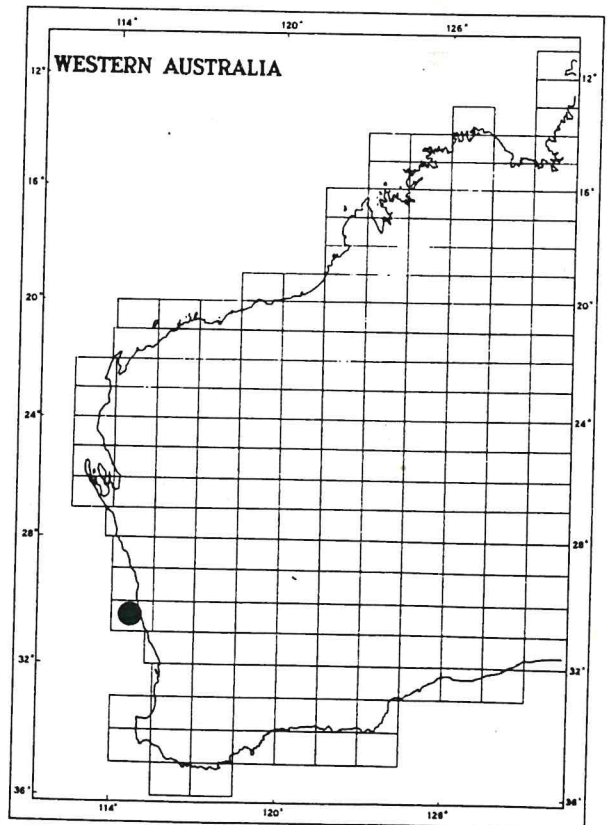
T. hispidissima



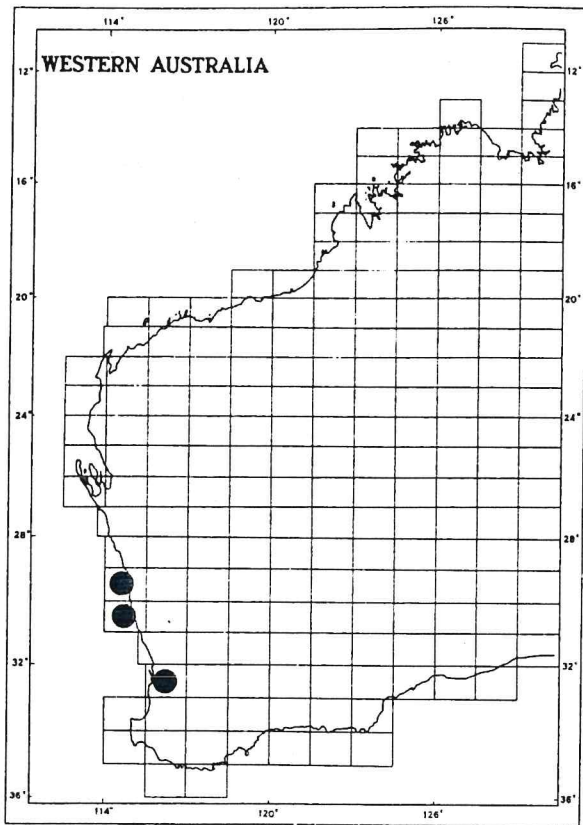
T. nuda



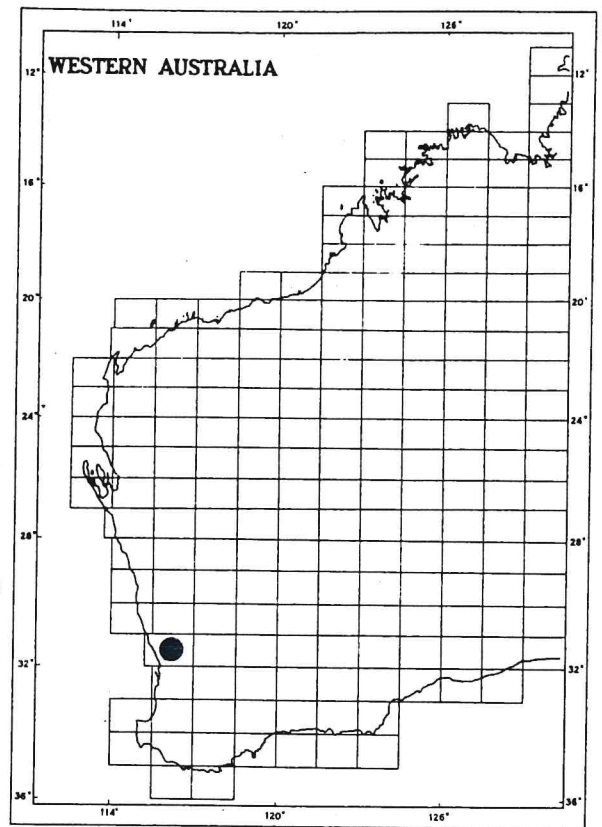
T. parvifolia



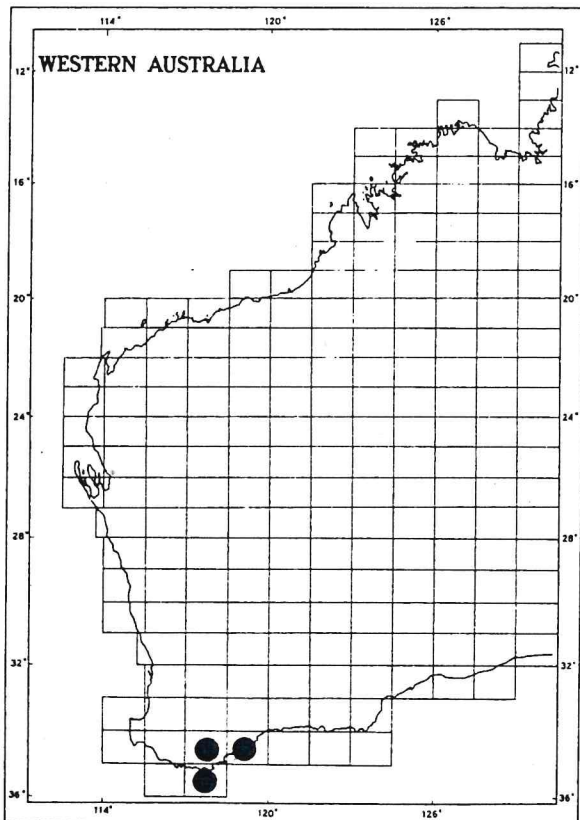
T. remota



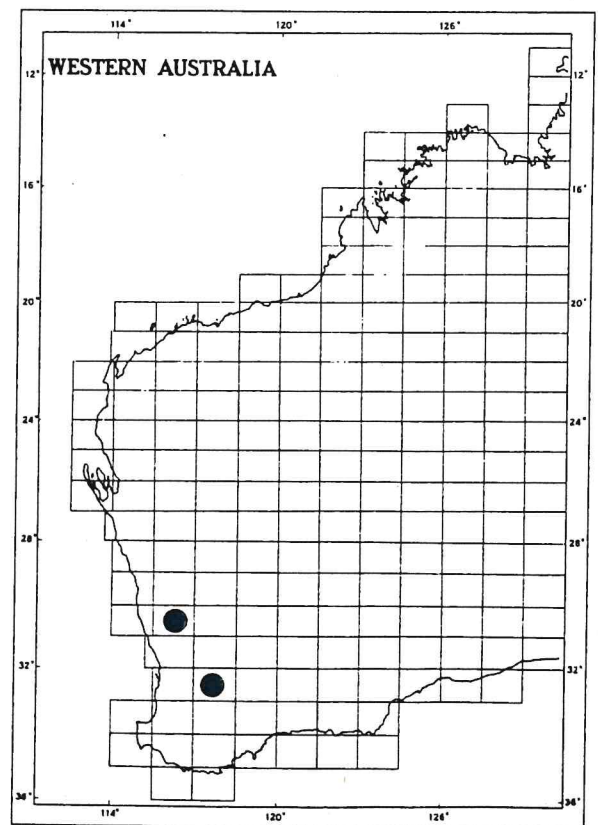
Tetratheca pauciflora



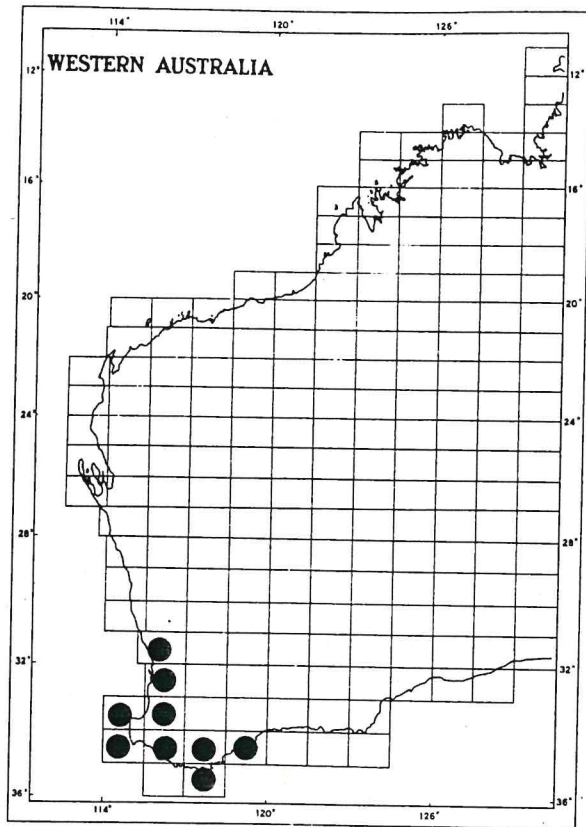
T. pilifera



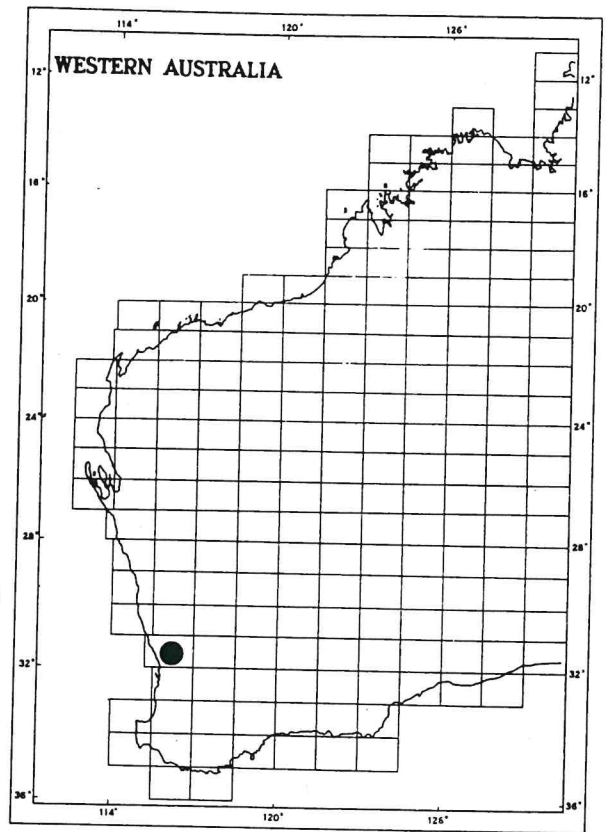
T. pubescens



T. retrosa



Tetratheca setigera



T. similis

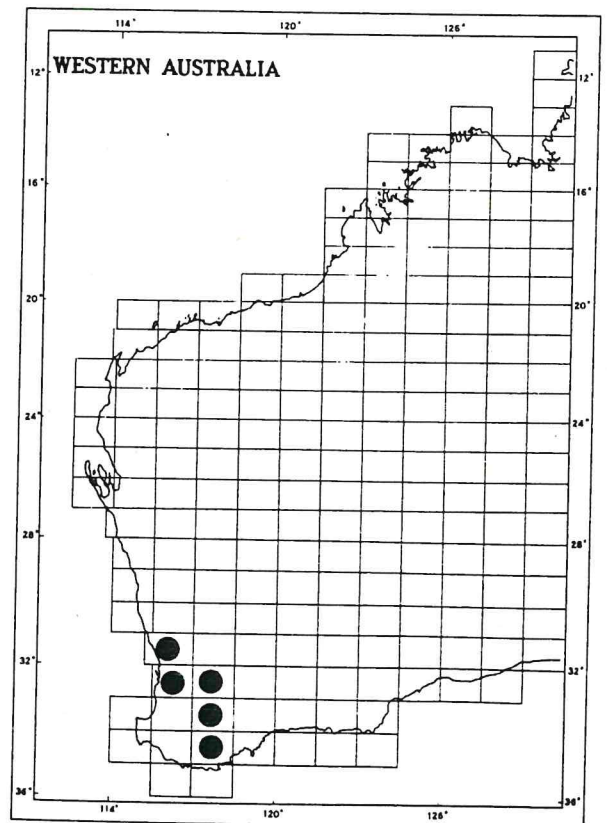
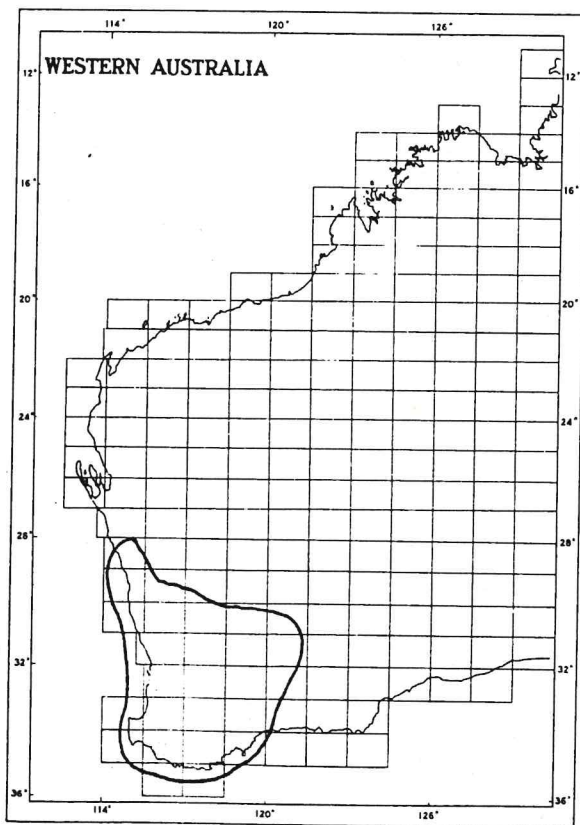


Fig. 1 : Range of the genus *Tetratheca*

T. virgata

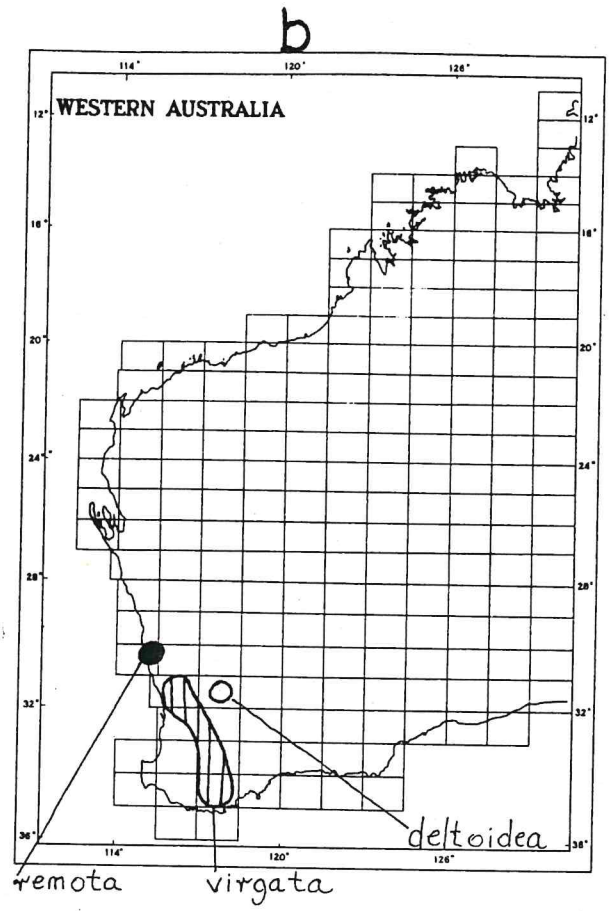
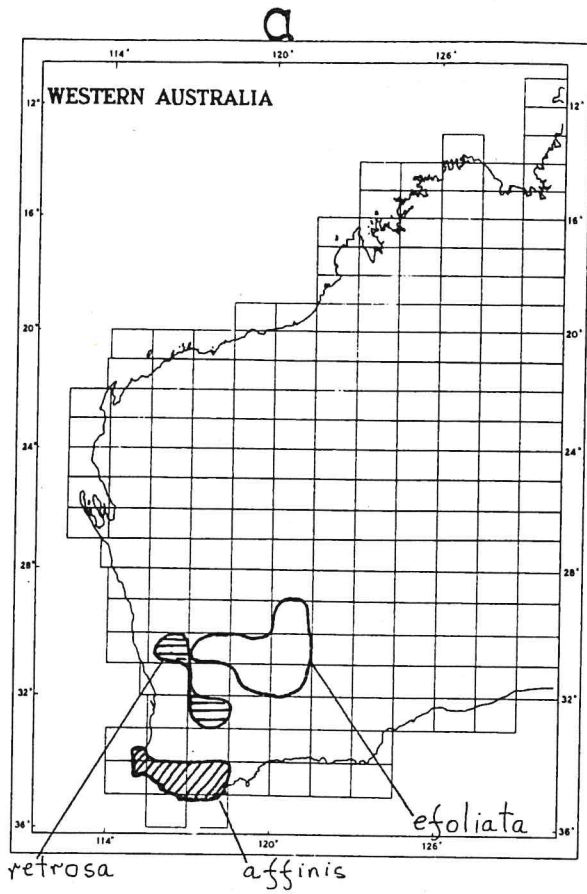


Fig. 3 : Closely related species distributions in the genus *Tetratheca*

