

WESTERN AUSTRALIAN DEPARTMENT OF AGRICULTURE

POISON PLANTS OF WESTERN AUSTRALIA

NET-LEAF POISON  
BROTHER-BROTHER  
RIGID-LEAF POISON  
SLENDER POISON  
ROUND-LEAF POISON





## POISON PLANTS OF WESTERN AUSTRALIA

The toxic species of the genera  
*Gastrolobium* and *Oxylobium*

NET-LEAF POISON (*Oxylobium racemosum* (Turcz.) C. A. Gardn.)

BROTHER-BROTHER (*Oxylobium tetragonophyllum* E. Pritzel)

RIGID-LEAF POISON (*Oxylobium rigidum* C. A. Gardn.)

SLENDER POISON (*Oxylobium heterophyllum* (Turcz.) Benth.)

ROUND-LEAF POISON (*Gastrolobium pycnostachyum* Benth.)

By T. E. H. APLIN, B.Sc., Botanist

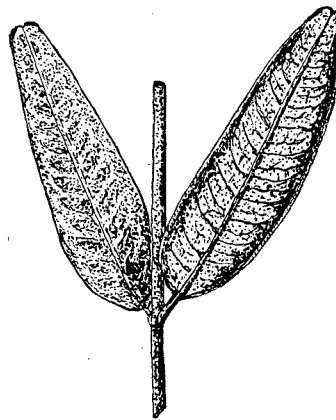
THIS article deals with five toxic species, all of which are found in the Eyre district of the South-Western region of Western Australia.

### NET-LEAF POISON

NET-LEAF POISON derives its name from the prominent net-veining on the leaves. It is an erect shrub about six feet high, and is found from the Gairdner River eastwards to Ravensthorpe.

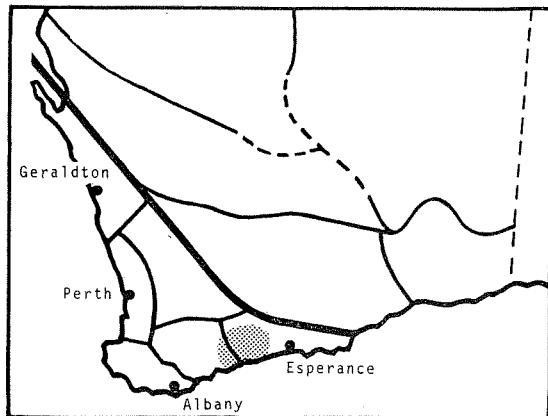
The leaves of net-leaf poison are borne on short leaf stalks, in opposite pairs along the stem. The leathery leaves are flat with thick prominent veins. They are erect, one and a half to two inches long, narrow-elliptical or oblong, rounded at the base and blunt at the apex. The whole plant lacks hairs except for a woolly fringe on the margins of the calyx lobes.

The botanical name from the Latin *racemosus*, refers to the elongated racemes, much longer than the leaves, in which the orange-red flowers are borne.



Leaves of net-leaf poison

The pedicel or flower-stalk is about as long as the calyx. The calyx, which is hairless apart from the woolly fringe on



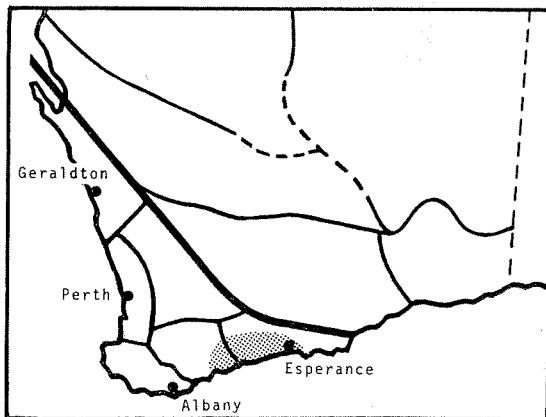
Distribution of net-leaf poison

the margins of the lobes, has the two uppermost lobes united to form a lip. The seed pod is hard, dark purple or black and contains six to eight seeds.

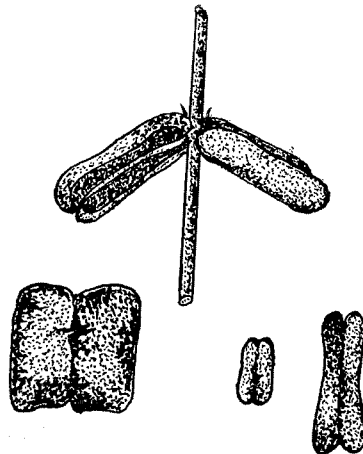
## BROTHER-BROTHER

**BROTHER-BROTHER**, the supposed aboriginal name for this species, is a low shrub rarely exceeding 18 inches in height. It is found from Jerramungup eastwards to Esperance.

The botanical name, of Greek origin, refers to the square-sided leaves of brother-brother, which are usually borne in opposite pairs along the stem, and are reflexed or angled downwards. The leaves are square to oblong, less than half an inch long, and indented or lobed at both ends. They are deep green above with a



Distribution of brother-brother



Leaves of brother brother

channelled midrib, inrolled towards a densely hairy undersurface and practically stalkless. The stipules are long, fine and spreading or angled downwards.

The flowers of brother-brother are borne in short, dense racemes. The calyx has short lobes with the two uppermost lobes united into a lip. The almost globular seed pod contains three to four seeds.

There is another shrub, *Mirbelia ovata*, which resembles brother-brother and is found in the same general area. However, the leaves of *M. ovata* are invariably in threes (rarely so in brother-brother) while the calyx lobes are acute and deeply divided (brother-brother having short lobes).

## RIGID-LEAF POISON

**RIGID-LEAF POISON** is a low shrub rarely more than a foot in height found in open sandplain country from Karlgarin southwards and eastwards to Mt. Gibbs and Mt. Madden. It is also found as a larger bush in mallee country at Tarin Rock.

The stems of rigid-leaf poison arise from a rootstock and are dichotomously branched. The flat rigid leaves, are carried on short leaf-stalks and borne in opposite pairs along the stem. They are blue-green and oblong-lanceolate with a prominent midrib. The Tarin Rock form grows into a larger bush, up to three feet in height. The leaves are more ovate in outline and are a darker green.





### NET-LEAF POISON

Net-leaf poison (*Oxylobium racemosum* (Turcz.) C. A. Gardn.) derives its common name from the prominent net-veining on the leaves. It occurs on better class soils in the Ravensthorpe-Jerramungup area, where it caused heavy stock losses in the Soldier Settlement areas of the Jerramungup district.



### BROTHER-BROTHER

Brother-brother (*Oxylobium tetragonophyllum* E. Pritzl) has thicker and shorter leaves than most other poisonous plants and can be distinguished by this. It is found from Jerramungup to Esperance but is not common and has not caused many stock losses.





#### RIGID-LEAF POISON

Rigid-leaf poison (*Oxylobium rigidum* C. A. Gardn.) is one of the most recently discovered poisonous plants and its distribution is not completely known. It could prove to be of economic significance if more land were developed in areas in which it occurs.

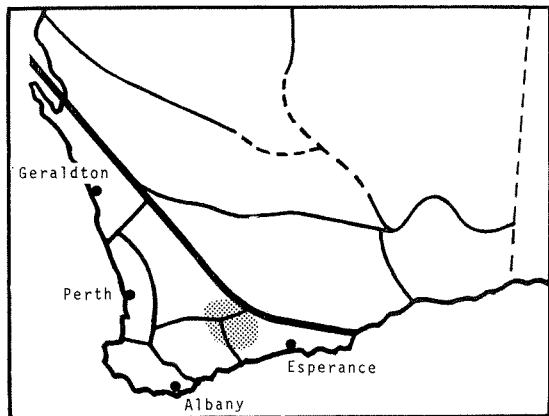


#### SLENDER POISON

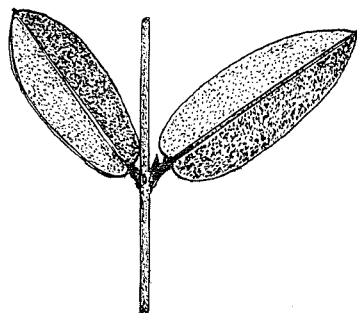
Slender poison (*Oxylobium heterophyllum* (Turcz.) Benth.) is restricted to watercourses in the Esperance area and is a comparatively rare species. It has a prostrate habit and is one of the few poisonous plants of these genera that is not a shrub.

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Distribution of rigid-leaf poison



Leaves of rigid-leaf poison

The racemes of rigid-leaf poison have relatively few flowers. The pedicel or flower-stalk is shorter than the calyx which is hairless except for a fringe on the margins of the lobes. The stalked seed pods contain four seeds and are covered with silky hairs.

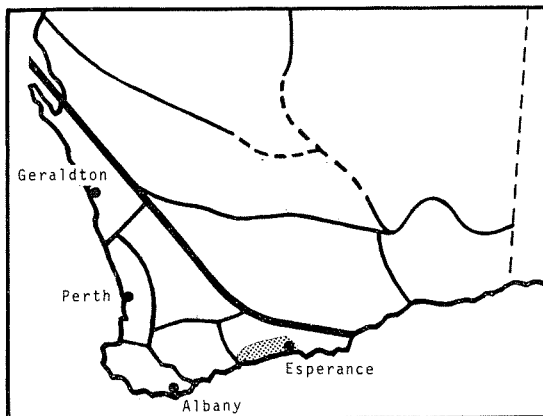
### SLENDER POISON

**SLENDER POISON** is a trailing rather than erect shrub with weak slender stems. It resembles box poison, but may be distinguished by its trailing habit (box poison is always erect) and its conspicuous stipules which exceed the leaf stalk in length (box poison has small, inconspicuous stipules). Slender poison is found from the Phillips River eastwards to Gibson.

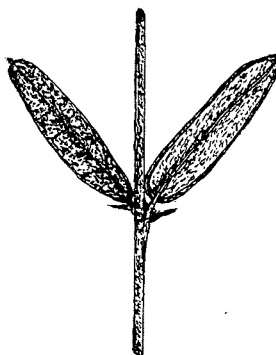
Slender poison derives its botanical name from the Greek, literally other leaf, because the plant has leaves of different forms. The leaves are narrow-elliptical,

coarsely and conspicuously net-veined on the dark green hairless upper surface. The lower surface is paler with spreading hairs especially on the midrib. The margins of the leaves are slightly inrolled underneath.

The racemes of slender poison are shorter and have fewer flowers than those of box poison. The acute bracts persist until the flowers open.



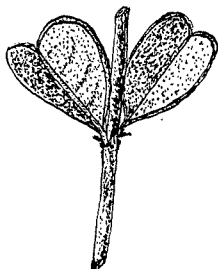
Distribution of slender poison



Leaves of slender poison

### ROUND-LEAF POISON

**ROUND-LEAF POISON** is a low shrub two feet in height with rigid, spreading branches. The younger parts of the plant are covered with white hairs which lie flat to the surface of the stem. Round-leaf poison has only been collected at East Mount Barren and at Mount Ragged in the Russell Range near Israelite Bay. It was once known as Mt. Ragged poison



Leaves of round-leaf poison

because of the sheep losses it caused in that region many years ago.

The leaves of round-leaf poison are borne in opposite pairs along the stems. The leaf stalk or petiole is short and the leaves, as the common name implies, are broadly elliptical to circular in outline. They are up to three quarters of an inch long, flat, thick, rigid, slightly notched or lobed at the base and rounded or lobed at the apex. The upper surface is dark green and the undersurface is paler, both with prominent netted veins. The small erect stipules soon break off.

The flowers, orange-red with a purple keel, are borne on short, dense, spike-like racemes. The pedicels are long and like the calyces are silky-hairy. The seed pod is sparsely silky-hairy and oval almost globular.

## TOXICITY

Round-leaf poison was listed as a suspected poisonous plant by Carne, Gardner and Bennetts (1926) and Bennetts (1927) reported that the flowers and buds of brother-brother were very toxic to sheep.

Gardner (1937) listed net-leaf poison as a poisonous plant and reported that round-leaf poison was virulent during all stages of growth. Net-leaf poison proved a hazard in the Land Settlement area at Jerramungup when it was first opened up.

Gardner and Bennetts (1952) listed slender poison as a toxic species and Gardner (1964) when describing rigid-leaf poison stated that it would prove to be toxic. Recent field evidence has shown rigid-leaf poison to be toxic to sheep.

McEwan (1964) isolated the toxic principle, mono-fluoroacetic acid, in wall-flower poison. Mono-fluoroacetic acid is

better known by its sodium salt "1080" which is widely used in Western Australia for vermin control. Simultaneously and independently Cannon showed mono-fluoroacetic acid was present in box poison and in rock poison. Aplin (1967a) reported the presence of this toxic principle in net-leaf poison and in brother-brother.

Net-leaf poison has been shown to contain up to 1,500 parts per million of "1080" equivalent on an air-dry basis. At this level of toxicity it would take roughly one and a half ounces of green plant material to kill an adult sheep.

Brother-brother has been shown to contain 750 parts per million of "1080" equivalent, while rigid-leaf poison has been shown to contain traces of this toxic principle. A sample of slender poison that was analysed gave negative results for "1080". Stock losses in the field, however, have demonstrated that this species as well as round-leaf poison, which has not been tested chemically for "1080," is toxic to stock.

All five species are usually most dangerous when new shoots appear or when the plants are in the flowering or fruiting stage. The toxic principle remains unchanged in dried leaves. Plants that have been grubbed should therefore be heaped and burnt to prevent stock from eating the dried leaves.

Net-leaf poison, brother-brother, rigid-leaf poison and slender poison are present in some of the areas now being used or opened up for agriculture. These plants are therefore a definite hazard to stock-raising activities. Round-leaf poison, being present only in areas which have been set apart for the conservation of fauna and flora, does not constitute a hazard to livestock.

Farmers and graziers in the region extending from the Gairdner River to east of Esperance should learn to recognise these toxic species as well as other species that may be present. These include box poison, prickly poison, heart-leaf poison and Stirling Range poison which have been treated in previous articles by Aplin (1967b, 1967c, 1968) and thick-leaf poison and narrow-leaf poison which will be dealt with in a subsequent article.



It is essential to eradicate poison plants, right down to the last bush, before any area of land is used for stock-raising activities.

To be certain of the identity of toxic species, specimens of suspected plants should be submitted to the Officer in Charge, Botany Branch, Department of Agriculture, Jarrah Road, South Perth, for identification and comment.

### References

- Aplin, T. E. H. (1967a).—*J. Agric. W. Aust.* (4th series) 8 : 42.
- Aplin, T. E. H. (1967b).—*J. Agric. W. Aust.* (4th series) 8 : 200.
- Aplin, T. E. H. (1967c).—*J. Agric. W. Aust.* (4th series) 8 : 408.
- Aplin, T. E. H. (1968).—*J. Agric. W. Aust.* (4th series) 9 : 69.
- Bennetts, H. W. (1927).—*J. Roy. Soc. W. Aust.* 14 : 7.
- Carne, W. M., Gardner, C. A. and Bennetts, H. W. (1926).—Dept. Agric. W. Aust. Bull. 96. Revised Ed.
- Gardner, C. A. (1937).—“*Poison Plants of South-Western Australia*” (West Australian Newspapers Ltd., Perth).
- Gardner, C. A. (1964).—*J. Roy. Soc. W. Aust.* 47 : 54.
- Gardner, C. A. and Bennetts, H. W. (1932).—*J. Agric. W. Aust.* (3rd series) 1 : 481.
- McEwan, T. (1964).—*Qld. J. Agric. Sci.* 21 : 1.