

WESTERN AUSTRALIAN DEPARTMENT OF AGRICULTURE

POISON PLANTS OF WESTERN AUSTRALIA

CRINKLE-LEAF POISON

RUNNER POISON

HORNED POISON and HILL RIVER POISON

WOOLLY POISON





## POISON PLANTS OF WESTERN AUSTRALIA

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

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CRINKLE-LEAF POISON (*Gastrolobium villosum* Benth.)

RUNNER POISON (*Gastrolobium ovalifolium* Henfr.)

HORNED POISON and HILL RIVER POISON

(*Gastrolobium polystachyum* Meissn.)

WOOLLY POISON (*Gastrolobium tomentosum* C. A. Gardn.)

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

THIS article deals with four toxic species of the genus *Gastrolobium* which are superficially similar to one other. Two of these species are prostrate in habit; the other two are more upright but are generally short in stature.

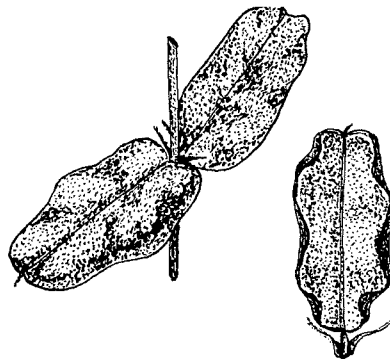
### CRINKLE-LEAF POISON

CRINKLE-LEAF POISON is a prostrate shrub when young, but later assumes an upright habit. It has a spread of three feet and normally attains a height of two feet, although the southern forms may grow to three feet high.

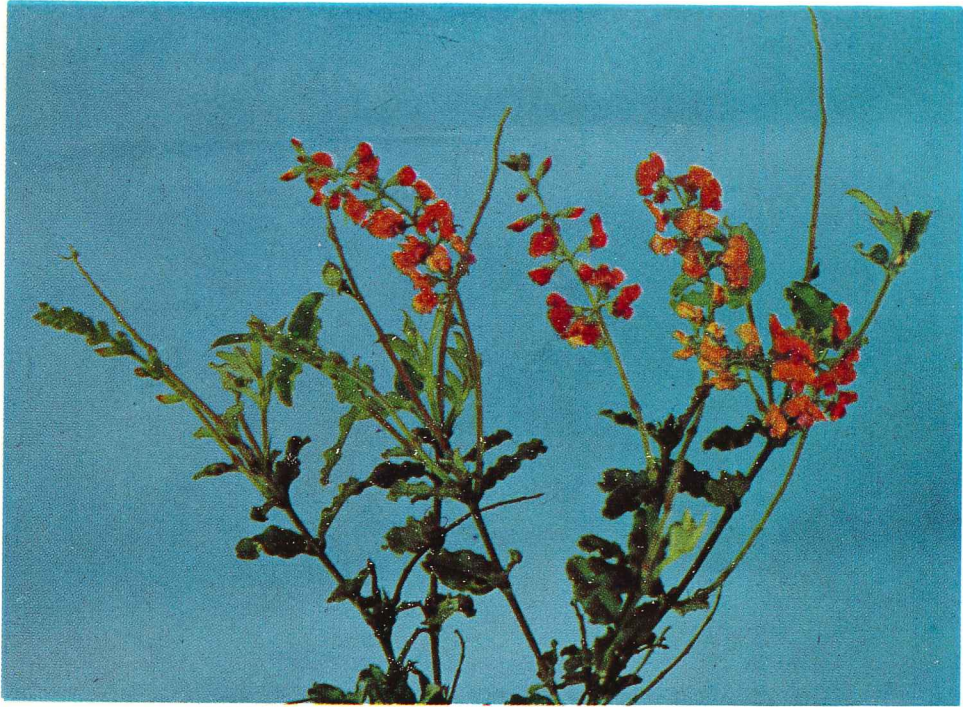
Crinkle-leaf poison derives its common name from the undulate or crinkled margins of the leaf. These leaves, borne in opposite pairs, are dark green on the upper surface and paler and hairy beneath. Hairless forms are found, but these always have the characteristic crinkled margin. The shape of the leaf varies with location. The common form seen in the Darling Range possesses leaves that are longer than broad, almost oblong in shape, with a densely hairy underside. Farther to the

south the leaves become smaller and almost circular in outline.

The stipules at the base of the leaves are long, broad at the base and tapering to a fine point. They are much longer than the leaf stalk.

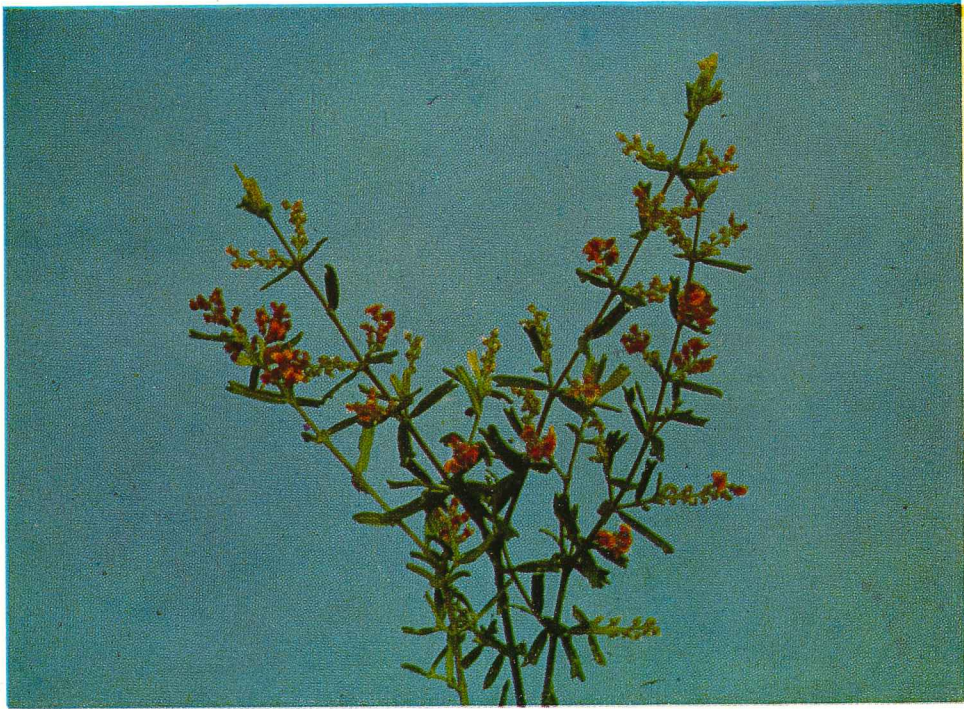


Leaves of crinkle-leaf poison



### CRINKLE-LEAF POISON

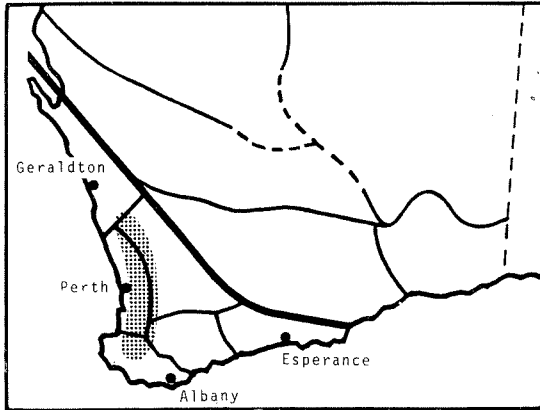
Crinkle-leaf poison (*Gastrolobium villosum* Benth.) is a prostrate shrub associated with gravelly, sandy or clayey soils of the jarrah forest and wandoo woodlands, from Bindoon southwards to the Dale River. A round-leaved form is seen southwards from Darkan to Manjimup.



### HILL RIVER POISON

Hill River poison (*Gastrolobium polystachyum* Meissn. var. *revolutum* C. A. Gardn.) considered a variety of horned poison, is a small shrub. The leaves of Hill River poison are much narrower than the typical horned poison. It is found on gravelly rises on sandplain country from Eneabba southwards to Dandaragan.





Distribution of crinkle-leaf poison

The bracts, present on the flowering stalks before the flowers open, are large, pointed, concave, hairless or loosely hairy and reddish coloured.

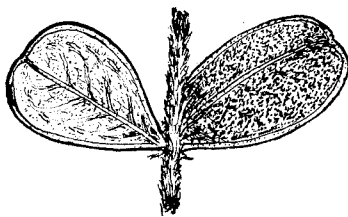
The red or orange-red flowers are borne on elongated racemes. The axis of the raceme and the calyces of the flowers are loosely hairy with long spreading hairs. The calyx lobes are acute. The seed pods are broadly egg-shaped or globular. The seeds and the pods fall off the plant as soon as they ripen.

The specific name *villosum* is derived from the Latin *villosus*, meaning bearing villi or long, weak hairs.

The common form of crinkle-leaf poison, found on sandy or clayey gravelly soils, and near to granite rocks, may be seen at Bindoon, eastwards to Toodyay and southwards to the Dale River. The roundleaf form of this plant is found to the south of the range of the common form from Bridgetown and Manjimup eastwards to Darkan.

## RUNNER POISON

RUNNER POISON, as its common name suggests, is a prostrate shrub with stems that radiate from a central rootstock to



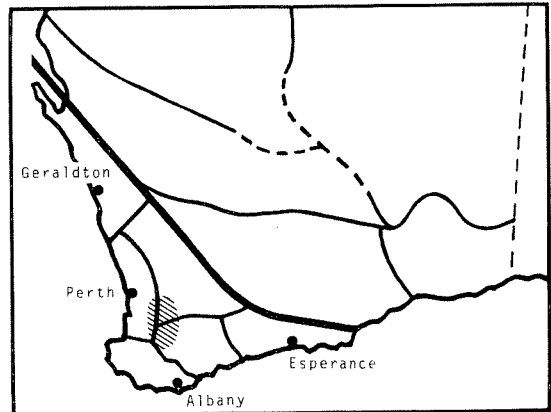
Leaves of runner poison

a diameter of six to eight feet. It does not grow much more than a few inches high.

Runner poison is somewhat similar to crinkle-leaf poison. The main points of difference are the close, thick, net-veining on the flat leaves, the broad, cottony stipules, and the colour of the flowers, which are yellow tinged with red or purple.

The specific name, derived from the Latin *ovalis*, broadly elliptical or egg-shape, and *folium*, a leaf, refers to the oval or almost rounded outline of the leaf. These measure from half to three quarters of an inch across and are borne in opposite pairs. The colour of the upper surface is a dark green, while the lower surface, with the spaces between the prominent veins appearing as pits, is a paler colour.

The smaller branches and branchlets are covered with cottony "wool." The stipules,



Distribution of runner poison

often clothed with cottony wool, are broad and erect, with basal parts persisting on the stem.

The yellow and purple flowers are borne on elongated, terminal racemes which stand erect. The axis of the racemes, the individual flower stalks or pedicels, and the calyces of the flowers are velvety hairy. The calyx lobes are acute and almost equal in length.

Runner poison, which is usually associated with gravel hills and with *Eucalyptus astringens* (brown mallet), is found in the Narrogin and Williams districts and southwards to Kojonup.



### WOOLLY POISON

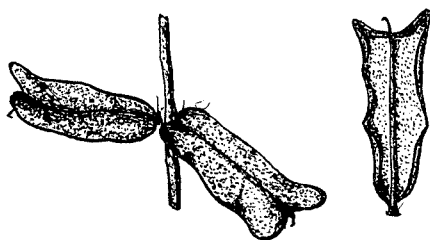
Woolly poison (*Gastrolobium tomentosum* C. A. Gardn.) is a low compact shrub with a dense woolly undersurface to its leaves. It is found on gravelly rises in the West Arthur district.

## HORNED POISON AND HILL RIVER POISON

HORNED POISON is an upright shrub with spreading branches, standing about three feet high.

The common name of the plant describes the leaf, which besides being crinkled and inrolled on the underside, is truncate or cut straight across or is two-horned at the apex. The leaves of this plant are arranged in opposite pairs, the upper surface being a dark green, the lower surface much paler in colour.

The specific name, derived from the Greek *polys*, many, and *stachys*, a spike, refers to the numerous racemes of flowers



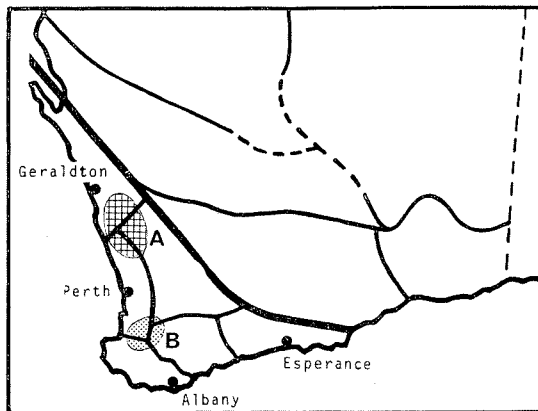
Leaves of horned poison and hill river poison (lower)

present on each plant. These racemes are short and only slightly longer than the leaves.

The leaves of horned poison are short and broad, with crinkled or slightly inrolled margins. It is normally associated with wandoo woodland on clayey or gravelly soils in the Moora and Calingiri districts.

HILL RIVER poison, described by Gardner as the variety *revolutum* of *G. polystachyum*, and at one time regarded as a distinct species, *G. bidens*, possesses a narrow leaf, completely inrolled on the underside and with two distinct lobes or horns which exceed the width of the leaf at the apex. The upper surface of the

leaf is a darker green than the almost-concealed under surface. Young plants of Hill River poison often possess the broader, truncate leaves of horned poison. Hill River poison, named after the area where it grows in abundance, is found on gravelly rises in open sandplain country from Eneabba southwards to Dandaragan.



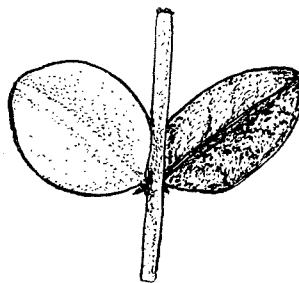
Distribution of—(A) horned poison (B) woolly poison

## WOOLLY POISON

WOOLLY POISON is a low compact shrub with stiff stems and branches. Both its common name and its specific name, which is derived from the Latin *tomentosus*, covered with thick, soft hairs, refer to the woolly under surface of the leaves.

Woolly poison possesses a leaf which is almost round to ovate in outline. These leaves are roughly threequarters of an inch across, dark green and smooth above, white felted or woolly on the underside. They are arranged in opposite pairs. The stipulates are small and fall early.

The flowers are borne on racemes which exceed the stem leaves. The axis of the



Leaves of woolly poison

raceme, the pedicels and the calyces of flowers are densely clothed with fine silky hairs. The petals are yellow and red and only slightly exceed the calyx lobes.

Woolly poison is associated with wandoo woodland and is found on gravelly clay soils in the West Arthur district.

## TOXICITY

Crinkle-leaf poison was incriminated as the cause of the deaths of 400 sheep at the junction of Chittering Brook and the Avon River by Morrison (1900). Morrison (1910) listed runner poison as one of the poisonous plants found in Western Australia. Herbert (1921) referred to a report by Rosselotty in 1899, who had investigated the physiological activity of runner poison and found that it had the same effect on sheep as heart leaf poison (*G. bilobum* R. Br.). Horned poison was regarded by Carne, Gardner and Bennetts (1926) as being probably as poisonous as crinkle-leaf poison. Woolly poison was described by Gardner (1955) but only one field report regarding its toxicity has been received to date.

The toxic principle monofluoroacetate, first demonstrated by McEwan (1964) to be present in wall flower poison and almost simultaneously and independently shown by Cannon to be present in rock poison and in box poison, has been detected in crinkle-leaf poison and in woolly poison. Aplin (1967) reported that samples of runner poison and horned poison tested to date have not yielded measurable quantities of this toxic principle. These results do not necessarily mean that runner poison and horned poison do not ever contain this toxic principle. It only demonstrates that at the time that these particular samples were collected for chemical analyses they were relatively non-toxic.

Field evidence has proved that at least two if not all the species are toxic to stock, particularly when new growth is starting.

Stock losses from crinkle-leaf poison, for example, occur more often in late spring or early summer when growth activity is at its peak.

The four poisonous species described in this article do not sucker when plants are cut at ground level. Bushes so destroyed should be heaped and burned, as the toxic principle remains unchanged within the intact plant.

There is no effective remedy for stock poisoned by these plants. The toxic principle (which is similar to "1080"), is a water-soluble compound that is rapidly absorbed into the body tissue, so that once a lethal dose is consumed there is little that one can do to save livestock, except to keep them rested and away from water.

Farmers and graziers should learn to recognise these poisonous plants and to avoid exposing stock to the hazards presented by them.

The eradication of poison plants, right down to the last single bush, is essential before any area of land is utilised 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

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