

WESTERN AUSTRALIAN DEPARTMENT OF AGRICULTURE

POISON PLANTS OF WESTERN AUSTRALIA

THICK-LEAF POISON  
NARROW-LEAF POISON  
MALLET POISON  
WALL-FLOWER POISON



# POISON PLANTS OF WESTERN AUSTRALIA

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

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- THICK-LEAF POISON (*Gastrolobium crassifolium* Benth.)  
NARROW-LEAF POISON (*Gastrolobium stenophyllum* Turcz.)  
MALLET POISON (*Gastrolobium densifolium* C. A. Gardn.)  
WALL-FLOWER POISON (*Gastrolobium grandiflorum* F. Muell)
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By T. E. H. APLIN, Botanist

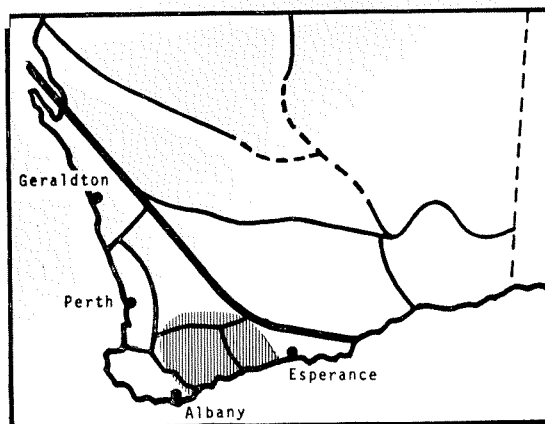
**THIS article deals with three species of *Gastrolobium* which are found in the south-west region of Western Australia. Two of these extend into the Eyre District, the third species is found in the Lake Grace area. The fourth species, Wall-flower poison, is the only toxic species of the genus found outside the State.**

## THICK-LEAF POISON

THICK-LEAF POISON, the botanical name of which is derived from the Latin *crassus*, thick, and *folium*, leaf, has an appropriate common name. In the past it was referred to as narrow-leaf poison and many farmers still refer to this species by this name. Thick-leaf poison is an erect, branched shrub, two to four feet in height, with dark olivaceous angled stems. It commonly forms thickets on gravelly soils from Narrogin southwards to Albany and eastwards to the Munglinup River, between Ravensthorpe and Esperance.

The leaves of thick-leaf poison are usually borne in whorls of three along the stem, rarely in whorls of four and more rarely in opposite pairs. The shape of the leaves vary from narrow-oblong to broadly oblong-elliptical. They are thick, typically concave on the upper side or occasionally flat. The short stalk continues as ribs along the stem. The apex of the leaves may be blunt or rounded with a minute rigid point, or it may be abruptly acute

with a longer, stout, rigid point. It does not taper gradually nor is it notched at the apex as in Stirling Range poison, which is found in the same general area. The leaves vary from grey-green, blue-green to yellow-green. The stipules are fine, short, and dark and usually break off as the leaves mature.

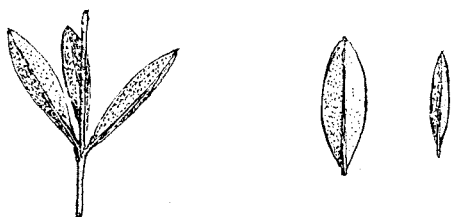


Distribution of thick-leaf poison.



### Thick-leaf poison

Thick-leaf poison, *Gastrolobium crassifolium* Benth., is an erect, branched shrub, two to four feet high, with dark olivaceous angled stems. It commonly forms thickets on gravelly soils from Narrogin southwards to Albany and eastwards to the Munglinup River, between Ravensthorpe and Esperance.



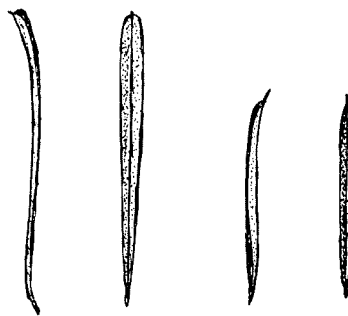
*Leaves of thick-leaf poison*

The racemes are terminal, with the flowers clustered three to a whorl along the axis. The axis of the raceme and the pedicels or flower-stalks are downy hairy. The calyx is hairless or with a few hairs lying flat to the surface, less than a quarter of an inch in length, with short rounded lobes, the two uppermost being united almost to the top. The petals are yellow and purple and are about twice the length of the calyx. The chestnut brown bracts are boat-shaped and fall away after the buds have developed.

## NARROW-LEAF POISON

NARROW-LEAF POISON, which derives its botanical name from the Greek *stenos*, narrow, and *phylon*, leaf, also has an appropriate common name. At one time it was referred to as Phillips River poison after the only locality from which it had then been found.

Three forms of this species are recognised. The form found in the Fitzgerald River area is a shrub six to eight feet high with pale green, crowded leaves and long racemes of pale yellow flowers. The form seen along the Phillips River has broader,



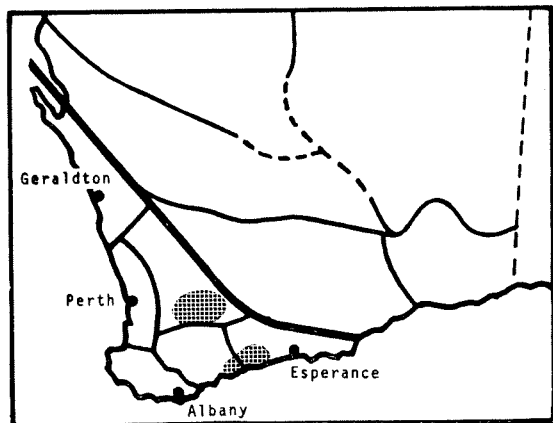
*Leaves of narrow-leaf poison*

dark green leaves and condensed racemes of flowers. The third form found from Shackleton eastwards to Narembeen and Southern Cross is a low spreading shrub with grey green leaves which have a distinct, sharp point and with rather larger, deep yellow flowers borne in loose racemes.

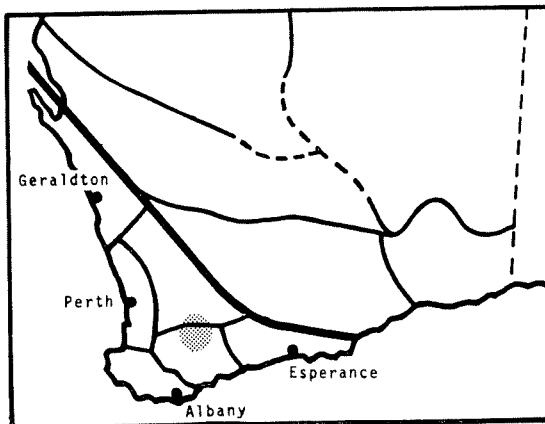
Narrow-leaf poison may be distinguished from the other toxic species of the genus *Gastrolobium* by its crowded, narrow leaves, which are deeply concave above or folded lengthwise, with a rather blunt apex which terminates in a fine, sometimes prickly point. The leaves while mainly opposite are somewhat crowded and with many arranged alternately. The racemes vary from short and dense, elongated and rather dense to elongated and loose.

## MALLET POISON

MALLET POISON, so named because it is usually associated with the lowland brown mallet, but sometimes also with wandoo and salmon gum, is a shrub up to



*Distribution of narrow-leaf poison*



*Distribution of mallet poison*

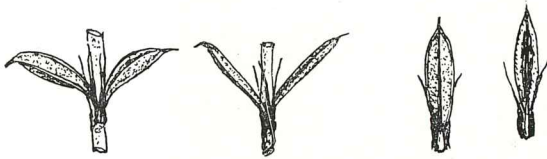




### Mallet poison

Mallet poison, *Gastrolobium densifolium* C. A. Gardn., is so named because it is usually associated with lowland brown mallet, however sometimes it is also found with wandoo and salmon gums. It is found from Dudinin southwards to Kukerin and eastwards to Lake Grace.





Leaves of mallet poison

two feet in height, with rather thick stems and branches which in the larger shrubs, especially in open areas, spread outwards from the base before becoming erect. The stems are marked by the persistent remains of the leaf bases and the bases of the stipules. Mallet poison is found from Dudinin southwards to Kokerin and eastwards to Lake Grace.

The leaves of mallet poison are lance-shaped with a sharp, prickly point, half to three-quarters of an inch long, curved

outwards in the shape of a bow and crowded on the branchlets. The Lake Grace form has leaves that appear to be much narrower due to the inrolling of the margins towards the underside. The stipules are fine, broad at the base, but with thread-like points, one-third the length of the leaves, and with the base more or less fused to the leaf stalk or petiole. The botanical name of the mallet poison derived from the Latin *densus*, close or dense, and *folium*, a leaf, is in allusion to the somewhat crowded leaves.

The flowers of mallet poison are borne in dense, terminal racemes. The calyx and ovary are covered with long, silky hairs. The pointed calyx lobes are all equal in length, the upper two united almost to the middle. The corolla is yellow and purple. The bracts persist until the flowers open.



### Wall-flower poison

Wall-flower poison which is found in three widely separated areas of Western Australia is the only toxic species of *Gastrolobium* found outside the State. The shrub is usually three to five feet high and is usually associated with rocks or with watercourses in sandy areas.

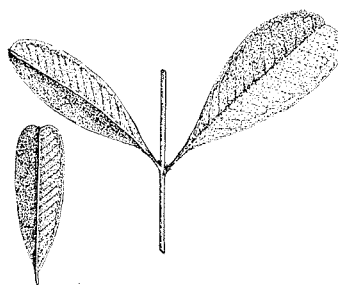
## WALL-FLOWER POISON

WALL-FLOWER POISON is a shrub of varying height, but usually from three to five feet tall, found along the Yule, Sherlock and Oakover Rivers in the Hamersley Range; in rough sandstone country bordering the Prince Regent, Drysdale and Carson Rivers, in the Precipice and the King Leopold Ranges, and at Tableland and Karunjie Station in the Kimberley region; and in the Rawlinson and Carnegie Ranges in the Eastern Division.

Wall-flower poison is the only toxic species of *Gastrolobium* found outside Western Australia, being present in the Northern Territory and Queensland. It is usually associated with rocks or with watercourses in sandy areas.

The leaves of wall-flower poison are usually in opposite pairs, sometimes alternate, oval or elliptical in outline, one and a half to three inches long and from half to one and a quarter inches across, blunt at the apex and tapering towards the base.

The flowers are large and borne in racemes which arise terminally or from



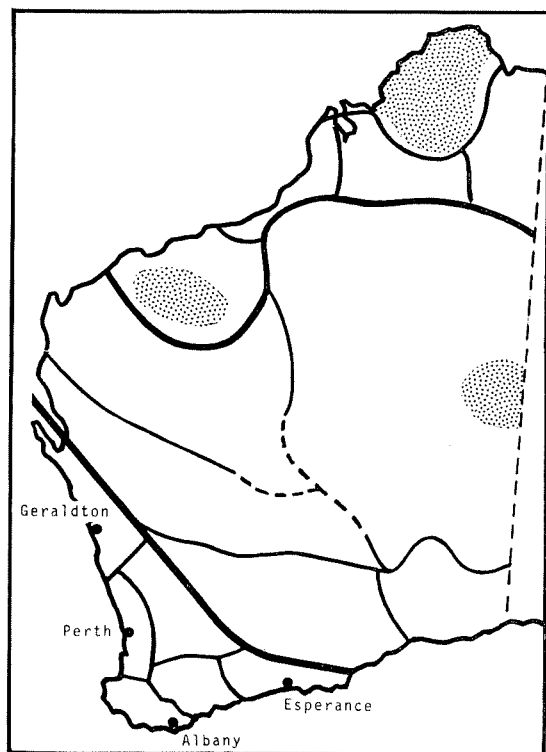
*Leaves of wall-flower poison*

the axils of the upper leaves. The botanical name derived from the Latin *grandis*, large, and *floris*, flower, is in allusion to the large flowers. The young branchlets, the axis of the racemes and the calyces are clothed with short, dense, downy-silky hairs. The petals which may be up to one inch across, are red to brownish-red and yellow in colour. The common name wall-flower poison refers to the colour of the flowers on this plant. The ovary is silky-hairy and carried on a long stalk. The ripe pod, which is up to half an inch in length, is covered with spreading hairs or is hairless and borne on a stalk which is longer than the calyx.

## TOXICITY

Morrison (1910) made reference to a narrow-leaf form of box poison which could have been thick-leaf poison. Thick-leaf poison was considered by Herbert (1921) to be dangerous at all times, but more so when flowering or in fruit. Carne, Gardner and Bennetts (1926) also considered thick-leaf poison to be dangerous. However there could have been some confusion between this species and wodjil poison, found to the north of its distribution range. They also reported that narrow-leaf poison was probably toxic. Gardner (1926) reported the toxicity of mallet poison which he described in the same year. Gardner (1937) was able to differentiate thick-leaf poison from wodjil poison and reported that narrow-leaf poison was virulent at all stages of growth.

McEwan (1964) characterised the toxic principle in wall-flower poison as monofluoroacetic acid. Simultaneously and independently Cannon demonstrated the presence of the same toxic principle in box poison and rock poison. Aplin (1967)



*Distribution of wall-flower poison*

reported the presence of this substance in thick-leaf poison. The well-known vermin poison "1080" is the sodium salt of mono-fluoroacetic acid.

Thick-leaf has been shown to contain 150 parts per million of "1080" equivalent in air-dried material. A sample of mallet poison gave a negative result for "1080," while narrow-leaf poison has as yet, not been examined chemically for the contained toxic principle.

All three species are most toxic when new shoots or suckers appear or when in the flowering or fruiting stage. The toxic principle being a stable compound remains unchanged in dried leaves so that plants which are cut or grubbed should be heaped and burnt rather than left for stock to consume.

Mallet poison and narrow-leaf poison may normally be killed by cutting the stem at ground level. Thick-leaf poison, which suckers from the base of stem, should be grubbed and the hole left after the plant has been removed should then be replaced with soil and firmed down to prevent suckering from the roots.

#### *Wall-flower poison*

Chippendale (1963) referred to a report of the death of some 600 sheep by an Arthur Giles at Davenport Range near the Devil's Marbles in the Northern Territory in the year 1872. A similar loss was incurred by a Ralph Milner in 1870 at the same locality. Giles sent a specimen of the plant to Baron Ferdinand von Mueller, the noted botanist who stated that it was "the deadly poison, common in Western Australia, and known as *Gastrolobium grandiflorum*". Wall-flower poison has been reported as a poisonous plant in Queensland, the Northern Territory and Western Australia.

McEwan (1964) isolated and identified the toxic principle of wall-flower poison as mono-fluoroacetic acid. He found that air-dried plant material contained as much as 185 parts per million of this toxic compound. The leaves of wall-flower remain toxic to stock in the dried condition.

Wall-flower poison has been and could continue to be the cause of serious stock losses in the North-West and the Kimberley regions. Pastoralists in these areas should learn to recognise this plant and to avoid exposing stock to the hazards presented by it.

There is no effective remedial treatment for stock poisoned by these toxic species.

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

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

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