

BULLETIN No. 3509

WESTERN AUSTRALIAN DEPARTMENT OF AGRICULTURE

POISON PLANTS OF WESTERN AUSTRALIA

ROCK POISON



Reprinted from "THE JOURNAL OF AGRICULTURE OF WESTERN AUSTRALIA"
VOLUME 8 (Fourth Series) No. 6 - - - - JUNE, 1967



POISON PLANTS OF WESTERN AUSTRALIA

The toxic species of the genera
Gastrolobium and *Oxylobium*

ROCK POISON

(*Gastrolobium callistachys* Meissn.)

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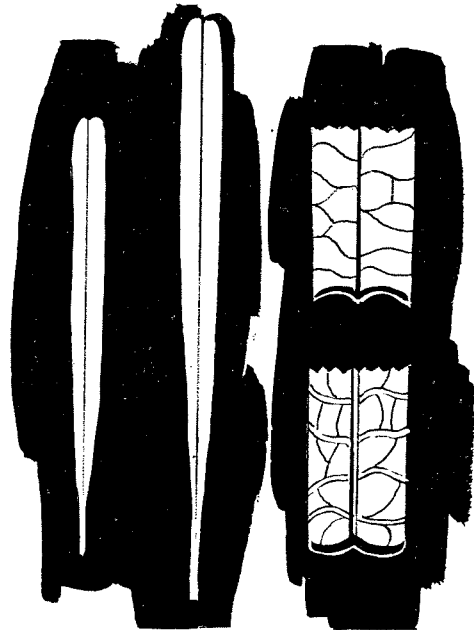
ROCK POISON, so called because it is commonly found on granitic soils, usually among granite rocks, occurs from the Irwin River, southwards to the Dale River and eastwards to Mount Stirling, south of Kellerberrin.

Rock poison is the only toxic species of *Gastrolobium* in which the leaves are not regularly opposite or whorled.

They are narrow, usually erect, mostly 2 inches long, tapering at the base into a short stalk, and are blunt or notched at the apex with a minute, usually fine point. The stipules, which are small, fall at an early stage and are absent from mature specimens.

The racemes (or flowering spikes) are terminal, erect, and rigid, often 7 to 9 inches long. The specific name *callistachys* is derived from the Greek, *callistos*, very beautiful, and *stachys*, a spike. The stem of the spike is stout, and the individual stalks of the irregularly arranged flowers are about as long as the calyx, which is golden-hairy with close-lying hairs. The two upper calyx lobes are united into a notched upper lip. The pod is egg-shaped and pointed.

The plant is usually 3 to 4 feet high but may grow to 6 to 9 feet.

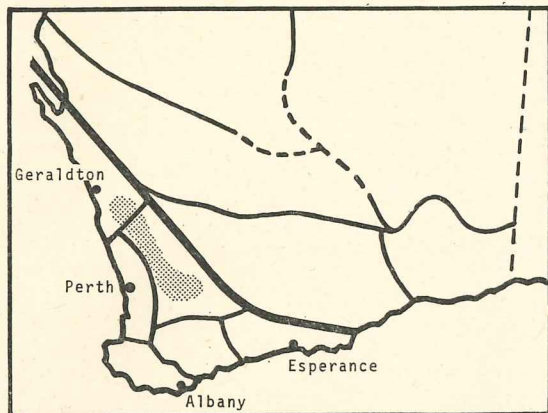


Leaves of rock poison



ROCK POISON

Rock poison (*Gastrolobium callistachys* Meissn.) is usually found among granite rocks, from the Irwin River in the north, southwards to the Dale River and eastwards to Mt. Stirling, south of Kellerberrin. Rock poison is the only toxic species of the genus *Gastrolobium* in which the leaves, which are narrow and notched at the apex with a minute fine point, are not in opposite pairs or whorled. Rock poison has a long spike of irregularly arranged flowers. It was early recognised as a toxic species, and was the first plant in Western Australia in which the toxic principle, mono-fluoroacetic acid, was characterised.



Distribution of rock poison

Rock poison was first discovered to be toxic at York, after an animal had eaten the plant from a vase that had overturned. It was one of the four toxic plants that were recorded by Drummond in 1842, and in 1864 it was listed in the second volume of Bentham's "Flora Australiensis" as one of the Swan River poison plants.

In 1934, in an extensive investigation conducted by Gardner and Bennetts to determine the toxicity of the different species and to obtain precise information about the signs and post-mortem appearances of poisoned sheep, rock poison was found to be highly toxic, even after the leaves had been stored for two years after collection.

Because the toxic principle remains active in dried leaves, grubbed plants should be heaped and burned rather than left for stock to consume.

During 1935-37, James attempted to isolate the toxic principle from rock poison but attained no conclusive results.

The toxic principle, mono-fluoroacetic acid, was isolated and characterised from rock poison by Cannon in 1964. Mono-fluoroacetic acid was earlier that year isolated independently by McEwan from wall-flower poison (*G. grandiflorum* F. Muell.). This substance, better known by its sodium salt "1080" the rabbit poison, is highly toxic to all domestic stock.

Recent analyses undertaken on samples obtained from a small area, of less than one square chain, showed that levels of the toxic principle, measured in terms of "1080" equivalent, ranged from 100 to 1,000 parts per million. At a level of 1,000 parts per million of "1080" equivalent, less than an ounce of air-dry plant material or 2½ ounces of fresh green material would be sufficient to kill a full grown sheep of about 110 lb. liveweight. Further work is in progress to learn more about the toxicity of this species.

As with other toxic species that contain mono-fluoroacetic acid as the toxic principle, rock poison is most toxic when making active growth, e.g. with the appearance of new shoots or when in the flowering or pod stage.

There is no effective remedial treatment for stock once the plant has been consumed in lethal quantities.

Rock poison, because of its highly toxic nature, its palatability to stock, and because it is found near granite rocks over a fairly large area of Western Australia can be a serious hazard to stock. Farmers and graziers should learn to identify this species. Areas containing it should be fenced off from stock and all traces of the plant must be eradicated before stock are allowed onto affected land.

To be absolutely safe, specimens of suspected poison 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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