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Calotropis or rubber tree (Calctropis procera (Linn.) Dryand)

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TWO SPECIES of Calotropis have been introduced to the northern parts of Western Australia. They are closely related in most respects but differ in one fundamental feature which decides their significance as undesirable plants.

Calotropis procera, the subject of this article, produces large numbers of viable seeds which are spread readily by a parachute appendage, while C. gigantea, although it flowers freely, is not known to form seeds in this State.

Both species are native to the tropical regions of Asia and Africa. There is little doubt that C. gigantea was introduced to Australia as a garden subject. A fine specimen is growing in the Darwin Botanic Gardens and it has been planted in private gardens both in the Northern Territory and the Kimberleys. Propagation has been by cuttings and there has been no natural spread because the plant has not produced seeds.

Seeds of C. procera are reported to have reached Australia in the packing of a camel saddle brought from India during one of the gold rushes, and there are other possible avenues of introduction. The plant was naturalised in the vicinity of Cairns in Queensland by 1935 and, following establishment at Katherine in the Northern Territory, spread down the Roper River in about 1950 and along the Victoria River in the 1960s.

In the early records in Western Australia there appears to have been some confusion between the two species. Most of the plants grown in gardens, particularly in the West Kimberleys, are likely to have been C. gigantea as they were propagated by cuttings and did not show any tendency to spread. In 1965 the Regional Weed Control officer located an infestation of about 40 acres close to the Ord River between Kununurra and Wyndham. The plant was identified as C. procera. By 1969 it had spread over more than 10,000 acres, mainly along the Ord River, several pastoral properties as well as the irrigation area being affected.

Description

Calotropis is derived from the Greek kalos—beautiful, and tropis—the keel of a boat; referring to the shape of the coronal scales. C. procera is known by a number of vernacular names including calotrope, Indian milk wood, rubber tree and king's head. To avoid confusion we prefer to use the generic name Calotropis. It belongs to the asclepiad family, Asclepiadaceae, which includes other weeds such as cotton bush (Asclepias fruticosa).

It is a shrub, seldom higher than 10 ft., with broad, thick, glaucous leaves 4 to 8 inches long and cordate (heart shaped) at the base. The scented flowers are about one inch across, the corolla mainly white with a purple blotch on each erect lobe.

The flowers of C. procera (above) have a purple blotch on each corolla lobe while those of C. gigantea are uniformly coloured.
A mature plant of calotropis showing the large glaucous leaves.

The coronal scales are as long as the staminal column. The swollen fruits are 3 to 4 inches long and filled with seeds, each having a tuft of silky hairs. The follicle eventually bursts, releasing the seeds.

All parts of the plant exude a white latex when broken.

Besides not producing seeds, C. gigantea differs from C. procera in having uniformly-coloured corolla lobes which spread to a greater degree.

**Significance**

In India, where both species occur widely, almost every part of the plant is used in indigenous medicine. The flowers are considered to be digestive and tonic. The bark is used as a substitute for ipecacuanha and the milky juice as a drastic purgative and emetic.

Several toxins have been isolated and an extract of the juice has proved highly poisonous to dogs and donkeys when given by mouth or subcutaneously. The bark and latex have both been used homicidally and suicidally and the latex in making a spear poison. The silky seed hairs are a poor substitute for kapok, while fibre from the bark is used by Africans for making fishing lines and nets.

In the Northern Territory sheep have been killed by extracts of the leaves in quantities that they might swallow by eating the plant. Cattle have been observed to eat Calotropis when hungry but do not relish it, probably because of the bitter taste, and no case of poisoning in the Territory has been attributed to it. As toxic materials have been extracted, however, it must be suspect for grazing animals.

A dense growth of calotropis developing from seedlings.
Calotropis forms dense thickets, particularly on alluvial flats along rivers, thus substantially reducing the grazing value. Mustering stock is difficult in densely infested areas.

It has also proved a weed of some consequence on arable land at Katherine, but so far has not become established on irrigated land in the Kimberleys. Under such conditions there would be greater opportunity for control by cultural methods but the plant could still be troublesome and costly. *C. procera* has been declared a primary noxious weed for the Kimberleys, and is also a noxious weed in the Northern Territory.

**Control**

The need for prevention cannot be overstressed, and isolated plants should be destroyed as soon as they appear. Once established, eradication or even control is very difficult. Under no circumstances should *C. procera* be grown as a garden subject.

Plants often grow in inaccessible places and under pastoral conditions are difficult to find. Individual plants produce thousands of seeds, each fitted with a parachute attachment capable of carrying it a considerable distance. The cost of control measures, either mechanical or chemical, is high in relation to land values. Plants sucker freely unless mechanical removal is thorough, and are not highly susceptible to chemicals.

Larger bushes, with stems 2 inches or more in diameter, can be lifted with a suitable blade attached to a tractor. If the plants break off at less than about 9 inches below ground level, suckers are formed. A soft soil aids the lifting of underground parts.

Often, after the removal of parent plants, numerous seedlings germinate.

 Trials have shown Tordon 50D to be the most effective chemical. Good results have been obtained by spraying with a solution containing 6 fluid ounces in one gallon of water. A complete cover of foliage and stems with high volume equipment is essential. Application with a mister has not been satisfactory, and regrowth has developed following basal treatment with both Tordon 50D and 2,4,5-T. The spray treatment is too costly for large areas.

Cotton is highly susceptible to Tordon 50D and its use is not permitted in a defined section of the Ord Irrigation Area.

In view of the limitations of known control measures it is desirable that the behaviour of Calotropis in the northern parts of Australia be studied to define the limits of spread that may be expected and ascertain whether any practical system of land use and management, particularly under pastoral conditions, will result in reasonable control.