Weeds of Western Australia - Watsonia (Watsonia spp. and Chasmanthe aethiopica (L.) N. E. Brown).

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WATSONIA
(Watsonia Leipoldtii L. Bolus)

Originally introduced as a garden subject, Watsonia is now extensively naturalised, particularly in the moister parts of the South-West. It is more a weed of roadsides and wasteland than of arable land and pastures as it can be controlled by cultivation, followed by pasture establishment and grazing.
As the title implies, the vernacular name Watsonia is applied, not only to several species of that genus, but also to the related Chasmanthe aethiopica. At times some small flowered types of Gladiolus are also included.

The South African flora is characterised by a large number of cormous plants, many of which have been cultivated for ornamental purposes. Some of these have not remained within the confines of gardens and have become very troublesome weeds. This has been due, in no small degree, to the fact that they are capable of propagating by seeds and also by vegetative structures—corms and cormils—which are often produced in large numbers. Unfortunately for Western Australia, several of these plants have found our conditions to their liking. Cape tulip is the outstanding example and others which have proved troublesome, although to a lesser degree, include species of Chasmanthe, Watsonia, Gladiolus and Sparaxis along with the almost cosmopolitan Guildford grass (Romulea rosea).

**DESCRIPTION**

Species of Watsonia which have become naturalised and are regarded as weeds are Leipoldtii, Meriana, and Bulbifera. The first-named is the subject of the coloured illustration.

*Watsonia Leipoldtii* has 4-6 basal leaves, rigid in texture, 1-2 feet long and $\frac{3}{4}$-1 inch broad. The corm is globose, 1-1½ inches in diameter, having a fibrous cover. The stems are round in section, usually branched, and reach a height of 3-4 feet. The flowers are in a loose spike 6-9 inches long, the outer surrounding spathe-valve being brown, rigid and $\frac{3}{4}$-1 inch in length.

The flowers are bright scarlet with a curved tube nearly two inches in length, dilated in the upper half and $\frac{3}{4}$ inch in diameter at the throat. The segments are $\frac{3}{4}$ inch long, and the style reaches to the tip of perianth segments. The anthers are linear, $\frac{1}{4}$ inch long. The other species differ in details.

*Chasmanthe aethiopica*, depicted in the drawing, has several moderately firm basal leaves 1-1½ feet long, and 1 inch or more broad forming a fan-shaped rosette. The corm is large and globose, and has a brown, membranous cover. The stems are branched and 3-4 feet long, while the many red-yellow flowers are arranged in a moderately dense spike, sometimes 6-9 inches long. The spathe-valve is greenish and $\frac{1}{4}$-$\frac{3}{4}$ inch long.

The floral tube is curved, up to two inches long, and is cylindrical in the upper two-thirds. The upper segment is 1-1½ inches long, while the others are much shorter and spreading. The stamens reach to the top of the upper segment.
*Chasmanthe aethiopica*, one of the plants commonly known as Watsonia. A.—Leaves and flowering spike; B.—Corm surrounded by a brown membranous cover; C. and D.—Two views of a flower; E.—The divided style.
SIGNIFICANCE
Watsonia, using the term collectively, grows extensively and vigorously on moist soils, in fact it will withstand inundation for some time. It is plentiful along many water-courses and drains, particularly on the Western coastal plain at such places as Keysbrook, Wokalup and Dardanup. It is significant that in many localities a heavy roadside infestation terminates at a fence which encloses a well-managed pasture, despite the fact that soil and moisture conditions are the same on each side of the fence. This is shown clearly in the coloured illustration.

We must conclude that Watsonia is primarily a weed of moist wasteland, or areas that are not managed effectively. The mature plants are not eaten readily by stock, but young shoots are grazed along with other herbage. This defoliation, together with competition from vigorous pasture species, are the reasons why Watsonia seldom encroaches on well managed pastures.

CONTROL
Details of control measures are largely dictated by the extent of the weed and the conditions under which it is growing. When the plants are not abundant, complete grubbing can be carried out, but where this is not practicable, deep ploughing or working with a rotary hoe is recommended. This operation cannot always be completed to the limit of an infestation, such as along a creek bank, and usually involves supplementary grubbing if complete eradication is desired. Where possible these operations should be carried out early in the winter before flowering stems have appeared. If delayed, new corms are permitted to form. As many as possible of the corms brought to the surface by the working, should be removed by raking.

The ploughing should be followed, if practicable, by the establishment of suitable pasture species such as Lotus major, white clover, strawberry clover, subterranean clover, paspalum, and water couch. These plants provide keen competition for the Watsonia, and stock, while grazing the forage species, tend to trample the weed, and even eat the young shoots.

Pigs have rooted out many of the corms when confined to small areas.

An effective chemical would provide the answer to roadside and creek bank infestations, where cultural methods are difficult to carry out, but although some degree of control has been obtained by this method it is not highly satisfactory. Best results have been obtained from the application of 3 lb. acid equivalent of 2,4-D ester in 100 gallons of diesolene per acre. The initial spraying should be carried out during July or August and it is sometimes necessary to spray regrowth during the Spring. This is a relatively costly treatment and, owing to the presence of dormant corms, complete control in one season cannot be expected.

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