

## WILD FLOWERS OF WESTERN AUSTRALIA.

## No. XXXIII.: The Scarlet Bladderwort.

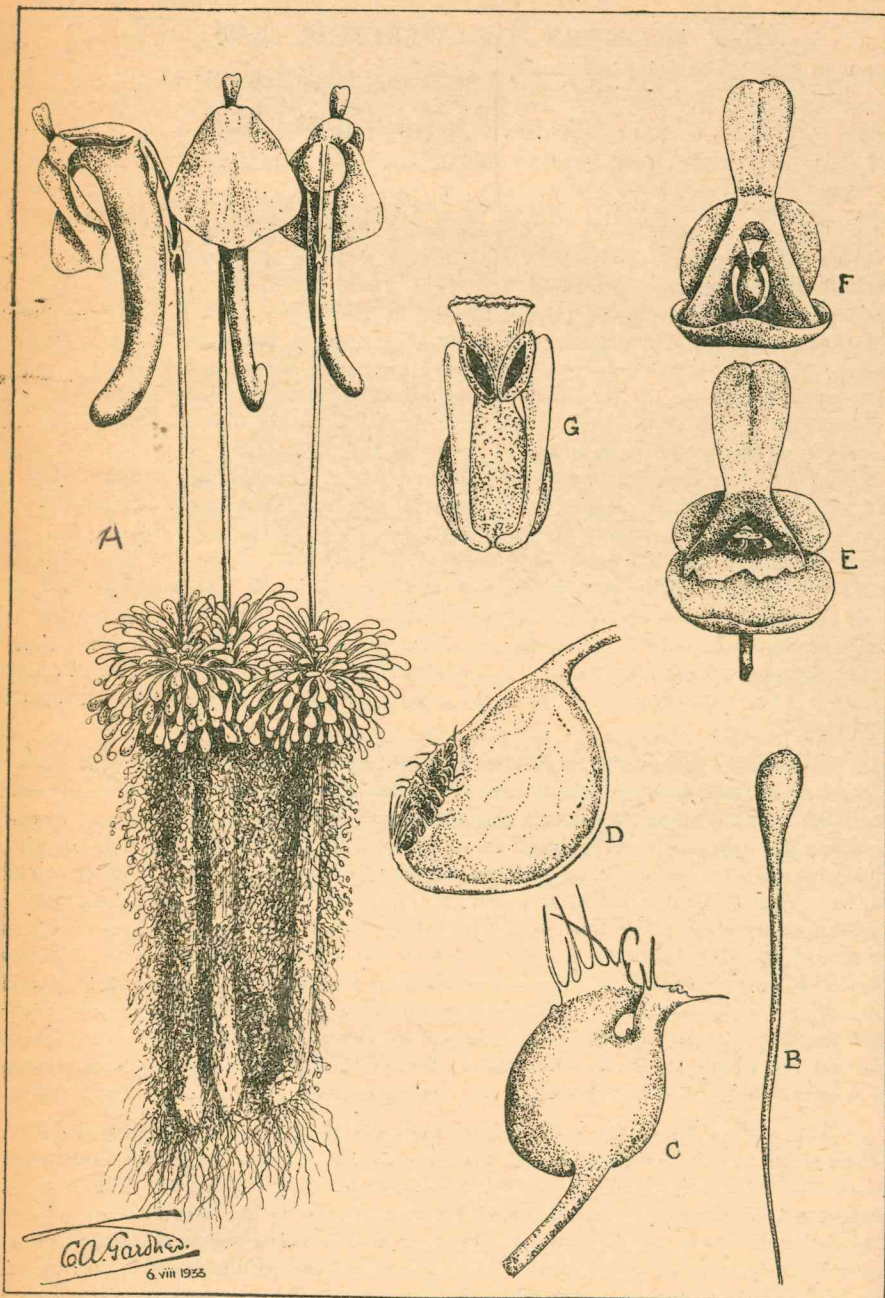
*(Utricularia Menziesii, R. Br.)*

(By C. A. GARDNER, Government Botanist.)

The plants which digest insects and small animals are not confined to the Sundews and the Pitcher plant. There are many others. We have scattered through various moist places of Western Australia a number of plants belonging to the family Lentibulariaceae, which at first sight would not appear to be of this type. If we could see below the surface of the soil in which they grow, however, we might discover small root-like organs with minute transparent "bladders" at their extremities. These capture small insects and creatures such as minute crustaceans, which go towards making up the food supply of the plants. Each "bladder" is provided with a trap-door which opens inwards, but does not open outwards, and the small creatures which swim about in very wet soil apparently push open the doors of the bladders, but are unable to make an exit. The bladders either secrete a ferment, or the animals simply die in them; in any case, after they have decomposed the plant feeds upon them. Since the bladders are so minute (they can be seen with the naked eye, however) only very small things can enter. It would appear that the bladder-like organs, which are really leaves which live below ground, are not absolutely necessary for the life of the plant. They are very numerous in this species, but it is only occasionally, in all the specimens I have examined, that I have found evidence that the leaf has succeeded in imprisoning a victim. Perhaps I have been unfortunate, or perhaps other species are more successful in this respect.

The Scarlet Bladderwort produces three types of leaves. The normal leaves, which arise from a root-stock an inch or so below the surface of the soil are small and narrow, but somewhat fleshy, red and green in colour, and form small rosettes around the base of the flowering stalk. Mixed with these leaves are some modified leaves with thread-like stalks, and imperfectly formed bladders (*see fig. C.*). They have a type of doorway, but not quite like the third type, and do not succeed in catching anything. The third type of leaf is found only in the wet soil. It has a thread-like stalk, and the bladder produced is roughly egg-shaped with a circular opening fringed with hairs. Inside this opening is a trap-door which can be pushed in, after which it closes, but cannot be opened from within by pressure. These are the traps which catch small soil animals. The roots are numerous and fibrous; in fact the whole production of roots, leaf-stalks and bladders is so enormous, that I was unable to draw anything like the mass produced.

The flowers are singly produced on short stalks of about two inches in length. Each stalk has two or three bracts near the top, and these bracts are attached by their centres, so that they have points both at the base and apex. The flower is rather remarkable in shape. The most striking feature is the long pod-shaped spur which hangs down. On the top of this is a lid-like calyx segment closely pressed over the upper lip of the corolla. The lower lip of the corolla spreads downwards, and behind it is the long spur, which is also a part of the lower lip. The second, and lower calyx-segment is pressed against the back of the spur. Both calyx segments are round, and coloured red like the corolla. You will also observe that the flower is attached to the stalk at the top, just behind the point where the two lips are joined. The stamens and pistil are situated here, and are contained in a concave depression in the upper lip, which also protrudes at the tip beyond the calyx-segment, as a small ear-like process.



## EXPLANATION OF PLATE.

*(Utricularia Menziesii, R.Br.)*

A, habit, slightly enlarged. B, normal leaf, much enlarged. C, aerial bladder-leaf, showing the imperfect formation of a "bladder." D, a typical "bladder" showing the fringed orifice. E and F, details of the upper lip of the corolla. G, stamens and pistil. C, D, E, F and G much enlarged. Leon. origin.

Cannington, W.A.

There are two stamens with thick stalks, and two dark-coloured one-celled anthers. The ovary is flask-shaped with a funnel-shaped, two-lipped style. Both stamens and pistil are suspended above the broad spur, and any insect visitor which pollinates the plant must, after forcing the two lips apart, come in contact with the stamens and pistil before entering the spur which contains the nectar.

The ovary is one-celled and contains numerous ovules. I have not seen the species in fruit.

There are ten species of *Utricularia* in Western Australia. The genus is found in many countries, and some are submerged water plants; but most, if not all of our local species grow in soil. The commonest species grows to a height of about ten inches, and has a violet and yellow flower, but the spur is not very prominent. In the accompanying plate figures E and F show the corolla with the lower lip removed. E shows this as it appears from the front, and the stigma and portion of the anthers are visible. The irregular line below shows where the lower lip has been torn off. F shows the upper lip of the corolla with the two calyx-segments. Note the concave centre with the two stamens and style. Figure G shows these on a much larger scale.

## MALACHI'S COVE.

By ANTHONY TROLLOPE.

(1815—1882.)

*(Continued.)*

Mally knew well how useless it was to attempt to rescue aught from the fury of that boiling cauldron. The hole went in under the rocks, and the side of it towards the shore lay high, slippery, and steep. The hole, even at low water, was never empty; and Mally believed that there was no bottom to it. Fish thrown in there could escape out to the ocean, miles away,—so Mally in her softer moods would tell the visitors to the cove. She knew the hole well. Poulradioul she was accustomed to call it; which was supposed, when translated, to mean that this was the hole of the Evil One. Never did Mally attempt to make her own of weed which had found its way into that pot.

But Barty Gunliffe knew no better, and she watched him as he endeavoured to steady himself on the treacherously slippery edge of the pool. He fixed himself there and made a haul, with some small success. How he managed it she hardly knew, but she stood still for a while watching him anxiously, and then she saw him slip. He slipped, and recovered himself;—slipped again, and again recovered himself.

'Barty, you fool!' she screamed; 'if you get yourself pitched in there, you'll never come out no more.'