

CARNIVOROUS PLANTS

On 20 December 1995, Kevin Kenneally introduced Allen Lowrie to the assembled crowd of 46 members and guests at the Old Observatory. Allen and Kevin have spent much time together in the Kimberley searching for carnivorous plants, especially *Stylidium*s. These Trigger Plants are not quite so obviously carnivorous; insectivorous is a better word to describe most of them, though the *Utricularias*, with their underwater bladders, can entrap all types of tiny aquatic creatures.

Allen has written three volumes of *Carnivorous Plants of Australia* and is an expert in this field. There are over 500 different species in the world, of which 150 are in the south west of Western Australia. We also heard that more and more new species are being discovered and described, especially in the Kimberley and northern regions, making it a very exciting field of botany.

Allen showed excellent slides of these unusual plants, beginning with the largest of them all, the Pitcher plants of Borneo, *Nepenthes*. But we do have one of our own: the famous Albany Pitcher plant, *Cephalotus follicularis*. It grows around swamps and streams where water is continually moving through the soil. The pitchers contain a watery liquid in which insects easily drown and later decompose. It is the only member of its family and was photographed at Two Peoples Bay in a swampy area.

The talk then moved to the *Droseras* or sundews with their sticky tentacles on their unusual leaves. These tentacles secrete a colourless mucilage which attracts and entraps small insects so that they can be broken down by a digestive juice and the simple proteins absorbed by the plant. These plants invariably grow in areas of poor nitrogen content and this is how they add this vital element to their diet. Some are very tiny, and hence called Pygmy *Droseras*, and all 42 species of these are endemic to the south west of Western Australia.

Of a different family but somewhat like the large *Droseras* is the *Byblis gigantea*. It grows up to 45 cm tall and is found in profusion in ephemeral damp herb fields in the Kimberley. Next came the tiny *Utricularias* or bladderworts, the most colourful of which are the Red Coats, *Utricularia menziesii* of the southern areas. All of these live in water or very damp situations and have bladders attached to their roots. These attract and entrap tiny aquatic creatures of all kinds, again to be digested and absorbed for their nitrogen content. The plants are common in the damp ephemeral herb fields of the Kimberley where *U. chrysantha* can form carpets of bright yellow.

Allen spoke of many new species that are still in the process of being described and of a *Drosera petiolaris*—originally collected by Banks on Cook's expedition—which he had sighted and handled in the Sydney Herbarium. This is a thrilling experience for a Botanist but Allen also mentioned how difficult it is for a collector in the Kimberley during wet times, which is when these plants are at their best. Many boggings have to be endured, but then there are such exciting finds as Allen's recent discovery of *Aldrovanda vesiculosa* at Mitchell Falls. This is a Venus Fly Trap which has whorls of spoke-like leaves but no roots. It floats on water, and flowers at the nodes rise above the water to enable pollination to take place.

Allen's real love is clearly the Trigger plants or *Stylidium*s, which he described as part-time insectivores. The column or "donger" works on a hydraulic system. It contains the stigma and anthers and is triggered to spring forward when an insect alights on the flower seeking nectar. The pollen is thus deposited on a specific part of the insect's body and when it visits the next flower, the same process occurs and pollen is transferred via that part of the insect's body. Cross pollination is thus facilitated. This fascinating process was well illustrated by excellent slides. Allen takes superb photographs, many through his microscope since these flowers are quite minute, as well as doing all his own drawings. He and Kevin Kenneally are describing many new species at present, and research in this field is gaining momentum.

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