Briefing: THE ORCHIDS OF BOMADERRY CREEK

The residents of the Shoalhaven area should be well pleased with the orchid species which can be found in the local region. Those who know of and have visited Bomaderry Creek Regional Park and the immediate surrounding area, will be aware of the varying landscape types represented in the park; it is this variety of landscape and habitat which produce 40 orchid species, 31 terrestrials and 9 epiphytic or lithophytic species.

Identification - the parts of an Orchid

Orchids differ from other flowering plants by consisting of six segments. These are known as the "Perianth Segments" but occasionally these segments are combined. Orchids begin with a dorsal sepal, which is in the top centre of the flower but some flowers are naturally upside down (non-resupinate). Next are two petals and two lower sepals which are termed lateral or ventral sepals. Finally the labellum or lip, which is the most attractive part of the flower and from this segment a pheromone or scent, is emitted to attract a pollinator. Other features are that only exotic *Cymbidiums* have true bulbs and the reference is the tern "Pseudobulbs". To some this can be confusing as the *Dockrillia* group have pseudobulbs and no leaves. All terrestrials except two at Bomaderry Creek are deciduous with all others losing single or multiple leaves forming a rosette which turns brown and dies at various intervals after the flowering has finished.

Other terms used in this briefing are as follows:
Terrestrial - Growing in the ground.
Epiphyte - Growing on a tree.
Lithophyte - Growing on a rock.
Evergreen - Leaf available all year.
Saprophyte - A plant totally reliant on a soil-borne fungus (Mycorrhiza) for survival.
Raceme - The section of the stem which displays orchid flowers.
Peduncle - The stalk which attaches flowers to the main stem.

The Creek population

The different land forms are home to 40 different species of orchids, although only one is listed as endangered under state and commonwealth legislation. Of these 40, nine are either epiphytic (on trees) or lithophytic (on rocks), with the remaining 31 being terrestrial (in the ground) and of these 31 only two are evergreen, having a leaf available all year round for easy identification.

The endangered species is *Genoplesium baueri* (Brittle Midge Orchid) and there are 29 known plants recorded, although three individuals have been deliberately destroyed by a person or persons unknown. The two evergreen species are *Cryptostylis erecta* and *Cryptostylis subulata* (Tongue Orchids).

Several other species have no preference for a rock or a tree and are regularly found on both but normally in a moist rainforest habitat. One species is a source of dispute as it is commonly known as the Sydney Rock Orchid; however in some areas of the Shoalhaven and Illawarra only, it prefers to live in trees and those tree dwellers have been given a new name. The same applies to some terrestrials as occasionally these are found on moss covered rocks - one should never be surprised where orchids choose to grow.

On almost any day throughout the year a watchful visitor will see an orchid in flower either within the Regional Park area or somewhere in the bush land between the creek and Illaroo Road. All are protected by law but a sharp eye is required to see all the area provides.

Seasonal Flowering - the First half of the year

The flowering year begins in January with *Spiranthes australis*, the Pink Spiral orchid. This species displays its bright pink 5mm flowers in a spiral around the stem and is frequently found in damp locations. This species as for all terrestrials will produce a new replacement tuber for the following season by the time the plant is in flower.

The next seven species are known as Midge Orchids and all have a similar habitat preference for well lit areas but often this can be a 50cm square clear section in open forest. Plants are seen in the order of listing from January to May. *Corunastylis apostasioides* is known as the Freak Midge Orchid and grows to 60cm tall and is the tallest of the group. The pale flowers are rarely fully open and display the hairy labellum through the petals. *Corunastylis densa* (Dense Midge Orchid) lives up to its name in that the deep purple flowers are densely packed on a stem to 9cm.
The Brittle Midge Orchid is *Genoplesium baueri* and is listed as endangered under state and commonwealth legislation. Three to five reddish to brownish upside down flowers are the norm but this species is known to support 12 flowers and is identified by a pink stem. *Corunastylis woollsii* has dark red flowers, hence the common name of Dark Midge Orchid and is the most commonly seen species in this genus. With as many as 30 fringed flowers, *Corunastylis fimbriata* (Fringed Midge Orchid) should be identified without difficulty by the fringed labellum on each of its 30 lemon scented flowers. *Corunastylis laminata* the Red Midge Orchid, is the last in this group and is also has up to 20 moderately crowded flowers with upturned petals.

Adelopetalum exiguum is a rain forest species, equally at home on rocks or trees and in flower from February, almost to mid-year. When the walker sees the plant and its 6mm yellow flowers the common name of Tiny Strand Orchid will be obvious as each tiny bulb is connected by a thin strand.

Eriochilus petricola (Parsons Bands) is a single leafed terrestrial and one which can be easily identified by looking at the underside of the heart-shaped leaf. This will reveal a red/purple colour which differs from *E. cucullatus* (Leafless Parsons Bands). Flowers have slender segments with slender petals and inverted paddle shaped sepals. A difference with the two species is that *E. petricola* has a leaf which is well developed at flowering whereas the leaf of *E. cucullatus* is visible but yet to fully develop.

Speculantha parviflora (Tiny Greenhood) is a small multi-flowered plant from the *Pterostylis* genus. Flowers have soft green and white vertical stripes with a brown tip to the hood. Flowers do not emerge from the rosette but are off to the side and appear after the plant has flowered (post flowering) and plants can have as many as five rosettes per flowering plant. This species prefers thin soils around *Leptospermum* and *Kunzea* over rock shelf.

Acianthus exsertus (Dark Mosquito Orchid) has a heart-shaped leaf and it is common to find many leaves and only a few will produce flowers. Found in moist Eucalypt and exposed areas the small flowers are red/purple and green.

Diplodium obtusum (Blunt Tongue Greenhood) is another from the *Pterostylis* group and has a single shiny green and white flower. It also has a post flowering rosette and comes with leaves on the stem (Cauline leaves).

Acianthus fornicatus (Large Mosquito Orchid) is the second in this group but with a larger heart-shaped rosette and up to 10 bent over flowers which can vary from flesh coloured to green. Plants can be found in sandy habitats or areas of heavy leaf mould.

Cestichis reflexa (Tom Cats) is a very common lithophytic species with green to yellowish pseudobulbs with slightly darker leaves. Flowers can number as many as 30 and are mainly yellow with some white sections. Plants prefer shaded locations.

Corybas aconitiflorus is known as the Common Helmet Orchid and is usually pink but has been known to come in a port wine colour. The single flower sits upon a roundish leaf and is 12mm tall. Can be found in a variety of locations such as heavy leaf mould, wet forest and also sandy habitats.

The Second half of the year

Pterostylis nutans is the Common Nodding Greenhood and is found in wet forest, open Eucalypt forest, sandy habitats and also in moss on rocks. Flowers emerge from the rosette which has slightly wrinkled edges and plants can produce several tubers for each existing tuber. *Pterostylis curta* is another common species which enlists a wide range of habitats to display its single flower. Rosettes are large with a smooth edge, attractive surface texture and have an elongated stalk. The labellum of *P. curta* is not held symmetrically as are all others but always points to one side.

Glossodia major (Wax Lip Orchid) in mid-August can form very large colonies of blue, single flowered plants and rarely break this rule to have more. Flowers have a white patch at the base of the labellum and the single leaf is slightly hairy.

Prasophyllum brevilabre (Short-Lip Leek Orchid) is one of the leek orchids and normally the first to flower each year. Up to 22 small green to brownish flowers on a stem with a white ruffled labellum, which is bent backwards. Grows in open forest and is prolific after fire.

Thelymitra carnea (Tiny Sun Orchid) is a small pink sun orchid with up to four flowers. Plants prefer well lit positions and flowers close when the sun is shaded by clouds. This species naturally hybridises with *T. ixioides* (Dotted Sun Orchid) which is usually spotted and carries up to 10 flowers but plants are occasionally unspotted. The hybrid is *T.* x *irregularis* (Crested Sun Orchid) and this plant can be with or without spots. A close check of the labellum with all *Thelymitra* species is the only sure way to pick the species or hybrid. Flowers are self-pollinating.

Thelychiton speciosus (Sydney Rock Orchid) is a feature of many escarpments in the Shoalhaven and plants have as many as 50 flowers which can vary from white to a rich yellow. Seasonal variations can produce several racemes from each pseudobulb and a plant with several is a sight to behold. The perfume of the flowers is strong and can be detected often well before the plant is seen.

Thelychiton epiphyticus (Illawarra Rock Orchid) at Bomaderry Creek is restricted to one tree with only a few plants sitting high in the tree. Similar in appearance to *T. speciosus* the fact they are in a tree should be sufficient to distinguish the difference.

Diuris sulphurea (Tiger Orchid) is a sunlight loving species with a preference for hard soils and can support as many as seven flowers. These are yellow with a dark brown blotch on each side of the central ridge of the labellum. The petals also have a brown stem and the dorsal sepal has brown markings at the base.

Contrasting with the *Diuris* is *Oxysepala shepherdii* (Wheat-Leaf Rope Orchid) which prefers the heavier shade of the rainforest and is found on rocks or trees. Flowers are also yellow but generally 3mm-5mm.

A common lithophyte is *Dockrillia striolata* and is in abundance at Bomaderry Creek, although with differing habits. Those plants in more open areas take their normal form in the manner of a group of fingers sitting on a rock but in heavier shade the same plant will be more dense and hang down in stages with longer pseudobulbs. An observant walker will also notice one plant growing on a tree which is a contradiction to its lithophytic origins. Flowers are yellow with vertical stripes, hence the common name of Streaked Rock Orchid.

Plectorrhiza tridentata is another for the rainforest and is well named as the Tangle Root Orchid. It is one of many "Twig Epiphytes" and can dangle by one slender root from the outer tips of a limb but again can contradict as it can also grow on a rock. Flowers are small and usually green or brown but can occasionally be more red than brown.

Dockrillia linguiformis is only seen on rocks at Bomaderry Creek but in many other sites is more at home on a tree. Pseudobulbs are flat and the common names of "Tongue Orchid" or "Thumbnail Orchid" fit well. Flowers are white with slender segments but when a plant has numerous racemes, each carrying over a dozen flowers the viewer will be presented with a beautiful sight to photograph.

The next species will be easily recognised by any first time walker as the "Duck Orchid" because the flower shape could not be mistaken for anything else. *Caleana major* has up to five dark red flowers but usually two or three would be considered to present a normal flowering. The slender single leaf emerges before the flower as flat on the ground but over time stands more erect as the plant presents its flowers. It can grow in open wooded areas or around shrubs in thin soils over rock shelf.

Dockrillia pugioniformis is commonly known as the "Dagger Orchid" and is another for a preference for a shaded, wet habitat, either on rocks or trees. Plants can hang from a tree or rock for two metres with small white flowers with purple marks on the ruffled labellum. As with all *Dockrillias* the flower is upside down.

There are two species of bearded orchids at Bomaderry Creek. Both are fairly common throughout the Shoalhaven and the first is *Calochilus paludosus* (Red Beard Orchid). Both species can be found in open woodland and *C. paludosus* is easily identified by a gold colour in the background of the top to middle section of the red beard. Both species support up to nine flowers with one or two open at any one time. These flowers last from 2-4 days. *Calochilus gracillimus* (Slender Beard Orchid) is a late flowering species as it is in flower during December and January. The beard has a vertical red centre section but the beard hairs are red to brown in colour.

There are only four evergreen terrestrial species in the Shoalhaven and two are within the Creek bushland. *Cryptostylis subulata* (Large Tongue Orchid) has a red labellum which points down and it looks like a rolled over tongue with a dark backward facing hook underneath where the pollinating insect enters the plant. Petals and sepals are narrow and pale and flowers can number 20 but only one or two are open at one time. The labellum begins as a flat tongue and takes a day or two to form the rolled over shape. Plants are easily identified when not in flower by looking at the leaf, which will be green on the front side and pale green on the rear. *Cryptostylis erecta* (Bonnet Orchid) has a green colour on the front of the leaf with smudges of red/purple on the rear. Flowers are shaped in the fashion of an old style

bonnet with vertical purple veins. The number of flowers open at one time can vary from two to four. Both species can form good colonies at times in open to semi open areas.

Along the edges of the creek on certain trees in shaded areas, *Sarcochilus hillii* (Myrtle Bells) will be found. Possibly the first sight will be the extensive root system which can travel along the trunk of a tree or branch for 50cm. When the entire plant is visible this will seem an excessive root system for such a small plant but most orchids of this type send out roots to better attract moisture and survive on the lichens and mosses the particular tree species will produce. The 12mm-15mm flowers are a watercolour pink with a sugar coated surface texture. The plant will produce one or two flowers at a time and a raceme can be found with a new flower during the three-week period. Plants are grey-green and despite their small size can form large clumps.

Orthoceras strictum (Horned Orchid) prefers a site where it has access to regular moisture by growing on the periphery of wet areas. Flowers can number 12 and the labellum colour is usually green but can be red or even charcoal grey; this can depend on the soil type.

Australia is home to a mere three species of *Cymbidium* and only one is found in the Shoalhaven. This is the common *Cymbidium suave* (Grassy Boat-Lip Orchid) which prefers a tree hollow, fallen limb or old tree stump. The plant survives on the rotted heartwood of these hosts and its roots can travel several metres down the hollow. The pendulous flowers are usually a dull yellow to light brown colour and although a very common species, a large plant in flower is a memorable sight.

The last two species on the list are saprophytes but both are colourful and present a photographic treat at the end of the year. *Dipodium punctatum* (Blotched Hyacinth Orchid) and *Dipodium variegatum* (Slender Hyacinth Orchid) prefer open well-lit habitats and can form large groups, both species supporting 50-60 flowers. *D. punctatum* has small pink spots over a pale pink background and D. variegatum has larger pink blotches over a white background. *D. variegatum* can be easily identified prior to flowers opening as the peduncle which attaches to flower to the main stem displays pink spots.

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