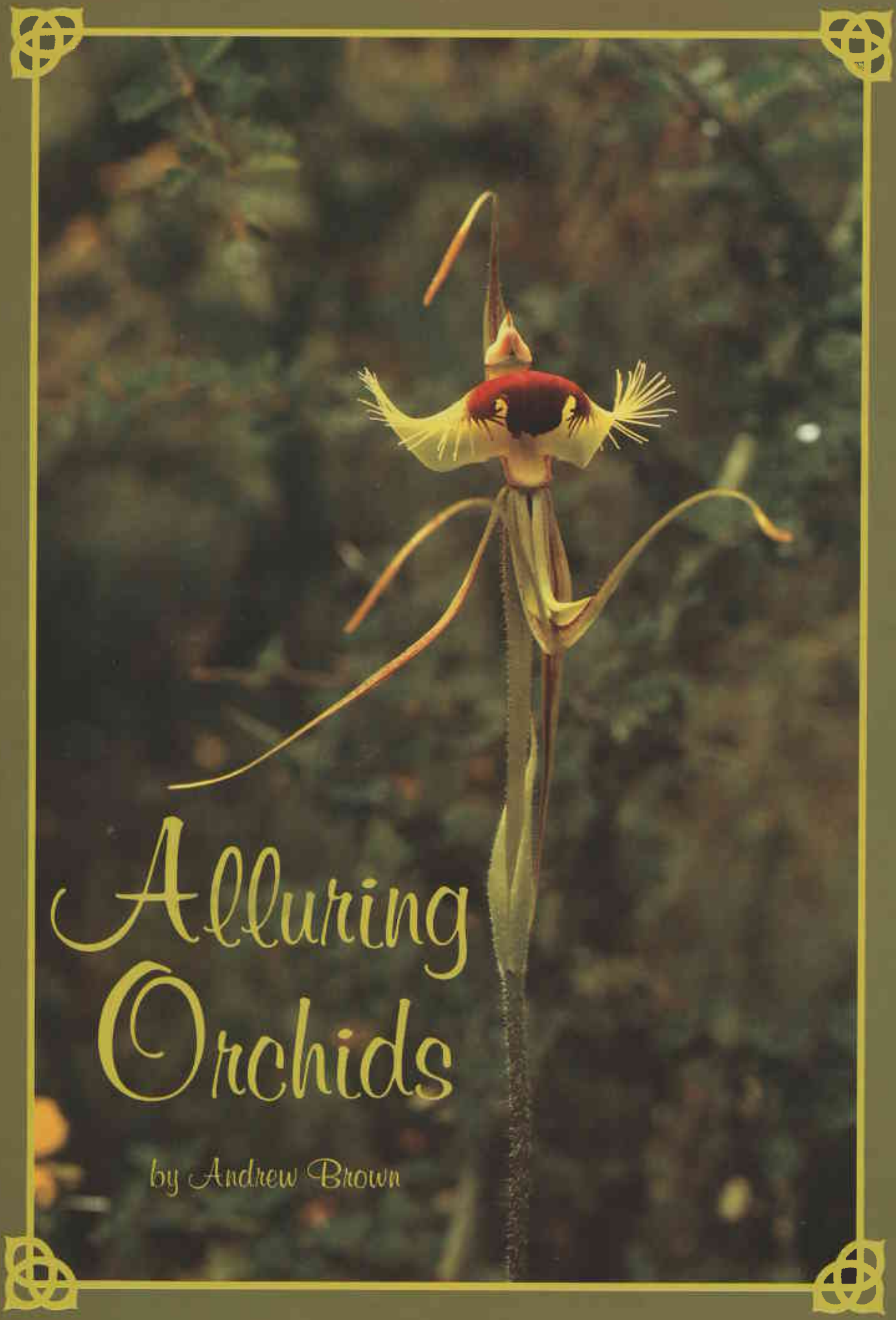
Alluring
Orchids
by Andrew Brown

WESTERN Australian orchids might not be as large or spectacular as many of their tropical counterparts, but they have a charm and appeal all of their own.

Most orchids are found in the South-West of the State, where there is a typical mediterranean climate of cool, wet winters and hot, dry summers. Under these conditions they grow and flower during the autumn, winter and spring months. With the exception of the slipper orchid (*Cryptostylis ovata*), all die back to dormant tubers in the summer.

THE SPIDER ORCHIDS

There are over 350 species of orchid in WA, but few of them can match the beauty and elegance of the spider orchids. With some 120 known species and subspecies, they are the largest and most diverse group of orchids. They range from the dainty dwarf spider (*C. bryceana*), just six centimetres high with flowers two centimetres across, to the largest of all Western Australian orchids, an undescribed species found between Busselton and Augusta. This can grow over 70 centimetres high with flowers up to 40 centimetres across.

Spider orchids belong to the genus *Caladenia*, which is Latin for beautiful glands, alluding to the rows of glands found on the lips of all species. These are thought to visually lure visiting insects and in some cases may also emit chemical attractants.

Spider orchids are found throughout the South-West from just north of Kalbarri, south-east to Balladonia, and then east in a narrow coastal strip to Eyre on the Great Australian Bight. Their habitats range from the jarrah-marri and karri forests, winter wet swamps, and coastal heath in the high-rainfall zone of the lower South-West, to the much drier inland mallee woodlands, salt lake margins, and granite outcrops.

Although most species flower in the spring months of September and October, spider orchids can be seen for most of the year. The first to appear in May-June is the winter spider (*C. drummondii*), while the south coast spider (*C. corynephora*) is the last in December-January.

ENDANGERED SPECIES

Although most species are common and widespread, a few are limited to specific habitats within very narrow geographic ranges. A rare form of mustard orchid (*C. caesarea*) occurs only on granite outcrops near Dunsborough, while an undescribed species closely related to the dragon orchid (*C. barbarossa*) is confined to the margins of salt lakes near Miling and Pithara. Any further destruction of their habitat may result in their extinction. Sixteen species of spider orchid are now declared as endangered flora. All are illustrated in a new book, *Western Australia's Endangered Flora*, available from bookshops and the Department of Conservation and Land Management.

FLORAL FRAUD

While most flowering plants secure the services of pollinators by offering food such as nectar or pollen, few spider orchids offer either. Instead, they use deception. The methods they use to deceive pollinators are fascinating, and fall broadly into two groups.

The first contains colourful species such as the white spider (*C. longicauda*), sugar candy (*C. hirta*) and cowslip (*C. flava*). They use colour, perfume, mimicry, and occasionally nectar to attract a variety of insect pollinators.

Members of the second group are far more specialised. Species such as the clubbed spider (*C. longiclavata*,) king spider (*C. huegelii*) and leaping spider (*C. macrostylis*) have unobtrusive colours. The flowers of plants in this group are usually green, dark maroon, and muddy yellow. Most have clubs, thickened glands on the ends of the sepals or petals, which emit chemicals designed to attract male flower wasps. Several have developed even more exclusive techniques. Dragon orchids, for example, have evolved intricate labella (lips) which mimic the size, shape and texture of flightless female flower wasps. When the males attempt to pick up what they think is a female, they are thrown against the column by the hinged lip during their frustrated lift-off. In this way they pick up pollen and transfer it to the next false female wasp.

The butterfly orchid is one of the most unusual of all our spider orchids.
Photo - Les Harman ◄

From top: The bizarre shape of the lazy spider orchid is designed to lure native flower wasps onto the insect-like lip. The blue china orchid flowers in profusion during the season after summer fires. This undescribed pink spider orchid is confined to consolidated dunes along the south coast.
Photos - Andrew Brown

HYBRIDS AND FIRES

Cross-fertilisation occasionally occurs between species in these groups, resulting in quite unusual offspring. These often look so unlike their parents that several, such as the lavender orchid (*C. lavandulacea*) and prisoner orchid (*C. ericksoniae*), were named in the belief that they were new species. Hybrids between more closely related species of spider orchid are far more common and often very attractive. The yellow-flowered cowslip (*C. flava*) often crosses with the pink fan (*C. nana*) or little pink fairy (*C. reptans*) to produce a marvellous yellow, pink and orange-flowered hybrid. Hybrids are often found in sites that have been disturbed by partial clearing or fire. This may be due to increased insect activity resulting from less competition from other flowering plants.

Most orchids flower *en masse* after bushfires, but the reason for this is still not fully understood. Some, such as the pink fan (*C. nana*), silky blue (*C. sericea*) and white fairy (*C. marginata*), will not flower unless the bush has been burnt, while others, including the blue fairy (*C. deformis*) and pink spider (*C.* sp.), can be found in unburnt bush but flower in greater profusion after fire. Recent studies suggest that the ethylene gas produced during a fire is the most likely stimulant, but it is possible that flowering may also be triggered by potash, increased soil temperature and light, or by some influence on the growth of soil fungi.

There is still much to learn about spider orchids, but it is certain that they will always provide a sense of wonder and discovery when we see them during walks through our bushland.

From top: The hybrid of the pink fan orchid and yellow-flowered cowslip between its parents.
The pink fairy forms large colonies. It is one of the most common and well-known spider orchids.
Photos - Andrew Brown

The lip of the dragon orchid resembles the flightless female flower wasp and is an irresistible lure to the frustrated male, which then transfers pollen to the next false female.
Photo - Babs and Bert Wells

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LANDSCOPE

VOLUME FIVE No. 4 - WINTER EDITION 1990

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Western Australia grows some rare and stunning native spider orchids. Their alluring nature will delight the reader on page 34.

FEATURES

REGULARS

COVER

*Back in the early 1970s, Western Australia proclaimed the numbat (*Myrmecobius fasciatus*) as its State emblem which may have saved its life. With the help of scientists and new techniques, these delightful creatures are now fighting back against extinction. See page 15.*

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