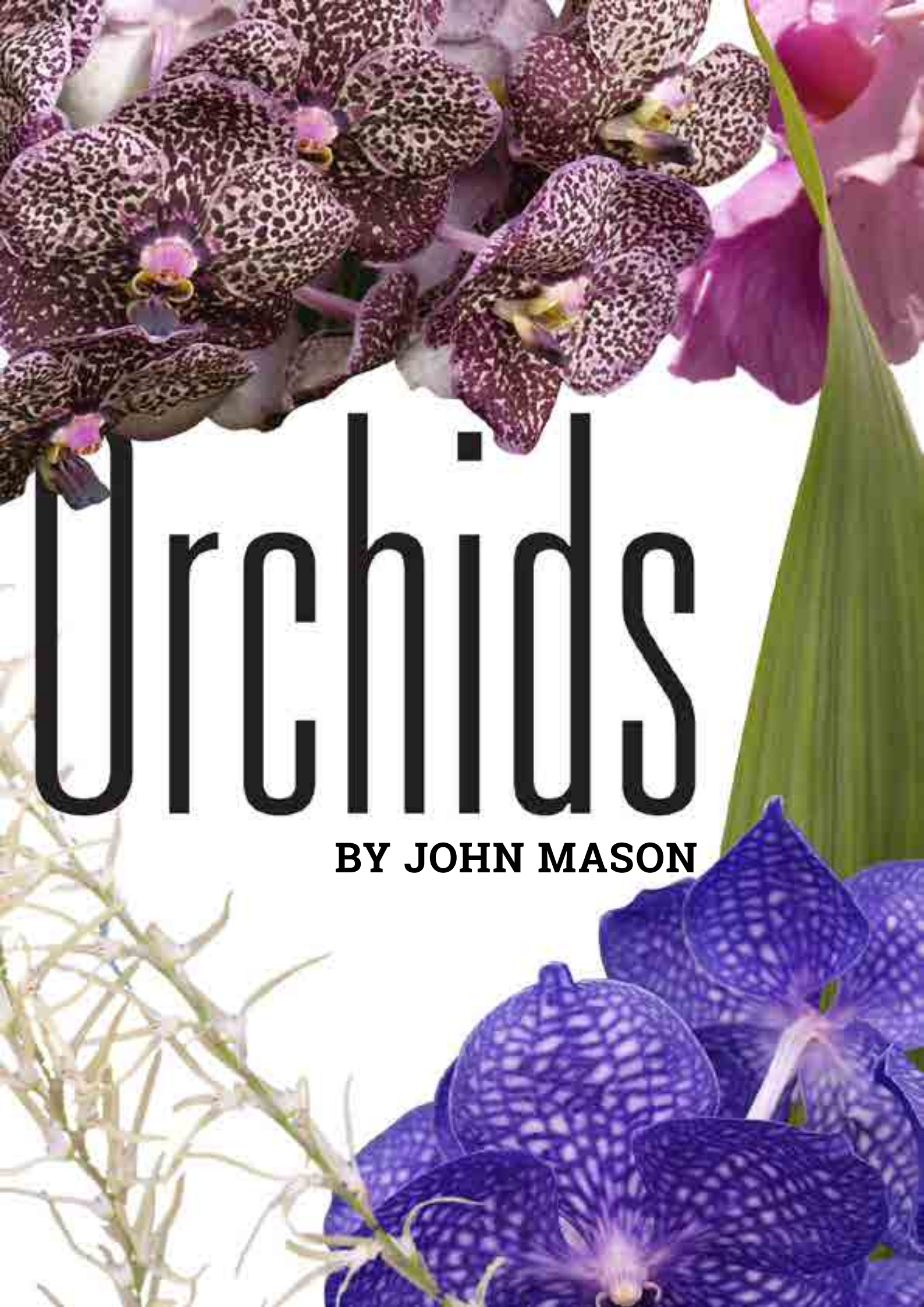

Orchids

BY JOHN MASON

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CHAPTER 1 INTRODUCTION

There are between 20,000 and 30,000 orchid species known to man, coming from almost every corner of the world. In fact, the only locations in the world that are not home to at least one species of orchid are the dry arid zones and the Arctic and Antarctic. Some orchids, such as the vanilla orchid are valued for their commercial properties, but most are admired solely for their unique beauty. With so many orchids in existence, and the group adaptable to a wide range of habitats, it certainly gives the home gardener the opportunity to grow this lovely plant in a range of situations.

Aranda

Orchids can be classed according to the growing medium from which they feed. They include:

Epiphytic - growing above ground, usually on or next to another plant as a support, but not as a source of food (non-parasitic). These plants spread roots on the surface of trunks (or internally through crevices) to obtain nutrients in the rainwater as it trickles down the trunk. Tropical climate species of orchids are primarily epiphytic.

Lithophytes - these plants grow on rocks. They normally obtain their food and growing requirements from organic matter collected from falling/blowing on or in between the rocks.

Terrestrial – these orchids forms have a below ground type of root system like the majority of garden plants. Most cool climate orchids grow this way and not many of the tropical forms.

The flowers of orchids are as diverse as the plants themselves, ranging from small, nearly inconspicuous blooms to large, long lasting flowers and flower stems. Some types of orchids are known to flower and provide colour for up to 2 months.

If you choose the appropriate orchids for your locality, they are very easy plants to grow, often requiring very little attention once established in a suitable position. This doesn't mean they will

grow better if neglected, but they will often survive neglect better than many other types of orchids.

The best approach to growing a particular type of orchid is to look at it's natural habitat, and try to recreate similar conditions. In cool areas, most species will need protection from extreme cold, and in hot climates protection from direct sunlight is essential. For this reason, shade houses and well ventilated greenhouses are frequently used for orchid growing. Orchids also perform well as pot plants, and are also a nice addition to ferneries and palm plantings.

Orchids that are suitable for cool climates include Cymbidium, Dendrobium and Pleonie species. Dendrobiums, Vandas and Cattleyas are good choices for warm areas. As with any other plant, with creation of the right microclimate and good management, (shadehouses and controlled environment glasshouses) the possibilities are endless.

From the hundreds of genera that make up the orchid family, this e-book will review some of those more common genera grown throughout various parts of the world.

Cymbidium Mavoureen 'Jester'

ORCHID BOTANICAL CHARACTERISTICS

Orchid flowers comprise of a perianth with six segments (3 petals and 3 sepals). The lip petal is usually the showy part of the flower and can be quite elaborate. Some are rounded, bucket shaped or tongue-like. The lip is attached at the top of the flower, but because the flower twists, it appears to be at the bottom of the flower. The perianth consists of petals and sepals. The two identical petals are often identical to the sepals as well.

The flowers are normally borne on stalks known as peduncles. These flower stalk with its inflorescences may carry one flower or up to more than 100 blooms.

Most orchids are hermaphrodites, having flowers with both sexes, though they rely on fertilisation coming from another plant. The ovary is always inferior in its placement, (i.e. below the point where the perianth unites with the flower). The ovary does not fully develop until it is fertilised. After flower fertilisation, the fruit capsule is produced, containing up to thousands of minute seeds. Once the capsule matures and dries, it splits open to release the seed which are dispersed by the wind.

Orchid plants have 3 main growth habits:

1. **Sympodial** - refers to the horizontal growth habit of a creeping rhizome that produces periodic pseudostems (pseudobulbs) from lateral buds eg. Dendrobium, Oncidium, Cattleya.

2. **Monopodial** - means 'one foot' and refers to the upward growth habit. Some orchids have one growing tip such as Vanda and Ascocentrum, and no rhizome or pseudostem.

3. **Geophytic** - swollen root-like structures that help orchids survive droughts and poor environmental conditions. They tend to die down in the bad season and revive after environmental stimulus like rainfall or temperature. This habit is predominantly associated with terrestrial orchids such as Caladenia and Diuris.

Doritaenopsis Taida Salu

CLASSIFICATION OF ORCHIDS

Orchids are monocotyledons,that is they are members of the group containing grasses and most flowering bulbs (e.g. onion, daffodil and iris).

Monocotyledons are characterised by parallel veins in the leaves, and when a seed germinates, only one leaf is first developed.

Orchids belong to the Orchidaceae family, one of the largest flowering plant families, with 735 genera and 20,000 species. They are perennial, herbaceous plants, normally terrestrial in temperate climates, or epiphytes in tropical climates; occasionally saprophytic (i.e. living on dead organic material).

The subdivision of families into sub families has been difficult with orchids. Various authorities have recommended different classification systems, making it difficult to accept any one particular system. Some have recommended six subfamilies, others three. In fact the tribes vary for different authorities.

The following classification by Dr J Willis divides them into 3 subfamilies and 6 tribes: Listings of genera are for reference only, as many of these genera are not covered in this book. (Reference: 100 Plant Families by Hickey & King, Cambridge University Press)

Subfamily	**APOSTASIOIDAE**
	Flowers more or less actinomorphic (regular - divides into equal halves in two planes), labellum shallow, stamens 2 or 3. This is considered to be the most primitive of orchids.
Tribe	**APOSTASIEAE**
	e.g. Genus Apostasia
Subfamily	**CYPRIPEDIOIDEAE**
	Flower zygomorphic (divides into equal halves in one plane only), labellum deeply saccate, 2 stamens, staminode (ie: sterile stamen) usually shield like.
Tribe	**CYPREIPEDIEAE**
	e.g. Genera Paphiopedilum and Cypripedium.
Subfamily	**ORCHIDOIDEAE**
	Flowers are zygomorphic, only 1 stamen, no staminode present..
Tribe	**ORCHIDEAE**
	Viscidium (disc at base of caudicle) present, base of anther firmly attached to column. e.g. Genera Orchis, Platanthera, Ophrys & Dactylorhiza.
Tribe	**NEOTTIEAE**
	Viscidium present, anther deciduous, apex lightly attached to column. e.g. Genera Listera, Spiranthes, Neottia & Epipactis
Tribe	**EPIDENDREAE**
	Viscidium absent or poorly developed, anther deciduous, attached by apex. eg: Genera Dendrobium, Vanilla, Cattleya & Epidendrum.
Tribe	**VANDEAE**
	Viscidium present, anther deciduous, attached by apex eg: Vanda, Oncidium, Angraecum and Odontoglossum.