

THE GENUS EURYCHONE *Orchidaceae*

Isobyl la Croix

Summary. The taxonomic history and generic relationships of the tropical African genus *Eurychone* Schltr. (*Orchidaceae*) are discussed; descriptive accounts, cultivation notes, illustrations and a key to the two known species, *E. galeandrae* (Rchb. f.) Schltr. and *E. rothschildiana* (O'Brien) Schltr., are provided.

Until the early twentieth century almost all monopodial African epiphytic orchids were assigned to one of three genera, *Angraecum* Bory, *Listrostachys* Reichb. fil. or *Mystacidium* Lindl. Species where the pollinia were attached to a single stipes and viscidium were placed in *Angraecum*, those with two stipites and one viscidium in *Listrostachys* and those with two stipites and two viscidia in *Mystacidium*. To the German botanist Rudolf Schlechter (1872-1925), this was an unsatisfactory state of affairs which sometimes led to plants that were obviously closely related being separated while disparate ones were placed together. He believed that other features of the plants, both floral and vegetative, were also important and in 1918 he published *An Attempt at a Natural New Classification of the African Angraecoid Orchids*. In this paper he recognised a total of 32 genera of which 18, including *Eurychone*, were new. Not all of Schlechter's genera are still recognised but his classification is basically accepted today.

In his key to these 32 genera, *Eurychone* is included among those genera with a distinctly extended rostellum while *Angraecum* is keyed out among those with a deeply emarginate rostellum. The name *Eurychone* comes from the Greek *eurys*, broad and *chone*, funnel, an obvious reference to the shape of the flower. Schlechter comments that in floral structure, *Eurychone* resembles to some extent the Madagascan genus *Beclardia* A. Rich. but that too many differences remain for them to be placed together. There is a further resemblance to some species of *Angraecum*, such as *A. birrimense* Rolfe and *A. eichlerianum* Kranzl. which also have a wide-mouthed spur that is abruptly constricted in the middle. However, as mentioned above, the column structure as well as the shape of the lip and the texture of the flower is different and, in spite of these similarities,

Eurychone is a distinctive genus - a plant in flower is hard to mistake for any other African orchid.

Two species of *Eurychone* are known from tropical West and Central Africa and, as they are such showy plants, it seems unlikely that any more species remain to be discovered. Normally, I would be unwilling to give such a hostage to fortune as this statement but in this case it would be such a great pleasure to be proved wrong that it worth tempting fate! Although the two species have flowers of similar shape, they are easily distinguished by the longer and laxer inflorescence of *E. galeandrae* as compared to the short, dense one of *E. rothschildiana* - quite apart from the different colours of the flowers. Vegetatively, the two species look quite different, *E. galeandrae* has rather narrow, dull olive green leaves while those of *E. rothschildiana* are broad with an undulate edge, dark green but not olive green. In fact, a sterile plant of this species looks very much like *Aerangis kotschyana* (Reichb.) Schltr.

CULTIVATION. Neither species of *Eurychone* is common in cultivation and I surmise that this is both because they are relatively uncommon plants in the wild and because they can be rather temperamental when grown. I have grown and flowered both species in an intermediate greenhouse (minimum night temperature c. 15°C) but suspect that they might be better in a warm greenhouse (c. 18°C). *Eurychone rothschildiana* in particular, seems prone to what might be called 'sudden death syndrome', where a plant seems perfectly healthy one day, then suddenly drops all its leaves and is dead within a week. Any orchid can behave in this unhelpful way - even in the wild, one may find the occasional dead plant in a colony of healthy ones - but most people I know who have grown *E. rothschildiana* have experienced this at some time. Some unfavourable environmental factor must be responsible but it is not easy to work out what, possibly a cold draught. Young plants of *E. galeandrae* can be difficult to get established, but once they have developed a good root system, they seem to have a firmer grip on life. It has been suggested (Roberts, 1999) that *Eurychone* species are twig epiphytes and, as such, are naturally short-lived, but I am not convinced that this is the case. As is shown in the habitat descriptions given in the accounts of the individual species, they do not consistently grow on twigs or small branches. Furthermore, I do not think that twig epiphytes are, by definition, short-lived. Often if a twig or small branch breaks, any epiphytic orchids, which are often lightly attached, become caught up in undergrowth and continue to live successfully there.

Both species of *Eurychone* will grow in a pot in a free-draining epiphyte mix but, because the peduncle is so short and the lowest flowers of the raceme are borne close to the stem, plants look much better mounted on a raft or slab of bark. Humidity should be high but ventilation should be good, although cold draughts should be avoided. *Eurychone rothschildiana* seems to prefer to be heavily shaded, *E. galeandrae* rather less so. They are no more prone to pests and disease than any other orchid although slugs seem to have a tendency to home in on buds and newly opened flowers. Both species have a further asset in that their flowers are fragrant; the scent of *E. rothschildiana* has been likened to that of lemon soap or lily-of-the-valley. It is worth taking trouble over the cultivation of these plants because, if conditions are to their liking, they are among the most beautiful of orchids.

HYBRIDS. A hybrid between the two species, named *Eurychone* Virginie Moulin, was registered in 1987. The flowers have the peachpink colouring of *E. galeandrae* but with a dark blotch inherited from *E. rothschildiana*. A few intergeneric *Eurychone* hybrids have been registered, mostly crosses with various species of *Aerangis* although the earliest seems to be, surprisingly, with a *Phalaenopsis*. None of these is readily obtainable. Those that I have traced are as follows:

Euryangis Victoria Nile (*Aerangis kotschyana* x *Eurychone rothschildiana*), 1980. A plant was exhibited at the Royal Horticultural Society in London in 1991 by Joyce Stewart and received an A.M. It is an attractive plant, very much intermediate in appearance between the parents.

Euryangis Spicychild (*Aerangis spiculata* x *E. rothschildiana*), 1988.

Euryangis Grass Valley (*Aerangis con acea* x *E. rothschildiana*), 1990.

Euryangis Gallant (*E. galeandrae* x *Aerangis distincta*), 2000.

Euryangraecum Lydia (*Angraecum sesquipedale* x *E. rothschildiana*), 1986.

Eurynopsis Fort Caroline (*Eurychone rothschildiana* x *Phalaenopsis* Terri Cook), 1977.

At first sight it is surprising that all but one of these intergeneric hybrids involves *E. rothschildiana* because one would expect the colour of *E. galeandrae* to be the most desirable feature. However, this probably simply reflects the fact that this species is rarer in cultivation.

Eurychone Schltr. in Beih. Bot. Centralb. 36: 134 (1918). Type species: *Eurychone galeandrae* (Reichb. f.) Schltr.

DESCRIPTION. *Epiphytic, monopodial, short-stemmed herbs. Leaves* broadly oblong-elliptic, obovate or ligulate, unequally bilobed at the apex. *Inflorescences* pendent, 2-12-flowered, often shorter than the leaves. *Flowers* large, thintextured and more or less translucent, scented. *Sepals and petals* subsimilar, erect or spreading. Lip funnel-shaped, tapering into a wide-mouthed spur which is sharply constricted in the middle, then recurved and swollen at the apex. *Column* short and broad, lacking a foot; rostellum elongated, ligulate; anther cucullate, retuse; pollinia 2, ellipsoid; stipes 1, linear; viscidium 1, oblong or ovate, relatively large.

DISTRIBUTION. Two species in tropical West and Central Africa.

KEY TO SPECIES OF EURYCHONE

Leaves oblong or ligulate, less than 2.5 cm broad; flowers usually pink, lacking a dark blotch on the lip; sepals and petals 15-18 mm long, spur 25-30 mm long ... *E. galeandrae*
Leaves broadly elliptic to obovate; flowers white with a dark blotch in the lip; sepals and petals 20-25 mm long; spur 20-25 mm long *E. rothschildiana*

EURYCHONE GALEANDRAE

Although this species was known before *E. rothschildiana*, it seems to be less common both in the wild and in cultivation. It was first described in 1865 by Reichenbach filius as *Angraecum galeandrae*, from a plant collected in Angola by Friedrich Welwitsch. In 1918, Rudolf Schlechter transferred it to his new genus *Eurychone*. Friedrich Welwitsch was born in Austria in 1806 and later settled in Portugal. In 1853 he left for Angola on behalf of the Portuguese government `... to obtain information on the natural products of the region and to develop its economic interests'. (Reinikka, 1995). He collected in hitherto unexplored areas and did not return to Portugal until 1861. During these years of wandering in Angola he made the first collections of numerous orchid species, including *E. galeandrae*. Reinikka comments on how Welwitsch's collecting notes were unusually comprehensive for that period and this is well illustrated by the notes that accompany his specimen of *E. galeandrae* in the Kew herbarium. Welwitsch remarks: `Golungo Alto ... several individuals growing together and---suspended from branches by their numerous, densely intertwined roots, leaves and racemes pendulous Rather rare on a *Sterculia* near the banks of the river Cuango'. Regarding another specimen he says `in damp woods, Monte de Queta, with unripe fruit, end of July 1856'. The mention of *Sterculia* as a host tree is interesting. As far as I know, all the southern African species of *Sterculia* grow in

hot, essentially dry areas. These trees seldom bear orchids but in Malawi I have seen a few species, for example *Microcoelia corallina*, growing on such trees when they are near a river. The grass and vegetation around may be dry and withered but presumably there, the atmospheric humidity is relatively high. Other collectors describe the habitat of *E. galeandrae* as 'forest' and 'wooded scrub, on tree'. The term 'forest' is often used rather loosely and applied to any area with a lot of trees. As orchid habitats, however, forest and woodland are decidedly different. Forest plants almost always require moderate to heavy shade and are used to high humidity for most of the year with only a short dry season. Woodland plants inhabit a more open environment, they prefer relatively light shade and are accustomed to a distinct dry season. Until I read the various collectors' notes, I had assumed that *E. galeandrae* was a plant that required heavy shade and moisture for most of the year. From these notes, however, it would seem that in cultivation it would be better suited to a position in moderate shade and a dryish period of rest, in the warmest part of the greenhouse available.

The flowers of *E. galeandrae* have a translucent quality similar to those of *Diaphanthe* species, but their most striking feature is the colour. This is described variously by collectors as 'rose-coloured with darker veins'; 'pale rose striped with pale brown'; 'white with a wine-red tinge, lip ... with wine-red streaks on the inside'. The notes accompanying one plant from the Central African Republic are rather less appealing, the flowers are said to be 'un blanc douteux' which translates as 'dirty white'! As for plants that have flowered in our greenhouse, I would describe the colour as peach pink. Apart from the 'dirty white', these are unusual colours for an angraecoid orchid - they are usually white, if not green or yellow-green. In fact, a common complaint among orchid growers is: 'Why are African orchids always white?' Other colours are known in angraecoids, however. *Microcoelia gilpiniae* and *M. elliotii* from Madagascar and the rare *Ossiculum aurantiacum* from Cameroon all have bright orange or orange-red flowers - albeit small ones. In many species of *Aerangis* the tips of the sepals and petals are strongly tinged with salmon pink and the Madagascan *A. mooreana* has a form in which the whole flower is salmon-pink. There is an intriguing reference to a pink *Rangaeris* from Kenya in Piers (1968). He describes the colour as 'a vivid rose pink, lighter in the centre around the column, deepening towards the edges and tips of the perianth members, an unusual shade among the Angraecoids'. Sadly, this mysterious species was collected only once and the collector could not remember exactly where he found it.

Aerangis luteoalba var. *rhodosticta* is justly popular in cultivation for its bright red column, but the floral parts are creamy-white. *Microcoelia corallina* also has a red column and in this species, the colour spreads, as it were, into the flower, the sepals and petals have a salmon-red central line and the spur and ovary are salmonred. So, while *E. galeandrae* is not the only angraecoid orchid with coloured flowers, the translucent peach-pink of the flowers is unusual and distinctive.

Eurychone galeandrae (Rchb. f.) Schltr. in Beih. Bot. Centralb. 36: 135 (1918); Geerinck in Fl. Mr. Centr., Orchidaceae part 2: 496, t.73, c,d (1992). Type: Angola, Golungo Alto, Welwitsch 658 (holotype BM, isotype K). *Angraecum galeandrae* Rchb. f. in Flora 1865: 189 (1865); Rolfe in F.T.A. 7: 136 (1897).

Angraecum lujae [as 'lujaei'] De Wild. in Pl. Util. Congo 1: 142 (1903). Type: Zaire, Bumbayo, Luja 272 (holotype BR).

Rhaphidorhynchus galeandrae (Rchb. f.) Finet in Bull. Soc. Bot. France 54 (Mem. 9): 43,

pl. 8 (29-36) (1907).

DESCRIPTION. *Short-stemmed, epiphytic herb*; roots 3-3.5 mm diameter. *Leaves* 6-20 x 1-1.5 (2.5) cm, ligulate to narrowly obovate, unequally and obtusely bilobed at the apex, slightly fleshy, dull olive green. *Inflorescence* 8-15 cm long, pendent, the peduncle very short, 3-12-flowered. *Flowers* peach-pink or salmon-pink with darker veining, rarely off-white. *Pedicel and ovary* 12-14 mm long; bracts 3-7 mm long. *Dorsal sepal* 5-17 x 4 mm, lanceolate, acute; lateral sepals 17-20 x 4-5 mm, obliquely lanceolate, acute, keeled on the outer surface. *Petals* 15-16 x 4 mm, lanceolate, subacute, the edges slightly undulate. *Lip* 15-28 mm long, funnel-shaped, acute, the edges erose and undulate, narrowing gradually into a wide-mouthed spur 25-30 mm long, the last 10 mm much narrower with the apical 5 mm doubled back and inflated at the tip. *Column* 6-7 mm long, winged.

DISTRIBUTION. Angola, Central African Republic, Gabon, Ivory Coast, Zaire.

HABITAT. Wooded savanna and forest, altitude range not known.

EURYCHONE ROTHSCHILDIANA

This beautiful species was described in 1903 by James O'Brien who was Secretary to the Royal Horticultural Society's Orchid Committee from 1889-1923. The type specimen was a cultivated plant which flowered in the collection of the Hon. Walter Rothschild, originally collected by H.B. Rattray in Uganda, 'in the direction of Victoria Nyanza'. There are more collections of *Eurychone rothschildiana* in the Kew herbarium than there are of *E. galeandrae* and, with most of them, there are notes on the habitat although some of these comments are very general, for example 'Epiphytic on trees in forest'. Altitudes mentioned vary from 300 m to 1200 m. Twice it is described as growing on a cocoa tree and once on *Cola acuminata*. One collector describes it as local, growing on small trees in forest, another says it is 'Epiphytic on a dead, thin liana, 4 m above the ground', while another saw one plant only at the top of a large tree in primitive forest. Several refer to 'shady places' or 'heavy shade', but one talks about finding it in grassland savanna - this was at the highest altitude mentioned, 1200 m. Joyce Stewart (Stewart & Campbell, 1970) describes the habitat as follows: 'Plants ... were thriving on the thin trunks of young trees in a ground-water forest, and also on the woody lianes or creepers which thread themselves among the trees. Temperatures and humidity were both high and the plants were all in the relatively still atmosphere near the ground and up to twenty five feet above it'. Another description of its habitat, again in Uganda, says '... it was growing at eye-level, on a multistemmed shrub, whose branches were about 1 in. diameter, a shady spot in a small patch of big forest trees, with a footpath running through ... it is a very fertile, high rainfall, high humidity area close to the lake. I can remember some Red-tail Guenons chirruping and peering at us'. (M. Spurrier, pers. comm.).

So in most cases *E. rothschildiana* is described as growing on lianas, small branches or small trees, usually near the ground - with the exception of the single plant growing near the top of

a large tree. This suggests that, in cultivation, this species should prefer heavier shade and higher humidity than *E. galeandrae*.

Eurychone rothschildiana (O'Brien) Schltr. in Beih. Bot. Centralb. 36: 135 (1918); Summerh. in FWTA ed. 2, 3: 270 (1968); Piers, Orch. East Africa, ed. 2: 270 (1968); Stewart & Campbell, Orch. Trop. Africa: 82, pl. 29 (1970); JJ. Wood in FTEA, Orchidaceae part 3., 585, fig. 145, pl. 7 (1989); Geerinck in Fl. Afr. Centr., Orchidaceae part 2: 496 (1992). Type: Uganda, *H.B. Rattray*, cult. *W. Rothschild* (specimen not located).
Angraecum rothschildianum O'Brien in Gard. Chron. ser. 3, 34: 131 (1903).

DESCRIPTION. *Epiphytic herb* with a short stem, eventually up to about 8 cm long; roots 3-4 mm diameter. *Leaves* several, 6-21 x 2-7 cm, obovate or broadly oblanceolate to broadly elliptic, the edges undulate, unequally and subacutely bilobed at the apex, the longer lobe up to 12 mm long, dark green. *Inflorescences* arising below or among the leaves, 3-10 cm long, the peduncle very short, 2-6(-12)-flowered. *Flowers* strongly scented in the evening, opening greenish-white, turning white, the lip with a green central blotch and a brown or purple area at the entrance to the spur. *Pedicel and ovary* 10 mm long, bracts 2-5 mm long. *Sepals and petals* subsimilar, all oblongelliptic, acute, sepals 20-25 x 6-7 mm, petals slightly shorter and wider, 18-23 x 7-10 mm. Lip 20-27 mm long, 20-25 mm wide across the mouth, entire, ovate in outline, funnel-shaped with the edge erose and undulate and slightly reflexed, emarginate with a mucro in the sinus; spur 18-25 mm long, funnel-shaped at the base, constricted in the middle, the apical 7-8 mm inflated and geniculate. *Column* 8-10 mm long, 6-7 mm wide.

DISTRIBUTION. Bioko (Fernando Po), Ghana, Guinee, Ivory Coast, Liberia, Nigeria, Sierra Leone, Uganda, Zaire.

HABITAT. Usually a low-level epiphyte in forest and thicket, 300-1200 m.

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