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[Mansen 98a]

AQUATIC PLANTS OF SAHUL.

AQUATIC PLANTS FROM NEW GUINEA.

THE GENUS CRYPTOCORYNE.

Introduction: The aquarium hobby has many facets like a well-cut jewel. For some the appeal lies in the rapidly growing marine fish and reef sector with the accent on technology. For others the appeal lies in freshwater fish - collecting those little glittering "gems" from the four corners of the globe and maintaining them in a community tank. Still others are enchanted by the fascination and charm of the native fish from the country that they live in. Another group are more entranced by underwater plants and the fish take second place for these "underwater" gardeners. There are even hobbyists who try to put it all together and devote themselves to the concept of the biotope where they aim to keep the fish and plants of a particular geographical region in a simulation of the natural habitat in their terraria, paludaria and aquaria. There is even a still more "devout" group within them who pursue the concept of the habitat tank - for example a tropical northern Australian billabong community.

ANGFA has encouraged members to be interested in all aspects of the natural aquatic habitats of Australia and New Guinea and especially over the last few years we have tried to seek out information on the aquatic plants of these two countries and pass it on to our members. We often get requests from enthusiasts for advice on authentic plant lists for biotope tanks and advice on their cultivation. The first is difficult enough but the second is even more of a headache as very little information is available, and what little there is, is scattered throughout a range of publications in dribs and drabs. Fortunately several ANGFA members in various parts of Australia are actively developing expertise in assessing the suitability for aquarium purposes of native aquatic plants as well as cultivation techniques.

For this article I have decided to indulge myself by discussing a genus that is well known to the fanciers of exotic aquarium plants - *Cryptocoryne*. "Crypts" come in a fascinating range of leaf shape and colours and a variety of species are regularly available either through commercial or hobby channels. Some species seem quite easy to propagate whilst other defy the efforts of all but the expert. However not many Australian hobbyists are aware that our nearest neighbour to the north, New Guinea, is home to 3 species of *Cryptocoryne* of the 50 or 60 species described so far and of course this number may well increase as further collections are made there. They are -

Cryptocoryne ciliata

Cryptocoryne versteegii

Cryptocoryne dewitii

CRYPTOCORYNE CILIATA

History: Originally described as *Ambrosinia ciliata* back in 1819 by Roxburgh, it was moved to *Cryptocoryne* in 1832 by Schott (according to Muhlberg).

Distribution: The most widespread of all the species in the genus - from the eastern states of India across via Thailand and Malaysia to Indonesia and as far east as New Guinea. The range in New Guinea includes the southern drainages such as the Kikori and Purari, across to the Kemp Welsh in the east.

Habitat: Mainly from brackish areas in the tidal mud and mangrove swamps and banks of rivers. Also extends up into freshwater streams and swamps but usually with some tidal influence.

Features: Largest of the genus, with a thick rhizome; leaves - tough & green, with a prominent central vein and with paler undersides and no markings; leaf shape and proportions vary with variety - there are at least 2 forms. The most common is *C. ciliata*. var *ciliata* with lanceolate leaves, the narrow-leaved form which produces long creeping runners and then plantlets along the runner. This form is diploid with 22 chromosomes and is found in the more estuarine habitats e.g. *Nypa* mangrove communities and grows in dense stands up to 1 metre tall but more usually around 50 to 60 cm. The

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other less common form *C. ciliata var latifolia* has much wider leaves and reproduces by short basal lateral shoots and dormant buds on the rhizome that then form plantlets which break off and embed in the substrate nearby or wherever flow or tidal influence takes them. This form is triploid with 33 chromosomes and usually only grows to around 30 cm tall and tends to occur in the more freshwater areas of the habitat. The spathe blossom is very distinctive – about 30 cm long with a straight tube, purplish-brown inside with a yellow throat and ciliated margin hence the specific name. There may also be a very narrow form with much more elongated and pointed leaves that occupies the mangrove mud habitat and reproduces vigorously by runners.

We saw large stands of both forms when our small group of ANGFA members spent a week in the Kikori region in October 1994.

Cultivation: Best grown emerge with a mud substrate and strong light and warmth. Apparently all the specimens in Australia now belong to the broad form which reproduces by the short basal shoots rather than runners. These can be removed and planted with a high degree of success especially if they are left on the parent plant until they have started to develop roots. The narrow form has not been reported for some time here in Australia and probably died out because of a lack of knowledge of requirements. These plants will tolerate reasonable amounts of salt in solution and seem to like more calcareous and organic matter in the substrate than many of the other members of the genus. Also it is not as subject to "Crypt Rot" as other members.

CRYPTOCORYNE VERSTEEGII.

History: Described in 1910 by Engler (or perhaps ^{coll.} 1907).

Distribution: Endemic to New Guinea. I can only find 2 references of collections – Womersley around Kikori, and Versteeg himself back in 1907.

Habitat: Found in lowland swamp forest streams up to 30 metres altitude. On our trip in 1994 we saw them growing mainly emerged on the banks of a small spring-fed freshwater tributary of the Kikori River in the village of Kikori. Apparently it tends to only be submerge in the wet season as all but one or two plants of the hundreds seen were emerge. The substrate was a granular lateritic mixture and light was dappled sunlight provided by the overhanging rainforest. Other aquatics included *Cryptocoryne ciliata var. latifolia*, *Microsorium brassii*, *Microsorium pteropus* and *Hydrostemma motleyi*. Water parameters measured in this stream were pH 6.4 and TDS 30 ppm only and this was the dry season.

Features: This is a short fleshy plant up to about 20 cm high, but usually smaller with almost triangular leaves (that may be more ovate) that are an even mid-green colour. The fleshy rhizome produces runners that may branch and which bear the plantlets. Spathe about 10 cm long and greenish-yellow, with a yellow throat and collar and a short rugose purplish-red margin and tip.

Cultivation: All references seem to agree that this is a very slow grower and only produces a few runners each year even when growing well and under favourable conditions. Occasionally successful submerged but needs much stronger light than and bottom heat. Most success has been in a humid hothouse situation growing emerge. Recommended substrate is sandy loam with added peat and clay. Soft water and a temperature of around 80 F are the other recommendations. I am not aware if any plants of this species exist in Australia at the present time. Perhaps we can persuade some of our quarantine-enabled enthusiasts to include some on their import lists in the future as it is available in Europe from enthusiasts but is not on the catalogues I have seen from Oriental and Tropica.

CRYPTOCORYNE DEWITII.

History: Described as a new species by Jacobsen in 1977 but the specimens were collected by Katik in 1971 and mistaken for *C. versteegii* by some reviewers. Specimens are lodged in Lae, Leyden and Washington but apparently no living material has ever been distributed to hobbyists or botanical institutions for culture. The drawing of this plant was constructed from the various specimens by Jacobsen.

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Distribution: Endemic to New Guinea – so far only found near the airstrip at Kiunga, in the Western District Province of New Guinea. Further collections may extend this distribution.

Habitat: Found at an altitude of about 70 metres above sea level in lowland swamp forest country. The short inflorescence suggests that it is an amphibious species. But further information from fish collections in the area suggest that water parameters are likely to be around a pH of 6.5 and TDS of 50 or less in the dry season.

Features: The leaves are apparently ovate, about 15 cm long, dark green above and pale below with slightly undulate margins. The inflorescence has no collar and the spathe has a flat elongated limb and cream to yellow opening with brownish edges. It is likely that it produces runners like other members of the genus.

Cultivation: As there are no references suggesting specimens have ever been made available for cultivation it is speculative as to whether this information will ever be available. We can only hope that collections will be made and the regulations controlling exports from New Guinea negotiated successfully.

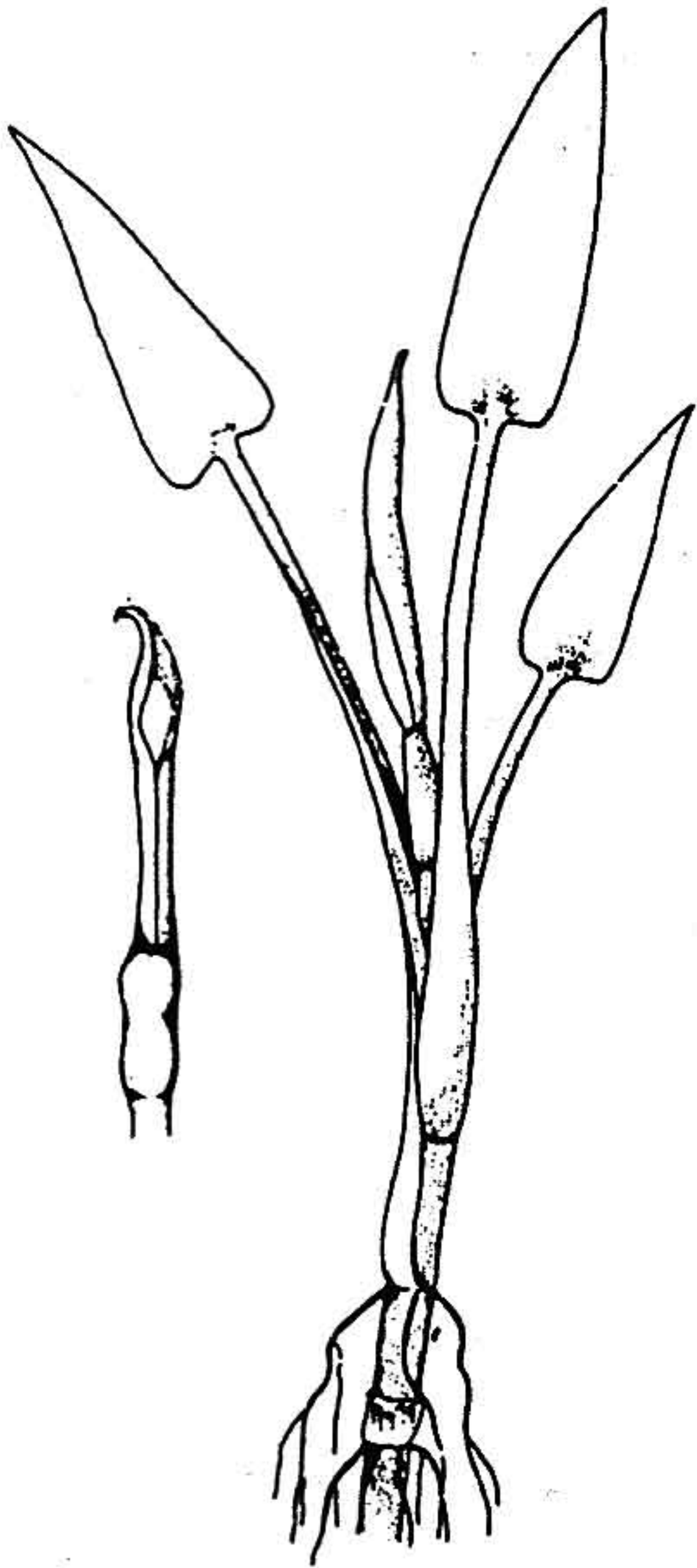
REFERENCES :

- Bastmeijer J : Personal communications by email, 1998
List of collections of *Cryptocoryne* specimens in New Guinea, 1998
- Cook C.D.K.: Aquatic Plant Book, 1990.
- De Wit H.C.D.: Aquarium Plants, 1964.
- Hansen B.W.: Fishes of Sahul, Vol 9, No 3, 1995.
- Jacobsen N.: 1977, *Cryptocoryne dewitii* N. Jacobsen sp. Nov. (Araceae) *Bot. Notiser*. 130:
Aquarium Plants, 1979, Blandford Press.
- Leach G.J. & Osborne P.L.: Freshwater Plants of Papua New Guinea, 1985.
- Muhlberg H.: The Complete Guide to Water Plants, 1982.
- Rataj K.: Revision of the Genus *Cryptocoryne*, 1975.
Cryptocoryne ciliata – the Largest *Cryptocoryne*, T.F.H., July 1986.
- Rataj K. & Horeman T.J.: Aquarium Plants – their identification, cultivation and ecology, 1977.
- Stodola J.: Encyclopedia of Water Plants, 1967.

- Bruce Hansen



After de Witz



After Nees & Osborne



After Jacobsen.