STUDIES IN THE GESNERIACEAE OF THE OLD WORLD XXI: RHYNCHOTECHUM AND ISANTHERA

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The spelling of Blume's generic name *Rhynchotechum* has caused some trouble, for several authors have felt sure that this was a misprint for *Rhynchothecum* and have "corrected" it accordingly. The original publication gives no clue as to the meaning of the name, nor does the description of the plant indicate a beaked theca or anything else with a beak. However Blume referred to the genus again in the introduction to his Flora Javae (i, p. viii: 1828) and there he wrote it as *Rhynchotoechum*. We must therefore conclude that the original spelling was correct and that the generic name means 'beaked wall'. To what this refers is still uncertain; perhaps it is to the deflexed flap of the open anther, or even to the early stage of anther-dehiscence, when the opening valve may bear some fanciful resemblance to a duck's bill. However the meaning is less important than the spelling, for *Rhynchothecum* would be dangerously close to *Rhynchotheca* Ruiz & Pavon (Geraniaceae).

C. B. Clarke only retained *Isanthera* Nees as a genus distinct from *Rhynchotechum* with some hesitancy. Schlechter, however, has stated (in Engl. Bot. Jahrb., 1viii, 304: 1923) that he considers the distinction valid, more especially by reason of the characteristic valvular dehiscence of the anthers of *Rhynchotechum*. Here he was, I think, misled by relying on published descriptions of the anthers of *Isanthera*. In *I. discolor* Maxim. I find they are quite similar to those of *Rhynchotechum*. Anthers of the original species of *Isanthera*, *I. permollis* from Ceylon, have eluded my search. The corollas evidently fall quickly, as that acute naturalist George Gardner observed many years ago, and all the available herbarium material is too advanced. Nees's description of the genus, which he referred to *Verbascineae*, is suspect at several points, notably in respect of polygamous flowers. He said the anthers dehisce by a single median slit, but it is not clear whether he meant transverse or longitudinal. If transverse, and Gardner later mentioned a transverse slit, this could be a rough description of the early stage of opening of the typical *Rhynchotechum* valve. Other authors have stated that the anthers dehisce "marginally". Further investigation is needed, but whatever the result the matter is one of detail and insufficient to differentiate the two genera.

Schlechter makes the further point that the fruit of *Isanthera* is leathery and hairy, whereas that of *Rhynchotechum* is more fleshy and smooth. Again I feel the distinction is specific rather than generic. An important point to remember is that in general appearance the species referred to *Isanthera* are very much closer to *Rhynchotechum obovatum*, for instance, than that species is to *R. vestitum*. It has long been realized that there is no constancy of opposite leaves in *Rhynchotechum* and that the alternate ones of *Isanthera* give no adequate diagnostic character.

As a result of these studies I have no hesitation in following up C. B. Clarke's hint and in uniting the two genera.

Living material of *Rhynchotechum* has been available for study, having been raised from seed sent by Mr. J. S. Womersley, Lae, New Guinea—one of his several very valuable contributions to this work on Gesneriaceae. Seedling stages showed the unequal development of the cotyledons after germination, which is characteristic of Old World Gesneriaceae. The next important observation was that the anthers showed the valvular dehiscence typical of *Rhynchotechum* (cf. the illustration of *R. polycarpum* K. Schum. in Engl. Bot. Jahrb. lviii, 305: 1923). This plant was self-fertile and has set fruit freely. When young these fruits are almost cylindrical but as they mature they become fatter and are finally almost globose. They are white and fleshy, containing numerous small brown seeds. The fleshiness is here in the fruit wall, not in the placenta as in *Fieldia*. It is characteristic that when the berry is removed from the persistent calyx a few seeds adhere to the central scar which the berry leaves: the basal wall of the fruit is thin.

This New Guinea plant is undoubtedly *Isanthera lanata* Warburg. I cannot yet satisfy myself however that it is a species distinct from the better known *I. discolor* Maxim. of Formosa and the Philippines. I am therefore transferring only *I. discolor* to *Rhynchotechum* at present. If this judgment is later shown to be wrong, *I. lanata* can then be transferred.

The brief enumeration that follows is primarily a checklist and makes no attempt to provide more than a few selected references.

Rhynchotechum Blume, Bijdr. 775 (1826); Benth. & Hook. fil., Gen. Pl. ii, 1016 (1876); C. B. Cl. in DC., Mon. Phan. v, 194 (1883) et in Hook. fil., Fl. Brit. Ind. iv, 372 (1884); Ridley, Fl. Malay Penins. ii, 541 (1926); Bakh. f. in Backer, Beknopte Fl. Java, ixA, 18 (1949).

Syn.: *Isanthera* Nees in Trans. Linn. Soc. London, xvii, 82 (1834).
Corysanthera [Wall. ex] Endlicher, Gen. Pl. 719 (1839).
Cheilosandra [Griffith ex] Lindley, Veg. Kingd. 672 (1847), in syn.
Chiliandra Griffith, Notulae, iv, 150 (1854) et Ic. Pl. Asiat. t.438 (1854).

Type species: *R. parviflorum* Bl.

No. of species: about 12.

Distribution: from Ceylon, S. India, E. Himalayas & S. China southeastwards to New Guinea.

Annotated checklist of names in Rhynchotechum

R. alternifolium C.B. Cl. in DC., Mon. Phan. v, 198 (1883).

Distr.: Assam, Burma.

Specimens of *R. obovatum* in which the uppermost leaves are alternate have often been assigned to this species. The calyx lobes, oblong and subglabrous in *R. alternifolium* acute and densely silky in *R. obovatum*, provide a much more reliable diagnostic feature.

R. angustifolium Ridley in Journ. As. Soc. Mal. i, 80 (1923).

Distr.: Sumatra.

The type of this species should be compared with that of *R. eximium*; they may be conspecific.

R. ?brandisii C.B. Cl. in DC., Mon. Phan. v, 198 (1883).

Syn.: *Stauranthera ?brandisii* C.B. Cl. in Hook. fil., Fl. Brit. Ind. iv, 372 (1884).

Distr.: Burma, Thoungyun in Pegu, *Brandis* (holo. K).

This is a wholly uncertain species of which, to my knowledge, the type specimen remains the sole example. C. B. Clarke placed it in *Rhynchotechum* first and then in *Stauranthera*, or *vice versa*, without any cross-reference: the two publications were perhaps in the press at the same time and it has been suggested that the account for the Flora of British India was actually the first of them to be written. Being in fruit only the generic position of the specimen remains uncertain and it is a pity it was ever described. The vegetative parts, from which the infructescences are detached, bear a considerable resemblance to those of *Tetraphyllum bengalense* C. B. Cl.

R. calycinum C. B. Cl. in DC., Mon. Phan. v, 199 (1883).

Distr.: Assam.

Still only known from the type specimen. Until rediscovered one cannot help wondering if it could be an abnormal form of *R. alternifolium* with enlarged calyces.

R. copelandii (Elm.) Elm. ex Merrill, Enum. Phil. Fl. Pl. iii, 455 (1923).

Syn.: *Cyrtandra copelandii* Elm., Leafl. Phil. Bot. vii, 2661 (1915).

Distr.: Philippine Isl., Mindanao, *Elmer* 13716 (iso. E).

R. discolor (Maxim.) B. L. Burtt, **comb. nov.**

Syn.: *Isanthera discolor* Maxim. in Bull. Acad. Petersb. xix, 538 (1874) et Mél. Biol. ix, 372 (1876); C.B. Cl. in DC., Mon. Phan. v, 192 (1883); Merrill, Enum. Phil. Fl. Pl. iii, 455 (1923); Ohwi in Acta Phytotax. Geobot. vii, 29 (1938).

Rhynchotechum? tenue C. B. Cl. in DC., Mon. Phan. v, 199 (1883)—teste Merrill.

Isanthera crenata C. B. Cl. in DC., Mon. Phan. v, 193 (1883), in syn.

Isanthera lanata Warburg in Engl. Bot. Jahrb. xiii, 418 (1891).

Isanthera dimorpha Kränzlin in Phil. Journ. Sci. viii, Bot. 332 (1913).

Distr.: Formosa, Ryukyu Islands, Philippine Islands, New Guinea.

See discussion above (p. 36).

R. ellipticum (Wall. ex D.F.N. Dietr.) A.DC. in DC., Prodr. ix, 285 (1846); Hook. fil. in Bot. Mag. t. 5832 (1870); C. B. Cl. in DC., Mon. Phan. v, 196 (1883) et in Hook. fil., Fl. Brit. Ind. iv, 373 (1884).

Syn.: *Corysanthera elliptica* (Wall., Num. List n. 6411: 1832—nomen nudum ex) D.F.N. Dietrich, Syn. Pl. iii, 582 (1843).

Distr.: E. India, E. Pakistan.

There are grounds for objection to the above citation, for DeCandolle did not quote Dietrich when publishing *R. ellipticum* and was obviously unaware that the species had been described. He pointed out, following Robert Brown, that *Corysanthera* was a synonym of *Rhynchotechum* and that there would be a species "*Rhynchotechum ellipticum* nondum

descripta". However he cites *Wallich* 6411 and this provides a direct link to the published name.

If we reject DeCandolle's use of *R. ellipticum* we find that its next publication was by Sir J. D. Hooker (in Bot. Mag. t. 5832: 1870). We could not accept this as a new combination, for exactly the same reasons, but it would be valid as a new species, of which the type, the main basis of the description and illustration, is clearly the cultivated plant raised at Kew from Sikkimese seed sent by Gammie. *Wallich* 6411 is, however, quoted and, as it is the type of the validly published *Corysanthera elliptica* Dietrich, Hooker's name would be illegitimate. Yet it would pre-occupy the epithet in *Rhynchotechum* and a new one would be needed. I do not think nomenclatural pedantry need carry us so far.

The additional herbarium material which has come in since C. B. Clarke's studies is insufficient to allow a more critical appraisal of the varieties which he proposed. They may be retained for the time being.

R. eximium (C.B. Cl.) Schlechter in Engl. Bot. Jahrb. 1viii, 303 (1923).
Syn.: *Isanthera eximia* C.B. Cl. in DC., Mon. Phan. v, 193 (1883).
Distr.: Java. Also in Sumatra?

R. formosanum Hatusima in Journ. Jap. Bot. xv, 132 (1939).
Distr.: Formosa.
I have seen no material of this species, which the author allies to *R. ellipticum.*

R. hispidum C.B. Cl. in DC., Mon. Phan. v, 197 (1883).
Distr.: Java.

R. hoevellianum Schlechter in Engl. Bot. Jahrb. 1viii, 304 (1923), *nomen nudum.*
Distr.: Celebes.
I have seen a specimen named *R. parviflorum* Bl. from the Celebes (L); whether it would belong here I do not know. It did not seem to be incorrectly named.

R. latifolium [Hook. f. & Thoms. ex] C. B. Clarke = *R. obovatum.*

R. obovatum (Griffith) B. L. Burtt, **comb. nov.**
Syn.: *Chiliandra obovata* Griffith, Notulae, iv, 150 (1854) et Ic. Pl. As. t. 438 (1854).
Rhynchotechum latifolium [Hook. fil. & Thoms. ex] C. B. Cl., Commel. & Cyrtandr. Bengal. 133, t. 93 (1874), in DC., Mon. Phan. v, 198 (1883), in Hook. fil., Fl. Brit. Ind. iv, 374 (1884).
Cyrtandra hillii Lévl. in Fedde, Rep. Sp. Nov. x, 145 (1911).
Distr.: S. China, Burma, Thailand, Tonkin & Cambodia.
Griffith's name clearly supplies the earliest epithet for the species and this must now be adopted. There are specimens of Griffith's in the Kew herbarium, but whether any of these is the type is uncertain as no locality was cited in the publication and consequently correlation is not possible. Buchanan-Hamilton's specimen labelled *Chelone latifolia* in the Edinburgh herbarium is not this species but *R. ellipticum.* The name, however, was

never described and although the epithet may have been deliberately taken over in *Rhynchotechum* the identity of Hamilton's plant is now only of historical interest.

R. parviflorum Blume, Bijdr. 775 (1826); C. B. Cl. in DC., Mon. Phan. v, 195 (1883) et in Hook. fil., Fl. Brit. Ind. iv, 373 (1884).

Syn.: *Isanthera parviflora* Ridley in Trans. Linn. Soc. 2 Ser., iii, 331 (1891).

Distr.: Malay Peninsula, Sumatra, Java; Celebes?

The Malay Peninsula material is var.? *penangensis* C. B. Cl.

R. permolle (Nees) B. L. Burtt, **comb. nov.**

Syn.: *Isanthera permollis* Nees in Trans. Linn. Soc. Lond., xvii, 82 (1834); C. B. Cl. in DC., Mon. Phan. v, 192 (1883), et in Hook. fil., Fl. Brit. Ind. iv, 372 (1884).

Isanthera floribunda Gardn. in Calcutta Journ. Nat. Hist. vi, 483 (1846).

Distr.: Ceylon and S. India. Burma?

The Burmese plant (Griffith from Mergui) is var.? *paucinervia* C. B. Cl. It still requires confirmation.

R. polycarpum (K. Schum.) Schlechter in Engl. Bot. Jahrb. lviii, 304, fig. 6 (1923).

Syn.: *Cyrtandra polycarpum* K. Schum. in K. Schum. & Lauterb., Fl. Deutsch. Schutzgeb. Süds., Nachtr. 377 (1905).

Distr.: New Guinea.

R. vestitum [Wall. ex] C.B. Cl., Commelin. & Cyrtandr. Bengal. 132, t. 92 (1874), in DC., Mon. Phan. v, 197 (1883), in Hook. fil., Brit. Ind. iv, 373 (1884).

Syn.: *Corisanthera vestita* Griffith, Itin. Notes, 124 (1848).

Distr.: S. China, E. India, Indo-China.

Index of names published under Isanthera

austrokiushiuensis Ohwi in Acta Phytotax. & Geobot., Kyoto, vii, 29 (1938), in syn. = *I. discolor* var. *austrokiushiuensis* Ohwi, l.c.

I have not transferred varietal epithets, their status being quite uncertain. This will therefore be included under *R. discolor*.

crenata C. B. Cl. = *R. discolor*.
dimorpha Kränzlin = *R. discolor*.
discolor Maxim. = *R. discolor*.
eximia C. B. Cl. = *R. eximium*.
floribunda Gardner = *R. permolle*.
lanata Warb. = *R. discolor*.
parviflora Ridley = *R. parviflorum*.
permollis Nees = *R. permolle*.