A NEW GENUS OF ACANTHACEAE FROM SARAWAK

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This new genus, *Linariantha*, has long been represented in herbaria by several imperfect gatherings. C. B. Clarke gave the species a manuscript name under *Filetia* and more recently Dr. C. E. B. Bremekamp has annotated a sheet in the British Museum herbarium as belonging to a genus unknown to him. Its introduction into cultivation at Edinburgh (from Pelagus Rapids, Rejang River, Sarawak, 1962; *Burtt & Woods* B. 2548) has afforded the opportunity for more detailed study and illustration (fig. 1).

The genus *Filetia*, to which *Linariantha* certainly seems to be allied, is still rather poorly known. It was described by Miquel in 1856 with a single species, *F. costulata*, from Sumatra; since then six species have been added from the Malay Peninsula and two more have recently been described from Borneo. *F. africana* Lindau is generally reckoned a very doubtful member of the genus: we have seen no material of this species.

The Malesian species of *Filetia* agree in being plants that are woody at the base and have more or less glabrous leaves: they are typical forest Acanthaceae similar in habit to *Hallieriacantha*. *Linariantha* on the other hand is strictly herbaceous, decumbent and rooting at the lower nodes. For the floral characters of *Filetia* we rely to a considerable extent on *F. brookeae* Brem. (in Blumea, 10: 162 (1960)), also collected on Mt. Matang, Sarawak, by Burtt & Woods (B. 1946—see fig. 2), but a check on other species where possible has shown no serious discrepancy. The upper lip of the corolla is apparently concolorous with the lower: it is directed forwards and forms a hood over the anthers, which reach almost to its tip; the corolla tube is open at the mouth. By contrast the upper lip of *Linariantha* is white, flat and erect, the stamens are wholly enclosed within the corolla tube which is dorsiventrally compressed at the mouth; the palate of the lower lip is bright yellow and is not overhung by the upper lip: the corolla is personate. The form of the corolla is very like that of *Rhynchoglossum* (Gesneriaceae), but its yellow and white colouring recall more vividly *Linaria* (Scrophulariaceae), though it is, of course, spurless.

The pollen grains of *Linariantha* are, as in *Filetia*, 3-colporate with two fissures dividing the space between the colpi; in our material there was a rather high proportion of malformed grains.

Tribal classification in Acanthaceae has not yet reached stability. In Lindau's arrangement (in Engler & Prantl, Natürl. Pflanzenfam. IV, 3B: 335 (1895), repeated in outline with slight modifications by H. Melchior in Syllabus der Pflanzenfamilien, 12 Aufl. 2: 459 (1964)), *Filetia* and *Linariantha* are both to be placed in the tribe *Odontonemeae*. Bremekamp, however, proposes (in Ned. Akad. Wet. Verh. 2nd Sect. 45 no. 2: 4 (1948)) to merge this tribe with the *Justiceae*. On the merits of such changes a consideration of *Linariantha* does not seem to offer any evidence.

Mention must also be made of Bremekamp's recently described genus *Borneacanthus* (in Blumea, 10: 156 (1960)), which he has made the type of a new tribe in *Ruellioideae* (sens. Bremekamp). *Borneacanthus* differs from

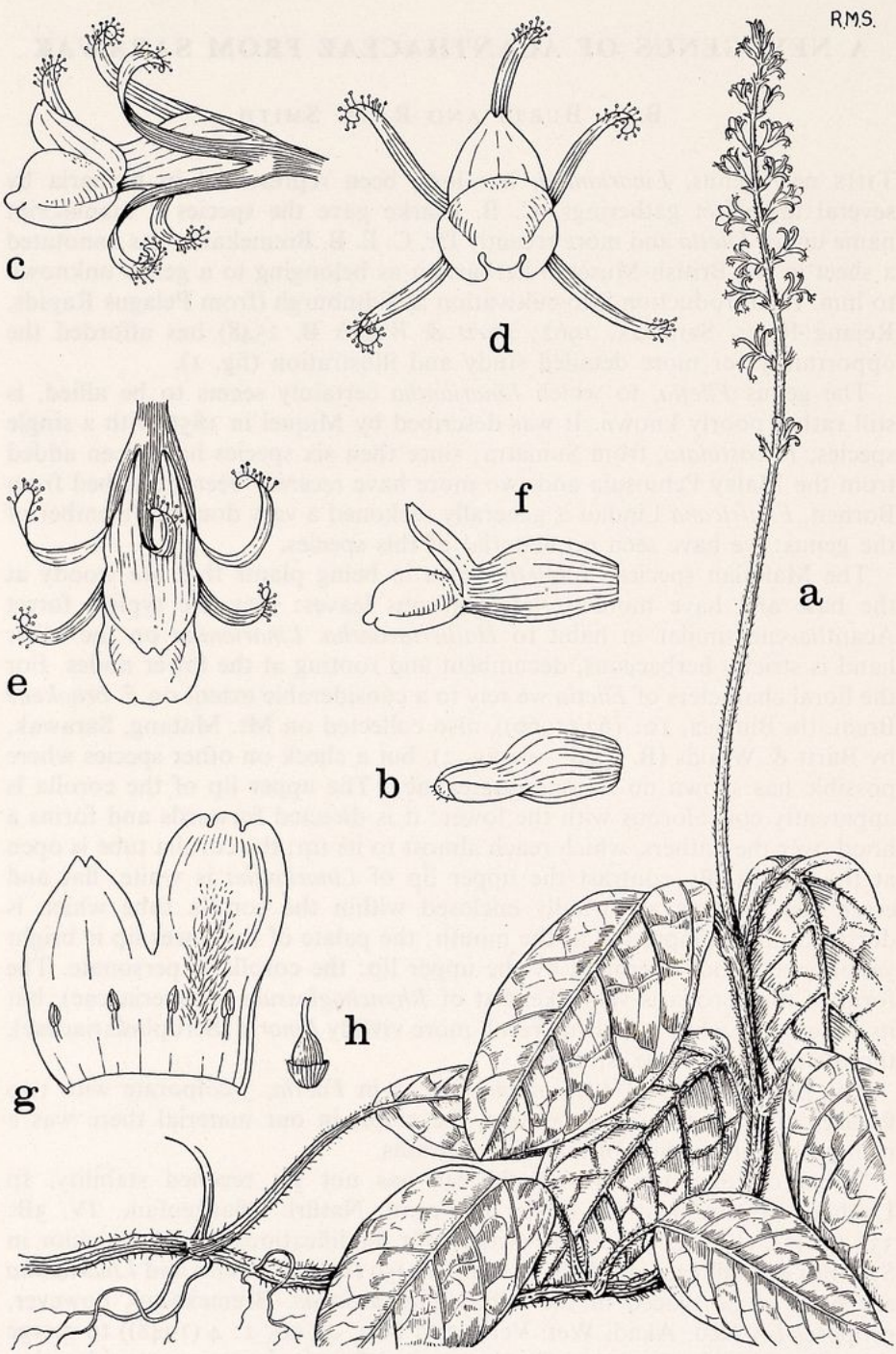

FIG. 1. *Linariantha bicolor* Burtt & Smith.
a. habit × $\frac{2}{3}$; b. young bud, calyx removed × 8; c-e. lateral, frontal and dorsal views of flower × 4; f. lateral view of corolla, calyx removed × 4; g. corolla, dissected × 4; h. gynoecium × 4.

Linariantha in having the median lobe of the lower lip covered in bud by the laterals: in *Linariantha* it is outside them. This difference of aestivation excludes *Borneacanthus* from *Justiceae* or *Odontonemeae*. Whether one quite accepts the fundamental importance of this character (it is known to break down sometimes in Scrophulariaceae where it has been greatly stressed), there are other differences between *Borneacanthus* and *Linariantha* which are certainly valid at the generic level. As we also have one species of *Borneacanthus* in cultivation in Edinburgh (*B. grandifolius* Brem., Gunong Gading, near Lundu, Sarawak, *Burtt & Woods* B. 2694) an illustration made from the living plant has been included here (fig. 3). This shows that *Borneacanthus* has a large median lobe to the lower lip, that the stamens arise near the top of the corolla tube, that the anthers are well exserted beyond the mouth and that the stigma is capitate. Most species of *Borneacanthus* are coarse erect herbs with more or less glabrous leaves; two, *B. parvus* Brem. and *B. mesargyreus* (Hall. fil.) Brem. are smaller plants and decumbent at the base, they are however nearly glabrous and have typical *Borneacanthus* flowers.

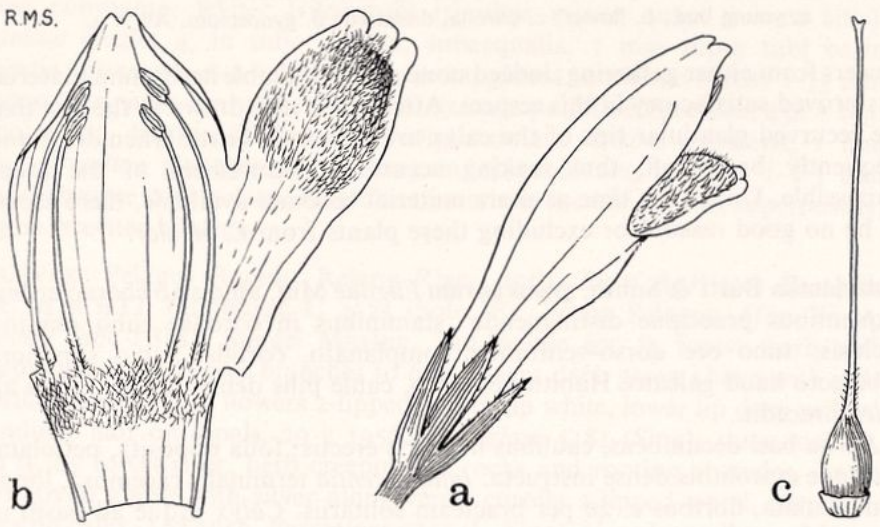

FIG. 2. *Filetia brookeae* Bremekamp.
a. flower; b. corolla, dissected; c. gynoecium. All × 4.

In having the stem densely covered with shaggy hairs *Linariantha* recalls some species of another recently described Bornean endemic genus, *Cosmianthemum* Bremekamp (in Blumea, 10: 166 (1960)). This has small whitish flowers with only two stamens which arise at the mouth of the corolla tube: it is allied to *Pseuderanthemum*.

The following description is based on the type material, for only here have we had access to a fully developed inflorescence. The other citations, whilst similar in general facies do not consistently display the long petioles of the lower pairs of leaves (in some sheets the basal portion of the plant is missing) and frequently possess smaller bracts and calyx lobes. This is particularly true of *Ridley* 12475 and *Hose* 424, where the lobes do not exceed 3 mm in length. The poorly developed inflorescence of these specimens may well be the cause of these variations, and we have been unable to examine mature

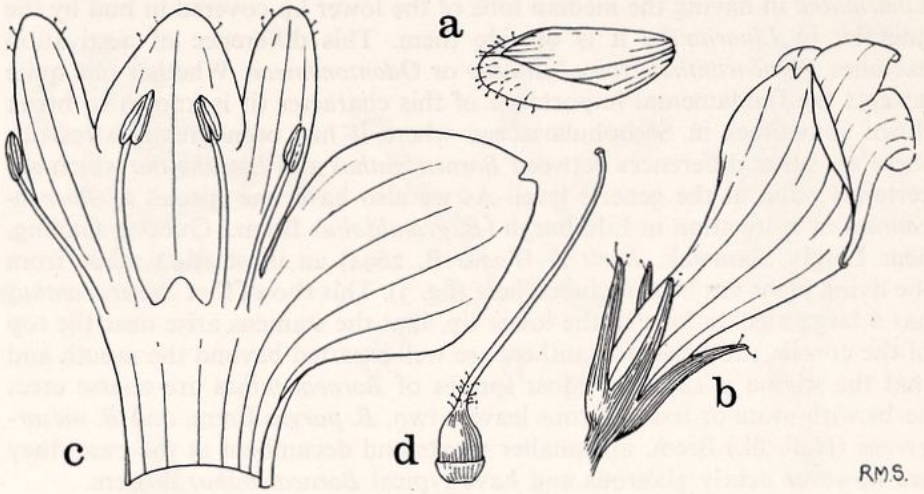

FIG. 3. *Borneacanthus grandifolius* Bremekamp.
a. young bud; b. flower; c. corolla, dissected; d. gynoecium. All × 4.

flowers from either gathering; indeed none of the available herbarium material has proved satisfactory in this respect. Attention is also drawn to the fact that the recurved glandular tips of the calyx are extremely brittle when dried and frequently break off, thus making accurate measurement of the lobes impossible. Until such time as more material becomes available, there seems to be no good reason for excluding these plants from *L. bicolor*.

Linariantha Burtt & Smith, **genus novum** *Filetiae* Miq. affinis ab characteribus sequentibus praecipue distinguenda: staminibus in corollae tubo omnino inclusis, tubo ore dorso-ventraliter complanato, corollae labio superiore suberecto haud galeato. Habitu herbaceo, caule pilis densis lanatis etiam ab *Filetia* recedit.

Herba basi decumbens, caulibus floriferis erectis; folia opposita, petiolata, utrinque cystolithis dense instructa. *Inflorescentia* terminalis racemosa, longe pedunculata, floribus c. 20 per bracteam solitariis. *Calyx* usque ad basin in segmentis 5 divisus; segmenta linearia ad apices glanduloso-pilosa, recurva. *Corolla* tubo basi angusto, medio inflato, ore dorso-ventraliter complanato; labium superius suberectum, bifidum; labium inferius breviter trilobatum, palato convexo, lobo mediano parvo sed laterales in alabastro paulo obtegente. *Stamina* fertilia 4, paulo supra corollae basin orientia, omnino in tubo inclusa; antherae theca una paulo supra altera inserta. *Granula* pollinis ellipsoidea, 3-colporata, fissuris duobus inter colpos notata. *Discus* cupularis. *Ovarium* breviter ovoideum biloculare, ovulis in loculis duobus, stylo ovario aequilongo, stigmate breviter bifido. *Fructus* adhuc ignotus.

Linariantha bicolor Burtt & Smith, **species nova.**

Herba decumbens nodis inferioribus radicans, caulibus pilis multicellularibus praecipue apices versus brunneo-villosis. *Folia* opposita; petioli inferiores 5·5 cm longi, sursum ad 1 cm decrescentes, dense villosi; lamina oblongo-elliptica, 4–8 cm longa, 2·25–4 cm lata, apice acuta, basi obtusa, utrinque cystolithis 0·15–0·25 mm longis dense instructa et parce glandulis

patelliformibus conspersa, supra fusco-viridis glabra, subtus pallidior in venis brunneo-villosis ceterum glabra, marginibus integris levissime revolutis; nervi laterales utrinsecus 5–7, supra leviter impressi, subtus elevati. *Inflorescentia* terminalis, racemosa; pedunculus 8–11 cm longus, parce albo-pubescens; rhachis 6–9 cm longa, parce pubescens; flores per paria sub-oppositi, inferiores 2 cm inter se distantes. *Bracteae* anguste lanceolato-acuminatae, ad 4 mm longae. *Pedicelli* 2–3 mm longi, glabri, basi minute bibracteolati. *Calyx* rubro-castaneus, ad basin in segmenta 5 divisus; segmenta linearia, 6–7 mm longa, 0·5 mm lata, dimidio superiore patentia apicibus recurvis interne conspicue glanduloso-pilosis, ceterum glabra. *Corolla* bilabiata, personata, 7–8 mm longa, extra glabris (pilis paucis in apicibus ipsis loborum exceptis) intus zona pilorum a palato ad medium tubum percurrente; tubus brunnescens, 3·5–4 mm longus, basi 2 mm diametro, superne ad 3 mm diametro dorsaliter ampliatus, ore dorso-ventraliter complanatus; labium superius album, suberectum, plus minusve triangulare, 2 mm longum, basi 2·5 mm latum superne 1 mm, apice breviter bidentatum; labium inferius luteum, 3·5–4 mm longum, 3–4 mm latum, valde convexum, leviter trilobatum (sinubus minus quam 1 mm altis). *Stamina* fertilia 4, in tubo inclusa, subaequalia, 1 mm supra tubi basin orientia; filamenta 1–1·5 mm longa, recta, glabra; antherae thecae 1·75 mm longae, una paulo supra altera inserta; granula pollinis ellipsoidea, $43\mu \times 28\mu$, tricolporata, fissuris duobus inter colpos notata. *Discus* cupularis, 1 mm altus. *Ovarium* glabrum, 2 mm longum, ellipsoideum, in stylo 1–1·5 mm longo abrupte contractum, biloculare, ovulis in loculis duobus superpositis; stigma breviter bifidum.

SARAWAK: Pelagus Rapids, Rejang River, 1962, *Burtt & Woods* B. 2548; cult. in R.B.G. Edinburgh C 4123 (holo. E); Wong Pelagus, *Miss W. A. Brooke* 9269 (BM); Sungei Maying, Tau Range 600 ft, forest, herb with creeping stem and erect branches to 6 in, leaves dark green above with pale mottling along veins, flowers 2-lipped, upper lip white, lower lip deep yellow, glandular hair on sepals, 29 v 1956, *Purseglove* 5181 (Sing); same locality, 700 ft, by forest river, herb creeping on rocks and rooting at nodes, leaves dark green above with silver along veins, corolla 2-lipped white, glandular hairs on calyx, 1 vi 1956, *Purseglove* 5251 (L, Sing). Near Long Kapa, Mount Dulit (Ulu Tinjar), flowers small and greenish, 22 viii 1932, *Synge* 303 (K); same locality, by forest river, 700 ft, flower buds dirty pale yellow, leaves dark bluish green, variegated with light patch along mid-rib and small light patches along side veins, underside of leaves uniformly light green, 27 ix 1932, *Synge* 2077 (K, L). Puak, flowers white, ix 1905, *Ridley* 12457 (BM, K). Baram District, Entoyut River, 13 ix 1894, *Hose* 424 (BM, K). Without precise locality; xi 1871, *Beccari* 2903 (K); *Haviland* 573 (K); 1891 *Haviland* s.n. (K).

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