Notes RBG Edinb. 45(2): 341–343 (1988)

A NEW ALPINIA FROM SABAH

R. M. SMITH

ABSTRACT. A new species of *Alpinia, A. beamanii*, is described from Sabah. Despite displaying monoecism, a characteristic hitherto confined to sect. *Myriocrater*, the new taxon is placed in sect. *Eubractea* and the reasons for this discussed.

It is already recognized that all the known species which comprise *Alpinia* sect. *Myriocrater* exhibit monoecism (Burtt & Smith in *Notes RBG Edinb.* 32:29–43, 1972; Smith *op. cit.* 35:195–208, 1977). That is, fruit is produced by only the first, or rarely the second, flower of the cincinnus; the remainder are functionally male with an aborted ovary, the style reduced to a few millimetres. The distribution of sect. *Myriocrater* extends from the Solomons to the islands of the Bismarck Archipelago (it is apparently absent from the New Guinea mainland), the Moluccas, Sulawesi, and to the Philippines.

Recent collections from Sabah now extend such sexual differentiation to the island of Borneo and, as the classification of *Alpinia* presently stands, to a different section. In *A. beamanii*, described below, the flowers in the lower half of the cincinnus are hermaphrodite, towards the top they are functionally male with a rudimentary gynoecium. The species is most closely related to *A. rufa* (Presl) K. Schum. of the Philippines and similar monoecism has been observed in *Elmer* 14051 (E). The two taxa are remarkably uniform in inflorescence detail and differ from sect. *Myriocrater* in the much more delicate, slender-tubed flowers and in the presence of a 3–4mm tube formed by the union of the bases of the labellum and filament above the insertion of the petals. In both species the dorsal petal is markedly cucullate.

Schumann placed *A. rufa* in sect. *Oligocincinnus*, most species of which are native to New Guinea. As has already been noted (Smith in *Notes RBG Edinb.* 34:151, 1975), this section does not form a natural group. The recent rediscovery of *A. eubractea* K. Schum. (Smith *op. cit.* 40:531, 1983), the type species of sect. *Eubractea* and native to Sulawesi, indicates that it is with this species that the true alliance of *A. rufa* and *A. beamanii* lies. Only two collections of *A. eubractea* have been seen (*de Joncheere* 1168 and *Johansson et al.* 529; both E); these collections appear to be entirely hermaphrodite. To sum up, monoecism in *Alpinia* is probably more widespread than was hitherto believed and may not be present in all members of an otherwise closely related group. Unless the condition is deliberately sought it is easily overlooked, particularly in the herbarium. Field data on the development of the inflorescence is badly needed, and collections should include spirit material, ideally of several complete cincinni, each at a different developmental stage.

Alpinia beamanii R. M. Smith, **species nova** *A. rufae* (Presl) K. Schum. similis ob cincinnos multifloros, bracteolas tubulares et bases labelli et filamentorum supra petalorum insertionem tubum formantes; sed foliis petiolatis, indumento vaginarum hand conspicue villoso et staminodiis lateralibus absentibus differt. Fig. 1

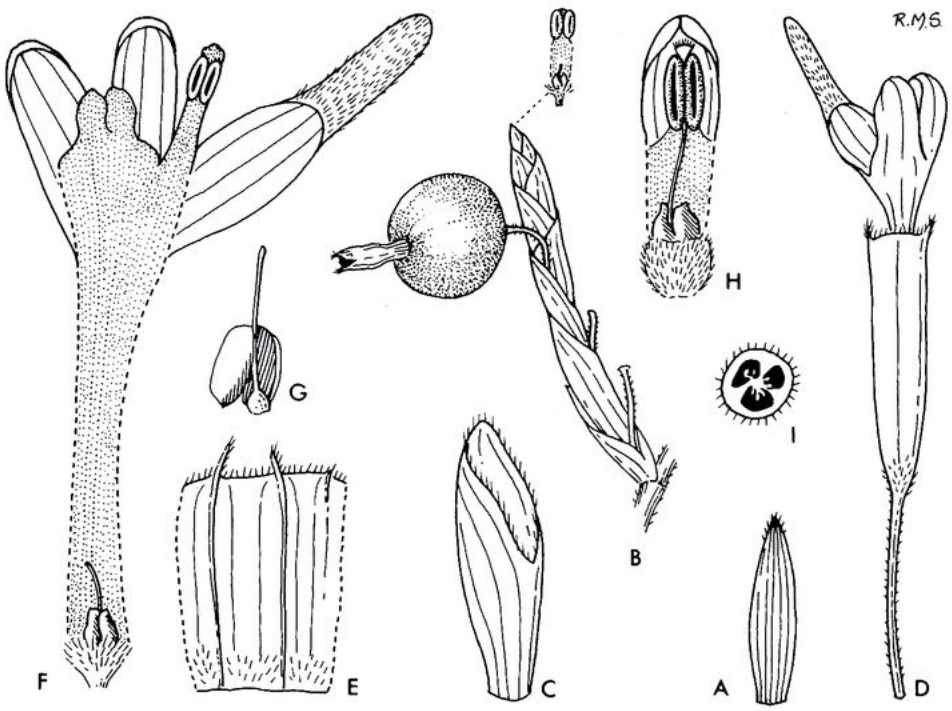

FIG. 1. *Alpinia beamanii*. A, bract × 1; B, cincinnus, lower half in fruit, upper half with young ♂ flowers × 1; C, bracteole × 2; D, ♂ flower × 3; E, calyx, dissected, × 3; E, corolla of ♂ flower, dissected × 3; G, aborted gynoecium and epigynous glands, much enlarged; H, bud of hermaphrodite flower × 4; I, ovary in T.S. × 4. (A, B, from *Beaman* 8308, C–I from *Beaman* 8962, all from dried material).

Herba ad 2·5m alta. *Folia* 30–40 × 2–3·5cm, lineari-lanceolata, acuminata, subtus parce pubescentia; petioli 0·5–1cm longi; ligula 3mm longa, biloba, pubescens; vaginae parce pubescentes. *Inflorescentia* usque ad 15 × 8cm, probabiliter erecta, pubescens. *Bracteae* 1·5 × 0·5cm (ad apicem versus inflorescentiae minores), lanceolatae, pubescentes, cincinnum usque ad 10-florum subtendentes; bracteolae usque ad 1·5cm longae, anguste tubulares, carinatae, unilateraliter breviter fissae, parce pubescentes. *Flores* albidi, pedicelli ad 2cm; calyx 1cm longus, margine et basi pubescens, truncatus dentibus parvis duobus, haud unilateraliter fissus; flos masculinus 2cm longus, tubo 1 × 0·1cm, lobo dorsali 1 × 0·3cm dimidio superiore cucullato, dense pubescente; lobi laterales 0·5 × 0·3cm; labelli basis et pars inferior filamenti in tubo 3–4mm longa supra petalorum insertionem conjunctae; labelli pars libera c.3 × 3mm, fera ad basin biloba; staminodia lateralia absentia; filamenti pars libera c.2mm longa; thecae 2mm longae, connectivo in cristam brevem rotundatam prolongato; stylo rudimentario 2mm longo; glandulae epigynae c.1mm longae, incrassatae, inter se liberae; ovarium haud evolutum. *Flos* hermaphroditus (ex flore adhuc inaperto) gynoecio bene evoluto, stylo inter thecas percurrente; ovarium pubescens, triloculare, placentatione axili. *Capsula* globosa, 2cm diametro, leviter pubescens, relictis calycis coronata.

NB. The description of the hermaphrodite flower is taken from *Beaman* 8962, not from the holotype.

Type: Sabah, Crocker Range, Penampang Distr., Tambunan Rd, 5′51N 116′16, 1050m, montane dipterocarp forest, flowers greenish-white, 20 i 1984, *Beaman et al.* 8308 (holo. E).

Other material seen:

SABAH: as type locality, 18 iii 1984, *Beaman et al.* 8962 (E).

The shaggy reddish indumentum of the leaf sheaths which distinguishes *A. rufa* is absent from *A. beamanii*, which is a much less pubescent plant, further differentiated by the shortly petiolate leaves and absence of lateral staminodes.

ACKNOWLEDGEMENT

I am grateful to Mr B. L. Burtt for the latinization of the description.