

and the plant can then be said to have a crownshaft in Bailey's sense. From field observations and from the examination of numerous herbarium specimens the picture emerges of the great majority of inflorescences being found among the leaves and most of the infructescences being found below the leaves and in any large population of *I. polymorpha* this process can be seen on a single plant where there is a series of inflorescences from the young inflorescences among the leaves to the infructescences below the leaves.

Hooker f. (1892) made this same distinction of "spadix infrafoliar" and "spadix interfoliar" in separating the taxa of *Iguanura* — *I. brevipes* he distinguished from *I. polymorpha* solely on the former having interfoliar inflorescences and the latter having infrafoliar inflorescences. The character "infrafoliar inflorescence" being equivalent to the taxon possessing a crownshaft. Thus the presence or absence of a crownshaft in *I. polymorpha* (and the synonymous *I. brevipes*) depends only on the age of the inflorescence and the time at which the lowest leaf abscisses and does not as Whitmore (1973) suggests "reflect a considerable difference in the growth processes of the stem apex"

*I. ferruginea* was distinguished by its acutely curved fruits (though the specimens identified by Ridley are not more curved than those of *I. polymorpha* and do not have the pronounced hook of *I. corniculata*) and dense hairs — neither of these characters is a reliable taxonomic character and fall within the variation seen within a single population of *I. polymorpha* and *I. ferruginea* is therefore reduced to synonymy. The description of *I. ferruginea* in Ridley (1925) is that of *Licuala ferruginea*.

### 13. *Iguanura prolifera* Kiew sp. nov.

Caulis 1.5 crassus. Vagina folii crassa, fibrosa c. 10 cm longa. Folia marcescentia. Petiolus 12–24 cm longus. Lamina 25–45 cm longa, 17–19 cm lata indivisa, vel pare apicale segmentorum latorum et 1–2 paribus infinis angustorum. Inflorescentia inter folia, simplex, 25–35 cm longa, pedunculos 15–25 cm longo. Flos masculus antheris non lobatis. Fructus oblongus porca unica dorsale, porcis duobus lateralibus.

Typus: *Hallier 1759*, Gunung Kenepai, Borneo. Holotypus (L).

Stem 1½ cm thick. Leaf sheath thick, fibrous c. 10 cm long. Leaves marcescent. Petiole 12–24 cm long. Lamina 25–45 cm long and 17–19 cm wide, simple or with a wide apical pair of leaf segments and 1–2 narrow pairs of basal parallel-sided segments. Inflorescence among the leaves, unbranched, 25–35 cm long of which peduncle is 15–25 cm long. Male flowers with unlobed anthers. Fruits oblong, ridged with one dorsal and two lateral ridges.

*Distribution*: Borneo.

*Collections examined*: Borneo: G. Kenepai, *Hallier 1759* L (!); Muara Muntai on S. Bongan, Kutei. *Meijer 503*.

*Notes*: This species is recognised by its unbranched inflorescence and oblong, ridged fruits and is distinguished from *I. leucocarpa* and *I. corniculata*, which have unbranched inflorescences, by their trapezoid leaf segments and their fruit shapes, and from *I. wallichiana* var *malaccensis* with parallel-sided leaf segments by its olive-shaped fruits.

Hallier's collection was determined by Beccari as "*I. macrostachya* var *prolifera*". His variety had a simple leaf or a scarcely segmented one compared with the typical variety with leaves with about 10 segments. Although *I. prolifera* and *I. macrostachya* both have an unbranched inflorescence, they differ in the length of the inflorescence and the shape of the fruit: *I. macrostachya* always has

a long inflorescence, and the fruits are olive-shaped and ridged while *I. prolifera* possesses a shorter inflorescence (about half the length of that of *I. macrostachya*) and the fruit which is oblong in shape has an additional lateral ridge on either side of the main ridge (fig. 3), I have elevated Beccari's varietal name "*prolifera*" to the species level.

14. **Iguanura remotiflora** Wendland Bot. Ztg. 17: 63 (1859).

Stem  $\frac{1}{2}$ – $1\frac{1}{2}$  m tall. Leaf divided into 3 pairs of wide segments, parallel-sided but with apical corner elongated. Petiole c. 15 cm long, lamina 37–44 cm long and 17–19 cm wide. Inflorescence branched, thin, 1 mm thick. Outer spathe  $10\frac{1}{2}$  cm long, inner 22 cm long. Peduncle 28–50 cm long. Rachillae 5–7, 15–22 cm long, and at right angles to the main axis. Flowers  $\frac{1}{2}$ –1 cm apart. Male flowers with anthers lobed. Fruit globose (2-lobed in Ridley's collection) and neither ridged nor ribbed.

*Distribution*: Sarawak: 1st Division.

*Collection examined*: Sarawak, 1st Div. Lobb s.n. (1857) (type) K (!); Bau, Ridley 11815 SING (!).

*Notes*: The two collections match exactly on vegetative and inflorescence characters. The lamina is broad compared to its length and is divided into a few wide segments; the inflorescence, both peduncle and rachillae, is unusually thin and the rachillae are held at right angles to the main axis. The flowers are not exceptionally wide apart — several other species e.g. *I. palmuncula* have equally widely-spaced flowers but the effect is exaggerated by the thinness of the rachillae of *I. remotiflora*.

The fruit on Lobb's specimen is immature while that on Ridley's, besides being immature, is also a rare aberrant fruit where the two ovules have developed to produce a two-lobed fruit: the immature fruits show neither ribs nor ridges.

*I. remotiflora* resembles *I. wallichiana* in possessing parallel-sided leaf segments and an inflorescence, which although unusually thin, falls within the range of variation seen in Malayan specimens. It differs in possessing lobed anthers. In many aspects it is most similar to *I. ambigua* (see *I. ambigua*) but neither species is represented by specimens with mature fruits.

15. **Iguanura sanderiana** Ridley, Gdnrs' Chron. 35: 50 (1904).

Stem 1– $1\frac{1}{2}$  cm thick, bark papyraceous when dry. Annuli 1–2 cm apart. Leaf marcescent. Leaf sheath thick and fibrous, 9–20 cm long. Petiole short, 3–8 cm long. Lamina simple, large, 30–85 cm long and narrow 9–16 cm wide, apex acuminate. Lamina deeply and closely plicate, lateral veins c.  $\frac{1}{2}$  cm apart, apical notch obscured by overlapping pleats. Margin finely serrate. Lateral veins abaxially covered by brown hairs. Inflorescence usually branched, sometimes unbranched, always among the leaves. Inner spathe 15–36 cm long. Peduncle short 10–13 cm long or sometimes up to 57 cm long, stout 3 mm thick. Rachillae 2–3, 9–18 (40) cm long, flowers  $\frac{1}{2}$ –1 cm apart. Male flowers 2 mm long, anthers lobed. Fruit olive-shaped, neither ridged nor ribbed. Endosperm homogeneous.

*Distribution*: Sarawak: 1st Division.

*Collections examined*: Sarawak: Lundu River, Micholitz 11849 (type) K (!); Forest Reserve, Kuching, Brunig nos. 5, 20, 22, 30. SING (!); Bako National Park, Brunig nos. 4, 31, 34 SING (!).

*Notes*: The leaf is particularly distinctive (Fig. 5), the deep plications and the lack of apical notch do not occur in other *Iguanura* species: it rather resembles the leaf of *Gigliola subacaulis* from which it can readily be distinguished by the inflorescence, flowers and fruits, and in the lobing of the leaf margin which in