

# Clinostigma in New Ireland

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## Abstract

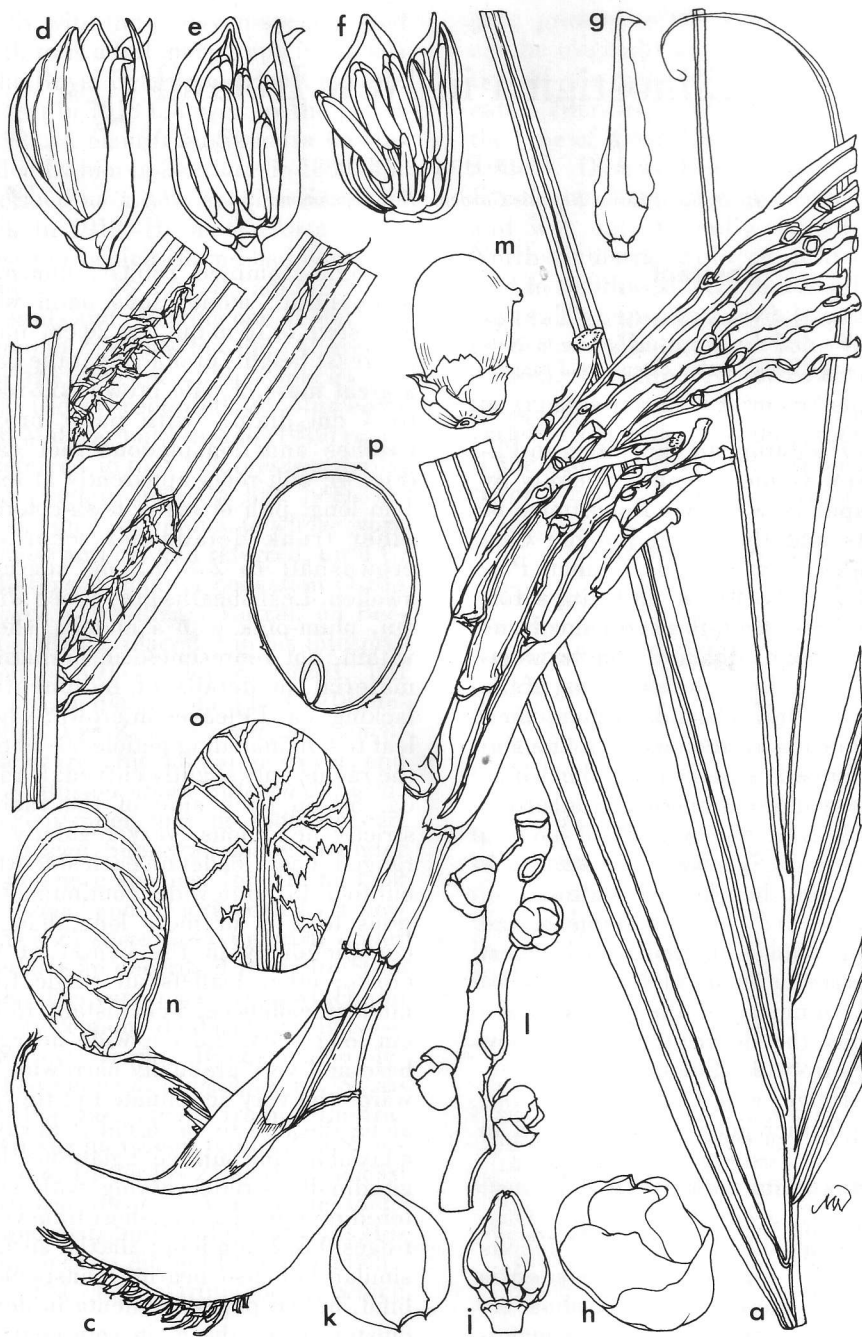
A new species, *Clinostigma collegarum*, represents the first record for the genus in New Ireland and a considerable extension of range.

In 1975 during an expedition to Papua New Guinea organized jointly by the Papua New Guinea Department of Forests and the Royal Botanic Gardens Kew, Martin Sands, Graham Pattison, Jeffrey Wood and Jim Croft reached montane forest in the Hans Meyer Range, about 8 km to westwards of Taron on the east coast of the island of New Ireland. Among their collections is a specimen of a fine single-stemmed, stilt-rooted palm which obviously differs in flower details from *Gulubia* and *Gronophyllum* (genera which were expected); the staminate flowers with their keeled acute sepals, their lob-sided petals, 6 stamens, and small pistillode immediately suggest *Clinostigma*. Moore (1969) provided a useful summary of the genus to accompany the description of two new species from the Solomon Islands, *C. haerestigma* and *C. gronophyllum*, and a further account is provided in Moore and Fosberg (1956).

***Clinostigma collegarum* J. Dransf.**  
sp. nov. *C. gronophyllo* insulae Guadalcanal ut videtur affinis sed foliis conspicue pendulis, inflorescentia multo robustiore rachillis pluribus, sepalis floris masculi petalis aequantibus, fructu ovoideo differt.

Typus: New Ireland, *Sands et al.* 2552 (holotype K).

Single-stemmed robust, unarmed pleoanthic, monoecious palm with grey stem to 16 m tall, ca. 20 cm diam. at breast height, producing at the base a great mass of pale brown stilt-roots to 4 cm diam., with paler brown patches and conspicuous root caps (Fig. 4); stilt-roots apparently at least 1 m long; pith of trunk flesh-colored; other trunk details not recorded; crownshaft to 2 × 0.2 m, scarcely swollen. Leaf sheaths grey-green without, plum-pink with a metallic sheen within, not represented in herbarium material so details of indumentum lacking; ca. 13 leaves in crown; whole leaf to 4 m including petiole 60-70 cm, the rachis only slightly curved; leaflets ca. 56 on each side of the rachis, strictly pendulous, very regularly arranged; basal leaflet on each side without fold, to 5 mm wide, continuing into reins to 2 m or more long, hanging conspicuously in the center of the crown; other leaflets all single fold; midleaf leaflets ca. 5 cm distant, to 117 cm long × ca. 2.8 cm wide near the base and very gradually narrowing towards the very acuminate tip; tip split along the fold to ca. 6 cm (? always); adaxial lamina surface ± glabrous, longitudinally striate, drying with scattered prominent, very short transverse ridges 0.5-2 mm long; abaxial surface similar but also bearing conspicuous bifid, brown papery ramenta in dense clusters along the main vein near the base, and scattered to ca. 30 cm above the base, and minute scales all over the surface. Inflorescences infrafoliar,



1. *Clinostigma collegarum*. a, leaf tip  $\times 2/3$ ; b, abaxial surface of two mid-leaf leaflets showing ramenta  $\times 2/3$ ; c, infructescence with rachillae removed, viewed from the side, showing the bulbous base of the peduncle  $\times 2/3$ ; d, staminate flower  $\times 4$ ; e, staminate flower with one petal and two sepals removed



2. View through the crowns of *Clinostigma collegarum* from the mountain ridge top to the coast of New Ireland (photo. J. Wood).



3. A windblown group of *Clinostigma collegarum* (photo. J. Wood).

$\pm$ scopiform ca. 8 exposed at any time, erect at anthesis, ca. 70 cm long, increasing somewhat with age, and becoming  $\pm$ horizontal; base of peduncle with 2 wings encircling the stem, to 14 cm wide in all; base of peduncle flattened at anthesis, swelling grossly as the fruit develops, to form a bulbous boss to ca. 4.5 cm thick, pushing the inflorescence away from the trunk; bracts 2 only, the inner partially preserved glabrous; first order branches spirally arranged, ca. 20 in all, the apical unbranched, the basal soon branching to produce up to 48 rachil-

lae; rachillae glabrous,  $\pm$ pendulous, angular, slightly zig-zag, at anthesis ca. 45 cm long, ca. 3 mm diam. near the base decreasing to ca. 1 mm near the tip, bearing triads each subtended by a minute triangular bract except near the tip where triads replaced by solitary or paired staminate flowers. Staminate flowers drying brown, ca. 6 mm long; sepals 3, free  $\pm$  to the base, narrow, elongate,  $\pm$ keeled, to  $6 \times 1.5$ –2 mm, tip and margins incurved; petals 3, valvate, free  $\pm$  to the base, asymmetric, acute, strongly nerved, to  $5 \times 3$  mm; stamens 6,

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$\times 4$ ; f, vertical section of staminate flower to show pistillode  $\times 4$ ; g, sepal of staminate flower  $\times 4$ ; h, pistillate flower  $\times 4$ ; j, ovary  $\times 4$ ; k, petal of pistillate flower  $\times 4$ ; l, detail of section of rachilla with pistillate flowers  $\times 2$ ; m, mature fruit  $\times 4$ ; n, seed from one side  $\times 4$ ; o, seed showing longitudinal hilum  $\times 4$ ; p, vertical section of seed  $\times 2$ . Drawn from *Sands et al.* 2552 by Mary Millar Watt.



4. The stilt-roots of *Clinostigma collegarum*  
(photo. M. J. S. Sands).

somewhat shorter than the petals, with filaments to 1.5 mm and anthers to  $3 \times 0.7$  mm; pistillode conical to 15 mm. Pistillate flower in bud globular, ca. 5 mm diam.; sepals 3 imbricate,  $\pm$ rounded, to  $3 \times 3$  mm; staminode minute; ovary somewhat conical. Fruit ripening from yellowish to scarlet, borne on the enlarged perianth whorls; mature fruit  $\pm$  ovoid, to  $12 \times 8$  mm, bearing the stigmatic remains on a short subapical beak to  $2 \times 1.5$  mm, usually less; epicarp drying  $\pm$ smooth; mesocarp apparently thin; endocarp thin. Seed ovoid, ca.  $9 \times 6$  mm, with longitudinal hilum; endosperm homogeneous; embryo  $\pm$  basal (Fig. 1).

*Specimen Examined.* BISMARCK ARCHIPELAGO: NEW IRELAND; Manatanai Sub-Province, Hans Meyer Range, on steep ridge ca. 8 km WNW of Taron on East Coast ( $152^{\circ}58'E$ ,  $4^{\circ}26'S$ ), montane forest of *Syzygium*,

*Podocarpus*, with frequent thickets of bamboo, alt. 1,350 m, 26.10.1975, M. J. S. Sands, G. A. Pattison, J. J. Wood and J. Croft 2552 (holotype K; isotypes BH, BISH, BO, CANB, L, LAE, PNH, USF).

This is a striking and beautiful palm (see cover and Figs. 2 and 3); it is to be hoped that it may eventually be introduced into cultivation. The specific epithet honors my colleagues at Kew, Messrs. Sands, Pattison, and Wood.

*Clinostigma* with about 13 species has a remarkable distribution occurring in a great arc from the Bonin Islands and Carolines in the north, south, and eastwards through the Western Pacific to the New Hebrides, Fiji and Samoa. The discovery of two new species in the Solomon Islands in 1965 helped to fill in a great gap between the New Hebrides and Ponape; *C. collegarum* helps further to fill in the arc, at the same time suggesting links between New Ireland and the Pacific rather than the more expected links with New Guinea.

#### Acknowledgments

Martin Sands and Jeffrey Wood provided habitat details and the photographs; Mary Millar Watt prepared the diagnostic drawing.

#### LITERATURE CITED

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