

Plate 1. a. Sungei Teku at Kuala Teku, the type locality of *Indotristicha malayana*; b. the criss-crossing dead white rhizomes of *Indotristicha malayana* Dransfield & Whitmore.

**A PODOSTEMACEA NEW TO MALAYA:
INDOTRISTICHA MALAYANA**

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SUMMARY

Indotristicha malayana Dransf. & Whitmore, from north Pahang and west Trengganu, represents a new family for Malaya, a new genus for Malesia, and a new species for science.

In February 1968, while we were exploring the Tahan Woods, that locus famous to Malayan botany, one of us (J. D.) noticed on sandstone boulders in the river at Kuala Teku (photo 1), exposed by the exceptional drought of ten rainless weeks, whitish dead filaments reminiscent of the W. African podostemad *Tristicha hypnoides*, seen earlier by him in Sierra Leone.

Close inspection revealed that most of the boulders down to 15 cm across had a high tide mark of such criss-crossing rhizomes (photo 2), in those parts of the Sungei Tahan and the Sungei Teku at Kuala Teku, where the water runs swiftly and is fully open to the sky. Below this for about 15 cm above and below the water line, a dark brownish-green dense carpet of leafy shoots occurred, in places covering several square metres. Closer inspection showed erect tiny reddish flowers standing out of the carpet. Associated with the plant we found one species of the moss *Fissidens* and numerous algae.

Later we found the same plant lower down the Sungei Tahan at Kuala Puteh and on the Sungei Tembeling, on two rapids below Kuala Tahan, on all the rapids between Kuala Tahan and Kuala Keniyam, and along the lowest kilometre of the Sungei Keniyam (once here on a rotten log). At Kuala Tahan the local women were washing their clothes on meadows of the plant.

Our excitement at having found *Podostemaceae* for the first time in Malaya was spiced by the knowledge of the illustrious roll of Malayan botanists who must have explored its carpets with their toes without realising what they trod on, when they stayed, like ourselves, at Kuala Teku, the mandatory base camp for every ascent of Gunong Tahan. Our good luck is ascribed to the drought, worse than anyone at Kampong Kuala Tahan can remember, and to one of us having seen *Tristicha* before.

In June 1968 P. F. Cockburn made a second collection of the species in west Trengganu about 60 km north east of Kuala Tahan: he recognized our description of white criss-crossing dead rhizomes. In July 1968 a third Kepong expedition exploring the S. Loh in west Trengganu (debouching into the S. Dungun at 103° 3' E. 4° 45' N) found none at all.

In floral characters our species fits well the genus which is correctly called *Indotristicha*

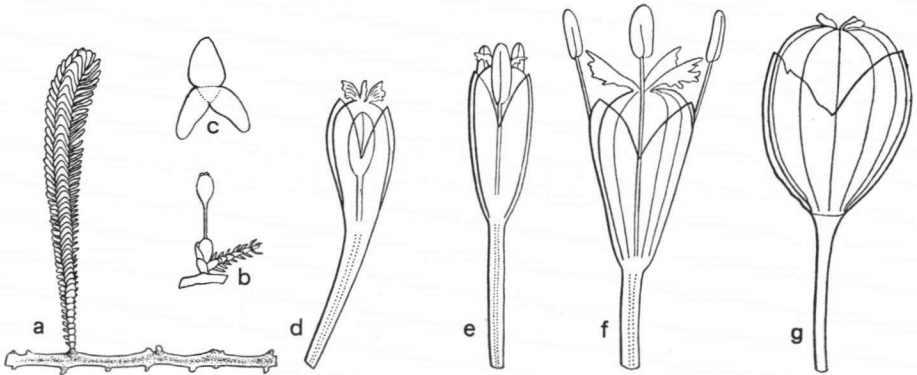


Fig. 1. *Indotristicha malayana* Dransfield & Whitmore. a. Habit, sterile; b. ditto, fertile; c. petals; d—g. four stages in the development from flower to fruit. (a & b, $\times 3$, c, $\times 7$, d—g $\times 14$).

van Royen, the nomenclature of which has recently been worked out by R. C. Bakhuizen van den Brink (Taxon 18, 1969, 598—599) for the benefit of the publication of this new species. This genus was formerly known from a single species, *I. ramosissima* (Wight) van Royen, which is widely distributed through India, so our discovery represents a major extension in range and a new genus for Malesia.

In vegetative structure our species is strikingly distinct from the other, so much so that taken with minor floral differences one might be tempted to create a new genus. This problem can only be resolved by a monographer.

***Indotristicha malayana* Dransfield et Whitmore, sp. nov.**

Rhizoma repens, perenne, complanatum, 0.5 (1) mm latum, irregulariter ramosum. *Rami* steriles usque 2 cm longi, rarissime floriferi, foliiferi; foliis tristichis, sessilibus, confertissime verticillatis, duobus eorum equalis, retrocurvatis, leviter asymmetricis, elongato-triangularibus, usque ad 1.5×0.5 mm, tertio late triangulari usque 1×0.7 mm; rami alteri floriferi plerumque conferti, foliis brevioribus, remotis. *Flores* proterogyni, plerumque prope basin ramorum foliiferorum solitarii, erecti, sub anthesi usque ad 5 mm longi, pedunculo gracili rigido basi bibracteolato, singulatim bracteis inaequalibus, concavis, interdum mucronatis, chartaceis, imbricatis, usque 1×0.5 mm suffulti. *Petala* 3, valvata, obovata, leviter concava, chartacea, translucida, 1×0.8 mm. *Stamina* 3, initio occulta, anthesi per 1 mm exserta; filamentis rigidis, erectis, roseis; antheris ovato-oblongis, cremeis, 0.4 mm longis. *Ovarium* stramineum, obovoideum, post anthesin paullo longius et angustius obovoideum, 9-nervosum; stylis 3 roseis, verticaliter complanatis, margine exteriori profunde divis. *Capsula* anguste obovoidea, apice coronata, brunnescens, 2×1.3 mm.

PAHANG: Kuala Teku, Dransfield 639 (holotypus SING, isotypi K, L).

TRENGGANU: Ulu Trengganu, S. Trengganu from Kuala Kerbat to Kuala Ta'ak (16 km) P.F.Cockburn FRI 8448. (This specimen in old fruit, and with only the attenuate leafy shoots).

Rhizome creeping, flattened, thalloid, closely adpressed to the substratum, 0.5 mm wide, occasionally to 1 mm, of indefinite length, branching irregularly. *Leafy shoots* rarely flowering, borne irregularly, usually closely, to 2 cm long, rarely branching, usually curved, pale green and attenuate in shade, tinged red and shorter in full sun, iridescent.

Stem triangular in section. *Leaves* sessile in very close whorls of 3 unequal ranks, the bases touching, increasing in size to about two thirds of the length from the rhizome, and thence decreasing slightly; two ranks long triangular to 1.5×0.5 mm, outline slightly asymmetric recurved, convex towards the third rank which is broadly triangular to 1×0.7 mm. Also with flower bearing leafy shoots, often clustered, with smaller rather distant leaves. *Flowers* protogynous, lateral, solitary; peduncle slender, stiff, erect, to 5 mm long at anthesis, subtended by two unequal, concave, sometimes mucronate, chartaceous, imbricate bracts to 1×0.5 mm. *Petals* 3, valvate, obovate, 1×0.8 mm, slightly concave, chartaceous, translucent. *Stamens* 3, at first hidden by petals, later at anthesis longly exerted to 1 mm on stiff, erect, pink filaments, later shrivelling and becoming thread-like and twisted; anthers ovate-oblong, 0.4 mm long, cream. *Ovary* pale straw-coloured, obovoid, becoming narrowly obovoid by anthesis to 1.6×1.0 mm with 9 rib-like veins; styles pink, 3, flattened in a vertical plane, with a deeply divided outer margin; placentation free central, ovules numerous, tiny, cylindrical. *Capsule* narrowly obovoid, 2×1.3 mm, light brown, crowned by remains of styles.

We should like to thank Professor C. G. G. J. van Steenis, Dr. R. C. Bakhuizen van den Brink Jr., and Dr. C. X. Furtado for assistance, the last named with the Latin description. The drawings are by the Kepong artist Enche Yusoff b. Haji Mohd. Saman.