

## NOTE ON ULMUS IN MALESIA (ULMACEAE)

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Already in 1922 the Netherlands Indian Forest Service had collected *Ulmus* in North Sumatra and in South Celebes, which was published by F. H. Endert in his Keys to Neth. Indian Trees based on Vegetative Characters (Med. Proefst. Boschwezen 20, 1928, 163). Subsequently Merrill identified the N. Sumatran specimens collected by the Banghams as *U. lanceaefolia* Roxb. (Contr. Arn. Arb. 8, 1934, 44).

We have now several collections but they are all sterile.

The names of two species are involved, which appear rather similar, viz. *U. parvifolia* Jacq. which is largely extra-tropical and widely distributed in China, Korea, Japan, and Formosa (? Hainan), and *U. lanceaefolia* Roxb. *sp.* Wall. which is distributed in Assam, Sikkim, eastern Bengal, Burma, Thailand, Indo-China, and Yunnan; *U. tonkinensis* Gagnep. and *U. hookeriana* Planch. are synonyms of the latter.

They are very alike in habit, though well distinguished in flower and fruit: *U. parvifolia* has a caducous perianth, fruiting pedicels halfway articulated up to 3 mm long and  $\pm$  glabrous, and samaras of *c.*  $\frac{3}{4}$ — $1\frac{1}{4}$  cm  $\varnothing$ , whereas *U. lanceaefolia* has a persistent perianth, fruiting pedicels articulated near the apex, 5—7 mm long, of which the lower portion is short-hairy, and samaras *c.*  $1\frac{1}{2}$ —2 cm  $\varnothing$ .

There are, fortunately, also some differences in the vegetative parts and particularly in the short-shoots. *U. parvifolia* has rather coarse leaf-teeth (*c.* 4—5 teeth per cm), the greatest width of the leaf often above the middle, and an acute top, while the twigs of the flush are glabrous or sparsely pubescent at first. In *U. lanceaefolia* the leaves are narrower, with finer leaf-teeth (*c.* 6—8 per cm), the greatest width in or below the middle, and a more or less acuminate top, and the twigs of the flush are generally densely hairy. Specimens from Tonkin have their short-shoots sparingly hairy to glabrous, but are otherwise typical.

The North Sumatran specimens belong certainly all to *U. lanceaefolia* Roxb. The specimens from SW. Celebes (Bonthain complex) belong probably also to the same species, by having an acuminate leaf apex and hairy twig ends, but their leaf-teeth are coarser and more like those of *U. parvifolia*. But the junior author finds the specimen miserable and probably not representative.

It is curious to note that a Northern Hemisphere genus as *Ulmus* does not show the usual stenothermous ecology of such genera. In North Sumatra the localities are scattered between 200 and 1500 m altitude, and the Celebes specimen is also found at only 200 m altitude.

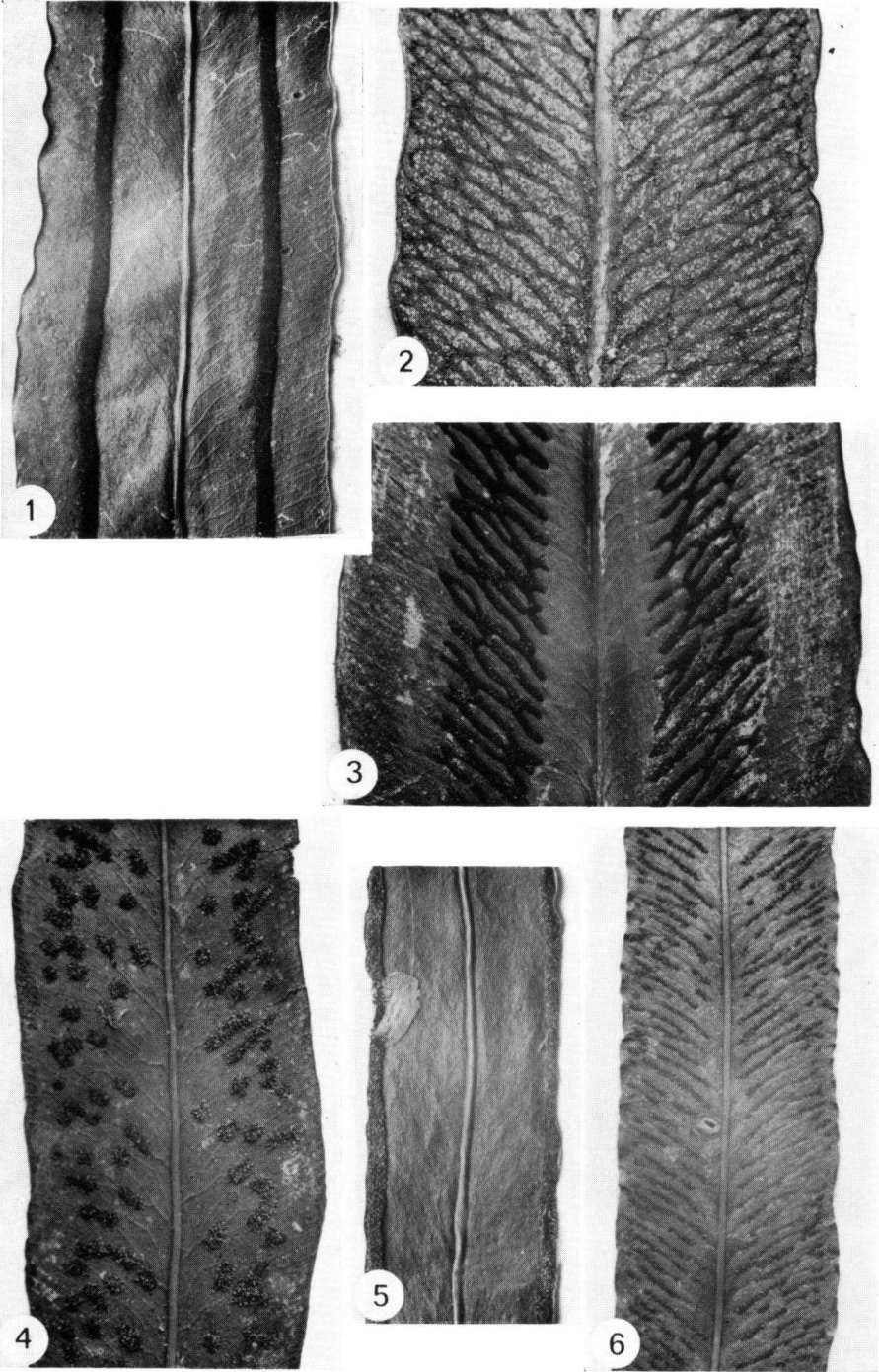


Fig. 1. *Taenitis blechnoides*, Sarawak, C.D. 158 ex Herb. E. — Fig. 2. *T. lanceolata*, type. — Fig. 3. *T. hosei*, type. — Fig. 4. *T. pinnata* var. *polypodioides*, Fiji, A. C. Smith 537. — Fig. 5. *T. vittarioides*, type. — Fig. 6. *T. pinnata*, type. All  $\times 3/2$ .