THE IDENTITY OF PLECTOMIRTHA OLIV. WITH PENNANTIA J. R. & G. FORSTER (ICACINACEAE)

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In 1948, W. B. R. Oliver described the new monotypic genus *Plectomirtha*, collected by G. T. S. Baylis in 1945 from a single tree on a small rocky islet of the Three King's Islands off New Zealand. He placed it in the *Anacardiaceae*, a family hitherto absent from New Zealand. This aroused a certain curiosity both from a taxonomic and plantgeographic point of view, because it would be much intriguing if an endemic genus occurred there.

This was the reason why Dr C. G. G. J. van Steenis asked Prof. G. T. S. Baylis from the University of Otago, Dunedin, N.Z., for original material to be able to elucidate this case. A fragment of the holotype, consisting of a few flowers and a leaf, conserved in the Auckland Institute and Museum, became available to our institute in October 1954 by the courtesy of Dr R. Cooper.

The scrutiny of these type fragments at first had no results, as there were no fruits with them, which, according to later information by Prof. Baylis, could not be obtained from the original tree because it sets no seed. An examination of the pollen by Prof. G. Erdtman in 1956 showed 'that the pollen grains are too young to be used as material for a detailed pollen diagnosis. However, it is impossible for these to be anacardiacious'. The material has since undergone further study in the Rijksherbarium, first by Dr Ding Hou, a specialist in *Anacardiaceae*, who found no good reason to exclude *Plectomirtha* from, but also hesitated to attach it to that family, as only the mature fruit would be decisive in this case. Mr P. Baas, on investigating the vegetative anatomy, had so far reached the conclusion that *Plectomirtha* could hardly belong to the *Anacardiaceae*, on the grounds of amongst others its very primitive secondary xylem and the absence of resin canals. The petiole seen in transverse section through the distal end shows one of the more striking anatomical features: the vascular system is composed of a large cylinder, enclosing one smaller bundle and accompanied on each side by two concentric adaxial bundles.

Finally, the specimen came accidentally under my eyes and, being familiar with the *Icacinaceae* which I had just revised for Asia and Malesia and partly for the Pacific, I recognized the enigmatic *Plectomirtha baylisiana* W. B. R. Oliver as being the same as *Pennantia endlicheri* Reiss., described in 1842 from Norfolk I. and up till now only known from there.

To confirm this, four specimens of *P. endlicheri* from Norfolk I., kindly sent on loan by the Director of the Royal Botanic Gardens at Kew, were compared with the original material of *Plectomirtha baylisiana*. Of these four specimens two bear ♂ flowers, and two are in fruit, whereas the type of *Plectomirtha* bears bisexual, or presumably functionally female flowers, as the pollen is not well developed.

The genus *Pennantia* is known as polygamous. When comparing these specimens, not a single character of taxonomic value could be found which would allow to separate *Plectomirtha baylisiana* from *Pennantia endlicheri;* these species share even the domatia which are not known from the other species of *Pennantia*.

An examination by Mr J. Muller of the pollen grains of *Plectomirtha* confirmed that they are not normally developed. A large proportion is shriveled, apertures are mostly not clearly visible, and there is some variation in size. However, this may not be due to the grains being too young, as supposed by Erdtman, but to the fact that the available flowers are apparently functionally female. A comparison of a few rather well developed grains with pollen of a ♂ flower of *P. endlicheri* (*Mc Comish 35*, K) revealed that at least the wall structure is strikingly similar. The apertures, although poorly developed in *Plectomirtha*, appear to approach the distinct tricolpate ones of the former species, while also the average size agrees. There exist thus no palynological objections against merging *Plectomirtha* with *Pennantia*.

Mr P. Baas recently compared the leaf epidermis and the anatomy of the petiole of *Plectomirtha* with those of *Pennantia cunninghamii* Miers (N. S. Wales Nat. Herb. 11151, L) and of *Pennantia endlicheri* Reiss. (*Cunningham 85*, K). He found these to be principally of the same kind, though very small differences occur which may even be expected within the same species. The same can be said of the anatomy of the stem, though here no material of equal thickness was available. There is almost 100 % evidence from anatomical features that *Plectomirtha* belongs to *Pennantia*. Unfortunately, at the moment there is not sufficient material in our hands to ascertain that anatomically seen *Plectomirtha baylisiana* is conspecific with *Pennantia endlicheri*.

Plant-geographically, the identity is not too surprising, as Norfolk I. is only about 650 km away from the Three King's Is, and other floristic relations between them and the flora of New Zealand's North Island, and even to Australia, are known at least at the generic level.