X. AN AMATEUR BOTANIST ON THE LESSER SUNDA ISLANDS

Tabula Rasa. In 1963 as a missionary I arrived in the Flora Malesiana region, notably in the Lesser Sunda Islands. A certain 'sensus botanicus' was my only equipment for botanical surveys, and the next thing to do was to walk the arduous but occasionally quite entertaining road to discovery. I often felt like Mr. Columbus when he was discovering America. I entered the New World at Port Said. A lovely 'pine avenue' drew me, which turned out to consist of arborescent Equisetes! I now realize that it must have been Casuarina, and still these trees, which I grow in my garden are a source of delight to me.

Later it was the tropical gardens with their 'unending splendor of flowers' that captivated my interest, until one day I learnt that Canna indica is of American origin and that there is indeed a kind of commonplace tropical assortment. For meanwhile I had found occasion to set foot in a genuine Asian primary forest, where reality turned out to be a tedious green monotony. This 'dead point' must perhaps be reached and passed by anyone who finds himself unprepared like me in the Malesian plant kingdom before, step by step, he can learn to know and love the true 'Flora Malesiana'.

Sporadic findings marked the beginning of this, not spectacular in any way, but they left a deep impression in my memory. A case in point is the village weed Triumfetta rhomboidea. Like all 'hippies' among the plants it looks a bit shabby but only in the morning. Only in the afternoon does this herb begin to feel good, under a sprinkling of many splendent yellow stars, outright illuminating the ruderal. And this herb belongs to the family of the mighty lime trees.

On Mussaenda frondosa. In its remarkable 'display leaves' it is suggestive of the crab which lives in the mangrove and has transformed one of its claws to a colourful eyecatcher.

At the time I noticed that the two kinds of 'leaves', the green one and the white one, possess a different venation, and only through Van Steenis's Flora voor de Scholen van Indonesië - then my only piece of botanical literature - I learnt that these white 'leaves' are transformed calyx lobes. Not every flower in an inflorescence develops such an extra leaf. There are always but few, and their presence therefore must be some achievement of the inflorescence as a working unit. Later in Surabaya I saw a 'garden form' in which a horticulturist had perpetuated his lack of taste by having produced 'filled' inflorescences, every calyx lobe having been produced into a decoy leaf, all jampacked to a chaotic dumpling. The proper Mussaenda which nature created is something entirely different, and notwithstanding its unprepossessing

and obvious structure seems to me no less exotic than the most sophisticated orchid flower: rubiaceous sophistication! One time I went by a flowering bush and thought in passing: this is Mussaenda frondosa. Then the habitat, a Barringtonia beach, gave me an afterthought of suspicion, and I went back. It was not Mussaenda frondosa, but the capparid Cadaba capparoides. How could the confusion come about? From a certain distance the flowers of both shrubs work in a very similar manner: besides, it is the optical constellation of yellow flower & 'white pennon'. True, the white pennon in Cadaba is of a totally different nature, consisting of the upturned petals, merged to an optical unit. However, if not taxonomically related, both inflorescences may have a flower-biological affinity.

The encounter with Professor Kostermans. Ruteng, west-Flores at 1200 m. A truck arrived in the mission compound, with Professor A.J. Kostermans on top of a number of tin boxes and alcohol containers which he tended with great care. (The visit took place from March to June, 1965. See page 1248 —Ed.)

A 'walk' in the mountains above Ruteng to which Dr. Kostermans invited me was rather decisive for my subsequent botanical occupations. The excursion was a brief and demanding one. The Professor hurried up the mountains with giant's steps pointing left and right in the scenery: "look over there, the beautiful Urticaceae, Maoutia! Up there an elm relative: Trema! And the poplar-like thing in the distance is Homalanthus, a Euphorb! And have you noticed this composite, a genuine tree: Vernonia arborea!" So it went on. Arborescent nettles and spurges, tropical Ulmaceae, and these remarkable Compositae! It was all utterly new to me and my enthusiasm grew. In order to extract some use out of this haphazard impromptu excursion, I stumbled behind the Professor, snatching an occasional twig here and there, with my pencil busy in my small pocket calendar, the collection growing under our arms for want of a vasculum. I sometimes succeeded in managing a question: "Professor, what is this remarkable tree, the fruits look like American egg grenades ...". — "Oh, red seeds hanging out on white threads? Must be Magnoliaceae, perhaps Manglietia, or Talauma."

The brainwashing went on for two hours. I returned with fifty sorts of woody plants and had some effort to correlate them with my notes. But this laid the basis for my knowledge of the local ligneous flora, for many a time I went up again, to retrieve very species in the field for closer study.

This occasion also initiated me in the 'wet method', which gave me a great convenience during my subsequent long journeys on horseback and on foot.

In the maple forest. To me, Acer laurinum is the montane primary forest sets the theory of natural selection in floodlight. Which creative force must inhabit that 'selection pressure' eventually to bring forth a rainforest-leaf with drip-tip, so much a lauraceous leaf that Blume in 1847 could pin down the trees as Laurus alba? Accordingly, the Manggarai people of the west Flores mountains have been struck by the analogy; they, too, have adopted a kind of binary nomenclature! Acer laurinum they call wuhar rona (= male wuhar tree); a species of Cryptocarya, a true Lauraceae, is wuhar wina (= female wuhar tree).

Barely one hundred steps from the maple stands an elm, Ulmus lanceaefolia. This tree has preserved its nordic leaf shape, so much so that it can effortlessly be recognized in the sterile state. This tree, too, is adapted to the rainforest but remarkably enough without the leaves showing any trace of 'selection pressure'.

Last not least I find in the forest fringe a leaf shape which deceitfully suggests the Norway maple, Acer platanoides; they are the juvenile leaves of Alangium chinense. The rainforest has called forth this leaf shape, apparently unsuitable for Acer, in Alangium afresh. A misapprehension towards theory comes up, and will not vanish when in a considerable book of 1973 I read, with regard to drip-tips in Acer: "One may go through a collection of Acer ..., comparing the leaves as to degree of development of the trip-tips, noting the kind of climate, from which each has come." In my herbarium there are specimens with marvellous drip-tips of 5 cm, and others in which the tips are just very short. The former always come from young trees, the latter from trees producing fruit, as I often have tested in the field, which excludes doubt anyway for the Manggarai forests.

One more remarkable resemblance in features. In the forest fringe together with Alangium, occurs the malpighiaceous Rhyssopterys timoriensis. Its fruits and those of Acer are so strikingly similar that they look as if cast in the same mold, however easy it is to imagine a multitude of variations on this theme.

Is it really the environment which creates the analogies in shape through a process called in the typical idiom of our time: Selection pressure? The biologist, bound as he is by his methods to prove his case, may have to stop at a boundary which is open to the amateur botanist who is inclined to a bit of philosophizing. When I reflect on my observations in the maple forest, nature appears to me as 'a husband who takes old as well as new from his treasury', to quote a portion of the Scriptures, and unceasingly combines the two to new, surprising creations.

Violaceae. Dr. Kostermans showed me a violet. He had found it in a ditch along a street in the township of Ruteng. As soon as I had expressed a mild suspicion, that the rarity might have originated from the garden of the nunnery where such violets are carefully tended, the professorial face darkened, and the poor nuns for a time earned the evil reputation to bring havoc in the virgin flora of the Manggarai by emptying flower pots from one continent onto another. Later, the plant turned out to be Viola philippica and in the mountains I found more violets, also wild, all of which very similar to those in central Europe.

In Timor blue violets together with the bellflower Wahlenbergia bordered the roadside, and by a sudden stroke transports the traveller in home-like surroundings. Flowers with such an effect on men's being must have exerted a deep, almost archetypical power on the mind of nordic man.

Another violet thriving here is Hybanthus. The violaceous plan can easily be detected in the magnificent flower; a few differences in proportion suffice to turn a violet into a splendid Hybanthus, which the show element has been condensed into the enlarged coloured 5th petal. Small wonder that Robert Brown gave an early finding of Hybanthus the name Viola monopetala. During my rides out in the country my eye was drawn to an orange Hybanthus. This generated a correspondence with Leiden and the gathering of more material; an investigation of the matter revealed that a new taxon was involved, for which the Leiden botanists proposed the epithet verbi-divini, after the missionary society of that name.

When a modest sprig in my herbarium taken from a tree was at Leiden identified as Rinorea macrophylla I was astonished to learn that this same family contains quite large woody plants as well. I decided to retrieve the tree in the field, in order to treat myself to nothing less than a tree ablaze with beautiful violet flowers. What a disappointment to find inconspicuous greenish actinomorphic flowers! But on romping a bit in literature I found with Sleumer (1954) an indication of affinity between Violaceae and Flacourtiaceae often leading to misidentification of sterile material. So from this viewpoint the 'violets tree' is truly interesting again; at first sight recalling a Flacourtiaceae, but more important characters 'deeper hidden', inside the plant, must have moved the botanists to classify it among the Violaceae. What may have passed in the course of evolution? But if I understand things correctly the Flacourtiaceae is a kind of melting pot, from which in the course of time a multitude of beautiful things have emerged, like Viola and Hybanthus flowers.

Collaboration. On the Lesser Sunda Islands there are several missionaries who made collections for large Herbaria,

especially Leiden: J. J. L o e t e r s, C. W. K o o y, J. A. J. V e r h e ij e n, I myself* and may be others. All felt supported and encouraged by the quick return of name lists, various reprints, and letters about remarkable findings. Without this good connection, interest on the part of the missionaries might have waned long ago.

What is the use of scientific plant names to a missionary? There may be a direct use, like in the case of Father Verheijen, who for decades is working on a dictionary of the Manggarai language, in which he includes the plant names. But also as a 'key to literature' the scientific names of plants are of great value. A missionary takes an interest in every bit of knowledge about the island where he works. There may be ethno-botanical data. But interest goes further: through Father Verheijen's and my collecting a series of findings were made which, as we were informed, are of considerable plant-geographical significance, like Drimys piperita (Winteraceae), Lobelia borneensis (Campanulaceae), Boholia nematostylis (Rubiaceae), Sympetalandra schmutzii (Caesalpiniaceae; see Blumea 22, 1975, 161, 167), to mention only a few. Altogether, these may necessitate a re-thinking of the phytogeographic position of the Lesser Sunda Islands.** So the fruitfulness may well be mutual to science and mission alike.

---

* Entries about all these four collectors in Supplement II of the Cyclopaedia, Fl. Males. i 8, part 1 (1974).

**This is now being done by Professor Van Steenis, who intends to publish in Blumea a paper on the subject.—Ed.

Tromolpos 2
Ruteng via Den Pasar
Flores, Indonesia

Fr. Erwin Schmutz SVD