

**A Three Decade Work on the Chemistry of Sumatran Plants;
The Dream and the Reality**

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Three decades ago, our systematic ethnobotanical and phytochemical survey of Sumatran plants was started in the backside of our campus and some other West Sumatran forests. There was a dream that sooner or later we should be able to discover some scientific explanation of the use of some of our Sumatran Traditional Medicinal plants which had been used by our ancestors since the beginning of civilization. Altogether, more than 10.000 different flowering plants have been collected from 56 different ecotype locations of Sumatran forests and tested for their main secondary metabolites, i.e. alkaloids, flavonoids, terpenoids, glycosides, etc. More than 900 selected plants having traditional value have been extracted and screened for their preliminary antimicrobial activity by using usual method in Nutrient Agar (NA) for some Gram(+) and Gram(-) bacteria; and antifungal activities in Sabaroud Dextrose Agar (SDA). Some selected extracts have also been evaluated for Hypocratic Screening, Brine Shrimp Lethality Assay and Antioxidant Activities.

Based on the results of the above work, some alkaloid bearing plants having traditional medicinal values have been selected for further chemical study. Special attention was paid to Rubiaceous plants. Some known indole alkaloids were obtained beside some novel alkaloids from this family and named as follows: Ophiorrhizine was isolated from *Ophiorrhiza major*,⁸ glabratine from *Uncaria glabrata*, lercheine from *Lerchea bracteata*, bracteatine from *Ophiorrhiza bracteata*, isomalindine-16-carboxylate from *Ophiorrhiza cf. communis*, blumeanine from *Ophiorrhiza blumeana*, etc.

Recently we investigated two other Rubiaceous species of *Lercheas* and two species of *Ophiorrhizas* and different from before, instead of working on only higher plants, we have also broaden our interest to study the chemistry of *Sumatran lower plants* i.e the liverworts *Bazzania* sp and *Dumortiera* sp.; the lichens *Stereocoulon philippinense* Rasanen and *S. massartianum* Hue; the fungus *Scleroderma sinnamariense* (Mont.) as well as the ferns *Gleichenia linearis* (Burm) Clarke, *Diplazium esculentum* Swartz, and *Hymenophyllum javanicum* A. Spreng.

In addition, it was observed that due to many reasons, a lot of our forests have been converted into palm, rubber, coffee and theobroma plantations while some others were destroyed by illegal logging. Sadly, this has caused many of our traditional medicinal plants investigated in the eighties and early nineties could not be found anymore. Because of this, in the last 10 years while doing inventory work in various ecotype of Sumatran forests, thousands of seeds and seedlings were also collected and planted in our *newly built* Andalas University Botanical Garden.

Only part of our dreams have come true. The reality is that our *ancestors might be right*, since most of their medicinal plants proved to contain active or related to reported active constituents. However, a lot more work is needed in order to bring them for public use.

The surveys, isolation, structure elucidation and chemical work as well attempts to *ex situ* conserve these Sumatran plants will be discussed.