BIOGEOCHEMICAL STUDIES IN SOUTH EAST ASIA BY USE OF HERBARIUM MATERIAL.

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ABSTRACT.

A biogeochemical survey of Indonesia was undertaken analyzing herbarium samples by atomic absorption. (Indonesia was chosen because it has been well surveyed botanically, but poorly surveyed geologically.)

Background concentrations of copper, nickel and zinc were determined using various species, predominantly members of the families Flacourtiaceae and Violaceae.

Rinorea bengalensis (Wall.) O.K. (Violac.) was discovered as a hyperaccumulator of nickel (Brooks et al., 1977) and this led to an in depth study of R. bengalensis and other species of the genus. From this study two areas of doubtful geology were predicted as containing ultrabasic rocks, R. javanica (Bl.) O.K. was shown to be a hyperaccumulator of nickel and R. albersii Engl. was found to yield a very high cobalt/nickel concentration ratio.

Three hyperaccumulators of nickel were discovered after analysis of a selection of herbarium samples collected on Obi Island by Dr. E. de Vogel. (They were: Myristica laurifolia Spruce ex DC var. bifurcata (Myrist.); Planchonella oxyedra Dubard (Sapotac.); Trichospermum kjellbergii Burret (Tiliac.).)
Ambon Island was predicted as consisting of ultrabasic substrates.

Plants collected from Salajar Island were shown to contain anomalously high concentrations of copper possibly due to anomalous copper concentrations in the soil.

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