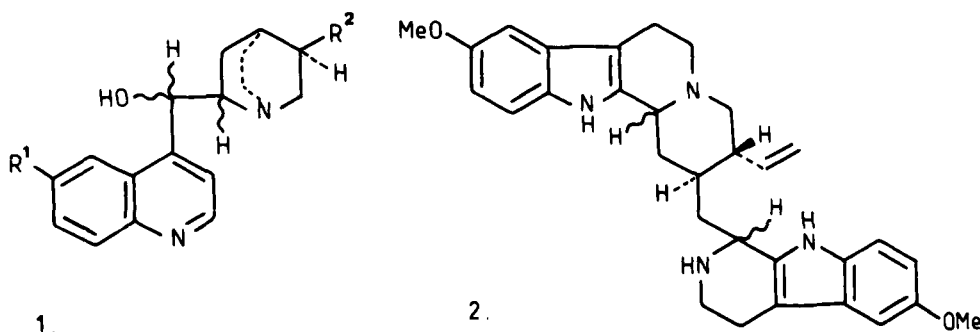


ALKALOIDS OF THE LEAVES OF CINCHONA SUCCIRUBRA FROM THAILAND

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The barks of a number of Cinchona species have been investigated in the past in order to determine whether they contained appreciable yields of quinine-type alkaloids (1). Such alkaloids are derived biosynthetically from indole precursors (Phillipson and Zenk 1980 and references therein). Approximately 40 species of Cinchona exist and although there are many publications on the bark alkaloids, the leaves have attracted little attention because in general they contain lesser amounts of alkaloids. A recent investigation into the leaf alkaloids of C. ledgeriana Moens from an African plantation has shown the major constituents to be indoles of the cinchophylline-type (2) (Zeches et al 1980). These compounds are indole analogues of the emetine-type alkaloids. A knowledge of the leaf alkaloids of other species of Cinchona is of interest since the potential production of the clinically useful alkaloids quinine and quinidine by plant tissue culture techniques may well be facilitated by an understanding of the biosynthetic pathways involved.

Leaves of Cinchona succirubra Pav. obtained from a trial plantation north of Chiang Mei in Thailand have been investigated and the major alkaloids identified by their UV and MS properties and by their TLC and HPLC characteristics. The following major alkaloids have been identified: quinine and quinidine (1, $R^1 = \text{OMe}$, $R^2 = \text{CH}=\text{CH}_2$), cinchonine and cinchonidine (1, $R^1 = \text{H}$, $R^2 = \text{CH}=\text{CH}_2$), dihydroquinine (1, $R^1 = \text{OMe}$, $R^2 = \text{CH}_2\text{CH}_3$). Hence the major alkaloids of the C. succirubra leaves obtained from Thailand are all quinolines of the quinine-type (1) and differ significantly from the cinchophylline-type (2) indole alkaloids reported to be present in the leaves of African grown C. ledgeriana. TLC and HPLC of the total alkaloid extracts indicated the presence of at least ten additional minor alkaloids.



Phillipson, J.D., Zenk, M.H. (1980) Indole and biogenetically related alkaloids, Academic Press, London, pp. 75-76.
Zeches, M. et al (1980) Phytochemistry 19: 2451-2454.