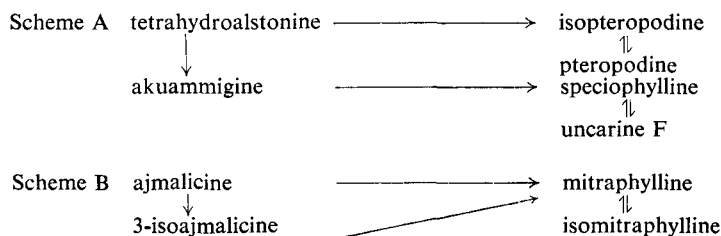


and containing the alkaloidal system shown in Scheme A were used. By means of the wick method of feeding through the xylem both ajmalicine (*normal*, closed E ring) and 3-isoajmalicine (*pseudo*, closed E ring) were introduced to the plant. In both cases after 24 h the corresponding *normal* closed E ring oxindoles, mitraphylline and isomitraphylline were present in the leaves. Since 3-isoajmalicine could not be detected when ajmalicine was fed into the plant there is some doubt about the hypothesis that this alkaloid is formed by conversion of the C(3)H- α ajmalicine to C(3)H- β . These results support the modified proposals that *normal* oxindoles may be derived from corresponding *pseudo* oxindoles (Scheme B).



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The distribution of alkaloids in *Mitragyna parvifolia* (Roxb.) Korth in young plants grown from Ceylon seed

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Initial investigations of the alkaloidal pattern in *Mitragyna parvifolia* obtained from Ceylon showed the leaves to contain the closed E ring alkaloids, tetrahydroalstonine, akuammigine, pteropodine, isopteropodine, speciophylline and uncarine F while the trunk bark contains the open E ring alkaloids isorhynchophylline and rhynchophylline in addition. The root bark contained isorhynchophylline and rhynchophylline only (Shellard & Houghton, 1971).

A more detailed examination of all parts of a young plant grown from seed and of the seeds and seedlings has revealed an interesting distribution of alkaloids throughout the plant. The root xylem and phloem both contain isorhynchophylline, rhynchophylline and corynoxine (Δ^{18} -rhynchophylline). This latter alkaloid occurs in large quantities in the root tips and is also present in the seeds and seedlings as the main alkaloid. This group of alkaloids also occurs in the stem xylem at all positions in the stem but could not be found in the petioles, leaves or stipules. Hirsutine and hirsuteine (Δ^{18} -hirsutine) also occur in the root phloem. The alkaloids in the stem phloem vary according to the position in the stem. No indole alkaloids were detected and the oxindole alkaloids present in the leaves also occur in the stem phloem in the upper part of the stem although the amounts present decrease to zero in a zone just above the hypocotylar region. This region contains isorhynchophylline, rhynchophylline and corynoxine but in a narrow zone just above this region there are traces of an alkaloid which appears to correspond to mitraphylline on many t.l.c. systems. The stipules contain the same oxindole alkaloids as in the leaves with speciophylline predominant.

This distribution of alkaloids can lead to an interesting speculation regarding their movement and possible role in the plant.

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