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Note

Pharmacology of the Alkaloids of *Malouetia arborea* (Vell.) Miers

ROBERT F. RAFFAUF, E. MACKO and O. RIBEIRO,* *Smith Kline and French Laboratories, Philadelphia 1, Pa.*

At least one species of the genus *Malouetia* (Apocynaceae) has been reported to possess extremely toxic properties although the botanical identity of the material still appears to be open to question.[1] With this exception, chemical and pharmacological knowledge of the genus is virtually non-existent.

In the course of screening a large number of plants for alkaloids we obtained a strongly positive test for a Brazilian Apocynaceae identified as *Malouetia arborea* (Vell.) Miers.† A total ethanolic extract of 4·25 kg of leaves and stems of the plant was processed to yield *ca.* 18 g of crude bases. Quaternary alkaloids were present only in traces and were not further investigated.‡ The mixture was assayed pharmacologically without further separation. Doses of 50–250 mg/kg (i.p.) produced a depression of motor activity in mice. Higher doses (250–2000 mg/kg) brought on respiratory difficulties and asphyxial convulsions preceding death. There were no significant changes in body temperature nor was there any significant effect on the pain threshold at any of the doses tested.

Cardiovascular effects were observed on cats anaesthetized with pentobarbital sodium. Intravenous administration of 10 mg/kg produced hypotension with associated respiratory embarrassment.

* Institute of Agricultural Chemistry, Ministry of Agriculture, Rio de Janeiro, Brazil.

† The sample was collected at Sumaré, Rio de Janeiro, D. F., Brazil, in August and identified by the late Dr. J. G. Kuhlmann; specimen No. 21877, Herbarium of the Botanical Garden, Rio de Janeiro.

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Slow intravenous infusion of 14 mg/kg produced prolonged depressor effects following an initial triphasic response. Inhibition of 1,1-dimethyl-4-phenylpiperazinium iodide (DMPP) and the pressor effects of peripheral vagal stimulation indicated a non-specific ganglionic blocking action.

The crude alkaloids failed to alter the response to maximal electroshock in mice after p.o. doses as high as 1000 mg/kg. The amplitude of contraction of the isolated rabbit intestine was decreased by addition of 0·01 mg/100 ml of bath solution. An increase in resting tone was noted at 0·01 mg/100 ml while higher doses (1·0–2·0 mg/100 ml) produced a decrease in resting tone. A concentration of 1·0 mg/100 ml inhibited furtrethonium-induced spasms.

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References

[1] Bisset, N. G. *Annales Bogorienses*, **3**, 105–236 (1958)