

ALKALOIDS OF *CROTON DRACONOIDES*

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Croton draconoides (Muell.) Arg.*, a tree of several areas of the South American jungle, produces a blood-red latex, named 'Sangre de Drago' [1], largely used in the popular medicine for wound healing [2]. Since a preliminary pharmacological investigation [3] on leaves and latex extracts seemed to confirm a real healing activity, related to the alkaloid content and since *C. draconoides* had not yet been submitted to chemical investigation, we have examined the alkaloid fractions of this plant.

The leaves and twigs contain two known aporphine alkaloids, not yet found in the genus *Croton*, thaliporphine (1) [4], [5] and, in smaller amount, glaucine (2) [4, 6]. In the latex one alkaloid only is present. After a difficult isolation, it has been identified as taspine (3) [7], an alkaloid of unusual structure, found also in *Croton lechleri* and regarded as an antiinflammatory agent [8]. The co-occurrence in the same plant of taspine and aporphine alkaloids supports the hypothesis [9] that taspine biogenesis proceeds from an aporphinic precursor.

EXPERIMENTAL

Plant specimens were collected in the region Tingo Maria—Pucallpa (Peru). A voucher sample of the plant with leaves, flowers and fruits is deposited at the Istituto di Chimica Organica dell'Università di Roma under the number ICO-201.

Thaliporphine (1) and glaucine (2). Dry leaves (or dry powdered twigs) were extracted with EtOH and the basic fraction was isolated. Si gel TLC, revealed with Dragendorff reagent, indicated the presence in the mixture of 2 alkaloids (R_f 0.5 and 0.6, CHCl_3 -MeOH, 9:1) which were separated by CC on Si gel with CHCl_3 -MeOH (19:1). The alkaloid (1) with lower R_f , (mp 190–191°), $[\alpha]_D^{25} + 34^\circ$ ($c = 0.3$ in MeOH), was identified

as thaliporphine (or thalicmidine) by elemental analysis and UV, IR, NMR and MS spectra. The other alkaloid, present in small amount, was identified as glaucine $[\alpha]_D^{25} + 113^\circ$ ($c = 3$ in EtOH), by co-chromatography with an authentic sample (from Koch-Light) and UV, IR, NMR and MS spectra. Compound (1) was converted to (2) by CH_2N_2 methylation.

'Sangre de Drago' alkaloid: taspine (3). The complexity of the latex composition and its tendency to give emulsions and foams prevented us from following the usual extraction of the basic fraction. The best method found for the isolation of (3) is as follows: 10 ml latex, adsorbed on 10 g of Si gel, were carefully mixed with 10 ml CHCl_3 -MeOH- Et_2NH (9:9:2) and 18 g of Si gel. The mixture, dried *in vacuo* at 40–50°, was eluted in a column with CHCl_3 - Et_2NH (9:1). The alkaloid (3) (65 mg), pure at TLC, crystallizes from CHCl_3 - Me_2CO , mp 350° dec. It was identified as taspine by elemental analysis and UV, IR, NMR and MS spectra.

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* Botanists of S. Marco's University of Lima classify the same plant as *Croton palanostigma* (Klotzschs).