

## SHORT COMMUNICATION

# CONSTITUENTS OF THE STEM AND ROOT BARKS OF *FAGARA CAPENSIS* (THUNB.)

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**Plant.** *Fagara capensis* (Thunb.) [Synonyms; *Xanthoxylon capense* (Harv.) and *X. capense* (Sim)]<sup>1</sup>-Rutaceae, collected in the forests of the Eastern Cape Province, South Africa.

**Uses.** A decoction of the root used for snakebites;<sup>1</sup> decoction of the root bark for tuberculosis, paralysis and relief of toothache.<sup>2</sup>

**Previous work.** Resin, tannins and a yellow substance were reported in the roots and twigs of *X. capense* (Harv.).<sup>3</sup> The fruits of *X. capense* (Sim) were reported to contain a high percentage of oil.<sup>4</sup>

**Compounds isolated.** Extraction of the dried stem bark (3.0 kg) with light petroleum (40–60°) yielded a basic fraction (109.4 g) which contained skimmianine  $C_{14}H_{13}O_4N$ , m.p. 176–177° (from  $CHCl_3$ /light petroleum) (0.5 g) (m.p., TLC, i.r.); u.v.  $\lambda_{max}^{EtOH}$  250, 320, 332 nm ( $\log \epsilon$  4.90, 3.91, 3.91). Traces of chelerythrine were also present.

The root bark (2.8 kg) similarly gave a basic fraction (134 g) which yielded skimmianine (m.p., TLC, i.r., u.v.) and chelerythrine isolated as the chloride  $C_{21}H_{18}O_4N^+Cl^-$ , m.p. 193° (EtOH/Et<sub>2</sub>O) (5.0 g) (m.p., TLC, i.r.); u.v.  $\lambda_{max}^{EtOH}$  228, 272, 283 (sh), 320, 343 (sh) nm ( $\log \epsilon$  4.27, 4.55, 4.47, 4.36, 4.17); chelerythrine nitrate m.p. 240° (EtOH).

Further extraction of the root bark (2.8 kg) with  $CHCl_3$  yielded a second basic fraction (10.3 g) from which nitidine was isolated as the yellow chloride,  $C_{21}H_{18}O_4N^+Cl^-$  (2 N HCl/EtOH) (0.1 g) (m.p., TLC, i.r.); u.v.  $\lambda_{max}^{MeOH}$  231, 272, 281 (sh), 303 (sh), 329 nm ( $\log \epsilon$  4.42, 4.49, 4.48, 4.40, 4.38). On heating between 210 and 230° this compound sublimed producing colourless needles, m.p. 263–264°, whose i.r. and u.v. spectra were not identical with the starting material.

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<sup>1</sup> I. C. VERDOORN, *J. Bot., Lond.* **57**, 205 (1919).

<sup>2</sup> F. VON BREITENBACH, *The Indigenous Trees of Southern Africa*, Vol. III, p. 408, Government Printer, Pretoria (1965).

<sup>3</sup> C. F. JURITZ, *S. African J. Sci.* **11**, 123 (1914).

<sup>4</sup> I. B. POLE-EVANS, *S. African J. Sci.* **17**, 13 (1920).