136°). Elution with CHCl₃-MeOH (50:3) gave a crystalline compound, m.p. 190-191-5° (MeOH), which was identified as siderin, 4,7-dimethoxy-5-methylcoumarin (reported [2,3] m.p. 194-195°) by UV, IR, NMR, MS and comparison with an authentic sample prepared by synthesis [4]. Siderin, a biogenetically novel coumarin [2], has previously been isolated only from the two *Sideritus* species (*Labiatae*), *S. romana* L. [2], and *S. canadensis* Ait [3].

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BRUGINE FROM BRUGUIERA CYLINDRICA

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Key Word Index—Bruguiera cylindrica; Rhizophoraceae; brugine; (+)-tropine 1,2-dithiolane-3-carboxylate.

Plant. Bruguiera cylindrica (L.) BL. (Rhizophoraceae). Source. Klang, Malaya. Uses. Pulpwood. Previous work. B. xangula (Lour.) poir [1, 2].

Present work. The chipped stem and bark (24 kg) was extracted with CHCl₃ at 50-60°. The extract was concentrated to give dark brown solid, which was chromatographed on a Si gel column firstly with CHCl₃ and then with MeOH-Me₂CO-C₆H₆ (2:1:1) as solvents. The eluted fraction was rechromatographed on a aluminium oxide (Al₂O₃) column with Me₂CO-C₆H₆ (1:1), yielding brugine, (+)-tropine 1,2-dithiolane-3-carboxylate (50 mg).

Brugine. $C_{12}H_{19}NO_2S_2$, $[\alpha]_D^{2.5} - 23$ (c, 3·5 in CHCl₃), m/e 273 (with isotopic ion peaks at M + 1 and M + 2), $140(C_8H_{14}ON)^+$, $124(C_8H_{14}N)^+$, 96 $(C_6H_{10}N)^+$, 94 $(C_6H_8N)^+$, 84 $(C_5H_9N)^+$, 82 $(C_5H_8N)^+$, 42 $(C_2H_4N)^+$, ν_{max} (CHCl₃) 1727 (-CO-O-). λ_{max} (EtOH) 278 nm (ϵ 360), 324·3 (sh),

 δ_{ppm} 4·93 (*t*, 1H (-CH₂)=C<u>H</u>-O-) 4·17 (*dd*, 1H, J 7·7 -S-(-CO)-C<u>H</u>-CH₂) 3·8-2·5 (*m*, 6H) 2·27 (*s*, 3H, -N-Me) 1·55-2·02 (*m*, 8H). These spectral data were in accord with those published [1, 2].

Hydrolysis of brugine overnight at room temperature in 0.05 N NaOH in 50% EtOH gave, after extraction with CHCl₃, tropine (mp 62° NMR, IR and MS, identical with those of an authentic sample).

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