H. curvistigma F. Maekawa (0·38%); *H. hexaloba var. perfecta* F. Maekawa (0·30%).

Group B: *Asarum caulenscens* Maxim*†; *Asarum hirsutisepalum* Hatsushima**; *A. yakusimense* Masam**; *Asiasarum heterotropides var. seoulense* F. Maekawa; *A. sieboldii* F. Maekawa; *Heterotropa albivenium* F. Maekawa; *H. asaroides* Morr. et Decne; *H. crassa* F. Maekawa; *H. kiusiana* F. Maekawa; *H. megacalyx* F. Maekawa; *H. muramatsui* F. Maekawa; *H. nipponica* F. Maekawa; *H. savatieri* F. Maekawa; *H. tamaensis* F. Maekawa.

Acknowledgements—The authors wish to thank Prof. Y. Saiki for providing us with the air-dried materials tested in our experiments.

** Collected in Yakushima in middle of November.

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TRITERPENES FROM LATEX OF *EUPHORBIA BALSAMIFERA*

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(*Received* 12 *August* 1975)

Key Word Index—*Euphorbia balsamifera*; Euphorbiaceae; tabaiba dulce; germanicol; germanicone; lupeol; lupenone; β-amyrin; cycloartenol; dihydroagnosterol; cycloartanone.

Plant. Euphorbia balsamifera Ait. Source: Collected on the coast of Guia de Isora, Tenerife, Canary Isles. *Previous work*: germanicol, cycloartenol and lanosterol [1–3].

Present work. The unsaponifiable of the latex (1l.) was chromatographed on silica gel, yielding the following compounds which were characterized by their physical and spectroscopic data: *germanicol* (3·1 g), *germanicone* (89 mg), *lupeol* (4·5 g), *lupenone* (38 mg), *β-amyrin* (140 mg) and *cycloartenol* (300 mg) which were identified by comparison with authentic samples; *dihydroagnosterol* (80 mg), obtained as alcohol, was characterized as the acetate, mp 165–171° (MeOH), $[\alpha]_D$ +62 ($CHCl_3$; *c* 0·76); its UV spectrum [λ_{max}(EtOH) nm (log ε): 236 (3·89), 243 (3·95), 253 (3·79)] was in agreement with an homoannular dienic system which was corroborated by the NMR ($CDCl_3$) signal at δ 5·74 (2H, *m*, $W_{1/2}$ 15 Hz); *cycloartanone* (50 mg), isolated for the first time in nature, mp 95–99° (MeOH), IR ν_{max}($CHCl_3$) cm^{-1}: 3020, 1695; MS (probe) 70 eV *m/e* (rel. int.): 426 M^+, 411 (M^+-15; 100), 355, 342, 313, 288, 257, 245, 231, 175, 163, 161, 159, displaying characteristic fragments of tetracyclic triterpenes with a cyclopropane ring between C-9 and C-10 [4,5]; NMR (60 MHz, $CDCl_3$): δ 0·60 (2H, *dd*); its IR and NMR spectra were superimposable with those of a synthetic sample.

Part 23 in the series "Latex of Canary Euphorbiaes". For part 22 see Gonzalez, A. G., Breton J. L., Martin, J. D. and Fraga, B. M.; (1972) *Anal. Quim.* **68**, 203.

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TRITERPENOIDS OF THE STEMS OF SIX *CASTANOPSIS* SPECIES OF HONG KONG

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(*Received* 8 *July* 1975)

Key Word Index—*Castanopsis concinna, C. cuspidata, C. eyrei, C. fabri, C. fissa* and *C. hickelii*; Fagaceae; triterpenoids; rearranged oleananes, lupanes, hopanes and ursanes; steroids.

Plants. Castanopsis concinna A. DC., *C. cuspidata* (Thunb.) Schky., *C. eyrei* (Champ.) Tutch., *C. fabri* Hance, *C. fissa* Rehd. and Wils., and *C. hickelii* A. Camus.