

(with isotopic ion peaks at $M + 1$ and $M + 2$ in accord with 5. IR, UV and NMR spectra of 3-5 were identical with those of authentic samples.

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HYDROCARBONS, STEROLS AND FATTY ACIDS OF *LOBARIA PULMONARIA*

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Key Word Index—*Lobaria pulmonaria*; lichen; aliphatic hydrocarbons; ergosterol; fecosterol; fatty acids.

Plant. *Lobaria pulmonaria* (L.) Hoffm. (Stictaceae). **Source.** The lichen, growing on chestnut tree bark, was collected in September near Galliciano (Lucca, Italy). **Previous work.** Arabitol [1], gyrophoric acid [2], stictic acid [3], thelephoric acid [4], proteins [5], transaminases [6].

Present work. The dried material (1.3 kg) was extracted with light petrol for 40 hr and the residue obtained on evaporation (17.8 g) was worked-up in the usual way [7].

Constituents. Percentages of compounds with respect to the dried plant: aliphatic hydrocarbons, 0.05; ergosterol (mp 158–160°, $[\alpha]_D - 132^\circ$; acetate, mp 172–175°, $[\alpha]_D - 93.5^\circ$), 0.08; fecosterol [8] (mp 134–136°, $[\alpha]_D + 45.5^\circ$; acetate, mp 137–139°, $[\alpha]_D + 35.2^\circ$, $M^+ 440$), 0.09; fatty acids, 0.96. Relative amounts of aliphatic hydrocarbons (% GLC): C_{25} , 7.5; C_{26} , 1.3; C_{27} , 21.5; C_{28} , 9.7; C_{29} , 32.6; C_{30} , 7.9; C_{31} , 19.5. Relative amounts of fatty acids (% GLC of methyl esters): lauric, 0.2; tridecanoic, 0.6; myristic, 1.1; tetradecenoic, 0.5; pentade-

canoic, 0.6; pentadecenoic, 1.5; palmitic, 51.3; palmitoleic, 0.3; heptadecanoic, 0.5; heptadecenoic, 0.2; stearic, 3.2; oleic, 20.4; linoleic, 13.5; linolenic + arachidic, 1.5; gadoleic, 2.5; behenic, 2.0.

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A NEW COUMARIN, FRAXIDIN 8-O- β -D-GLUCOSIDE AND 10-HYDROXYLIGSTROSIDE FROM BARK OF *FRAXINUS EXELSII*

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Key Word Index—*Fraxinus exelsior*; Oleaceae; coumarins; fraxidin 8-O- β -D-glucoside; mandshurin; iridoid glucoside; 10-hydroxyligstroside.

Bark of the common ash, *Fraxinus exelsior* L., is known as a rich source of trioxxygenated coumarins [1];

initially, the glucoside fraxin (2) [2,3] and the aglucones fraxidin (3), isofraxidin (6) and fraxinol (9) were identified,