with the data given for the compound isolated from *Seseli hippomarathrum*[1] proved the identity of (II).

Chromatography of the aerial parts of the plant showed the presence of lesser amounts of falcarinone (I), and trace amounts of the terpene aldehyde (III),[1,4] (IR–CHO 2720, 1710 cm^{-1}; $—CO_2R$ 1730 cm^{-1}; C=C 850 cm^{-1}. MS M^+ 248, further breakdowns identical with those reported in the literature.

TABLE 1. COMPARATIVE AMOUNTS OF COMPONENTS IN *E. bourgatti* AND *S. hippomarathrum*

Plant	mg compound/kg roots I	II	III	IV	V	VI
E. bourgatti	11	750	—	—	—	—
S. hippomarathrum	450	450	11	7	2	45

A comparison of the amounts of the respective compounds isolated from the two plants shows that *E. bourgatti* is an excellent source of (II), whereas *S. hippomarathrum* contains a far greater amount of falcarinone, together with various lesser polyynes (IV and V) plus two terpene aldehydes (III and VI) (see Table 1). Lack of data for the aerial parts of *S. hippomarathrum* prevents any comparison.

EXPERIMENTAL

E. bourgatti plants (obtained from the Botanical Gardens, Copenhagen, where the voucher specimen is kept), which had ceased flowering, were washed, the roots and aerial parts separated, minced, and extracted for 24 hr with light petroleum (b.p. 40–60°), followed by 24 hr extraction with Et_2O. The solvent was removed from the combined extracts by evaporating and the dry crude extracts weighed. Roots (890 g) yielded 1050 mg crude extracts. Aerial parts (285 g) yielded 22 mg crude extract. Each extract was chromatographed on silica gel (Merck) columns made up in light petroleum and eluted with increasing proportions of Et_2O in light petroleum. Preparative TLC was performed on 2·5 mm thick layers of silica gel G (Merck) with 5% (I), 40% (II), and 50% (III) ether in light petroleum as eluting solvent.

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CONSTITUENTS OF *SMYRNIUM ROTUNDIFOLIUM*

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Key Word Index—*Smyrnium rotundifolium*; Umbellifereae; hydrocarbons; sitosterol; triterpene; alkaloids.

Plant. Smyrnium rotundifolium, Mill. Identified by Professor Dr. A. Baytop, deposited in the Herbarium of Faculty of Pharmacy, University of Istanbul, Turkey, Voucher No.

ISTE 19055. *Source.* Western part of Turkey (İzmir).[1] *Previous work.* On the leaves[2] and on the roots[3] of *S. olusatrum.*

Present work. The roots of the plant was extracted with 96% EtOH, chromatographed on a silica gel column. n-*Pentacosane.* $C_{25}H_{52}$, m.p. 53°, [α] ±0° (Found: C, 85·40; H, 14·53%). TLC and IR spectra comparison. *Sitosterol.* $C_{29}H_{50}O$, m.p. 137°, [α] −35° (Found: C, 83·82; H, 12·80%) m.m.p., TLC and IR spectra comparison. *Ginnon.* $C_{29}H_{58}O$, m.p. 75°, [α] ±0° (Found: C, 82·09; H, 13·47%) m.m.p., TLC and IR spectra comparison.

Unknown triterpenic compound. $C_{34}H_{56}O_7$, m.p. 304–307° (Found: C, 71·2; H, 9·30%). Mass peak *m/e* 576. IR (3400, 2900, 1450, 1370, 1150, 1060, 1020, 890, 840, 790, 740 and 690 cm^{-1}); NMR, three methyl groups were at 0·8, 0·9 and 1·1 ppm (each, 3H doublet), other peaks at 3·1, 3·3, 3·8, 4·8 and 5·3 ppm.

After acetylation a triacetyl derivative was obtained, $C_{40}H_{62}O_{10}$ (Found: C, 69·2; H, 8·52%) m.p. 159–160°. IR spectrum of the acetyl derivative showed no hydroxyl group. Epoxy groups were found to be present, upon hydrolysis of the unknown compound and its acetyl derivative new alcohol groups were formed. The structure of this compound is still under investigation. Mannose glucose and sucrose (PC and IR) were also isolated.

Alkaloidal fraction. 1 kg dried roots yielded 800 mg crude alkaloidal mixture which showed various alkaloidal spots on TLC. The crude mixture was chromatographed on a neutral Al_2O_3 (activity III) column. $CHCl_3$ eluates yielded 27·9 mg of a white crystalline compound, m.p. 120–122°, IR spectrum 3400, 1740, 1600, 1450, 1370, 1050, 740 and 690 cm^{-1}. UV max at 236 nm log ε 4·00 (sh 280 nm). HCl derivative m.p. 127–129°, $AuCl_3$ derivative m.p. 187–190° (Found: C, 82·00; H, 12·60; N, 3·41%). Due to the minor amount of the compound no further work was done.

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VERBENACEAE

IRIDOIDS AND ECDYSONES FROM *VITEX* SPECIES*

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Key Word Index—*Vitex pseudo-negundo; Vitex rehmanni; Vitex sereti;* Verbenaceae; iridoids; ecdysones; agnuside; aucubin; ecdysterone.

Plant. Vitex pseudo-negundo (Hausskn.) Hand.-Mazz. *Source.* Afghanistan. *Previous work.* On other *Vitex* species.[1–4]

* Part II in the series "Iridoids and Ecdysones from Verbenaceae". For Part I see Ref. 2.

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