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ESSENTIAL OIL OF *SAURURUS CERNUUS**

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Key Word Index—*Saururus cernuus*; Saururaceae; Essential oil; GLC; GC–MS; Terpenoids.

Plant. Saururus cernuus L. *Source.* S. B. Penick Co. (No. LLC 765). Voucher specimen is kept in the Herbarium of the School of Pharmacy, University of the Pacific (SCA-0725). *Uses.* Variety of folklore medicinal uses [1–4]. *Previous work.* On the absence of Alkaloids [5], on the Protein and Carbohydrate content of the plant grown in sites of different fertilities [6]. *Plant part examined.* Aerial parts.

Present work. The steam-distilled essential oil from the aerial parts showed the presence of 26 components on GLC, of which 16 were identified by means of spectral data, (IR, NMR and GC–MS) retention times and peak enhancement. The analytical data shows that the oil is rich in sesquiterpenoid compounds (57%).

EXPERIMENTAL

Isolation of essential oil. Dried powdered aerial parts (10 mesh powder, 300 g) upon steam-distillation for 48 hr yielded 1·0 ml (0·3% v/w) of yellow oil.

Gas chromatography. GLC separations were carried out on 1·8 m × 6 mm i.d. stainless steel column with 3% OV-17 on chromosorb-HP and a thermal conductivity detector.

GC–MS. Was on a 1·8 m × 6 mm i.d. glass column filled with 3% OV-17 on Gaschrom-Q and an FID; The GC–MS interphase was at 245° and the separator at 235°; MS were recorded at 80 ev.

Collection of GC peaks. Individual components from the GC were trapped at room temp. in 5 in. long glass capillaries cut out from disposable pipettes. The micro samples (1–3 μl) thus collected were used to record IR and NMR spectra, and the identifications were confirmed by comparison.

* Part IV in the series *Saururaceae*. For Part III see *Phytochemistry* **10**, 3331 (1971).

Table 1. GLC retention values, per cent composition and method of identification for the constituents in the essential oil of *S. cernuus*.

Peak no.	Compound	Per cent v/v	M^+ *m/e*	Relative retention time (R_x)* 130°	190°	Method of identification
1	Unknown	3·42	—	—	20·00	—
2	Unknown	11·62	—	—	19·10	—
3	1-Docosanol†		326	—		MS [7]
4	Palmitic acid	3·52	256	—	10·41	MS [8]. IR [9]
5	Methyl Palmitate	3·81	270	—	7·16	MS [10]. IR [11]
6	Unknown	3·71	246	—	6·58	—
7	Unknown	3·12	250	—	5·75	—
8	Unknown ($C_{16}H_{22}O_2$)	4·10	246	—	4·83	—
9	Globulol	2·44	222	—	3·75	MS [12]
10	Unknown ($C_{15}H_{24}O$)	5·36	220	—	2·91	—
11	Unknown ($C_{15}H_{24}O$)	12·01	220	—	2·66	—
12	Unknown ($C_{15}H_{24}O$)	2·05	—	—	2·25	MS. NMR. IR. GC
12a	Methyleugenol					
13	β-Bisabolene	12·30	204	—	1·50	MS [13]
14	α-Curcumene	7·03	202	—	1·33	MS [14]
15	Humulene	1·85	204	—	1·26	MS [15]. IR
16	β-Farnesene	1·17	204	—	1·16	MS [12]
17	β-Caryophyllene	3·51	204	1·00	1·00	MS [12]. IR [16]. GC
18	Unknown ($C_{14}H_{20}O$)	5·17	204	0·78	—	—
19	Unknown ($C_{15}H_{24}$)	0·87	204	0·71	—	—
20	Bornyl acetate	2·92	196	0·65	—	MS [17]. IR [18]. GC
21	Borneol	1·75	154	0·36	—	MS [19]. IR [20]. GC
22	Linalool	2·14	155‡	0·19	—	MS [19]. GC
23	*p*-Cymene	0·87	—	0·15	—	GC
24	*d*-Limonene	3·71	—	0·12	—	IR. GC
25	β-Pinene	0·97	—	0·09	—	GC
26	α-Pinene	0·78	—	0·07	—	GC

* Retention times relative to Caryophyllene. $R_x = T_x/T_c$. T_c = 6·6 min (130°) and 1·2 min (190°).
† To be confirmed.
‡ This is the parent peak which represents M + 1 peak.

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