The *n*-BuOH concentrate was chromatographed on cellulose (preparative tlc) with *n*-BuOH-HOAc-H_2O (4:1:5, upper phase). The above four flavonoids were isolated. Schaftoside and isoschaftoside were purified by preparative tlc on cellulose with 15% HOAc. All flavonoids were identified by comparison of uv and ms of their permethylated ethers with published values (5-7). They have been isolated from any sources (8).

The number of Rutaceae species that have been investigated form *C*-glycosylflavones is too few to determine whether the compounds identified from *M. trifolia* may have taxonomic significance. In the Cuspariae, most of the *C*-glycosylflavones identified are apigenin derivatives (9, 10).

Details of the isolation and identifications are available from the senior author.

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DITERPENES FROM *VIGUIERA PORTERI*

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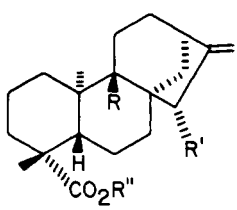
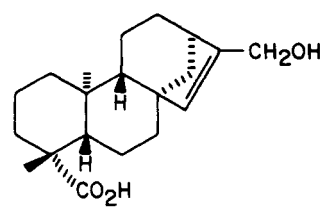
Approximately 25 species of the large genus *Viguiera* (Compositae, tribe Heliantheae, subtribe Helianthinae) have been studied chemically (1-19). Characteristic constituents are heliangolides incorporating a furanone ring and diterpene acids of the *ent*-kaurane and *ent*-trachelobane series, although not all species elaborate both types of compounds. The sole representative of the genus in the southeastern U.S. is *Viguiera porteri* (A. Gray) Blake, which has a limited distribution in the Piedmont plateau of Georgia and southeastern Alabama. In keeping with the chemistry of other representatives of *Viguiera* and the closely related genus *Helianthus*, our examination of *V. porteri* has furnished the diterpene acids **1a-1d** and **2**. Acids **1c** and **1d** were isolated in the form of the methyl esters **1e** and **1f**. Other compounds present were β-sitosterol; stigmasterol; and linoleic, linolenic, and stearic acids. Sesquiterpene lactones were not detected.





1a R, R′, R″=H
1b R, R″=H, R′=OH
1c R=OH, R′=OAng, R″=H
1d R, R′=H, R′=OEpoxyang
1e R=OH, R′=OAng, R″=Me
1f R=H, R′=OEpoxyang, R″=Me

2

EXPERIMENTAL

PLANT MATERIAL.—*V. porteri* was collected by Dr. R.K. Godfrey on September 13, 1980, in the vicinity of the Dialtown Community on the Gum Creek Road near Oxford, Newton Co., Georgia (RKG #78141 on deposit in the Florida State University herbarium).

EXTRACTION AND ISOLATION.—Dried aerial parts (0.75 kg) were extracted with $CHCl_3$. The usual work up (20) gave 9 g of gum, which was adsorbed on 15 g of Si gel (EM Reagent, 70-230 mesh) and chromatographed over 250 g of the same adsorbent set in C_6H_6, 250-ml fractions being collected as follows: fractions 1-12 (C_6H_6), fractions 13-24 (C_6H_6-$CHCl_3$, 1:1), fractions 25-32 ($CHCl_3$), fractions 33-36 ($CHCl_3$-MeOH, 49:1), fractions 37-40 ($CHCl_3$-MeOH, 19:1), and fractions 41-48 ($CHCl_3$-MeOH, 9:1).

Fractions 9-16 (0.72 g) were mainly **1a**. Purification of fractions 17-18 (0.12 g) by tlc (C_6H_6-EtOAc, 19:1) afforded from the upper band 55 mg of **1a**, identical with authentic material (21), and 47 mg of a 1:1 mixture of β-sitosterol and stigmasterol from the lower band. Fraction 28 (1.6 g) showed several spots on tlc. Esterification of ca. 0.2 g of this mixture with CH_2N_2 followed by tlc (C_6H_6-EtOAC, 19:1, three developments) gave a mixture (60 mg) of methyl linoleate, linolenate, and stearate (by ^1H nmr and ms); 26 mg of **1f**, identified by comparison with authentic material (21); and 32 mg of **1e**, identified by comparison with authentic material (21). Fraction 31, upon standing in $CHCl_3$, furnished 14 mg of a 1:1 mixture of **1b** (21) and **2** (21).

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