inseparable from and identical with α-spinasteryl acetate, R_f 0·58. Examination of the benzoate derivative, however, revealed that the material is actually composed of three sterols having R_f 0·34 (I), 0·53 (II), 0·65 (III).

The MS[4,5] of the isolated sterol mixture indicated that sterol I is a $C_{29}H_{48}O$ sterol (M^+, *m/e* 412), containing two double bonds, which exhibited the fragmentation pattern expectable for α-spinasterol. The principal features of this pattern include the loss of a monounsaturated $C_{10}H_{19}$ side chain alone and together with 42 m.u., and the expulsion of butadiene from ring *A* in dehydroxylated ion species. Sterol II is stigmastenol, $C_{29}H_{50}O$ (M^+, *m/e* 414) containing one double bond located in the steroid nucleus. This was evidenced by the total loss of the saturated side chain $C_{10}H_{21}$. Sterol III is stigmastanol, $C_{29}H_{52}O$ (M^+, *m/e* 416) which is fully saturated. The observed fragmentations are those expectable for saturated sterols and include products resulting from break down of ring *A* in the dehydroxylated ion species by a retro-Diels–Alder type of reaction.

The unsaponifiable fraction of the seed fat afforded a sterol mixture which was found to be identical with that isolated from the leaves.

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5,4′-DIHYDROXY-3,7-DIMETHOXYFLAVONE FROM *AMBROSIA ERIOCENTRA*

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Key Word Index—*Ambrosia eriocentra*; Compositae; flavonol; kaempferol 3,7-dimethyl ether.

Plant. Ambrosia eriocentra (Gray) Payne. *Source.* Collected by R. J. Barr on 3 May 1965, and on 3 May 1967, near Wickenburg, Maricopa County, Arizona. (Barr No. 65-191 and 67-143 on deposit in herbarium of Florida State University.) *Previous work.* No crystalline sesquiterpene lactones.[1]

Isolation and identification. The above-ground parts of Barr No. 65-143, wt 9·8 kg, were extracted with $CHCl_3$ and worked up in the usual fashion.[2] The crude gum, wt 31·9 g, was only sparingly soluble in benzene or $CHCl_3$. It was dissolved in 1:1 C_6H_6–$CHCl_3$ with the aid of some EtOH and chromatographed over 500 g of silicic acid in the usual manner. 24 g of gum was recovered from the first 4 l. of eluate; subsequent fractions consisted of gummy mixtures. The gum from the first 4 l. of eluate was redissolved in

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C_6H_6–$CHCl_3$ (1:1) with the aid of a few ml of EtOH. Addition of 100 g of silica gel followed by evaporation of solvent gave a free-flowing powder which was placed on a column of 500 g of silicic acid and rechromatographed in the usual manner, 1 l. fractions being collected. The only solid material was found in fractions 91–93 ($CHCl_3$–MeOH 99:1). Recrystallization afforded 0·25 g of 5,4′-dihydroxy-3,7-dimethoxyflavone, m.p. 246–248° (lit 253–254°,[3] 246–247° [4]), NMR signals (DMSO-d_6) at 7·91 *d* and 6·90 *d* (*J* 9, A_2B_2 system of H-2′, H-3′, H-5′ and H-6′), 6·62 *d* and 6·27 *d* (*J* 2, *AB* system of H-6 and H-8), 3·82 and 3·78 (two methoxyls), UV λ_{max} 352·5 and 267 nm, with added NaOAc 355 and 268 nm, with added $AlCl_3$ 352·5, 305 and 277 nm, with added NaOEt 395 and 270 nm, with added NaOAc–H_3BO_3 350 and 267 nm. Direct comparison with an authentic sample of 5,4′-dihydroxy-3,7-dimethoxyflavone supplied by Prof. P. R. Jefferies established identity. Extraction of Barr No. 65-191 gave similar results.

The present report corroborates the findings of Higo *et al.*[1] that *A. eriocentra* yields no easily crystallizable homogeneous sesquiterpene lactone components. 5,4′-Dihydroxy-3,7-dimethoxyflavone has previously been isolated from an unnamed new *Beyeria* species,[3] from *Alpinia Kumatake*,[4] *A. japonica*,[5] *Eucryphia lucida*,[6] *Cistus ladanifera*,[7] *Cheilanthes farinosa*[8] and *Larrea cuneifolia*,[9] but not, to the best of our knowledge, from a Composite.

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6-PHENYLETHYL-5,6-DIHYDRO-2-PYRONES FROM *ANIBA GIGANTIFOLIA**

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Key Word Index—*Aniba gigantifolia*; Lauraceae; anibine, substituted (6*S*)-phenylethyl-5,6-dihydro-2-pyrones.

Several *Aniba* species contain 4-methoxy-6-styryl-2-pyrones (I).[2] Metabolites of this type are accompanied in two *Piper* species by dihydro (II) and tetrahydro (III) deriva-

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