Biemann separator from a 15·24 m × 0·25 mm SCOT silanized column coated with 20% Carbowax 20M. Carrier flow was 1·0 ml/min N_2, column temperature 125°. The mass spectrometer was a double focusing PE-270 unit. Approximate material balances for all fractions were obtained by weighing or peak triangulation as appropriate. GLC retention times are presented as Kovåts[6] indices (I_k). Fragment ion values were compared with those of Cornu and Massot[7], Bondarovich *et al.*,[8] and von Sydow.[9]

6-Octen-4-ol. The Kovåts indices were consistent with this assignment. The suggested analysis by MS was as follows: McLafferty rearrangement of the parent results in the elimination of ethylene; subsequent abstraction of a proton gives *m/e* 99. Alpha fission of the carbon adjacent to oxygen of *m/e* 128 yields *m/e* 43 and 55. Location of the vinyl group at C_6 reinforces *m/e* 55. *M/e* 45 arises from *m/e* 100 (*m/e* 99).

Acknowledgement—The authors thank Douglas Crawford of the Mississippi State Chemical Laboratory for performing the mass spectral analyses.

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NYCTAGINACEAE

CONSTITUENTS OF ROOTS OF *BOERHAAVIA DIFFUSA*

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Abstract—Hentriacontane, β-sitosterol and ursolic acid have been isolated from roots of *Boerhaavia diffusa* (Linn).

Plant. Boerhaavia diffusa (Linn).

Occurrence. Distributed in tropical and sub-tropical regions. Six species are found in India.

Uses. The root of the plant is considered laxative and diuretic. It has also expectorant properties and is used in asthma.[1] In large doses, it acts as an emetic. Powder of the plant is used in abdominal tumors[2] and cancer.[3]

Previous work. Pharmacological studies of an alkaloid[4] and an acid[5] of unknown structure reported.

Roots. Extracted with light petroleum (60–80°) and chromatographed on Brockmann Alumina.

Hentriacontane. $C_{31}H_{64}$ (found: C, 84·50; H, 14·62; required: C, 84·97; H, 15·03, m.p., mixed m.p., IR and NMR) earlier petroleum fractions and crystallizations (hexane).

Ketone. (m.p. 86°, IR 1725). Hindered, no DNP or oxime derivative. Oxidation with conc. HNO_3 gives an acid (IR). Further work is in progress. From later petroleum fractions and crystallization ($CHCl_3$–MeOH).

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[3] NATIONAL CANCER INSTITUTE, central files.

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β-Sitosterol. $C_{29}H_{50}O$ (found: C, 83·98; H, 12·15; required: C, 84·05; H, 12·07, IR, NMR, *m/e* 414 (M^+). $[\alpha]_D$, m.p., mixed m.p., of sterol and its acetate). From benzene–$CHCl_3$ fractions and crystallizations with acetone. Alcoholic extract was extracted with Et_2O. Extract on repeated crystallizations with EtOH gave ursolic acid. $C_{30}H_{48}O_3$ (found: C, 78·80; H, 10·58; required: C, 78·94, H, 10·52, m.p., mixed m.p., $[\alpha]_D$, *m/e* 456 (M^+); co-TLC, m.p., methyl ester and formate).

Glucose, fructose and sucrose have been identified in the aq. solution by paper chromatography.

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PHYTOLACCACEAE

3-ACETYLOLEANOLIC ACID FROM *PHYTOLACCA AMERICANA* SEEDS*

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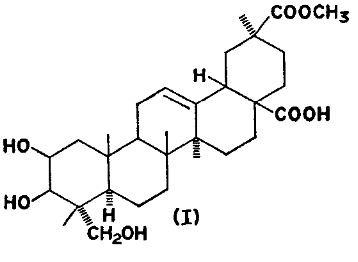
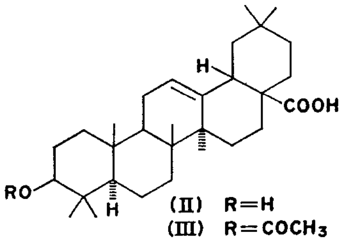
Abstract—3-Acetyloleanolic acid has been obtained from the seeds of *Phytolacca americana* L. It has not been detected in other parts of the plant. Oleanolic acid has been detected in the roots.

INTRODUCTION

THE ROOTS of *Phytolacca americana*, abundant in the eastern United States, owe their toxicity to phytolaccatoxin, a disaccharide (xylose, glucose) of phytolaccagenin (I).[1] Since phytolaccagenin probably arises biogenetically from oleanolic acid (II), we have searched for related compounds in the plant which might reflect aspects of this conversion.



(I)



(II) R=H
(III) R=COCH3

RESULTS

Light petroleum extraction of the seeds of *P. americana* gave oily material from which 3-acetyloleanolic acid (III) was obtained in 0·17 per cent yield. The seeds were further extracted with methanol. No other triterpenoids were detected in either extract.

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