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FLAVONOL-3-GLYCOSIDES IN *PLUMMERA AMBIGENS*

H. WAGNER, M. A. IYENGAR and L. HÖRHAMMER
Institut für Pharmazeutische Arzneimittellehre der Universität München, München, Karlstr. 29, Germany
and
W. HERZ
Department of Chemistry, Florida State University, Tallahassee, FL 32306, U.S.A.

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Key Word Index—*Plummera ambigens*, Compositae; flavonoids; patuletin-3-*O*-rutinoside; patuletin-3-*O*-galactoside; quercetin-3-*O*-glucoside.

Plant. Plummera ambigens Blake. *Source.* Collected by Dr. R. J. Barr (Barr No. 61–212), 9 August 1961, east of the Pineleno Mountains, Graham County, Arizona, at a height of 5500 ft. *Previous work.* None on flavonoids.

Compounds isolated. Patuletin-3-*O*-rutinoside, patuletin-3-*O*-galactoside and quercetin-3-*O*-glucoside were isolated from the methanolic extracts of the aerial parts of the plant by the method described previously[1] and identified by hydrolysis, direct comparison with authentic material by cochromatography (PC and TLC-3 solvents), UV and IR (of those which crystallized) analysis. It may just be mentioned here that our work on the sister species *P. floribunda*[2] did not disclose any patuletin derivatives.

Acknowledgements—We are grateful to Professor T. Mabry for supplying an authentic sample of patuletin-3-*O*-rutinoside. This investigation was supported in part by the U.S. Public Health Service (RG-GM-05814).

[1] H. WAGNER, M. A. IYENGAR, L. HÖRHAMMER and W. HERZ, *Phytochem.* **10**, 2824 (1971).
[2] H. WAGNER, M. A. IYENGAR, E. MICHAHELLES and W. HERZ, *Phytochem.* **10**, 2547 (1971).

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FAGACEAE

SOME CONSTITUENTS OF THE LEAVES OF *CASTANEA SATIVA*

A. MARSILI and I. MORELLI
Istituti di Chimica Farmaceutica e di Chimica Organica dell'Università di Pisa,
56100 Pisa, Italy

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Key Word Index—*Castanea sativa*; Fagaceae; ursolic acid; betulin; fatty acids.

During research on the constituents of the mosses of the Italian flora,[1–4] we noted that some samples, collected in chestnut woods, contained ursolic acid, and in one case also lupeol.[2]

[1] A. MARSILI and I. MORELLI, *Phytochem.* **7**, 1705 (1968).
[2] A. MARSILI and I. MORELLI, *Phytochem.* **9**, 651 (1970).
[3] A. MARSILI, I. MORELLI and A. M. IORI, *Phytochem.* **10**, 432 (1971).
[4] A. MARSILI, I. MORELLI, C. BERNARDINI and M. PACCHIANI, *Phytochem.* **11**, 2003 (1972).

Since it has been shown that many lipid constituents of forest soil derive from decomposed tree leaves,[5] we put forward the suggestion that the above-mentioned triterpenes found in some mosses could have been derived from chestnut leaves.[2] This hypothesis was also supported by the fact that amyrin or lupane derivatives have never been found in ferns,[6] which instead are rich in hopane derivatives.

In the light petroleum extract of the dead leaves of *Castanea sativa*, Mill., collected in autumn, the following constituents have been found: *waxes*, λ_{CO} 5·8 μ, 0·1%; *ursolic acid* ((m.p. 283–286°), $[\alpha]_D$ +65°), 0·2%; *lupeol* ((m.p. 208–210°), $[\alpha]_D$ +25°, benzoate (m.p. 270–273°), $[\alpha]_D$ +55°), 0·4%; *betulin* ((m.p. 252–255°), $[\alpha]_D$ +22°, diacetate (m.p. 220–223°), $[\alpha]_D$ +23°), 0·1%; *aliphatic hydrocarbons*, 0·04%; % composition (GLC), C_{23} 0·5, C_{25} 0·5, C_{27} 13·0, C_{29} 66·0, C_{31} 19·0; *fatty acids*, 1·58%; % composition (determined by GLC on the corresponding Me esters), lauric 1·4, tridecanoic 1·8, myristic 3·5, pentadecanoic 1·0, pentadecenoic 0·5, palmitic 24·8, palmitoleic 0·9, eptadecanoic 0·6, stearic 5·0, oleic 13·7, linoleic 13·0, linolenic + arachidic 21·5, monocosanoic 2·5, behenic 4·5, tricosanoic 0·7, lignoceric 4·6.

These results strengthen our belief that both ursolic acid and lupeol are not constituents of the mosses studied, but were derived from the decomposed chestnut leaves.

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[5] R. RIFFALDI and G. GALOPPINI, *Agrochim.* **13**, 303 (1969).
[6] G. BERTI and F. BOTTARI, *Prog. Phytochem.* **1**, 645 (1969).

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JUGLANDACEAE

POLYPHENOLS OF *JUGLANS NIGRA*

S. R. GUPTA, B. RAVINDRANATH and T. R. SESHADRI
Department of Chemistry, University of Delhi, Delhi-7, India

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Key Word Index—*Juglans nigra*; Juglandaceae; juglone; dihydrojuglone-4-glucoside; myricitrin; sakurenin; neosakuranin.

Plant. Juglans nigra L. (bark, sapwood and heartwood). *Source.* North Central Forest Experimental Station, St. Paul, Minn., U.S.A. *Other species.* Juglone,[2] α-hydrojuglone-4-β-D-glucoside[3] and sakurnetin[4] were isolated from *Juglans regia.*

Present work. The concentrate of the acetone extract of the powdered stem-bark (600 g was defatted with light petroleum and then extracted with Et_2O (Fraction 1). The Et_2O-insoluble part was redissolved in minimum quantity of acetone and diluted with Et_2O.

[1] A. BRISSEMORET and R. COMBES, *Compt. Rend.* **141**, 838 (1905).
[2] A. BERNTHSEN and A. SEMPER, *Ber. Dtsch. Chem. Ges.* **20**, 934 (1887).
[3] C. DAGLISH, *Biochem. J.* **47**, 452 (1950).
[4] T. SASAKI, *Takugaku Zasshi* **85**, 547 (1965).