

## CONSTITUENTS OF *BORRICHIA FRUTESCENS*\*

G. DELGADO<sup>•</sup>, M.Y. RÍOS

*Instituto de Química de la Universidad Nacional Autónoma de México, Ciudad Universitaria, Circuito Exterior, Coyoacán 04510, México, D.F.*

L. COLÍN, P.E. GARCÍA, I. ALVAREZ

*Departamento de Química Orgánica, División de Estudios Superiores de la Facultad de Ciencias Químicas e Industriales, Universidad Autónoma del Estado de Morelos, Av. Universidad 1001, Cuernavaca, Morelos, México*

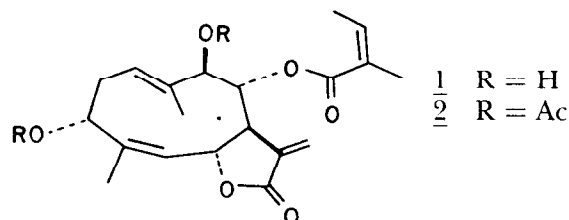
Received March 5, 1991 - Accepted September 24, 1991

*Plant.* *Borrichia frutescens* (L.) DC. (Compositae, Heliantheae), locally known as "verdolaga de mar",<sup>1</sup> aerial parts collected in Veracruz, México, June 1984, identified by Prof. J.L. Villaseñor, voucher specimen MEXU 395246 (National Herbarium, Instituto de Biología, UNAM).

*Uses in traditional medicine.* The tea is reported to possess unspecified medicinal properties.<sup>2</sup>

*Previously isolated constituents.* None in plants of genus *Borrichia*

*New-isolated constituents.* From 2.5 kg, stigmastanol (72 mg), stigmasterol (49 mg), oleanolic acid (207 mg) and zoapatanolide A (1, 92 mg),<sup>3,4</sup> characterized as the diacetyl derivative 2, were isolated.



*Physical and spectroscopical data of 2.* Mp 190-1°; IR (CHCl<sub>3</sub>): 3046, 1767, 1734, 1663, 1617, 1456 cm<sup>-1</sup>; <sup>1</sup>H-NMR (80 MHz, CDCl<sub>3</sub>): δ 2.05 (3H, s), 2.01 (3H, s), 2.86 (complex, H-7), 4.78 (1H, *bd*, *J* 11 Hz, H-9), 5.62 (1H, *bs*, H-13a), 6.08 (1H, *m*, H-3'), 6.30 (1H, *bs*, H-13b); <sup>13</sup>C-NMR (20 MHz, CDCl<sub>3</sub>): 124.56 (C-1), 29.57 (C-2), 80.43 (C-3), 120.22 (C-4), 125.46 (C-5), 70.19 (C-6), 48.42 (C-7), 75.25 (C-8), 69.96 (C-9), 134.07 (C-10), 137.01 (C-11), 169.90\* (C-12), 127.07 (C-13), 12.49 (C-14), 17.94 (C-15), 169.50\* (C-1'), 134.42 (C-2'), 139.95 (C-3'), 15.64 (C-4'), 20.17\* (C-5'), 20.18\*, 20.95\* (2CH<sub>3</sub>-CO), 168.59\*, 166.09 (2CH<sub>3</sub>CO); MS *m/z* (rel. int.): 446 (M<sup>+</sup>, 0.3), 388 (38), 386 (40), 346 (8), 345 (4), 344 (17), 244 (4), 83 (100), 55 (49), 43 (56).

*Acknowledgements.* We thank Mr R. Villena, M. Torres, R. Gaviño, R. Patiño, F. del Río and L. Velasco, Instituto de Química de la UNAM for running the spectra, J.L. Villaseñor for the botanical identification and Dr. L. Quijano for authentic sample of 1.

\* Contribution 1111 from the Instituto de Química de la UNAM

#### REFERENCES

1. Martínez M., "Nombres Vulgares y Científicos de Plantas Mexicanas", Fondo de Cultura Económica, México, 1980.
2. Semple J.C., *Ann. Miss. Bot. Gard.* 65, 681 (1978).
3. Quijano L., Calderón J.S., Gómez F., Ríos T., *Phytochemistry* 21, 2091 (1982).
4. Seaman F.C., Malcolm A., Fronczek F.R., Lee I.Y., Fischer N.H., *Phytochemistry* 23, 817 (1984).