

ASCLEPIADACEAE

TERPENOIDS OF THE AERIAL PARTS OF *ASCLEPIAS LATIFOLIA**

XORGE ALEJANDRO DOMÍNGUEZ and MEDARDO VANEGAS TORRES†

Departamento de Química, Instituto Tecnológico y de Estudios Superiores de Monterrey, Monterrey, N.L., Mexico

(Received 25 August 1971)

Plant. *Asclepias latifolia* Torr. *Source.* Southern part of Monterrey, N.L., México. *Previous work.* On several sister species.¹ *Present work.* Examination of aerial part and seeds.

Aerial parts. Extracted successively with light petroleum and ethanol. The petroleum extract was saponified and the unsaponifiable light was taken with isopropyl ether and chromatographed on a silicic acid column, yielding

β -Amyrin: $C_{30}H_{50}O$; m.p. 193–195°; $[\alpha]_D + 78^\circ$ ($CHCl_3$), confirmed by IR, NMR, UV, and mixed m.p. with authentic specimen. Acetate, m.p. 232–235°, $[\alpha]_D + 76^\circ$; Benzoate, $C_{37}H_{54}O_2$, m.p. 232–235°, $[\alpha]_D + 92^\circ$.

β -Sitosterol: $C_{29}H_{50}O$; m.p. 137–138°. $[\alpha] - 37^\circ$ ($CHCl_3$), confirmed by IR, NMR, UV, co-TLC with an authentic specimen. Acetate, m.p. 127°, $[\alpha] - 40^\circ$, confirmed by IR, and Co-TLC with authentic β -sitosteryl acetate.

The ethanolic extract gave no evidence by TLC of containing alkaloids, flavonoids or cardenolides. Its IR and NMR spectra failed to show any lactone or flavonoid.

The ethanolic extract was mixed with $CHCl_3$. The $CHCl_3$ layer was chromatographed on silicic acid yielding. β -Amyrin acetate: $C_{32}H_{52}O_2$; m.p. 236–238°; $[\alpha]_D + 74^\circ$ ($CHCl_3$), confirmed by IR, NMR, UV, mixed m.p. and co-TLC with an authentic specimen. On hydrolysis it gave β -amyrin, m.p. 194°. A new triterpendiolone, $C_{30}H_{48}O_3$ ($M^+ 456$), m.p. 262–264° $[\alpha]_{589} + 57.7^\circ$; $[\alpha]_{578} + 60.1^\circ$; $[\alpha]_{436} + 118.4^\circ$; IR, 3560 (OH), 2920, 2860 (CH), 1690 (C=O), 1640 (C=C), 1450 (CH_2), 1375 and 1360 ($CH_3)_2C$), 1030 and 990 (C=O), 650 cm^{-1} . The mass spectrum principal fragmentations were 456 (4.10)(M^+), 438 (2.85) ($M-H_2O$), 410 (3.80) ($M-H_2O-CO$), 248 (100); 219 (16.10), 218 (5.65), 207 (37), 203 (52.0), 189 (21.0), 135 (16.90), 133 (8.25), 199 (28.2), 107 (20.10), 95 (28.2), 81 (28.2), 69 (31.5), 43 (29.80), 28 (28.20), 18 (17.70).

Seeds. were extracted with $CHCl_3$ and then with MeOH, but no secondary products could be detected.

Acknowledgements—To Syntex de México and Forge Foundation for their economical help. To Professor Dr. Agurell from Uppsala University for the mass spectrum of β -amyrin, to Professor Dr. Paulino Rojas for the identification of the plant material and to Ing. Francisco Jauregi, Sria. Hda. de México for the mass spectrum.

* Part XX in the series "Studies on Mexican Medicinal Plants".

† Becario ICETEX, Colombia.

¹ R. HEGNAUER, *Chemotaxonomie der Pflanzen*, Vol. 3, p. 199, Birkhauser, Verlag, Basilea (1964).

Key Word Index—*Asclepias latifolia*; Asclepiadaceae; terpenoids; β -amyrin; β -sitosterol.