

8. J. Nunez-Alarcon, G. Marin, J. Naranjo, and T.J. Mabry, *Revista Latinoam. Quim.*, **8**, 98 (1977).
9. K.H. Bauer and H. Dietrich, *Chem. Ber.*, **66B**, 1053 (1933).
10. C. Guerrero, M. Silva, E. Maldonado, and M. Martinez, *Revista Latinoam. Quim.*, **9**, 71 (1978).

Received 25 April 1986

### TRICIN FROM *VERNONIA REMOTIFLORA*

HELEN JACOBS, MALCOLM BUNBURY,

*Centre for Natural Products Chemistry, University of Guyana, Georgetown, Guyana*

and STEWART MCLEAN\*

*Department of Chemistry, University of Toronto, Toronto, Ontario, Canada M5S 1A1*

The genus *Vernonia* Schreb. (Compositae), with more than 1,000 species, has attracted a wide range of interests. The diversity of its metabolites has been of chemotaxonomic interest (1,2), and the structural complexity and biological activity of some of the metabolites have been of considerable chemical and pharmacological interest; the tumor inhibitors vernolepin and vernomenin provide notable examples (3,4). *Vernonia remotiflora* Rich. is a representative of the genus found in Guyana and does not appear to have been investigated previously. We have examined this species, but the only secondary metabolite that we have been able to isolate and identify is the flavone triclin (5,6).

### EXPERIMENTAL

**PLANT MATERIAL.**—The aerial parts of *V. remotiflora* were collected in June 1984, in a locality at Long Creek on the Soesdyke-Linden Highway, Demerara, Guyana. Voucher specimens were deposited in the Herbarium of the University of Guyana and at the Institute of Systematic Botany, University of Utrecht, Netherlands.

**EXTRACTION AND ISOLATION.**—Air-dried and ground plant material (1 kg) was exhaustively extracted by cold percolation with  $\text{CHCl}_3$ . Removal of the solvent under reduced pressure afforded a gum (45.5 g) that was dissolved in hot EtOH (40 ml). The solution was stirred for 15 min with an equal volume of hot  $\text{H}_2\text{O}$ , and the resulting suspension was refrigerated overnight. The supernatant liquor was decanted, filtered, concentrated, and extracted with  $\text{CHCl}_3$  ( $5 \times 100$  ml). The residue (7.2 g) after evaporation of the solvent was fractionated on a column of Si gel (200 g). Crystallization of the fractions eluted with  $\text{CHCl}_3$ -EtOAc (9:1) yielded triclin, identified by comparison of its mp, uv, and  $^1\text{H}$ -nmr data with published values (5,6).

### ACKNOWLEDGMENTS

The Centre at the University of Guyana is grateful for generous support from the Canadian International Development Agency. Research support from the Natural Sciences and Engineering Research Council of Canada is acknowledged.

### LITERATURE CITED

1. J.B. Harborne and C.A. Williams, in: "The Biology and Chemistry of the Compositae," Ed. by V.H. Heywood, J.B. Harborne, and B.L. Turner, vol. 1, Academic Press, London, 1977, p. 524.
2. T.J. Mabry, Z. Abdel-Baset, W.G. Padolina, and S.B. Jones, *Biochem. Syst. Ecol.*, **2**, 185 (1975).
3. S.M. Kupchan, R.J. Hemingway, D. Werner, A. Karim, A.T. McPhail, and G.A. Sim, *J. Am. Chem. Soc.*, **90**, 3596 (1968).
4. S.M. Kupchan, M.A. Eakin, and A.M. Thomas, *J. Med. Chem.*, **14**, 1147 (1971).
5. M. Kaneta and N. Sugiyama, *Bull. Chem. Soc. Japan*, **45**, 528 (1973).
6. M.V. Piretti, F. Zeli, and R. Pistore, *Gazz. Chim. Ital.*, **112**, 47 (1982).

Received 25 April 1986