

CHEMICAL INVESTIGATION OF THE GENUS *RHEEDIA*, V.  
BIFLAVONOIDS AND XANTHOCHYMOL

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In previous studies on the roots of *Rheedia benthamiana* Pl. Triana (1), *Rheedia gardneriana* Pl. Triana (2,3), and *Rheedia brasiliensis* (Martins) Pl. Triana (4) (Guttiferae), several xanthonones have been described. In this note we report on the biflavonoid composition of the roots of the three species above, as well as of the fruits of *Rheedia madrunno* (HBK) Pl. Triana. The  $\text{CHCl}_3$  extract of the last yielded mainly the polyprenylated benzophenone xanthochymol (5), while the MeOH extract afforded three biflavonoids which were identified as volkensiflavone, fukugetin, and the biflavanone GB2a (6). The same biflavonoids were isolated from the root extracts of *R. benthamiana*, *R. brasiliensis*, and *R. gardneriana*. In the last extract the biflavanone GB1a was also identified. Cumulatively, these compounds are known as *Garcinia* biflavonoids (6); conversely, xanthochymol has been reported from *Garcinia* spp. (5) and *Clusia rosea* (7), both belonging to the same subfamily, Clusiaceae. This is the first report on their occurrence in the genus *Rheedia*.

## EXPERIMENTAL

**PLANT MATERIAL.**—The fruits of *R. madrunno* were collected on August 1982, in the Jardim Botânico of Caracas, Venezuela. A voucher specimen is deposited in the Herbarium of Centro Chimica dei Recettori (RM82). The roots of *R. benthamiana* (1), *R. brasiliensis* (4), and *R. gardneriana* (2) were collected in northeastern Brazil. Vouchers of the former two are deposited in the Herbarium of Departamento de Antibioticos (4825 and 4826, respectively). A voucher of *R. gardneriana* is deposited in the Herbarium of Depto de Química UFAL, Maceió, Brazil (RG80JEP).

**EXTRACTION, ISOLATION, AND IDENTIFICATION.**—The fresh fruits of *R. madrunno* were extracted with cold  $\text{CHCl}_3$  and MeOH, successively. After column chromatography and crystallization, the  $\text{CHCl}_3$  extract gave xanthochymol (yield 1.5% of the fruits). The MeOH extract was washed with cold  $\text{Me}_2\text{CO}$ , and the residue was purified by column chromatography and preparative tlc, affording volkensiflavone, fukugetin, and the biflavanone GB2a. Similar procedures were used to isolate the biflavonoids from the EtOH extract of the roots of *R. benthamiana*, *R. gardneriana*, and *R. brasiliensis*. Xanthochymol was identified by spectral data and comparison (mmp and co-tlc) with an authentic specimen (7). The identification of the biflavonoids was based on the spectral data of the isolated products and their permethylated derivatives in comparison with those available in the literature (6).

Full details of the isolation and identification of the compounds are available on request to the senior author.

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