

## SHORT COMMUNICATION

# NEW ANTHOCYANINS FROM *ELEOCARPUS MASTERSII*

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**Abstract**—Young leaves of *Eleocarpus mastersii* are pigmented by two anthocyanins; peonidin-3-xylosylglucoside and petunidin-3-xylosylglucoside, both of which appear to be new compounds.

## RESULTS AND DISCUSSION

ANTHOCYANIN coloration of young leaves is a conspicuous feature of tropical floras. In the course of investigating this phenomenon among certain Malaysian taxa, young-leaf pigments of *Eleocarpus mastersii* King (Tiliaceae) were studied. Preparative chromatography yielded two anthocyanins of differing colour and with a regular difference in  $R_f$  values that suggested a common sugar substituent. On hydrolysis the aglycones detected were, respectively, peonidin and petunidin. Sugars detected in the hydrolysates of both pigments were glucose and xylose. Partial hydrolyses gave only the corresponding 3-glucosides thus showing that the original pigments were 3-xylosylglucosides. This was confirmed by oxidative removal of the flavonoid residue,<sup>1</sup> which gave a sugar not identical to glucose or xylose. Absence of u.v. fluorescence in the peonidin compound indicated that the 5-hydroxyl was not substituted.

The only xylosylglucose sugar known so far from flavonoid glycosides is sambubiose (2- $\beta$ -D-xylosido-D-glucose) and it is therefore likely that this linkage is present in the *Eleocarpus* pigments. The peonidin-3-xylosylglucoside reported by Harborne from *Lathyrus odoratus*<sup>2</sup> was later found to be the xylosylgalactoside,<sup>3</sup> and it appears that no xylosylglucosides of methylated anthocyanins have been reported before.<sup>4</sup> The other pigment also represents the first case of a pentose sugar occurring in combination with petunidin.

## EXPERIMENTAL

Preparative and diagnostic chromatography of anthocyanins, anthocyanidins and sugars were carried out by the usual methods.<sup>5,6</sup> Authentic samples of all compounds except the anthocyanin biosides were available for direct chromatographic and spectral comparison.

<sup>1</sup> B. V. CHANDLER and K. A. HARPER, *Australian J. Chem.* **14**, 586 (1961).

<sup>2</sup> J. B. HARBORNE, *Nature* **187**, 240 (1960).

<sup>3</sup> J. B. HARBORNE, *Phytochem.* **2**, 85 (1963).

<sup>4</sup> J. B. HARBORNE, in *Comparative Biochemistry of the Flavonoids*, p. 25, Academic Press, London (1967).

<sup>5</sup> J. B. HARBORNE, in *Comparative Biochemistry of the Flavonoids*, Ch. 1, Academic Press, London (1967).

<sup>6</sup> K. C. B. WILKIE, in *Laboratory Handbook of Chromatographic Methods* (edited by O. MIKES), Ch. 2, Van Nostrand, New York (1967).