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FLAVONOID EXUDATIONS IN FARINOSE FERNS

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Key Word Index—*Adiantum sulphureum*, *Cheilanthes*, *Notholaena*; Polypodiaceae; exudates; flavonoid methyl ethers.

Plants. Adiantum sulphureum Kaulf.; *Cheilanthes albomarginata* C. B. Clarke, *C. bullosa* Kze., *C. grisea* Blanford, *C. rufa* D. Don.; *Notholaena candida* (Mart. & Gal.) Hook, *N. schaffneri* (Fourn.) Underw. var. *nealleyi* (Seaton) Weatherby, *N. standleyi* Maxon. *Source.* Botanic Garden of Concepcion, Chile (A.s.), Kew Herbarium (Ch.), natural habitat in Texas (N.). *Previous work.* Flavonoids from *C. farinosa* [1, 2], *C. longissima* [3] (nom. val.?); chalcones, dihydrochalcones and flavones in *Pityrogramma* sp. (lit. cit. in [4]).

Present work. Leaves, pinnules or only fragments were rinsed with acetone to dissolve the farina deposited on under surface. The components were identified by cochromatography with authentic substances on polyamide and silica gel (comp. [5]).

Adiantum sulphureum. The farina of this species consists mainly of 2′,6′-diOH, 4′-OMe chalcone (to which yellow coloration is due) and 2′,6′-diOH,4′-OMe dihydrochalcone with trace amounts of galangin and galangin 7-methyl ether (izalpinin) and still unknown minor compounds.

Cheilanthes albomarginata. Apigenin 7-methyl ether (genkwanin), kaempferol 7-methyl ether (rhamnocitrin) and kaempferol 3,7-dimethyl ether (kumatakenin) constitute the light yellow farina of this species. There may be traces of quercetin 3,7-dimethyl and kaempferol 7,4′-dimethyl ethers, too.

Cheilanthes bullosa. Acecetin is the main flavone of the white excretion, accompanied by small amounts of apigenin and apigenin 7,4′-dimethyl ether.

Cheilanthes grisea. Kaempferol 7,4′-dimethyl ether, kaempferol 3,7,4′-trimethyl ether and apigenin 7,4′-dimethyl ethers are major products; kaempferol 3,7-dimethyl ether, kaempferol and apigenin 7-methyl ethers occur in trace amounts.

Cheilanthes rufa. This species shows the same main flavonoids as *C. albomarginata*, with trace of kaempferol 7,4′-dimethyl ether. *Notholaena candida.* The pure white farina of this fern contains the rare 3,7,3′,4′,5′-pentamethyl ether of myricetin, combretol (proved by UV spectra, too). The second component is likely to be a tetramethyl ether of myricetin.

Notholaena schaffneri. Apigenin and its 7-methyl ether are the sole constituents of the white farina.

Notholaena standleyi. Kaempferol, kaempferol 3- and 4′-methyl ethers as major products are accompanied by the 3,7-, 3,4′- and 7,4′-dimethyl ethers of Kaempferol. This is only the third report of the natural occurrence of combretol (comp. [5]). The other aglycones have been shown recently to occur relatively frequently in lipophilic exudates (see e.g. [6]). It should be noted that the results given here for certain specimens are not necessarily valid for the species in general. Natural variation and even the existence of "chemotypes" with important differences as shown in [7] must be taken into consideration. Results on further species will be published elsewhere [8].

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