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raphy) when applying the sample to a nonequilibrated stationary phase.

If the sample is used for circular preparative layer chromatography, this new method can be carried out with the recently developed preparative circular cromatography device (Fig. 3). For this separation mode the center of the chromatoplate is scratched out to a certain diameter, which serves as the mobile phase reservoir. Afterwards, a ring form of the stationary phase is scratched out and filled with the sample, which is adsorbed on an inert support with the same procedure as described above (see Fig. 2). For starting the separation, the whole solvent reservoir is filled with a suitable solvent system. The magnet from the bottom of the layer ensures that the solvent migrates evenly through the stationary phase. These offline separations are rapid, generally within 30 min, with all the advantages of circular separations (3).

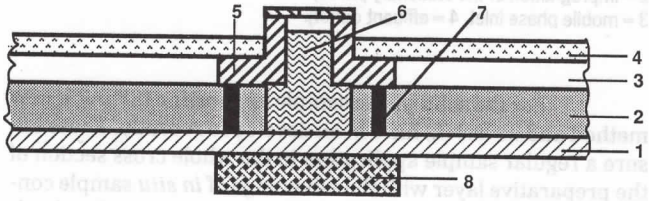

Fig. 3 Circular preparative chromatographic device. [1 = glass plate, 2 = stationary phase, 3 = vapor space, 4 = lid of the chromatographic chamber, 5 = solvent reservoir from iron, 6 = mobile phase, 7 = applied solid phase sample, 8 = magnet].

The efficiency of the three new methods is demonstrated with the isolation of alkaloids, coumarins, flavanolignans, and flavonoid glycosides from different medicinal plants.

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P_1 164 Concerning the Standardization of *Fabiana imbricata*

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Scopoletin (β-methylesculetin) is a major secondary metabolite component of the terminal branchlets of *Fabiana imbricata* Ruiz and Pav. (Solanaceae), a South-American drug (common name pichi-pichi) used to treat kidney and bladder pains (1). Bearing in mind that scopoletin possesses an analgesic activity (2) and anti-inflammatory properties (3), we believe that some applications of *F. imbricata* could be explained by the presence of this metabolite. Moreover, scopoletin was shown to inhibit the formation of leucotrienes in polymorphonuclear leukocytes (4).

Like the other hydroxylated coumarins, scopoletin shows a blue fluorescence under UV light (366 nm). This property was used for the quantitative estimation of scopoletin in this drug by direct densitometry of chromatographically separated zones on silica gel layers.

We measured the fluorescence of scopoletin contained in three different commercial batches. The measurement was achieved by means of a Desaga TLC Scanner programmed to work in reflection-fluorescence at 361 nm (mercury lamp). We employed the following chromatographic procedure (5):

- Layer: TLC plates Silica gel 60 Merck;
- Mobile phase: Toluene-ether-acetic acid solution (10 %) (50 + 50 + 50); the upper organic phase was employed;
- Migration distance: 10 cm;
- Standard solution: 4 mg of scopoletin RCS were solubilized in 50 ml of MeOH;
- Sample solution: 0.250 g of pichi-pichi were extracted by 25 ml MeOH at 40 °C;
- Applications of 3–5–10 µl for the standard and 10 µl for samples;
- R_f of scopoletin ca. 0.30.

After linearisation, the concentration of scopoletin was estimated by measurement of the different standards and samples mean areas. In our findings, scopoletin content ranged from 0.25 to 0.55 %.

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P_1 165 Polarographic Analysis of Fixed Oil Obtained from a Natural Source: A Method for the Determination of Saturated and Unsaturated Fatty Acids in Fixed Oil

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The fixed oil from the seeds of *Cordia dichotoma* Forst. F. (Boraginaceae) was extracted in petroleum ether (60–80 °C) in a Soxhlet apparatus. The fixed oil obtained was saponified by Hilditch's method (1). The saponified mass was subjected to the separation of saturated and unsaturated acids