

Feuilles.—Des alcaloïdes totaux (5,69 g/kg), obtenus de façon analogue à ceux des écorces, on sépare après chromatographie sur silice (CHCl₃, MeOH) la voacangine, la voacangarine et l'hydroxycoronaridine, identifiées d'après leurs caractéristiques spectrale (ir, rmn-¹H, sm).

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2-HYDROXYACETOPHENONE: PRINCIPAL ROOT VOLATILE OF THE EAST AFRICAN MEDICINAL PLANT, *CARISSA EDULIS*

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Carissa edulis (Forsk.) Vahl (Apocynaceae) is a thorny shrub widespread in East Africa. Its fruit is edible, and its pungent roots are used locally for a variety of medicinal purposes (1, 2). In one application, steam from an aqueous root or root bark infusion is inhaled as a treatment for chest congestion. We were thus interested in investigating the chemistry of the steam distillate of the roots of this previously uninvestigated plant. Methylene chloride extraction of the steam distillate of fresh *C. edulis* root bark resulted in isolation of almost pure 2-hydroxyacetophenone, identified by capillary gc-ms and spectroscopic methods. This structurally simple compound, although the principal volatile of this plant root, is not a common phytochemical and has been reported previously as a natural product only in the wood and bark oils of *Chione glabra* (3) and as a minor component of the volatiles from the flowers of *Castanopsis cuspidata* (4) and *Castanea creata* (5). The antibiotic activity of simple phenols is well known (6) and may lend some credence to the traditional medicinal use of the plant.

EXPERIMENTAL

PLANT MATERIAL.—Roots were collected near Kisumu, Western Kenya, in October 1983. A voucher specimen of the foliage is deposited in the University of Nairobi Herbarium.

ISOLATION AND IDENTIFICATION.—Bark (150 g) from freshly collected roots was subjected to steam distillation and the distillate multiply extracted with CH_2Cl_2 . After drying over Na_2SO_4 , the CH_2Cl_2 was removed at room temperature in a nitrogen stream to yield 140 mg of a pale yellow liquid. Capillary gc (22m \times 0.25mm DBI, 70°-250° at 5°/min, flow 0.7 ml/min, He) demonstrated the liquid to be an essentially pure (>99.9%) compound. The retention time (8.14 min), mass spectrum, 60 MHz ^1H -nmr, and ir of the substance were identical with those of authentic 2-hydroxyacetophenone (Aldrich Chemical Co., Inc.).

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A FLAVONE WITH ANTIINFLAMMATORY ACTIVITY FROM THE ROOTS OF *RHUS UNDULATA*¹

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In the course of our search for biologically active compounds from indigenous South African flora, we have investigated the roots of *Rhus undulata* Jacq. var. *undulata* (Anacardiaceae, Kuni-bush), a tree widespread in southern Africa (1). Plant material and extracts were worked up in accordance with our normal procedures (see Experimental section) (2) and yielded 5-hydroxy-4',7-dimethoxyflavone (apigenin dimethylether) in addition to some nonpolar compounds that were not characterized.

Apigenin dimethylether showed a 25% inhibition (75 mg/kg dose) [phenylbutazone (reference), 81% inhibition at 75 mg/kg dose] of the phlogistic response (carrageenan-induced edema) (3) in the rat, an activity reported (4-6) for several closely related flavonoids (Table 1). The presence of antiinflammatory activity may provide an explanation for the claims made with regard to the therapeutic value of *R. undulata* roots in infective disorders of the gastrointestinal tract.

TABLE 1. Antiinflammatory Activity of Some Flavonoids Compared with Apigenin Dimethylether

Test Compound	ED ₂₅ (mg/kg)	Potency (Antiinflammatory units/g)
Naringin	Inactive	0
Nobiletin	20	50
Hydrocortisone phosphate (reference)	13.5	74
Apigenin dimethylether	75	13

¹Part 3 in the series "Studies of South African Medicinal Plants." For Part 2, see *S. Afr. J. Chem.*, **36**, 114 (1983).