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Phytochemical Screening of Costa Rican Plants:

Alkaloid Analysis. III*

by

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We have followed in this report the same criteria of previous papers (1, 2); however, we have included additional data, such as folk name and collection site of each analyzed species.

MATERIALS AND METHODS

Roots, leaves and stems of Costa Rican plants were used, processed and analyzed following procedures already described (1, 2). Herbarium vouchers of each species studied were prepared and placed in the Herbarium of the Dept. of Biology of the University of Costa Rica.

RESULTS

A summary of the results is detailed in Table 1.

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TABLE 1

Qualitative alkaloid analysis

Species	Folkname	Locality	Plant Part	Alkaloid Analysis H+ Layer	Alkaloid Analysis OH— Layer
AIZOACEAE					
Sesuvium portulacastrum L.		Tárcoles	Aerial Part	—	—
AMARYLLIDACEAE					
Bomarea costaricensis Kraenzlin	Papa de venado	Cerro de la Muerte	Leaves & Stem	—	—
ANACARDIACEAE					
Mauria Birringo Tulasne	Cirrí amarillo	Alajuela	Leaves	—	—
———	———	———	Stem	—	—
APOCYNACEAE					
Rauwolfia hirsuta Jacq.	Coatacó	Orotina	Leaves	++++	+
———	———	———	Stem	++++	+
Thevetia neriifolia Juss.	Chirca	San José	Leaves	+	+
———	———	———	Seed	—	—
———	———	———	Stem	+	+
ASCLEPIADACEAE					
Marsdenia brenesii Standl.		La Garita	Leaves & Stem	—	—
BASELLACEAE					
Boussingaultia ramosa (Moq.) Hemsl.	Hiedra	San Pedro	Leaves & Stem	—	—
BIGNONIACEAE					
Anemopaegma punctulatum Pitt. & Standl.		La Garita	Leaves	—	—
———		———	Stem	—	—

Species	Folk name	Locality	Plant Part	Alkaloid Analysis H+ Layer	Alkaloid Analysis OH— Layer
Crescentia Cujete L.	Jícaro	San Carlos	Leaves	—	—
———	———	———	Stem	—	—
Jacaranda filicifolia (Anders.) D. Don.	Jacaranda	San José	Leaves	—	—
———	———	———	Stem	—	—
Spathodea campanulata Beauv.	Llama del bosque	San José	Fruit	—	—
Tecoma stans (L.) HBK	Candelillo, Vainilla	Santa Ana	Leaves	+	+
———	———	———	Stem	+	+
BOMBACACEAE					
Ochroma lagopus Sw.	Balsa	Golfito	Leaves	—	—
———	———	———	Stem	—	—
CLETHRACEAE					
Clethra lanata Mart. & Gal.	Nance macho	Alajuela	Leaves	—	—
———	———	———	Stem	—	—
COMPOSITAE					
Baccharis braunii (Polak.) Standl.		Cerro de la Muerte	Leaves	+ (Weak)	—
———		———	Stem	—	—
Eupatorium anisochromum Klatt.		Volcán Poás	Leaves	—	—
———		———	Stem	—	—
Senecio andicola Turcz.		Cerro de la Muerte	Leaves	—	+ (Weak)
———		———	Stem	—	—
CONVOLVULACEAE					
Calonyction aculeatum (L.) House	Flor de luna	Tacares	Leaves	—	—
———	———	———	Stem	—	—

Species	Folk Name	Locality	Plant Part	Alkaloid Analysis H+ Layer	Alkaloid Analysis OH— Layer
Ipomoea batatas (L.) Lam.	Camote	La Garita	Leaves & Stem	—	—
CORIARIACEAE					
Coriaria thymifolia Humb. & Bonpl.		Volcán Irazú	Leaves	—	—
———	———	———	Stem	—	—
CUNONIACEAE					
Weinmannia pinnata L.	Lorito	Volcán Poás	Leaves	—	—
———	———	———	Stem	—	—
FLACOURTIACEAE					
Abatia parviflora Ruiz & Pav.		Cerro de la Muerte	Leaves	—	—
———		———	Stem	—	—
Casearia arguta (HBK)	Palo María,	Santa Ana	Leaves	—	—
———	Huesillo	———	Stem	—	—
GESNERIACEAE					
Kohleria spicata (HBK) Oerst.		Golfito	Leaves	—	—
———		———	Stem	—	—
Kohleria strigosa Morton		Empalme	Leaves	—	—
———		———	Stem	—	—
LOBELIACEAE					
Lobelia laxiflora HBK	Ceragallo	San Ramón	Leaves	+	—
———	———	———	Stem	+	—

Species	Folk Name	Locality	Plant Part	Alkaloid Analysis H+ — Layer	Alkaloid Analysis OH— Layer
MAGNOLIACEAE					
Magnolia poasana (Pitt.) Dandy	Candelillo	Volcán Poás	Leaves	+ (Weak)	+ (Weak)
———	———	———	Stem	+	+
MALVACEAE					
Hibiscus tiliaceus L.	Majagua	Tárcoles	Leaves	—	—
———	———	———	Stem	—	—
MELASTOMACEAE	Mariquita	Alajuela	Leaves	—	—
Conostegia oerstediana O. Berg.	———	———	Stem	—	—
———					
MELIACEAE					
Trichilia cuneata Radlk.		Santa Ana	Fruit	+ (Weak)	+ (Weak)
———		———	Leaves	—	—
———		———	Stem	—	—
MIMOSACEAE					
Acacia spadicigera Schl. & Cham.	Cornezuelo	Nicoya	Leaves	—	—
———	———	———	Stem	—	—
Lysiloma desmostachys Bentham	Ardillo	Nicoya	Leaves	—	+ (Weak)
———	———	———	Stem	—	+ (Weak)
Mimosa pigra L.	Zarza	Santa Ana	Leaves	—	—
———	———	———	Stem	—	—
Pithecolobium longifolium (H. & B.) Standl.	Sotacaballo	Alajuela	Fruit	—	—
———	———	———	Leaves	—	—
———	———	———	Stem	—	—

Species	Folk Name	Locality	Plant Part	Alkaloid Analysis H + Layer	Alkaloid Analysis OH — Layer
OLEACEAE					
Ligustrum lucidum Ait.		San José	Leaves	—	+ (Weak)
———		———	Stem	—	+ (Weak)
PAPILIONACEAE					
Calopogonium coeruleum Benth.	Gallinilla	Santa Ana	Leaves & Stem	+ (Weak)	+ (Weak)
Indigofera mucronata Spreng.		Santa Ana	Fruit	—	—
———		———	Leaves	+ (Weak)	+
———		———	Stem	—	—
Lonchocarpus costaricensis (Donn. Smith) Pitt.	Pavilla	Nicoya	Fruit	+ (Weak)	—
———	———	———	Leaves	+ (Weak)	—
———	———	———	Stem	—	—
Lupinus aschenbornii Schauer		Volcán Irazú	Leaves & Stem	++	+ (Weak)
ROSACEAE					
Rubus irasuensis Liebm.	Mora	Volcán Irazú	Leaves & Stem	—	—
RUBIACEAE					
Genipa americana v. Caruto (HBK) Schum.	Guaitil	Nicoya	Leaves	+ (Weak)	+
———	———	———	Stem	—	+
Isertia haenkeana DC.		Golfito	Leaves	++	—
———		———	Stem	++	—
Lindenia rivalis Benth.	Lirio	La Garita	Leaves	+ (Weak)	+
———	———	———	Stem	—	—

Species	Folk Name	Locality	Plant Part	Alkaloid Analysis H + Layer	Alkaloid Analysis OH — Layer
RUTACEAE					
Zanthoxylum microcarpum Griseb.	Lagarto Blanco	Vuelta de Jorco	Leaves	+	—
———	———	———	Stem	+ (Weak)	—
SAPINDACEAE					
Cupania guatemalensis Radlk.	Pozolillo	Santa Ana	Leaves	—	—
———	———	———	Stem	—	—
Dodonaea viscosa (L.) Jacq.		Vuelta de Jorco	Leaves	—	—
———		———	Stem	—	—
Paullinia costaricensis Radlk.	Hoja de pájaro	Santa Ana	Leaves	—	—
———	———	———	Stem	—	—
SOLANACEAE					
Cestrum Warsewiczii Klotz.	Pavoncillo	Volcán Poás	Leaves	—	+
———	———	———	Stem	—	—
Solanum storkii Mort. &. Standl.		Cerro de la Muerte	Leaves	—	+ (Weak)
———		———	Stem	—	+ (Weak)
STAPHYLEACEAE					
Turpinia occidentalis (Sw.) Don.		San Pedro	Leaves	—	—
———		———	Stem	—	—
TILIACEAE					
Luehea candida (DC) Mart.	Guácimo molinillo	Nicoya	Leaves	—	—
———	———	———	Stem	+ (Weak)	—
Luehea speciosa Willd.	Guácimo macho	Atenas	Leaves	—	—
———	———	———	Stem	—	—
Muntingia Calabura L.	Capulín	Atenas	Leaves	—	—
———	———	———	Stem	—	—

DISCUSSION

From the comparison of the above results with those published by the U.S.D.A. (3) and with later reports, it appears that the qualitative alkaloid analysis of the following plants is reported for the first time: *Magnolia poasana* (Pitt.) Dandy, leaves and stem; *Trichilia cuneata* Radlk., fruit; *Calopogonium coeruleum* Benth., leaves and stem; *Indigofera mucronata* Spring., leaves; *Lupinus atchenbornii* Schauer, leaves and stem; *Lindenia rivalis* Benth., leaves; *Baccharis braunii* (Polak.) Standl., leaves; *Isertia hankeana* DC., leaves and stem; *Zanthoxylum microcarpum* Griseb., leaves and stem; *Luehea candida* (DC) Mart., stem; *Lysiloma desmostachys* Bentham, leaves and stem; *Ligustrum lucidum* Ait., leaves and stem; *Solanum storkii* Mort. & Standl., leaves and stem; *Lonchocarpus costaricensis* (D.S.) Pitt., fruit and leaves.

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SUMMARY

A total of 53 species of Costa Rican plants were tested for their alkaloid content in both acid and alkaline layers; 14 of the plants mentioned in the list are here reported for the first time as containing alkaloids.

RESUMEN

Se analizaron por alcaloides tanto en la capa ácida (alcaloides terciarios) como en la alcalina (alcaloides cuaternarios) un total de 53 especies de plantas de Costa Rica. Se comunica por primera vez el análisis cualitativo positivo de 14 de las especies mencionadas en este trabajo.

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