

Contenido/ Contents

Aportes perdurables de un botánico destacado – Dr. Focko Weberling <i>in memoriam</i> (1926-2009)	1-2
Catálogo de las hepáticas (Marchantiophyta) de Guatemala: una actualización. Mervin E. Pérez	3-12
Salud de felinos silvestres en cautiverio- Estudio integral en el Centro de Rescate para la Vida Silvestre La Marina-Costa Rica. Misael Chinchilla, Christian González, Idalia Valerio, Gustavo Gutiérrez-Espeleta & Álvaro Apéstegui	13-20
Mamíferos del Refugio Nacional de Vida Silvestre Limoncito, Westfalia, Limón, Costa Rica. Lilliana Piedra Castro, Juan Bravo Chacón & Bolívar Salazar Herrera.	21-26
Diversidad fenotípica en peces del género <i>Hemibrycon</i> (Characiformes: Characidae) del sistema del río Magdalena-Cauca, Colombia. César Román-Valencia, Dahiana K. Arcila-Mesa & María. D. García G.	27-40
Análisis latitudinal y batimétrico de la comunidad de moluscos de mar profundo en el Golfo de California, México. Pablo Zamorano & Michel E. Hendrickx	41-54
Two new species of <i>Furculanurida</i> (Collembola: Neanuridae) from Guatemala. José G. Palacios-Vargas & Yan Gao	55-60
Thrips fitófagos en huertas de aguacate cv. Hass en Nayarit, México. Octavio J. Cambero-Campos, Roberto M. Johansen-Naime, Oswaldo García-Martínez, Carlos R. Carvajal-Cazola, Néstor Isiordia-Aquino, Mario Cantu-Sifuentes	61-64
Comunicaciones Breves/Short communications	
Selección de un lectotipo para <i>Zamia fairchildiana</i> L. D. Gómez (Zamiaceae). Rafael H. Acuña C. & Luis D. Gómez	65-66
New record of a black jaguar, <i>Panthera onca</i> (Carnivora: Felidae) in Costa Rica. Melvin Cartín Núñez & Eduardo Carrillo Jiménez	67-68
Registro de <i>Cabassous centralis</i> (Cingulata: Dasypodidae) en la Reserva Forestal Pacuare y Reserva Indígena Nairi Awari, Siquirres, Costa Rica. Carolina Sáenz Bolaños & Eduardo Carrillo Jiménez	69-70
Presencia de <i>Galictis vittata</i> (Carnivora: Mustelidae) en el Caribe Sur y Pacífico Norte de Costa Rica. Carolina Sáenz Bolaños, Luis Diego Alfaro Alvarado & Eduardo Carrillo Jiménez	71-72
First report of Vesper rat, <i>Nyctomys sumicrasti</i> (Rodentia: Muridae) feeding on Palm fruits. Brooke L. Bessesen & Guido Saborio-R.	73-76
Depredación de <i>Neusticomys monticolus</i> (Rodentia: Sigmodontinae) por <i>Cerdocyon thous</i> (Carnivora: Canidae). Carlos A. Delgado-V.	77-78
Nuevos registros en la distribución de cuatro rapaces diurnas (Accipitridae y Falconidae: Aves) en Costa Rica. Luis Sandoval	79-80
Ampliación del ámbito de distribución del Alcaraván <i>Burhinus bistriatus</i> (Aves: Burhinidae) en Costa Rica. Ghisselle Alvarado Quesada, Silvia Elena Bolaños Redondo & Javier Solano Zárate	81-82
Primer registro del nido y huevos de la urraca pechinegra (<i>Cyanocorax affinis</i> , Aves: Corvidae) para Costa Rica y notas sobre ampliación de su ámbito de distribución. Daniel Martínez, Julio E. Sánchez & James R. Zook	83-86
New hosts for Amblyopinina beetles (Coleoptera: Staphylinidae) in Antioquia, Colombia. Carlos A. Delgado-V.	87-88

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First report of Vesper rat, *Nyctomys sumicrasti* (Rodentia: Muridae) feeding on Palm fruits

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The vesper rat, *Nyctomys sumicrasti*, de Saussure 1860, is a medium-sized arboreal rodent of tawny pelage with white underparts (Goodwin 1946). This sigmodontine species is known to thrive on fruit, seeds, flowers and leaves (Emmons 1997, Timm and Vriesendorp 2003). As the genus name suggests, the vesper rat is a primarily nocturnal feeder (Birkenholz & Wirtz 1965).

On the nights of 14, 16, and 18 December 2008, a total of three vesper rats were observed and photographed eating the fruits of *Bactris glandulosa* var. *baileyana* (H.E. Moore) de Nevers, near Rio Piro (8°24'39.54"N, 83°20'14.028"W, 20 m a.s.l.) at the Osa Biodiversity Center, Osa Peninsula, Costa Rica. The palm, estimated at 4 m in height was bearing fruits (Figure 1A-B) in a 30 year old secondary forest.

Having no common name, *Bactris glandulosa* var. *baileyana* is found in lowland and montane forests of Costa Rica and Panama (Henderson 2000), and stands 1.5-5 m tall with spiny stems (de Nevers *et al.* 1996). Leaves are almost regularly pinnate, leaflets linear or lanceolate, spreading in different planes or sometimes on the same plane. Inflorescences are borne among or below the leaves, branched to one order and covered by a boat-shaped peduncular wooly bract. The fruits are orange to red with a thin pulpy mesocarp (Baumgartner *et al.* 2001).

All three rats were observed stationed in the palm with fruits varying in color from yellow to orange in their mouths. We did not observe any of the vesper rats holding or eating leaf material and no chewed leaves were seen in the discarded remains directly beneath the feeding site, which did include fruit skins, rat droppings, and seeds (Figure 1C-D). Abundant skins and seeds on the ground indicate the rats ingested only the pulp of the fruit. Additionally, no partially eaten fruits

were found, suggesting the vesper rats were not overly selective once they had started eating. No other species were seen foraging in or around the palm during several sequential morning and nighttime visits.

The vesper rats were later identified (Timm com. pers. 2009) as one adult breeding male missing approximately 5 mm from the tip of its tail, one adult female missing most of its tail from very near the base, and one subadult, slightly lighter and more gray in coloring with an intact tail.

The first vesper rat observed and photographed was the subadult of undetermined sex (Figure 1E). The rat was discovered by headlamp on 14 December between 22:00-23:59. It was perched on the petiole of a lower frond approximately 3 m above the forest floor, eating a yellow palm fruit. The rat stopped chewing as we approached and remained still in the artificial light for the subsequent period of observation, a duration of 3-5 minutes. This behavior of freezing in a spotlight is previously reported (Reid 1997). Two nights later, 16 December between 22:00-23:59, a pair of *Nyctomys sumicrasti* were found in the same palm tree. A photograph showing genitalia confirmed one adult female missing most of its tail (Figure 1F) and one adult male (Figure 2C). On the evening of 18 December (19:30-20:30) we returned to the location and again observed two vesper rats eating fruits from the palm tree. The female was easily identified by its amputated tail; we could not confirm whether the male was the same. Feeding observations and photography lasted 15-20 minutes.

Looking back through photographs, we discovered another vesper rat that was inadvertently documented eating the fruit of *Elaeis oleifera*, American oil palm on 24 June 2008 at 22:16

near a local swamp (8°24'724"N, 83°20'14.780"W, 31 m above sea level) located approximately 1.45 km from the aforementioned *Bactris glandulosa* var. *baileyana* (Fig 1G). Lack of data about vesper rat home range limits our conclusions about the possible relationships between individuals at both sights.

Elaeis oleifera (Kunth) Cortes (previously *E. melanococca*) is found in Central and South American tropics from Honduras to Brazil (Hartley 1977). This stem solitary palm can grow up to 6 m long, but not exceeding 2 m in height, since most of its stem is creeping over the ground. Leaves are 3-8 m long, regularly pinnate with the leaflets orientated in the same plane. Inflorescences are borne among the leaves, forming a unisexual cone with each individual producing inflorescences of different sexes alternating. Fruits are yellow to red, 2.5-3 X 1.8-2 cm. This palm prefers flooding soil along rivers and in swamps typically associated with *Rhaphia* (Quesada *et al.* 1997, Baumgartner *et al.* 2001).

Nyctomys sumicrasti ranges from S. Jalisco and S. Veracruz, Mexico south through Central America to Central Panama, except on the Yucatan Peninsula where the smaller Yucatan vesper rat resides (Wilson and Reeder 1993). Inhabiting low montane forests and evergreen lowlands, old secondary and riparian forests, and semi-deciduous forests to 1600 m elevation, the species is a well distributed, yet still considered uncommon.

Wild vesper rats are reported to eat the hard fruits of the false evergreen needle bush, *Jacquinia pungens* (Ceballos 1990), as well as figs, seeds, fruit of madders, borage (*Cordia diversifolia*) and moths. They have even been observed eating the leaves of *Daphnopsis americana*, a poisonous tree of the family Thymelaeaceae. To our knowledge, this is the first report of vesper rat (*N. sumicrasti*) feeding on palm fruits. Given time, more information is sure to be revealed about this species' unique life history and the fullness of its dietary complexity.

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LITERATURE CITED

- Baumgartner, T., J. González, M. Grayum, A. Estrada, B. Hammel, W. Huber, Q. Jiménez, C. Kastinger, O. Malzer, F. Morales, S. Pamperl, A. Rodríguez, J. Sánchez, E. Schembera, W. Till, A. Weber, S. Will, N. Zamora, and G. Zimmermann. 2001. An Introductory Field Guide to the Flowering Plant of the Golfo Dulce Rain Forests Costa Rica. Biologiezentrum des OÖ Landesmuseums. Linz, Austria. 462 p.
- Birkenholz, D.E.; Wirtz, W.O. II. 1965. Laboratory Observations on the Vesper Rat. *Journal of Mammology* 46: 181-189.
- Ceballos, G. 1990. Comparative Natural History of Small Mammals from Tropical Forests in Western Mexico. *Journal of Mammology* 71: 263-266
- De Nevers, G., A. Henderson and M.H. Grayum. 1996. Mesoamerican *Bactris* (Palmae). *Proceedings of the California Academy of Sciences* 49: 171-210
- Emmons, L. H. 1997. Neotropical Rainforest Mammals, A Field Guide. Second Edition. The University of Chicago Press. Chicago, Illinois, U.S.A. pp. 209-210.
- Goodwin, G. G. 1946. Mammals of Costa Rica. *Bulletin of the American Museum of Natural History* 87: 271-473
- Hartley, C. W. S. 1977. *The Oil Palm (Elaeis guineensis Jacq.)*, Second Edition. Longman. London, England. pp 69-73.
- Henderson, A. 2000. *Bactris* Palmae. *Flora Neotropica Monograph* 79. The New York Botanical Garden. Bronx, New York, U.S.A. pp 76-78.
- Quesada, F., Q. Jiménez, N. Zamora, R. Aquilar and J. González. 1997. *Arboles de la Península de Osa*. INBio. Heredia, Costa Rica. 411 p.
- Reid, F. A. 1997. *A Field Guide to the Mammals of Central America & Southeast Mexico*. Oxford University Press. New York, New York, U.S.A. pp. 218-219.
- Timm, R. M. and C. Vriesendorp. 2003. Observations on feeding behavior in the vesper mouse, *Nyctomys sumicrasti*. *Mammalian Biology* 68: 126-128
- Wilson, D. E. and D.M. Reeder. 1993. *Mammal Species of the World, A Taxonomic and Geographic Reference*, Second Edition. Sm



Fig. 1: Fruit count diminished from the night of 18 December (1A) to the following morning, 19 December (1B). 1C. Litter directly beneath feeding area of vesper rats includes fruit skins and rat droppings. 1D. Fruit seeds piled together suggests a clearly defined feeding station in the palm. 1E. Subadult *Nyctomys sumicrasti* holds a yellow palm fruit (14 December). 1F. Adult female vesper rat (short tail) rat holds a seed from *Bactris glandulosa* var. *baileyana*. Male can be seen above, also eating (18 December). 1G. A break in the terminal tail hairs of the adult male rat (18 December) suggests a portion of the tail is missing. 1H. *Nyctomys sumicrasti* perched on the petiole of an American oil palm *Elaeis oleifera*, holding the large orange fruit of the same palm (24 June).