

Pristimantis cristinae and *P. ruthveni*
LYNCH & RUIZ-CARRANZA, 1985 –
increase of altitudinal distribution
and páramo habitat use in the Sierra
Nevada de Santa Marta, Colombia

The Sierra Nevada de Santa Marta is a mountain range located in the Caribbean lowlands of the Department of Magdalena, Colombia, South America. Predominant ecosystems in the Caribbean lowlands of Colombia are tropical dry forests, while in the Sierra Nevada are wet ecosystems such as cloud forest and páramo (ESPINAL & MONTENEGRO 1963). This difference in natural ecosystems implies that many species in the Sierra Nevada are ecologically isolated, which is reflected in high endemism, especially of animals with low dispersal capacity such as amphibians. Previous studies in the Sierra Nevada de Santa Marta have found up to 50 amphibian species, of which 17 are endemic (RUIZ-CARRANZA et

al. 1996; LYNCH et al. 1997). In the Sierra Nevada, frogs of the genus *Pristimantis* have been found the most diverse in the area with nine species, particularly in cloud forest (LYNCH & RUIZ-CARRANZA 1985; FROST 2009). Here we increase the altitudinal range distribution of two species of *Pristimantis*: *P. cristinae* LYNCH & RUIZ-CARRANZA 1985 and *P. ruthveni* LYNCH & RUIZ-CARRANZA 1985 (Family Strabomantidae) in the Sierra Nevada and register for the first time their presence in the páramo habitat.

From September 13 to 22, 2008 a field expedition was conducted to the locality Lagunas de Sevilla (10°54'03"N, 73°55'04,23"W), Serranía de Cebolleta, east of the municipality of San Pedro, western slope of the Sierra Nevada of Santa Marta, Colombia. This locality is at about 3500 m elevation and exhibits rocks and shrubby vegetation characteristic of the páramo habitat (Fig. 1). Extensive diurnal hikes were made in an area of approximately 4.5 km² looking for amphibians in diverse microhabitats



Fig. 1: General aspect of the páramo habitat in Lagunas de Sevilla, Serranía de Cebolleta, Sierra Nevada of Santa Marta, Colombia.

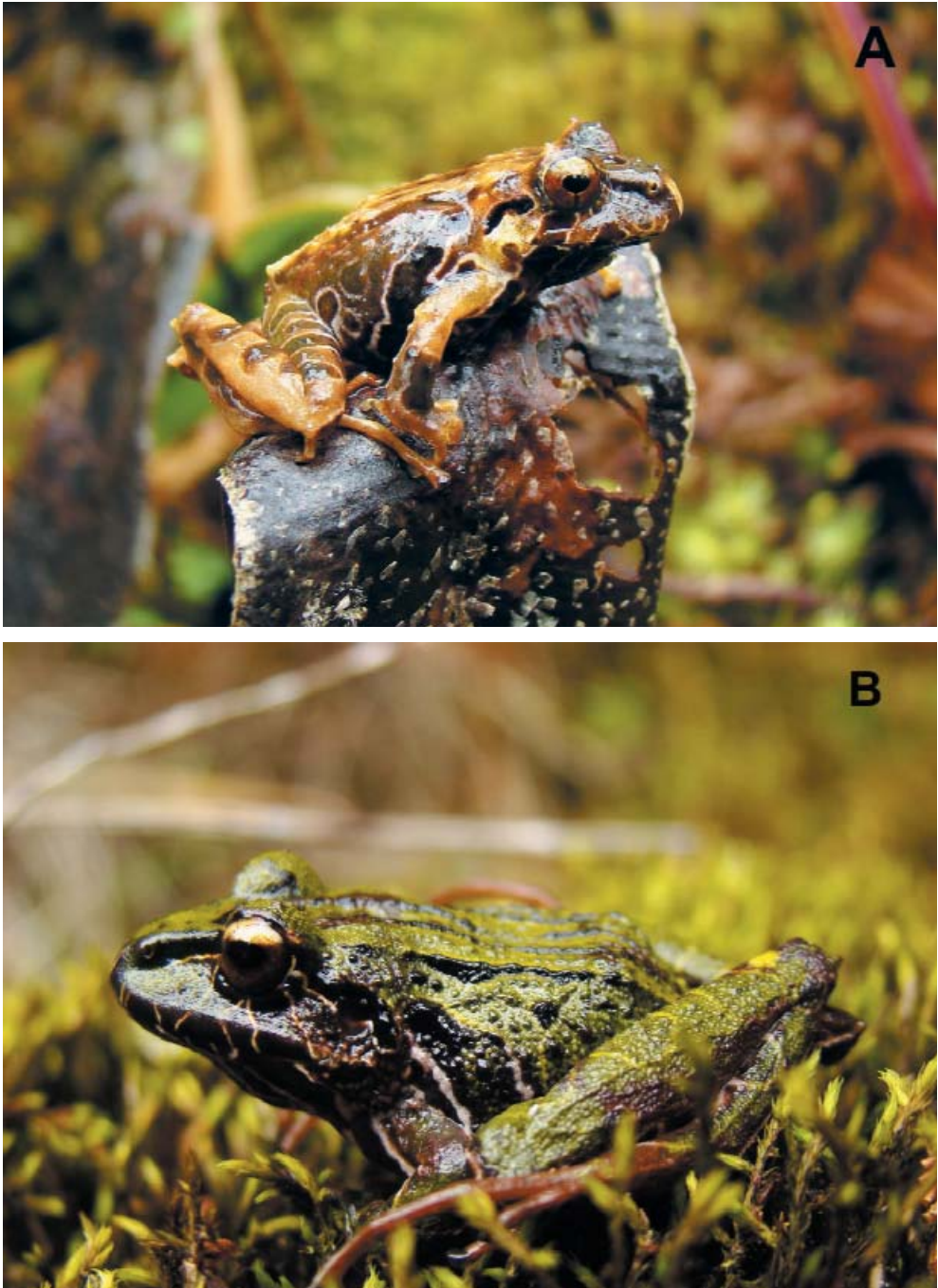


Fig. 2: *Pristimantis cristinae* LYNCH & RUIZ-CARRANZA, 1985 (A) and *Pristimantis ruthveni* LYNCH & RUIZ-CARRANZA, 1985 (B) observed for the first time at about 3500 m elevation in the páramo of Lagunas de Sevilla, Serranía de Cebolleta, Sierra Nevada of Santa Marta, Colombia.

(e.g. rocks, shrub, ground) both in places close and away from bodies of water (lakes, streams). During hikes alongside streams, we observed an individual of *P. cristinae* (Fig. 2a) calling from shrubby vegetation. Calls of this type were heard, especially on cloudy days, both during the day and night periods, leading to estimates of 10-20 individuals per day. Also, during the diurnal hikes frogs of the species *P. ruthveni* (Fig. 2b) were observed jumping and hiding around rocks in a stream. The identification of these species was based on descriptions, illustrations, the determination key published by LYNCH & RUIZ-CARRANZA (1985) and confirmed by J. D. LYNCH (pers. comm.).

Our records at about 3500 m elevation increase the known altitudinal distribution of *P. cristinae* (1530-2600 m) and *P. ruthveni* (1880-2600 m) by 900 m (ACOSTA-GALVIS 2000; FROST 2009), which is important in order to establish conservation strategies for endemic endangered species like *P. cristinae* (RAMIREZ-PINILLA et al. 2004). In addition, our records document the presence of *P. cristinae* and *P. ruthveni* in páramo, a habitat where these species have not been previously recorded (LYNCH & RUIZ-CARRANZA 1985; FROST 2009).

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REFERENCES: ACOSTA-GALVIS, A. R. (2000): Ranas, salamandras y caecilianas (Tetrapoda: Amphibia) de Colombia.- Biota Colombiana, Santafé de Bogotá; 1(3): 289-319. ESPINAL, T. S. & MONTENEGRO, E. (1963): Formaciones vegetales de Colombia: Memoria explicativa sobre el mapa de Colombia. Bogotá (Instituto Geográfico Agustín Codazzi [IGAC], Departamento Agrológico), 201 pp. FROST, D. R. (2009): Amphibian species of the world: Version 5.1. Electronic database accessible at < <http://research.amnh.org/vz/herpetology/amphibia/> >, American Museum of Natural History, New York, USA. [accessed on 26 February 2010]. LYNCH, J. D. & RUIZ-CARRANZA, P. M. (1985): A synopsis of the frogs of the genus *Eleutherodactylus* from the Sierra Nevada de Santa Marta, Colombia.-

Occasional Papers of the Museum of Zoology, University of Michigan, Ann Arbor; 711: 1-59. LYNCH, J. & RUIZ-CARRANZA, P. M. & ARDILA-ROBAYO, M. C. (1997): Biogeographic patterns of Colombian frogs and toads.- Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales, Bogotá; 21 (80): 237-248. RAMÍREZ-PINILLA, M. P. & OSORNO-MUÑOZ, M. & RUEDA, J. V. & AMÉZQUITA, A. & ARDILA-ROBAYO, M. C. (2004): *Pristimantis cristinae*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.2. < www.iucnredlist.org > [accessed on 26 February 2010]. RUIZ-CARRANZA, P. M. & ARDILA-ROBAYO, M. C. & LYNCH, J. D. (1996): Lista actualizada de la fauna de amphibia de Colombia.- Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales, Bogotá; 20 (77): 365-415.

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AUTHORS: Luis Alberto RUEDA-SOLANO, Fernando VARGAS-SALINAS, Laboratorio 305, Bloque J, Departamento Ciencias Biológicas, Universidad de Los Andes, Carrera 1 Este No. 18A-70, Bogotá D.C., Colombia, < biologoluisrueda@gmail.com > < f.vargas216@uniandes.edu.co >

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Autor(en)/Author(s): Rueda-Solano Luis Alberto, Vargas-Salinas Fernando

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