NOTA

PRESENCE OF A POLYDACTYLOUS *TROPIDURUS ETHERIDGEI* (SQUAMATA: IGUANIDAE: TROPIDURINAE) IN THE DRY CHACO OF CÓRDOBA PROVINCE, ARGENTINA

NICOLÁS PELEGRIN
Centro de Zoología Aplicada, Universidad Nacional de Córdoba. Casilla de Correos 122 (5000) Córdoba, Argentina.
npelegrin@efn.uncor.edu

PALABRAS CLAVE: Extra digits, abnormalities, lizard, Chaco forest.

Mutations for polydactyly are quite common in tetrapods (Galis *et al.* 2001) and have been reported in humans (D'Souza *et al.* 1998), amphibians (Caudata and Anura) (Blaustein and Wake 1995; Blaustein and Johnson 2003; Piha *et al.* 2006), and other tetrapods (see examples in Galis (2001), but it has been rarely reported in lizards (Carretero *et al.* 1995).

In the context of an ecological study of lizard assemblages in the Dry Chaco, a lizard sampling was made in Chancaní, province of Córdoba (central Argentina) (31º20'14" S, 65º20'24" W). A hundred drift-fence pitfall traps were set in native forest areas with different degrees of degradation by fire, grazing and logging. Out of a sample of 171 individuals of *Tropidurus etheridgei*, I found one juvenile bearing polydactyly. This animal (SVL = 28 mm) had one extra digit in each forelimb and two extra digits in each hindlimb (Fig. 1 a and b). None of these digits was capable of movement and they appeared to hinder the lizard's movement. Forelimb extra digits were apparently normal, although non-chromatic, whereas extra digits of the hindlimbs were rudimentary, merged at their base. It could be also an hyperphalangy case, where a phalange bifurcates creating a new "false digit"; but in order to confirm it, it would be necessary to practicize an x-ray photography or bone staining techniques. Pholidosis, coloration, and body size of the lizard were as usual for the age class of the species. The specimen was deposited at Herpetological Collection of Fundación Miguel Lillo, Tucumán (Argentina) (FML 18373).

This kind of abnormalities could be due to genetic or environmental causes, could be induced by predation or parasites (Johnson *et al.* 2006), or even be artificially induced in the embryo (Carretero *et al.* 1995; Blaustein and Johnson 2003). In the reported case, both the extremely low rate of polydactylous individuals in this large sample (0.6%) as well as the absence of pesticides and agrochemicals in the area suggest a genetic determining factor. According to Lande (1978) and Wright (1968) mutations causing polydactyly are negatively selected through negative pleiotropic effects at the phylotypic stage (Galis *et al.* 2001), so the proportion of polydactylous individuals should be low. On the other hand, the proportion of polydactylous and hyperphalangeous amphibians is higher than that of amniotes, due to the late development of the limbs and the consequent reduced pleiotropic effects (Galis *et al.* 2001).

ACKNOWLEDGEMENTS

The author has a posgraduate fellowship from CONICET. This work was funded as a part of the project PIP 6296 from CONICET.

Recibido: 26/05/07 — Aceptado: 19/08/07
Ed. asoc.: Mario Cabrera

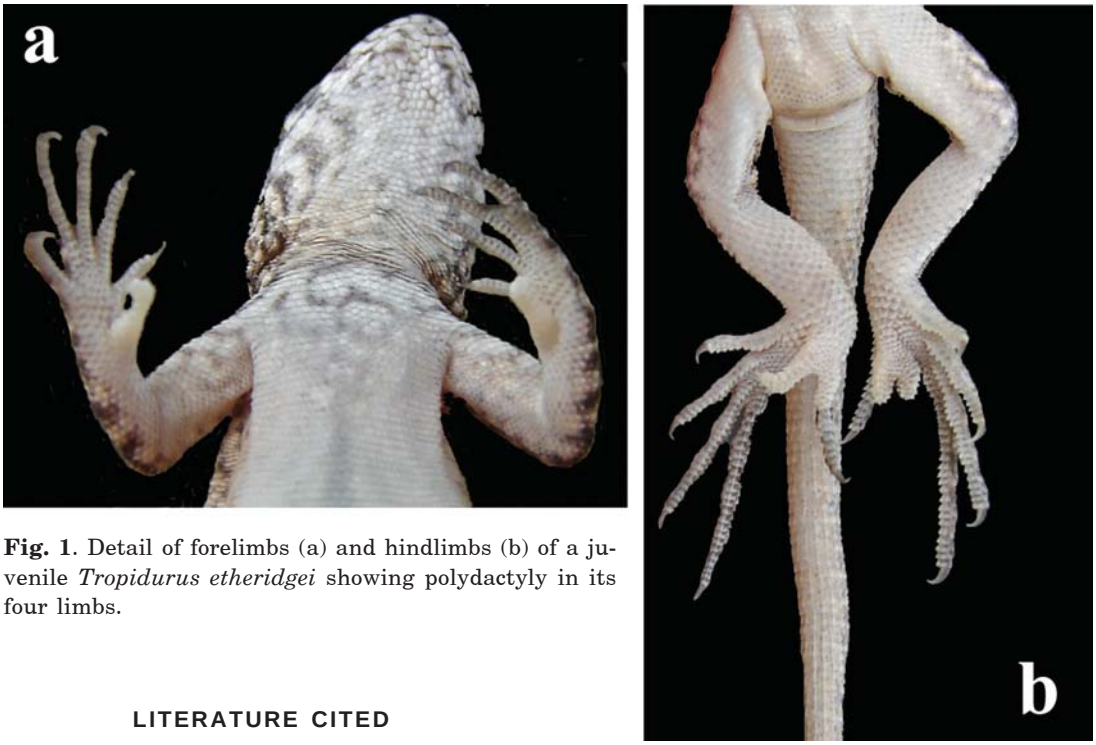

Fig. 1. Detail of forelimbs (a) and hindlimbs (b) of a juvenile *Tropidurus etheridgei* showing polydactyly in its four limbs.

LITERATURE CITED

BLAUSTEIN, A. R. & P. T. J. JOHNSON. 2003. The complexity of deformed amphibians. *Frontiers in Ecology and the Environment* 1 (2): 87-94.

BLAUSTEIN, A. R. & D. B. WAKE. 1995. The puzzle of declining amphibian populations. *Scientific American* April 1995: 52-57.

CARRETERO, M. A.; G. A. LLORENTE; X. SANTOS & A. MONTORI. 1995. Un caso de polidactilia en lacértidos. *Boletín de la Asociación Herpetológica Española* 6: 11-13.

D'SOUZA, D.; J. MCDIARMID & C. TICKLE. 1998. A polydactylous human foot with "double-dorsal" toes. *Journal of Anatomy* 193: 121-130.

GALIS, F.; J. J. M. VAN ALPHEN & J. A. J. METZ. 2001. Why five fingers? Evolutionary constraints on digit numbers. International Institute for Applied Systems Analysis, Laxemburg, Austria. Interim Report IR-02-030. 24 pp.

JOHNSON, P. T. J.; E. R. PREU; D. R. SUTHERLAND; J. ROMANSIC; B. HAN & A. R. BLAUSTEIN. 2006. Adding infection to injury: Synergistic effects of predation and parasitism on amphibian malformations. *Ecology* 87 (9): 2227-2235.

LANDE, R. 1978. Evolutionary mechanisms of limb loss in tetrapods. *Evolution* 32: 79-92.

PIHA, H.; M. PEKKONEN & J. MERILÄ. 2006. Morphological abnormalities in amphibians in agricultural habitats: A case of study of the common frog *Rana temporaria*. *Copeia* 2006 (4): 810-817.

WRIGHT, S. 1968. Evolution and the Genetics of Populations (Vol. 1). Genetic and Biometric Foundation, University of Chicago Press.