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REMARKS ON SOME NEOTROPICAL AMPHIBIANS OF
THE GENUS *ALSODES* FROM SOUTHERN ARGENTINA

(*Anura Leptodactylidae*)



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REMARKS ON SOME NEOTROPICAL AMPHIBIANS OF
THE GENUS *ALSODES* FROM SOUTHERN ARGENTINA

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Abstract. — A general review of the genus *Alsodes* is made, recognizing five Argentine forms. *Alsodes gargola neuquensis* subsp. nova and *Alsodes pehuenche* sp. nova are described. It is suggested that *Alsodes illotus* (Barbour) and *Alsodes nodosus* (Duméril and Bibron) are identical. The validity of *Alsodes verrucosus* (Philippi) is also supported.

Riassunto. — Osservazioni su alcuni Anfibi neotropicali del genere *Alsodes* dell'Argentina meridionale.

E' passato in rapida rivista il genere *Alsodes* di cui si riconoscono cinque forme dell'Argentina. Vengono qui descritte *Alsodes gargola neuquensis* n. ssp. e *Alsodes pehuenche* n. sp.. *Alsodes illotus* (Barbour) si considera sinonimo di *Alsodes nodosus* (Duméril e Bibron). *Alsodes verrucosus* (Philippi) viene rivendicato come specie valida.

I. - A general review of the genus « *Alsodes* » Bell.

The genus *Alsodes* Bell was resurrected by LYNCH (1968) who pointed out *Eupsophus coppingeri* (Gunther) and *Alsodes monticola* Bell were the same species. The genus *Eupsophus*, as recognized in the revisions by CEI (1960, 1962_a, 1962_b) and GRANDISON (1961), is now considered to be an artificial grouping of different and probably unrelated leptodactyloid frogs (GALLARDO, 1970; LYNCH, 1971). In this genus the monotypic *taeniatus* group belongs to *Batrachyla*, while the *roseus* and *peruanus* groups still remain as significant forms of the genus *Eupsophus*. The species group *nodosus* falls within the combination of morphological characters supporting the genus *Alsodes*, i.e., the atlas convex, the sternum expanded and notched posteriorly, the reduction or

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loss of the columella and the tympanic annuli, the tympanum externally concealed, the exceptional development of forelimbs in males and the presence of peculiar horny spines on fingers and chest of reproductively active males. In *Eupsophus roseus*, *vertebralis* and *peruanus*, on the contrary, the columella is normal-sized, the tympanic annulus is visible externally and the thumb pads are slightly developed in males.

GALLARDO (1970) suggested recognizing *Alsodes* as distinct from *Eupsophus* and assembled in the first genus the following Patagonian species: *Alsodes gargola* Gallardo, *Eupsophus illotus* (Barbour), *Alsodes monticola* Bell, *Eupsophus nodosus* (Duméril and Bibron), *Telmatobius montanus* Lataste, *Telmatobius praebasalticus* Cei and Roig and *Telmatobius reverberii* Cei. As shown by BARRIO (1970) and CEI (1972) the last two species are unquestionably *Telmatobius*, but the other five can be regarded as a rather homogenous group of telmatobiid leptodactyloid frogs, found on both the western and eastern Cordilleran slopes, between 30° and 45° South latitude. Some synonymic problems regarding the use of the generic name *Alsodes* are also considered by LYNCH (1968, 1971, 1972), in spite of his preliminary agreement with this arrangement. Still under discussion is the date of publication of both BELL's (1843) and FITZINGER's (1843) papers. Under the current provisions of the International Code of Zoological Nomenclature, Fitzinger's *Systema Reptilium* should be dated 31 December 1843, thus making the resurrected name *Alsodes* acceptable. On the other hand, if FITZINGER's (1843) paper antedates BELL's (1843) descriptions, *Hammatoedactylus* Fitzinger (1843) should be the correct name for the generic group recognized by GALLARDO (1970) and BARRIO (1970) and presently called *Alsodes* (Lynch, 1971). Moreover *Eupsophus* is used again by LYNCH instead of *Alsodes* in a later paper (1972).

During a general reexamination of the leptodactyloid frogs of Argentina I have had occasion to consider the still uncertain taxonomic status of several of the above mentioned forms. A more thorough analysis requires the elucidation of the present relationships of some species and the description of others. However, a valid systematic assessment of the Southern Argentine *Alsodes* is evidently unobtainable without a wide comparison with the Chilean representatives of this group.

As this is a preliminary note, no extensive discussion of the revised taxa is included. *Alsodes gargola* Gallardo 1970, is a distinctive species from the surroundings of the Nahuel Huapi lake (Rio Negro Province, Argentine Patagonia). A new northernmost subspecies of *gargola* is now known. The presence of *Alsodes monticola* Bell 1843, is doubtful in Argentina. *Alsodes illotus* (Barbour) 1922, known only by the type (MCZ,

8314: « Cordillerans west of Mendoza, 7000 feet »), agrees in all characters cited for *Alsodes nodosus* (Duméril and Bibron) 1841. It must be considered conspecific with that Chilean species, still unknown in Argentina. *Alsodes montanus* (Philippi) cannot be maintained as the validity of *Telmatobius montanus* Philippi has recently been shown by DONOSO BARROS (1970). A new specific name is needed for this poorly known anuran, erroneously rediscovered as *Telmatobius montanus* in 1965 in the Southern Mendoza Province (Pehuenche Valley: Cei and Roig, 1965). Lastly a correct specific status can be resurrected for the confused and uncommon forms from Southern Chilean *Nothofagus* forests, named *Borborocoetes verrucosus* by PHILIPPI (1902) and redescribed by VELLARD (1947) from Argentine specimens (Tronador mountains, Nahuel Huapi lake). I regard *Alsodes verrucosus* (Philippi) as a valid form. It agrees in the fundamental characters given by Vellard in his redescription, which have been likewise checked in one of the specimens used by the Author and in additional living and preserved individuals from the Lacar lake (Neuquen, Northern Patagonia, Argentina).

II. - Description of new species and subspecies of « *Alsodes* »

Alsodes gargola neuquensis subsp. nova.

Holotype - ♂ 1963 - 1, IBA, UNC (1). Volcanic tablelands of Lonco Luan, 1500 m, west of Zapala, Neuquen (Northern Argentine Patagonia); Cei J. M. leg., 7 jan 1968.

Paratypes - 2 ♀♀ specimens from the same locality: IBA, UNC 1963 - 2, 3; the same collector.

Derivatio nominis - The name of the subspecies is referred to the geographic locality.

Diagnosis - A slender northern form of the *gargola* group, having a larger snout, webs of the toes shared, a smoother skin and tarsal fold reduced.

Description of the holotype - Snout-vent 52 mm. Head wide and flattened. Snout short, but larger than in the nominal form, length of the snout equal to the ocular diameter. Interocular distance larger than the width of the upper eyelid and the internarial interval. Maxillary and vomerine teeth well developed, the later in two oval patches between the

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choanae. Canthus rostralis obtuse, rounded. Eyes prominent, laterally located. Tongue subcircular and free behind. Tympanum not evident. Supratympanic fold weak. Forearm stout, strong in the males. Fingers free, unfringed. Progressive increasing of the length of the fingers: 2° - 1° - 4° - 3°. Metacarpal and subarticular tubercles moderate. Toes two-thirds webbed. Inner metatarsal tubercle strong and enlarged; outer metatarsal tubercle small and round. Tarsal fold short and weak. Hind legs large and slender. When they are adressed the heels reach the tip of the snout in males, or go beyond the eyes in the females. When the femurs are bent at right angles with the body, the tibio-tarsal articulations overlap. Pectoral girdle similar to that of the nominal form. Skin smooth, scanty glandulous on the back, coarsely granular on the lower surface of thighs. Lateral dermal folds present. Greenish or yellowish on the dorsum, with a faintly interocular band and many irregular dark spots, smaller posteriorly. Ventrally yellowish-gray, speckled with close, minute white dots. Prominent thorny nuptial excrescences on the fingers, and rounded patches of black spines on the chest: they are secondary sex characters of the males. Measurements in mm: head length 13.5; head width 18; forearm 28; hindleg 95; foot 45; tibia 30; femur 29; ocular diameter 6.2; nostrils interval 5.

Description of the paratypes - Similar to the holotype. Females smaller, without lateral dermal folds evident. Length of the females, snout-vent 41-39.

Observations - Living in shallow creeks and springs, scattered in the volcanic, arid plateau of Lonco-Luan, surrounded by a relic flora of *Araucaria araucana*, *Chusquea* and *Nothofagus*. Biology and reproduction still unreported.

***Alsodes pehuenche* sp. nov.**

Holotype - ♂ 1646 - 1, IBA, UNC. Pehuenche Valley, in Andean mountains of Southern Mendoza Province, Argentina, 2000 up to 2500 m; Cei J. M. and Roig V. G. leg., 14 nov. 1973.

Paratypes - 11 specimens (5 ♂♂ and 3 ♀♀ and 3 juv.) from the same locality: IBA, UNC 1646 - 1, 7; 1642 - 1, 3; 1643 - 1: the same collectors.

Derivatio nominis - It is the ancient indigenous name of the region, being referred to its Araucanian inhabitants (Pehuenche tribu).

Diagnosis - A stout aquatic frog, with lateral bagginess and evident nuptial excrescences on the fingers and chest of the males. Toes entirely webbed. Greenish or light brown above, scattered with yellowish spots.

Description of the holotype - Snout-vent 58 mm. Body stout, with head wider than large. Snout rounded, slightly truncate when seen from above. Canthus rostralis distinct. Nostrils laterally located, near the tip of the snout. Maxillary teeth weak; vomerine teeth in two oblique, separate patches between the upper borders of the choanae. Interocular distance narrower than upper eyelid, but slightly larger than the interocular interval. Eyes laterally located; ocular diameter larger than the interocular distance, and subequal to the snout length. Tongue elliptical, free behind. Tympanum concealed, covered by blunt, horny warts. A strong supratympanic fold from the upper eyelid to the axilla. Forearm strongly developed. Fingers slightly fringed; metacarpal tubercles large and prominent; subarticular tubercles rounded, moderately developed. First finger longer than second. Hind leg slender; when adpressed, the heel reaches the eye. When the femurs are bent at right angles to the body, the tibiotarsal articulations hardly contact. Toes fully webbed; inner metatarsal tubercle strong and elliptical; the outer faint, almost indistinct. Tarsal fold sharp-edged, very evident. Omosternum cartilaginous, with short stem and dilated tip; sternum cartilaginous, twice length of omosternum, posteriorly expanded, shorter than epicoracoid and slightly emarginate. Skin tuberculate and granular dorsally, coarsely granular below, strongly granulous on the lower posterior surface of thighs. Loose lateral dermal folds. Strong spiny black excrescences on the first and second fingers; bilateral round spiny areas on the chest and small conical warts on forearms and upper lips. Dorsally greenish brown, scattered with yellow spots. A narrow yellowish interorbital bar present. Ventrally creamy white or bluish white, darker with purplish color on lower surface of the legs. Brownish color in preserved specimens, with darker or yellowish spots on the back; ventrally yellowish gray. Measurements, in mm: head length 17; head width 20; forearm 26.5; hind leg 96; foot 44; tibia 29; femur 29; ocular diameter 6; nostrils interval 4.5.

Description of the paratypes - Males similar to the holotype (snout-vent 59-54). Females, snout-vent 59-54. Forearm slender in the females, which do not present lateral dermal folds, horny excrescences in fingers and chest and dorsal skin warty. Females dorsally brownish, mottled with diluted yellowish dots.

Observations - Data on ecology and behavior of these uncommon leptodactyloid frogs were reported (CEI & ROIG, 1965). They have been considered at first as a Cordilleran population of *Telmatobius montanus* Lataste (in Philippi). Their tadpoles have been also erroneously described as larval stages of *Telmatobius montanus* (CEI & ROIG, 1965). *Alsodes pehuenche* is an aquatic inhabitant of the stony Cordilleran streams,

close to permanent snow but warmed by midday sun, probably also during the winter months. The adults stay in deep horizontal holes, located under water, which likely shelter them during the cold season.

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REFERENCES

- BARBOUR T., 1922 - Three new Neotropical Salientia - *Proc. Biol. Soc. Washington*, 35, pp. 111-114.
- BARRIO A., 1970 - *Insuetophrynus acarpicus*, un nuevo leptodactilido firmisternio sudamericano (*Amphibia, Anura*) - *Physis*, 30, pp. 331-341.
- BELL T., 1843 - Reptiles - In C. DARWIN, The Zoology of the voyage of the HMS Beagle, 5, p. 51.
- CEI J. M., 1960 - A Survey of the leptodactylid frogs, genus *Eupsophus*, in Chile - *Breviora*, 118, pp. 1-13.
- CEI J. M., 1962 a - El genero *Eupsophus* en Chile - *Inv. Zool. Chil.*, 8, pp. 7-42.
- CEI J. M., 1962 b - Batracios de Chile - Univ. Chile, Santiago, cviii + 128 pp.
- CEI J. M., 1972 - Herpetologia Patagonica. V. Las especies extra-cordilleranas alto-patagonicas del genero *Telmatobius* - *Physis*, 31, pp. 431-449.
- CEI J. M. & ROIG V. G., 1965 - The systematic status and biology of *Telmatobius montanus* Lataste (*Amphibia, Leptodactylidae*) - *Copeia*, 4, pp. 421-425.
- DONOSO BARROS R., 1970 - Catalogo herpetológico chileno - *Bol. Mus. Nac. Hist. Nat. Chile*, 31, pp. 49-124.
- DUMÉRIL A. & BIBRON G., 1841 - Erpétologie général ou Histoire Naturelle complète des Reptiles - Paris, 8°, pp. 1-792.
- FITZINGER L. J. F. J., 1843 - Systema Reptilium - Vienna, pp. 1-106.
- GALLARDO J. M., 1970 - A proposito de los Telmatobiinae (*Anura, Leptodactylidae*) patagonicos - *Neotropica*, 16, pp. 73-85.
- GRANDISON A. G. C., 1961 - Chilean species of the genus *Eupsophus* (*Anura, Leptodactylidae*) - *Bull. British Mus. (Nat. Hist.)*, 8, pp. 111-149.
- LYNCH J. D., 1968 - The identity of a Chilean frog, *Alsodes monticola* Bell, and the status of the genus *Alsodes* (*Amphibia, Leptodactylidae*) - *Herpetologica*, 24, pp. 255-257.
- LYNCH J. D., 1971 - Evolutionary relationships, osteology, and zoogeography of Leptodactyloid frogs - *Univ. Kansas Mus. Nat. Hist. Misc. Publ.*, 53, pp. 1-238.
- LYNCH J. D., 1972 - Generic partitioning of the South American Leptodactylid frog, genus *Eupsophus* Fitzinger (sensu lato) - *Bull. South Calif. Acad. Sciences*, 71 (1): pp. 2-11.
- PHILIPPI R. A., 1902 - Suplemento a los Batraquios chilenos - Santiago, pp. 1-160.
- VELLARD J., 1947 - Dos Batracios interesantes de la region de Bariloche - *Acta Zool. Lilloana*, 4, pp. 145-153.