

*Liolaemus melanops* Burmeister and the subspecific status of the  
*Liolaemus fitzingeri* group (Sauria-Iguanidae)

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**ABSTRACT**—A new arrangement of the Patagonian lizards of the *Liolaemus fitzingeri* group is discussed. Three geographical forms are proposed: *L. fitzingeri melanops* Burmeister North of Rio Chubut; *L. fitzingeri canqueli* subsp. nov. from the volcanic Meseta Canquel, Central Chubut; *L. fitzingeri fitzingeri* (Duméril et Bibrón) from Southern Chubut and Santa Cruz territories. A redescription of *L. fitzingeri melanops* is given. Populations from Meseta Canquel, formerly considered by the author as *L. fitzingeri melanops*, are synonymized with *L. fitzingeri canqueli* subsp. nov.

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Since the first description of the nominate form (*Proctotretus fitzingeri* Duméril Bibrón, 1837), *Liolaemus fitzingeri* has remained a poorly known taxon of Patagonian lizards whose type-locality ("Chile") was obviously unclear. No attempt has been made to critically revise the species, occurring in a widespread but uncertain geographical range. The history of *Liolaemus fitzingeri* is of interest in the analysis of its real status, in accordance with my recent discussion (Cei, 1973). Bell (1843) quoted the species for Puerto Deseado and Santa Cruz River; it was subsequently reported by Anderson (1898), Berg (1898), Boulenger (1885), Burmeister (1888), Burt and Burt (1931, 1933), Donoso Barros (1960; 1966), Donoso Barros and Codoceo (1962), Fitzinger (1843), Gallardo (1971), Girard (1885), Guichénot (in Gay, 1848), Hellmich (1950), Koslowsky (1895; 1896; 1898), Liebermann (1939), Peters and Donoso Barros (1970) and Stejneger (1909). *Liolaemus conspersus* Gravenhorst (1838) and *Eulemus affinis* Girard (1858) have been synonymized with *L. fitzingeri*. However such an opinion cannot be easily supported for *Liolaemus melanops* Burmeister (1888). Referring to the different kinds of evidence (Cei, 1973) in agreement with serological and morphological observations, two conspecific allopatric forms were recognized: *Liolaemus fitzingeri fitzingeri* (Duméril et Bibrón) from Southern Chubut Province and Santa Cruz territories, and *Liolaemus fitzingeri melanops* Burmeister from the sands and basaltic ravines of the Meseta of Canquel, South of Chubut River.

In examination of additional specimens collected later by Mr. A. J. Scolaro in Northern Chubut (Peninsula Valdes) for a better understanding of Burmeister's nominal species, just revived as subspecific taxon, I have had an occasion to consider several doubtful features of my former allocations. A new attempt at a revised and more adequate nomenclatural treatment of the geographical forms of the *fitzingeri* group is the purpose of the present paper.

The type of *Liolaemus melanops* Burmeister is no longer available in the Museo Argentino de Ciencias Naturales, Buenos Aires. It is likely completely decayed or lost. The specimens collected by Scolaro in the Peninsula Valdes, North Chubut River, agree in all characters used by Burmeister in the description of *L. melanops*; they are also fully compatible with the few specimens from Puerto Madryn treated as *Liolaemus fitzingeri* by Hellmich (1950). However, all these northern specimens show a number of different characters by a careful morphological comparison with populations formerly (Cei, 1973) referred to *Liolaemus fitzingeri melanops* from Meseta Canquel, south Chubut River, in spite of their general affinity and the unquestionable resemblance between all these lizards and the ancient but scarcely detailed Burmeister's description. In view of the loss of the holotype it is evident that the problem of a clear cut populational identification with the true *L. melanops* can only be resolved by the collection of a new sample of topotypes.

Burmeister (1888) patagonian explorations were accurately reported by this zoologist. Recorded distances in leagues between the visited localities permit a reasonably accurate reconstruction of the itinerary. Also the type-locality (Quelé-Curá, Araucan name for "Sierra Colorada") can be correctly identified (Fig. 1). It appears still as a subdesertic landscape of red porphyritic rocks, often surrounded by sandy marshlands. Pursuant to our suggestions, Mr. Scolaro explored again the type-locality in December, 1973 and some male and female specimens of *Liolaemus fitzingeri* were obtained. They agree in all characters utilized by Burmeister in his definition of *L. melanops*, and moreover they fall within the morphological characters and variation of the above mentioned lizards from Peninsula Valdes and Puerto Madryn. On the contrary, the topotypes differ by a number of significant somatic characteristics from populations I formerly recognized as *L. fitzingeri melanops*, south of Chubut River (cf. the following key of the subspecies).

In accordance with the morphological evidence provided by the specimens from the type-locality, a new interpretation of the *Liolaemus fitzingeri* group is required. The name *Liolaemus fitzingeri melanops* Burmeister must be restricted to the northern populations between the Rio Negro boundary and the Chubut River, the low sandy hills of Peninsula Valdes falling within its range. A new subspecific name is proposed, *Liolaemus fitzingeri canqueli*, for the populations formerly (CeI, 1973) allocated to *Liolaemus fitzingeri melanops*, from the basaltic plateau of Canquel, South of the Chubut River, southwards to the desertic salt flats of Laguna Palacios and Payahilé. The nominate form, *Liolaemus fitzingeri fitzingeri* (Duméril Bibrón), is maintained for the Southern Chubut and Santa Cruz populations. They agree with the careful description by Donoso Barros (1966) based on a limited Chilean population (near Buenos Aires Lake) belonging to the same geographical form (Fig. 2).

A redescription of the true *Liolaemus fitzingeri melanops* Burmeister is therefore submitted hereinafter as a definitive conclusion of the laborious analysis of its status, together a

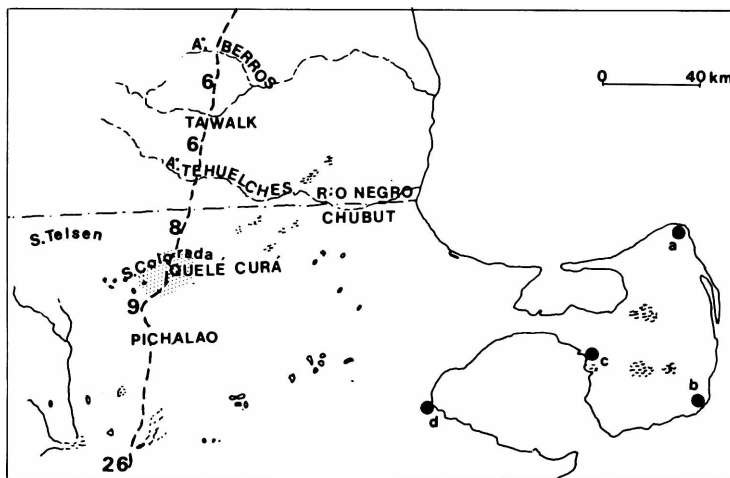


FIGURE 1. Burmeister's exploration's (1888) and the type-locality of *Liolaemus melanops* (Quelé Curá: now Sierra Colorada, Chubut). Stippled area indicates the collection area of topotypes. Distances between the visited localities have been expressed in leagues (about 3 miles), in Burmeister's report, the last lap of the itinerary (26 leagues) extended between Pichalao and Chubut River. The areas of collection from Peninsula Valdes are also reported: a-Punta Norte; b-Punta Delgada; c-Puerto Piramides; d-Puerto Madryn.

description of *Liolaemus f. canqueli* subsp. nov. A detailed key to all the subspecific taxa of *Liolaemus fitzingeri* is also provided, and characteristic male specimens are illustrated (Fig. 3). All specimens cited are in the collections of the Instituto Biología Animal, Universidad Nacional de Cuyo (IBA-UNC).

*Liolaemus fitzingeri melanops* Burmeister

**Neotype.**—IBA-UNC 943-1. An adult male from sandy flats near Sierra Colorada (Quelé Curá), Chubut, Argentina, taken December 1973 by A. J. Scolaro.

**Topotypes.**—IBA-UNC 943-2-3 (females); the same locality as neotype.

**Definition.**—A slender subspecies of *Liolaemus fitzingeri* characterized by smaller size; small number of scales around the middle of the body; dorsal scales keeled, smaller than ventral; hind legs long; head strongly melanic; dorsal color greenish or brown with irregular transversal stripes of broken black spots.

**Distribution.**—From the Rio Negro boundaries to Rio Chubut; all the Peninsula Valdes. From about 1000 m to sea level.

**Description of Neotype.**—A male specimen, snout-vent 75 mm, tail 180 mm, head length 18 mm, head width 14 mm, hind leg 44 mm, fore leg 27 mm. General aspect slender; adpressed limb reaching beyond the axilla. Head lepidosis and ear opening similar to those of the nominal form. Interparietal much smaller than parietals; 9 supralabials and 11 infralabials; dorsal head scales convex, somewhat wrinkled; temporal scales smooth. Sides of the neck granular. Antihumeral folds not prominent. Dorsal scales clearly keeled, smaller than in the other subspecies; ventral scales smooth, larger than dorsals; caudal scales diagonally keeled; limb scales weakly carinate. Thigh scales granular: a weak patch of enlarged scales on posterior border. Scales around the middle of the body 68; 20 scales contained in the head length; 28 lamellae under the fourth toe; 9 preanal pores.

**Color (in life).**—Head strongly melanic, as suggested by subspecific name. Dorsum yellow-greenish, with a bluish shade;

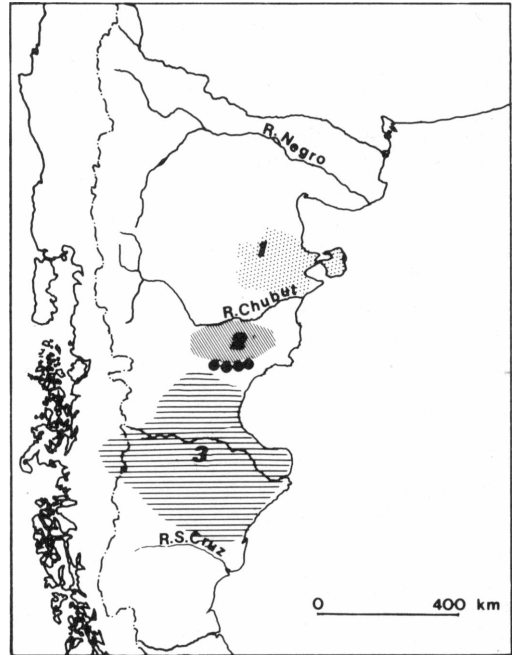


FIGURE 2. Map of the known geographical distribution of the Patagonian lizards of the *Liolaemus fitzingeri* group. 1-*Liolaemus fitzingeri melanops*; 2-*Liolaemus fitzingeri canqueli*; 3-*Liolaemus fitzingeri fitzingeri*. (black points indicate the desertic salt flats of Payahile and Laguna Palacios, probably ecological barrier between 2 and 3).

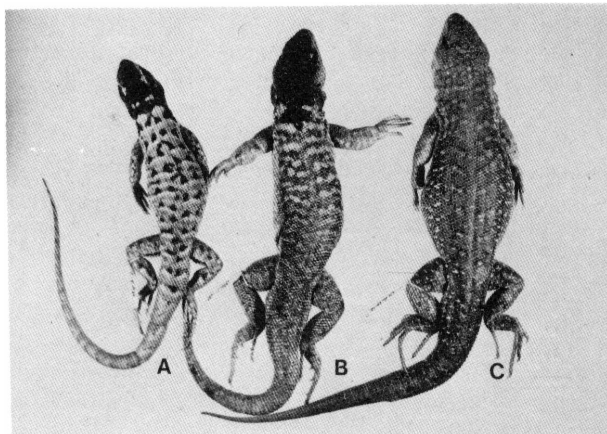


FIGURE 3. Male specimens of the subspecies of *Liolaemus fitzingeri*: A-*L. fitzingeri melanops*; B-*L. fitzingeri canqueli*; C-*L. fitzingeri fitzingeri* (reduced).

broken transverse white-bordered bars of black spots on the dorsum and proximal third of tail. Tail weakly banded with dark and pale rings. Black spots on limbs and arms. Ventrally bluish-white, with a remarkable black pigmentation on belly and throat.

*Variation.*—One of the female topotypes is very similar to the male, with dorsal pattern more confused. The other specimen, brown colored, exhibits weaker head melanism and a more reduced ventral pigmentation. Body size and number of dorsal scales are much as in the male (70-74 mm snout-vent; 68 dorsal scales around middle of body). Specimens from Peninsula Valdes are variable. The black transverse bars are in some very evident, but in others appear laterally interrupted by pale longitudinal streaks. Scales around the middle of the body 64-68, as in Hellmich's specimens from Puerto Madryn.

*Remarks.*—The neotype is strikingly similar to Burmeister's description, for size (7 inches), measurements and color pattern. The lizards are very nimble, burrowing quickly in the sandy soil. Their fossorial habits made observation and capture difficult but during the sunny days they run or forage under the low bunches of the thorny patagonian bush.

*Liolaemus fitzingeri canqueli* subsp. nov.

*Holotype.*—IBA/UNC 861-9, a male adult specimen from Callejas, northern slopes of Meseta Canquel, Chubut, 900 m, taken 19 January 1973 by J. M. Cei, L. M. Cei and T. Ferreira.

*Paratypes.*—IBA/UNC 861-1,8,10-12 (5 males, 2 females, 3 juveniles), same locality as holotype; 689 (a female) from northern border of Meseta Canquel, Chubut, taken 11 April 1970 by J. M. Cei and L. P. Castro; 804-1,2 (a male, a female) from Paso de Indios to Sombrero, 500-700 m, northern border of Meseta Canquel, Chubut, taken 15 January 1972 by J. M. Cei, L. M. Cei and T. Ferreira.

*Definition.*—A stout subspecies of *Liolaemus fitzingeri*, characterized by short tail; large hind legs; dorsal scales smooth, weakly keeled; ventral scales smaller than in the nominate form; dorsal color yellow or green, striped by transverse dark bands; head melanic.

*Distribution.*—On the sandy border of the basaltic slopes of Meseta Canquel, Chubut, south Chubut River, between 500 and 1000 m, southward to 45° South Lat.

*Description of Holotype.*—Male, snout-vent 89 mm, tail 101 mm, head length 19 mm, head width 16 mm, hind leg 52 mm, fore leg 31 mm. General aspect stout, the adpressed limb reaching the shoulder. Head lepidosis and ear opening as in the nominate form. Interparietal slightly smaller than parietals. Head scales and temporal scales wrinkled; 9 supralabials and 7 infralabials. Sides of the neck granular, with evident antihumeral and longitudinal folds. Dorsal scales softly keeled, somewhat smaller than in the nominate form; ventral scales smooth, not larger than dorsals, smaller than in the nominate form; caudal scales squarish, diagonally keeled; limb scales smooth. Thigh granular, with an evident patch of enlarged scales on posterior border. Scales around the middle of the body 75; 19 scales contained in head length; 29 lamellae under the fourth toe; 7 preanal pores.

*Color (in life).*—Head black. Dorsum brilliant yellow-green, with dark transverse irregular bars, attenuated on tail and limbs. Ventrally white, with some bluish shade. Strong pigmentation on belly, throat and hind limbs. The bright yellow color disappears in preserved specimens.

*Variation.*—Males 99 mm (snout-vent) are frequent. Very little color variation is evident in males; cephalic melanism and the dark transverse bars on the dorsum somewhat attenuated in females. Scales around the middle of the body—74-82, as in the nominate form; 6-8 orange preanal pores in the males.

*Remarks.*—As in all iguanids of the *Liolaemus fitzingeri* group, this is a psammophilous lizard, burrowing easily in the sandy soil. Individuals forage under the spinous bush during the warmest season. In the sandy hills of Callejas, Meseta of Canquel, at midday, soil temperatures of 40-44 C have been measured (11:30 AM, January, 1973). However, under the bush shade, 26 or 27 C were the rule.

In the same environment of *Liolaemus fitzingeri canqueli*, specimens of *Diplolaemus bibroni* and *Cupriganus fasciatus* have been collected. Also venomous snakes of the genus *Bothrops* (*B. ammodytoides*) were observed and captured.

Key of the subspecies of the *Liolaemus fitzingeri* group

1. Body stout (snout-vent 82-99 mm in males, 80-96 mm in females); 74-82 scales around middle of body; patch on posterior femoral border evident . . . . . 2  
 Body slender (snout-vent 70-77 mm in males, 70-74 mm in females); 64-68 scales around middle of body; dorsal scales clearly keeled, smaller than ventrals; patch on posterior femoral border faint; head melanic . . . . . *L. fitzingeri melanops*
2. Dorsal scales keeled; ventral scales larger than dorsal; long tailed (tail/snout-vent = 1.25-1.44); hind leg short (in the males, snout-vent/hind leg = 1.81-1.96); dorsal color gray brown, with scattered series of small transversal yellowish spots; frequently a dorsal reddish shading; head olive-brown; ventrally white or bluish, spotted on the throat; strongly pigmented on belly or neck . . . . . *L. fitzingeri fitzingeri*  
 Dorsal scales smooth or weakly keeled; ventral scales no larger than dorsal; short-tailed (tail/snout-vent = 1.00-1.21); hind leg long (in the males, snout-vent/hind leg = 1.54-1.80); dorsal color yellow or green, brilliant in the males; irregular dark transverse bars; head melanic; ventrally white, unspotted on the throat, strongly pigmented on belly . . . . . *L. fitzingeri canqueli*

(\**Liolaemus fitzingeri fitzingeri* and *L. fitzingeri canqueli* are serologically identical, in accordance with their crossed precipitin tests (crf. Cei, 1973).

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## LITERATURE CITED

- Anderson, L. C. 1898. List of Reptiles and Batrachians collected by the Swedish expedition to Tierra del Fuego 1895-96 under direction of Dr. Otto Nordenskiöld. *Ofvers. Vet. Ak. Forh.* 1898:457-662.
- Bell, Th. 1843. Reptiles: in *Zool. Voy. Beagle*, 5. London 51pp.
- Berg, C. 1898. Contribuciones al conocimiento de la fauna herpetológica argentina y de los países limítrofes. *An. Mus. Nac. B. Aires* 6:1-35.
- Boulenger, G. A. 1885. Catalogue of the lizards in the British Museum (Nat. Hist.). V.I: xii + 436 pp. London.
- Burmeister, H. 1888. Suplemento al grupo de los lagartos (Algunas noticias sobre la fauna patagónica). *An. Mus. Nac. B. Aires* 3:252.
- Burt, C. E. and M. D. Burt. 1931. South American Lizards in the collection of the American Museum of Natural History. *Bull. Am. Mus. Nat. Hist.* 61(7):227-395.
- \_\_\_\_\_ and \_\_\_\_\_. 1933. A preliminary check list of the lizards of South America. *Trans. Acad. Sci. St. Louis* 28:v + 104 pp.
- Cei, J. M. 1973. Los *Liolaemus* del grupo *fitzingeri* en Santa Cruz y Chubut. *Physis* 32(85-c):447-458.
- Donoso Barros, R. 1960. Ecología de los Reptiles Chilenos. *Inv. Zool. Chil.* 6:65-72.
- \_\_\_\_\_. 1966. Reptiles de Chile. Ed. Univ. Chile, Santiago 458 pp. 146 pls.
- \_\_\_\_\_ y M. Codoceo. 1962. Reptiles de Ayson y Magallanes. *Bol. Museo Nac. Hist. Nat.* 28(1):1-45.
- Duméril, A. M. C. and G. Bibron. 1841. *Erpétologie Générale*. Paris 1841, iii + 792.
- Fitzinger, L. J. 1843. *Systema Reptilium*. Vindobonae, Braumüller et Seidel, vi + 73 p.
- Gallardo, J. M. 1971. Algunas ideas sobre la zoogeografía de los saurios patagónicos. *Rev. Mus. Arg. C. Nat., Ecol.* 1(4):135-146.
- Girard, C. 1858. United States exploring expedition during the years 1838-1842 under the command of Ch. Wilkes. *Herpetology*. Philadelphia.
- Gravenhorst, J. L. C. 1838. Beiträge zur genauern Kenntniss einiger Eidechsengattungen. *Nov. Act. Acad. Leop. Car.* 18(2):712-784.
- Guichénot, A. 1848. En C. Gay: *Reptilia et Pisces in Historia física y política de Chile; Zoología* 2:5-136. Atlas: *Erpétologie*, 1854.
- Hellmich, W. 1950. Die Eidechsen der Ausbeute Schröder (Gattung *Liolaemus*, Iguan.). *Veröff. Zool. Staatssamml. München* 1:129-194.
- Koslowsky, J. 1895. Batracios y Reptiles de Rioja y Catamarca, recogidos durante los meses de Febrero a Mayo de 1895. *Rev. Mus. La Plata* 6:333-344.

- . 1896. Sobre algunos reptiles de Patagonia y otras regiones argentinas. *Rev. Mus. La Plata* 7:447-457.
- . 1898. Enumeración sistemática y distribución geográfica de los reptiles argentinos. *Rev. Mus. La Plata* 8:161-200.
- Liebermann, J. 1939. Catálogo sistemático y zoogeográfico de los Lacertilidos argentinos. *Physis* 16:61-82.
- Peters, J. A. and R. Donoso Barros. 1970. Catalogue of the Neotropical Squamata. Part II. Lizards and Amphisbaenians. *United States Nat. Mus.* viii + 293 pp.
- Stejneger, L. 1909. Batrachians and Reptiles (Princeton Univers. Exped. to Patagonia, 1896-1899). *Rep. Princeton Univ. Exped. Patag. 1896-1899. Princeton N.J. (Zoology)* 211-224.