



## The taxonomic status of *Phyllonastes* Heyer and *Phrynopus peruvianus* (Noble) (Lissamphibia, Anura): resurrection of *Noblella* Barbour

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Between December 1899 and August 1900, H. H. Keays collected zoological specimens in Departamento Puno, southern Peru. He shipped to the American Museum of Natural History a series of amphibians purportedly obtained near Juliaca, a locality at 3824 m a.s.l., close to the Lake Titicaca. From this series, Noble (1921) described a tiny frog named as *Sminthillus peruvianus*. Until then, the genus *Sminthillus* Barbour and Noble contained only the small Cuban species *S. limbatus* (Cope), and the broad geographic gap between the two species, together with some morphological arguments, led Noble to consider this generic assignment as provisional. Later, Barbour (1930) erected the genus *Noblella* to accommodate *S. limbatus*, but he did not define nor diagnose the genus. Subsequently, Lynch (1971) synonymized *Noblella* with *Eleutherodactylus* Duméril and Bibron and, eventually (Lynch 1975), with *Phrynopus* Peters.

Juliaca lies in the rather dry altiplano and the habitats around this locality are unsuitable for any *Phrynopus* species. Vaurie (1972) stated that specimens of various taxa collected by H. H. Keays did not come from “near Juliaca” but rather from the vicinity of the Inca Mine, in Santo Domingo; this cloud forest locality is at 1690 m on the Andean Amazonian slopes in the Provincia Carabaya, northern Departamento Puno. Whether specimens were collected at this locality or along the route between Santo Domingo and Juliaca, it is unknown. Certainly, 1690 m does not seem to be a suitable altitude for any *Phrynopus* species (De la Riva 2007).

Lynch (1975) reviewed the genus *Phrynopus* and recognized 14 species. He devoted a special treatment to the type species of *Phrynopus peruvianus* (i.e. *Noblella peruviana*) because *P. peruvianus* was different from other *Phrynopus* in some respects, as the presence of a pectoral girdle anatomically arciferous (as in other *Phrynopus* and “Leptodactylids”) but functionally firmisternal (the halves of the epicoracoid cartilages are fused). Furthermore, he reported other distinctive features, such as presence of a fold-like tarsal tubercle, and a prominent outer metatarsal tubercle. Lynch (1975) based his conclusions on the examination of one uncatalogued cleared and stained skeleton of the type series of *Sminthillus peruvianus* (the paratype AMNH 14526), and a series of frogs collected at Abra Acjanacu, Departamento Cusco. This locality lies more than 200 km (airline) northwest of Santo Domingo, the putative actual type locality of *P. peruvianus*.

Dealing with the taxonomy of several frogs from the Brazilian Amazon, Heyer (1977) erected a new genus, *Phyllonastes*, for two minute leptodactylid frogs described by Lynch a year before (Lynch 1976): *Euparkerella lochites* (Andean) and *E. myrmecoides* (lowland). With this arrangement, the genus *Euparkerella* Griffiths remained restricted to the Brazilian Atlantic Forest. The initial diagnostic characters of *Phyllonastes* established by Heyer (1977) became progressively less and less diagnostic as new species were discovered, and eventually the only remaining external difference with *Phrynopus* is the presence in *Phyllonastes* of pointed tips on at least Toes III and IV (De la Riva & Köhler 1998; Lehr *et al.* 2004; Lehr 2006). Indeed, the relationships and limits of *Phrynopus* and *Phyllonastes* are a common matter of discussion in the literature on the so-called “minute leptodactylid frogs” from the Andes (Duellman 1991; De la Riva & Köhler 1998; Lehr *et al.* 2004). Lehr (2006), based on Lynch’s (1975; 1986) statements about *P. peruvianus*, pointed out its similarity with members of the genus *Phyllonastes*.

We examined the tiny (16 mm) holotype (AMNH 14526) and paratypes (AMNH 14527–28) of *Sminthillus peruvianus*, as well as a large sample of specimens identified as *Phrynopus peruvianus* from Abra Acjanacu (KU 138937–49; 128951–62), including specimens used by Lynch. Both samples are clearly different. The types of *S. peruvianus* are adults with tips on Toes II, III and IV distinctively pointed; at least in some paratypes, a black inguinal spot is present (Noble 1921). There are some points of disagreement between the original description of the species and our personal examination of the type series; for example, Noble observed a tympanum and a tarsal tubercle, but we find these characters not evident after more than a century in preservative. However, observable characters and Noble’s original description clearly correspond to what we consider nowadays *Phyllonastes*. Thus, we remove *P. peruvianus* from the genus

*Phrynopus*. On the other hand, the Abra Acjanacu frogs are clearly assignable to the genus *Phrynopus* and constitute an unnamed species whose description will be published in a forthcoming paper. The name *Sminthillus* predates *Phyllonastes*, and is a junior synonym of *Eleutherodactylus*. The remaining available name is *Noblella*, which we resurrect from the synonymy of *Eleutherodactylus*. Hence, *Phyllonastes* Heyer becomes a junior synonym of *Noblella* Barbour.

The genus *Noblella* (type species: *Noblella peruviana*) is characterized by the following combination of characters: 1) head narrower than body; (2) cranial crests absent; (3) dentigerous processes of vomers absent; (4) "S" condition of adductor muscle; (5) terminal phalanges narrowly T-shaped; (6) Finger I  $\leq$  Finger II; (7) Toe III shorter than Toe V; (8) tips of at least Toes III–IV acuminate; (9) small size (SVL less than 22 mm). Osteological features of *Noblella* were commented by Lynch (1975; as *Phrynopus peruvianus*) and Heyer (1977; as *Phyllonastes*). The genus is hitherto composed by the following eight species: *N. carrascoicola* (De la Riva & Köhler), *N. duellmani* (Lehr, Aguilar & Lundberg), *N. heyeri* (Lynch), *N. lochites* (Lynch), *N. lynchi* (Duellman), *N. myrmecoides* (Lynch), *N. peruviana* (Noble) (type species) and *N. ritarasquinae* (Köhler).

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