

**Case 3303*****Hyloxalus panamensis* Dunn, 1933: proposed emendation of spelling from *Hyloxalus panamansis* (currently *Colostethus panamansis*; Amphibia, Anura)**

Taran Grant

*Division of Vertebrate Zoology, Herpetology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, U.S.A.; and Department of Ecology, Evolution, and Environmental Biology, Columbia University, 1200 Amsterdam Ave., New York, NY 10027, U.S.A. (e-mail: grant@amnh.org)*

Darrel R. Frost

*Division of Vertebrate Zoology, Herpetology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, U.S.A. (e-mail: frost@amnh.org)*

Roberto Ibáñez D.

*Smithsonian Tropical Research Institute, Apartado 2072, Balboa, Panamá; Circulo Herpetológico de Panamá, Apartado 10762, Estafeta Universitaria, Panamá, Panamá; and Departamento de Zoología, Universidad de Panamá, Panamá, Panamá (e-mail: ibanezr@tivoli.si.edu)*

Charles W. Myers

*Division of Vertebrate Zoology, Herpetology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, U.S.A. (e-mail: myers@amnh.org)*

Jay M. Savage

*Department of Biology, San Diego State University, San Diego, CA 92182, U.S.A. (e-mail: savy1@cox.net)*

**Abstract.** The purpose of this application, under Article 81 of the Code, is to conserve the subsequent spelling of the specific name *Hyloxalus panamensis* as a justified emendation of *Hyloxalus panamansis* Dunn, 1933 (currently *Colostethus panamansis*) for a Central American dendrobatid frog species which is the subject of important behavioural, environmental and biochemistry studies. While the original spelling *panamansis* is presently valid, both spellings have been in use since 1940. Although neither spelling has been established in prevailing usage, the emended spelling is becoming more widely used and is expected to prevail in the near future. It is proposed that the spelling *panamensis* be recognised as a justified emendation.

**Keywords.** Nomenclature; taxonomy; Amphibia; Anura; DENDROBATIDAE; *Colostethus*; *Hyloxalus panamansis*; *Hyloxalus panamensis*; Central America; Panama; frog.

---

1. Dunn (1933) named the Panamanian species *Hyloxalus panamansis*. Although an etymology is not provided in the original publication, it is clear that the specific name is in reference to the Panamanian origin of the taxon and is an incorrect latinization. In his next paper dealing with this taxon, Dunn (1940) referred to it with the correct latinization, as *Hyloxalus panamensis*, although he did not propose this as an explicit emendment of the previous spelling. In all his unpublished notes, Dunn used only the emended spelling, and there is no direct evidence that he was ever aware of his lapsus.

2. The taxon was infrequently treated subsequently, and neither spelling has clearly come into prevailing usage. Duellman (1966) applied the original spelling as *Prostherapis panamansis*. Heatwole & Sexton (1966) followed the emended spelling when they treated the taxon as the subspecies *Phyllobates inguinalis panamensis*. Savage (1968) followed the emended spelling in placing *Hyloxalus panamensis* in the synonymy of *Colostethus inguinalis* (Cope, 1868). Silverstone (1976) employed the original spelling, but also considered the taxon to be a synonym of *Colostethus inguinalis*, and Ibáñez et al. (1999) listed *Prostherapis panamansis* and *Hyloxalus panamansis* as ‘familiar synonyms’ of *Colostethus inguinalis*. Frost’s (1999–2002) widely cited electronic catalogue listed both spellings and explicitly considered *panamensis* to be a justified emendation. The taxon remained in synonymy with *Colostethus inguinalis* (Cope, 1868) from 1968 until 2004, when the synonymy was refuted by Grant (2004, p. 6).

3. There is no evidence in the original publication itself to allow *panamansis* to be treated as an inadvertent error. The specific name appears twice in the original publication (pp. 69, 70), and in both instances it is spelled *panamansis*. Therefore, the conditions of Article 32.5 (Incorrect original spellings) of the Code are not met, since incorrect latinization alone is not to be considered an inadvertent error. Although Dunn’s (1940) subsequent publication may be interpreted as evidence of an intended correction by the original author, that publication appeared seven years later and therefore does not satisfy Article 32.5.1.1 (Simultaneous correction).

4. The retention of Dunn’s (1933) original incorrect latinization as the correct spelling will undoubtedly cause confusion, as it has in the past (see above). Because the species was in synonymy for most of the last 35 years, during which time the vast majority of research on dendrobatid frogs has occurred, neither spelling has been established in prevailing usage. However, in resurrecting the species Grant (2004) suggested using the emended spelling. Hence the emended spelling of the name is likely to begin to appear in the modern literature. This Central American species was the subject of extremely influential papers in behavioural ecology, in all of which it was erroneously synonymized with *Colostethus inguinalis* (Cope, 1868). In addition, this species of frog is the only dendrobatid known to possess tetrodotoxin (all other alkaloids of dendrobatids are lipophilic), and the species is cited in the natural products/biochemistry literature. It is very likely that in the near future workers in

these fields will refer to this species of frog using the combination *Colostethus panamensis*.

5. In order to avoid confusion and promote stability, as outlined in Article 81, we ask the Commission to exercise its plenary power to validate *Hyloxalus panamensis* as a justified emendation of the original spelling *Hyloxalus panamansis* Dunn, 1933.

6. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that *panamensis* is a justified emendation of the original spelling *panamansis* Dunn, 1933, as published in the binomen *Hyloxalus panamansis*;
- (2) to place the name *panamensis* Dunn, 1933, in the binomen *Hyloxalus panamensis*, on the Official List of Specific Names in Zoology;
- (3) to place the name *panamansis* Dunn, 1933, as published in the binomen *Hyloxalus panamansis*, on the Official Index of Rejected and Invalid Specific Names in Zoology.

## References

- Duellman, W.E. 1966. Aggressive behavior in dendrobatid frogs. *Herpetologica*, **22**: 217–221.
- Dunn, E.R. 1933. Amphibians and reptiles from El Valle de Anton, Panama. *Occasional Papers of the Boston Society of Natural History*, **8**: 65–79.
- Dunn, E.R. 1940. New and noteworthy herpetological material from Panama. *Proceedings of the Academy of Natural Sciences of Philadelphia*, **92**: 105–122.
- Frost, D.R. 1999–2002. Amphibian Species of the World: An Online Reference. V2.21 (15 July 2002). Electronic database available at <http://research.amnh.org/herpetology/amphibia/index.html>
- Grant, T. 2004. On the identities of *Colostethus inguinalis* (Cope, 1868) and *C. panamensis* (Dunn, 1933), with comments on *C. latinasus* (Cope, 1863) (Anura: Dendrobatidae). *American Museum Novitates*, **3444**: 1–24.
- Heatwole, H. & Sexton, O.J. 1966. Herpetofaunal comparisons between two climatic zones in Panama. *American Midland Naturalist*, **75**: 45–60.
- Ibáñez D., R., Rand, A.S. & Jaramillo, C.A. 1999. *Los Anfibios del Monumento Natural Barro Colorado, Parque Nacional Soberanía y Areas Adyacentes / The Amphibians of Barro Colorado Nature Monument, Soberanía National Park and Adjacent Areas*. 187 pp. Editorial Mizrachi & Pujol, Panama.
- Savage, J.M. 1968. The dendrobatid frogs of Central America. *Copeia*, **1968**: 745–776.
- Silverstone, P.A. 1976. A revision of the poison-arrow frogs of the genus *Phyllobates* Bibron in Sagra (family Dendrobatidae). *Natural History Museum of Los Angeles County Science Bulletin*, **27**: 1–53.

Acknowledgement of receipt of this application was published in BZN **61**: 1.

---

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: [iczn@nhm.ac.uk](mailto:iczn@nhm.ac.uk)).