

PHRYNOBATRACHINAE LAURENT, 1940 (AMPHIBIA, ANURA): PROPOSED CONSERVATION. Z.N.(S.) 2362

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Noble, 1931, when proposing a new classification of the Amphibia, subdivided the family RANIDAE into six subfamilies. One of them, the ARTHROLEPTINAE, included the genera *Arthroleptis* Smith, 1849, *Cardioglossa* Boulenger, 1900, *Schoutedenella* De Witte, 1921, *Phrynobatrachus* Günther, 1862, *Arthroleptella* Hewitt, 1926 and *Dimorphognathus* Boulenger, 1906. Another one, the PETROPEDETINAE, included the genera *Petropedetes* Reichenow, 1874 and *Arthroleptides* Nieden, 1911. In addition he grouped the two genera *Cacosternum* Boulenger, 1887 and *Anhydrophryne* Hewitt, 1919 in a subfamily CACOSTERNINAE of his family BREVICIPITIDAE.

2. On the basis of osteological studies, Laurent, 1940, suggested that the genera *Arthroleptis* and *Phrynobatrachus* were not as closely related as had been believed by previous workers, and proposed a new subfamilial arrangement of the RANIDAE. He removed the genera (or subgenera in his mind) *Phrynobatrachus*, *Arthroleptella* and *Dimorphognathus*, and also *Natalobatrachus* Hewitt & Methuen, 1913, from the ARTHROLEPTINAE and placed them in the same subfamily as *Petropedetes*, *Arthroleptides* and also *Phrynodon* Parker, 1935. For this subfamily, instead of using the existing name PETROPEDETINAE, he coined the new name PHRYNOBATRACHINAE.

3. Laurent, 1940, after others, referred the genera *Cacosternum*, *Anhydrophryne* and also *Microbatrachella* Hewitt, 1926 to the RANIDAE, but maintained them in a distinct subfamily CACOSTERNINAE. Poynton, 1964, merged these three genera, and also the genus *Nothophryne* Poynton, 1963, in the same subfamily as the seven other genera already grouped by Laurent, 1940. For this subfamily, instead of using either the names PETROPEDETINAE Noble, 1931 or CACOSTERNINAE Noble, 1931, he used the name PHRYNOBATRACHINAE Laurent, 1940. Laurent (1972 b, p. 104) and others (Haacke, 1970; Savage, 1973; Dowling & Duellman, 1978) accepted Poynton's 1964 arrangement (including the eleven genera mentioned above in a single subfamily), while other authors (Kuhn, 1965; Liem, 1970; Lynch, 1973) still recognized the CACOSTERNINAE as a distinct subfamily.

4. Starting from Laurent's 1940 paper, most authors agreed

with this worker's suggestion to place *Phrynobatrachus* (and related genera) and *Petropedetes* (and related genera) in a single subfamily. However, no general agreement was reached as to the name which this subfamily should bear.

5. Laurent himself changed his mind several times. He first used the name PHRYNOBATRACHINAE (Laurent, 1940, p. 79; 1941, p. 192; 1942, p. 417). Then he wrote: 'Petropedetinae (= Phrynobatrachinae)' (Laurent, 1951, p. 119). He later reverted to PHRYNOBATRACHINAE (Laurent, 1961, p. 197; 1972 a, p. 198; 1972 b, p. 104; 1973, p. 666), and finally, recently, to PETROPEDETINAE (Laurent, 1980, p. 419).

6. As a result of Laurent's inconsistency in the use of the name of this subfamily, both names have appeared in the scientific literature besides his own works. The name PHRYNOBATRACHINAE seems however to have been used a little more than the name PETROPEDETINAE. The following authors used the name PHRYNOBATRACHINAE: Poynton (1964, p. 137; 1976, p. 218), Haacke (1970, p. 278), Liem (1970, p. 15), Broadley (1971, p. 117), Amiet (1972, p. 71; 1975, p. 48), Savage (1973, p. 354), Perret (1976, p. 21), Dowling & Duellman (1978, p. 43.2), Goin, Goin & Zug (1978, p. 237). The following authors used the name PETROPEDETINAE after 1940: De Witte (1952, p. 7), Perret & Mertens (1957, p. 561), Fuhn (1960, p. 224), Skelton-Bourgeois (1961, p. 322), Lynch (1973, p. 146). Goin & Goin (1962, p. 230) also used this latter name, but for the only genera *Petropedetes* and *Arthroleptides* (PETROPEDETINAE sensu Noble, 1931). Perret (1966, p. 354) did not choose between both names, writing: 'Petropedetinae ou Phrynobatrachinae'. Kuhn (1965, pp. 97-98) tentatively recognized the PETROPEDETINAE and the PHRYNOBATRACHINAE as two distinct subfamilies.

7. The above lists of references are certainly not exhaustive, but are given in order to show that no universality of use exists among Amphibian systematists as to the name which should be given to this subfamily.

8. In view of the fact that the name PETROPEDETINAE was coined in 1931 and the name PHRYNOBATRACHINAE in 1940, the first one would seem to be the valid name of this subfamily. However, a first problem arises when the name CACOSTERNINAE is also considered. As was shown above in paragraph 3, not all authors agree at present as to the systematic arrangement to be chosen, but it seems likely that in the future Poynton's 1964 arrangement will be accepted by most authors. The names PETROPEDETINAE and CACOSTERNINAE were both coined by Noble, 1931, and up to now no first reviser action has ever been taken concerning their relative priority. Therefore I hereby

take such an action by selecting the name PETROPEDETINAE and stating that I consider it to have priority over CACOSTERNINAE. This choice is made in order to avoid possible repeated changes in the name of the subfamily including *Phrynobatrachus* and *Petropedetes* according to whether *Cacosternum* is or not included in this subfamily. This action will, however, prove later to have been immaterial if the Commission follows the requests made below, since in this case even the name PETROPEDETINAE will disappear as a junior synonym.

9. As a matter of fact the name PETROPEDETINAE is not the first name available for this subfamily. All authors until now have overlooked the existence of an earlier synonym, namely the family-group name HEMIMANTIDAE Hoffmann, 1878. This name was created by Hoffmann (1878, pp. 613, 635) for a subfamily including the single nominal genus *Hemimantis* Peters, 1863 (of which Hoffmann considered that *Arthroleptis* Smith, 1849 and *Heteroglossa* Hallowell, 1858 = *Dimorphognathus* Boulenger, 1906 were synonyms), and does not seem to have been used again after its creation. *Hemimantis* Peters, 1863 (type species, by monotypy, *Hemimantis calcaratus* Peters, 1863) is a junior subjective synonym of *Phrynobatrachus* Günther, 1862 (type species, by monotypy, *Phrynobatrachus natalensis* Günther, 1862, a junior subjective synonym of *Stenorhynchus natalensis* Smith, 1849). The name HEMIMANTIDAE is thus a senior subjective synonym of PETROPEDETINAE, CACOSTERNINAE and PHRYNOBATRACHINAE, and should be used, under the correct spelling HEMIMANTINAE, instead of these names as the valid name of the subfamily. Since this name has been completely forgotten since its creation and is based on a generic name which is not in use any more, being a junior synonym, such a nomenclatural change would be most irrelevant.

10. Had Laurent, 1940, mentioned the existence of the name HEMIMANTIDAE and proposed the replacement name PHRYNOBATRACHINAE on account of the fact that the nominal genus *Hemimantis* was rejected as a junior synonym, and had the name PHRYNOBATRACHINAE won general acceptance since then, this latter name would have to be maintained by virtue of Art. 40; furthermore, it would take the date of the rejected name (1878), and would consequently become a senior synonym of HEMIMANTIDAE, PETROPEDETINAE and CACOSTERNINAE. This action would in my opinion best solve the existing nomenclatural problem.

11. Unfortunately, neither of these two conditions is met: Laurent, 1940, was not aware of the existence of the name HEMIMANTIDAE, and furthermore, as shown above in

paragraph 6, the name PHRYNOBATRACHINAE cannot be considered as having 'won general acceptance'. The use of Art. 40 to solve this problem is therefore not possible and an action of the Commission is necessary.

12. Although the name PETROPEDETINAE has priority over both names CACOSTERNINAE (see paragraph 8 above) and PHRYNOBATRACHINAE, I suggest that in this case the Commission should validate this latter name and give it the date 1878. I should certainly not have suggested such a validation if there had existed no other need for action of the Commission, but since the rediscovery of the name HEMIMANTIDAE makes an intervention of the Commission necessary, I think this opportunity should be taken to go even further and choose for this subfamily the name which seems the most appropriate and liable to stabilize the nomenclature.

13. My reasons for supporting the choice of the name PHRYNOBATRACHINAE for this subfamily and for giving it the date 1878 are as follows:

- (a) The name HEMIMANTIDAE, the first available name for this subfamily, is based on the nominal genus *Hemimantis*, a subjective synonym of *Phrynobatrachus*. Validation by the Commission of PHRYNOBATRACHINAE Laurent, 1940 with the date 1878 would obtain a result similar to that of Art. 40, which cannot be called upon in this case.
- (b) The name PHRYNOBATRACHINAE has been used a little more than the name PETROPEDETINAE since 1940.
- (c) The taxon which Noble, 1931, designated under the name PETROPEDETINAE is quite different from that which Laurent, 1940, called PHRYNOBATRACHINAE. Since the work of Laurent, 1940, the content of this subfamily has remained unchanged, except that additional genera have been incorporated into it. Therefore the creation of the name PHRYNOBATRACHINAE and of the current concept of the subfamily to which it applies are contemporary and it seems better, since in any case the Commission has to take an action, to associate Laurent's name to the taxon he was the first to recognise.
- (d) While in the genus *Phrynobatrachus* some sixty species are currently recognised, all the other genera of the subfamily, including *Petropedetes*,

contain less than ten species. The name PHRYNOBATRACHINAE refers therefore to the largest and best known of the genera of the subfamily and is also to be preferred for this reason.

- (e) This action encourages stabilization of the nomenclature of this subfamily without requesting the suppression of any name. The names HEMIMANTIDAE, PETROPEDETINAE and CACOSTERNINAE becoming junior subjective synonyms, they would remain available and could possibly be used in the future if arguments made it necessary, either to recognise tribes within the subfamily, or to split again the latter into several subfamilies. While the need of such an action is most unlikely ever to appear for the name HEMIMANTIDAE, it might arise for the two other names, which refer to specialized, 'extreme' groups (see e.g. Laurent, 1941; Poynton, 1964). Until such a need appears, however, it seems better to retain for the whole subfamily the name which refers to one of the most primitive, 'generalised' genera of the subfamily.

14. Accordingly I ask the International Commission on Zoological Nomenclature:

- (1) through use of its plenary powers, to rule that the family-group name PHRYNOBATRACHINAE is to be cited as of 'Laurent, 1940 (1878)' and that it has priority over the family-group name HEMIMANTIDAE Hoffmann, 1878;
- (2) to place the generic name *Phrynobatrachus* Günther, 1862 (*Proc. zool. Soc. London* for 1862, p. 190) (gender: masculine), type-species, by monotypy, *Phrynobatrachus natalensis* Günther, 1862, on the Official List of Generic Names in Zoology;
- (3) to place the specific name *Hemimantis* Peters, 1863 (*Monatsber. k. Akad. Wiss. Berlin* for 1863, p. 451) (gender: masculine), type species, by monotypy, *Hemimantis calcaratus* Peters, 1863, on the Official List of Generic Names in Zoology;
- (4) to place the specific name *natalensis* A. Smith, 1849, as published in the binomen *Stenorhynchus natalensis* (valid specific name of type species of *Phrynobatrachus* Günther, 1862) on the Official List of Specific Names in Zoology;

- (5) to place the specific name *calcaratus* Peters, 1863, as published in the binomen *Hemimantis calcaratus* (specific name of type species of *Hemimantis* Peters, 1863) on the Official List of Specific Names in Zoology;
- (6) to place the family-group name PHRYNOBATRACHINAE Laurent, 1940, as ruled under the plenary powers in (1) above to have priority from 1878 (type genus *Phrynobatrachus* Günther, 1862) on the Official List of Family-Group Names in Zoology with an endorsement that it is to be given nomenclatural precedence over HEMIMANTIDAE Hoffmann, 1878 whenever the two names are considered synonyms;
- (7) to place the family-group name HEMIMANTIDAE Hoffmann, 1878 (type genus *Hemimantis* Günther, 1862) on the Official List of Family-Group Names in Zoology with an endorsement that it is not to be given priority over PHRYNOBATRACHINAE Laurent, 1940, whenever the two names are considered synonyms.

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