

Pernicious descriptions of 'new' frogs from the Western Ghats, India

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In the last two years three publications¹⁻³ have described five new species of *Philautus* (bush frogs) from the Western Ghats, South India. The merit of these papers is debatable owing to deficiencies that we believe are harmful to taxonomy of *Philautus* and for the growth of herpetology in the region, when there is considerable interest in documenting herpetofaunal diversity. Broadly, the shortcomings are: (i) use of characters such as coloration, which is known to be highly variable in live and preserved samples, (ii) inadequate comparison of type specimens and incomplete description of methods, jeopardizing repeatability of findings, (iii) erroneous data-reporting, (iv) seemingly conscious effort to bring in literature that upholds the view to avoid comparison with *Philautus* from Sri Lanka and the Western Ghats, north of the Palghat gap, (v) not substantiating the status of the new species using independent verifiers such as molecular or acoustic techniques, and (vi) lack of caution while presenting details.

Kuramoto and Joshy¹ distinguished *Philautus luteolus* from all other known *Philautus* based on coloration and markings only from males. The authors admit that 'variation seems extensive regarding size, ratio of body parts, coloration, and so on...'. Under these circumstances, it is necessary to accumulate precise data especially on live specimens such as coloration and acoustic features'. However, these genuine yardsticks are not followed by the authors themselves and almost all the types of *Philautus* do not have this information. Further, despite having molecular data on 12S rDNA and of 16S rDNA sequences of *P. luteolus* (GenBank accession no. AB167904 and AB167932 respectively), attempts were not made to independently validate the status of the new species. For description of the call the reader is simply pointed to another publication, without making it clear whether the calls were based on the types of the species in question or not? And in any case, a comparison of call structure with other known species should have formed the basis for species identification. Clearly, there is need for more information to logically assign species status

to a group of individuals merely having some unique characters. Kuramoto and Joshy¹ made a similar description for *P. tuberochumerus* by pointing at one unique morphological character (bony projections on the antero-ventral side of the humerus). While we acknowledge the importance of revealing this character in *Philautus*, a comparative account based on examination of the type specimens is not evident. Two species, *P. melanensis*⁴ and *Ixalus montanus*⁵, were described from specimens collected from Kudremukh, central Western Ghats (type locality of *P. luteolus* and *P. tuberochumerus*). They are now subjective synonyms of *P. tinniensi*⁶. It is therefore necessary to compare and demonstrate that the new species is distinct from *P. tinniensi*. However, in both species descriptions, *P. tinniensi* was not used for comparison.

When any new species is described, the taxon must be compared with type specimens of all or most nominal taxa already recognized in the group and its uniqueness should be parsimoniously demonstrated. Biju and Bossuyt³ state that the new species 'were compared with all valid species currently recognized in the genus *Philautus*'.³ In contrast, Biju and Bossuyt³ produce evidence of having accessed specimens of 13 valid species of *Philautus* from the Western Ghats. In both publications^{2,3}, the authors do not make any specific comparisons based on examination of type specimens of all valid species. In both publications the authors seem to consciously avoid comparison with Sri Lankan *Philautus*, by mentioning that they 'belong to a member of the Sri Lankan radiation' and cite the work of Meegaskumbura *et al.*⁷. This paper had many serious pitfalls⁸, and merely postulates a hypothesis. Contrary to the norm where additional new data are used to support or reject a hypothesis, here the authors make conscious efforts to avoid comparison with *Philautus* from Sri Lanka and the Western Ghats north of the Palghat gap. Further, in the absence of supporting molecular and acoustic data, and a thorough comparison of the same on the new species in question, the above argument by the authors is unjustified.

We also question the judgment of Biju and Bossuyt² in ascribing 'direct development' to *P. nerostagona* by merely locating 'a clutch of eggs in a ca. 10 cm deep tree hole at about 10 m height... Hatched froglets were morphologically similar to the adults – confirming accurate identification'. Any field herpetologist working with *Philautus* will admit that it is extremely difficult to identify <4.5 mm froglets at the species level. If there is a specialized procedure followed in identification of the froglets, it should be made available. We also wonder why the froglets, 41 of them (crucial evidence in this case) were not described and deposited as paratypes. We seriously doubt the generic allocation of *P. nerostagona* based on their inference of 'direct development', lack of evidence through female specimens having large yolky eggs, and the presence of extensive webbing on the fingers as depicted in the article. We suspect the generic allocation, and thereby doubt the validity of the species.

Biju and Bossuyt³ described *P. bobingeri* where comparisons were restricted to species with 'overall green coloration', because they 'could be confused with three other green species from the Western Ghats ... and one species from Sri Lanka'. According to the authors, '*P. bobingeri* is distinct from *P. beddomii* and *P. chalazodes* by the granular dorsum, the red coloration of the posterior margin of the thighs, and the golden brown iris'. We argue that the evidences are ambiguous to make the judgment because: (i) one does not know in what way the granular dorsum of *P. bobingeri* differs from *P. beddomii* and *P. chalazodes* (ii) the comparison of coloration on the thighs and iris would be possible (see Biju and Bossuyt³, p. 33) only if the comparisons were made using live specimens of all three species. If this was done, then it has to be mentioned explicitly under methods for the benefit of the readers. Taxonomists have repeatedly been cautioned of unusually high intraspecific variability, particularly in coloration in *Philautus*¹ and that it could mislead specific taxonomy in the genus⁶. Having restricted the comparisons with other species, the authors compare *P. bobingeri* with a highly vari-

able species, *P. glandulosus*. *P. pulcherimus* has been made an 'objective' junior synonym of *P. glandulosus*, with the justification that it matches the description of live coloration on the dorsum and 'the name has merely figured in few lists of species and not in genuine biological studies of species'⁶. We find this objective synonymy highly subjective, because some 'genuine' biological studies have listed this species from different areas in the Western Ghats^{9,10}. In any case, 12 specimens (BMNH 1947.2.27.21–32) comprising of the lectotype and paratypes of *P. glandulosus* are now available for rigorous statistical comparisons with the supposed new taxon. However, the authors have restricted their comparison to a few lectotypes and two specimens in the personal collection identified by the acronym 'SDB', which is not listed in Bossuyt and Dubois⁶. Even with a small sample comparison, the authors could have tabulated qualitative traits such as 'dorsal skin structure' or quantitative traits such as 'oval fingertips vs rounded'. We feel that the reader is entitled to know how 'the new species differs from *P. glandulosus* by a number of clear-cut characters'. The authors mention that they 'observed a pair of *P. bobingeri* in axillary amplexus and located a clutch of 24 eggs on an *Acacia* tree', and 'Hatched froglets ... were morphologically similar to the adults'. In our opinion, this statement does not qualify the clutch to belong to *P. bobingeri*. Therefore, any description of these eggs would be redundant and misleading to the reader. It is also stated that, '*P. bobingeri* is known only from the type locality in Ponmudi, south of the Palghat Gap'. With just six specimens used for this study, any extrapolation on the distribution of the species is superfluous.

The authors further state that, *P. bobingeri* 'differs from all previously described species of the Western Ghats in having its snout length shorter than the horizontal diameter of the eye'; this is incorrect. The data provided as comparison are only from male specimens (see Biju and Bossuyt; table 1) where the ratio (snout length/horizontal diameter of the eye) in males seems to be smaller compared to females of the taxon. In any case, this statement needs to be supported by appropriate statistical analysis. The authors continue their imprudent manner

of description and make the statement '*P. graminirupus* differs from *P. signatus* in having a smaller snout-vent length, the snout length shorter than the horizontal diameter of the eye'. Again the data for *P. graminirupus* corresponds only to male specimens. One does not know whether the comparisons are confined to only male specimens of the species and, if so, why only males were used for this interpretation? In describing the natural history of the species the authors mention, 'Breeding was observed in the type locality'. One would like to know how they knew that the observation on breeding was being made on the species being described. Further, they mention that 'two more clutches, containing 32 and 30 eggs respectively, were located within a radius of 5 m, one in a rock crevice and another at the base of a grass clump'. Again we doubt the logic behind the interpretation that clutches within 5 m radius of a clutch (presumed to belong to *P. graminirupus*) were made by the same species. In table 1 of Biju and Bossuyt³, detailing morphometric data are full of errors; SL in females under *P. graminirupus*, range is 4.4 and mean 4.0 is an error. There are seven instances under *P. bobingeri* where the mean exceeds or falls lower than the range of values, and also calculating standard deviation from two samples is meaningless. Interestingly, one paratype TBGRI 2002.0055 was used to describe both *P. bobingeri* and *P. graminirupus*³, which is incorrect. In the discussion, Biju and Bossuyt³ hypothesize based on few locality records and evidence from molecular data published elsewhere, that the Palghat Gap may constitute an important barrier to faunal dispersal in the Western Ghats. We believe that the findings in support of this hypothesis are probably an artefact of poor sampling of *Philautus* populations along the Western Ghats. The authors acknowledge Kerala and Tamil Nadu State Forest Departments for study permissions. However, the permission quoted pertains only to Kerala and not Tamil Nadu. These errors only cast further doubts on the caution used by the authors in the study.

Based on our critical examination of the recent 'new' species descriptions from the Western Ghats, we concur with Dubois's apprehension¹¹ that amphibian groups have not been properly revised since Boulenger, and any new frog spe-

cies from this region should be preceded by a revision of the group. The review by Bossuyt and Dubois⁶ serves as a useful guideline, but definitely requires refinement. Without this, it seems to have suppressed several names under the genus and created a fertile ground for spawning of several new species descriptions. Therefore, our plea is that any new data on *Philautus* should be used to revise the group and only after rigorous examination of all available names, new species descriptions should be published. It is only expected that such a study takes longer time and is more expensive than merely describing isolated 'new' species¹¹. We argue that mere compliance to the International Code for Zoological Nomenclature norms by creating a new nominal species by merely listing distinctive characters shifts the burden of proof from the proponent of the new species to the end-user, which is unjustified. We wish to record our serious concern that publishing inaccurate and imprecise descriptions will harm the progress in taxonomy of *Philautus*.

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