



## Letters

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### SCIENTIFIC CORRESPONDENCE

#### Taxonomy of dolphins of the subfamily Delphininae

I thank the editors of *Marine Mammal Science* for publishing the very thought-provoking paper, “How to contend with paraphyly in the taxonomy of the delphinine cetaceans?” by Perrin, Rosel, and Cipriano (2013). This review of taxonomic literature on the delphinine cetaceans is highly interesting, brings out some very good points, and provides more clarity on some of the problems with our current classification of this group. However, I do not support the suggestion that a good potential solution would be to lump all of the dolphins currently in the genera *Delphinus*, *Lagenodelphis*, *Stenella*, *Tursiops*, and *Sousa* into the single genus *Delphinus*.

Others with more experience in molecular biology are likely better able to comment intelligently on the potential issues that may be going on with the various molecular studies and their interpretations. My objections are more basic and practical. My reasons for not supporting the proposed change of taxonomy are as follows:

- (1) As the paper points out, this change is quite radical, and ignores the well-established sister relationships of *S. chinensis*/*S. teuszii* and *D. delphis*/*D. capensis*/*D. c. tropicalis*. And if *T. truncatus*/*T. aduncus* are eventually found to be monophyletic (current information is not clear on this), this would apply here as well. It seems that *Sousa*, *Delphinus* (as we know it), and *Lagenodelphis* are good diagnosable genera. After all, the reason that all these species were first described under *Delphinus* was due to an utter lack of understanding of the evolutionary relationships among members of this group. In my opinion, it would be a step backwards to eliminate or misuse those genera.
- (2) It seems the new “super-genus” *Delphinus* would be nearly impossible to diagnose (at least morphologically), unlike the very large beaked whale genus *Mesoplodon*, which has several unique and diagnosable characters. The proposed new 12-member *Delphinus* would include dolphins with a dorsal fin, but what characters could be used to distinguish them as a group from other delphinids? It seems there is little that is “diagnosable” there.
- (3) It is true that our current taxonomy does not do a good job of reflecting the evolutionary relationships of these species, with several polyphyletic/paraphyletic genera. But, if we adopt this new lumping scheme, we risk “replacing one erroneous classification with another,” as LeDuc *et al.* (1999) put it. It

seems to me prudent to retain the current taxonomy in its basic form until we have good agreement for specific revisions that will correct the problems, while retaining recognition that there are indeed valid genera here. The recognition of the importance of taxonomic stability was even mentioned by Perrin *et al.* (2013).

- (4) It would cause great confusion and turmoil for those who must use a cetacean taxonomy scheme in real-world applications, but who will likely not see or understand the reasons for the revision. This would be especially problematic for people involved in management and conservation, where some species and genera of cetaceans may actually lose conservation emphasis (and funding) when relegated to being just one of 12 species in a single globally-distributed genus. The same thing happened to the bhulan, when it lost its “species status” after publication of Rice (1998). If we are fairly certain that the new taxonomy is correct and will survive, then I think it is appropriate to forge ahead and “damn the torpedoes.” But, if we are just changing the taxonomy because we have something that is a little closer to the truth than what we use now, I say we should wait until we think we can “get it right.”

I know the last argument may not hold much sway for some, but I believe that it may be the strongest objection to this proposal. After all, science does not exist in a vacuum. Perhaps more than any other field of science, taxonomy affects how people in the real world deal with nature, and I think we owe it to them not to change things up on them, unless we have some good agreement that what we are proposing is accurate and will last (at least for a while—taxonomy will always change as we learn more).

In my opinion, there is still too much disagreement among the various molecular studies, and I think we have a ways to go in learning how to properly incorporate various sampling biases and challenges in interpretation of the genetic data. The issue of hybridization and introgression of outside genes is particularly confounding. Those darn bottlenose dolphins just don't seem to recognize our species boundaries!

So, while this is a very interesting and thought-provoking paper, my vote on a proposal to lump *Stenella*, *Lagenodelphis*, *Tursiops*, *Sousa*, and *Delphinus* into a single genus would be no. I am optimistic that advances in our knowledge in the next few years will show us a better pathway—one that will not have to be replaced in a few years, and will stand the test of time. In the meantime, it will be important to acknowledge and recognize, as Perrin *et al.* point out, that *Stenella* (and possibly *Tursiops*) as we currently know them are paraphyletic genera (and thus not reflective of evolutionary relationships). This will help us to focus the direction of future taxonomic studies on delphinid cetaceans, and to resolve such problems with less controversy in the future.

#### LITERATURE CITED

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