FURTHER COMMENT ON THE PROPOSED CONSERVATION OF PANTHERA O肯EN, 1816 (MAMMALIA, CARNIVORA). Z.N.(S.) 482

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With reference to Morrison-Scott’s request (Bull. zool. Nomencl., 22 : 230-232, 1965) to validate the generic name of Panthera Oken, 1816, and to the subsequent remarks by Hershkovitz, de Avoila-Pires, Tortorese and Henmer, I wish to give full support to Morrison-Scott’s motion and the comments by Hemmer. I should particularly like to emphasise that no researcher whose special work has been devoted to the large cats in the last 50 years has used Leo or any other generic name for them, and that—for want of something better—the “Classification of existing Felidae” is still best served by following Pocock (Ann. Mag. Nat. Hist., 1917). Cabrera, to me, is a very dubious authority, as he has written a catalogue but apart from that knew little about cats.

Although I must admit to some sympathy with Hershkovitz’s philological and nomenclatorial pangs of conscience, I also feel that the purpose of nomenclature can only be to serve zoology, not harness it to a Procrustean bed. There is no room for a nomenclature as the ‘part pour l’art’. Abandoning Panthera for whatever other name it might be would only create new confusion after all those actually working on these animals have adopted it.

For the past ten years I have been doing intensive research on the relationship of the Felidae, starting from behaviour, but gradually adding evidence from all other available material, such as anatomy, furs, caryology, serology. It is my opinion that, due to the complicated pattern of character distribution within the family, a better classification than the existing one can be achieved only by working simultaneously on all cat species without exception; which is what we here are trying to do. This is, of course, a time-consuming enterprise, and it will be at least another 5 or 10 years before we shall feel on sufficiently safe ground for publication. However, we are quite certain that many and surprising changes in classification will have to be made, and that any further ruling now by the International Commission on Zoological Nomenclature of the kind suggested by Henmer would be premature. It is certain that a number of genera are required, and that the generic name Felis should be confined to the group of cats included in that genus by Pocock (Catalogue of the Genus Felis, Trustees of the Brit. Museum, London, 1951) and Haltenorth (Die Wildkatzen der Alten Welt, Leipzig 1953). However, I strongly doubt the need for a subfamily and subgeneric names within the family of Felidae and cannot, therefore, support Henmer’s request for a ruling on a subgeneric name Tigris, as there is mounting evidence that neither the tiger nor the ounce has a particularly close relationship with Panthera proper, that is lion, leopard and jaguar. A study on the problem of hyoid bone ossification is in progress. There is reason to suspect that non-ossification of the epithal bone in large cats is linked with body size rather than kinship.

In short, I am thoroughly in favour of Tortorese’s comment (vol. 24, page 3) against issuing any rulings now which in all probability would have to be revoked or altered again in a few years’ time. I feel confident that in the not too distant future sufficient evidence will be available to resolve apparent discrepancies between the work of Haltenorth, Hemmer, myself and other workers and to support the proposal of a nomenclature for all the Felidae which will last.

By Patrick: I support name Leptacia. I strongly bel ibisianum as the Code of In Code.

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By Vratislav Mazak (Musée National d'Histoire Naturelle, Paris, France and Institute of Systematic Zoology, Charles University, Prague, Czechoslovakia)

Since Morrison-Scott's (Bull. zool. Nomencl. 22: 230-232, 1965) request to validate the generic name *Panthera* Oken, 1816, several comments concerning this name have been published in this journal (vol. 23: 67-70, vol. 24: 3 and 259-261). In detail by Hemmer (Bull. zool. Nomencl. 24: 259-260, 1967). I agree completely with Hemmer's opinion and conclusions as far as the question of the name *Panthera* is concerned. I would only like to mention some additional facts and some more general aspects concerning the problem.

There is no doubt that Hershkovitz's statement (Bull. zool. Nomencl. 23, 1966) that "the most commonly used generic name for great cats is Felis Linnaeus" has been repeatedly applied to big cats much more frequently than the name *Felis* (see also Mammals of U.S.S.R. and Adjacent Countries, vol. 3, Jerusalem, 1962) who the same as those of Hershkovitz (i.e. that the type-species of the genus in question was *Felis catus*). Hemmer (loc. cit.) mentions, however, all the reasons showing that the National Code of Zoological Nomenclature. It is interesting to mention that the names *Panthera* and *Felis* have been used without being at variance with the Inter- generic name *Panthera* has been used by Ognev himself as well as by his (loc. cit.) in his excellent monograph on the Siberian Carnivora (see also Mammals of Siberia. Carnivora.) Moscow, 1962). Generally a somewhat different concept of genus accepted by American authors on the one hand and by European authors on the other hand can explain another explanation is less distinct from small cats... As commonly known the American "splitters" this question, however important it is, has none the least absolutely nothing to do with the problems of nomenclature and its stabilization.

Hemmer (loc. cit. p. 760) summarises a great number of different characteristics which separate the so-called big cats (Pantherinae) from all other cats. To like the example from Ognev (loc. cit. pp. 111-112) the anterior process of the jugal bone. As the characteristic hemmed by Ognev was of the Soviet Union, I have tried to verify it in other forms of the Felidae and I can, validly. Nevertheless, another characteristic, briefly recently described (V. Mazak, Note Mammal. 47 (in press), 1968), was found. In big cats the most anterior part of the level of the foramen infraorbitalis does not generally exceed the level of the infraorbital foramen in the oral direction. It should be said, that in the cheetah (Acinonyx jubatus) the shape of the anterior part of the foramen infraorbitalis is less distinct from that found in big cats. I think it is necessary to mention that many other various features separate the cheetah from big cats as well as from other cats.

As to the different features of behaviour given by Hemmer (loc. cit.) I can emphasize that all of them are fully justified. Indubitably we must not overestimate the economic importance of behavioural characteristics and criteria as they are influenced by evolutionary phenomena to the same extent (though perhaps in somewhat different ways) as other characteristics and criteria used by Hemmer as a basis (e.g. cranial and dental). In the case of the family Felidae both behavioural and morphological characteristics however more or less pronounced they are, fit none the less together.

The Puma and the Leopard seem to be the best example as both of them are about the same size. All the morphological characteristics listed by Hemmer as well as other characteristics mentioned above separate these two cats. So the basic behavioural features of the Puma are absolutely identical with those of all big cats and all the principal features of behaviour in the Leopard are identical with those of all big cats.

The group of big cats covers five species: the Leopard, the Jaguar, the Tiger, the Lion, and the Snow Leopard or Ounce. All of these species show every single feature of the common characteristics summarized by Hemmer (loc. cit.) as well as a common skull feature given above. The Ounce presents, nevertheless, additional features (especially cranial: general shape of skull, broad and short nasals, different forms of the bullae, different forms of the occipital part of the skull). I think that a distinct general group rank has to be applied to the group for the following reasons.

I have repeated these known data in order to point out again the fact that all species of recent Felidae can be divided into some groups on the basis of series of morphological and behavioural differences, and to accent the other fact, viz. that these differences are within each of these groups we can find forms which are distinct enough to represent different genera in the framework of the respective group. Three or four subfamilies (Felinae, Leporidae, Carnivora) of Felidae (Lynxinae, Pseudeoceans, Pseudeoceans) might thus indicate evolutionary lines and phylogenetic interrelations among species. Several forms of recent Felidae show a different variation in the number of the skull and in the number of the teeth. This point from the view of the Clouded Leopard, Neofelis nebulosa, that in my opinion cannot certain held to be a member of Pantherinae, might turn out to be of the greatest interest.

Zoological nomenclature serves the end of zoological classification and a mass classification should reflect phylogeny, and developmental evolution, on the different levels of taxa. Morphological differences, of which cranial and skeletal ones are the most important, still represent the basis for such a classification in Mammals. There is no doubt that there are no fundamental differences in the general plan of structure in living Felidae. We cannot go very deep into the details of the past of evolution and its ways, and there is no need to do so in order to show that even the greatest morphological similarities are in no contradiction with quite different orders of the forms in question. The findings of fossil cats show more and more that the barrows in the life of the Felidae were not always the same as today. The paleontological evidence also seems to support the assumptions that main groups of cats could be related among themselves and generally believed. Hence, we should finally admit the justification of different genera and subgenera in the living Felidae.

I would like to emphasize again that all the problems mentioned above have nothing to do with the problems of nomenclature. All the discussion which has gone on in this journal has only shown that the questions of interrelationships in the family Felidae are not clear. All this discussion has also shown the different opinions of various students and that can only be another reason that the generic name Panthera as used is not the best one. The paid would be validated. A different opinion needs admitted to be evoked in a formally correct way, if for nothing else than in the interest of defending zoological nomenclature against confusion and in the interest of its stability. In my opinion the preservation of the generic name Panthera would be in the full accordance with these interests.

In conclusion, I would like to subjoin and to support Morrison-Scott's Hemmer's application for conservation of the generic name Panthera Oken, 1816.