

REQUEST FOR A DECLARATION MODIFYING ARTICLE I SO AS
TO EXCLUDE NAMES PROPOSED FOR DOMESTIC ANIMALS
FROM ZOOLOGICAL NOMENCLATURE. Z.N.(S.) 1935By C. P. Groves (*Faculty of Archaeology and Anthropology, Cambridge, England*)

Domestic animals have long been a problem to the taxonomist and the user of Zoological Nomenclature. Their nomenclatorial treatment, with its consequent implications for taxonomy, has been inconsistent, varying considerably both between authors and even within the works of a single author. Whether to apply a name given to a domestic species to the wild representatives of the same species has been a troublesome problem; Ellerman and Morrison-Scott (1951) use the name *Capra hircus* for the Wild Goat, although this name was applied by Linnaeus to a domestic goat, but (by inference) refuse to use the name *Ovis aries*, given to the domestic sheep, for any wild species of sheep. One might ask, what is the difference? The answer matters little; for such internal inconsistency is surely symptomatic of the whole problem.

It is probable that the definitions and discussions of the Species and Sub-species concepts in Mayr (1963) reflect, to a greater or lesser extent, the views of the consensus of taxonomic workers. Mayr makes the point (p. 20) that "species consist of populations, rather than individuals", and later on (p. 137) defines the local population as "a group of individuals so situated that any two of them have equal probability of mating with each other and producing offspring"—an idealized situation probably rarely, if ever, realized in nature, but implying what does appear to be the case, namely that the reproduction within such a group is under the control of members of the group itself. However, in no sense can a domestic "species" be called a local population; only at the level of Breeds and below can one suppose that there is equal probability of mating, but even here the choice of partner is, as often as not, outside the control of the members of the group. Moreover, breeds are not geographically circumscribed: they overlap one another geographically as if they were distinct biological species.

If domestic breeds are reproductively isolated, it might be worth asking whether perhaps these are not the species, rather than domestic "forms" taken as a whole. But if man's vigilance over these breeds is relaxed, their reproductive isolation will disappear, as many a pedigree dog breeder knows to his dismay. Moreover, if wild kindred are living in the vicinity, there is often interbreeding between these and the domesticates. So that, but for man's influence, there would be no reproductive isolation between domestic breeds, nor between them and wild animals. Whether it is legitimate or meaningful to consider that in this case man is an isolating mechanism promoting speciation, is doubtful: the interbreeding of domestic and wild relatives seems the nearest approach to "natural conditions" made by a domestic animal, so we may conclude that the wild and domestic forms in such cases are conspecific.

It must next be asked, how does one divide up a species, some of whose individuals are domestic, into sub-species? A sub-species is an entity both

geographically and morphologically distinct from other, conspecific sub-species. The domesticates cannot themselves, therefore, belong to separate sub-species; they must be taken into account region by region when the species is being revised, and each sub-species of the species has to include both the wild and the domestic forms of the given region.

Of course, this latter scheme makes a nonsense of all attempts to elucidate geographic variation within a species, and completely obscures the whole function of taxonomy. The solution to the dilemma is surely that the Linnaean system—even as modified and interpreted by such modern writers as Mayr—was never intended to handle such situations; that the relation of domestic and wild forms is something qualitatively different from the relationship between two wild forms; and that the system of zoological nomenclature should be restricted to defining and interpreting the relationships among wild animals, a function it performs adequately in spite of the complexities these relationships often involve, and not pressed unwillingly into service in a system which is different in principle from this.

Several schemes have been proposed of recent years to recognize this situation nomenclatorially. Bohlken (1958) recognized that the concept of a domestic species or race is an artificial one and refused to use the names applied to them to cover wild species, in cases where the domestic animal had been described first (as is so often the case). Thus we have the yak referred to as *Bos mutus* Przewalski, 1873, this being the earliest name applied to a wild yak—whereas the domestic yak has been known as *Bos grunniens* Linnaeus, 1758. Ellerman and Morrison-Scott (1951) make the wild yak a sub-species of the domestic yak, and call it *Bos grunniens mutus*: as has been discussed above, this is unrealistic since the two simply do not stand in the relationship of sub-species to one another. However, Bohlken goes on to say, "But a domestic yak is, after all, still a yak!"—and adds the name of the domestic form to that of the wild one, *Bos mutus grunniens*, as if they were in fact sub-species, and also in violation of the Rules of Nomenclature.

Trumler (1961) goes further. He considers, contrary to Bohlken, that some domestic "species" have a multiple wild origin: not necessarily by hybridization, but often by separate processes of domestication. In his view, the donkey is one of these: he considers it descended from two wild species which he calls *Asinus africanus* and *Asinus taeniopus*. Combining this viewpoint with Bohlken's system of nomenclature, he concludes that some breeds of donkey should be called *Asinus africanus asinus* and the others *Asinus taeniopus asinus*—the Linnaean name being in fact *Equus asinus* (for "the" domestic donkey).

In a reconsideration, Bohlken adduced a new system of naming, on the grounds that domesticated animals could be considered "ecological races" of their species. In his 1961 paper, he recommended interposing "f." between the wild and domestic names; thus: *Equus przewalskii* f. *caballus*, for the domestic horse.

Finally, a different system again is proposed by Dennler de la Tour (1968). This author proposes using a standard name which would always denote a domesticate; he suggests the word *familiaris*, to be placed in inverted commas somewhere within the name. In cases where the origin of a domestic form from

a given wild form is proved, the name of the wild form is followed by the key-word "*familiaris*" and this is followed by the name given to the domesticated variety, thus: *Bos mutus* "*familiaris*" *grunniens*. But in disputed cases, where the wild ancestor is not proved, the trivial name applied to the domesticate is to be used as the specific name, followed by the key-word, thus: *Equus asinus* "*familiaris*".

It is here submitted that domesticates are not adequately dealt with by any system of nomenclature thus far proposed; and that this is hardly surprising, since nomenclature is designed to serve the purposes of the classification of natural populations. The schemes of Bohlken (1958, 1961) and Dennler de la Tour (1968) both flout the rules of nomenclature and in effect (except for Bohlken's second system) treat domesticates as if they were sub-species of wild species. The only solution is to remove them from zoological nomenclature altogether.

The International Code, Art. 1, states:

Zoological nomenclature is the system of scientific names applied to taxonomic units of animals (taxa; singular: taxon) known to occur in nature, whether living or extinct. This code is concerned with names in the family-, genus- and species-groups. Names given to hypothetical concepts, to teratological specimens or to hybrids as such, to infrasub-specific forms as such, or names proposed for other than taxonomic use, are excluded.

It could be argued that domesticated animals are already excluded from the code in the phrases "in nature" (Shorter Oxford English Dictionary, *NATURE*, meaning IV, 2: "The features and products of the earth itself, as contrasted with those of human civilization"), and "hypothetical concepts". But such an interpretation is not always given to the wording: only the insertion of an explicit phrase will make this clear. It is therefore proposed to alter the third sentence to read:

Names given to hypothetical concepts, to domesticates, to teratological specimens or to hybrids as such, to infrasubspecific forms as such, or names proposed for other than taxonomic use, are excluded.

The definition of domestic animals, at least in the archaeological record, is a difficult matter: Higgs and Jarman (1969) view it as a long process, disputing the theory of a rapid "neolithic revolution", and suggest that in origin it is not different in principle from other human activities such as selective hunting. Be this as it may, there is hardly ever any doubt in a modern situation whether an animal is domesticated or not; and the proposal here put forward would not prevent adequate reference being made to putative intermediate stages by archaeological workers—indeed it would simplify matters, since such meaningless questions as whether a given set of remains represents *Bos primigenius* or *Bos taurus* would be prevented.

The implications of removing domesticated forms from nomenclature would be that all animals would be identifiable under a name that refers to a local wild population, with a type locality; and trinomials would be restricted, as they are supposed to be, to sub-species. If it is desired to refer to a domesticate, the name of the (wild) species would be employed, if the wild representative is

known down to species or sub-species level; and no further scientific name would be added to specify a domesticated form, although the writer could qualify it in the vernacular to his heart's content. Thus a domestic cow could be *Bos primigenius* (domestic form); *Bos primigenius* Bojanus, Jersey cow; *Bos primigenius* dom., or whatever was felt most appropriate—even *Bos primigenius taurus*, so long as the "taurus" was not written in italics and could not be mistaken for a scientific trinomial. It should be pointed out that domesticated plants are excluded from Botanical Nomenclature and there is a separate International Code of Nomenclature for Cultivated Plants; it is probably unnecessary to establish a Code for Domesticated Animals, but the botanists' example in excluding plant domesticates from Botanical Nomenclature should be noted.

Note also that feral populations (formed by individuals that have regained their freedom from a domesticated state) are not excluded along with domesticated forms. There is no reason why, in principle, long-established and easily recognizable feral populations, the products of natural selection like any other wild forms, should not be treated on their merits and classified accordingly with suitable nomenclatorial dignifying.

The International Commission on Zoological Nomenclature is therefore requested to issue a Declaration, to insert in Art. 1 of the Code, sentence three, between the fifth and sixth words (between "concepts", and "to teratological . . .") the words "to domesticates", in order to explicitly remove such animals from nomenclatorial consideration.

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