

Colin P. Groves

Department of Archaeology and Anthropology, Australian National University, Canberra, A.C.T. 0200, Australia

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The recent reverse-order exchange in "News and Views" between Gail Kennedy and Bernard Wood (Kennedy, 1999; Wood, 1999) highlights the sad fact that, 36 years after G. G. Simpson's stricture (quoted approvingly by Kennedy), still all is not well with hominin nomenclature, at least as far as the East African Plio-Pleistocene is concerned.

According to the *International Code of Zoological Nomenclature*, to be "available" (i.e., taxonomically usable), a new name has to have been (a) published, (b) a scientific name, not a colloquial one, (c) treated as the name of a valid taxon, (d) accompanied by a description, or bibliographic reference to one, giving "characters that are purported to differentiate the taxon" (otherwise it is a *nomen nudum*), (e) not merely proposed conditionally (after 1960), and (f) not a junior homonym (the same as a name previously published in the same genus). The last three stipulations in particular are, unfortunately, very commonly flouted in palaeoanthropology. Promoting the freedom of taxonomic thought is the chief rationale of the *Code*, and is why we have rules of nomenclature at all. The Fourth Edition of the *Code*, which will be published in 1999, does not differ in its essentials from the Third.

The aim of the present paper is to draw attention, very briefly, to four cases of nomenclature problems and misunderstandings involving Pliocene and Early Pleistocene hominids, and to show how the application of the rules of nomenclature affects them.

(1) *Australopithecus afarensis* Johanson, 1978

An application has recently been approved by the International Commission on Zoological Nomenclature to conserve the specific name *afarensis* regardless of its generic attribution (Opinion 1941). This is necessary because *afarensis* was effectively, although not explicitly, a replacement name for *africanus* Weinert, 1950, which was proposed in the combination *Meganthropus africanus*. In the genus *Australopithecus* Weinert's name is a homonym of *africanus* Dart, 1924, as noted by Senut (1995, 1996) and Strait *et al.* (1997), but as soon as the species is removed from *Australopithecus* to some other genus, such as *Praeanthropus* or *Paranthropus*, the name would, in accordance with the *International Code of Zoological Nomenclature*, revert to *africanus* [see Groves (1996) for details]. The name *afarensis* is very widely used, and it is clearly desirable to conserve it irrespective of what genus it may be placed in. After applications to the Commission have been published in its *Bulletin*, comments are sought. These too are published, and assist the Commission to make its eventual ruling.

Incidentally, Day *et al.* (1980) explained that, although a correct formal diagnosis of *Australopithecus afarensis* was published by Johanson, White and Coppens late in 1978, the name was (inadvertently?) published earlier that year by Hinrichsen (who unfortunately attributed it to Johanson alone) in a way which satisfies the requirements of the

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Code. This includes, as far as the evidence goes, being "for the purpose of providing a permanent scientific record" [Art. 9(a)]. In his short article, Hinrichsen (1978) mentioned the species and used it as a springboard for what are evidently his own assessments ("This pushes man's origins back further and provides provocative evidence of our earliest recognizable ancestor"), and he offset his report of Johanson's new species with reports of two other contributions to the Nobel Symposium, by Leakey and by Tobias.

(2) *Paraustralopithecus aethiopicus*
Arambourg & Coppens, 1968

The mandible Omo 18 [strictly Omo 18-(1967)-18], from Member C of the Shungura Formation, was designated the type of a new genus and species, *Paraustralopithecus aethiopicus*, by Arambourg & Coppens (1968). The name was virtually ignored for nearly 20 years until Walker *et al.* (1986), in their announcement of the discovery of KNM-WT 17000 ("The Black Skull"), suggested that, should the latter prove to represent a species different from *Australopithecus boisei*, than other specimens, including Omo 18, might belong to it, in which case the name would be *Australopithecus aethiopicus*. Though presumably intended as a stimulus to further research, their proposal has been widely and uncritically adopted.

However, a few years earlier Tobias (1980) had also described an *Australopithecus aethiopicus*. In a new interpretation of the *A. afarensis* material, he separated the Hadar from the Laetoli representatives and placed them as separate subspecies within *A. africanus*. As the Laetoli material includes the type specimen of *A. afarensis*, it alone would carry the name *A. africanus afarensis*; as for the Hadar specimens, he wrote:

If further close morphological and statistical analysis confirms the presence of these small marks of distinction, it may be necessary to recognize and name a separate subspecies within the evolving and polytypic lineage of *A. africanus*. . . . I propose *Australopithecus africanus aethiopicus* as a suitable name for this Ethiopian taxon.

In his Abstract he was more definite:

Moreover, it is hypothesized that the Laetoli and Hadar hominids cannot be separated morphologically from *A. africanus* and that they represent two new subspecies of that species. Since "*A. afarensis*" is tied to a Laetoli specimen as holotype, only the Laetoli specimens should be designated *A. africanus afarensis* . . . and the Hadar fossils *A. africanus aethiopicus*.

Previously (Groves, 1989), I regarded this name as a "conditional" proposal. As explained above, according to Article 15 of the *Code*, a name proposed "conditionally" (after 1960) is unavailable in nomenclature. Olson (1985) argued strongly that *aethiopicus* Tobias, 1980, is in fact available (not conditionally proposed), and on that basis designated A.L. 28801, "Lucy", as lectotype. He also transferred the name to the genus *Homo*, i.e. he used the combination *Homo aethiopicus*. While Tobias's sentence beginning "If close morphological . . ." could well be interpreted as the prelude to a conditional proposal of a name, Olson is surely right that his last sentence, beginning "I propose", is quite definite, as is his phraseology in the Abstract. Accordingly, the first use of the combination *Australopithecus aethiopicus* is that of Tobias, 1980, and it designates the Hadar hominins (and the first employment of the combination *Homo aethiopicus* is that of Olson, 1985).

The resulting situation is analogous to that of the specific name *afarensis* (above). A taxon typified by Omo 18 cannot be designated by the combination *Australopithecus*

aethiopicus (cf. Walker *et al.*, 1986) as this is a homonym (=same name, different taxon) of Tobias's usage. Nor can it be designated by the combination *Homo aethiopicus* (cf. Groves, 1989), as this is preoccupied not merely by Olson's usage but by that of Bory de St. Vincent (1825:314), who used it as the name for subsaharan Africans, one of 15 "species" into which he divided modern humans. An Omo-18 taxon could however be designated by the combination *Paranthropus aethiopicus*. For that nomenclatural reason, and indeed for the taxonomic reason that no studies have been done to test the proposition that the Omo jaw and the Black Skull really are conspecific, we should cease, for the time being, referring to the Black Skull as *Australopithecus aethiopicus*. Ferguson (1989) made KNM-WT 17000 the type of a new species *Australopithecus walkeri*; if the Black Skull is to be referred to the genus *Australopithecus* (or indeed the genus *Homo*) and is thought to typify a distinct species, then *walkeri* is the available name for it. It may be that, to preserve freedom of taxonomic thought, another application to the Commission is in order.

(3) *Pithecanthropus rudolfensis* Alexeev, 1986

Wood (1999) is entirely correct in his account of the nomenclatural status of this name, except that the earliest formal diagnosis of the species *Homo rudolfensis* is in Groves (1989).

As Wood (1999) notes, it may be useful to cite not only the original author and date of a name, but also a subsequent user. However, the Code [Art. 51(b)] insists that it be done in a way which distinguishes it very clearly from the taxon's author. At most, adding something along the lines of "*sensu* Groves, 1989" or "*sensu* Wood, 1999" is the best way to do this.

(4) A name for Olduvai Hominid 9

Shortly after its discovery by L. S. B. Leakey, Heberer (1963) published a description of OH9 and tentatively gave it a name, as follows:

Als Vorschlag, der nicht vorgeiften will, möge die folgende Benennung gewertet werden [As a suggestion, without wishing to preempt, the following designation would be appropriate:]:

1. *Homo leakeyi* n. sp. oder
2. *Homo erectus leakeyi* n. subsp.

Clark (1990) argued that this name is available, and used it (in the combination *Homo leakeyi*) to designate a species embracing a wide array of early Pleistocene African hominins. But, as was pointed out long ago by Simons *et al.* (1969), and more recently by Harrison (1993), it is evident from Heberer's phraseology that the name *leakeyi* is awarded conditionally, and is thus not available according to the Code. Clarke (1990) would be the first available usage of the name *leakeyi*.

Five years later, Tobias (1968) also gave a name to OH9:

On geographical grounds, as well as for convenience until more adequate material is discovered, the three African groups of pithecanthropines might appropriately be dubbed *Homo erectus mauritanicus* (Ternifine, Sidi Abderrahman and Rabat), *Homo erectus olduvaiensis* (Olduvai Bed II) and *Homo erectus capensis* (Swartkrans) . . . the name *H.e. olduvaiensis* is a tentative new proposal, pending the full study and description of all the hominine remains from Beds II and IV at Olduvai.

Unaccountably, Groves (1989) used this name as the prior available name for a taxon typified by OH9, but Professor Tobias himself pointed out to me that it, too, is a conditional name and so unavailable.

Finally, Kretzoi (1984) proposed *Homo (Proanthropus) louisleakeyi* explicitly as a replacement for *leakeyi* Heberer, on the

grounds that the latter is a homonym of *leakeyi* Paterson, 1940, awarded to the Kanjera skulls from Kenya. Paterson's name is, most would agree, a synonym of *Homo sapiens*, but this would not matter: subjective assessments (taxonomy) do not overrule objective ones (nomenclature). Again, as pointed out by Harrison (1993), Kretzoi was wrong because Paterson's name is not attached to a description, it merely occurs in a table at the end of his paper, listing key fossils. The name *louisleakeyi* is nevertheless needed because Heberer's name was proposed conditionally, and since it is available [antedating Clarke's (1990) usage of *leakeyi*] it should be used by anyone who considers that OH9 typifies a separate taxon and is not a member of, for example, *Homo ergaster*, *Homo erectus* or *Homo mauritanicus*.

The subgeneric name *Proanthropus* Wilser, 1900, incidentally, was used by Kretzoi to replace *Pithecanthropus* Dubois, 1894, which he supposed to be a homonym for *Pithecanthropus* Haeckel, 1866, "an imaginary ancestor of man"; but "hypothetical concepts" are explicitly excluded from nomenclature by Art. 1(b) of the *Code*, so Dubois' *Pithecanthropus* is available for use by anyone who thinks it is needed.

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