of *Sivapithecus* based upon a set of character states that most now accept as being derived features showing phyletic affinity with the orangutan. It is a framework in which neither the definition nor the species inclusivity of *Sivapithecus* is as ambiguous as Delson suggests.

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1. Leakey, R.E.F. & Walker, A. *Nature* **318**, 173-175 (1985).
2. Delson, E. *Nature* **318**, 107-108 (1985).
3. Kelley, J. & Pilbeam, D. *Am. J. phys. Anthrop.* **66**, 188 (1985).
4. Ward, S.C. & Kimbel, W.H. *Am. J. phys. Anthrop.* **61**, 157-171 (1983).
5. Andrews, P. & Cronin, J.E. *Nature* **297**, 541-546 (1982).
6. de Bonis, L. & Melentis, J. *C. r. hebd. Séanc. Acad. Sci., Paris* **300**, 429-432 (1985).
7. Kelley, J. & Pilbeam, D. in *Comparative Primate Biology* Vol. 1 (ed Swindler, D.R.) (Liss, New York, in the press).
8. Pickford, M. in *Hominid Evolution: Past, Present and Future* (ed. Tobias, P.V.) 107-112 (Liss, New York, 1985).

Quantum behaviour of superconducting rings

SIR—In a recent *Nature* (**319**, 726; 1986), U. Eckern discussed the applicability of quantum mechanics to macroscopic objects, for which superconducting rings incorporating weak link constrictions are considered to be very strong candidates. To set this in context, we wish to point out that there are modes of operation of weak link rings other than the one considered by Eckern. For these, experimental results already exist which are very strong evidence for the fact that such rings do indeed behave as macroscopic quantum objects.

The magnetic flux threading the superconducting ring ϕ and the electric charge localized at the weak link Q are the conjugate variables for a weak link ring. If it is a quantum object a Heisenberg relation for the flux and charge uncertainties $\Delta\phi\Delta Q \geq \hbar 2$ exists. Eckern addressed only the limit where the flux is exceedingly well defined compared to the quantum unit of flux ϕ_0 ($\phi_0 = \hbar/2e$ where $\hbar$ is Planck's constant and e the electric charge), so $\Delta\phi << \phi_0$, and thus $\Delta Q >> 2e$, $2e$ being the charge on a Cooper pair of electrons in the superconductor. Our experimental and theoretical work over the past few years has considered two other limits: (1) where the flux is quite well defined $\Delta\phi << \phi_0$, and the charge is fairly uncertain $\Delta Q >> 2e$. (2) Where the charge is quite well defined $\Delta Q << 2e$, and the flux is fairly uncertain $\Delta\phi >> \phi_0$. We have accumulated a large amount of experimental data which are in accord with the predictions made theoretically by considering weak link rings as quantum objects, and which to date have no alternative explanation.

Readers who are interested in the quantum mechanics of macroscopic objects but are unfamiliar with the published literature on superconducting weak link rings are referred, for example, to *Helv. phys. Acta* **56**, 789 (1983) and *Phys. Lett.* **104**, 375 (1984); **107**A, 133 (1985); **111**A, 199 (1985); **115**A, 125 (1986).

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The stability of zoological nomenclature

SIR—The long letter on this subject by Erzinclioglu and Unwin (*Nature* **320**, 687; 1986) reveals some fundamental misunderstandings. But if they, or others prompted by their letter, will make constructive suggestions then a valuable purpose will have been served.

As stated in its introduction, the *International Code for Zoological Nomenclature* (3rd Edn, 1985) "provides guidance for zoologists needing to establish new names, and rules to determine whether any name, previously proposed, is available and with what priority..." It is a do-it-yourself manual and like any must be used with commonsense for the desired results, in this case stability coupled with taxonomic freedom.

The purpose of the International Commission on Zoological Nomenclature is the very opposite of that portrayed in the situation graphically described by Erzinclioglu and Unwin: "taxonomists... are kept in place by the tyranny of the Commission: the Code must be obeyed". Their statements that "[in some circumstances] a name must still be changed in spite of the confusion that will be caused" and "there is only one course open to us if sanity is to be restored and that is that some sections of the code must be consistently ignored" are not accurate and overlook the basic function of the Commission.

Some code of zoological nomenclature, internationally recognized, must clearly exist, and like any other set of 'rules' the existing one is imperfect and could not be otherwise. The number of zoological names runs into millions, and naturally rigid adherence to the code's prescriptions will sometimes cause confusion. Individual zoologists (in the widest sense of the word) cannot follow the recommendation of Erzinclioglu and Unwin and "consistently ignore some sections of the Code", because in the nature of things they would be inconsistent. The International Commission, at present of 25 scientists from 15 countries, exists largely to overcome this problem.

Anyone encountering a difficulty, for example a conflict between the priority of one name and the established usage of another (the blood-sucking maggot mentioned by Erzinclioglu and Unwin is a case), should submit the matter to the Commission. This does not then act in any tyrannical manner, but solicits the comments of zoologists by publishing the problem in the quarterly *Bulletin of Zoological Nomenclature*, and also by notifying appropriate journals. The Code (Article 80) provides that existing usage should be maintained meanwhile. Comments adding any new facts are published in the *Bulletin*, and in every case are brought to the attention of the Commission. After at least six months (commonly two years, although this is being reduced) the members of the Commission vote by postal ballot, and a two-thirds majority will suffice to set aside the provisions of the Code if appropriate. The outcome is published as an 'Opinion' in the *Bulletin*. Of course there is no power to enforce anybody either to approach the Commission or to abide by its conclusions, but it is in the common interest that they should do so.

The 1985 Code is a carefully considered result of very numerous contributed suggestions, although none were proposed as "devices to ensure unnecessary name changes"! Of course it needs amendments. One is proposed by Erzinclioglu and Unwin (although they are not the first), and concerns the requirement that the gender of generic and specific names should agree. This was clear in the past when naturalists knew Latin and classical Greek, but many feel it unsuited to the present day of computer information retrieval (see p.xix of the Code's introduction). The Commission invites views on this and on any matters concerning zoological nomenclature.

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In the eye of the beholder

SIR—T. Nash (*Nature* **320**, 402; 1986) believes that the patches he sees in the out-of-focus image of a light point originate from individual light receptors in his retina. If he set about measuring their angular subtense, he would discover that they are about an order of magnitude larger than those of retinal cones. And how does he think he gets to "see" the spaces between the "receptors"? In fact, Nash is viewing entoptically the quality of his eye's optics and the transparency of his crystalline lenses.

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