Letters

Bone Biology

In Barbara J. Culliton's concise and accurate article about the National Institutes of Health Conference on Osteoporosis (News & Comment, 20 Feb., p. 833), the figure caption on page 834 refers to "osteoporotic bone, which has lost calcium." This wording does not identify the fundamental problem in osteoporosis, namely, the loss of whole bone (deossification). The implication is that remineralization may correct the problem. Unfortunately, the mass of a deossified skeleton only can be improved by cellular deposition of an organic matrix and by mineralization in a pattern typical of bone. If one follows this line of reasoning, the terms "demineralization" and "loss of calcium" are not applicable to bone loss in osteoporosis, since osteoclastic resorption appears to remove inorganic and organic fractions of bone nearly simultaneously.

As Culliton points out "There is a lot to learn about basic bone biology before one can hope to develop surefire therapies for preventing or reversing osteoporosis."

C. ANDREW L. BASSETT
Department of Orthopaedic Surgery, Bioelectric Research Center, Columbia Presbyterian Medical Center/ Columbia University, Riverdale, NY 10463

World Bank Projects

It was a pleasure to read John Walsh's article "World Bank pressed on environmental reforms" (News & Comment, 14 Nov., p. 813), which addresses the World Bank's controversial environmental practices in considerable detail. However, certain quotations may leave readers with the erroneous impression that environmentalists are opposed to continued funding for the Bank and that we have impeded performance of the Bank's mission in Africa on account of unfortunate errors made in South America.

To the contrary, we have supported funding for the Bank, despite the fact that Africa has been the scene of several ill-advised World Bank projects. For example, the World Bank–financed $112-million "Bura" irrigation and resettlement project in Kenya was a disaster, resulting in destruction of tropical forest, pesticide contamination of drinking water, and rampant disease among settlers. After concluding that the project had cost $40,000 to $50,000 per family settled, a Bank evaluation team declared the project a failure and concluded that "[l]arge-scale irrigation schemes as a means to promote settlement are costly and questionable" (*1*). According to one report, none of the large agricultural projects, such as Bura, "built over the past ten years in black Africa have made a dent in the current famine" (*2*).

In 1985 the Bank funded the $18-million cattle development project in Botswana, described in Walsh's article, despite the fact that the Bank's own consultants had concluded that a previous project in that country based on the same assumptions had "no ability to halt or reduce damage to range resources—if anything, the reverse. . . . [W]ithout the benefit of the doubt it seems unlikely that any African livestock development project would ever be funded" (*3*). These and other misguided investments illustrate that environmentally unsound projects often lead to economic and human welfare losses, and not to sustainable development.

Our organizations have been strong supporters of foreign aid generally and for Africa in particular. We publicly endorsed the Administration's budget request for the multilateral development banks for fiscal year 1987. We support H.R. 1199, introduced by Representatives Howard Wolpe (D–MI), Benjamin Gilman (R–NY), and others, a bill that would substantially increase bilateral assistance to sub-Saharan Africa for ecologically beneficial projects. We do, however, believe that improvements in the quality of World Bank lending should not be left to chance. U.S. contributions to the World Bank should be accompanied by explicit expectations that the Bank will make rapid, measurable progress toward the goal of environmentally sound, sustainable development.

Despite 4 years of heightened scrutiny by Congress, the Reagan Administration, and the public, the World Bank has yet to make the needed reforms. For example, last summer the Bank approved an electric power sector loan—opposed by the U.S. government on environmental grounds—that will finance the completion of several uneconomic and environmentally harmful dams in Brazil.

A 3-year commitment of nearly $2.9 billion has been requested from Congress to fund the International Development Association (IDA), the "soft" loan window of the Bank. Unless the Bank can demonstrate that it has taken major steps to improve the environmental soundness of its lending, there will very likely be difficulties similar to those of past years in obtaining appropriations that total almost $1 billion per year. We are not necessarily opposed to the IDA replenishment. However, rather than simply accepting this quantity of aid to Africa, we are concerned that the quality of such assistance improve. The World Bank has now undertaken a substantial reorganization, the outcome of which will be a test of the Bank's good faith in improving environmental practices. By rapidly implementing reforms, World Bank President Conable can ensure that environmental concerns no longer cast doubt on the quality of the Bank's performance.

DAVID A. WIRTH
Natural Resources Defense Council, 1350 New York Avenue, NW, Washington, DC 20005
BRENT BLACKWELDER
Environmental Policy Institute, 218 D Street, SE, Washington, DC 20003
BARBARA BRAMBLE
National Wildlife Federation, 1325 Massachusetts Avenue, NW, Washington, DC 20005
JOHN HINCK
Greenpeace, 1611 Connecticut Avenue, NW, Washington, DC 20009
BRUCE RICH
STEPHAN SCHWARTZMAN
Environmental Defense Fund, 1616 P Street, NW, Washington, DC 20036
FRANCES SPIVY-WEBER
National Audubon Society, 801 Pennsylvania Avenue, SE, Washington, DC 20003
LARRY WILLIAMS
Sierra Club, 330 Pennsylvania Avenue, SE, Washington, DC 20003

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Malaria Diagnosis

In their report "Specific DNA probe for the diagnosis of *Plasmodium falciparum* malaria," Barker *et al.* (21 Mar. 1986, p. 1434) imply that they have invented a new tool for malaria diagnosis. In 1984, we reported the "Analysis of clinical specimens by hybridisation with probe containing repetitive DNA from *Plasmodium falciparum*" (*1*). In this article we clearly brought up the idea of using cloned repetitive *P. falciparum* DNA for sensitive and rapid screening of blood

samples. The only significant difference between our method and that of Barker *et al.* is that they spot the blood directly on the filter, whereas we make a phenol extraction before application of the sample. This can hardly be regarded as new since investigators engaged in DNA-based diagnosis of hepatitis B virus are using similar methods. In our paper we also described a partial sequence of our clone, and the whole repeat has since been further characterized and sequenced by us (*2*) and by others (*3*). The use of repetitive DNA for malaria diagnosis has also been reported by other investigators (*4*).

ULF PETTERSSON
Department of Medical Genetics, Uppsala University, Biomedical Center, Box 589, S-751 23 Uppsala, Sweden
HANS WIGZELL
Department of Immunology, Karolinska Institute, Box 60400, S-104 01 Stockholm, Sweden
PETER PERLMAN
Department of Immunology, University of Stockholm, S-106 91 Stockholm, Sweden

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4. Y. Pollack *et al.*, *Am. J. Trop. Med. Hyg.* **34**, 663 (1985); G. L. McLaughlin *et al.*, *ibid.*, p. 837.

Response: The focus of our work and our report is the development of DNA probe–based methods for the diagnosis of infectious agents, primarily parasites in the developing world. This requires both a specific DNA probe and more important, a method that will allow its use under field conditions directly from clinical samples. Methodologies that require sample extraction or complex experimental procedures such as those suggested by Franzén *et al.* may work very well in the laboratories of the developed world, but our extensive field experience with DNA probes for leishmaniasis, filariasis, and now malaria clearly indicates that simple, direct sample application procedures are necessary if this methodology is to have any future utility for people living in endemic areas. Much of our effort was devoted to developing such direct sample application methods and then testing them directly in the field in Thailand, Brazil, and subsequently Africa. The Franzén *et al.* paper is quoted in our report (reference 4) and we attempted to point out the advantages of our methods over those previously reported. Our focus in this work is not on the molecular biology of repeated DNA sequences but instead on the practical field application of DNA probe–based diagnostics for malaria.

DYANN F. WIRTH
ROBERT H. BARKER, JR.
Department of Tropical Public Health, Harvard School of Public Health, Boston, MA 02115

Erratum: In the Table of Contents for the issue of 16 January (p. 260), the authors of the article "Geologic evolution of northern Tibet: Results of an expedition to Ulugh Muztagh" on page 299 should have been listed as P. Molnar, B. C. Burchfiel, Z. Zhao, K. Liang, S. Wang, and M. Huang.

Erratum: In Mark Crawford's article "Genentech sues FDA on growth hormone" (News & Comment, 20 Mar., p. 1454), antibody response that occurs in some patients using Protropin was incorrectly portrayed as the result of the product's 192nd amino acid—a methionyl. While the methionyl may be involved in the antibody responses of a limited number of Protropin users, there is evidence that antibody formation is a result of a number of factors. In particular, the precise details of the manufacturing process appear to be the major factor in determining the antigenicity of growth hormone preparations.