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tions introduced only last year mean that, in order to borrow geological specimens, it is now necessary to obtain documents sequentially from four different departments scattered throughout Moscow, a process which takes a *minimum* of a month. These measures were, of course, introduced to help stem the flow of valuables out of the country, but all the foreign scientists I spoke to complained of the dire consequences for collaborative work. Even when official permission is finally obtained, hostile customs officers, hoping for bribes, will often stop export of specimens if they spot minor grammatical mistakes in the documentation. This happened to me twice. Regrettably, these problems will only disappear when the country as a whole recovers.

Michael S. Y. Lee

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Institute of Human Origins: Separation Issues

The 27 May News article by Ann Gibbons about the Institute of Human Origins (IHO) (p. 1247) reports a number of statements by IHO's critics that are inaccurate, out of context, or incomplete, providing readers with a distorted picture of the issues confronting our organization at present. It also reports unsubstantiated and erroneous assertions about IHO founder and president Donald Johanson's job performance that cannot go unchallenged.

Gibbons writes, "When the motion [to force founder Donald Johanson out of IHO] was defeated, Getty withdrew his support of the IHO. . . ." Actually, Gordon Getty, a member of IHO's Board of Directors since 1981, sent written notice to IHO on 29 April—5 days *before* the board meeting—rescinding the balance of his 5-year pledge effective immediately. It is crucial to an understanding of subsequent actions that the reader know that Getty's unrestricted funding was withdrawn without warning or stated cause.

The board met on 3 May with the hope that Getty might reinstate his pledge, or at least provide transitional funding so that IHO could continue to operate normally through 1994. These hopes were dashed when Getty made the motion that two IHO staff members, Johanson and a respected geochronologist, be removed summarily, and that the board chairman step down.

The motion to cease operating the geochronology division (which had been part of IHO since 1985, not 1989, as reported by Gibbons) came only after re-

peated statements to Getty that the loss of such substantial funding without adequate time to seek alternative funding would make a reduction in staffing an economic necessity, and after he refused to continue his funding of IHO on an interim basis.

Getty's attorney, William Coblentz, is quoted as saying, "Instead, we have more photo opportunities and NOVA interviews than pure research." As founder and president of IHO, two of Johanson's important functions are fund raising and public education. The NOVA film "In Search of Human Origins," which was co-produced by IHO, was fully consistent with this role. The 1991 board meeting at which the NOVA project was first discussed featured discussion about the time commitment Johanson would need to make to the project; both Getty and Garniss Curtis were present, and no objections were raised by them then, or at any subsequent time. We are incredulous at the suggestion made by Coblentz that IHO, which is a recipient of American taxpayers' dollars through NSF grants and operates for the public good with a tax-exempt status, should not be involved in educating the public about human evolution, especially through such important vehicles as public television. We wonder how many scientists and educators would agree with such sentiments in light of continuing attacks by creationists on the teaching of evolution in American public school science classes.

Furthermore, allegations of critics that Johanson was not involved enough in "pure research" are erroneous. He has co-led each of three IHO field expeditions to the Hadar fossil site in Ethiopia since 1990, co-authored a recent *Nature* paper on new hominid discoveries (1), and delivered a paper on these finds at a meeting of the American Association of Physical Anthropologists this past April. In fact, a research trip to Ethiopia scheduled for this month was postponed because of the withdrawal of Getty's pledge and the need for Johanson to turn his immediate attention to fund raising. We leave it to the readers to judge whether it is Johanson's record of research, or Getty's interpretation of that record, that is wanting.

Gibbons' article notes that "This should have been a banner year for the Institute of Human Origins. . . ." In fact, 1994 *has* been a banner year for IHO. We are confident that when we resolve these separation issues, IHO's scientists and staff will be able to proceed with their work, and the achievements of the first half of 1994 will continue to provide the momentum that has brought so much good science to fruition.

Donald C. Johanson
Founder,

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2453 Ridge Road,
Berkeley, CA 94709, USA*

William H. Kimbel
Director of Science,
Institute of Human Origins
Susan C. Shea
Executive Director,
Institute of Human Origins

References

1. W. H. Kimbel, D. C. Johanson, Y. Rak, *Nature* **368**, 449 (1994).

Response: Characterizing my article as using "statements that are inaccurate" and "providing readers with a distorted picture" of the IHO schism is itself something of a distortion. My account of the IHO board meeting was confirmed before publication by several board members, and Johanson and Kimbel do not provide evidence of inaccuracy in my reporting of the dispute. Further, Johanson declined all requests for interviews while I was preparing the article for publication, and Kimbel also declined to discuss what occurred at the board meeting.

The fact that Getty sent the letter referred to by Johanson, Kimbel, and Shea on 29 April does not challenge the accuracy of my article. While Getty sent the letter, he also offered at the meeting to continue his funding—if the IHO board would meet his conditions. When the board refused, Getty withdrew his funding. And it was the IHO board that immediately voted to lay off the geochronology staff—even though Getty asked for that decision to be delayed 24 hours to try to find a way to ease the transition financially.

Johanson *et al.*'s second major point, objecting to the contention "that Johanson was not involved enough in 'pure research,'" refers to a statement by Getty's attorney, William Coblenz, indicating that Getty felt that Johanson was not spending enough time on basic research. The IHO's executive director, Susan Shea, responded to that charge in the article, mentioning, as do Johanson, Kimbel, and Shea in their letter, the recent *Nature* paper as evidence of Johanson's research activities.

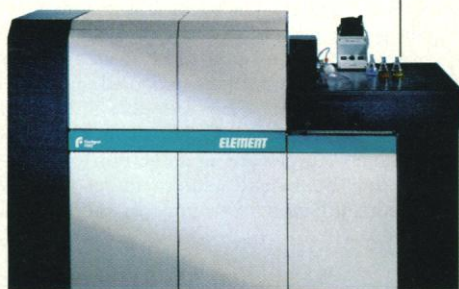
—Ann Gibbons

The account of the rift between IHO director Donald Johanson and patron Gordon Getty suggests that there were a number of issues troubling the organization. It implies, however, that the major factor leading to Getty's withdrawal of support was the amount of time spent in recent years by Johanson in promoting paleoanthropology and human evolutionary studies to the public instead of focusing on pure research. Although the publication of two major papers, one establishing an entirely new time frame for *Homo erectus* and the other describing the long-sought skull of *Australopithecus afarensis*, suggests that research is

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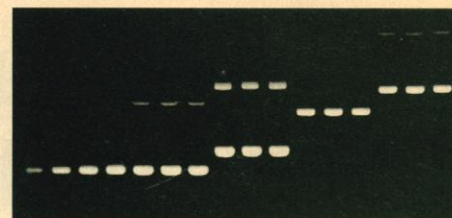
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still a high-priority item at the institute, there can be little doubt that production of the recent NOVA series had to be an immensely time-consuming undertaking. But the result was a truly outstanding miniseries on human evolution and the processes of paleoanthropology. Many people watched it, and they will watch it again, where most will probably never read a book on the subject. We live in a society where knowledge of and acceptance of evolution is incredibly limited, and the assaults on it by the religious right and others are a constant and serious threat. Television is probably the most effective means of reaching a wide audience with an alternative message, and it would seem, therefore, that public education by any means *ought* to be an important part of the program of the IHO or of any institution dealing with this subject. We would all like an ivory tower where pure research is our only obligation. But this is clearly not feasible in a society where the anti-intellectual forces are so powerful. I simply do not see this as an issue open to criticism. As for the suggestion that Johanson should spend more time fund raising, I would ask where he could reach the greatest audience, in a number of lecture halls or in three programs on NOVA, one of the most popular series on public television.

If there are other ills that need to be set right at the IHO, then they should be addressed, but to run the entire organization onto the rocks over the issue of public education does not seem to me to be a reasonable way of setting things right.

Jack E. Smith
Park Archeologist,
Mesa Verde National Park, CO 81330, USA

Corrections and Clarifications

In figure 3B (p. 1124) in the report "A molecular organic carbon isotope record of Miocene climate changes" by M. Schoell *et al.* (25 Feb., p. 1122), the extraneous upside-down "20" floating in white space under "8¹⁸O" in the "Mixed" zone should not have appeared.

D. G. Rainnie *et al.*, in their report "Adenosine inhibition of mesopontine cholinergic neurons: Implications for EEG arousal" (4 Feb., p. 689), suggested that adenosine may mediate sleep-debt related potentiation of EEG slow-wave activity in non-REM sleep. This is similar to a hypothesis proposed by J. H. Benington *et al.* [*Sleep Res.* 22, 4 (1993)]. Rainnie *et al.* suggested that adenosine exerts this effect by means of inhibition of mesopontine cholinergic neurons rather than by direct inhibition of neurons in the cerebral cortex.

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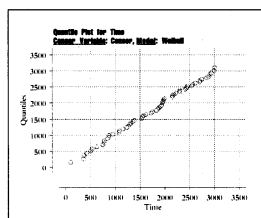
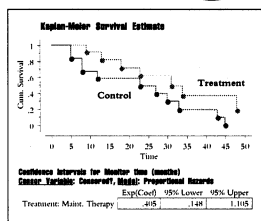
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