Whether fossils found in India are organic and a billion years old is explored. A reader discusses California's new education standards and advocates "attracting top science specialists into the teaching profession," saying "we have physical education teachers, math teachers, and just about any teacher teaching science." Anthropologists are described as vigorously pursuing human rights around the world. A program that trains life science Ph.D.s for emerging fields is praised. The Internet is said to foster friendships. A copyright agreement with a "publisher's honeymoon" is proposed. And mechanisms of Alzheimer's disease and alcoholism are debated.

Fossil Discoveries in India: Continued

The announcement of small shelly fossils from the Vindhyan Supergroup of India (R. A. Kerr, News of the Week, 23 Oct., p. 601; Letters, 23 Oct., p. 627) would indeed throw rather severe doubt on the proposed billion-year-old trace fossils described in the report by Adolf Seilacher *et al.* (2 Oct., p. 80), as has already been noted by Brasier (*1*). There is, however, little reason to accept identification of the Vindhyan material as organic, let alone being any sort of small shelly fossil. R. J. Azmi, who described these fossils (*2*), visited us in Cambridge a couple of weeks ago. Our examination of the material he generously made available convinces us that the supposed fossils are principally mineral growths, with their regularity resulting from a "cone-in-cone"–like arrangement. Electron micrographs of other material are conceivably algal, but none of the specimens or images is consistent with a Cambrian age. We urge any interested paleontologist to examine the original material; in our opinion, relying on photographic evidence is not sufficient.

It might be expected that those of us who argue against a very deep divergence of the Metazoa would welcome the findings of Azmi, inasmuch as he implied an Ediacaran age for the supposed billion-year-old fossils. The structures identified by Seilacher *et al.* may, in fact, be correctly dated. Even so, there is a wide consensus that the pre-Ediacaran metazoans must have been minute, although there is much less agreement as to the organization and ecology of this as-yet-cryptic fauna (*3*). The large size of the Vindhyan "trace fossils" is, therefore, rather unexpected. It may be that the refutation of the biogenicity of the supposed small shelly fossils will be extended in due course to these purported burrows.

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California Standards

Gretchen Vogel's article "California adopts controversial standards" (News of the Week, 16 Oct., p. 387) is exceptionally well balanced. It focuses on a key issue: Is there too much content in the new California Standards, and will this quantity of content preclude exciting, hands-on science activities in California's classrooms? It will be up to the curriculum committees to translate the new standards into classroom activities. Everyone wants to see plenty of discovery exercises in science classes, and I am confident that the curriculum committees will work hard to develop exciting activities that teach the new standards.

Who is teaching him science?

But there is a far more important issue facing California's schools and, for that matter, all schools in this nation. One can have all the rigorous standards one wants on paper, but unless one has exquisitely trained teachers, then elementary science, middle school science, and high school science instruction will never substantially improve. In other countries, science teachers must have a major and sometimes a Master's degree in their subject of instruction. Here, we have physical education teachers, math teachers, and just about any teacher teaching science in some circumstances. It's about time that the nation faces up to the real problem, and that is attracting top science specialists into the teaching profession.

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Human Rights: An Issue Among Anthropologists

James Glanz's article "Human rights fades as a cause for scientists" (News of the Week, 9 Oct., p. 216) is helpful insofar as it focuses attention on changes in the ways scientists connect human rights to their work. But both the headline and parts of the article suggest a readiness to generalize beyond what the core information of the article supports.

Among anthropologists, I do not see signs of fading interest. Although not all anthropologists have become conscious of links between human rights and the practice of anthropology, the American Anthropological Association's (AAA's) human rights effort is vigorous and undiminished.

For example, in 1999, the membership will vote on a "Declaration on Anthropology and Human Rights" that identifies specific areas in which the connections between anthropology and human rights are strong. Meanwhile, the AAA's Committee for Human Rights continues an active program of intervening in selected cases around the world and building awareness among the association's membership. Among this group of scientists, at least, human rights continues to be a powerful and important issue.

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New Niches for Life Scientists

We write in response to the National Research Council (NRC) report (*1*), which outlines the difficulties that many new recipients of life-science doctorates have in securing research positions in the traditional arenas of academia, government, and industry. This report has stimulated considerable discussion in *Science* (C. Holden, "Report paints grim outlook for young Ph.D.s," News of the Week, 11 Sept., p. 1584) and other international journals (*2*). Asserting that traditional Ph.D.s must retool their skill sets for a changing job market, the NRC report recommends that new programs should train researchers for emerging fields. At least one such program currently exists.

In 1996, the National Science Foundation (NSF) established Post-doctoral Fellowships in Science, Mathematics, Engineering, and Technology Education (PFSMETE) to provide recently graduated Ph.D.s with "the opportunities to develop expertise in facets of science education research that would qualify them for the new range of educational positions that will come with the 21st century."

With this innovative allocation of funds,

the NSF encourages promising scientists to study and contribute to education, thus positioning fellows to assist educational reform efforts at all levels. Simultaneously, the industrial sector is providing funding for initiatives that fellows with precisely this training can facilitate (J. Couzin, "A record grant for college programs," News of the Week, 18 Sept., p. 1779). Such opportunities encourage valuable new collaborations among scientists and educators. Current fellows are working cooperatively with teachers and education researchers to develop and rigorously evaluate novel curricula, software, and a variety of learning materials that stimulate critical thinking in diverse classroom settings.

Programs like PFSMETE give scientists the opportunity to create new niches in the academic and private sectors. Although still in its infancy, the PFSMETE program exemplifies the type of initiative that will allow doctoral recipients to adapt to the changing employment environment. We encourage other private and public funding agencies to contribute to these creative efforts.

PFSMETE fellows
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Internet Friendships

The item "Internet hazardous to social health?" (NetWatch, 11 Sept., p. 1567) states that Robert Kraut's work is "[t]he first study of how the Internet affects people's social lives." However, in 1997, we published a paper (*1*) about community involvement and friendship formation among Internet users. In November 1995, we carried out a national random survey of nearly 3000 Americans. Contrary to the pessimistic predictions of numerous scholars and observers, our survey revealed no support for the hypothesis that Internet use is diminishing community participation and social integration. Our study compared users' and non-users' membership in religious, leisure, and community organizations, controlling for demographic differences.

In our paper, we also reported on the results of surveying 601 Internet users about friendship creation through the Internet. Despite ongoing skepticism that the Internet is inimical to meaningful social interactions, we found that a substantial minority of users (14%) had established friendships through the Internet. Of those, three out of five reported meeting one or more of their Internet friends. These results suggest that the Internet is indeed a medium where friendships can be developed.

Our results report attitudes expressed at one point in time. More studies are needed to monitor trends in the impact of the Internet on people's social lives.

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Publishers' Honeymoon?

To Steven Bachrach *et al.*'s recommendation (Policy Forum, *Science*'s Compass, 4 Sept., p. 1459) that a publisher should no longer demand that a scientific author surrender copyright, Floyd E. Bloom (Editorial, 4 Sept., p. 1451) rejoins that, by virtue of a publisher's efforts in editing, proofreading, and distribution, transfer of copyright is not only deserved but "critical to the process of communicating scientific information accurately." The grant to a publisher of substantial auctorial rights is a familiar quid pro quo. The foregoing rejoinder leaps to the stronger conclusion that the grant must be a copyright transfer. Publisher reward for investment, authority to pursue infringers, and a nonexclusive privilege to republish—these and other benefits stressed by Bloom have long flowed by means of authors' licenses, which Bachrach *et al.* do not discuss, of "first serial rights." Manuscript licensing is analogous to a museum's lending items of its collection rather than selling them. An author's freedom to republish has heretofore posed little threat to a first-journal publisher, because competing journals decline works already published. Hence, in foregoing copyright ownership, publishers have lost nothing but permissions fees, a negligible prospect when library holdings and the pace of progress leave little appetite for anthologies.

The Internet has boosted the social val-