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Bioresources and "Biopiracy" in Brazil

I congratulate Elizabeth Pennisi and *Science* for the article "Genetic ownership: Brazil wants cut of its biological bounty" (News & Comment, 6 Mar., p. 1445), which calls attention to the initiative to enact a law regulating access to biological resources in Brazil. It is important to show the scientific community the political side of this question and the different interest groups concerned about it. It was also heartening to see that Brazilian authorities have finally decided to speak publicly about the access bill.

Pennisi quotes biologist Thomas Lovejoy of the Smithsonian Institution as stating that the legislation "is potentially a real roadblock ...to scientific progress." This is an argument often invoked by international interests who perceive a national legislative framework as an obstacle to their economic goals. Haven't these same groups used the argument of "scientific progress" when applying pressure for laws protecting their own intellectual property rights in various countries, including Brazil? Exactly what does "scientific progress" mean to the economic groups that sponsor bioresearch in developed countries? A sense of justice would also require a recognition of the contributions and the resulting intellectual rights of traditional rural and indigenous communities. The intent of the proposed law is to protect these rights, while encouraging fair and efficient use of Brazil's bioresources.

Lovejoy's pessimistic prediction is echoed by Pennisi when she refers to "a series of bureaucratic hurdles that anyone who wants to collect and use biological specimens in Brazil must clear." This concern could well have been discussed by business, science, and government representatives with myself as author of the bill, or with Brazilian Senator Osmar Dias, the bill's rapporteur and a member of Brazilian President Fernando Cardoso's political party, Partido de Social Democracia Brasileiro. After $2\frac{1}{2}$ years of public hearings and seminars, however, those sectors' suggestions have not been forthcoming.

It is their apparent silence, perhaps a strategy for opposing this legislation, which may in fact represent the greatest threat to scientific progress. There are many interests awaiting approval of the law (such as Shaman Pharmaceuticals, mentioned in the article) in order to begin working seriously in Brazil, free from charges of biopiracy. The best strategy for avoiding bureaucratic "bogeymen," which frighten us all, is to contribute as soon as possible to the creation of appropriate legislation by democratic means, in the Brazilian Congress.

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Super-Accelerators and International Collaboration

I enjoyed the article by David Kestenbaum (News, 27 Feb., p. 1296) about the next generation of particle acclerators. I share the opinion that we need an electron-positron collider with a performance exceeding that of the Stanford Linear Accelerator Center (SLAC) Linear Collider by at least a factor of 5 to 10 in energy and perhaps four orders of magnitude in luminosity. I also share the opinion that such a project should be truly international. However, I would like to comment on two statements in the article.

Germany's DESY lab is described as "hard at work" on a linear collider made of superconducting cavities as an alternative to the conventional technology promoted by Japan's KEK laboratory and by SLAC, and this is said to be a bad omen for international collaboration.

Indeed, DESY is making a major contribution to the international TESLA collaboration, initiated by physicists at Cornell University (since 1993, centered at DESY). At present, some 30 institutions from eight countries, including the United States, are collaborating to develop this technology. TESLA is thus a truly international collaboration where outside institutions have contributed some 50% of the total effort. Given the large extrapolation in performance parameters, we feel that it is not detrimental to international collaborations as stated in this article but important and prudent to explore all options in order to arrive at the best solution. A premature decision on the technology will not serve the international user community well.

Moreover, DESY is criticized by the U.S. Department of Energy's Peter Rosen for raising the question of a site at this stage. In the TESLA Conceptual Design Report, two sites were considered—one at DESY, the other at Fermilab. I do not feel that this is bad for international collaborations. To make a meaningful comparison of the options, the availability of a site and the total cost incurred in setting up a new laboratory—if needed—must be known.

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Shifty Eyes

I disagree with the implication that human iris morphology is more "stable" than fingerprints or retinal vasculature ("Eyeball ID," Random Samples, 16 Jan., p. 329). The iris can change with trauma, infection, inflammation of an idiopathic nature, glaucoma, and after cataract surgery. In the young, the likelihood of change is minimal.

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Funding Themselves and Others

In reading "Scientists who fund themselves" (Special News Report, 9 Jan., p. 178) by Jon Cohen, we were moved to relate this story of neurophysiologist Alexander Forbes, who not only used his own funds to support his own work (*1*), but went considerably further by helping another scientist, Ernst Theodor von Brücke, escape from Nazi-occupied Austria in 1939, so that Brücke could resume his research (*2*).

Forbes, born in Milton, Massachusetts, was the grandson of Ralph Waldo Emerson. He is one of America's premier electrophysiologists and biomedical engineers (*3*). Brücke, a prominent Austrian europhysiologist of Jewish ancestry, was an excellent experimentalist who postulated spinal cord interneurons and championed the concept of reciprocal innervation of muscles (*2*).

Soon after the Nazis annexed Austria to Germany in March 1938, Brücke was abruptly dismissed from Innsbruck University. Unknown to Brücke, Forbes immediately began to arrange a position for him at Harvard. He offered to underwrite, and subsequently assumed sole responsibility for, Brücke's salary for 2 years. He wrote to numerous scientists (including J. Erlanger, R. W. Gerard, and H. S. Gasser), industrialists (including E. Mallinckrodt), and foundations soliciting