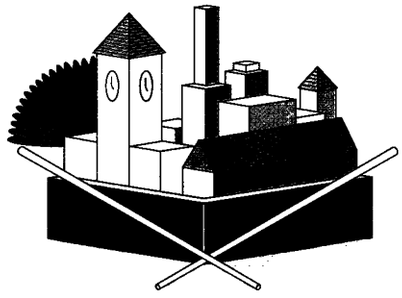
LETTERS

Marvelous analogies

If the complete sequence of the "human genome" can be likened to the periodic table, will subsequent research be like playing with a chemistry set? Can a university be compared to a box lunch at a Japanese train station (right)? Does a queen's title qualify her as an insect? And does scientific fraud really "strike" like lightning?



RWEEY E. SMITH

"Struck" by Fraud?

The soft soap dispensers are back at it again, and *Science* is aiding and abetting. "Fraud strikes top genome lab," a News & Comment piece by Eliot Marshall (8 Nov., p. 908) is pure cultural soft soap inflated into giant bubbles. Fraud did not "strike," it originated in the lab.

Before we call in the lawyers, defer to the ethics committee, arrange a blue-ribbon panel, or make this a long-running story, perhaps we could agree on the following. If you haven't done the work, don't put your name on the paper. If you put your name on the paper, then you are stuck with it.

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As former scientists, we are naturally troubled by controversies about co-authored papers, but find that subsequent discussions within the scientific community generally focus on *how*, and rarely on *why*, such incidents occur. One possible reason is that co-authorship of a paper is not always indicative of participation in the reported research—or even of knowledge about its content. We feel that co-authors should bear collective responsibility for their publications, sharing blame as well as credit. It is a contradiction to be a co-author but then plead ignorance (and assume victim status) if there is controversy regarding data in the paper.

We propose a simple convention embodying the principle that authorship equals responsibility. Publication of an article should require the mandatory submission of a form signed by all authors verifying that they have read the complete manuscript and take equal responsibility for its contents. One would expect joint authorship to automatically imply this, but evidently this code of conduct needs to be formalized. If scientists do not feel that they can vouch for the integrity of a paper, then they should not assume co-authorship.

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Mental Health and Disability

Findings of the World Health Organization (WHO)–World Bank Global Burden of Disease (GBD) study (C. J. L. Murray and A. D. Lopez, Policy Forum, 1 Nov., p. 740) accord well with those of less ambitious investigations and underscore the central importance of neuropsychiatric disorders to the health status and economic productivity of developed and third-world countries. Some readers may have been surprised to find unipolar depression, self-inflicted injuries, violence, alcohol dependence, bipolar disorder, and schizophrenia ranked high among the leading causes of disability worldwide. The authors of the GBD predict that demographic trends will make depression the second leading cause of disability in 2020; human immunological deficiency–related disease has a predicted rank of 10th.

Other studies suggest that psychiatric disorders are common in nonselected samples. More than a quarter (28.1%) of the U.S. citizens participating in the largest epidemiological study of psychiatric disor-

ders heretofore conducted experienced a major psychiatric disorder over a 1-year period (*1*). Neuropsychiatric conditions may be even more prevalent in third-world countries. Depression, posttraumatic stress disorder, and other disorders are common among individuals from war-torn areas (*2*). Studies of earthquake survivors in rural India, of psychiatric sequelae of "ethnic cleansing" and genocide in Bosnia and Rwanda, of tortured political activists in Turkey, and of refugees and those who have experienced civil unrest generally suggest that many aspects of life in developing countries contribute to high levels of psychiatric morbidity (*3*).

Not only are neuropsychiatric disorders ubiquitous, they are particularly costly because of their early onset and frequently chronic course. The WHO Collaborative Study on Psychological Problems in General Health Care found psychiatric illness more strongly related to occupational impairment than physical disorders and concluded that "the consistent relationship of psychopathology and disability indicates the compelling personal and socioeconomic impact of common mental illnesses across cultures" (*4*).

Greater personal and public recognition of psychiatric disorders and funding of neuropsychiatric research is needed. In addition to their large direct costs, psychiatric disorders also contribute to the development or complicate the management of other important causes of premature death and disability. Developed countries should devote more resources to psychiatric research and treatment in order to benefit their own citizens and find ways to assist developing nations in caring for their own psychiatrically impaired citizens.

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After the Genome

In his Policy Forum "The new genomics: Global views of biology" (25 Oct., p. 536), Eric S. Lander offers a marvelous analogy, likening the conceptual contribution of the Human Genome Project to "the discovery and consolidation of the periodic table." I was relieved that he selected this over the alternative of the Holy Grail.

Lander proposes 10 goals to fill the idle hours of soon-to-be–ex-genome scientists. These are systematically arranged under four helpful subheadings, to wit, "DNA," "RNA," "Protein," and "Society." While this might appear to cover all the bases, his otherwise thoughtful propositions seem to overlook what held most scientists' interest in chemistry as children—putting together unlikely looking components and getting unexpected, highly colorful, delightfully messy, and sometimes explosive results. Between "Protein" and "Society" lies the enormous range of behavior, development,