

## SCIENCE'S COMPASS

familiar (for example, HBEF). Since 1983, there has been no significant change in the pH of precipitation at HBEF, yet the figure would suggest otherwise.

Currently, there is much interest and debate about trading CO<sub>2</sub> emissions in the free market. As control strategies are considered, it will be important to recognize the fundamental difference in biogeochemical effect of sulfur and carbon emissions. Carbon dioxide is a major greenhouse gas, so its concentration and mixture throughout the atmosphere are critical, whereas acidifying gases and particles of sulfur contribute to the acid rain problem when they are deposited to the Earth's surface, after being transported in the atmosphere (4). Thus, the location of emission sources is much less critical for CO<sub>2</sub> than for SO<sub>2</sub> emissions in causing environmental change.

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### References and Notes

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4. Obviously, CO<sub>2</sub> also interacts dynamically with organisms and with Earth's surfaces; SO<sub>2</sub> can be a phytotoxicant at high concentrations in the atmosphere, and aerosols can affect global warming.

## The Context of Molecular Data

Elizabeth Pennisi, in her article about the *methuselah* gene regulating life-span in *Drosophila* (News of the Week, 30 Oct., p. 856) includes a quote from molecular geneticist Cynthia Kenyon: if this process "happens in both worms and fruit flies, you have to be crazy to think it won't happen in vertebrates." Although likely an impromptu comment from Kenyon, the immediate conclusion and the underlying thought are troubling.

First, the referenced flies and nematodes are animals with short life-spans and highly regulated development, making them valuable model systems, but possibly unrepresentative of their respec-

tive phyla. Additionally, both taxa may be more closely related than previously suspected, as some evidence suggests they are members of a larger grouping within the Protostomia, the Ecdysozoa (1). Thus, a *methuselah*-type gene may simply be a shared character of the Ecdysozoa and not relevant to deuterostomes.

Second, I am concerned that natural and evolutionary history are often overlooked in such extrapolations from molecular data. I see this attitude reflected in an increasing number of undergraduates. Many important strides, such as the Modern Synthesis, were achieved by scientists integrating theory and laboratory studies with natural history observations (2). Natural selection generally acts at the level of the organism (3), so we ignore the context in which the organism operates at our peril.

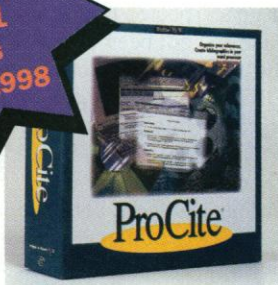
Whether from natural or laboratory systems, data need to be evaluated in terms of the contributing organisms' overall biology. Otherwise, we as a society may begin missing both forest and trees for all the cells, mitochondria, and genes.

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## Icelandic Health Records

Recent News of the Week articles by Martin Enserink (14 Aug., p. 890 and 30 Oct., p. 859) and an editorial by Henry T. Greely (*Science's* Compass, 23 Oct., p. 625) clearly describe the discord over plans by the government of Iceland to create a central health record database and give a private company, deCODE Genetics, exclusive rights to analyze and market the data.

It needs to be emphasized that the proposed bill allows deCODE to bypass review by human subjects committees and seeks to strip patients of rights that are considered fundamental in Westernized societies.

First, while the bill provides an "opt-out" clause, no informed consent will be obtained from individuals whose data will be included in this database that targets insurance companies and HMOs as prospective buyers.

Second, and even more troublesome, is a provision in the bill that would give deCODE exclusive rights to market the data for 12 years, preventing patients from participating in studies and databases that might be created in the future by competing entities. Thus, this provision limits a patient's ability to use health records, including genetic information, even when the patient's intent may be to seek understanding and solution of their affliction. Furthermore, such legalized monopoly of genetic research threatens academic freedom in Iceland.

The Icelandic government, which is skilled at managing fisheries, seems to be inclined to treat our health records and genetic information like a seafood product. Although similar plans would not be taken seriously in other Western cultures, the proposed bill could motivate others to encroach on academic freedom and to trample on a patient's rights for monetary gain in different parts of the world. Therefore, it is of paramount importance that leaders in the international scientific community, especially those concerned about ethical aspects of genetic research, join patient advocates, physicians, and scientists in Iceland in condemning these plans.

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## Protein Data Bank Deposits

Since the Protein Data Bank (PDB) inaugurated the "Layered Release Protocol" on 9 July 1998 (F. E. Bloom, "Policy Change," *Science's* Compass, 10 July, p. 175) ([www.pdb.bnl.gov/](http://www.pdb.bnl.gov/) and [\[ebi.ac.uk/pdb\]\(http://ebi.ac.uk/pdb\)\), results have exceeded our highest expectations. Specifically, since July we have received 931 new entries, of which 813 were submitted by means of our latest data deposition software \(AutoDep 2.1\), which allows for "release on publication." For less than 22% of these, "on-hold" is requested, and the rest have been either immediately released or held](http://www2.</a></p>
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AUTODEP 2.1 ENTRIES  
(FROM 9 JULY 1998 TO 28 NOVEMBER 1998)

Category	No.	%
Request immediate release	245	30.1
Waiting for publication	393	48.3
Request on-hold	175	21.5

until publication (see table above for details). This is in sharp contrast to the situation just a year ago, when more than 75% of new entries were requested to be put "on-hold" for 1 year.

This is an enormous tribute to the journals that have set the new policy requiring "Release on Publication," as well as to the PDB, which instituted the "Layered Release Protocol," making it possible to access data concurrently with publication.

It is clear that there has been a profound change in the attitude of the vast majority of experimental crystallographers and nuclear magnetic resonance spectroscopists toward releasing their data either immediately or at the time of publication. This is an exciting development for structural biology that will have a positive impact on other scientific disciplines, industrial research, and education.

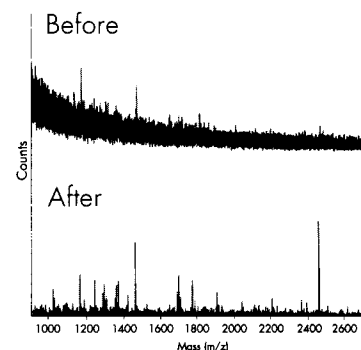
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The Handy-Dandy  
Kitchen Device

In gray tree frogs, the duration of males' mating calls is correlated with enhanced genetic fitness among offspring (A. M. Welch *et al.*, *Reports*, 19 June, p. 1928). Perhaps the same genes that enable some frogs to sustain longer calls also confer a survival advantage to their young (E. Penisi, *Research News*, 19 June, p. 1837). If so, this may be an example of a more general, but underappreciated, evolutionary process, in which fitness is increased through the combined effect of multiple inherited characteristics. In the case of gray tree frogs, a characteristic with little if any apparent adaptive significance (longer calls) may be associated with oth-

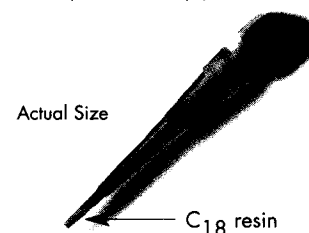
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