1995. The species or family names of more than 800 samples have been identified, and the results have been presented to the IWC's Technical Committee or its Scientific Committee. Japan is also developing a system to detect illegal trafficking in whale products based on registration of DNA profiles, similar to the Norwegian DNA register system. In regard to western North Pacific and Antarctic minke whales sampled during scientific surveys by JARPN and JARPA, Japan has begun genetic labeling for these samples. In addition, Japan has been collecting DNA profile data from by-catches, strandings, and stockpiles of cetacean species. We believe that continuous molecular monitoring and an inclusive registration of DNA profiles will contribute to avoiding or greatly reducing illegal whale hunting and trading in whale products in Japan.

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Further Scrutiny of Scientific Whaling

Normile reports on Japan's expanded scientific whaling program and notes that "Canada, the United States, the Soviet Union, South Africa, and Japan were among several countries that [conducted scientific whaling] before 1982 [the year the IWC passed the worldwide commercial moratorium on whaling], but in recent years Japan has stood alone." Although true, this statement omits three equally important points.

First, Iceland and Norway exploited the scientific whaling provision allowed by the IWC. Between 1986 and 1994 both countries killed 651 whales in the name of science (*1*), and between 1987 and 1991 Japan imported 4146 metric tons of whale meat, including 4036 tons of research whale meat from Iceland (*2*). More meat might have been exported, but in 1986 the IWC passed a resolution on scientific whaling that recommended that "the meat as well as the other products should be utilised primarily for local consumption." Iceland withdrew from the IWC in 1992, and Norway reinitiated commercial whaling for minke whales in 1993 under its objection to the IWC commercial moratorium.

Second, the number of whales killed in scientific whaling programs before the commercial moratorium was at most in the low hundreds, and these programs were of limited duration. The Japanese started research whaling for Antarctic minke whales in the austral summer of 1987/88, which is when the commercial moratorium began. They have killed 4595 minke whales so far (*1*) and are about to start whaling for the 14th year (the first 2 years were called a "feasibility study"). The Antarctic minke whale research program is scheduled to continue until the 2003/04 season. In the North Pacific, the Japanese started research whaling on minkes in 1994 and have killed more than 500 whales (*1*). Since the 1987/88 season, Japan's research whaling program has taken 5181 whales, about 2.4 times as many as were taken between 1949 and 1987 by all other countries combined.

Third, the IWC established a Southern Ocean Sanctuary in 1994 (Japan was the only member nation that voted against it), but since then Japan has continued to take all of its annual catch of Antarctic minke whales within the sanctuary boundary, despite repeated requests by IWC that it not hunt there.

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References and Notes

1. Data available from the Secretariat of the International Whaling Commission, Station Road, Histon, Cambridge CB4 4NP, UK.
2. Japanese import statistics, Statistics and Information Department, Ministry of Agriculture, Forestry and Fisheries, Tokyo, Government of Japan, and Statistical Bureau of Iceland, Foreign Trade, Reykjavik, Iceland.

Publication Rights for Sequence Data Producers

Lee Rowen and colleagues highlight in their Policy Forum (15 Sept., p. 1881) their concerns with the publication of articles containing information derived from publicly available sequence data that have not yet been published in peer-reviewed primary papers. They refer to two review articles (*1, 2*) on the murine major histocompatibility complex (MHC) that were published before any primary papers from the data producers. In both cases, great care was taken to ensure that the source of primary sequence data was acknowledged in accordance with the guidelines set out by the hosting databases, the labs that produced the primary sequence were credited, and the European Molecular Biology Laboratory/GenBank accession numbers were quoted. It should be noted that Rowen's lab was one of those involved in the

primary sequencing efforts, and the decision to publish was taken after a period of consultation with all those involved, including an offer of coauthorship. Although rejected, this latter offer is in line with the "agreeable options" for etiquette-led protocols on use of third-party database entries or annotations.

At present, there is no worldwide policy governing the use of sequence data publicly available on genome databases. A major factor that was taken into consideration in the cases referred to above was the length of time that the primary sequence had been available in the public domain. We recognize that the value of work done by labs that contribute to publicly available genome data goes far beyond their skill in identifying and sequencing genes, and that they deserve priority in bringing the wider impact of these analyses to the primary literature. For the two MHC review papers referred to here, however, most of the primary sequences were deposited in the databases before the end of 1998. Sufficient time had therefore elapsed for the sequence producers to prepare, submit, and publish primary papers.

We welcome the guidelines suggested by Rowen and colleagues in their Policy Forum. However, as they themselves admit, there will be instances where data producers do not publish their analyses within a reasonable time frame and that disputes will occur. They suggest that the research community develop a policy with guidelines about the kinds of analyses for which data producers can claim priority. Additionally, we would argue for a "statute of limitations" on such priority that would define a "reasonable time frame" in which sequence producers can publish their analyses of primary data. After this set time frame—say, a year after public release of the sequence—third parties would have the right to use the data freely.

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References

1. R. J. N. Allcock *et al.*, *Immunol. Today* **21**, 328 (2000).
2. C. Y. Yu *et al.*, *Immunol. Today* **21**, 320 (2000).

Response

In our Policy Forum, we argued that the producers of freely available sequence data should have the right to define the scope of the primary paper they intend to write once the data-gathering effort is completed. Our discussion was prompted by the publication of the two review articles to which Bell, the editor of *Immunology Today*, refers. Although she is correct in stating that the data had been released for a considerable period of time, Bell does not address a key point of dissension, namely that the sequencing projects that were reviewed in the articles were not finished. In the case of Yu *et al.*'s review, it consisted of a comprehensive analysis of half of the human and mouse MHC class III region, an analysis that relied heavily on the annotation we provided with the data entries. The review was written while we were still sequencing the other half of the region. In the case of the review by Allcock *et al.*, it included a comprehensive map and gene table for the mouse MHC region, with a clear indication that the sequence of the class I region was not finished. The authors of this review preempted and ignored the publication plans of three laboratories that are collaborating on the completion of the mouse MHC locus.

There are three important issues at stake. First, we do not believe that reviews should be written on unpublished data and analyses that have not gone through the peer-review process. Preparation for publication and peer review give the data producers a chance to correct inadvertent errors in the publicly released data. Second, we do not sanction the preempting of obvious primary publications by third parties when permission to do so has

been neither sought nor granted. We argue instead that publicly released data and analyses should be given respect analogous to that given to personal communications. Finally, projects such as the mouse MHC locus research are of sufficient complexity that the time frame for mapping, sequencing, and analyzing the data can be long, especially if funding resources are limited. With an immediate data release policy, some of the data will be available well before completion of the entire project. Thus, imposition of a time frame is only fair to data producers if the clock begins to tick when the data-gathering phase is done.

In sum, we endorse the policy of open data release, and we encourage third parties to make use of the data to further research. However, we maintain that the right to publish a peer-reviewed, well-defined landmark or comprehensive analysis of the primary data should be reserved for the data producers. Precedents set now will define the norms and standard practices for the future. Thus, we urge journal editors to exercise fair and reasonable judgment vis-á-vis third-party publications.

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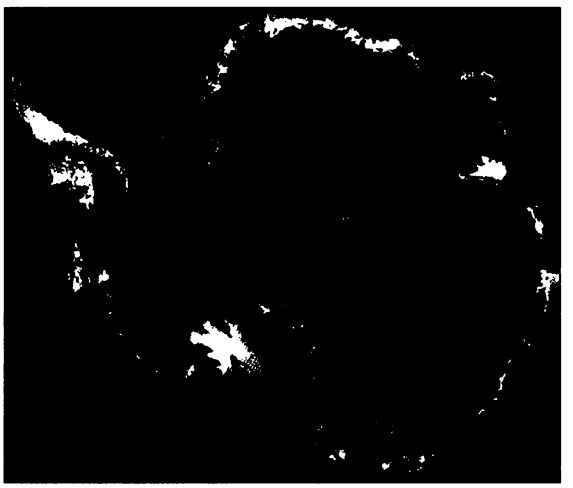
CORRECTIONS AND CLARIFICATIONS

Letters: "Consideration of copollutants" by S. H. Moolgavkar (20 Oct., p. 453). Editing of the letter for publication changed the meaning of a sentence in the first paragraph. In reference to the morbidity study, it is the method, not the study, as stated in the letter, that "has little power to control confounding by copollutants."

Cover: (15 Sept.). The figure shown here in proper orientation depicts the first high-resolution (25-meter), synthetic aperture radar mosaic of Antarctica. Data for the mosaic were collected over an 18-day period in 1997 as part of a Canadian Space Agency and NASA collaboration to map Antarctica with RADARSAT-1, the first Canadian Earth Observation satellite. The mosaic was assembled by a team that included The Ohio State University, Vexcel Corporation, the Alaska SAR Facility, and the Jet Propulsion Laboratory. It represents a unique "snapshot" of the southern continent, providing a benchmark for gauging future changes of the ice sheet and coastal ocean, which are possible indicators of global warming. The 1997 mosaic will be compared with new and even higher resolution radar imagery collected during the fall of 2000 using RADARSAT-1. Along with searching for spatial changes in ice sheet surface properties and extent, the 2000 data will be used for radar interferometric analysis of ice sheet surface velocity to yield new information about the dynamics of ice sheet motion. RADARSAT-1 imagery is copyrighted by the Canadian Space Agency.



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