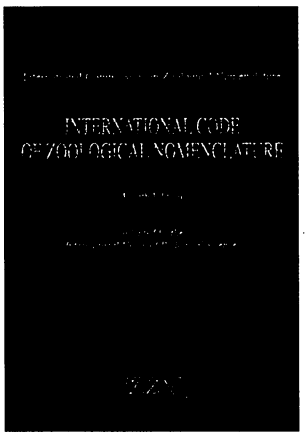
TAXONOMY

Zoology Naming Rules Eased

While most of biology has kicked into hyperdrive, taxonomists pride themselves on keeping their research in line with work done decades, even centuries, ago. That means sticking with the principles that each organism's true name be the oldest one appearing in the print literature, all names be in grammatically correct Latin, and any deviations from these rules be approved by an international commission. But even taxonomists are feeling the pressure of our accelerated pace of life, as shown by the new edition of the *International Code of Zoological Nomenclature*, (ICZN) a set of naming rules that first came out in 1905 and was last updated in 1985.



Going green. The 95-year-old *Code of Zoological Nomenclature* has its first green cover, instead of a red one, reflecting its editors' hope that 2000 will be the dawn of a biodiversity millennium.

The code, newly revised under the auspices of the International Commission on Zoological Nomenclature, allows its users to make some time-saving changes and even begins to bring zoological nomenclature into the digital age. Still, a few researchers fear that the revisions don't go far enough in preparing the field for the 21st century. "A lot of people wanted a lot more changes," notes William Eschmeyer, an ichthyologist at the California Academy of Sciences in San Francisco.

To its credit, the new, fourth edition "gives individual scientists a lot more authority" to sidestep priority when they find an early name if that name has not been in use for at least 100 years, says Eschmeyer. It also relaxes some rules for making sure that the Latin spellings of names are correct. And while the old rules required that descriptions of new animals or name changes be printed in a journal, the new code allows researchers to publish them on compact discs, as long as "identical and durable copies" are put in at least five libraries that are accessible to the public. The World Wide Web, however, is not acceptable, nor are electronic journals, says Alessandro Minelli, a zoologist at the University of Padova in Italy.

To streamline searches for existing species names, the code opens the door to the establishment of official species lists that anyone could check. "There are many lists in progress," notes Minelli, president of the commission, but there is no agreement yet on exactly how the lists should be set up or kept current. That, he says, may be in the next revision.

At least one of the revised code's new authors, entomologist F. Christian Thompson of the U.S. Department of Agriculture systematics laboratory at the National Museum of Natural History, wishes that the commission had not put off that step, however, and that the code had also gone further in eliminating Latin requirements so as to make it easier to automate and computerize taxonomic data. Indeed, Thompson worries that there might not even be a "next revision." Over his 25-year career, he says he has seen a steady decline in the number of taxonomists as the pace of progress in other areas of biology lures budding scientists. "With fewer and fewer people [in the field], I'm not sure we could assemble a core group of people to do this again," he says.

–ELIZABETH PENNISI

POSTDOCS

Academy Plans Guide To Improve Status

"I'm taking a risk just being here. Missing a day of work could raise questions about my priorities." That frank statement from Daniel Zuckerman, a physiology postdoc at Johns Hopkins Medical Institutions in Baltimore and president of the university's Postdoctoral Association, reflects the vulnerability that many postdocs feel today. But Zuckerman was among friends: His comments were made at a workshop held late last month by the National Academy of Sciences (NAS) that was aimed at reducing that vulnerability for the 40,000 postdocs who contribute mightily to the U.S. research enterprise but rarely receive commensurate pay, rights, or recognition.

Zuckerman and 100 other people crammed into an academy conference room in Washington, D.C., to offer advice to its Committee on Science, Engineering, and Public Policy (COSEPUP) on a publication due out in the fall. Its "Guide to the Postdoctoral Experience" will describe issues facing these fledgling scientists and advise all the players—graduate students, postdocs, mentors and supervisors, university administrators, and the government agencies whose funding keeps the system afloat—of their rights and responsibilities. (Questions and comments may be sent to cosepup@nas.edu)

The status of postdocs is a hot topic in academic circles (*Science*, 3 September 1999, p. 1513). Last month, for example, the Association of American Medical Colleges adopted a 1998 report from the Association of American Universities that tells institutions to define the position clearly; set "realistic" salaries and benefits; standardize hiring, training, and evaluation practices; and create an office to enforce these policies. A growing number of universities have already taken such steps, and a dozen postdoctoral associations have sprung up to negotiate better working conditions and raise postdocs' visibility.

The academy hopes its guide will move this process along. Discussion of a draft ranged from tips on setting up a central postdoc office to questions of whether performance appraisals are an important management tool or a waste of time. But it was pay and working conditions, especially in the life sciences, that brought emotions to a boil. "The issue is one of basic fairness," said immunologist Jack Bennink of the National Institute of Allergy and Infectious Diseases, speaking about the 2800 postdocs on the National Institutes of Health (NIH) campus. "If we don't pay them a living wage, in 10 years [U.S. science] will be hurting for talent."

Many participants professed surprise that institutions follow the scale for NIH's National Research Service Award fellows, which starts at $26,252. "We couldn't get approval for anything under $35,000," said Massachusetts Institute of Technology electrical engineer Mildred Dresselhaus, a COSEPUP member who chaired the workshop. And even that amount may be low: NASA's Jet Propulsion Laboratory and the National Institute of Standards and Technology pay in the mid- to upper $40s, representatives noted, while Eli Lilly's Jean Labus said the Indiana drug company starts its life science postdocs at $42,000. And although

Work in progress. Proposed guide hopes to stimulate debate on role of postdoctoral scientists.

CREDITS: (TOP TO BOTTOM) ICZN; SAM OGDEN PHOTOGRAPHY

university officials defended the practice, they admitted that the system is flawed. "Physicians are also required to work a period of low-paying servitude, for which they are compensated the rest of their lives with higher pay and guaranteed employment," noted H. F. Gilbert of Baylor College of Medicine in Houston. "Unfortunately, we can't do that for postdocs."

Dresselhaus says the guide won't recommend a specific pay floor—"it would be hard to get anything through [NAS] review that was opposed by NIH or the biomedical community," she confesses—or prescribe certain practices. "But we hope people will use it as a basis for further discussion."

–JEFFREY MERVIS

ENDANGERED SALMON

Army Corps Seized by Dam Indecision

PORTLAND, OREGON—For years the Army Corps of Engineers has been chewing over the best way to bring back endangered populations of salmon and steelhead along the Snake River. The most controversial proposal—embraced by environmentalists and bitterly resisted by many local residents—is to breach four hydropower dams on the Snake River, a tributary of the Columbia River in Idaho and Washington state. At a press conference here on 17 December, the corps announced, to the dismay of both sides, that it was delaying a decision until summer.

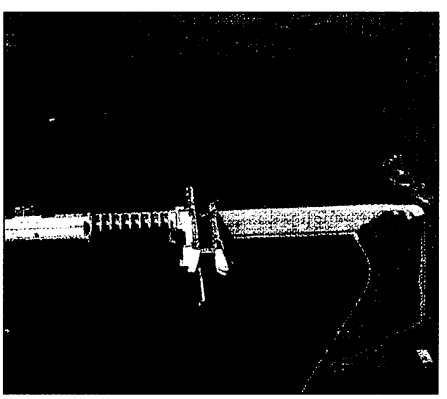
Describing the evidence as "not conclusive," Brigadier General Carl Strock, commander of the corps's Northwestern Division, argued that the economic and social impacts of breaching the dams are so enormous that the corps needs "additional regional dialogue and scientific information" to "arrive at a preferred alternative." As a basis for this discussion, the corps has released its draft environmental impact statement: megabytes upon megabytes on everything from salmon growth rates to analyses of tribal treaties (www.nwd.usace.army.mil).

The delay does not sit well with tribes and environmental groups. Fanning their displeasure, the U.S. Fish and Wildlife Service (FWS) issued a report on the same day asserting that dam breaching "would provide many more benefits to fish and wildlife" than would other options. The "biological conclusion is a no-brainer," says FWS regional administrator Anne Badgley. "A free-flowing river is better than a dammed river."

However, the corps will turn first for advice not to FWS, but to another agency—the National Marine Fisheries Service (NMFS)—which under the Endangered Species Act has the legal mandate to protect endangered migratory fish throughout the Columbia River Basin. Unsatisfied by the prospect of planning tributary by tributary, the NMFS wants to incorporate the recovery of Snake River fish into a basinwide effort. For that reason, says NMFS regional administrator Will Stelle, the agency is examining a "much more complicated" subject than Snake dams versus no Snake dams: the effects on endangered fish throughout the region of habitat degradation, hatcheries, and fishing, in addition to hydropower.

The examination is occurring through a broad new NMFS program called the Cumulative Risk Initiative. CRI—which attempts to integrate the factors determining the species' risk of extinction into a model of population growth—supersedes an effort known as the Plan for Analyzing and Testing Hypotheses, or PATH (*Science*, 23 April, p. 574). PATH was intended to be the sole scientific basis for a Snake River decision, until NMFS concluded that independent scientists would get lost in PATH's complexity.

Using the more transparent CRI model, Stelle says, NMFS scientists have finished an analysis of improvements that might help the Snake River salmon recover. The next step, he says, is to rate each option's feasibility. If what's best for the salmon were the sole criterion for decision-making, Stelle admits, "we should stop all irrigation, terminate all development and inriver uses, take out the dams, and probably move east." But economic and social factors—not just what's best for the salmon—must be considered, NMFS recognizes.



CREDIT: U.S. ARMY CORPS OF ENGINEERS

Breach of faith? Army Corps has yet to rule on fate of this Snake River dam.

Next summer, after the CRI is finished, the corps will identify its "preferred alternative" in a revised draft environmental statement. The final version is expected late in 2000. If the corps endorses dam breaching, the matter will go to Congress for a final decision—suggesting that the resolution on the fate of these controversial fish is a long way off.

–CHARLES C. MANN AND MARK L. PLUMMER

Mann and Plummer are the authors of *Noah's Choice*.

ScienceScope

Science Under Siege When security outfits in three former Soviet countries stepped up their activities in 1999, scientists paid the price. The Cold War games kicked into high gear last July, when Russian ecologist Vladimir Soyfer was accused of mishandling classified documents on nuclear contamination. The Ukrainian KGB charged marine biologist Sergey Piontkovski with diverting Western grant money to foreign accounts. And Belarus got in on the act, reportedly imprisoning a researcher who studies lands blighted by Chernobyl. No matter the outcome of these cases, there's no sign that the attack dogs will be under tighter leash in 2000.

Getting Out the Vote Cutting-edge science promises to be a 2000 election issue—but not in the way many might hope. Antiabortion groups have put a high priority on banning taxpayer funding of promising research using cells and tissues from human fetuses. The Traditional Values Coalition is already running TV ads attacking four senators, including Nebraska's Bob Kerrey (D), for voting against an amendment that would have required scientists to document the source of fetal tissues. Meanwhile, biomedical lobbyists are girding themselves for a bruising congressional debate this spring over legislation that would ban or restrict federal support for fetal tissue studies.

E-Publish or Perish? Web-based scientific publishing will see some major roll-outs this year, as NIH test drives its controversial PubMed Central biomedical journal database and several players develop more preprint sites for posting papers that haven't yet been exposed to a peer reviewer's red pen. And expect universities and research societies to step up their assaults on for-profit journals, founding more low-priced competitors.

Genomaniacs Researchers racing through a trio of high-profile genome sequencing efforts are likely to see some checkered flags soon. First across the finish line should be a complete picture of the fruit fly genome, scheduled for release within a couple of months. But the runner-up will get much more press: a rough first draft of the human genome, due by March. Plant scientists are rooting for a bronze for the humble mustard, whose genome could be sequenced by year's end. The list of organisms that have had their genetic codes cracked could grow to nearly three dozen by year's end.

Contributors: The *Science* News staff.