come to life?" says Christine Nalepa, an entomologist at North Carolina State University in Raleigh.

Zompro turned to two systematicists and anatomists at the Zoological Museum of the University of Copenhagen, Denmark, for help. Niels Peder Kristensen and Klaus-Dieter Klass, who is now at the Zoological Museum in Dresden, Germany, evaluated how closely related the three specimens were to each other and to other insects.

Klass found that all three specimens shared some characteristics with stick insects and an obscure group called ice crawlers. Unlike stick insects, for example, females lack a plate on the underside of the abdomen to cover the egg-laying appendages. They also look different because stick insects have elongated thoraxes, with a stretched-out middle segment, but the new specimens don't have this feature. Furthermore, when Klass dissected the female to look for further similarities and differences, he discovered that the stomach was full of insect parts; stick insects are vegetarians, not carnivores, says Kristensen.

Klass, Kristensen, Zompro, and Plön collaborator Joachim Adis therefore argue that the specimens are three new species that together make up a separate new order. They have named it Mantophasmatodea because of a superficial resemblance to the praying mantis and phasmids, the stick insects. "I am glad this group has a name and a place," says George Poinar, a paleoentomologist at Oregon State University in Corvallis. Until now, he says, "anyone who looked at them really couldn't put them anywhere."

With only three members, Mantophasmatodea is the smallest insect order yet known. Of the 32 other insect orders, only one has less than 20 members and another has more than 300,000. So far, entomologists have placed about 750,000 species into these orders, "but we're probably only halfway there" in finding and classifying the rest, says Wilson.

The three members of Mantophasmatodea may soon have company. "I bet you anything that there are more specimens lurking in museums," Grimaldi predicts. Even more exciting, says Kristensen, Zompro and Eugene Marais of the National Museum of Namibia in Windhoek have just discovered two more species in Namibia. Zompro has brought living specimens of one back to his lab to study their behavior. All these finds just go to show, Kristensen adds, "that we are still very far from knowing the diversity of life on Earth."

–ELIZABETH PENNISI

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AMPHIBIAN DECLINE

Ubiquitous Herbicide Emasculates Frogs

The most heavily used herbicide in the United States makes hermaphrodites of male frogs at concentrations commonly found in the environment, a new laboratory study reports. Its authors urge looking more closely at the possible role of atrazine and similar pesticides in amphibian declines, although a causal role has yet to be demonstrated. Atrazine is banned in many European countries, and some scientists expect this study to influence the U.S. Environmental Protection Agency's (EPA's) ongoing assessment of the chemical.

For more than a decade, scientists have watched with alarm as many amphibian populations have declined and some species have suddenly gone extinct. Although loss of habitat is clearly a culprit, many disappearances have occurred in undisturbed areas such as mountain rainforest reserves. Suggested causes for these mysterious declines include fungal pathogens, increased ultraviolet light, climate change, and pesticide residues.

Toxicologists had come to regard atrazine as one of the more benign pesticides around. Approximately 27 million kilograms of the chemical are applied annually to corn and other crops in the United States, and much of it makes its way into surface water, groundwater, and even rainwater. Past studies with amphibians had shown effects only at abnormally high levels. But researchers had not zeroed in on an apparent amphibian Achilles' heel: the hormone system, which can be disrupted by extremely low concentrations of compounds.

Now researchers led by developmental endocrinologist Tyrone Hayes of the University of California, Berkeley, report that in lab studies, male tadpoles develop extra gonads and become hermaphrodites at concentrations 30-fold lower than EPA's safe drinking water standard. The researchers raised

Sex change. In lab studies, male African clawed frogs become hermaphrodites when exposed to atrazine.

ScienceScope

Lethal Legacy The Republic of Georgia is about to ramp up its hunt for Soviet leftovers. In February, the International Atomic Energy Agency helped the Georgians recover two abandoned canisters (below) packed with dangerous strontium-90 (*Science*, 1 February, p. 777). So far, six of the highly radioactive Soviet-era sources, once used to power portable thermogenerators, have been retrieved from the Ingury River valley. But the agency believes as many as four remain unaccounted for. In June, atomic agency experts and member states will assist Georgia on a 2-week mission to scour the valley for the missing devices by vehicle, horseback, and foot. Also in the planning stage is a countrywide search for other "orphan" radioactive sources.

Barrier Breaker Washington, D.C., high school science teacher Douglas Tyson sees it as a unique opportunity for his students to mingle with the scientific elite. For the National Academy of Sciences (NAS), it's a chance to be a good neighbor and open doors to a group of highly motivated minority students.

This week the academy announced a new partnership program linking it with Benjamin Banneker, the district's only public college-prep high school. This summer four graduating seniors will work in the National Research Council's (NRC's) division of earth and life sciences to kick off a paid internship program, and academy staffers have agreed to spend time in the classroom and on science-related activities. The goal, says NAS President Bruce Alberts, is "to help close the gap in the number of minorities in scientific, engineering, and medical careers."

Banneker's success with a rigorous academic curriculum for students from disadvantaged backgrounds makes it the obvious partner, says NRC division head Warren Muir, who worked with Tyson to lay the groundwork. "You want a school where there's somebody on the other end who cares," he says. Tyson, coach of the school's national championship "It's Academic" team, is looking for something that he can't provide: "We can set high standards, but if students are going to succeed in this world they also need to engage in activities involving the majority population."

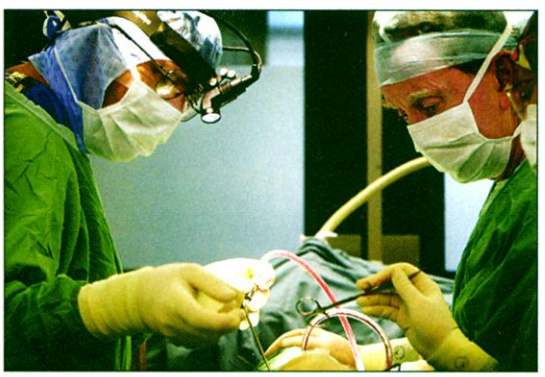
large group of faculty members are from other universities both at home and abroad. So we need a written document to guide and instruct our teachers and to prevent them from misconduct." **–DING YIMIN**

Ding Yimin writes for *China Features* in Beijing.

SCIENTIFIC MISCONDUCT

Australia Probes Kidney Researcher

SYDNEY—The Australian government has frozen funding to a prominent medical researcher and clinician pending the outcome of an investigation into allegations that he committed scientific misconduct. The case has raised questions about the adequacy of the country's present system of investigating misconduct.



Open inquiry. Bruce Hall (left) is under investigation by the University of New South Wales.

The allegations against Bruce Hall, a renal transplant physician and professor of medicine at the University of New South Wales (UNSW), have been made by three members of Hall's laboratory. In a series of submissions to university officials beginning last fall, they alleged that Hall misrepresented and fabricated experimental results, manipulated authorship credit in presentations and papers, and provided false data on a federal grant application. The work in question involves the role of CD4+ and CD25+ cells in organ acceptance and rejection as well as experiments involving monoclonal antibodies. Hall has declined to comment on any aspect of the case.

This month, in an attempt to put pressure on the university, the researchers—Clara He, Juchuan Chen, and Hong Ha—took their charges to ABC radio, which aired them last weekend. Two days after the ABC story ran, the UNSW Council, the institution's governing body, ordered an outside inquiry into the matter as well as an internal review of the university's procedures relating to possible misconduct. "The allegations are enormously disturbing," says council member Jeremy Davis, a former dean of the university's management school and past president of the academic board. "If the allegations are true, all our deep processes have failed."

Immediately after the show aired, John Ingleson, the university's deputy vice chancellor, issued a statement saying that the radio program "contained a number of serious inaccuracies." The statement also asserted that "the university has taken all appropriate steps to investigate the complaints referred to in the program." Ingleson said that its findings would be made public but did not give a timetable.

In a 16 January letter to UNSW officials, the National Health and Medical Research Council (NHMRC), the country's leading biomedical research funding agency, said that it was suspending a recently awarded grant to Hall—one of several he holds from the council—because of questions He had raised about the accuracy of the data upon which the application was based. "We don't have a view [on the truthfulness of the allegations]," says a council spokesperson. "But we take the matter very seriously, and we've asked that [the investigation] be done quickly."

Australia has no national body to monitor, investigate, and prosecute allegations of misconduct. Instead, each institution sets its own procedures, which must follow relevant state employment or anticorruption laws. To receive federal funding, institutions must agree to a code of conduct written by NHMRC and a nationwide body of university vice chancellors.

But that system may be inadequate for the task, says Merrilyn Walton, an ethics scholar at the University of Sydney and a former state commissioner for health care complaints. While making no judgment on the allegations against Hall, Walton says it's unrealistic to require institutions to root out serious scientific misconduct that could damage their reputations and their bottom lines. "It's like asking police to investigate police," she says.

–LEIGH DAYTON

Leigh Dayton writes from Sydney.

CHEMISTRY

To Net Big Molecules, Widen the Mesh

Some tradeoffs seem unavoidable. Industrial efforts to purify water or natural gas, for example, separate desired compounds from mixtures by passing them through membranes pocked with tiny holes. The smaller the holes, the more selectively the membrane lets molecules pass. But the tighter passage also slows the overall flow, requiring the use of higher pressures to push compounds

ScienceScope

Touching a Nerve Do investigators believe that grant size and duration have a big impact on their research? The National Science Foundation (NSF) is still tallying the answers to that and other questions put to some 6000 grantees as part of a study ordered by the White House budget office. But the 92% response rate to its Web-based questionnaire indicates how strongly researchers feel about the subject, officials say.

"I've never seen such a high response. It's amazing," says Norman Bradburn, a survey veteran who heads NSF's social and behavioral sciences directorate. NSF director Rita Colwell expects that the survey results, due out next month, will help her persuade Congress and the White House that larger, longer awards would make researchers more productive. "We hope it will reveal what more they could do with the right size and length of grants," Colwell told the National Science Board at its March meeting. The average NSF grant is now $113,000 and runs for 2.9 years.

One Beluga, Two Beluga Responding to critics, an international body has disclosed the data it relied on in allowing Caspian nations to resume fishing beluga. Pressure groups have argued that stocks of this sturgeon species, prized for its caviar, cannot sustain commercial harvest (*Science*, 22 March, p. 2191). But the secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) deems the beluga's status "far from precarious," claiming that there are an estimated 9 million individuals in the North Caspian alone (www.cites.org/eng/programme/Sturgeon/catch.pdf).

The 2002 allowed catch of 1780 beluga—a 39% decline from the average over the previous 4 years—is "sustainable and conservative," argues CITES Deputy Secretary-General Jim Armstrong. Critics are unimpressed. "I'm not at all convinced that they have a case," says Ellen Pikitch of the Wildlife Conservation Society. She hopes CITES officials change their mind before the main sturgeon harvest in the north Caspian commences in May.

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