SOUTHERN EUROPE

European Union to Fund Science in Balkan Region

VIENNA—Scientists in the war-torn Balkans may soon get a helping hand from the European Union (E.U.). The European Commission (EC) plans to launch a "Balkan Reintegration" program in 2001 to fund collaborations between E.U. scientists and colleagues in Albania and three former Yugoslavian countries: Bosnia-Herzegovina, Croatia, and Macedonia. Although "the Balkan region is high on the political agenda," says the EC's Peter Härtwich, Western efforts to support research there have been "almost nonexistent" until now.

The EC intends to issue a call for proposals next March that would include scientists from at least two target countries and two E.U. member states. Likely themes are environmental degradation and public health issues linked to war and refugee migration. The EC plans to release a modest 4.3 million euros ($3.8 million) for the new program.

Speaking here at the first meeting on how the E.U. might support Balkan research, scientists from Croatia and Bosnia quickly found common ground on one theme: pollution in the Danube watershed. Yugoslavia may be able to join, too, if, as EC officials expect, the new democracy is cleared to participate in such E.U. programs in time for next spring's call.

But even in these struggling nations,

Troubled waters. Fish-killing pollution on the Danube could be one Balkan project.

$4 million doesn't go far. "Opening the new Framework program is not enough," argues meeting organizer Manfred Horvat, director of Austria's Bureau for International Research and Technology Cooperation. Erhard Busek, a former Austrian science minister, urged Balkan scientists to try prying loose some research dollars from the Southeast European Cooperative Initiative (SECI), which doles out money in the Balkans for projects such as beefing up border stations, power grids, and securities markets. Busek, who coordinates SECI, suggested that the scientists put together a slate of projects and present them at SECI's next meeting in March.

Scientists from the Balkans region may also be able to compete for funds from the E.U.'s next 5-year research program, Framework 6, which begins in 2003. EC officials have privately encouraged Horvat to compile a wish list of initiatives that could benefit the former Yugoslav countries and Albania in the next Framework. One possibility might be a program to help these countries, which have suffered massive brain drains, recoup scientific talent. "We should fight for return scholarships," says Raoul Kneucker, director-general of Austria's Ministry of Education, Science, and Culture.

Horvat planned to deliver the document to Brussels before Christmas, so it could be considered for the Framework 6 proposal that is expected to go to the European Parliament in March. **–RICHARD STONE**

ECOLOGY

Silk Moth Deaths Show Perils of Biocontrol

North America's largest, most spectacular moths are being decimated by a foreign fly introduced to control gypsy moths, a new study suggests. These cecropia moths and other native silk moths were once so common that people gathered cocoons by the basketful, but lately entomologists have been hard-pressed to find them. Now, a series of field experiments has shown that the European fly *Compsilura concinnata* has a ferocious appetite for silk moth caterpillars.

The work, published in this month's issue of *Conservation Biology*, not only may help solve the mystery of the silk moths' decline, but it also underscores a growing concern among ecologists: that biocontrol agents can have unintended side effects, attacking species outside their intended range of hosts. "It's an important paper," says ecologist Donald Strong of the University of California, Davis. The study, led by wildlife biologist George Boettner of the University of Massachusetts, Amherst, "gives the clearest evidence so far" that biocontrol insects are harming native insects, says Strong, who recently advocated stricter rules for biocontrol (*Science*, 8 December, p. 1896, and 16 June, p. 1969).

Government and university scientists began introducing *Compsilura* flies in 1906 to control forest-devouring gypsy moths and browntail moths. They continued to release the fly in 30 states until 1986. But, says Boettner, the fly doesn't just kill these imported moths; it attacks at least 180 species of insects. As early as 1919, scientists noted that one silk moth, the promethea moth, was

Collateral damage. Cecropia moths are falling victim to a fly meant to control other moth species.

becoming rare in the areas where the fly had been loosed.

The fly's spread has also coincided with the decline of cecropia (*Hyalophora cecropia*), North America's largest moth, with a wingspan of up to 15 centimeters. It dwells in eastern and central forests along with other members of the silk moth family. At the turn of the 19th century, silk moths were so common that people reportedly gathered cocoons just to watch them hatch in the parlor. Now the moths are scarce, and at least four species are listed by the state of Massachusetts as imperiled. Scientists have blamed both the pesticide DDT and habitat loss, but neither fully explains the silk moths' disappearance.

To find out whether *Compsilura* could be a culprit, Boettner and his colleagues raised cecropia moth caterpillars and placed 300 of them (five per tree) in several spots in the Cadwell Memorial Forest in Massachusetts. After a week, the caterpillars were recaptured and reared in the lab. But, rather than turning into moths, 81% of the caterpillars became dead larvae bursting with *Compsilura* maggots. In another series of experiments, the team set out promethea moth caterpillars at densities varying from 1 to 100 per tree. Flies killed between 52% and 100% of the caterpillars.

"When you see that kind of mortality, it's a wake-up call," says Boettner, who coauthored the study along with his wife, U.S. Fish and Wildlife Service biologist Cynthia Boettner, and U. Mass entomologist Joseph Elkinton. Elkinton says that although the study isn't absolute proof, "there's a fairly strong likelihood that *Compsilura* is the reason for the [silk moth] decline."

The study is one of the first "that uses experimental techniques to figure out, in hindsight," that unintended consequences can occur during a biological control campaign, says Francis Howarth, an entomologist at the Bernice P. Bishop Museum in Honolulu, Hawaii. That issue is of growing concern to many scientists, even those such as Elkinton who strongly support biological control. Right now, he says, the regulations governing the release of insects intended to control other

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