should include an epidemiological investigation of risk factors, blind testing of samples, and clear records of the chain of custody of samples. She says juries should also be told explicitly that phylogenetic analysis cannot prove direct transmission.

Schmidt, who will be sentenced in the next month, faces 15 to 50 years in prison. His lawyers have said they plan to appeal.

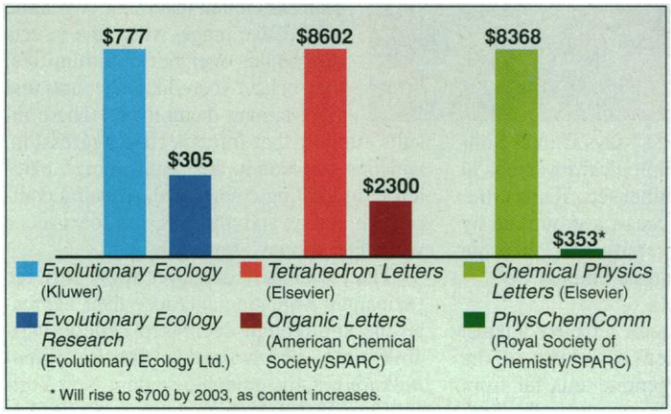
–GRETCHEN VOGEL

ACADEMIC PUBLISHING

New Journals Launched To Fight Rising Prices

A librarian-led rebellion against spiraling prices for commercial scientific journals has gained some new allies. Last week, Britain's Royal Society of Chemistry (RSC) announced plans to launch a low-cost journal that will compete directly with a more expensive commercial publication, and a prominent ecologist has taken the unusual step of defecting from a successful title he founded a decade ago to start a lower cost competitor.

Both ventures are backed by the Scholarly Publishing and Academic Resources Coalition (SPARC), a Washington, D.C.–based organization that is encouraging scientific societies and rebel publishers to create journals that compete head to head with commercial titles. "We are focusing the spotlight on a lack of competition that we believe is narrowing the dissemination of knowledge," says Richard Johnson, enterprise director for the coalition. Although the new alliances are unlikely to ease the budgetary pressures on libraries anytime soon, industry observers say they suggest that a decade-old war between major academic libraries and a handful of large commercial publishers is heating up.



Price-wise. The subscription prices of three established journals (top row, with publisher) are several times higher than what their competitors (bottom row) plan to charge.

SOURCE: SPARC AND OTHER PUBLISHERS

Soaring journal prices are not a new problem for librarians. Since 1986, median prices for scholarly journals issued by both commercial and nonprofit publishers have risen at least 169%, or more than three times the rate of inflation, according to the Association of Research Libraries (ARL) in Washington, D.C., which represents 121 collections in the United States and Canada. Unable to keep pace, ARL libraries have cut thousands of subscriptions and are now spending 124% more to stock 7% fewer titles.

In particular, librarians say that an increasing share of their budgets goes for widely cited, "must-have" scientific and technical journals published by a few dominant commercial publishers, such as Europe-based Reed Elsevier and Netherlands-based Wolters Kluwer. Each journal typically has less than 500 subscribers and can cost up to $15,000 annually, notes Ken Frazier, an ARL official who directs the University of Wisconsin, Madison, library system. "To say that commercial research journals are expensive is like saying tornadoes are windy," he jokes. Publishers, however, say their prices are justified by their quality and the number of pages they run.

ARL officials believe the academic market could benefit from a little competition—and last year they organized SPARC to provide it. The idea is that SPARC's 114 members will agree in advance to buy the new, cost-conscious journals endorsed by the group. That solidarity is intended to provide publishers with an immediate cash flow that might carry a new title through its perilous early years. In its first deal last July, SPARC teamed with the American Chemical Society, which agreed to develop three new journals over 3 years. The first, *Organic Letters*, will debut in mid-1999 as a $2300 alternative to Elsevier's $8602 *Tetrahedron Letters* (*Science*, 3 July, p. 21).

Now, with the two new deals, SPARC has expanded its reach. Last week, it joined the RSC and more than 100 European libraries to promote a new $353-per-year electronic chemistry journal called *PhysChemComm*. This time, the target is Elsevier's *Chemical Physics Letters*, which costs $8368. By publishing the journal, "the RSC sees itself reclaiming the moral high ground," says Mike Hannant, the group's electronic publisher. Elsevier officials, however, have charged that SPARC is promoting the proliferation of journals in an already overcrowded marketplace—and that only time will tell if soci-

ScienceScope

FRENCH MINISTER NOT IN SYNC WITH NEW LAB

The sudden opposition of the French science minister to a long-planned synchrotron has dismayed researchers.

Last week, while answering questions in Parliament, science chief Claude Allègre hinted that he won't support construction of the $180 million, 106-meter-diameter SOLEIL electron-storage ring, on the drawing board since 1991. Allègre said the machine isn't needed because there will soon be seven new European x-ray sources that can produce similar beams for biological and biomedical research.

The remarks outraged synchrotron scientists at the LURE facility in Orsay. "We are dumbfounded by your answers," they wrote to him on 22 October. And European synchrotron directors warned Allègre that, without SOLEIL, there won't be enough x-rays to go around and that French research could suffer.

Next month the European Science Foundation is expected to issue a report on beamline supply that could clarify the picture.

U.K. LIFE SCIENCES GET BIG BOOST

Life sciences are the big winner as the British government announced this week how it would divvy up a $1.1 billion boost for science over the next 3 years.

The 15% hike in science spending was announced in July without details of how it would be distributed among the six main research councils. The new information shows the Medical Research Council's (MRC's) budget rising the fastest, by 6.8% after inflation. Hikes of slightly more than 3% go to engineering and the physical sciences, environmental research, and biotechnology and biology. Although particle physics and astronomy can expect just a 0.5% boost, officials say it's enough to preserve their place in various international projects. The government and the Wellcome Trust also will contribute equally to a $950 million pot to improve university laboratories.

George Radda, head of the MRC, says he is "enormously pleased" by the boost, adding: "It recognizes that research is a long-term business."

eties can hold down prices.

The second deal, still pending, is more controversial. SPARC has agreed to promote a new print journal published by Michael Rosenzweig, a prominent ecologist at the University of Arizona, Tucson. Rosenzweig and his 34-member editorial board have abandoned a successful journal they began in 1987—*Evolutionary Ecology*—to start a self-published competitor, *Evolutionary Ecology Research*. His departure late last year, Rosenzweig says, was primarily because Kluwer—which obtained the journal from Thomson Corp. in a merger last year—planned to raise *Evolutionary Ecology*'s library price from $464 to $777 and, essentially, to end cheaper individual subscriptions. "We wanted wider dissemination; we're tired of publishing papers that our colleagues and libraries can't afford," says Rosenzweig, who plans to publish the first issue in January.

But publishing experts say the new for-profit journal, which will cost libraries no more than $305 and individuals as little as $33 annually, faces substantial obstacles. First, knowledgeable sources say, Rosenzweig may have to strike a compromise with Kluwer on the question of trademark infringement, that is, whether the new journal is attempting to benefit from the "good will" generated by the older journal. He also will face a marketplace and academic culture that is notoriously slow to embrace new entries.

Even with SPARC's support, "it's a really bad time to be starting a journal—some libraries simply aren't subscribing to any new titles," says Janet Fisher of the Massachusetts Institute of Technology University Press in Cambridge, Massachusetts. And Kluwer executive Ad Plazier predicts that subscribers could be left hanging by Rosenzweig's venture. "When the price is too low, you can't guarantee that the journal will be available in the future," he says.

But Rosenzweig—who describes himself as "an ant taking on Goliath"—is cautiously optimistic. One positive sign, he says, is that authors appear to be flocking to the new journal, which he and his wife are running out of their home. Indeed, says ecologist Peter Smallwood of the University of Richmond in Virginia, a former student of Rosenzweig's, "it is the articles that make the journal, and it looks like [he] is getting the articles that would have gone to Kluwer." Kluwer editor Ursula Hertling, however, says the original journal, though temporarily without an editor, has manuscripts and "will continue as usual."

Librarians, however, shouldn't look for Kluwer to match prices with its new competitor: Plazier says there are no plans to reduce the title's price. But SPARC's Johnson is willing to be patient. "I have high hopes," he says, "that this will be more than just a protest movement." —DAVID MALAKOFF

ECOLOGY

Mutual Nonaggression Pact May Aid Ant Spread

Argentine ants have become common pests worldwide, raiding kitchens from San Francisco to Johannesburg to cart away crumbs of chocolate cake and soetkoekies. These tiny invaders are more than a nuisance: They often upset ecosystems and reduce biodiversity by wiping out indigenous ants. "Argentine ants are one of the two or three ant species that are a huge problem in many parts of the world," says Daniel Simberloff, who studies biological invasions at the University of Tennessee, Knoxville. One secret to their success, a group led by Ted Case of the University of California (UC), San Diego, suggests on page 949, is intraspecies harmony.

Takeover time. Argentine ants show their fighting mettle by attacking a harvester ant.

CREDIT: MARC DANTZGER

Most ants defend their territory against other colonies, particularly those of the same species. But Argentine ants far from their South American home generally don't fight each other, although they still attack other ants. Now Case and his colleagues have obtained the first direct evidence for something that ant ecologists have suspected for some time: The Argentine invaders flourish because they lose some of their aggressiveness against their own kind. In lab studies, the researchers have shown that pairs of Argentine ant colonies that don't fight reach higher population numbers than pairs of warring colonies, possibly because they waste less time and energy. "This helps explain how the Argentine ant can outcompete other insects in its introduced range," says Philip Ward, an ant biologist at UC Davis.

Although most Argentine ants in Southern California don't attack each other, Andrew Suarez, a graduate student in Case's lab, found some that did. Taking advantage of this natural variation, the group reared pairs of colonies, both containing either the aggressive or nonaggressive ants, in a setup that gave the two colonies access via plastic tubing to a shared area that contained food.

The warlike colonies started battling immediately, and many ants died, says postdoc David Holway, a community ecologist in Case's lab. After a few weeks, workers stationed themselves at the openings to the plastic tubes as if to prevent incursions from members of the other nest. In contrast, workers from the nonaggressive pairs "commonly walked [through the shared area] in a file from one nest to the other," says Holway. Furthermore, in the peaceful setting, the ants foraged for food more actively.

After 70 days, the researchers counted worker ants, eggs, larvae, and pupae in the colonies. The nonaggressive colony pairs had significantly larger numbers than the warring colony pairs. The worker populations, for example, differed by almost 100%. Underscoring the costs of aggressive behavior is a separate study by Case's group, to be published in an upcoming issue of *Biological Invasions*. The researchers found that in the Argentine ant's native range, where the insects don't take over ant communities, they behave more like other ants and fight among themselves. "These results suggest that intraspecific aggression, which is common in their native range, plays a role in limiting colony size, reducing competitive ability, and allowing for coexistence with other species," says Holway.

The researchers don't yet know why the peripatetic Argentine ants lose their aggressiveness, although decreased genetic variability may be involved. In the *Biological Invasions* study, graduate student Neil Tsutsui showed that Argentine ants in California display less genetic diversity than they do in their native ranges.

The researchers point out that harmony probably isn't the only factor helping the wanderers thrive. The ants may also benefit from the absence of some natural enemies in their foreign homes and, in some locales, from meeker competition by indigenous ants. In Australia, for example, where the Argentine ants seem to fare worse than in California, "the ant competitors are arguably less wimpy than in California," says Ward.

The new findings may spark ideas about how to control Argentine ant invasions. "If Argentine ants could be made to fight more often in the introduced range, their population sizes would probably go down," says Holway. Reintroducing genetic diversity, he suggests, might generate increased aggres-