

editions from the 16th to 18th centuries. The entire newspaper collection from the Soviet period and the foreign periodical sections were devastated. The manuscript division, however, was untouched.

The toll is likely to climb. Etherington says that 3 million books are damaged by water. Mold has formed on some. The Soviets said they plan to disinfect the whole library with Formalin, although the foreign consultants brought up the fact that the chemical is carcinogenic. Many books are charred around the edges, although the print on the page is still intact. Soviet authorities told him that 6,000 local citizens were allowed to take a few books home after the fire to dry them out. They also said that 220,000 volumes have been frozen, a method that buys time for conservators. According to the Soviets, 93% of the water-damaged books are now dry, which "is not an impossible figure, but it's a lot for that time span," Etherington said.

The library is one of the few in the Soviet Union that Western scholars are allowed to use for research.

Likhachev was very critical in his speech about the way the disaster was managed. He pointed out, for example, that a bulldozer was summoned and ordered to destroy huge piles of books and newspapers—burned, wet, or intact. The library staff was forbidden to try to save books from the pile.

The cause of the fire has not yet been determined, although faulty electrical wiring has been mentioned. But whatever the cause, the fire spread rapidly through the concrete building through air ducts, according to *Pravda*. An *Izvestiia* correspondent reported that "we were stunned to learn" that old editions were right next to electrical wiring, the main stacks were extremely overcrowded, and the library had no fire alarm.

Olmsted noted that Soviet libraries in general are in poor shape and are "in jeopardy." Fires have occurred in other libraries.

Likhachev said that Pushkin House, which is the Academy's Institute of Russian Literature in Leningrad, and houses all the manuscripts of Pushkin and many of Dostoyevski and other major Russian writers, is "in danger" because of fire hazards.

Olmsted says that the central research library of Moscow University, Gorkii Library, is reportedly suffering from water damage. The Lenin Library in downtown Moscow is in "delicate" shape, he says, because construction work on the city's subway, which runs underneath the library, has caused structural damage to the walls and foundation of the building.

And the State Public Historical Library, also in central Moscow, is in bad shape. This is "one of the great libraries of the Soviet

Union," Olmsted said. A fire in 1980 caused extensive damage to the collections. In addition, the building and the holdings are being ruined by leakage from a poorly designed annex now being built onto the main facility. A recent article in the Soviet *Literary Gazette* said that "the construction has closed off the main source of ventilation for a large section of the books, and the room temperature has risen drastically. The new roof traps water, so a tremendous amount of water has gotten into the building and damaged books, as many as 2000 to 4000." Some of the reading rooms have been closed or restricted. Basic stacks and newspaper holdings are closed.

"The staffs of many libraries are eager to get the word out," Olmsted said. ■

MARJORIE SUN



Water damage. Books drying in the main reading room.

Laser Team Leaves Stanford for Duke

Raleigh, North Carolina

A laser inventor who made his reputation at physics research meccas on the West Coast says he is moving to the Research Triangle area of North Carolina in a bid for more flexible living and working arrangements.

John M. J. Madey will move his free-electron laser, the Mark III, from Stanford to Duke in July. Duke plans to move an old Van de Graaff particle accelerator out of an underground campus laboratory to make room for the Mark III. In addition, the university will build a \$2-million surface laboratory to house a more ambitious proposed free-electron laser that is expected to be capable of reaching 1 gigaelectron volt. Madey will also bring with him an electron storage ring for his new laser.

"His principal and up-front inducement had to be some place to house his big new project. Not every university has the ability or space to put up a new building," said Lawrence E. Evans, chairman of Duke's physics department. Madey's undisclosed salary was less of a factor. "I think it is fair to say that other considerations that made it an attractive place were decisive."

Madey, 45, is considered the inventor of the free-electron laser, which he first began contemplating in the mid-1960s while still a California Institute of Technology undergraduate. Some other scientists dismissed the notion of producing laser light from accelerated electrons that had been stripped free of their confining atoms. But Madey made his concept into a working model by 1977, during his years at Stanford, where he has been a research professor of electrical engineering and high-energy physics.

Free-electron lasers can be tuned to various frequencies and are powerful enough to be leading candidates for the Strategic Defense Initiative space anti-ICBM program. But Madey, who is frequently shuttling between the West and East coasts, said in a telephone interview that his work in North Carolina will be basic and nonmilitary.

He acknowledged that the Research Triangle is not known as a hotbed for laser research. But he said that is less important than it once was. He is now looking for opportunities to apply his invention to a number of scientific fields by working with collaborators at Duke and three other area universities.

He listed surface interface science, semiconducting and optical materials research, basic biology and biochemistry, and lasers in human and veterinary medicine. He has concluded that there is "broader based" work going on in those fields in the Research Triangle area "than any comparable area in the U.S." Madey also cited living conditions for his graduate students and staff as a factor. Compared to the Palo Alto area, the cost of housing in Durham is a bargain.

In the Triangle, his lasers can be used by scientists at three major campuses—Duke, the University of North Carolina at Chapel Hill, and North Carolina State University in Raleigh—as well as the smaller North Carolina Central University in Durham.

"I think it was the overall level of effort in the Triangle that convinced me it was the place to go." ■ MONTE BASGALL

Monte Basgall is a reporter for the News and Observer of Raleigh, North Carolina.