ducts militarily relevant research on infectious agents as part of its mission to provide a defense against potential biological warfare agents, has focused seriously on RVF since the Egyptian outbreak. Now it has a new human vaccine against RVF that also can be used in domestic animals and is ready for field testing. Tests on monkeys indicate that a single shot of the live attenuated virus vaccine will protect for several years.

Such testing is ideally carried out where the disease occurs; the plan is to mount field trials in the Senegal River valley. Arranging vaccine trials in the Third World can be a delicate matter. The new vaccine has the blessings of WHO, which should help smooth the way, and U.S. researchers are cooperating as consultants with the Pasteur scientists in all work on RVF in the region in deference to French experience and status there.

Finding a better vaccine is important because, once a patient is ill with the disease, therapies are limited to providing general support. In most rural areas in sub-Saharan Africa, such support is minimal. Advances in treatment are being made, but remain mostly in the experimental stage. Peters says that decided promise for treating RVF is shown by the antiviral medication ribavirin, which is also used against AIDS. In addition, new testing techniques make it easier to obtain accurate antibody levels and to make much more rapid diagnoses of RVF by detecting viremia in patients with the disease.

Given what is known about the transmission of RVF, one possible strategy would be to rely on remote sensing for an early warning. Enough comparative data are available to spot changes in vegetative cover that would indicate conditions favorable to mosquito hatching. At that point, livestock in the area could be vaccinated to prevent an epizootic. Linthicum says it has also been suggested that breeding places could be seeded with persistent pesticides.

The growing potential for combating RVF clashes with the reality of the conditions prevailing in the region now and in the foreseeable future. Rosso, only about 50 miles upriver from the Atlantic port of St. Louis, is hardly the most remote place in that part of the world, but it took a full month for the suspicions about RVF in Rosso to be confirmed in the lab in Dakar.

Peters and others suggest that the RVF epidemic on the Mauritanian shore could serve as a paradigm for other outbreaks of the disease. Unfortunately, it could also serve as a paradigm for the predicament affecting developing countries when the scientific ability to prophesy misfortune far exceeds the capacity to avert it.

■ JOHN WALSH

U.S.-Soviet Science Pact Stalls

Negotiations between the United States and the Soviet Union over a draft agreement providing a framework for scientific cooperation have hit a snag. Talks with a Soviet delegation were proceeding last month in hopes that an agreement could be signed by President Reagan and General Secretary Gorbachev at the Moscow summit. But shortly before the summit, officials from the Office of Science and Technology Policy (OSTP) asserted that a provision of the proposal could be used by the Soviets to gain access to sensitive corporate technology. Though other American agencies disagree with OSTP's interpretation, the agreement was put on hold.

The draft agreement, if approved, would represent a modest step in renewing joint collaboration among Soviet and American scientists under the auspices of each government's agencies. Scientific cooperation between the two countries has been limping along since the Soviets invaded Afghanistan. The last general scientific agreement between the two countries was signed in 1972.

Under the new proposal, the areas of collaboration would be limited to basic science, although the Soviets have pressed for joint projects in applied science. The proposal would include study in life sciences, mathematics, theoretical physics, chemistry, and Arctic research. The National Science Foundation and the U.S. Geological Survey would be the main American agencies participating in the exchanges under this agreement. (These federal agencies and others already cooperate with individual Soviet institutions under separate accords.)

The provision that OSTP is worried about defines who can participate in the bilateral agreement and under what conditions. In a small, but significant, change from the past, the language now proposed by the U.S. delegation emphasizes that exchanges will take place between individuals rather than institutions. To the frustration of Americans, Soviets in the past have sometimes pulled their best scientists from a joint project and substituted more obscure researchers.

As it stands now, the provision says that the joint projects would be carried out by higher institutions, government agencies, and individual scientists. It contains a parenthetical note that individual scientists could include researchers from companies. Acting assistant secretary of state Richard Smith, after hearing no objections from a 21-member U.S. delegation, which included OSTP members, last month initialed the proposal along with the Soviets.

But OSTP is said to have asserted that this parenthetical note could provide the Soviets direct access to researchers at American companies. White House Science Adviser William Graham declined to discuss the specific language of the proposal, but told *Science* "OSTP and other agencies want to ensure that the U.S. government is aware of the contacts proposed or allowed under the agreement. We don't want to give the Soviets a hunting license to go to universities and corporate labs without the cognizance of the U.S. government."

Smith says, "Contacts between individual scientists could only take place pursuant to the scope and conditions specified by a particular project-related agreement" that is negotiated by government agencies. Smith also contends that the proposed agreement does not increase the chances of technology transfer, but would narrow them because all of the scientific contacts allowed under the proposal must be authorized by American agencies. In addition, Soviet scientists would be subject to normal visa procedures which require them to detail the purpose of their visit and their itineraries.

In a separate, but related matter, the United States and the Soviets are discussing the possibility of launching an American device for measuring stratospheric ozone from a Soviet rocket. The United States launched such an instrument, known as TOMS, nearly two decades ago, but the device is expected to fail in the next 6 to 8 months. Last month, officials at the National Aeronautics and Space Administration brought up the idea of a Soviet launch of a new TOMS during informal talks in Moscow. The device is made from 1960s technology, says NASA official Samuel Keller. He said, "It's speculative whether the joint project will actually go forward, but it looks like it might be doable."

Gorbachev had suggested before the summit that the Soviets and the U.S. might reach an agreement on a mission to Mars. But after the Moscow meeting, the two leaders issued a joint statement that merely said that missions to the moon and Mars are "areas of possible bilateral and international cooperation." ■ MARJORIE SUN