streams through space at 378 kilometers per second, while the Small Magellanic Cloud moves at 302 km/sec. These speeds are about 200 times that of a bullet.

The group announced the findings on Jan. 9 at a meeting of the American Astronomical Society in Seattle. The new work agrees with Hubble measurements reported in the March 2006 *Astronomical Journal* by another group of researchers, led by Mario H. Pedreros of the University of Tarapacá in Arica, Chile.

The satellite galaxies couldn't be moving that fast if they were circling the Milky Way as it's currently understood, Kallivayalil says. She suggests three possible explanations. In one scenario, the speedy Magellanic Clouds wouldn't orbit our galaxy but instead would leave our cosmic neighborhood in a few billion years.

Another possibility is that the Milky Way is about twice as heavy—about 1 trillion solar masses—as the current estimate, providing an additional gravitational grip that would keep the clouds in orbit. Like most of the Milky Way's weight, this mass would be in dark matter—material that exerts a tug but can't be seen.

The speed of the clouds might also be explained if the Milky Way's dark matter halo is lopsided, with more material concentrated along one direction than another, Kallivayalil says.

Theorist Doug Lin of the University of California, Santa Cruz says that he favors a more massive Milky Way as the explanation of the velocity measurements, which match values that he and a colleague predicted in 1982.

Doubling the mass of the Milky Way by adding dark matter wouldn't greatly change astronomer's views of the galaxy's structure and interactions, he says. Moreover, Lin says, a long streamer of hydrogen gas that trails the Magellanic Clouds can best be explained if it was torn out by the Milky Way's gravity, another indication that the clouds are indeed orbiting the galaxy. —R. COWEN

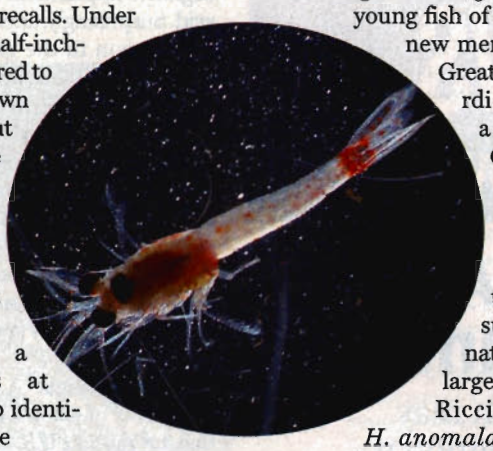
Alien Alert

Shrimpy invader raises big concerns

In November, an unusual swarm of tiny critters caught the attention of a crewmember on a National Oceanic and Atmospheric Administration boat docked in a Lake Michigan channel. He asked Steven Pothoven of NOAA's Great Lakes environmental field station at Muskegon, Mich., what the critters were.

"I could see they weren't fish, so I netted some," the biologist recalls. Under magnification, the half-inch-long animals appeared to be crustaceans known as mysid shrimp. But "they couldn't be the native mysid," Pothoven realized, because those are cold- and deep-water denizens, not shoreline dwellers.

Within about a week, scientists at another federal lab identified the shoreline crustacean as a new invader, the warm-water species *Hemimysis anomala*. It's native to rivers in Eastern Europe's Ponto-Caspian region, also the home of zebra mussels.



STOWAWAY This tiny European mysid shrimp could spell big problems for the Great Lakes, where it's just been spotted.

POTHOVEN/NOAA

This week, NOAA received a report of "large concentrations" of *Hemimysis* that appeared to be reproducing in southeastern Lake Ontario.

From the 1970s through the 1990s, waves of notorious Ponto-Caspian species entered the Great Lakes in ships' ballast waters. In 1998, Anthony Ricciardi and Joseph B. Rasmussen of McGill University in Montreal predicted 17 additional Ponto-Caspian species that they worried were poised to invade North America via the Great Lakes. *Hemimysis* is the first animal on that list to show up.

"I predict it will be a highly disruptive species," says Ricciardi. He points out that the mysid voraciously consumes microscopic animals at the bottom of the food chain, which are dietary staples for many young fish.

David Reid, director of NOAA's National Center for Research on Aquatic Invasive Species in Ann Arbor, Mich., says that he's virtually certain that transatlantic cargo ships picked up *Hemimysis* in ballast water in Europe. Ironically, he adds, the species probably arrived on ships that had dumped ballast water before leaving Europe. However, those ships—called NOBOBs, for "no ballast on board"—still carry dozens of gallons of water at the bottom of their ballast tanks.

Since the mid-1980s, roughly 90 percent of saltwater ships entering the Great Lakes have been NOBOBs, Reid says.

Guidelines now recommend that NOBOBs flush their ballast tanks with salt water to kill freshwater stowaways before entering the Great Lakes. If they don't "swish and spit," Reid says, they can release European invaders as the ships pick up and release ballast water while offloading and taking on cargo in the Great Lakes.

Although *Hemimysis* deprives some young fish of food, it could be a new menu item for larger Great Lakes fish, Ricciardi says. However, as a new link in the Great Lakes food chain, Ricciardi worries, the fatty crustacean could boost concentrations of pollutants such as polychlorinated biphenyls in the larger fish.

Ricciardi says that *H. anomala*'s small size and innocent look shouldn't fool anyone. "This is not a species to ignore." —J. RALOFF

No Fluke

New weapon against tropical parasite

An experimental drug shows potential against schistosomiasis, a scourge that infects millions of people throughout the tropics. Tests in mice suggest that the drug might complement the sole effective treatment currently used to fight this disease.

Schistosomes are blood flukes, or flatworms, that infect people through the skin during the parasite's waterborne larval stage. The larvae penetrate the circulatory system and ultimately settle in the liver, where they feed on blood and develop into adult worms. Females then lay eggs, some of which the infected person excretes in feces, potentially spreading the parasite. Other eggs lodge in the liver and other tissues, eliciting immune responses and causing the abdominal pain, fever, and malaise that mark schistosomiasis.

Scientists at the University of California, San Francisco several years ago found that a drug called K11777 kills the protozoan that causes Chagas' disease, which is common in South America. That observation led them to test the drug against schistosomiasis.

K11777 deactivates enzymes called cysteine proteases, which a schistosome needs to digest proteins drawn from human blood. Disabling these enzymes "seems to starve the animal," says study coauthor Conor R. Caffrey, a parasitologist.

In the January *PLoS Medicine*, Caffrey and his colleagues report the drug's potent effect on the schistosomiasis parasite.

In one test, the researchers infected 10