Monk parakeets may fowl up North America

In the late 19th century, a small number of starlings were imported to the United States from Europe. They began multiplying and spreading throughout the United States until today they are the most numerous of all birds in North America and probably the most disliked. Now, wildlife officials around the country fear the phenomenon may be repeating itself, only this time the bird is the dreaded monk parakeet (*Myiopsitta monachus*) from South America.

Originally brought to the United States as an exotic pet, the small subtropical parakeet has been spotted free-flying and successfully nesting and reproducing in 22 states. Despite subfreezing winter temperatures, some 200 to 300 monk parakeets are known to be living in the New York metropolitan area alone. From 1968 to 1972, more than 50,000 monk parakeets were imported to the United States. It appears that the birds are introduced into new areas by escaping from or being released by their owners rather than by population expansion or migration.

The parakeets are distinguished by a light gray forehead, crown and breast with light green upper tail coverts, wing coverts and back feathers. The tail has dark green feathers with dark blue rachis. The birds average 11 to 11½ inches in length.

Monk parakeets are sociable. They live in small communities sharing large common nesting structures usually cylindrical in shape and three to four feet long by two feet deep. Made with young twigs one to two feet long, the nests have one or more entrances on the lower side that lead to small compartments within. One pair of monk parakeets were found nesting on top of the Civil Defense Tower in Silver Spring, Md. The largest nest found so far is six feet long by four feet deep with eight entrances.

In Argentina, Bolivia, Brazil, Paraguay and Uruguay, the monk parakeet is an agricultural pest. The bird has been known to damage up to 45 percent of such crops as sunflower, corn, sorghum, millet and citrus fruit. The Argentine Government has been attempting to eradicate the parakeet since 1947.

Though the monk parakeet population in America is at present too small to cause severe agricultural damage, wildlife officials are taking measures to exterminate or control the birds before they become a serious threat.

"We already have received reports of localized damage—damage to fruit and decorative trees in the vicinity of nests," says Douglas Roscoe of the Wildlife

Richard A. Rowlett

Monk parakeet captured in Maryland.

Research Laboratory in Delmar, N.Y. "In view of the bird's feeding habits and the agricultural damage taken place in South America, we are moving quickly to prevent the same thing from happening here."

When imported to America, the parakeets were sprayed and checked for disease. Consequently, those now in the wild are extremely clean and healthy birds. "The monk parakeet in the United States does not have its traditional predators nor diseases to keep its population down," says Roscoe. "The only remaining limiting factor is food which they can locate easily. The parakeet can proliferate quite nicely."

Wildlife pathologists and biologists in Delmar are shooting the birds and destroying all nests and eggs found. □

Tunnel linking Britain, Europe gets green light

A project engineers have dreamed about for more than a century and a half has been given an all-but-final go-ahead. Britain last week announced approval of plans to construct a tunnel beneath the English Channel to link Britain and France. The French have long favored the tunnel, and a treaty to allow drilling to begin is expected to be signed Nov. 15.

The 32-mile-long tunnel, 23 miles of it beneath water, will consist of two parallel reinforced tubes cut through the chalk channel bed. Each tube will carry one railroad line. A third tube between them will allow ventilation and servicing and help relieve the push of air from trains passing through the tunnel at 80 to 90 miles an hour.

The $2 billion, half-British, half-French project is scheduled to be completed by 1980. The tunnel, from Folkestone, near Dover, in England to Calais in France, will bring to fruition plans that have been discussed on and off with various degrees of controversy throughout the 19th and 20th centuries. Napoleon was presented with the first blueprint for a Channel tunnel in 1802.

Plans include a high-speed rail link from London to the British end of the tunnel, and a corresponding rail link to Paris on the other end. The French also plan a six-lane highway on their side. Projections call for 30 million passengers and 10 million tons of freight going through the tunnel by 1990. Planners hope passengers will be lured by the 3½-hour trip from London to Paris (about what it takes by plane, counting airport delays). Special trains, to leave as frequently as every 4 minutes, will shuttle cars and trucks through the tunnel in 35 minutes. □

Did a black hole collide with the earth in 1908?

On June 30, 1908, a strange object streaked to earth in the Tunguska region of Siberia, leaving a visible fiery trail in the air and setting off a blast wave that leveled trees over hundreds of square kilometers. The Tunguska event has been attributed to a number of causes: a large meteorite or a comet among other more bizarre possibilities.

Yet it remains a mystery. If it was a meteorite, meteoritic debris and a crater should have been left behind. No evidence of either has ever been found. Yet something extremely energetic happened: An explosion releasing an estimated 10^{22} to 10^{24} ergs of energy (equivalent to a 0.2 to 20 megaton nuclear explosion) would be necessary to destroy forest over such a large area.

Now two physicists working at the University of Texas at Austin, A. A. Jackson IV and Michael P. Ryan Jr. (now at Oxford University), suggest that it may have been a tiny black hole that collided with the earth at Tunguska that day.

Black holes, enormously dense objects that have condensed under their own gravity to the point where neither matter nor radiation can escape from them, entered theoretical physics as one of the possible end points in the evolution of stars, and it was generally thought that to form a black hole a mass of stellar size was needed. Lately Stephen Hawking of Cambridge University, one of the foremost experts in the field, has shown that very small black holes could have been formed in the big bang that started the universe. Others believe that small black holes could form in collisions between larger ones by a kind of fragmentation or in the meeting of trains of gravity waves.

In the Sept. 14 NATURE Jackson and Ryan suggest a black hole of the mass of a large asteroid (10^{20} to 10^{22} grams) could have caused the Tunguska ex-

plosion. A black hole of that mass would have a radius of only a few angstroms, no more than the size of a few atoms of ordinary matter. Coming down through the atmosphere it would have caused a shock wave and a fiery blue column (such a column was seen by witnesses of the event). The shock wave and heat would have caused the damage. In spite of the damage it does in the atmosphere, such a black hole would pass through the rock of the earth without any interaction because the forces that bind the rock together are much stronger than the gravitational interaction between the rock and the passing black hole.

The black hole would have come out of the earth in the North Atlantic in the region between 40 and 50 degrees north and 30 and 40 degrees west. As it emerged it would have caused a shock wave in the water and raised a column of water at the surface. The next thing that Jackson and Ryan want to do is check meteorological and other records to see if any such disturbance was recorded in the Atlantic at that time. □

Money and ethics in biomedical research

Biomedical research has recently been faced with several controversial issues that may soon be resolved. The questions, not surprisingly, have to do with money and ethics. In May the House, and last week the Senate, passed a bill (H.R. 7724) that would provide money for the training of young researchers and set up a commission to investigate and answer ethical questions.

The House version of the bill, which goes to conference next month, states that "National Research Service Awards [previously cut back by the Administration] should be the key element in the training programs of the National Institutes of Health and the National Institute of Mental Health." For this purpose, the bill would authorize more than $200 million per year (SN: 7/7/73, p. 386).

Both versions of the bill call for an end to research on live, aborted human fetuses (SN: 4/21/73, p. 253). There is less concurrence, however, on another issue, the use of psychosurgery (SN: 5/12/73, p. 310). If this problem is not settled in conference, the bill provides an alternate solution. It calls for the establishment within the Department of Health, Education and Welfare of a National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. The 11-member commission would set ethical standards for all federally funded research. □

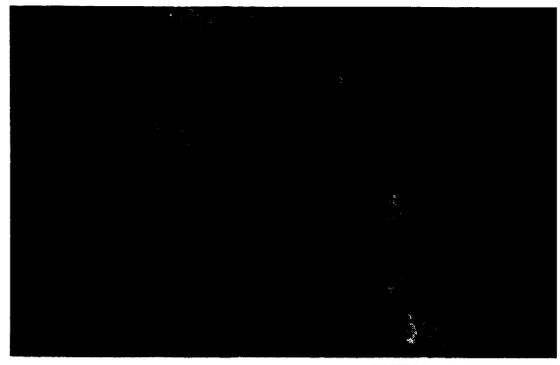
A 9,000-foot dive to watch the earth evolve

The Mid-Atlantic Ridge runs almost from pole to pole along the ocean floor, a double row of towering mountains with a vast canyon between them. The ridge and others like it are the markers of the living earth, for there the great plates of the planet's crust are being continually thrust apart to make room for new material thrust upward by the seething cauldron beneath the earth's outer layer. The ridge is a window to the bowels of the globe, and now, for the first time, man has been there.

For two years, Project FAMOUS—the French-American Mid-Ocean Undersea Study—has been in preparation. Ship-borne and towed instruments gathered magnetic, seismic and refraction data, made sonar maps of the bottom, took pictures and dredged up samples. Finally, on Aug. 2 of this year, the French bathyscaphe Archimède made its first descent, directly over the central valley of the ridge some 220 miles from the Azores (SN: 8/18/73, p. 104).

Before heavy seas drove the explorers away on Sept. 7, seven dives had been made to the floor of the rift some 9,000 feet below the surface. A prize of the final dive was a sample, weighing less than 10 pounds, of fine-grained basaltic rock still bearing the black, glassy traces of a geologically recent volcanic origin.

Due to the constant reshaping of the ridge area by the forces of the evolving earth, the terrain was a turmoil of crags and obstacles, making a tricky task for the pilot of the lumbering bathyscaphe. To be sure of where the data were coming from, Archimède was equipped with a precise navigation system that automatically kept a record of its path. This record, along with hundreds of photographs and television images—and the precious few samples—will be the subject of a week-long meeting in France in October among the six scientists who rotated during the mission. After that the detailed study will begin.

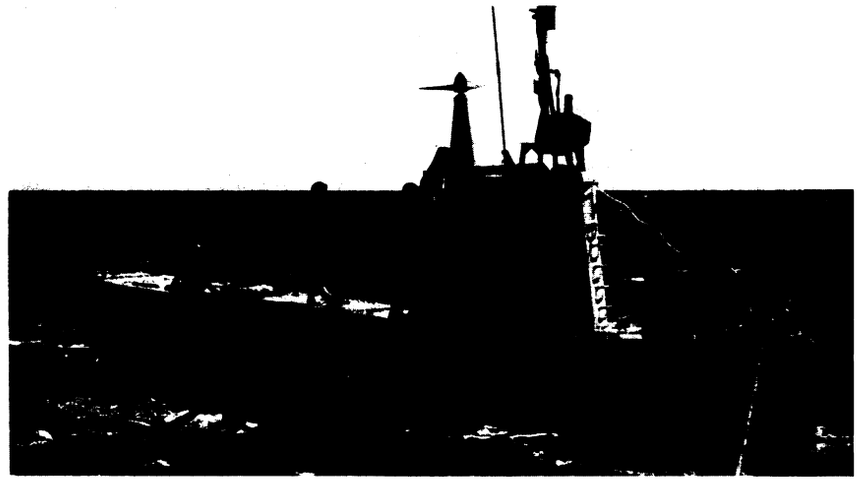


CNEXO

Seafloor lava is earth's renewal.

Archimède, like the first manned spacecraft, was hardly an ideal vehicle for research—but it worked. "It's a large boat," says Robert Ballard of the Woods Hole Oceanographic Institution, who spent eight hours in the rift zone on the second dive. "It's 53 feet long—it can't be taken out of the water on the scene, it's got to be towed, it's a logistical nightmare and it's difficult to fix." These are expected problems with bathyscaphes, ungainly spheroids burdened by tumerous ballast tanks filled with gasoline. "But," Ballard says, "they were the first ones to come along that could go deep."

Next summer, however, FAMOUS will swing into high gear. Along with the bathyscaphe are to be two more maneuverable, better instrumented submersibles, both now in the final testing stages. Jacques Cousteau's brainchild, the SP 3000, will be operated by France's National Center for Ocean Exploration, and Woods Hole will operate the U.S. Navy's Alvin (which found the notorious missing hydrogen bomb off Spain in 1966), just fitted with a new titanium hull to double its operating depth to 12,000 feet. The only other craft capable of reaching the depths of the rift valley, says Ballard, is Trieste, another French bathyscaphe.



Archimède prepares for 9,000-foot descent to the Mid-Atlantic Ridge.

CNEXO