

the American Astronautical Society, Kent says, and contributions to it are tax-deductible. Kent calls the contributors "a do-something group," maintaining that even people who are disinclined to take pro-space activist roles or join advocacy organizations are sometimes moved to help in the conduct of a specific research program. Donations have come not only from individuals, but from organizations such as the Oregon State University chapter of the L-5 Society, whose members raised funds by selling back their old textbooks to the campus bookstore. "Some of the contributions are only a dollar or two," says Kent, "but they're really getting a return." □

The wrong virus: Gene clone mistake

A San Diego scientist working on rare insect viruses cloned one virus when he thought he was cloning another. Samuel Ian Kennedy of the University of California has been ordered to temporarily stop the research, and the cloned material has been put in storage. Kennedy had planned to reproduce in bacteria the genes of the virus Sindbis, which is carried by mosquitos in parts of Africa, India and Australia. Sindbis is listed by the U.S. Center for Disease Control as a Class 2 agent. It can cause a skin rash and fever in humans.

Confusing results obtained last March led Kennedy to the discovery that he actually had transferred into the bacteria, instead of Sindbis genes, the genes of another mosquito-borne virus called Semliki Forest virus. Semliki virus is rarely associated with human disease but occasionally causes fever and headache. It is listed by the CDC as a more dangerous Class 3 agent.

"There was absolutely no biohazard to the community at large," says a University of California spokesman. Whereas cloning genes from the Semliki virus was forbidden under the National Institutes of Health Guidelines before July 29, the NIH director Donald S. Fredrickson has now approved a change that allows such Class 3 organisms in recombinant DNA experiments. The work must be carried out in a high-containment facility (P3). Kennedy had done his work with Semliki virus genes in a P3 laboratory, just because it was "handy," the UCSD spokesman said.

The NIH has requested a detailed chronology by Sept. 5 of the "apparent violation" of its guidelines. NIH supports the local biosafety committee, which has rescinded all permission for cloning in Kennedy's laboratory.

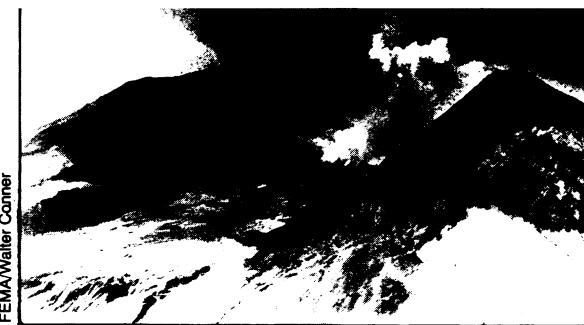
In a strange subsequent development, Sunday night a bottle of rabies vaccine virus was stolen from the laboratory. A telephone call led police to find the bottle unopened in one of the building's stairwells. □

Mt. St. Helens: Fifth time around

For scientists monitoring Mt. St. Helens, each eruption adds something new to their still-evolving ability to predict the mountain's behavior. And they seem to be getting better at it. Before the Aug. 7 eruption of ash and steam, as before the July 22 event, University of Washington seismologists noted unusual seismic activity and the area around the volcano was evacuated.

Unlike the July 22 eruption, however, which was preceded by a series of minor but frequent earthquakes, the Aug. 7 eruption was heralded by a particular pattern of harmonic tremor — the constant, rhythmic activity associated with the movement of magma. According to Steve Walter, a University of Washington spokesman, harmonic tremor began at about noon (Pacific Daylight Time) the day of the eruption. A Richter magnitude 2.3 earthquake occurred at 12:30 p.m. about 5 miles southeast of the volcano, and the harmonic tremor began to increase in intensity.

At that point, says Walter, the area around the mountain was cleared, and the harmonic tremor continued to build while a second quake was recorded at 2:58 p.m. The first eruption of ash — to a height of 44,000 feet — occurred at 4:28 p.m., and



Yawning jaws of the crater created May 18.

smaller blasts continued intermittently, accompanied throughout by harmonic tremor, until about 10:30 p.m.

In hindsight, the mountain — which has since begun to build a dome of thick, sticky lava in its crater, similar to that blasted away on July 22 — may have been providing an additional clue. Scientists measuring the amounts of carbon dioxide and sulfur dioxide — two gases commonly given off by volcanoes — noticed a decrease in the ratio of the two gases on the day before the eruption. Though not immediately interpreted as a precursor, a similar event was later noticed in the records for the days preceding the July 22 eruption. A possible explanation, says U.S. Geological Survey spokesman Tim Hait, is that the release of gas is somehow blocked and pressure is created in the volcano. "It may be that the gas and the harmonic tremor together are a good key," he says. "It may be something to look for the next time." □

The Red River skull: Oldest whale?



Perhaps the oldest intact whale skull ever found — an estimated 45 million years old — was unearthed July 31 by Louisiana State University geologists Judith Schiebout and William van den Bold. The four-foot-long skull of the *Basilosaurus cetoides*, examined here by graduate student Winston Lancaster, was excavated from beneath a few feet of earth along the Red River at Montgomery Landing, La. Researchers say the whale, which had teeth three inches long and lived on fish, was probably about 50 feet long. Also discovered nearby were ribs, teeth, a dozen vertebrae and a humerus, part of the whale's flipper. Shark teeth found close by suggest the whale may have been eaten by sharks as it was dying, or after it was dead.