

help the youngsters develop to more advanced creativity levels, if possible.

At the end of the second semester, three judges evaluated the children on the basis of videotape recordings of their behavior, and on the basis of six measures of creative behavior: advances in symbol or schema; control of the art medium; composition; sophistication of concept; verbal description of the artwork, and overall stages, as designated in a formal model.

Of the four moderately retarded children tested during the seven-month period, Musick found that the development of two of them was equal to that of normal children. While this may have constituted a surprising success in itself, Musick further found that the remaining two youngsters had "remarkable development—beyond their chronological age." Of the three profoundly retarded children (one youngster was dropped from the study because of chronic illness), one showed normal creative development and another showed "remarkable development, placing him close to his chronological age." The third profoundly retarded youngster exhibited no creative development.

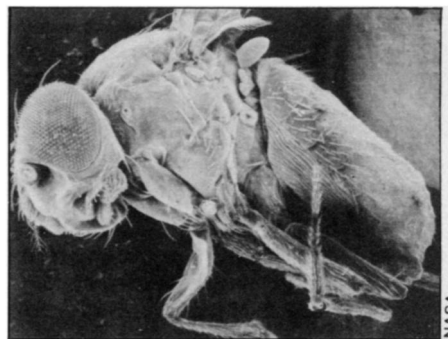
In the Connecticut study, researchers Ross Buck and Robert J. Duffy tested 37 male patients in a Veterans Administration hospital. One group had left hemisphere damage, another group had right hemisphere damage and a third control group had "no history or medical

evidence of neurological damage." Each of the men was shown a dozen slides, three in each of four categories—"familiar people," "scenic," "unpleasant," and "unusual." The men were videotaped and their reactions evaluated by eight observers, who were asked to judge, from the subjects' nonverbal responses to the slides, which type of slide was being viewed, and the patients' levels of expressiveness.

The left brain-damaged patients were considerably more accurate in relaying the type of picture to which they were responding than those with damaged right hemispheres, and were slightly more accurate than normal subjects, Buck and Duffy report. In addition, the left-damaged were rated as being significantly more expressive than either the right-damaged or normal groups.

While the researchers predicted that left-damaged subjects would be more expressive than right-damaged ones, the superiority over normal controls "was not expected," they say. "One possible explanation is that the left cerebral hemisphere may normally exert an inhibitory influence over some other part of the brain (perhaps the right hemisphere) that is responsible for spontaneous nonverbal expression.

"Damage to the left hemisphere, in this view, would free the right hemisphere from inhibition and allow for greater nonverbal expression," they suggest. □



*Cosmos-flown Drosophila exposed to zero gravity appear normal, but exhibit reduced mating and exploratory behavior.*

While the Soviets charged no rent for the premium space, they did make other exacting requirements. The experiments had to be self-contained and require no power, and they had to fit in a small volume of space. Otherwise, the Soviets "were extremely cooperative in all dealings," and the technicians who processed the U.S. experiments at the north central Asia recovery site (after recovery on Aug. 22) were "top notch," according to Kenneth Souza, manager of the U.S. studies who escorted the samples from Moscow back to the West Coast.

The consensus of U.S. researchers that the project was successful is reiterated by Russian scientists who collaborated on four of the seven studies. Next month a U.S.-Soviet meeting will convene in California to discuss future joint biospace efforts. Notes Harold P. Klein, director of life sciences at Ames, "It is possible they might want to fly on the shuttle." □

## Biosputnik hauls Yankee rats, fruit flies

As Apollo 11 was returning to earth after its historic moon mission, astronaut Edwin E. Aldrin began "seeing things"—blips of light the size of pinpoints that seemed to appear from nowhere, and passed as quickly as they came. At a later debriefing, researchers realized that Aldrin's eyes had been penetrated by "cosmic rays"—heavy, high-energy nuclei stripped of their electron shells. While most cosmic rays never reach the earth (but instead are absorbed or scattered by the atmosphere), NASA officials were concerned that future space travelers, unprotected from the radiation, might suffer eye damage.

Subsequent tests showed that the rays did little or no short-term harm, but space scientists are still concerned with the effects the beams might have on humans making extended space crossings. And there are other unanswered questions that may have profound implications for the future of human travel in outer space: Why do bones stop growing and muscles tend to atrophy during space travel? And what effects does zero gravity have on sexual capability and aging?

American biologists got a golden opportunity to further explore these questions recently when the Soviet Union launched Cosmos 936 from the cosmodrome 500 miles north of Moscow on Aug. 3. The Vostok-launched, unman-

ned payload carried with it seven experiments designed by scientists at NASA's Ames Research Center, West Coast universities and Veterans Administration hospitals around the country. Thirty Wistar rats, time-honored medical surrogates for humans, and 1,000 fruit flies, whose short life cycles provide information on aging and genetics, orbited the earth for 18.5 days along with experiments from France, the Soviet Union and six Eastern-bloc countries.

The U.S. studies were designed to shed light on how persons in less-than-perfect physical condition might fare in outer space. The robust U.S. astronauts have mentioned only slight nausea, and tests have indicated minor calcium loss in prior manned flights. But these "minor problems" may, like irregular vibrations in a new car, prove troublesome in older or less fit human models. If it were not for the Soviet biospace program, U.S. workers would have had to wait for space shuttle operations in the 1980s to continue biological research that has been virtually in limbo since the Skylab missions in the early 1970s. With Cosmos 936 and the earlier Cosmos 782 in 1975, however, not only have U.S. scientists been able to continue crucial research, they have done it for less than \$1 million—a fraction of the cost to mount a flight.

## Soviet UFO due to secret launch

A spectacular, starlike ball of light sighted over Petrozavodsk in the northwestern Soviet Union Sept. 20, "spreading over it like a jellyfish" and showering down shafts of light, was identified last week by American analysts as the launch contrails of the Cosmos-955 spy satellite.

The sighting of the strange phenomenon, also seen over Finland, was widely reported by the Soviet news agency Tass and by news agencies around the world. "A huge star suddenly flashed out of a dark sky, sending shafts of light impulses to earth," Tass reported. "This star was moving slowly toward Petrozavodsk and spreading over it like a jellyfish. It stopped and hovered over the city, sending out numerous thin light rays like a downpour of rain." No explanation was offered in the news reports.

But the phenomenon turns out to have been due to a predawn launch from a top secret military space center north of Moscow. Although the base, the Plesetsk Cosmodrome, has been known to Western observers since shortly after it became operational in 1966, Moscow has