

The satellite has been sought unsuccessfully in the last three NASA budget cycles, and the agency now ranks it behind such programs as the Venus Orbital Imaging Radar, a Saturn orbiter and double atmospheric probe, the beginnings of a late-1980s Mars mission and a comet program.

On the Soviet side, however, the picture looks different. Surkov told *SCIENCE NEWS* that a polar-orbiting lunar satellite *is* in the works, and that its mission is set to take place "within five years." □

Cosmonauts return, astronauts named

After a record-setting 96 days in orbit, Soviet cosmonauts Yuri Romanenko and Georgi Grechko left the Salyut 6 space station and returned to earth aboard the Soyuz 27 spacecraft on March 15. During the last week of their stay aloft, they followed an expanded exercise routine, intended to minimize the effects of the return to earth-normal gravity after the long period of weightlessness. Even so, back on the ground the cosmonauts found problems in otherwise easy tasks, such as turning a radio dial or lifting a cup of tea. Both crewmen have reportedly tried to "swim" out of bed in the morning, as was their custom in orbit. Soviet sources, however, have cited no serious readjustment problems.

The day after the Soviet spacemen landed, the U.S. space agency announced the selection of its first four two-man astronaut crews for the space shuttle, which is to begin orbital flights in spring of 1979. The first flight will be commanded by John W. Young, veteran of Gemini 3 and 10, Apollo 10 and the moon-landing Apollo 16. The pilot will be "rookie" Robert L. Crippen, who thus becomes the first of the astronauts who transferred over from the Air Force's canceled Manned Orbiting Laboratory program to get a prime-crew berth. The other selected crews have not been assigned specific shuttle flights, but one of them will fly the mission to raise the orbit of Skylab if it is decided to undertake the task. The crews are: Joe H. Engle and Richard H. Truly, who flew together in the shuttle's approach-and-landing tests; Fred W. Haise (lunar module pilot for Apollo 13) and Jack R. Lousma (pilot of the second Skylab crew); and Vance D. Brand (command module pilot for the Apollo-Soyuz mission) and Charles G. Fullerton (who flew shuttle tests with Haise).

The shuttle orbiter itself was transferred atop its 747 jet carrier last week from the West Coast to begin a series of tests at the NASA Marshall Space Flight Center in Alabama. Meanwhile, according to *AVIATION WEEK*, the Soviet Union is developing a reusable space shuttle of its own, a delta-shaped craft that has already been drop-tested from a Soviet Tupolev Tu-95 bomber. □

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Strep vaccine for unborn children

A number of viruses and bacteria are known to threaten the health of the human fetus, either in the womb or as it makes its way through its mother's birth canal (SN: 4/12/75, p. 242). One of the villains is group B streptococcus. Although the danger of the bacterium to unborn children has been known for about 30 years, its prevalence and devastating effects have become more evident during the 1970s.

Group B strep appears to be transmitted to a woman's vagina during intercourse. She will experience no symptoms as a result of this infection. However, if the infection is present as a child passes through her vagina at birth, the child can also become infected. As a result of infection, the child may die shortly after birth or go on to develop blindness, deafness, spinal meningitis, mental retardation or epilepsy. Approximately 15,000 newborns in the United States suffer from group B strep infections each year.

It is now reported that a vaccine to protect unborn children against group B strep and its ravages is being developed by Carol Baker, assistant professor of pediatrics and microbiology at Baylor College of Medicine, Morven Edwards, a postgraduate fellow in pediatrics at Baylor, and Dennis Kasper of Harvard University. A report on their preliminary testing of the vaccine will appear in the April *JOURNAL OF CLINICAL INVESTIGATION*. □

Multiple sclerosis: A closer look

Multiple sclerosis (MS) is a slow, implacable killer. The central nervous system is only injured in patches as the disease sporadically destroys myelin, a fatty sheath insulating the nerve fibers. Scar tissue replaces the missing myelin and the flow of nerve impulses is interrupted or distorted. When this occurs, the resultant symptoms can include blindness, paralysis, numbness and loss of coordination.

MS seems an incredibly complicated disease, and scientists have yet to learn its cause, cure or treatment. Discoveries during the last few years suggest that MS results from a viral infection that precipitates an autoimmune disease in which the body's own immune defenses attack the myelin sheathing. But the disease is more complicated than that. Influences of genetics, environment and geography also figure into the risk formula.

A symposium at the recent meeting of the American Society for Neurochemistry focused on advances in the understanding of MS. Cedric S. Raine of the Albert Einstein College of Medicine in New York reported that the rare occurrence of a death from

acute multiple sclerosis has permitted a direct look at myelin destruction as it happens. In most cases death occurs only after a decade or so of the disease. The mechanisms that led to the cumulative damage of the tissue are usually no longer working.

Raine reported that the affected brain areas of a woman who died two weeks after the disease became apparent were inflamed. On the periphery of the lesions was evidence of attack of the myelin by antibodies and by the scavenger cells of the immune system, the macrophages. This finding supports the hypothesis that an autoimmune disease is a major component of MS. It also suggests that experimental allergic encephalitis (EAE) may be a good animal model of MS.

Studies on MS have been hindered by the lack of a suitable animal model that mimics the pathology of MS in humans. EAE is an autoimmune disease that quickly leads to death. It produces inflammation around blood vessels and much less destruction of myelin than seen in tissues from chronic MS patients. Raine's findings suggest that the early stages of MS may be like EAE.

Shirley E. Podulso of Johns Hopkins University School of Medicine in Baltimore has isolated the cells of the central nervous system that make myelin, the oligodendroglia. Both oligodendroglia and myelin disappear in MS lesions, and oligodendroglia are proposed to be the target cells in the disease. Podulso reported that the isolated cells from rats make whorls of myelin in culture, and may be capable of remyelination. She is now studying the largely unknown properties of these cells and trying to learn exactly how myelin is made.

Progress is rapidly being made in understanding the components of MS, and the hope is that a breakthrough in one of the smaller areas will provide ways to halt the spread of the disease and, perhaps, alleviate some of its symptoms. □

Drug effects: Longer lasting than thought

Compared with what is known about the immediate dangers of drug use and abuse, data on the possible long-term effects of substance use—even with narcotics such as heroin—are sorely lacking. There have been indications of permanent or slowly reversible neuropsychological impairment among polydrug (multiple) users: Researchers at the University of California at San Diego observed two years ago that a substantial number of multiple drug takers showed such deficits, including brain wave abnormalities, for as long as five months after beginning treatment. But few systematic studies have been able to document these preliminary findings.

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