

## Cytomegalovirus and transfer factor

Cytomegalovirus infections, one of the well documented threats to the fetus and newborn, can waste muscles and lead to profound retardation. There is no drug to help victims (SN: 4/12/75, p. 242). Now a patient with the disease has been successfully treated for the first time, by J. Kelly Smith and Jerry Hsieh of North Shore University Hospital, Manhasset, N.Y. They used transfer factor.

Transfer factor is low-molecular-weight material from white blood cells that confers cellular immunity against specific diseases. It has already shown promise against tuberculosis, multiple sclerosis, cancer and several other diseases (SN: 2/9/74, p. 86; 6/15/74, p. 383).

Smith and Hsieh first processed transfer factor from the white blood cells of adults with proven immunity to cytomegalovirus. They then gave the transfer factor in six doses, over a nine-month period, to a little girl with cytomegalovirus infection. When the treatment was started, the girl had already developed severe motor retardation and muscle waste and was rapidly developing excess fluid on the brain. She began to improve within a week after the start of therapy and now, 20 months later, is free of disease, has regained her muscle mass and has almost completely recovered from severe motor retardation. She also appears to be normal in intelligence.

## Asthma and biofeedback control

Conscious mind control over involuntary functions of the body is being used to reverse various physiological disorders—arrhythmias of the heart, high blood pressure, headaches, muscle tension. Now it looks as if it can also reduce asthma attacks, according to a report in the November *ANNALS OF ALLERGY* by Merle S. Scherr of West Virginia University School of Medicine and his team.

Scherr and his co-workers set out to see whether the biofeedback approach might help young asthmatics breathe better. They studied 44 young asthmatics at a special camp that provides intensive care and rehabilitation for asthmatic children. Half of the children engaged in deep muscle relaxation exercises three times a week for six weeks. Taped relaxation instructions were used. The other asthmatics served as controls.

During this time, the mean number of asthma attacks for those engaging in relaxation exercises was only 8.36, compared with 33.72 for controls. Those engaging in relaxation exercises also reduced their use of steroids by 60 percent, compared with 14 percent by controls.

## DES and male offspring

The synthetic estrogen diethylstilbestrol (DES) is currently used as a food additive for cattle and as a postcoital contraceptive in women. For 25 years before 1971, DES was also used as medication for threatened abortion. But reports since then of the latent appearance of a previously rare genital tract tumor in young women whose mothers had been given DES during their gestations have curbed this use of DES.

Now DES has also been found to damage the male offspring of mothers who were given DES during pregnancy, at least in animal studies, according to J.A. McLachlan and R.R. Newbold of the National Institute of Environmental Health Sciences and B. Bullock of Bowman-Gray School of Medicine.

They treated 20 pregnant mice with DES. Sixty percent of the mice's male offspring were sterile and showed gonadal changes. So the investigators conclude in the Dec. 5 *SCIENCE* that men born to women treated with DES while they were in the womb should be checked for reproductive abnormalities.

DECEMBER 13, 1975

## An asteroid by infrared

An infrared spectrum of Vesta, claimed to be the first ever taken of an asteroid, has been recorded by Harold P. Larson and Uwe Fink of the Lunar and Planetary Laboratory at the University of Arizona.

Taken through a 1.6-meter telescope equipped with a Fourier spectrometer and later repeated through a more sensitive 2.3-meter instrument, it includes an absorption band assigned to an iron-rich pyroxene known as pigeonite, but is notably lacking in signs of other major rock-forming minerals such as olivine and plagioclase. Nor are there signs of variations in composition as the asteroid is illuminated from different angles. There appear to be no signs of water ice, or of ice forms of carbon dioxide, hydrogen sulfide, methane, ammonia or ammonium hydrosulfide. Thermal activity could explain the lack of olivine, the authors report in *ICARUS* (26:420). They conclude that "significant thermal activity, including the melting and differentiation of silicates, must have occurred on Vesta at one time. Vesta's surface has been at least partially flooded with lava or, alternatively, intrusions beneath the surface have been exposed by impact craters."

The authors suggest that the largest asteroids, at least, seem to have evolved independently in response to certain properties of the primordial solar system that are not yet completely understood. "This realization elevates a certain few of the asteroids to objects as unique as the planets themselves, and places their properties among the most sensitive tests of any theory of the origin and evolution of the solar system."

## The Jupiter-effect effect

The "Jupiter effect," a theory of possible seismic activity on earth correlated with a 1982 alignment of planets in relation to the sun, has evoked little enthusiasm among geophysicists. The theory, set forth in a 1974 book by John Gribbin and Stephen Plagemann, poses a scenario in which the planets of the solar system, lined up on the same side of the sun, exert tidal forces on the sun to create an overabundance of sunspots. This increases the probability of a solar eruption, thereby increasing interactions with earth's atmosphere, which in turn affect the earth's rate of spin, finally triggering potentially severe earthquakes.

Sharp criticism has now come from astronomer Jean Meeus of the *Vereniging voor Sterrenkunde* in Belgium. First of all, writes Meeus in *ICARUS* (26:257), the four major planets—Jupiter, Saturn, Uranus and Neptune—will not be aligned in 1982, but will span an arc of some 60 degrees. Furthermore, he says, the combined planetary tidal bulge on the sun will be 2.7 million times smaller than the tides raised on the earth by the moon, and the evidence cited by the authors for a planet-sunspot correlation shows no such correlation. There are no proven connections between solar activity and the earth's rate of spin, he says, and the low correlation in a study of 21,873 earthquakes between 1910 and 1945 by J.M. Van Gils led to the conclusion that "seismicity and solar activity are thus mutually independent."

The authors, replying in the same issue of *ICARUS*, agree that "the exact tidal mechanism postulated by K.D. Wood [the one cited in their account] looks less plausible than it did when we wrote our book." They maintain, however, that other mechanisms could be substituted for that and other steps in their scenario without invalidating the ultimate result.

Meeus, in a terse counter-reply, simply cites brief additional data to the effect that neither planetary influences on solar activity nor solar influences on terrestrial seismicity are established. "The 'Jupiter effect,'" he says, "does not exist."

377