

OF THE WEEK

Recombinant DNA success	310
Bacterial roots	310
Planetoid discovered	311
Clinch River veto	312
Behavior modification scored	312
Checking the speed of light	313
Listening for alien life	313
Dye for photovoltaics	313
New suit for David	314
Amphetamine ban	315
Cure for unnecessary surgery	315
Inside the rings of Saturn	315

RESEARCH NOTES

Space Sciences	316
Chemistry	316
Behavior	317
Biomedicine	317

ARTICLES

Special Astronomy Issue

Telescope technology	318
Do-it-yourself observatory	323
Galactic evolution	324
Many-colored Mars	326
Martian midnight	329
Io's cloud	332

DEPARTMENTS

Letters	309
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COVER: Only once has a Viking orbiter been allowed to aim its sensors at the Martian surface from over the midnight meridian, directly opposite the planet from the sun. A major result was this full-disk temperature map, which shows surprising variations from the expected patterns. See p. 329. (18-to-26-micron infrared map: Hugh H. Kieffer)

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NOVEMBER 12, 1977

LETTERS

Antibody warning

The development of specific anti-viral agents such as Ara-A (SN:8/20/77, p. 116) is a remarkable breakthrough, especially in view of its apparent specificity and selectivity, as Dr. Reines observes. (SN: 10/17/77, p. 243).

A common misconception, however, is that antibiotics like erythromycin, chloramphenicol and the frequently prescribed tetracyclines are harmless to or spare the host cells. Numerous adverse effects to eucaryotic animal and human cells and tissues have been reported. It appears that the more metabolically active and less differentiated cells of the body are particularly sensitive to antibiotics which affect protein synthesis and nucleic acid metabolism.

Chloramphenicol is notably toxic to the blood forming system; gastrointestinal reactions, liver damage, and neurotoxicity have been reported. Cases of death in the fetus and newborn are especially significant.

The extensively used tetracyclines are especially dangerous to the fetus and young children. Normal fetal development is impaired as well as normal bone and tooth development. In addition, photosensitivity, liver damage and blood dyscrasia have been reported in the adult.

It is for these reasons, as well as the alarming increase in antibiotic resistant strains of bacteria, that restraint and caution is being urged in the administration of anti-microbial agents.

Richard W. Serianni, Ph.D.
St. Mary's City, Md.

Confusing immunity

In the article "Helping plants hold the line" (SN:10/22/77, p. 269), Miller uses the term "plant immunity" as a synonym for "resistance." An immune response has six major properties that distinguish it from any other type of protective mechanism: (1) it is mediated by lymphocytes through their products called antibodies or lymphokines, (2) it is acquired only after contact with an inciting antigen, (3) it displays specificity in that the response is directed only at the inciting antigen, (4) it exhibits memory manifested as a more vigorous response on subsequent contact with the inciting antigen, (5) it is capable of being transferred from one individual to another via sensitized lymphocytes and/or antibodies, and (6) it distinguishes self from

nonself in that the response is normally made only against foreign substances. In light of modern definitions, it is inappropriate to apply the term "immunity" to plants in any way. Continuous misuse of this term by both plant and animal biologists will only serve to confuse rather than enhance understanding of a complex zoological discipline.

William D. Stansfield, Ph.D.
San Luis Obispo, Calif.

Lead poisoning

As a result of the finding by R. O. Pihl that elevated lead and cadmium levels are associated with learning disabilities, it is stated (SN: 10/22/77, p. 262) that "this may be the first study to implicate lead in learning disabilities." Before reaching this conclusion, it seems appropriate to examine the possibility (in fact the likelihood) that children who have impaired learning ability may not learn very readily that there are many objects that should not be placed in the mouth or that it is dangerous business to ingest paint chippings.

Robert Edelberg
Department of Psychiatry
Rutgers Medical School
Piscataway, N.J.

Fluoride tests

In a recent issue comment was made in reference to carcinogenic properties of fluoride by the National Health Federation (SN: 10/22/77, p. 262). Since about 100 million Americans inhale about 1 milligram of fluoride per day in their fluoridated water this is an important point if true, regardless of the qualifications of the NHF or their representatives. Usually carcinogenic properties are studied by giving large doses of the substance to animals. This is how saccharin was studied.

It is well known in otology circles that Dr. George Shambaugh of Chicago originated fluoride therapy for otospongiosis (otosclerosis) and has more than 10,000 patients who have taken 60 milligrams or more of fluoride per day. I would think studying these patients would be superior to animal studies. However Dr. Shambaugh has not reported harmful effects regarding cancer in these patients. Side effects have been nominal and reversible.

Robert J. Petersen, M.D.
Provo, Utah

Address communications to Editor
Science News, 1719 N Street, N.W.
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