

Huntington's—an infectious disease?

Recently an animal model was found for Huntington's disease, a rare but devastating neurological disorder leading to brain deterioration and eventually death (SN: 10/23/76, p. 63). Now a team of researchers at the University of New Mexico reports that while heredity is necessary for the development of the disease, a pathogen may also play a role.

First Ralph C. Williams Jr. and his co-workers at the university found antibodies to nerve cells in the caudate nucleus of two Huntington's patients. The caudate nucleus is part of the basal ganglia, gray matter in the brain that is damaged by Huntington's. Then they examined blood from Huntington's patients and their spouses and also from other neurological disease patients for such antibodies.

Williams reported at a recent meeting of the Federation for Clinical Research in Carmel, Calif., that Huntington's patients showed far more of the antibodies than did patients with other neurological diseases. Some of the spouses of Huntington's patients also showed the antibodies. Thus Huntington's may be due to some infectious agent that produces disease only in persons with genes that somehow allow the agent to damage their brains.

Prenatal hormones and personality

Sometimes women are given steroid hormones to help them maintain a high-risk pregnancy. Now it appears that such shots can affect the personality of such patients' offspring, according to a report in the April 7 NATURE by June Machover Reinisch, a psychologist at Rutgers University.

Reinisch located 34 families where at least one pregnancy had been treated with synthetic progesterin alone or in combination with estrogen and where at least one pregnancy had not. Her final sample included 42 hormone-exposed offspring ages 5-17 years (15 boys and 27 girls) and 42 unexposed siblings 6-18 years (18 boys and 24 girls). Of the 42 youngsters who had been vulnerable to hormones during pregnancy, 26 had been open mostly to progesterin, and 16 mostly to estrogen. Subjects were given age-appropriate personality and intelligence tests.

Hormone treatment was found to have a significant impact on personality. The progesterin children were more independent, sensitive, individualist, self-assured and self-sufficient than their siblings. The estrogen group was more group-oriented and group-dependent than their siblings. In contrast, the hormone-treated children had IQs comparable to their siblings.

B cells in the brain

B cells are those cells of the immune system that make antibodies against infectious agents. For what appears to be the first time, there is direct evidence of virus-reactive B cells in brain tissue.

Walter Gerhard and Hilary Koprowski of the Wistar Institute of Anatomy and Biology in Philadelphia injected flu virus into either the brains or stomachs of mice. Brain cell preparations from those mice were then injected into irradiated mice to see whether the preparations contained B cells that make antibodies against flu virus. As they report in the March 24 NATURE, B cells from brain preparations made antibodies in the recipient mice if the preparations had come from mice that had been injected with flu virus in the brain. In contrast, no antibodies were produced by brain cell preparations from donor mice that had received flu virus in the stomach cavity.

Thus it appears that B cells are able to migrate into the brain and to make antibodies there, and this antibody response may be different from that in other tissues of the body.

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Space Telescope ideas wanted

Wanted: Ideas for what to do with the proposed orbiting Space Telescope once the 2.4-meter reflector has been placed in orbit by the space shuttle in 1983.

The National Aeronautics and Space Administration is requesting that "scientist teams" submit proposals for research, including ideas for defining and developing the telescope's initial complement of instruments (cameras, detectors, etc.) to make the research possible. In addition, however, individual scientists are encouraged to send in their own proposals, not necessarily including instrumentation development.

The long-sought telescope is expected to be used primarily for stellar studies, at least in its initial stages. Estimates from inside and outside the space agency suggest that from 10 percent to as little as 4 percent of the facility's time will be devoted to planetary observations, at least during the first years of operations. Required viewing time is not the only criterion, however, and planetary astronomers are hoped to be among the contributors.

The telescope—not yet approved by Congress but part of the budget proposal now under consideration—would be emplaced about 500 kilometers above the earth in an orbit inclined 28.8 degrees to the equator. Operated remotely from the ground, it could accommodate five different instruments at its focal plane. Maintenance and instrument changes would be accomplished via the shuttle, either in orbit or by bringing the telescope back to earth and relaunching it. Expected lifetime is at least 10 years.

For a copy of the formal "announcement of opportunity," interested researchers should write to Dr. Nancy G. Roman, Space Telescope Program Scientist, Code SA, NASA Headquarters, Washington, D.C. 20546.

All at sea for Seasat

More than 100 scientists and technicians from 23 government and academic groups have just completed a major field experiment designed to evaluate instruments and collect "ground-truth" data for the Seasat-A oceanographic satellite, to be launched in May 1978. The project, which lasted an entire month, involved five aircraft, two radar stations, two instrumentation towers and assorted buoys in a study of the Pacific Ocean along the West Coast from Mexico to Alaska.

Another major goal of the exercise was to involve researchers and prospective users of the satellite in cooperative air and surface studies that will last as long as a year. Such coordination has been seen as one of the major requisites to Seasat's success, due to the many and diverse needs of users involved with different types of data, different resolution requirements and different periodic deadlines or "lead times."

The field experiment involved measurements of wave heights and spacing, currents, winds and temperatures. The instruments being tested included a synthetic-aperture imaging radar (already demonstrated in Arctic ice-floe studies), a wind-field scatterometer, a scanning multifrequency microwave radiometer and a radar altimeter.

Preparing for space—the dull way

No booze, no dope, no snacks, no visitors. These are some of the conditions under which 10 women, aged 35 to 45, are spending 27 days flat in bed, alternating with centrifuge and reduced-air-pressure studies, to evaluate stresses of reentry from space after prolonged weightlessness. The study, underway at the NASA Ames Research Center in California, is aimed at setting tolerances for space-shuttle passengers.

267