

Milk spiced with hormone for newborns

Charting of hormones, from control of their synthesis to the target of their actions, has flourished with radioimmunoassay techniques (SN: 10/22/77, p. 260). In the milk of humans, cows and rats a surprising hormone has just been detected. It is gonadotropin-releasing hormone (GnRH), which is made in the hypothalamus. This brain hormone activates the anterior pituitary gland to secrete other hormones (such as luteinizing hormone) that activate ovary or testis function.

The GnRH in milk possesses the inherent biological properties of the native hypothalamic hormone; it causes pituitaries to release the appropriate substances, report Tallie Baram, Yitzhak Koch, Eli Hazum and Mati Fridkin of the Weizmann Institute of Science in Rehovot, Israel. The researchers speculate that the milk GnRH may induce high hormone levels in the blood of newborns and induce sex differentiation of the rat hypothalamus. When female rat pups were not allowed to suckle for three hours, their blood concentration of luteinizing hormone became only 28 percent of that of their suckling littermates. "The presence of considerable amounts of GnRH in milk raises not only the question of its role there but also of its origin," the investigators say in the Oct. 21 SCIENCE. They suggest that either the very low blood levels of hormone are actively concentrated in the mammary gland, or a source for the hormone exists in addition to the hypothalamus.

Fish clean of PBB contamination

Ohio River fish contain at most only trace levels of PBBs (polybrominated biphenyls), according to recent tests by the Environmental Protection Agency and the Food and Drug Administration. These results contradict the "frightening" preliminary data on three catfish samples reported by EPA officials before a House of Representatives subcommittee last August (SN: 8/13/77, p. 101).

PBBs, which are no longer manufactured for use in this country, had been used as a flame retardant. In 1974 that chemical was accidentally mixed with animal feed in Michigan and contaminated livestock and food. Recent studies have identified adverse health effects on some farm residents.

Name that fossil

Have a rock, insect or plant that you want to identify? Thousands of systematically arranged specimens, as well as books, microscopes and advisers, are available at a new individual study facility of the National Museum of Natural History of the Smithsonian Institution in Washington. The collection includes recent and paleontological samples in anthropology, botany, zoology and geology. The Naturalist Center is open both to professionals and amateurs who want to examine a specimen or pursue a particular area of study.

Wheat nutrition at a glance

Wheat's nutritional value is strictly limited by its low content of one amino acid, lysine. For years researchers concerned with global malnutrition have tried to develop strains of wheat with a much higher lysine content, but progress has been hampered by the time and expense of measuring that amino acid. Now Gordon L. Rubenthaler of the USDA Agricultural Research Service in Pullman, Wash., and Bernard L. Bruinsma of Washington State University report a rapid test for lysine that uses commercially available equipment. In the new procedure, the investigators project selected wavelengths of light onto a wheat sample, and from the reflected light they can determine lysine content. The new test reduces the time required to analyze a sample of wheat from several days to one minute and cuts costs from \$20 to 15 cents per sample.

Search for Antarctic meteorites

One of the most striking scientific findings of the past Antarctic summer research season was the discovery of 11 meteorites sitting atop the Antarctic ice sheet, the result of a search that is soon to resume (SN: 10/22/77, p.264). The findings delighted and surprised meteoriticists the world around. The discovery opens up a whole vast new area for meteorite searches.

The international team of scientists flying to Antarctica in November to try to find more of the meteorites includes William A. Cassidy of the University of Pittsburgh, Brian H. Mason of the Smithsonian Institution and Keizo Yanai of the National Institute of Polar Research in Tokyo.

Cassidy and Yanai were members of the United States-Japanese field party which, with the aid of helicopters, discovered the 11 meteorites between December 10, 1976, and January 20, 1977, in Victoria Land about 190 kilometers northwest of McMurdo Station, Antarctica. One of the meteorites was a brown chunk of rock weighing 407 kg, one of the largest stony meteorites ever found in the world. Radioactive dating on one sample shows that it fell to earth 1.7 million years ago.

The meteorites probably fell in deep snow and suffered a minimum of breakage. The constant winds blowing across the ice sheet have in recent times unveiled them. The snow cover and cold temperatures protected the meteorites from the atmosphere, sunlight and organic contamination and greatly slowed their oxidation rate. This is expected to make them extremely valuable as a record of cosmic ray activity at the time they fell and as the models for studies of extraterrestrial organic chemistry.

India's monsoon: The Kenya link

An international study of monsoons has found that the intensity of surges of rainfall in the monsoon that periodically disrupt the economy of India might be related to high-speed, low-altitude winds over Kenya. John E. Hart of the University of Colorado reports that the winds that feed the monsoon originate in humid air over the southern Indian Ocean. As they flow along the eastern slopes of Kenya's highlands, they gain great intensity, to more than 50 miles an hour. This is principally due to the blocking effect of the East Africa highlands. This extreme jet stream then turns northeast toward India, bringing moisture that converts to heavy rain. Monitoring these winds may make it possible to predict the intensity and timing of these rains.

The data were gathered by a specially instrumented airplane in an experiment called Monsoon '77, a forerunner to the international Monsoon Experiment (MONEX).

Useful San Francisco Bay

San Francisco Bay is very young, scientists at the United States Geological Survey have confirmed. It was not a bay at all 15,000 years ago.

The team of researchers headed by Brian F. Atwater has uncovered plant-fossil evidence that 15,000 years ago the forerunner of the Sacramento-San Joaquin River flowed through the Golden Gate toward a shoreline about 30 miles off the present coast. By dating the fossil remains of tidal-marsh plants, they estimate (in USGS Professional Paper Number 1014) that the rising sea, at the last ice age, had entered the Golden Gate and begun to spread inland by approximately 10,000 years ago. During the next 2,000 years, the shoreline advanced inland at a rate of about two miles per century. As the ice sheets disappeared, the advance slowed. It has proceeded at an average of one-half foot a century for the past 6,000 years.