life sciences

PALEONTOLOGY

Florissant fossils saved

With one flourish of the pen, President Nixon will have acted to protect a bed of fossils dating back 38 million years from the crunch of a threatening housing project (SN: 6/21, p. 594).

The bill presently awaiting his signature passed the Senate last week, to the great satisfaction of its two Colorado Republican sponsors, Senators Gordon Allott and Peter Dominick.

"It was not a moment too soon," the Senators said in a joint statement. "With bulldozers practically waiting on the edge of the property, we faced destruction of this irreplaceable land unless this action was taken when it was."

CONSERVATION

Bay savers prevail

Governor Ronald Reagan signed legislation last week which he declared "will save the bay."

San Francisco Bay has been reduced in size from its original 700 square miles to about 420 square miles as the result of diking and filling by commercial and government developers in the past 100 years (SN: 8/2, p. 102).

To curtail the continued destruction of the bay, conservationists influenced the state to establish the Bay Conservation and Development Commission in 1965. Without the new bill, the commission would have expired this month, thus ending all controls which have protected thousands of acres of tidelands and marshlands.

In addition to aesthetic considerations, scientists have expressed concern over serious effects of more filling upon a wide range of environmental systems, from the ecology of fishes to severe changes in the climate of the bay area.

The Sierra Club and other conservation groups organized the Save Our Bay movement which culminated in Gov. Reagan's action. The movement grew in response to a proposal by David Rockefeller and Associates and others which would have provided for a $3 billion-landfill development along 27 miles of the San Mateo County shoreline with erection of apartments, restaurants, hotels and industry.

ECOLOGY

Viral control of algae

One of the first outward manifestations of deterioration in the ecological dynamics of lakes and rivers is the development of algal blooms. Control methods have focused on regulating the amounts of such inorganic nutrients as nitrates and phosphates entering the water.

Dr. Daniel F. Jackson of Syracuse University is studying the feasibility of using viruses in the treatment of algal overgrowth. In experiments with the blue-green algal virus LPP-1, the virus was introduced into a 2,500-gallon pool of water which was lime-colored with a dense algal growth. By the end of the second day, the water was crystal clear, while a control pool without virus remained infested.

Dr. Jackson, working on a grant from the Federal Water Pollution Control Administration, concludes that the use of algal viruses to control algae populations "is a practical and inexpensive method."

ENTOMOLOGY

Bio-control of pine sawfly

Scientists at the Northeastern Forest Experiment Station in Hamden, Conn., are engaged in studies of a virus for microbial control of the European pine sawfly, which, in its larval stages, is a voracious devourer of red and Scotch pines.

A naturally occurring virus that weakens sawfly populations and brings about their early death is produced in laboratory sawfly colonies. Millions of sawflies are infected with the virus, and after death, their bodies are washed, ground up, sieved, centrifuged, washed and recentrifuged at 35,000 revolutions per minute. Further purification produces a stable liquid suspension, or even a dry powder, which can be applied in the spring before sawfly larvae have a chance to do their damage.

The safety of the preparation still must be established before wide-scale use.

MALARIA

Induced resistance studied

Because of the difficulties in controlling the malaria mosquito, and the inadequacy of drugs that can prevent it, malaria researchers have sought to develop a vaccine which would induce resistance in the human host. But results have been uniformly discouraging due to unique characteristics of antigenic response in humans and all mammals studied in the laboratory to date (SN: 6/21, p. 598).

Researcher Lawrence E. D'Antonio of the University of Illinois reports success in producing a high level of responsiveness to resistance induction in mice using an inoculum made from *Plasmodium berghei,* a malarial parasite of rodents.

In the Aug. 2 NATURE, Dr. D'Antonio says that the system "seems to present an ideal model for further study of malaria vaccination."

AQUACULTURE

Induced fish breeding

A zoology teacher of Delhi University, India, has discovered a method of inducing fish to breed out of season.

Dr. B. I. Sundararaj has advanced the breeding cycle of a catfish (*Heteropneustes fossilis*) by three months using controlled lighting and injections of hormones.

Normally, this freshwater fish commonly found throughout India, spawns only in the period March to June, when daylight extends over 12 to 14 hours. Dr. Sundararaj found that when these long hours of daylight are simulated with electric lights, catfish can be persuaded to reproduce in other months as well.

Using this method and an easily available artificial hormone it is possible to get the fish to breed five times a year.

The same technique is said to be applicable to other river fish.