women had their pain longer before being referred, and their treatment had differed from that of men with similar complaints. "They had received more prescriptions for minor tranquilizers, antidepressants and analgesics and fewer prescriptions for narcotics," Lack noted. They had also received fewer pain-related surgical procedures.

But the difference is not that women are more sensitive to pain. Paula Goolkasian of the University of North Carolina studied the responses of women, men and women on oral contraceptives to heat applied to the forearm. When the volunteers rated the pain, Goolkasian found the responses of women on oral contraceptives, men, and women in the non-ovulatory stage of their menstrual cycle to be identical. During ovulation, women not on the pill rated the stimuli more painful.

Goolkasian's study agrees with previous studies that indicate a short period of higher sensitivity to pain during ovulation, rather than a pain threshold change. □

## Artificial blood trials

Since 1979 an artificial blood called Fluosol has helped save the lives of about 200 patients in Japan and the United States who could not receive transfusions of natural blood for various reasons. Fluosol is still experimental, however, so those patients in the United States who have received it have gotten it under a special emergency proviso of the U.S. Food and Drug Administration on a case-by-case basis. Thus, the ultimate goal of Fluosol's manufacturers — the Green Cross Co. in Osaka, Japan, and its subsidiary Alpha Therapeutic Corp. in Pasadena, Calif. — is to get Fluosol officially approved by the FDA for clinical use (SN: 4/12/80, p. 237).

Before such approval can be obtained, however, clinical trials demonstrating Fluosol's safety and effectiveness must be conducted at U.S. medical centers. The FDA has now given the green light for such trials. □

## Vaginitis culprits nabbed

Nonspecific vaginitis, a condition marked by vaginal itchiness and excessive vaginal discharge, earned its "nonspecific" appellation by eluding researchers in search of its cause. For years, a bacterium called *Gardnerella vaginalis* has been suspected. Researchers from the University of Washington in Seattle report in the Sept. 11 NEW ENGLAND JOURNAL OF MEDICINE that both *G. vaginalis* and a second class of bacteria are found in women with vaginitis. They did not determine the exact roles of the two bacterial strains, but they did note that a ratio between products of the two types of bacteria is useful in diagnosing the condition and can be used to indicate drug therapy effectiveness. □

# Atmospheric science for the 1980s

"[A]s world population increases and our societies become more technologically complex, a critical stage has been reached in our relationship with the earth's atmospheric environment," says the Committee on Atmospheric Sciences of the National Research Council. At the same time, the development of a variety of remote sensors and analytical instruments and the use of computers now enable scientists to "study the atmosphere on all important space and time scales." Hence, says the committee in its recent report, "The Atmospheric Sciences: National Objectives for the 1980s," atmospheric science is on the brink of making significant contributions to "urgent national problems."

Among those national concerns, according to the report, are the increasing effect of human activities on atmospheric quality and climate, the dependence of agriculture, transportation and industry on what is considered "normal" climate and the economic impact on those systems created by "abnormal" conditions such as drought and severe winters. To answer these concerns, the committee, led by Cecil E. Leith Jr. of the National Center for Atmospheric Research in Boulder, Colo., proposes three broad goals for the atmospheric sciences in the next decade:

- improvement of weather prediction capabilities, with an emphasis on precipitation in cyclonic storms (tornadoes, hurricanes) and on severe storms processes;
- understanding of the climate system and how it varies over periods of seasons to decades; and
- understanding of the cycles and reactions of chemicals in the atmosphere and their relationships to atmospheric processes.

In order to attain these goals, says the committee, several specific research problems should receive the highest possible priority by the atmospheric science community and by decision makers. For example, the increased number of weather observations and the improved methods of communicating and analyzing such observations should be used in a focused, coordinated program to improve short-term (one- to three-day) weather forecasts. In addition, theoretical and modeling studies as well as field experiments that use very fine-scale observing networks should aim toward improving predictions of the amounts of precipitation and the timing and duration of storms.

In the area of climate prediction, the committee recommends that researchers use computer modeling to identify short-term, potentially predictable components of climate, such as drought or severe winters, and to find their precursors, such as changes in sea surface temperatures. Modeling studies should also be used to determine the climatic effects of alteration of the earth's surface by natural (snow cover, deserts) and human (deforestation, urban development) activities.

The third topic of concern, atmospheric chemistry, is one of the least understood areas of atmospheric research, the committee points out. Research programs should be designed to study how various atmospheric chemicals affect the response of the atmosphere to solar radiation, such as the "greenhouse" effect of carbon dioxide. More specifically, atmospheric chemists in the 1980s should identify the factors contributing to acid rain, decreased visibility and regional air quality, as well as determine how pollutants are transported and altered. □

## Monsters of the sky

What's 11 feet long, 6 feet tall, weighs 170 pounds and flies? Answer: *Argentavis magnificens*, the magnificent bird of Argentina, which had a wingspan of 25 feet. Recently unearthed fossil evidence (wing, leg and skull bones) suggests that this extinct bird is a previously unknown genus and species of the family Teratornis (monster birds), which includes New World Vultures, such as the condor. Markings on the wing bones of the giant teratorn suggest that it was capable of flight and, if so, it is the world's largest known flying bird. "It's definitely a most spectacular creature," says Kenneth E. Campbell of the Natural History Museum of Los Angeles. While in South America on a National Geographic Society expedition he was invited to study the 5- to-8-million-year-old fossils by their discoverers, Eduardo P. Tonni and Rosendo Pascual of Argentina's La Plata Museum. □