

MEDICINE

Human Semen Banks

Iowa scientists suggest this application of their finding that human semen can be frozen and stored, then later used for artificial insemination.

► FROZEN HUMAN semen banks can take their place with blood, bone, nerve and artery banks, it now appears from the success of one established experimentally at the State University of Iowa in Iowa City.

The Iowa frozen human semen bank is probably the first of its kind anywhere in the world. The scientists who have created it let its existence be known in a round-about way through a report in the journal of the American Society for the Study of Sterility, *Fertility and Sterility* (Nov.-Dec.).

Three normal human babies, a boy and two girls, have already been born and a fourth is almost ready to be born, fathered by human semen frozen and stored by the Iowa scientists, Drs. R. G. Bunge, W. C. Keettel and J. K. Sherman. (See SNL, Nov. 7, 1953, p. 292.)

"The establishment of a semen bank" is one of the "clinical applications" they report for the semen freezing-and-storing method.

The four couples who have been helped to parenthood by the frozen semen may draw on the unique bank again. The scientists state that they have been storing semen "in anticipation of insemination for a second child," and one couple has already expressed a desire for a second child.

The frozen stored semen was used for artificial insemination of the mothers and the resulting babies are, in a sense, test tube babies. Although Dr. Bunge and as-

sociates have refused to state the source of the semen used so far, the technical report suggests that it was from the husbands.

"Collection, freezing, storage and concentration of a husband's semen is possible," states the technical report.

"Greater fertility potential than the husband's acting alone can be exerted at the most favorable time (of the woman's cycle)," the scientists point out. This would apply in cases where the sperm count is normal or even low.

A new criterion for evaluating the fertility potential of a given male may come from the study. Poor survival of spermatozoa after freezing might show that the spermatozoa were inferior or defective.

Male hormone treatment might be effective in such cases. The Iowa scientists state that in several cases pregnancies occurred after testosterone (male hormone) treatment of the man, even though spermatozoa counts only attained the pretreatment level. This suggests a difference in quality of sperm after treatment.

The semen being stored for possible insemination for a second child has been that from the "qualitative phase" when, presumably, the sperm cells, even if few, were of good quality.

The semen is concentrated and treated with glycerol prior to freezing.

Science News Letter, December 25, 1954

CLIMATOLOGY

Predict New Ice Age

► A NEW Ice Age may bury cities like Chicago, Berlin or Moscow under a thousand feet of ice within the next 10,000 years, Dr. Cesare Emiliani, University of Chicago geologist, predicted in Chicago.

Dr. Emiliani, research associate at the University's Institute for Nuclear Studies, based his prediction of a coming glacial age on the pattern of past variations in the earth's temperature. These long-ago temperatures are indicated by measurements of the ratios of two forms of oxygen in the shells of fossil microorganisms found in deep-sea sediments.

The oxygen-ratio method was developed in 1947 by Nobel Prize winner Dr. Harold C. Urey, also of the University of Chicago. It has already shown that the ratio of oxygen 16 to oxygen 18 varies with the temperature of the water in which the tiny sea creatures lived.

His studies, Dr. Emiliani reported to a seminar of the American Meteorological So-

ciety in Chicago, show that the earth is getting colder. The temperature of the oceans has dropped about 14 degrees in the last 30,000,000 years, he concludes.

It has long been known that at least four successive ice ages, with intervening warmer periods, have swept over the earth. These large-scale temperature fluctuations, however, were very irregular and some meteorologists doubt that reliable predictions of future climate can be based on extrapolation from past records.

Most weathermen agree that there has been a definite warming-up of the earth during the past 50 years or so, although they disagree as to its cause. And they have no estimate as to how long the warming-up period will last.

Since the geological record of when the ice ages swept over the continents is incomplete, scientists have turned to an examination of deep-sea sediments for a record of the last 1,000,000 years or so. The samples

are obtained by cutting cores from the ocean's bottom. These sediments may reach back in time more than 2,000,000 years.

Studies of the tiny fossil sea creatures found in the cores have shown that the surface temperature of the sea varied several degrees Fahrenheit in the last 1,000,000 years, Dr. Emiliani said, in separate periods of about 40,000 years. The coldest points in these periods corresponded to the glacial ages.

During the ice ages, vast areas of North America, Europe and northern Asia were covered with thick layers of ice. In the warmer interglacial periods, the ice melted away.

Science News Letter, December 25, 1954

MEDICINE

Leg-Lifting Test to Tell Gangrene Outcome

► A LEG-LIFTING test to help determine need for and probable outcome of amputation in cases of gangrene was described by Dr. Rutherford S. Gilfillan of the University of California School of Medicine, San Francisco, at the meeting of the American Academy of Dermatology and Syphilology in Chicago.

The test should be helpful not only in cases of gangrene, but also in treating lack of circulation in such diseases as arteriosclerosis and Buerger's disease.

The test consists of elevating the foot or leg above the level of the heart when the patient is lying down flat on his back, then measuring the height of the foot or leg above the heart at the point where natural skin color is maintained.

This enables a doctor to approximate easily the capillary pressure in the extremity, and relate this approximation of pressure to the survival possibilities of cells in these areas of the leg and foot.

Previous methods have been difficult to perform, Dr. Gilfillan said, and were not, therefore, generally used.

Science News Letter, December 25, 1954

ASTRONOMY

Spot New Asteroid In Southeastern Sky

► A NEW asteroid has been discovered low in the southeastern sky by Dr. George Abell of Mt. Wilson and Palomar Observatories.

The object's magnitude is 17, much too faint to be seen except with the largest telescopes. The asteroid, which, at some future date, will be named by its discoverer in accordance with international custom, was found in the constellation of Canis Major, the larger dog.

Its distance from the earth will not be known until more observations are made on the object. For that reason, Harvard College Observatory is notifying other observatories around the country of the discovery.

Science News Letter, December 25, 1954