

BIOLOGY

Artificial Fertilization

For the first time in medical history, human eggs have been developed outside of the body as far as the two-cell stage.

► FOR THE first time in medical history, human ovarian eggs have been fertilized outside the bodies of human mothers, and their development through the first two cell-division stages observed under the microscope. Accomplishment of this difficult feat in experimental biology is reported (*Science*, Aug. 4), by Dr. John Rock and Miss Miriam F. Menkin of the Harvard Medical School in Boston and the Free Hospital for Women at Brookline, Mass.

Three successful fertilizations of human eggs in glass dishes have been performed, two of them proceeding as far as the first cleavage, or two-cell stage of development, and the third showing three cells.

While this is far from realization of the ectogenesis, or "babies born in a bottle," about which imaginative zoologists romanced a couple of decades ago, it must be concluded as the first step in that direction. More soberly, the experiments have enabled scientists to observe, for the first time, some of the events of the first few hours of human prenatal existence, and may eventually open the way for better understanding of still-obscure points in embryology.

The human eggs for the experiments were obtained from the ovaries of women who found it necessary to lose them through surgery in order to save their own lives. Careful searching was needed

to find unfertilized eggs at the right stage for further development.

These were nourished on human blood serum in glass dishes, under close spermatozoa were released in the dishes, first supplied by the patients themselves, later by other women. Normal male spermatozoa were released in the dishes, and carried out the fertilization. The three-celled stage, and one of the two-celled stages, were subsequently fixed, stained and sectioned for closer microscopic work and for permanent preservation.

Artificially controlled manipulation of animal development from eggs began a half-century or so ago, when zoologists were able to produce fatherless worms, sea-urchins and even frogs by stimulating unfertilized eggs with chemicals, needle-scratches and electric current.

More recently, Dr. Gregory Pincus, now at Clark University, was able to remove unfertilized eggs of living rabbits and start development by similar procedures. He also succeeded in replanting "ectofertilized" eggs in the bodies of foster-mother rabbits where they eventually came to normal birth.

Dr. Rock and Miss Menkin state that they received assistance from Dr. Pincus in their present series of experiments. They also state that a longer, illustrated report is in preparation, for later publication.

Science News Letter, August 12, 1944

in skin grafting operations has been the practically unavoidable infection of the tissues after the burned, dead flesh has sloughed off. On an average, about a quarter of a large grafted area fails to "take."

The four researchers, who had been using a sulfa-drug treatment with some success, decided to see if they could improve their score with penicillin. Accordingly, they gave heavy injections of the mold-drug to 17 very badly burned patients, at one- or two-hour intervals for from one-half day to five days before the grafting operation. The "take" score ranged from 90% to 100% of the total grafted areas, with the single exception of "an uncooperative alcohol addict," whose "take" was only 80%.

The penicillin seems to have had the effect of keeping the germs of infection at bay while the new tissue growth had a chance to take place, rather than of suppressing them entirely. Bacteriological examination of material taken from sample areas showed the germs still present, but apparently unable to start any mischief.

Science News Letter, August 12, 1944



EAR WARDEN—Lives will be saved by this new U. S. Navy defense weapon, because with this soft Neoprene device in his ears a sailor can hear commands while having his hearing protected against the terrific din of guns, motors and explosions. It is the product of research conducted under the auspices of the National Research Defense Committee at the University of California at Los Angeles and at Harvard University's Psycho-Acoustic Laboratory. This is an official Navy photograph.

MEDICINE

Better Skin Grafting

Another victory for penicillin, this time as an aid in keeping infection down after severe burns, has been achieved.

► PENICILLIN has scored yet another victory in the battle against death and disablement, this time as a powerful aid in getting large skin grafts to take hold on areas that have suffered deep and severe flesh burns.

The success is reported (*Journal, American Medical Association*, Aug. 5), by a four-man research team consisting

of Dr. J. W. Hirshfeld, Dr. M. A. Pilling, Dr. C. W. Buggs and Dr. W. E. Abbott, of Wayne University College of Medicine and the Detroit Receiving Hospital. The work was done under a contract between the Office of Scientific Research and Development and Wayne University.

One of the principal causes of failure