

## BIOLOGY

# Start of Human Life Shown by Electron Microscope Pictures

## Problems of Human Sterility May Also Be Solved With Aid of Pictures Magnifying Spermatozoa 27,000 Times

**N**EW and detailed knowledge of how human life is started when the sperm cell penetrates the egg cell is expected from electron microscope pictures of human spermatozoa which reveal for the first time many hitherto unknown anatomical details of the human male parent cell.

Facts already learned from preliminary study of the picture of a spermatozoon from a 32-year-old father of four children are reported by Dr. Frances I. Seymour and Dr. Moses Benmosche, of New York (*Journal, American Medical Association*, May 31).

Problems of human sterility may also be solved with the aid of these pictures which magnify the spermatozoa 27,000 times.

The spermatozoon, as revealed by these pictures, has a head; a body, formerly considered its neck, nearly twice as long as the head is wide at its widest part; and a tail more than nine times as long as the body. This is much longer than previously supposed, and the tail is now seen to contain variations in structure which may enable it to perform some special function.

The head is pear-shaped with a crater-like notch at its crown. This newly discovered feature "may very well be some form of suction apparatus to facilitate the penetration of the ovum (egg)," the scientists report.

The body, which used to be called the neck, "appears to be a segmented structure, averaging nine to 12 segments in

the specimens examined. . . . Throughout the length of the body runs a core which is approximately uniform in diameter. This core is distinguished from the rest of the body by its opacity, being denser than the segmented structure around it. The core becomes the tail.

"The apparent segmentation of the body probably accounts for the extraordinary motility of the head of the spermatozoon as it is propelled in a forward movement."

Previous knowledge of spermatozoa consisted of three points: motility or non-motility; the general appearance when magnified 2,000 times, instead of the present 27,000 times; and the number in a given specimen. Fertility was supposed to depend either on ability of the spermatozoa to move, or on an imaginary spirem arrangement in their mid-section. This last theory was not confirmed by the electron microscope pictures.

"As research in these higher magnifications goes on," the scientists declare, "we may have to throw overboard the old theories of chemotaxis (chemical attraction of the egg for the spermatozoon) and revamp much of what was heretofore believed true."

*Science News Letter, June 7, 1941*



**VERY STRANGE BIRD**

*These infant brown pelicans were photographed in their birthday suits by the U. S. Fish and Wildlife Service. It is lucky, they suggest, that these birds do not go farther north than the Cape Romain Refuge in South Carolina.*

## PSYCHOLOGY

## Germany's Psychological Warfare Plans Revealed

**G**ERMANY began arming for the present World War, long before she started building airplanes and tanks, by building up systematic plans for psychological warfare.

These plans are revealed in a comprehensive survey and bibliography of German books and articles on war psychology now being completed for the Committee for National Morale under the direction of Ladislav Farago. Much of the material studied exists in this country only in microfilm copies and is available only to this Committee.

One section of the survey deals with psychology in total war. Here are included German psychological writings dealing with weapons of psychological warfare, propaganda, terror, intimidation, the fifth column, strategy and tactics, fields of psychological warfare, national psychology, and psychological espionage.

Problems of the selection and testing of military personnel, which has received emphasis in American military