

**WATER**—Luna B. Leopold, Kenneth S. Davis and the Editors of LIFE—Time-Life Bks., 200 p., photographs, diagrams, \$3.95 direct to publisher, Time Life Bldg., Chicago, Ill. 60611. Picture essays discussing the physical and chemical properties of water, its cycle and its effect on the earth, its life-maintaining role, and man's management and uses of water.

**WHALES, DOLPHINS AND PORPOISES**—Kenneth S. Norris, Ed.—Univ. of Calif. Press, 789 p., illus., \$15. Offers a representative cross section of the science of cetology based on research by physical scientists and biologists from a wide variety of scientific disciplines including systematics, zoogeography, hydrodynamics, acoustics and behavior.

**THE WORLD BOOK ENCYCLOPEDIA:** Fiftieth Anniversary Edition, Vols. 1-20—Robert O. Zeleny, Exec. Ed., 2,700 contributors and

subject specialists—Field Enterprises Educ. Corp., rev. ed., 12,000 p., 25,000 illus. (7,300 in color), 1,900 maps, \$169.50 (red), \$159 (blue cloth). This latest major revision contains 5,965 articles dealing with science and technology, written and signed by experts. Special features are fully illustrated state and province articles, 550 new maps, 3,000 updated cross-references, 5,000 biographical sketches. Keyed to school curricula the material offers concise and accurate information for the whole family, from upper elementary grades to nonspecialist adult use.

**A ZOO MAN'S NOTEBOOK**—Lee S. Crandall with William Bridges—Univ. of Chicago Press, 216 p., photographs, \$4.95. An abridgement of **THE MANAGEMENT OF WILD MAMMALS IN CAPTIVITY** (1964), with comments and anecdotes added.

• *Science News*, 89-323 April 30, 1966

For instance, they found that women definitely are able to experience orgasm, contrary to society's present vague and vacillating beliefs about the female climax. It has now been measured in blood vessel congestion, muscle tension and rapidity of recovery.

There is no physiological difference between clitoral and vaginal orgasms. Research here is particularly important because it overrules a psychiatric belief in clitoral orgasm.

Some women have a natural contraceptive in their vagina—a "lethal factor" that causes sterility by killing spermatozoa within 16 seconds. This knowledge may help physicians treat patients for sterility.

Certain "phallic fallacies" have also been destroyed. Sexual adequacy is not related to the size of the male genital organ. Age does not necessarily render a man impotent.

Through interviews with 261 men, Dr. Masters and Mrs. Johnson learned that college graduates under 40 are nearly always concerned about the woman's response and are disturbed by fears that they might not be able to satisfy her. Only 7 of 51 men without a college education expressed responsibility for the woman's satisfaction.

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## PHYSIOLOGY

# Human Sexuality Explored

An important, detailed study, scientifically exploring physiological sexual response in humans, will aid medical science in understanding sexuality—By Patricia McBroom

► **HUMAN SEXUAL** response has never been more fully detailed than in the 11-year St. Louis study released in April.

Publication of the book "Human Sexual Response" by Dr. William H. Masters and Virginia E. Johnson recalls both the significance of Dr. Alfred C. Kinsey's first published report in 1948 and the social furor it raised.

Dr. Kinsey and his group studied human sexuality by talking to people. Now, Dr. Masters and Mrs. Johnson have studied human sexuality by direct observation.

They have taken physiological measurements of respiration, perspiration, heart rate, flush, blood pressure and muscular tension during and after sexual stimulation.

They have timed the length of orgasms in men and women. They have measured, filmed and compared sexual intensity as it occurs during automanipulation and coitus.

The knowledge they have gained about the physiological working of the human body experiencing sex has exploded a few of the fallacies and some of the superstitions held by the public and has overturned a misconception propagated by psychiatrists.

Dr. Masters, a gynecologist, and Mrs. Johnson, a psychologist, observed during the 11-year period, 276 married couples, 106 single women and 36 single men in St. Louis, under the auspices of the Reproductive Biology Research Foundation. Their work was done in association with Washington University Medical School, St. Louis.

The researchers make no claims that their work has established norms for sexual response that other people may use to measure themselves. The study group was comprised of paid volunteers who came primarily from the well-educated university community. Care was taken to exclude obvious neurotics and exhibitionists from the program.

In attitude the people were modest, and some were even shy at the outset. However, once they became convinced of the scientific integrity of the program and after a period of orientation, all were able to participate without inhibition or embarrassment despite the artificial laboratory conditions. Many of the couples who stayed with the project for years were originally motivated either by a need to solve their own sexual problems or by an idealistic desire to contribute to science's understanding of sex.

It was not unusual to hear from individuals that their experiences in the laboratory had helped their marriages, said Dr. Masters and Mrs. Johnson.

How normal or abnormal were the responses of the study group cannot be judged because no standards for comparison exist. Information drawn from these 694 people can only be placed against an individual's own experience or his concept of normal human response. The report cautions that "from these prejudiced levels of comparison, there is no appeal at this time."

During 11 years the scientists studied at least 10,000 sexual cycles. From this careful study has emerged an impressive body of new scientific knowledge.

## ENTOMOLOGY

# Wasp Digs Blind Hole To Confuse Enemies

► **THE SOLITARY WASP** often spends an hour or more of her brief life digging a separate dead-end hole beside her nesting burrow in order to mislead parasite wasps looking for her young.

When a female wasp of the *Bembix* species digs her nest in the ground, she goes to great pains to conceal the entrance to the burrow, reported Dr. Howard E. Evans, curator of insects, Museum of Comparative Zoology, Harvard University.

Each time the wasp emerges from her burrow, she carefully covers the entrance with soil and smooths it over. Near by is one or more "accessory" burrows which she has built and which is always left open when the wasp leaves the nest.

These accessory holes are thoroughly and vainly inspected by the wasp's enemies—the bee flies, miltogrammine flies and the parasitic wasps called cuckoo wasps and "velvet ants."

The hard-working digger wasp may be digging extra holes for two purposes, Dr. Evans stated in *Science*, 000:000, 1966. She may be using the extra hole to trick her preying enemies, or as a source of extra fill for her own burrow.

There is no such thing as "trivial" behavior in animals, said Dr. Evans in summing up the intricate detail noted in the complex working of the wasp. Every aspect of seemingly inexplicable behavior is an important part of our accumulating knowledge of biological science.

• *Science News*, 89-323 April 30, 1966

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