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**VITAMINS AND COENZYMES**—Arthur F. Wagner and Karl Folkers—Interscience, 532 p., diagrams, \$17.50. Comprehensive treatment of isolation and structure determination—organic and biosynthesis, metabolic role, mechanism of action, biological activity, nutritional role in animals and in the human—for all the known vitamins and coenzymes.

**WAVES AND BEACHES:** The Dynamics of the Ocean Surface—Willard Bascom—Doubleday, 267 p., illus. by author, photographs, paper, \$1.45. Scientist's account of the interplay in the surf zone, and of the properties and measuring of waves, for the general reader.

**THE WEB OF THE SPIDER**—Laura Barr Lougee—Cranbrook Inst. of Science, 44 p., illus. by author,

\$3.50. Beautiful little book, developed from a project of collecting webs for exhibit purposes, tells about the various webs and how they are made.

**WILDLIFE IN AMERICA**—Peter Matthiessen, introd. by Richard H. Pough—Viking, 304 p., 100 illus. by Bob Hines, paper, \$1.95. A history of man's effect on the fishes, amphibians, reptiles, birds and mammals of the North American continent, reprint (1959).

**X-RAY SECTION OF THE CIVIL DEFENSE EMERGENCY HOSPITAL**—Division of Health Mobilization, Public Health Service, 40 p., illus., paper, free upon request direct to publisher, Washington, D. C. 20201. Authoritative information to assist community personnel in preparing the X-ray section for emergency hospital.

• Science News Letter, 85:220 April 4, 1964

## SOCIOLOGY

## Need For Birth Control

► WILL THE HUMAN RACE face its most pressing problem like a man—or, like a mouse, will it just let nature take its course?

The exploding population problem needs immediate and intelligent action, many scientists say in the book "Human Fertility and Population Problems" (Schenkman Publishing Co., Inc., Cambridge, Mass., \$7.45 regular, \$2.65 paperbound), just published.

Man's will power and birth control methods in today's world will distinguish him from lower animals in a far more fundamental way than his works of art or atomic bombs, states Dr. A. S. Parkes, University of Cambridge, England.

On the other hand, if we leave the human birth problem to nature, we can expect many unpleasant results of overcrowding. Nature has her own way of dealing with overpopulation in the lower animals that is not always in keeping with good manners, says Prof. Frederick L. Hisaw, professor emeritus at Harvard University.

When experimental rats are kept in crowded quarters, for instance, they show marked symptoms of mental and physical stress, points out Dr. Hudson Hoagland of Boston University Graduate School, Boston, Mass., and president of the American Academy of Arts and Sciences.

The mother rats become sloppy and fail to build nests and care for their young. Their pregnancies are not full term, and many babies are left carelessly to die, are born dead or are eaten.

Among male rats there is unusual sexual behavior, cannibalism and abnormal behavior ranging from overactivity to pathological withdrawal in which some males emerge from their nests only to eat and drink. By such drastic methods, nature manages to keep down the population.

Other species of lower animals respond to crowded conditions, Dr. Hoagland added.

When microorganisms become too heavily crowded, their toxic wastes such as acids or alcohol accumulate and kill off many potential organisms.

If flour beetles are too crowded, cannibalism sometimes occurs, egg production drops off, and the females even puncture and destroy their own eggs. The spectacular suicides of the lemmings which, every four years or so, travel many miles to drown themselves in the sea, may be a result of overpopulation.

The crowded jack rabbits of Minnesota

fight savagely among themselves, sex drives drop to a low ebb, young rabbits are often eaten, and the animals become more susceptible to infections.

Animals in the Philadelphia Zoo developed atherosclerosis and other symptoms caused by adrenal stress syndrome under crowded conditions.

What about man in this state of increasing population density, asks Dr. Hoagland. What can we do about the world population explosion in our own species?

We can, of course, do nothing, and wait for the stress syndrome or for a new virus to do its work. Perhaps nuclear weapons will solve the whole problem.

Or we can use our intelligence and will power and decide on an optimum population density. We should, he says, overcome psychological prejudice, indifferences and economic barriers that prevent people from using some of the many methods of birth control now known.

With education and social pressures, such as tax bonuses for small families, perhaps the tide of humanity could be controlled for better living.

The book, edited by Dr. Roy O. Greep, Harvard School of Dental Medicine, sets forth the proceedings of the 1963 seminar on population problems, sponsored by the American Academy of Arts and Sciences, with the support of the Ford Foundation.

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## Do You Know?

Alaska had a much warmer climate 8,000 to 11,000 years ago, based on carbon-14 dating of soil samples.

Mandarin Chinese is the most widely spoken language in the world; it maintains its position by the sheer numbers of Chinese.

Naturalists in Florida are using marsh-mallows to lure alligators out of deep swamps.

When a meteor plunges through the earth's atmosphere, it leaves behind an ionized trail of charged particles.

A record harvest of 3.5 billion board feet of timber was cut from National Forests in the third quarter of this year.

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