



**RACE TRACK DESIGN**—The 300,000,000 volt synchrotron of which this is a model will produce energy similar to that of cosmic ray particles and permit scientists to go a step beyond atom-smashing and study sub-nuclear particles. Being built by University of Michigan physicists in association with the Applied Physics Laboratory of Johns Hopkins University under special research contracts with the Navy Bureau of Ordnance, it is made up of four quarter circles connected by straight portions. Official U. S. Navy Photograph.

## HUMANICS

## Humanics Answers Strife

Wars start in people, and an understanding of human nature is the only way to achieve peace, according to Dr. R. J. Williams.

► A NEW SCIENCE to achieve peace between husbands and wives, between labor and management and between nations is proposed by Dr. Roger J. Williams, University of Texas biochemistry professor and discoverer of one of the B vitamins.

"Humanics" is the name Dr. Williams gives the new science. Webster defines humanics as "the study of human nature," parallel to mechanics, dynamics, acoustics and statistics. "The science of human beings" is Dr. Williams' definition of it.

"Only by learning its basic truths, teaching them to our youth, and by extending greatly the boundaries of our knowledge," he states, "can we cope with numerous social problems: education, marriage, health, employment, charlatanism in politics and elsewhere, crime, alcoholism, group bigotry (whose name is legion), and war."

To his fellow scientists and educators Dr. Williams gives a blueprint for the science of humanics in his new book, "The Human Frontier" (Harcourt, Brace and Co., \$3.00).

It is not atom bombs and germ warfare which threaten destruction of mankind but forces within each human being, Dr. Williams charges.

Two obstacles have prevented us from advancing beyond the "ox-cart days" in applying science to human relations, he believes. One of these is the strong tendency in universities and elsewhere to study human beings piecemeal. Anatomy, physiology, biochemistry and psychology are each studied intensively but separately. No one puts together the pieces of the jigsaw puzzle of facts known about man.

The other obstacle is "our devotion to man the statistical creature." We plan for the average man, instead of for each

John and Mary.

The results are about on a par with what would happen from attempting to furnish an entire army with average-sized shoes. An average-sized shoe would fit very few soldiers, though for purposes of calculating the amount of leather required to put shoes on an army it would be valuable to know the average size of the soldiers' feet.

"If science is to go to the bottom of things in the prevention of world destruction, it must study human beings. We must take humanics seriously," Dr. Williams declares, "because we are admittedly the most complex phenomena of which we are aware. If we could understand human beings and why they behave in such outlandish fashion, we would have gained the kind of insight that is necessary."

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## ORNITHOLOGY

## Bikini Tests Did Not Harm Birds of Atoll's Islands

► BIRDS of the little islands of Bikini atoll were completely unharmed by the two atomic bursts last summer, states Melvin Traylor, Jr., Chicago Natural History Museum ornithologist who was project officer for the pelagic fishing survey preceding and during the tests.

After each of the two explosions, biologists made a careful examination of the bird life of the atoll, and found no visible effects. Subsequent examinations showed no noticeable changes in numbers, says Mr. Traylor, adding:

"The birds were continuing with their regular household routines, and were it not for the evidence of the target ships it would be difficult to believe that the bombs had actually exploded. Although there is a possibility of a delayed effect from birds eating radioactive fish, of which there were a few in the lagoon, the bird life as a whole may be considered unaffected by the bomb."

The birds of Bikini are of course mostly seafowl. Among the most notable, and certainly the most beautiful, are the pure white fairy terns, which build no nests, merely laying their eggs on bare branches where a chance rough spot on the bark or the splinters of a short-broken limb give a precarious resting-place.

Another oddity noted by Mr. Traylor was the habit of the frigate birds of catching flying-fish in the air, after they have been scared out of the water by pursuing dolphins.

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