

PHYSICS

Newest Atom-Smasher Is Nearing Completion

See Front Cover

NEWEST in the rapidly growing family of atom-smashers is the eight-million-volt electrostatic generator nearing completion at the University of Notre Dame. Previous generators of this kind, erected at the University of Pennsylvania, the Carnegie Institution of Washington's Department of Terrestrial Magnetism, the Westinghouse Research Laboratories, etc., have been arranged vertically, but this one, planned by Dr. George B. Collins, is horizontal.

The new generator, which will operate under air or gas pressure approximately ten times as great as that of the atmosphere, resembles a railroad "tank car" and an addition to the university's science building was necessary to house the twenty-ton steel container, forty feet long, in which the apparatus is contained. One section is mounted on wheels, so that the generator proper is accessible for inspection or repairs. Freon gas, the same used in many refrigerators, will also be forced into the tank to improve its operation.

The illustration on the cover of this SCIENCE NEWS LETTER shows the interior of the structure. Charged particles will be driven at enormous speeds down the white porcelain tube. The closely placed aluminum rings around each column prevent sparking from taking place along these supports.

Science News Letter, April 5, 1941

A meteorite weighing 320 pounds was set up at a Texas trail junction by Comanche Indians, and offerings of beads, pipes and tobacco were left to the mysterious object by those who passed.

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ATOM SMASHER

When this eight-million-volt generator is completed at the University of Notre Dame, the X-rays from it will be the most penetrating ever produced.

ASTRONOMY

Astronomy Hampered But Work Goes on Amid Bombs

THOUGH astronomical research in Europe, and on this side of the Atlantic as well, has been reduced by the war, some studies are continuing even in the belligerent countries and those now under Nazi domination, says Dr. Bart J. Bok, associate professor of astronomy, at the Harvard Observatory.

In a recent statement, he says that: "In spite of the many advances that have been made during the year 1940 one cannot help but notice the retarding influence of the war on astronomical progress, not only in Europe but also in the United States. The uncertainties and delays connected with the sending of mail across the Atlantic make it difficult to get a clear picture of the present state of astronomical research in war-torn Europe. Until a few months ago British astronomers continued to publish papers at a not-too-much reduced rate. The summer issues of the Monthly Notices of the Royal Astronomical Society contain several articles that must have required thought and concentration. The recent

news of the bombing of the observatories in Greenwich and Edinburgh indicates that our British colleagues are now deeply involved.

"It has been more difficult to get a clear picture of what is happening in Germany. In spite of the war some German observatories appear still to be quite active. The current progress reports of the Observatories at Berlin, Hamburg, Potsdam and Breslau indicate that these



WYOMING

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Write for illustrated folder with map

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● Earth Trembles

Information collected by Science Service from seismological observatories resulted in the location by the Coast and Geodetic Survey of the following preliminary epicenter:

Friday, March 21, 2:58.4 a.m., EST

About 900 miles southwest of the Cape Verde Islands.

Latitude, about 7 degrees north. Longitude, 37 degrees west, on the mid-Atlantic ridge. Sharp shock.

For stations cooperating with Science Service, the Coast and Geodetic Survey, and the Jesuit Seismological Association in reporting earthquakes recorded on their seismographs, see *SNL*, Feb. 22.

are continuing with pure research at perhaps half the pre-war rate.

"The Blitzkrieg of the spring of 1940 had originally a paralyzing effect on research in Scandinavia, the low countries and France, but recent reports indicate that many astronomers in these parts of Europe are returning, perhaps as an escape from political uncertainties, to their own fields of research.

"So far as it is now known in this country, very few astronomers have been killed in action in the air, on the ground or at sea."

Science News Letter, April 5, 1941

ICHTHYOLOGY

Electric Traffic Control for Fish

A TRAFFIC-CONTROL device for fish is the object of patent 2,233,045 granted to F. S. Bonner of Kootenai, Idaho, and M. R. Miller of Huntington Park, Calif. It consists essentially of a gate-like structure which is placed athwart the stream or irrigation ditch from which the fish are to be barred. Contact of the fish's body with bars of the gate turns on an electric current, not strong enough to kill or harm it, but delivering just enough of a shock to make said fish lose interest in going in that particular direction.

Science News Letter, April 5, 1941

PSYCHOLOGY

Good States Produce, But Rich States Attract the Able

Psychologist Urges Free Trade in Great Ability But Warns of Danger of Exporting Too Much

THE MOST able men and women in America are produced in states that excel as good places to live, but they are then distributed to the rich states and manufacturing states, Dr. Edward L. Thorndike, eminent psychologist and educator of Teachers College, Columbia University, told the American Academy of Arts and Sciences.

This is probably for the common good, Dr. Thorndike believes.

"There should be free trade between the states in great ability as in everything else," he said. "It would be deplorable if any state used its power to keep gifted persons in, as some states are now using their power to keep goods from other states out."

But a state that is steadily exporting great ability should be sure, Dr. Thorndike warned, that it is keeping all that it needs. This is particularly true of business and industrial ability.

The work of an able painter, composer, poet, scientist, inventor or philosopher, he explained, benefits all states just as much as the state where he resides. Such men will be the best judges of where they should go.

"The benefits from the work of an able engineer, manufacturer, banker, merchant, craftsman or farmer are more localized," he said. "They do ultimately and indirectly spread to all mankind, but their first and direct action is upon the communities where they operate. An enlightened self-interest in the citizens of a state will teach them to cherish these abilities especially.

"It is shameful for a state to stone its

prophets in art and literature; it is both shameful and silly to stone its prophets in business and industry."

Dr. Thorndike traced the migrations of men of ability by studying men listed in *Who's Who*, *American Men of Science*, and *Leaders in Education*, noting where each was born and where he is now residing.

Then he gave to each state a score in general goodness—what he calls a "G score," which is a weighted average of 37 features of welfare (in 1930) including infant deathrate reversed, maternal deathrate reversed and other deathrates, items of expenditure for schools, teachers' salaries and books, percentage of persons sixteen to twenty attending schools, expenditures for recreation, rarity of poverty, infrequency of child labor, average wage, frequency of home ownership and per capita availability of such things as electricity, gas, automobiles, telephones and radios. Literacy, circulation of certain magazines, ratio of value of school to value of jails were some of the other items considered in estimating this goodness of life.

The three states highest in Dr. Thorndike's G score are California, Connecticut and Washington.

Dr. Thorndike explodes the popular idea that agricultural or rural communities produce the great majority of able men who are then "fed into the maw of industry, or sucked into the vortex of some metropolis, or sacrificed on the altar of capitalistic production."

Agricultural states actually do not produce quite their share of the able, and they fail relatively to retain them or to attract them.

Science News Letter, April 5, 1941

Flies are shortsighted.

In 100 years, from 1840 to 1940, the average *fleece* sheared from sheep in the United States increased from two pounds to eight.

King Herod's fortress in *Jerusalem* was named Antonia Fortress to honor Mark Antony.

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