

STATISTICS

Chance of Death From Tuberculosis Figured

FOR A WHITE male child born in the United States in 1930 the chances of dying of tuberculosis are 42.5 in 1,000. But for white boys born in 1925 the chances were 50.9 per 1,000 of dying of this disease, while those born in 1920 had 64.6 chances per 1,000 of eventual death from tuberculosis.

"This means that, out of every thousand white males born at the present time, twenty-two escape the death of tuberculosis to which they would have been fated under conditions prevailing ten years ago," statisticians of the Metropolitan Life Insurance Company, who computed the chances, explain.

White girl babies born in 1920 had 57.7 chances per 1,000 of dying of tuberculosis, while those born in 1930 had 35.6 chances per 1,000.

Negro boys born in 1930 had 96.7 chances per 1,000 of dying of tuberculosis. Negro girls born in that year had 91.3 chances per 1,000 of death from this disease.

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PSYCHOLOGY

Flash in Eyes Produces Strange Color Effects

KEEP WELL AWAY from flashlight photographers.

This advice would be given by Dr. K. Mackenzie, who was the victim of a sudden, unexpected flash, which took place just below his head, close enough to singe his eyebrows. He describes in the British scientific journal, *Nature*, his visual experiences after the flash.

The first effect was a complete "black-out," lasting for an indefinite period. Next Dr. Mackenzie could see the filament of a 100 watt gas-filled lamp about three feet away from him. It appeared as a bright red line. Then, being a scientist, he turned to his watch and started to observe himself.

After twenty seconds more he could distinguish the general outline of the furniture. It appeared as a red monochrome. In about fifteen seconds the color changed from deep maroon to light claret, and in about ten more seconds to orange.

Then the background and some white objects changed suddenly to green, at first olive, afterwards brightening to

emerald. The green faded rapidly, and after a slight intermediate yellow tinge white shades appeared for the first time.

The total illumination seemed, says Dr. Mackenzie, to increase steadily over the whole period. His pupils were still abnormally contracted at least two minutes after the flash took place, and owing to nervous reaction he is unable to state whether further after-images or color changes occurred.

Dr. Mackenzie's explanation of this experience is that the flash had reached its maximum intensity before either his pupil reflex or his eyelid reflex could operate. The eye was thus exposed to a very powerful beam of strongly actinic light. The peculiarity of the phenomenon was, he points out, that color sensation was regained discontinuously, and not in the spectral order that might have been expected.

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METEOROLOGY

Yellowstone Lake Has Huge Ice Output

YELLOWSTONE National Park has a superlative automatic ice-making plant, according to Park Ranger Allyn F. Hanks.

It is Yellowstone Lake, located at an altitude of 7,731 feet, which, during the winter months, would yield approximately 184,267,652.2 tons of ice at one cutting or about one and one-half tons for every man, woman, and child in the United States.

Ranger Hanks is in charge of the Lake district of the park, and last winter spent several months in this isolated section, 55 miles from the nearest railroad. "Night after night, with the thermometer hovering far below the zero mark and the snow piled several feet high in all directions," he explained, "one's mind turns to strange things, and I thought of the tremendous amount of ice contained in this large body of water which lay outside the door of the ranger station."

According to his figures, the average thickness of the ice on the Lake was estimated at 20 inches. With its area of 139 square miles and the weight of the ice figured at 57.2 pounds to the cubic foot, the total of over 184,000,000 tons of ice as the output of one cutting was estimated.

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IN SCIEN

PUBLIC HEALTH

Influenza Spread Increases Apprehension

SURGEON General Hugh S. Cumming, U. S. Public Health Service, is apprehensive regarding the increase in influenza cases throughout the country. A total of 26,144 cases were reported by state health officers for the week ending December 10. This is nearly double the number reported for the preceding week, while for the corresponding week of 1931 only 1,009 cases were reported.

The actual number of cases of influenza in the country is undoubtedly much higher than the reported number. Probably only one case out of every ten gets reported, Surgeon General Cumming pointed out. This is particularly apt to be the case at present when many people for financial reasons will not call a doctor for a mild case of influenza. The outbreak this year started on the West Coast, where the disastrous epidemic of 1917-1918 started, Surgeon General Cumming further pointed out.

Fortunately, the disease in the present outbreak has so far occurred in comparatively mild form and there has not been much pneumonia. Reports from western states showed decreases in the amount of influenza, indicating that the peak of the epidemic has probably been passed in that part of the country.

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PHYSICS

Scientists' Eyes Saved by Standard Lantern Slides

SCIENTISTS and engineers who sit through long scientific meetings will welcome the latest standardization project of the American Standards Association. Rules for widths of lines, lettering and symbols on lantern slide charts have been formulated and when put in practice are expected to reduce the number of illegible lantern slides shown at meetings.

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CE FIELDS

ANTHROPOLOGY

Another Neandertaler Found in Palestine

DISCOVERY of a complete adult Neandertal skeleton in the Cave of the Oven, at the foot of Mount Carmel in Palestine, is reported by cable by Miss Dorothy Garrod, British archaeologist, to Dr. George Grant MacCurdy of Yale University.

Dr. MacCurdy is director of the School of Prehistoric Research which is exploring for remains of ancient man jointly with the British School of Archaeology.

The newly found skeleton lay in the same cave which yielded the massive lower jaw of a man several weeks ago. Near the Cave of the Oven is the Cave of the Kids, where Dr. Theodore D. McCown found eight skeletons of Neandertalers last spring. In 1931, an additional skeleton was found, so that altogether anthropologists have eleven individuals of this remote Palestine cave-dwelling age to study and compare.

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ENGINEERING

Radium Discovers Flaws In Ten-Inch Steel

USING a diminutive capsule of radium salt instead of an elaborate X-ray camera, engineers now take pictures through steel as much as ten inches thick in search of threatening cracks and flaws. With this recently developed technique, castings for big guns of the U. S. Navy are made to reveal their weakness before they can be fired disastrously, and electric welds are tested without actually breaking the joints.

These are some of the applications of testing with gamma rays of radium described by Dr. Gilbert E. Doan of Lehigh University. Dr. Doan was active in research which developed these methods.

X-rays have been used for some time in industrial testing, he pointed out. But the X-ray method is satisfactory only for relatively thin metal, and requires exten-

sive apparatus, high-voltage electric current and trained operators.

"If the steel object were more than three inches thick it took so long for the X-rays to blacken the film that the process was hopelessly slow and costly," Dr. Doan said.

Now, since scientists have learned how to use gamma rays, they can test thicker castings more rapidly and with much less trouble, he explained. All that is required is a capsule of radium salt the size of a pea, and ordinary photographic paper.

The radium is put a short distance from the metal on one side and the photographic film, wrapped in black paper, is laid against the other side of the test specimen. The time of exposure depends on the thickness of the casting, a few minutes being sufficient in most cases. The developed film reveals the interior of the metal just as an X-ray of one's teeth gives the location of an abscess.

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METEOROLOGY

Winter Begins With Two Freakish Turns

THE FIRST two weeks of the weatherman's winter brought the United States two freaks of weather, one so unusual that "the records will have to be searched a long way back to find a precedent," J. B. Kincer, chief of the Climate and Crop Weather Division of the U. S. Weather Bureau, told Science Service.

The first abnormality was an excessive drop from average temperatures for the first winter week (the weatherman begins winter Dec. 1) to those for the second week. This change was felt throughout the central, northwestern and more western portions of the country and in some places was as great as fifty degrees Fahrenheit. Livestock in this region suffered.

The cold weather brought snow with it, so that practically all the country that is ordinarily visited by snowfall was blanketed at the same time. This extensive coverage is very unusual so early in the season, Mr. Kincer said. The fall was moderate, but it covered all states except the larger part of the South and the Pacific coast for a short distance inland.

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ARCHAEOLOGY

Scientists Plan to Learn Prehistory of Southeast

THE LOST STORY of what happened in Southeastern United States in the days before Columbus can be reconstructed, in the opinion of Matthew W. Stirling, chief of the Bureau of American Ethnology, who spoke at the conference on southern prehistory held in Birmingham. Half a hundred American prehistorians attended the conference, which was organized by the Division of Anthropology and Psychology of the National Research Council, to plan the hard task of writing the prehistory of the Southeastern United States.

Mr. Stirling pointed out that not long ago the ancient story of the American Southwest was as confusing as the story of the Southeast seems today. Science had a mass of unrelated facts about Pueblo Indians and Basket Maker Indians, gathered from excavating Southwestern ruins and from studying modern tribes and the writings of Spanish explorers. Today, through systematized research, the story of the Southwest is told in amazing detail—amazing considering that the Indians themselves left no writings—from a time before the Christian era down to the era of Spanish conquest.

Mr. Stirling declared that it is especially important that science gather all possible knowledge of the Indians who lived in the southern states in the days of the explorers and in more recent times. Information about these Indians whom the white man has met and known is especially valuable in interpreting the remains of the prehistoric Americans.

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SEISMOLOGY

Earthquake Shakes Peruvian Andes

THE HIGH ANDES of Peru, north of Lake Titicaca, were shaken by an earthquake early Friday morning, Dec. 9, according to calculations by scientists of the U. S. Coast and Geodetic Survey, based on data gathered by telegraph and radio by Science Service. The calculations showed the quake as centering in 14.5 degrees south latitude, 71 degrees west longitude. Time of origin was 3:35 a. m., eastern standard time.

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