

## PUBLIC HEALTH

**Tuberculosis In Girls  
Not Due To Social Fads**

**T**HE HIGH death rate from tuberculosis among girls in the 10-19 year age group is not due to the way they dress or the dieting fad, but to the fact that girls in the adolescent period are physiologically more susceptible to tuberculosis than boys in the same group, stated Dr. Lloyd Arnold of the University of Illinois College of Medicine at a meeting of the Illinois State Nursing Association in Chicago.

Dr. Arnold exhibited charts showing that since 1870, when the first vital statistics in this country were collected, the peak age for deaths from tuberculosis among girls was in the 10-14 year group, and it has remained in the same group in every succeeding decade.

In 1870, there were 208 girls who died to each 100 boys in the group of children 10-14 years. Comparable figures were: 1880—230 girls; 1890—250 girls; 1900—257 girls; 1910—262 girls; 1920—255 girls.

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## NEUROLOGY

**Sleep, Known To All,  
Still a Mystery**

**A**LTHOUGH you spend almost a third of your life in sleep, the problem of how sleep comes about is still a puzzle to the scientists who have given most thought to its solution, Dr. S. W. Ranson, professor of neurology and director of the Institute of Neurology, Northwestern University, said.

"Many theories have been advanced, but they are all unsatisfactory," he said. "It has been supposed that during activity fatigue substances are produced and accumulate in the blood and that these have a narcotic action on the brain. The accumulation of these substances would thus periodically induce sleep during which they would be excreted from the body thus allowing for the return of the waking state. But against this theory are the facts that sleep, as in an afternoon nap, may come when there is little fatigue, that extreme nervous fatigue often leads to insomnia, and that normal sleep, unlike ether narcosis, is easily interrupted by noise or other disturbances.

"Another theory, which at one time received considerable attention, is that during sleep the conduction pathways in

the nervous system are broken by the retraction of small contact points between the neurones which are the conducting units of which the nervous system is composed. If this occurred it would stop nervous activity just as effectively as pulling all the plugs from a switchboard would stop all communication over that telephone system. But there is no evidence that such retraction occurs."

Sleeping sickness, the disease affecting the patient with extreme drowsiness so that if not aroused he would sleep day and night, has been found to be accompanied by damage to a point in the midbrain near its junction with the forebrain. This region has a very important relation to the alternation of sleep and wakefulness, it has been found.

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## ORNITHOLOGY

**Poets' Favorite Birds  
Now In National Zoo**

**B**IRDS known by name to everybody who has read English poetry or literature have taken up residence "in person" in the National Zoological Park, Washington. Director William M. Mann has secured a small collection of English birds, which includes lapwing and waxwing; four finches; goldfinch, chaffinch, bullfinch, and hawkfinch; the European butcher-bird or shrike, enemy of the others; and most familiar and famous of all, the English robin, who "hides in a barn to keep himself warm" and is not at all the same bird as the larger, tawnier-breasted American robin.

The English robin is expected to receive a good deal of attention, not only from children who know it from the nursery rhyme, but from nostalgic Britons who may not have seen England for years. One such was found by keepers in the bird house before the red-breast's cage, talking gently to the "little chap"—quite disarmed of his traditional British reserve by the sight of a small bird from home.

In addition to the strictly British birds famed in English literature, there are two from the East, the bulbul and the shama thrush, which English men of letters have made known to the rest of the world.

Another new collection which Dr. Mann has started will be first-class typical specimens of the canary tribe.

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**IN SCIENCE**

## TESTING MATERIALS

**Strength of Crates  
Tested By Tossing**

See Front Cover

**A**N IMPORTANT phase of the work of the timber mechanics department of the U. S. Forest Products Laboratory at Madison, Wis., has been to perfect the designing and nailing of these boxes so that their durability is greater. Chemically treated nails and reinforcement by diagonal braces have given more rigidity to a crate than the use of a high-grade wood could.

"The mechanical baggage man" of the Forest Products Laboratory has given the technicians this information. This mechanical man is none other than a 14-foot hexagonal drum that revolves vertically. Inside, sharp edges of wood and metal project, so that with every revolution of the wheel, the box receives six meter-recorded bumps. In ten minutes the container receives all the hard knocks of a thousand mile journey by freight or express. Because of the effectiveness of the "baggage man," thirty-five industries have duplicated him.

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## ORNITHOLOGY

**Ptarmigan Increase in  
Alaska's National Park**

**A**PHENOMENAL increase in ptarmigan in Mount McKinley National Park, Alaska, in the past four years is reported by Superintendent Harry J. Liek.

When Superintendent Liek first went to the park, in the winter of 1929, these interesting birds were rarely even sighted. For two years little increase was noted. Then, in the winter of 1931, small coveys were seen traveling through the park. Now they are everywhere by the thousands, and Mr. Liek reports that flocks of several hundred at headquarters are a common sight.

During the winter the ptarmigan in McKinley Park live entirely upon the buds of willows and birch trees.

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# ICE FIELDS

## PALEONTOLOGY

### Beavers As Big As Bears Once Lived in America

**A**BOUT a million years ago the North American continent was inhabited by beavers as large as black bears. From this huge stature they varied in size to that of a California ground squirrel or muskrat.

This is the picture of the past as drawn by R. A. Stirton, curator of the museum of paleontology at the University of California, as the result of a three-year study of fossil beavers from the Tertiary and Pleistocene geologic ages. Thirty-four species were studied, which range back into the Tertiary period, approximately 40,000,000 years ago. Of these twenty occur in North America.

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## ANTHROPOLOGY

### Earliest Human Beings Not All Cave Dwellers

**S**TONE AGE man was not necessarily a cave man.

Doubt is cast on the prevalent conception that all our hairy, club-wielding grandsires and great-uncles had "walk-ups" in caverns, by Dr. Ales Hrdlicka of the U. S. National Museum, who has made an analysis of 360 sites in Europe and Asia where human remains or stone implements of Old Stone Age date have been discovered.

The earliest evidences of human activity, Dr. Hrdlicka finds, were found predominately in open sites, away from caves. As time went on, and the climate grew colder with the coming of the last great advance of the Ice Age glaciers, man took more and more to the caves, finally emerging into the open again, this time as a house-builder, with the coming of the New Stone Age.

Thus, during the remotest and crudest culture periods, the Chellean of approximately 200,000 years ago, the presence of man is evidenced only by crude stone artifacts, and out of 94 places where these have been found

only two are caves. Then comes the Acheulian, dating approximately from 150,000 to 100,000 B. C. Only 10 out of 46 identified sites are in caves.

With the coming of the Neanderthaler during the next state of prehistory—the Mousterian—the practice of cave-dwelling became considerably more widespread, but man still clung to the open. Sixty-six per cent. of the known Mousterian sites are caves.

From that point on there is a steady increase in the number of cave or rock shelter sites, until during the Azilian and Tardenoisian eras, about 10,000 years ago and just at the edge of the Old Stone Age, man seems to have been chiefly a cave dweller. Only ten per cent. of the sites found belonging to these periods are in the open.

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## OCEANOGRAPHY

### Rate of Light Absorption In Sea Water Measured

**G**REEN light is absorbed by the green waters of inshore arms of the sea less rapidly than either red or blue. This is indicated by results of experiments of Prof. C. L. Utterback of the University of Washington, and the late J. Watson Boyle, performed among a group of small islands near the entrance to Puget Sound and also off the coast of Alaska.

The light penetrating to various depths in the water was measured with a light-sensitive apparatus lowered into the sea and read by means of electrical instruments on the deck of a boat. The apparatus was fitted with three colored filters which could be rapidly changed by an electro-magnet while the instrument was still submerged. Thus red, green and blue light could be tested in quick succession.

The small absorption of green light by green water is only what might be logically expected, Prof. Utterback points out. Green water appears green to the eye because it partly reflects from its surface the green rays in sunlight, partly lets them sink in for a short distance and then sends them back out again. The results in the two groups of experiments confirm the reports of other workers who have tested light absorption in inshore waters.

Farther out at sea, where the water is blue, one might expect the absorption of the blue light to be the least, Prof. Utterback suggests.

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## SEISMOLOGY

### Deep-Seated Earthquake Located In Siberia

**Y**AKUTSK, in Siberia, was the nearest city to the epicenter of the Monday, December 4, earthquake, seismologists of the U. S. Coast and Geodetic Survey announced, after studying data gathered telegraphically by Science Service from four observatories. The approximate location of the epicenter was given as in latitude 63 degrees north, longitude 135 degrees east. This point is somewhat to the northeast of the city of Yakutsk, and east of the Lena River. The earthquake was deep-seated, the slip occurring some miles beneath the surface; but the shock was not severe enough to cause material damage, the scientists estimated.

Observatories supplying data to Science Service were those of the Jesuit Seismological Association at Georgetown University, Washington, D. C.; Fordham University, New York City, and St. Louis University, St. Louis, Mo., together with the station of the U. S. Coast and Geodetic Survey at Honolulu, Hawaii.

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## ARCHAEOLOGY

### Old Britons Were Cannibals, Archaeologist Discovers

**C**ANNIBALISM was a practice among the natives of Britain about the time the Romans came, is the discovery just reported by G. C. Dunning of the Society of Antiquaries.

Mr. Dunning found the evidence of human bones split for their marrow while he was excavating at Salmons-bury Camp near Bourton-on-the-Water, in Gloucestershire. About thirty of the split human bones, believed to be female bones, were unearthed.

Aside from their cannibalism, the Britons who lived at the site were considerably civilized, Mr. Dunning reported. The surprising feature is that the cannibalistic practices occurred within the Christian era, near the time when the Romans extended their conquest over the island.

A pike-head found near the junction of two well-known trout streams was also described. It shows that ancient fishermen used the stream long before its modern era of popularity.

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