

search but have also had long experience as executives in charge of the nation's foremost scientific organizations and institutions.

The President's executive order establishing the new board is as follows:

"The National Research Council was created at the request of President Wilson in 1916 and perpetuated by Executive Order No. 2859, signed by President Wilson on May 11, 1918. In order to carry out to the fullest extent the intent of the above Executive Order there is hereby created a Science Advisory Board with authority, acting through the machinery and under the jurisdiction of the National Academy of Sciences and the National Research Council, to appoint committees to deal with specific problems in the various departments.

Members of Board

"The Science Advisory Board of the National Research Council will consist of the following members who are hereby appointed for a period of two years: Karl T. Compton, Chairman, President, Massachusetts Institute of Technology, Cambridge, Massachusetts; W. W. Campbell, President, National Academy of Sciences, Washington, D. C.; Isaiah Bowman, Chairman, National Research Council, and Director, American Geographical Society, New York City; Gano Dunn, President, J. G. White Engineering Corporation, New York City; Frank B. Jewett, Vice-President, American Telephone and Telegraph Company, and President, Bell Telephone Laboratories, Incorporated, New York City; Charles F. Kettering, Vice-President, General Motors Corporation, and President, General Motors Research Corporation, Detroit, Michigan; C. K. Leith, Professor of Geology, University of Wisconsin, Madison, Wisconsin; John C. Merriam, President, Carnegie Institution of Washington, Washington, D. C.; R. A. Millikan, Director, Norman Bridge Laboratory of Physics, and Chairman of the Executive Council, California Institute of Technology, Pasadena, California."

Science News Letter, August 19, 1933

In 50 leading American cities cancer deaths have increased from approximately 71 to 122 per 100,000 population in about 20 years.

The freighter *Seirstad*, which hit an iceberg and sank May 18, landed on two transatlantic cables, putting them out of commission for four days.

PUBLIC HEALTH

Decade's White Plague War Adds Year to Average Life

ALMOST an entire year has been added to the general average duration of life by America's successful battle against tuberculosis within the decade from 1920 to 1930, statisticians of the Metropolitan Life Insurance Company of New York City have found. About another year's gain stands to the credit of the previous decade.

That so much has been accomplished in increased life expectation through attack on a single disease is considered to be "very remarkable and gratifying."

According to the mortality statistics of the recent census year, 1930, the curtailment of the average length of life due to tuberculosis was just over one year for white persons of either sex. In 1920 it was a little short of two years. Still another decade further back in time it was about three years.

The loss of potential years of life through a given cause depends not only on the degree of the mortality from that cause, but also on the age period at which its effect is concentrated. In this respect tuberculosis is in a particularly unfavorable position.

Deaths from tuberculosis occur very largely among young persons or persons at the prime of life. As the result of

this, although the death rate from tuberculosis has fortunately decreased in late years so far as to relegate this cause to the seventh rank among the principal causes of death, yet the number of years of life lost, on the average, is still a relatively important item.

Among white persons in the United States in 1930, the average length of life or the expectation of life at birth is shortened by 1.1 years through all forms of tuberculosis. Up to about the twentieth year of life the curtailment of the average remaining after-lifetime by tuberculosis remains nearly the same, irrespective of age, namely, about one year, according to the mortality as of 1930.

After this age it falls rapidly. Among white males, for example, the loss of remaining after-lifetime at age 42 is about one-half year, at age 62, only .15 of a year, or less than two months. The situation is strikingly different in the case of heart disease. There the loss of years of life was nearly the same for all ages up to 52, and only slightly less even at age 62, because heart disease claims most of its victims among persons in or past midlife.

Science News Letter, August 19, 1933

ARCHAEOLOGY

Greek Kids Got Spankings; Babies Had Rattles and Bottles

GREEK children got spanked with the classic equivalent for a slipper, and their infant brothers and sisters were amused with rattles and fed from nursing bottles.

These connections between child life in ancient and modern times were dug out of masses of Greek art material by Prof. Anita Klein and are described and pictured in a book recently published by the Columbia University Press.

A number of Greek paintings show children undergoing the painful application of a sandal-sole, and liking the process as little as a modern youngster would. Even the children of the gods

were not immune: one scene shows Cupid about to be "attended to" by his mother, Venus, while his father, Mars, looks on.

But when little Greek children were good, they did not go unrewarded. Prof. Klein's researches have brought to light astonishing numbers of toys used ages ago, as well as pictures of pets and records of childish amusements and games. The toys included play-carts and hoops exactly like those used by children today, as well as terra-cotta and bronze figures of dogs, horses, deer, cattle, lions, tortoises, mice, and domestic poultry. Older boys are shown

playing hockey, and one vase is decorated with a picture of two girls balancing on a see-saw.

Babies had feeding bottles made of pottery, though of course these could not be equipped with rubber nipples. These bottles were shaped rather like small teapots, with short side spouts, some of them smoothly rounded into nipple form. One of the bottles has a clay pellet inside, presumably so that the nurse could rattle it for the infant's amusement after it had been emptied.

Rattles for babies are usually hollow figures of terra cotta, with pellets inside. Prof. Klein remarks that these seem rather too fragile for a baby's own handling, and may possibly have been intended for the nurse to shake, attracting the child's attention.

Science News Letter, August 19, 1933

SURGERY

1,000,000 Operations In United States Every Year

OVER a million surgical operations a year are now performed in the United States, with few resulting deaths. This high figure was cited by Dr. George Crile, well-known surgeon of the Cleveland Clinic, in a report to the American Association for the Advancement of Science.

Telling what has been achieved in the past century and what lies ahead in the next, Dr. Crile said that one hundred years ago there were no surgical dressings. The X-ray was undiscovered. There was no skin grafting. Tonsils were not removed. Brain tumors were not disturbed. There were no operations to remove gall stones. Infection was not controlled. Working without anesthetics, the surgeon of a hundred years ago had to depend on a swift knife and hot iron, a steady hand and quick intuition.

"It was," said Dr. Crile, "the art of a swordsman rather than of a scientist."

Surgery has become more conservative and no longer does its chief work amputating limbs and cutting violently into human anatomy. Today, Dr. Crile said, every organ and tissue in the body is subjected to surgery, and the work is so delicately and precisely done that shock, hemorrhage, and infection are remarkably reduced.

A prediction that there will be fewer operations in the coming century was made by the surgeon, who said that biochemistry and biophysics will tend to supplant the surgeon's scalpel.

Science News Letter, August 19, 1933

ORDNANCE

"Boat Tail" Bullets Improved For Use in American Weapons

THE BULLET is foolish; the bayonet alone is wise.

This aphorism is credited to a Russian general of the Crimean War period. It may have had some truth in it then, for those were the days of the earliest large military use of rifled firearms—guns as clumsy and heavy as the old-fashioned smoothbore muskets they had barely replaced, which threw thumb-size slugs of lead rammed uncertainly down their throats on top of a handful of black powder that made so much smoke as to blind the soldier when he tried to aim his next shot. Certainly the general's point of view became that of Russian military men generally, for Russian troops even in these Soviet days still conduct all maneuvers with bayonets fixed.

But bullets have been learning a thing or two in the past hundred years; they aren't as bullet-headed as they used to be. In a recent article in *Mechanical Engineering*, Major Glenn P. Wilhelm of the Ordnance Department, U. S. Army, tells of the past century of progress in making bullets wiser.

One hundred years ago, he says, the standard military smoothbore musket could just be depended upon to hit a man at 100 yards. Today's military rifle can hit the same target just as easily at 1000 yards; and in the hands of a sharpshooter and with special ammunition and sights it will turn the trick at 1500 yards.

A century ago a soldier was doing

very good shooting if he could put ten consecutive shots inside a three-foot circle at 100 yards. Today's expert rifleman, shooting at that short range, puts all ten into a three-inch circle; and targets have been turned in that had all ten shots apparently through the same single hole.

One hundred years ago a musket could be fired once in two minutes. With the latest semi-automatic military rifle a soldier can deliver 100 aimed shots in the same two minutes.

The terrific increase in deadliness of fire is due largely to improvements in arms and ammunition, for although today's soldier has a better mechanical education he almost certainly is no stronger or quicker than his great-grandfather who "fit the Redskins" at Tippecanoe.

The latest thing in making American military bullets wiser is giving them what is called the "boat tail." This means tapering their rear ends to approximately the same shape as the stern of a boat, instead of leaving them flat and square across as heretofore. This lets the air close in around them as they slip through it; the old square base created a partial vacuum that pulled back on them and decreased their velocity and hence their flatness and accuracy of flight.

This trick, originally worked out by the French, was quickly adopted by the Germans during the World War when they found the advantage in range it was

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