VITAL STATISTICS

Lower Maternal Death Rate In Childbirth in 1937

FEWER deaths of mothers in childbirth is the bright spot already showing in the 1937 health record. A drop of 11 per cent. in the cumulative death rate for diseases of the maternal state is announced by the Metropolitan Life Insurance Company. This means that out of every hundred mothers giving birth to children so far this year, 11 who might have died have been saved.

The figures of the life insurance company apply to industrial policyholders but the maternal death rate has been declining continuously in the general population of the United States as well.

The drop in the country's birth rate has obviously been an important factor in reducing maternal deaths due to conditions associated with childbirth, since fewer women are being exposed to this risk. The drop in maternal mortality, however, has been much greater than that in the birth rate, the life insurance company statisticians point out. This shows that genuine improvement has taken place. Credit for the improvement goes largely to the increasingly better medical supervision and nursing care that American women, as a class, have been receiving before, during and after the birth of their children.

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PUBLIC HEALTH

Winners in City-County Health Contests Announced

NAMES of cities and counties in the United States that do most to protect the health of their inhabitants have just been announced. These are the winners this year in the city and rural health conservation contests conducted annually by the Chamber of Commerce of the United States with the American Public Health Association.

Milwaukee, Wis., is winner among competing cities of over 500,000 population. Reward for meritorious achievement was given to Pittsburgh. Other winners are: for cities between 250,000 and 500,000, Dallas, Texas; for cities between 100,000 and 250,000, New Haven, Conn.; for cities between 50,000 and 100,000, Pasadena, Calif.; for cities between 20,000 and 50,000, Greenwich, Conn.; for cities under 20,000, Middletown, N. Y.

In the rural contest the country is divided into six geographic areas. Winners of this contest are: for the northeastern division, Columbia Co., N. Y.; for the eastern division, Davidson Co., Tenn.; for the southeastern division, Pike Co., Miss.; for the north central division, Shawnee Co., Kans.; for the south central division, Dallas Co., Texas; for the western division, Los Angeles Co., Calif.

Not all cities in the country compete. Improvement in health and a saving of thousands of lives, however, is believed to have been accomplished as a result of the stimulation to health protection which participation in the contest provides. Among the larger cities, for example, the 26 cities which have continuously competed had in 1934, last year for which complete returns are available, a death rate which if it had prevailed in the remaining large cities of the country would have represented a saving of 19,600 lives annually.

The city health contest is financed by a group of life insurance companies and the rural contest by the W. K. Kellogg Foundation of Battle Creek, Mich.

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ETHNOLOGY

Indians Could Read Beads? No, Says Ethnologist

NO USE handing an Indian an old wampum belt and asking him to read historic events or secrets "written" in bead patterns.

Bead writing of this sort never existed, says J. N. B. Hewitt, Smithsonian Institution ethnologist. Yet many white people, even some Indians, believe certain tribes invented a bead language to record matters of importance.

So persistent is the belief, says Mr. Hewitt, that wampum belts have even been seized and destroyed, in the mistaken idea that Indians would then have no record of some treaty argument, or business deal, or "heathen" ceremony.

In fairly modern times, an Iroquois chief would hold wampum strands while reciting the ritual called the requickening address. But Mr. Hewitt cannot find the slightest evidence that a chief got any help from the beads for the actual information in his address.

Iroquois Indians did devise certain bead arrangements to serve as cues for memorizing points. An Indian speaker who "read the wampum" was merely keeping track of, say, whether he had reached point four or not.

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IN SCIENC

MEDICINE

Serum Most Powerful Weapon Against Pneumonia

MOST powerful weapon the modern physician can use to fight pneumonia, which takes an annual toll of more than 100,000 in the United States, is specific immune serum, Dr. Edward L. Bortz, of the Post-Graduate School of Medicine of the University of Pennsylvania, told physicians at the Post Graduate Institute of the Philadelphia County Medical Society and the First District Councilor Meeting.

Describing the dramatic results obtained with serum in treating pneumonia, Dr. Bortz said:

"From a desperate, acute, consuming illness with a dangerous temperature, chest pain, restlessness, paroxyms of cough, and approaching delirum, the prompt administration of the correct serum will sweep away the toxemia, the temperature will fall, the pain in the chest will disappear, the pulse and respiration return to normal, the cough is quieted and the patient finds himself practically a well man, emerging as it were from an evil dream.

Turning to statistics, Dr. Bortz said the high pneumonia death rate can be cut at least 50 per cent. by modern treatment, which means prompt diagnosis and treatment with the appropriate serum. Diagnosis in pneumonia means determining by laboratory tests of the patient's sputum which of the many pneumonia germs are causing the disease in a particular case. This test is called typeing and the germs are known respectively as Type I pneumococcus, Type II pneumococcus, and so on for all the different members of the pneumonia germ family.

Unfortunately, curative serums have not been developed for all the pneumonias, but where they have, their use will save thousands of lives.

Nutrition, elimination, rest and nursing care are other important factors in the treatment of pneumonia. Dr. Bortz said that oxygen is an important aid, but that its use "has unfortunately not affected the mortality rate."

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E FIELDS

DENTISTRY

More Toothache For Boys Than Girls

HERE is bad news for little boys and better, although not entirely happy news for little girls—science has found the boys are far more likely to have toothache than the girls.

Among 98 boys and girls between 6 and 8 years old, the girls averaged 8.12 cavities per girl and the boys averaged 13.72 cavities per boy, Drs. Paul K. Losch and Fred W. Morse, Jr., of Harvard Dental School reported.

Of the five boys and five girls with the most cavities, the average per child was 38.2 for the boys and only half that, 16.8, for the girls. Of the five boys and girls having fewest cavities, the girls had not a single cavity but the boys averaged 2.6 cavities per boy.

Searching for causes, the Harvard dentists found only three factors ordinarily associated with tooth decay which had any positive correlation with the cavities found in the 98 children. These factors were the number of prolonged illnesses, such as would interfere with nutrition; the presence of aciduric bacilli; and early rickets due to insufficient vitamin D.

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MEDICINE

Kidney Infections Yield To New Germicide

THE NEW chemical germ fighter, sulfanilamide, which gives promise of conquering deadly streptococcus infections such as childbed fever, is apparently also winning the fight against infections of the kidneys and bladder.

Successful use of this chemical and its relative, Prontosil, in the treatment of these common and often refractory infections was reported by Dr. Russell D. Herrold of the University of Illinois College of Medicine at the meeting of the Society for Experimental Biology and Medicine.

"This drug would seem to be the first definite advance in the use of chemicals to combat infections since the discovery of the chemical treatment of syphilis. It opens a new field in the fight against infectious diseases," he said.

"It is startlingly successful, often in as short a time as three days," Dr. Herrold stated. "Its action apparently is somewhat different from that of another useful urinary tract antiseptic, mandelic acid, which has become quite generally used in the past six months. It is destined to replace the acid almost completely.

"The new compound is much more palatable to the patient," he said. "In one-tenth of cases, mandelic acid cannot be used. The new chemical has revealed no such limitations yet."

The chemical is taken by mouth in tablet form and in serious cases is made into a solution for hypodermic injection.

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PALEOBOTANY

Fossils in the Making Found Under Volcanic Ash

FOSSILS were not all made and stored in the rocks millions of years ago. The first steps in the making of plant fossils have been seen and reported to the Carnegie Institution of Washington by one of its research associates, Dr. Ralph W. Chaney, chairman of the department of paleontology at the University of California.

When the great triple-peaked volcano Katmai in Alaska blew up in 1912, hurling some five cubic miles of ash into the air, part of the finely powdered material settled like snow on the branches of evergreen trees, pulled off billions of their needles, and bore them down to the ground.

Now, a quarter-century after the great eruption, Dr. Chaney has revisited the region and dug down to the bottom of the foot-deep ash. There he found the tree leaves pressed down in a matted layer, mostly in the lower few inches. They looked for all the world like the matted fossilized leaves he has often investigated in the ancient geological deposits in Oregon known as the John Day formation, which were volcano-formed many millions of years ago.

Of course the single Katmai eruption layer had only a small fraction of the thickness of the John Day formation. Many more eruptions, covering many centuries, would be needed before the Alaska situation would resemble the Oregon beds. But the basic principle is the same; and one man has seen, well within his working lifetime, the beginning of a true process of fossilization.

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ASTRONOMY

Probe to Universe's Limits For New Light on History

A WIDE-spread search that extends to the limits of the visible universe is being pursued in the hope that new light will be shed upon history, scientifically speaking.

Astronomy is not usually considered a branch of history but telescopes can look out in space's depths and see what happened there a hundred million years ago—that is, light from a stellar outburst takes that time to reach earth.

Dr. Fritz Zwicky, young and brilliant California Institute of Technology physicist, is investigating history in this sense with the help of Mt. Wilson Observatory's Drs. W. Baade, Edwin Hubble and M. L. Humason.

Scientifically speaking, he says, "history means the change in time of dimensionless ratios of significant physical quantities." As for instance, the famous red shift in the rainbows or spectra of distant star aggregations as compared with nebulae relatively neighbors to the earth. Interpreted under the theory of relativity, this is a historical effect.

The assumption that history must be operative suggests clearly to Dr. Zwicky the necessity of an investigation of all those dimensionless ratios between significant physical quantities. Only after this investigation has been completed does he believe a final understanding of the red shift and other cosmic phenomena will be possible.

Other effects are being investigated by Dr. Zwicky. There does not seem to be any significant difference in the speed of light from distant parts of the universe compared with light from nearby stars. But there are suggestions that great exploding stars, distant supernovae, spraying light and particles out into space, are seen or "received" imperfectly here on earth because some kinds of their radiations travel more slowly than others. Suggestive discrepancies have turned up in astronomical studies but not so positively that conclusions can be drawn.

This is the stuff that philosophy is made of. As yet the researches stay within the bounds of relativity theory's principles, but this investigation on fundamental reference systems for physical measurements on a cosmological scale may well go beyond the classical theory of general relativity. It promises to out-Einstein relativity.

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