HYGIENE

Babies Face Hazards

By S. J. CRUMBINE

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The average American is proud of the safeguards put about the children of his country and inclined to feel that there is very little left to be done by the United States in the way of health protection.

The scientist, working among stolid, unchangeable facts and figures, is less optimistic. He knows, for instance, that life in a war-time trench during the last war was far safer than it is in America's peace-time cradle. Records show that for every thousand men in the American army, ten lives were lost. For every thousand babies born in the United States in 1924, over seventy lives were lost the first year.

The scientist knows too, that forty thousand school children in America die yearly of preventable causes; that one-third of crippled adults are injured during the first six years of their lives and a large per cent. needlessly handicapped; that a baby born in this country today has slightly more chance of living more than a week than has an old man of ninety.

To put these startling facts and statistics and their remedy before the layman—the mother, father, and teacher—is the object of National Child Health Day, the idea for which originated with the American Child Health Association four years ago. The day is celebrated on May 1, the beginning of spring, and its fourth observance found complete year-round organizations in every state, with chairmen, usually representing state health departments, aided by national groups in the country, such as the churches, government departments, welfare agencies and clubs.

The ideal of National Child Health Day is so to focus attention upon the needs of children that in every community an adequate health service can be worked out.

Of the terrific loss of life under one year of age in 1924, we find that one-half (54.5 per cent.) of these deaths occurred during the first month, and the majority during the first seven days. To these dying so early must be added those born dead. The enormous still-birth rate and early infancy rate point to causes operating before birth, which can only be reached through care of the expectant mother. Therefore, the first community concern in providing a child health service is to provide simple, yet practical means by which every expectant mother may secure such medical advice and care as will minimize the hazard of child-bearing and insure a vigorous and well-nourished child at birth.

We find, too, in a further study of the causes of infant mortality, that large numbers still die from cholera infantum, a disease much more common among bottle-fed than breast-fed babies, and due probably in the majority of instances to unwholesome milk. This fact points to another way in which communities may safeguard the lives of babies, as well as children and adults, by providing a clean and safe milk supply.

The production and distribution of safe milk is so easy of accomplishment that it is fair to say that the community which fails to provide a safe milk supply for its people is guilty of a grave offense against society, and must be morally responsible for the results of such neglect. It is just as easy and certain to kill with a contaminated milk or water supply as with the pistol or dagger; the victims are just as dead.

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MEDICINE

Disease Fought After Death

Immunity to disturbing disease invasions from the outside does not need to end with the death of the animal that possesses it, but will live on in a part of its tissues if these can be kept alive by artificial means. Dr. William Bloom describes, in *Archives of Pathology,* an ingenious experiment in which he showed that bits of a rabbit's lung, kept growing in a glass vessel after the rabbit's death, were still able to kill off disturbing elements aaginst which the rabbit had been rendered immune during its lifetime.

In his research, Dr. Bloom substituted alien red blood cells, taken from a pigeon, for disease germs. He was able to do this because the blood of any animal will react toward many outside substances, especially proteins, very much as though they were hostile germs. He made the rabbit immune to the injection of these blood corpuscles by suitable physiological treatment. Further injections of pigeon blood corpuscles had no effect on the rabbit; they were simply destroyed by the white cells in its blood. Then the rabbit was killed, and a bit of its lung kept going as a tissue culture. Pigeon's blood was placed upon it, and the conduct of the white blood cells in the culture watched through the microscope. These minute "policemen of the blood" acted as though they were still in the living animal, seizing upon the alien corpuscles and devouring them.

As a further test, a tissue culture was made from the lung of another rabbit which had not been immunized. When pigeon's blood was added, its white cells did nothing. But when a little blood serum from the immunized rabbit was added, there seemed to be something in it that stimulated the white cells to action, for they then eagerly went after the pigeon corpuscles and soon destroyed them.

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ASTRONOMY

Dust Cloud Envelops Earth?

That the earth, the sun, and all the nearby stars may be surrounded by a cloud of cosmic "dust," or some sort of absorbing matter, which extends from the sun for 600 trillion miles or more, is the idea advanced by Prof. Edward S. King, of the Harvard College Observatory.

Prof. King makes this suggestion after a study of the color of the stars, and points out that such clouds of absorbing matter are not unique. In many parts of the sky they hide the stars behind them, and they surround some star clusters. One of these is the famous group, the Pleiades, a number of stars loosely gathered together, and mixed in with such a "dust" cloud.

It has been suggested before that such a cloud extends through all space, and that its effect is to make stars look redder, as their light passes through a greater thickness of it. This effect is similar to the red sunsets which appear when the earth's atmosphere is full of dust.

However, if the clouds were present throughout the universe, the most distant stars would look intensely red, but this is not the case. Prof. King does find that up to a certain distance, stars do get redder, the farther away they are; but beyond this distance, about a hundred light years, as the astronomer measures it, there is no increase in redness with distance. The light year is the distance that a beam of light will travel in one year, or about six trillion miles.

His observations may be explained, says Prof. King, if the sun, and all the stars within that distance are in a dust cloud, so that the farther away they are, the more the material their light has to penetrate, and the more of the blue rays they lose, making the light proportionally stronger in red. But the light from stars outside the local cloud has to penetrate the same amount of dust, regardless of how far the stars are.

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