SCIENCE NEWS

Science Service, Washington, D. C.

THE BIRTH RATE

WAR has caused the birth rates in Germany and France to drop considerably. The number of babies born in America and England, on the other hand, has shown a decided increase, according to a report issued by the Metropolitan Life Insurance Company.

Germany's birth rate fell by 25 per cent. from 1940 to 1942, the latest year for which a national figure is available. Figures for the large German cities for the first half of 1943 show a further decline, and in all probability this has continued uninterruptedly.

In France the birth rate had already fallen below the death rate before the country was overrun by Germany. In 1938 only about 14 or 15 children were born for every 1,000 of the French population, and even this was reduced to 13 by 1941. The following year, however, the birth rate surprisingly rose almost to the prewar level.

Italy showed a drop of about 14 per cent. in her birth rate from 1940 to 1942. Since then, with war being waged on her territory, the birth rate there has undoubtedly continued to fall.

"The experience of England has been very different from that of the other countries at war," according to the report. "With most of her men kept within the country, the birth rate in the first years of the war declined only five per cent. from 1939 to its low point in 1941. A sharp recovery in 1942 and a further increase in the following year brought the English birth rate back to the level of fifteen years ago. Current figures for the urban population of England indicate a further rise in the birth rate."

In the few years from 1939 to 1943, the birth rate in America was increased by 27 per cent. The number of births in 1943 exceeded 3,000,000, about 1,000,000 more than during the bottom year of the depression. The birth rate in 1943, 22 per 1,000, was the highest in about two decades.

During the present year, despite the fact that husbands are being sent overseas in increasing numbers, in the United States more than 20 babies are being born for each 1,000 population. This is higher than for any recent year except 1943, and there is a good chance that around 3,000,000 babies will be born in 1944.

ITEMS

NEW standards for the amounts of vitamins required in the daily diet and for the amounts of foods needed to supply them may come from discoveries of vitamin factories in the body, it appears from the report of Professor C. A. Elvehjem, of the University of Wisconsin. These internal vitamin factories are operated by bacteria inhabiting the intestinal tract. Scientists a generation or more ago saw the possibility of the intestinal bacteria being related to health and length of life, but the discoveries of their role in synthesizing certain vitamins have been made within recent years. Vitamin synthesis by intestinal bacteria apparently varies in different species of animals. It is impossible, Professor Elvehjem said, to predict from studies with one species of animal, such as rats or dogs, that other species, such as chickens, monkeys or man, will be found to have the same kind of bacterial vitamin synthesis. Bacterial vitamin synthesis also varies, at least in some animal species studied, according to the type of diet exclusive of its vitamin content. In rats, for example, synthesis of riboflavin, one of the B vitamins, is decreased by the presence of fat in the diet. Even the type of fat affects production of the vitamin by intestinal bacteria. The discovery that both thiamin (vitamin B_1) and riboflavin are produced in the intestinal tract of man was made in experiments in which the diet was high in rather pure carbohydrate. "The effect may be quite different in the human living on a typical mixed diet," he said. "In fact, we now have preliminary results which indicate that this is true."

ALL-MAGNESIUM wings on aircraft, fabricated entirely of magnesium, have been in use for over a year on Navy training planes, according to J. C. Mathes, of the Dow Chemical Company, who spoke at the New York meeting of the American Society of Mechanical Engineers. Thirty sets of wings, he said, have been in regular service at naval training stations since early in 1943, and have proved entirely satisfactory. Development work on all-magnesium wings has been under way by the Dow Company, in cooperation with the Navy and the U. S. Bureau of Aeronautics, since 1940. The original set was designed for the Navy's SNJ–2 advanced trainer built by North American Aircraft Company. After static tests and certain minor changes in design in 1942, the 30 sets were ordered. The magnesium wings are 14 per cent. lighter than the standard aluminum wings, and, according to the speaker, are stronger than wings of low-carbon steel, stainless steel, plywood and other materials tested.

TIN cans resist rusting in outdoor exposure in hot humid weather when treated by a new process developed at the Battelle Institute at Columbus, Ohio. The process is the result of research here and in England to develop full protection for food for fighting men in parts of the world where ordinary treatment is not sufficient. In the new method, after the cans are filled, sealed and processed, they are dipped momentarily into a hot solution of alkaline salts. This cleans the surface and produces an invisible film over the tin. No lacquer or enamel is used on the cans, as in present protective processes. Lacquering tin plate to prevent rusting involves expensive and inconvenient operations in the manufacture of cans. The hot alkaline process is readily adaptable to production lines in canneries. Protection against corrosion may not be quite as good as lacquers under some conditions, but it appears to be adequate for most purposes. The mechanism of the new process is not definitely understood as yet. However, tests show that pinhole corrosion is effectively delayed and the cans stay bright and clean after weeks of outdoor exposure.