

MEDICINE

Childbirth and War Are Now Robbed of Gravest Danger

New Chemical Saves 17 Out of 20 Mothers Infected With Childbed Fever—Wound Infections Fought

CHILDBIRTH robbed of its gravest danger for mothers. Maternal deaths from the most dangerous form of dreaded puerperal fever prevented in 17 out of 20 cases.

Medical science is on the brink of these great life-saving achievements if present hopes are justified.

Four out of five mothers who now die of "childbed fever" are saved by a new treatment used at Queen Charlotte's Hospital, London. There about half the puerperal fever cases in the English metropolis are treated. Dr. Leonard Colebrook, director of the Bernhard Baron Memorial Laboratories at the hospital, is now visiting in this country and relating the results obtained with the new treatment to American physicians and medical scientists.

This latest medical conquest recalls the dark days before the germ theory of disease was established when motherhood was so often a death sentence. Then Oliver Wendell Holmes and Ignaz Philipp Semmelweis demonstrated that the infection of childbed fever came from the dirty instruments and hands of the doctors and nurses. Antiseptics, and later asepsis, killed these germs. Now the work accomplished by Dr. Colebrook and his colleagues at Queen Charlotte's Hospital makes bringing children into the world even safer.

Credits Germans

Dr. Colebrook, however, modestly insists that he is "not the hero" of the story. That glory belongs, he says, to two German chemists, Mietzch and Klarer, who first prepared a certain red dye, and to Dr. G. Domagk, also a German, who first showed that this dye was able to protect mice infected with the deadly streptococcus of puerperal fever and other serious human ailments.

Prontosil is the name of the dye that seems destined for a high and shining place in medical science. The saving of maternal life, important as that is, is only part of the achievement expected of Prontosil. This red dye may give physicians the long-sought "ideal internal antiseptic"—the chemical that can

kill disease germs in the body without injuring body tissues. For while Prontosil itself only destroys certain members of one family of germs, Dr. Colebrook hopes that chemists and biologists will learn from the action of this dye how to make other chemicals that will prove certain and safe cures for other human ills due to micro-organisms.

Go Slow

Dr. Colebrook emphasized this point at a meeting of the Washington Branch of the Society of American Bacteriologists. He urged practicing physicians to go slowly in their use of the new treatment. At this stage, he explained, it is more important to learn how the chemical acts, and how it may be made even more effective, than it is to build up a record of enormous numbers of patients cured by Prontosil.

Puerperal fever, dreaded childbirth complication, is only one of the diseases caused by streptococci. Erysipelas, scarlet fever, septic sore throat and

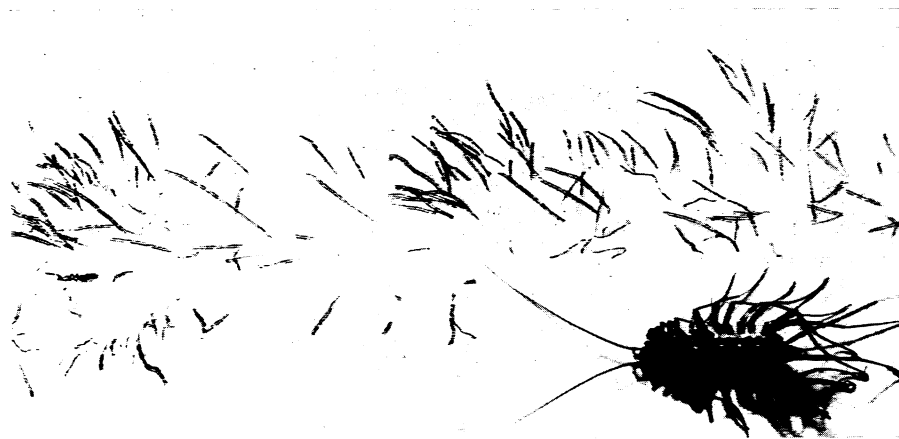
septicaemia, commonly called blood-poisoning, are others. For all of these Prontosil is possibly the long-sought cure.

Puerperal fever, however, is the particular infection that Dr. Colebrook and associates at Queen Charlotte's Hospital have studied. This condition is due to infection. Other germs besides streptococci may cause the condition, but fully one-half the cases, and those the ones most often ending in death, are due to infection with a particular streptococcus identified by scientists as Beta hemolytic streptococcus.

Heavy Toll

This deadly disease germ, a tiny, round organism, takes the lives of 1,200 mothers in childbirth every year in England and Wales, approximately 4,000 in the United States, and inflicts serious illness and suffering on five times that number of mothers, too often at the birth of their first child.

For five years before the discovery of Prontosil, Dr. Colebrook and colleagues at Queen Charlotte's Hospital had been studying this deadly puerperal fever. They have learned much that may help to prevent the condition, though that is part of another story, but they learned of no way that would prevent the deaths of mothers who became infected. Not all mothers with this condition die, but no treatment so far can be credited surely with saving the lives of any who recover.



CENTIPEDE WRITES SEISMOGRAM

The Fly, in the fable, clung to the spoke of the chariot-wheel, saying, "See what a dust I raise!" A similar parable might be told of the centipede called George, who is official mascot in the private seismological observatory of Mrs. M. M. Seeburger of Des Moines. George wandered across a freshly prepared sheet of seismograph record paper, leaving a trail of scrambled footprints more portentous-looking than the record of a mighty earthquake that ruins great cities. George emerged from hibernation a short time ago; by this token, says Mrs. Seeburger, she knows that spring is at hand.

The average deathrate every year for five years at Queen Charlotte's Hospital for puerperal fever patients infected with hemolytic streptococci was 22.8 per cent, Dr. Colebrook reports. During the sixth year, when Prontosil treatment was given to all patients so infected except a few who were not very sick, the deathrate was 4.7 per cent. Very nearly four out of five previously doomed mothers were saved. Careful study of the records and of the patients at Queen Charlotte's Hospital and of the records at other large maternity hospitals in London has convinced Dr. Colebrook that Prontosil was almost certainly responsible for this remarkable improvement.

The chemical, which looks like nothing so much as red ink, is now being widely used in this country and abroad for puerperal fever and many other conditions due to infection with hemolytic streptococci. Dr. Colebrook hopes that properly controlled tests will be devised and used in the United States to confirm the results obtained in London.

Latest development in the treatment is the discovery by French scientists of another chemical which is not a dye and which is as effective as Prontosil, in

controlling infection in mice. This chemical is p-amino-benzene-sulfanamide, called sulfanilamide for short. It is now being tested at Queen Charlotte's Hospital. It has the important advantage of being much less expensive than Prontosil. The dye, Prontosil, is a patented product of the German dye industry, whereas sulfanilamide is a chemical that cannot be patented.

More important even than the saving of lives in childbirth and surgical infections promised by Prontosil is the possibility of its value in war. Stating that he hated war as much as anyone, Dr. Colebrook pointed out to his medical audience that war seems now so imminent that medical men must be prepared for it. Prontosil, or sulfanilamide, will be part of the future war surgeon's supplies, for streptococcus infections are perhaps the greatest danger he must fight.

"The appalling price we had to pay for streptococcus infections" during the World War was recalled by Dr. Colebrook in his address before the bacteriologists in Washington. This war-time experience, he said, was responsible for his present interest in streptococcus infections in childbirth.

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VITAL STATISTICS

Two Causes for Greater Age of Supreme Court Justices Today

TWO FACTORS have contributed to the fact that the U. S. Supreme Court today is made up largely of older men. One is the fact that the average age of justices at the time of appointment has been considerably older since 1862 than before that date. The other is that the average expectation of life for all men in the United States has increased materially as a result of improved public health and medical practice.

Expectancy of life at birth in the early years of the nation's and the Court's existence was between 25 and 30 years. Around 1850 men born in the United States had a life expectancy of 38.3 years. By 1910 life expectancy at birth for men had risen to 50 years and in 1930 it was about 60 years. These figures represent the average expectation at birth, but persons with better than average health may expect to live 70, 80 or even 90 years.

Justices of the U. S. Supreme Court

are not an unusually long-lived body of men, statistical analysis shows.

As a group, each of the 66 justices appointed since the Court has been in existence lived about a year longer than would be expected for men of their ages in the ordinary walks of life, statisticians of the Metropolitan Life Insurance Company have figured.

Since 1862 the average age of the justices at appointment has been considerably greater than before that date, the figures also show. The situation has been reversed in so far as Presidents are concerned, it is pointed out.

The greater average age at appointment of the Supreme Court Justices may be due to the fact that the rapidly growing complexity of our legal structure demands men of riper age. Whatever the reason, the average greater age of these appointees during the period since 1862 "seems not to have affected their ability to carry on, if we may be guided by

their greater longevity as compared with that of judges appointed in prior years. The average age of these later justices was almost four and one-half years greater than that of the earlier group—73.7 years as against 69.3," the life insurance company statisticians state in their report.

"During the 146 years that the United States Supreme Court has been in existence, 76 appointments and 2 reappointments—John Rutledge and Charles E. Hughes—have been made to this distinguished body. Of these 76 men, 66 are dead, their average age at death being 71.4 years. This cannot be called a particularly advanced age despite the fact that there have been three nonagenarians and nine octogenarians on the Supreme Court Bench since its foundation. As nearly as can be computed, the aggregate years of life expectation of these 66 men at the time of their appointment was 1,205, while the total number of years actually lived was 1,265. As a group, each lived about one year over the life expectancy of men of their ages in ordinary walks of life.

"Prior to the Civil War the picture was somewhat different from that following it. The total years of life expectation of the justices appointed during the earlier period numbered 712, while their actual years of life totalled 713. They thus fulfilled almost exactly the term of life that ordinary men of their age might expect. Subsequent to the Civil War, the number of years lived by the judges somewhat exceeded the expectation of life at time of appointment (522 years as against 493), namely, by not quite 2 years each over the expected. It can hardly be said, therefore, that life on the Supreme Court Bench is outstandingly conducive to longevity, as is generally supposed."

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SAFETY ENGINEERING

Mine Fatalities Cut During Past 3 Years

THE record of mine fatalities in the last three years, in the United States, is the best in the history of the mining industry, reports the U. S. Bureau of Mines. Due to increasing study of the causes of mine explosions the number of yearly deaths has been cut to an average of 40 a year from the average of 542 deaths yearly prior to the founding of the Bureau of Mines in 1910.

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