

BACTERIOLOGY

New Invisible Chapter In Disease Germ Life Found

Ability of Familiar Germs to Diminish in Size to Filterable State May Explain How Diseases Can Lie Dormant

AN UNKNOWN chapter in the life of common disease germs, during which they are invisible through the most powerful microscope and so small that they slip through the finest filters, was announced to the Society of American Bacteriologists at Cambridge by Prof. Philip Hadley of the University of Michigan.

Cholera, typhoid, dysentery, diphtheria and other germs were shown by the experiments of Professor Hadley and his associates, to take on a filterable state of existence when roughly treated by chemicals, digestive fluids and unfavorable food. This new G type culture, as Professor Hadley has named it, differs markedly in form, growth, chemical and serum reactions from the ordinary types of the germ.

The consequences of this discovery made as the result of intensive work in Professor Hadley's laboratory since 1927 can not now be foreseen.

The germ of dysentery, known as the Shiga bacillus, which was the organism most thoroughly studied in the G type stage, was found to be non-toxic when rabbits were infected with its invisible stage. On the other hand, the bacillus in its invisible state was resistant to its usually effective enemy, the bacteriophage or "bacteria eater."

It seems probable that Professor Hadley has discovered a reason why diseases can lie dormant for a time and then later become dangerous. After the germ has been induced to take its G type existence, it propagates itself and retains the characteristics of its invisible form. But after some weeks of growth of the culture, the germ reassumes its common form. This indicated to Professor Hadley that his G type cultures are a real stage in the changing existence of the bacterial races.

The finest porcelain filters that can be made do not have holes small enough to separate the organisms of the young broth cultures of the new G type from the liquid in which they grew. Moreover, the filtrates and the cultures themselves when sealed up for more than

two years were alive and ready to produce the common form of germ.

Professor Hadley considers the filterable virus forms he has been investigating as comprising, at least in part, the bacterial microgonidia, which correspond loosely to reproductive cells or spores. These microgonidia are liberated from the cells and filaments of the germs at a certain point in their development.

Miss Edna Delves and John Klimek aided Professor Hadley in his research which was conducted in the hygienic laboratory of the University of Michigan.

Science News Letter, January 3, 1931

PSYCHOLOGY

Psychologist Measures Moral Age of Individuals

YOU have been told that psychology can estimate how old you are mentally, and socially. Now comes a new yardstick: How old are you morally?

The new measuring scale was reported to the American Association for the Advancement of Science by Prof. F. J. Shields of the Connecticut College for Women and Prof. E. A. Lincoln of Harvard.

A child develops gradually in moral judgment until he reaches maturity, and in the average person this moral maturity is not reached until well over sixteen years, Professor Lincoln said in presenting the "tentative conclusions" of the investigation. That the word guilty has no meaning to a child under ten or eleven years of age, is one of the vocabulary facts that the two professors discovered when they probed into the moral understanding and attitude of people of different ages and different kinds of environment.

The effect of environment in shaping a child's attitude toward moral questions was clearly shown in the case of a little Italian boy of twelve years. This child ranked stealing as worse than

murder. When questioned, he insisted that was right, and showed that killing was taken rather as a matter of course in his neighborhood if affairs shaped seriously in that direction.

Many individuals grow faster mentally than they grow morally, so to speak, the investigation showed.

There is no evidence that the person who has a mature understanding of moral questions will act accordingly, the professors admit. The test is expected, however, to prove useful in studying the problem individuals who get into trouble in society and whose attitudes toward the world have to be studied in the courts, in clinics, and in schoolrooms.

Science News Letter, January 3, 1931

ELECTRICAL ENGINEERING

Pioneer Radio Work Brings Dr. Conrad Award

PIONEERING work in radio-telephone transmission before the days of broadcasting, and the building of an amateur radio telephone transmitter which resulted in the world's first broadcasting station, KDKA, have brought to Dr. Frank Conrad, of the Westinghouse Electric and Manufacturing Co., Pittsburgh, the Edison Medal, the highest award of the electrical engineers in the United States.

Announcement of this year's award, the twentieth to be granted, was made by the American Institute of Electrical Engineers. In addition to his developments in radio, Dr. Conrad has made important contributions to alternating current work and arc lamp design. He has been in the employ of the Westinghouse Company since 1890 and is now assistant chief engineer.

Science News Letter, January 3, 1931

MEDICINE

Maternal Care Saves Mothers and Babies

MOTHERS who have adequate care when their babies are born and during the months before and after have about three times as good a chance to survive as mothers in the same locality and circumstances who do not have this care, it appears from a statistical study made by Dr. Louis I. Dublin of the Metropolitan Life Insurance Co. Dr. Dublin reported the results to the Maternity Center Association in New York.