

MEDICINE

Drug Resistance Probed

► TUBERCULOSIS, THE greatest killer among infectious diseases, might be well on the way to complete eradication if it were not for the speed with which the TB germs develop resistance to streptomycin, isoniazid and other new medicines for tuberculosis.

But tuberculosis has still to be completely wiped out, penicillin is now useless in about half the cases of staphylococcus, and erythromycin, one of the newest antibiotics, or so-called mold remedies, has already grown useless in about two-thirds of the infections it once stopped completely.

Looking for chinks or loose blocks in what one scientist calls the "stone wall" of drug resistance by disease germs, workers in many scientific fields conferred at a meeting in Washington sponsored by the Office of Naval Research and the University of Pennsylvania.

Use of several drugs at one time in treating patients with germ diseases is one way to lick the problem, in the opinion of Drs. V. Bryson and W. Szybalski of the Long

Island Biological Association at Cold Spring Harbor, N. Y.

Development of chemicals that will check genetic changes in disease germs and the induction of resistant cells is another method proposed by these scientists. They see drug resistance as based chiefly on the continuous origin of new, rare types of cells by the process of mutation. This leads to changes in heredity of the germs, followed by the selection in the presence of the drug of strains of resistant germs.

Differing with these and many other U. S. scientists are Canadian and British workers who see drug resistance as an adaptation of the germs to a new environment caused by drugs, rather than as a mutation and genetic change. Reports to this effect were given by H. B. Newcombe of Canada's Chalk River Atomic Energy Project, Dr. A. C. R. Dean of Oxford University, England, and Prof. C. P. Martin of McGill University, Montreal, Can.

Science News Letter, April 10, 1954

METEOROLOGY

Predict Future Weather

► THE WORLD'S record for being the first to use a giant electronic "brain" for a daily weather forecast in the future has been claimed for Sweden by Dr. Carl-Gustaf Rossby, the father of modern meteorology. Dr. Rossby, now visiting this country, is director of the Institute of Meteorology, Stockholm, Sweden.

A cablegram received from his colleagues in Sweden told Dr. Rossby of the milestone event. It read: "First operational forecast yesterday, another run today." It was dated March 24.

In 1939, Dr. Rossby first predicted the successful use of numerical weather forecasting, as the use of giant computers in weather prediction is now termed. At that time, he foresaw that Sweden would some day "bring home the bacon." This week's success is thus a poetic tribute to Dr. Rossby.

He said that he did not know exactly how accurate the March 24 and 25 forecasts, made on the computer hour-by-hour for 24 hours into the future, had turned out.

However, figures he reported to a gathering of Weather Bureau scientists in Washington showed that practice forecasts made after the event last fall with the computer gave weathermen predictions that were as good or better than an expert meteorologist with experience would make. The record is expected to be equally good for operational predictions.

The scientists who made the title-claiming forecast were Dr. Norman A. Phillips of the United States and G. Dahlquist of Denmark. They used the Swedish computer group's "BESC," which stands for Binary Electronic Sequence Computer. The basis for their work, however, was laid by Dr. Rossby.

Science News Letter, April 10, 1954

TECHNOLOGY

New Gas Said to Extend Car Engine Life 60%

► A NEW gasoline has been developed that is said to extend the life of automobile engines by as much as 60%.

Augustus C. Long, president of The Texas Company, said tests showed the new gas cut piston ring wear 45%, produced 38% less intake deposits and yielded a 300% improvement in valve performance.

Now being delivered to the company's

service stations scattered throughout the country, the gasoline is backed by a 20-year research program and climaxes a million-dollar test program involving a fleet of test cars driven more than a million miles.

The gasoline's qualities are attributed to "Petrox," a petroleum compound added to the gasoline. Petrox now is being made at the company's refinery in Port Arthur, Tex.

Science News Letter, April 10, 1954

Questions

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PHYSIOLOGY — How do turtles react to weightlessness? p. 237.

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