

archaeologists from the Chicago Natural History Museum under the leadership of Dr. Paul S. Martin.

Discovered with the bowl were some crude figures of bears, a tobacco pipe and about half of a sandstone disk painted in

bright colors. Archaeologists are excited about the find because of what the objects reveal of the lives of prehistoric Americans many hundreds of years before the coming of the white man.

Science News Letter, September 19, 1953

#### MEDICINE

## Specific Virus Antidotes

**Prediction made that within five years diseases now incurable will have chemical specifics. Many classes of compounds considered hopeful.**

► PREDICTION THAT virus diseases will find their specific antidotes within five years was made in Chicago by members of the world's first symposium on chemical specifics against the disease group for which there is now no cure.

Taking part in the symposium were Dr. Alexander M. Moore, Mellon Institute, Pittsburgh, who presided; Dr. I. W. McLean, Jr., Parke, Davis & Co., Detroit, Mich.; Dr. Laurella McClelland, Merck Institute for Therapeutic Research, Rahway, N. J.; Dr. W. Wilbur Ackermann, School of Public Health, University of Michigan, Ann Arbor, Mich.; and Dr. John Spizizen, department of virology, Sharp & Dohme Division, Merck & Co., West Point, Pa.

Less than 20 classes of compounds are now looked upon as hopeful as the source of such possible specifics against virus diseases, these research people say. But they point out that each class of compounds may offer the chance of finding the most promising drug among many related chemical substances. Five years ago no work was being done on this problem. Today the results so far obtained give hope that study for an equal time in the future may produce practical results.

Pooling their information on how to study virus attack on the living cell, this group, calling themselves "virologists," came to the American Chemical Society's meeting to interest chemists in helping them.

Their hope is to expand the number and kind of chemicals that seem hopeful in their attack on the cause of polio, influenza, and other virus-caused diseases. These diseases still resist the sulfas, the antibiotics and the other so-called miracle drugs which have proved specific against other illnesses. It is the hope of the virologists that some medicines with equal power against virus diseases may be found, either among new antibiotic preparations or as known types of chemical compounds formulated on purpose for trial.

A 50-50 chance exists, in the opinion of this group, that the specifics they hope to find will come from the antibiotic or the strictly chemical classes of remedies. Some signs have already appeared in their researches of compounds that prolong the life of cells under virus attack. There is even

an occasional "cure," although the results are by no means yet predictable enough so that they can be tried in clinical tests on patients.

What happens when a virus breaks through the membrane surrounding a living cell, and how the break-through can be prevented or the virus destroyed before it multiplies and spreads to other cells, make up one line of attack on the virus disease problem. There is plenty of literature, according to the scientists, on things that do not work. They now begin to see hope of finding some that do.

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#### BIOLOGY

## Study Germ Genetics For Best Treatment

► BETTER DISEASE fighting will be done when doctors know more about the genetics of disease germs and how this affects the germs' reaction to antibiotics, or so-called mold remedies.

Some of this kind of knowledge was reported by Dr. W. Szybalski of the Biological Laboratory, Cold Spring Harbor, L. I., N. Y., at the meeting of the Sixth International Congress for Microbiology in Rome.

Development of resistant strains of germs is responsible for many failures with penicillin and other antibiotics, as is well known. Such resistance develops because the drug kills off the non-resistant germs, allowing mutants that were born with resistance to develop.

When two antibiotic drugs are given at one time, as is being done more and more, the situation is more complicated. If the drugs are unrelated, the chances are much smaller that a particular single disease germ will be resistant to both. This is the case for the TB fighting drugs, isoniazid and PAS, or para-aminosalicylic acid.

But when the drugs are related, the situation is different. For example, mutants resistant to aureomycin are also resistant to terramycin and the reverse. Such cross resistance is not always reciprocal, however. Mutants may develop which are resistant to erythromycin and also to aureomycin if that is given later, but if aureomycin is

given first, aureomycin-resistant mutants may not be resistant to erythromycin.

Antagonism between drugs also appears when they are given together. This develops when a strongly germ-killing drug is given with a relatively ineffective concentration of a drug that checks germ growth but does not kill the germs.

From his studies, Dr. Szybalski concludes that there is probably a genetic explanation for both positive and negative interaction between anti-germ drugs.

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