

MEDICINE

Lung Disease Detection

Isolating and purifying antigens may lead to better detection of the various lung diseases and to the eventual development of a protective vaccine against tuberculosis.

► HOPE FOR BETTER detection of the various infectious lung diseases was seen in a unique biological meeting at Warrenton, Va.

Scientists from Japan, England, Sweden, Switzerland, France and Italy pooled their research in a workshop that may be historic. It was held to speed up the discovery of antigens that will help differentiate the lung infections that on X-ray film resemble tuberculosis.

Dr. Robert C. Parlett, chairman of the microbiology department of George Washington University, Washington, D. C., and conference coordinator, told SCIENCE SERVICE that time and mistakes could be saved by this type of meeting.

Isolation and purification of two major extracellular protein antigens that could lead to the eventual development of a protective vaccine against tuberculosis were described by Dr. Yoshio Fukui, collaborator of Dr. Masahiko Yoneda of Osaka University, Osaka, Japan.

Antigens, which stimulate the body to produce antibodies, have never been as simple in lung diseases as in smallpox, polio

and measles, for example. The tubercle bacillus seems to have many antigens, some of which may relate to other organisms.

Dr. Parlett said many patients with lung diseases today are infected with the so-called unclassified mycobacteria, rod-shaped germs that can cause leprosy, tuberculosis and other diseases. These organisms resemble *Mycobacterium tuberculosis* but do not fit the classical description of that germ.

"We badly need antigens specific for the disease caused by each species of these unclassified mycobacteria," Dr. Parlett said, "so we can separate the sheep from the goats and treat the specific disease."

Histoplasmosis, for example, affects some 30 million persons in this country, and this is only one of the fungal lung diseases.

The International Conference on Mycobacterial and Fungal Antigens was sponsored by the George Washington University School of Medicine, the American Thoracic Society, medical section of the National Tuberculosis Association, and Pfizer Laboratories Division of Chas. Pfizer & Co., Inc.

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VETERINARY MEDICINE

Immunize Against Worms

► FOR THE FIRST TIME, parasitic worms are grown in a test tube to produce a substance that will immunize an animal from the worm's harmful effects.

When tissue was extracted from a calf's worm-infested intestine, and added to a test-tube media in which identical nodular worms were being grown, the secretions from the worms clumped and stuck to them. Normally, these materials, which are secreted from the worm's openings, disperse in the medium.

Scientists at the Agricultural Research Service at Beltsville, Md., believe that the clumping was caused by the reaction of the calf antibodies with the worm antigens.

An antibody is a substance such as an antitoxin that acts in antagonism to specific foreign bodies, such as the toxins, or the bacteria forming these toxins. An antigen is a substance, usually protein, which stimulates the production of an antibody.

Growing a parasite in a test tube and collecting the antigen from its secretions is the first step toward immunizing animals against parasites.

Scientists now plan to inject an animal with the worm-produced antigen to stimulate the production of antibodies in defense against the worms. Thus an animal can build up resistance against infection.

The idea of immunizing animals against parasites was studied in the 1930's. But at that time, research using chemicals to control parasites seemed much more dynamic, and the study of immunological methods slackened. Scientists now studying parasite immunology have better research tools than they had 30 years ago.

One of these, a recently developed technique for growing parasitic worms in a test tube, enables researchers to observe changes and reactions of the worms during that part of their lives normally spent inside the host, or animal.

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MEDICINE

Seal Oil Related To Chest Diseases

► USE OF SEAL OIL as a cough syrup by Alaskans has been related to the incidence of pneumonia and other chest disease in preliminary studies at Anchorage, Alaska. Drs. Martha Wilson and George Sperry of the Alaska Native Hospital in Anchorage said the widespread use of seal oil, not only as medicine but in other ways, points to a relationship with bronchial ailments.

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GENERAL SCIENCE

Second Hospital Health Museum in U.S. Complete

See Front Cover

► THE INSTALLATION of 25 health education exhibits and displays in the Reading, Pa., hospital's new Health Education Center has recently been completed by the Cleveland Health Museum, the first museum of its type in the country and pioneer in the field of health education.

The Health Education Center is a part of a new addition to the hospital and occupies a 1,500 square-foot room. Most of the 25 exhibits are made primarily of beautiful walnut paneling. If appropriate, they are lighted internally, and some are designed to be visitor-operated.

By far the biggest single undertaking of the entire project was sculpturing the two Vesalius models of a male and a female, seen on this week's front cover and the first to be built in this country. They are modeled in copper tubing after the famous Vesalius drawings and show the major systems of the body. The organs light up internally while their functions are being explained by a tape recording heard either through individual earphones or over a loudspeaker. "Black light" is used to illuminate the nervous, circulatory and lymph systems.

Other exhibits in the Center include: Skin Cross Section; How You Hear; Birth of a Baby; When to Expect Baby; Your Life Span; Food Facts and Fallacies; What's Back of Overeating; Diabetes; Your Heart in Health and Disease; Your Blood Pressure.

Dr. Bruno Gebhard, Health Museum director and consultant for the project, said, "We at the Museum strongly feel that today's hospital patients need a better understanding of what their illness is and what the doctors and nurses are doing to the patient.

"Talk alone is not enough. The patient wants and should be shown what his illness is, how his body is being affected and what he can do to hasten his recovery."

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PSYCHIATRY

Mental Illness Diagnosed By Observing Fingers

► A WOMAN PSYCHIATRIST in the Veterans Administration psychiatric hospital at Lyons, N. J., has reported a new way of diagnosing mental illness—by looking at the fingers of patients through a microscope.

Dr. Hildegard R. Maricq found a certain pattern of the capillaries, or tiny blood vessels, to be present in 70% of 50 patients with schizophrenia, the most common mental disease, who had relatives with this illness. But only 19% of 42 schizophrenics without a background of the disease in the family showed this pattern, and only 3% of 60 normal persons showed the pattern of capillaries. Dr. Maricq believes there may be two types of schizophrenics, those who inherit the disease and those who do not.

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