GENERAL SCIENCE

New Body For Promotion of Research Taking Shape in WPB

Development Committee Studies Industrial Problems Under Direction of Maury Maverick; Ask $100,000,000

THE COMMITTEE on Technical Development, a new body for the promotion and correlation of research in general industrial production, is now taking shape within the War Production Board under the guidance of Maury Maverick, chief of the Bureau of Government Requirements. It is intended to operate along lines parallel to the work of the Office of Scientific Research and Development and the National Inventors Council, supplementing, though not duplicating, their efforts. An appropriation of $100,000,000 is being asked for, to finance the work of the Committee.

Associated with Mr. Maverick in the new project are a number of research men and administrators, including Dr. Charles I. Gragg and Dr. C. C. Hill, Jr., both of Donald Nelson's organization.

As the research men picture their task, it involves several separate steps for each of the industrial problems with which the country is faced today.

First is a survey of the problem itself, a determination of its magnitude and of all the factors involved that can be discovered. This is done largely by calling in groups of representative industrialists, engineers, and government and university researchers who know about various phases of the problem.

Having thus outlined a particular job, the next thing is to lay it out as a research project and final places where existing laboratory facilities will permit rapid work. This is very likely to involve a breaking down of the project into sections, and "farming out" the sections to universities and technical schools which have the necessary apparatus and personnel not yet employed on war research jobs. In this part of its work, the Committee on Technical Development would be functioning along lines analogous to those of the Smaller War Plants Corporation of WPB, in procuring the completion of jobs by subcontract.

After the laboratory research stage comes the pilot plant, where processes until then done only by spoonfuls in test-tubes are expanded to middle-sized batches—say a couple of hundred pounds—in relatively small kettles or retorts, similar to those of factories, only not so big. Here is where the jobs graduate from "pure" chemistry into engineering chemistry, where "bugs" are discovered and eliminated.

Finally, after the pilot plant has carried the task as far as it can, it goes to the full-scale industrial plant for regular commercial development. The interval between pilot plant and factory is the "slip twixt cup and lip" where many a hopeful research project has died a-borning, and been embalmed in neatly bound research reports that only gather dust on library shelves, instead of rolling dollars into bank accounts and payrolls. One of the big jobs of the Committee on Technical Development will be to help practicable research results to become practical and real in the marketplace.

Even before formal organization and financing, the Committee has made a number of beginnings. One hitherto neglected possibility of natural rubber has been turned up in the strangling-fig vines that grow wild in southern Florida and the West Indies. Little is known about it as yet; it is one of the research tasks that will have to be done from the ground up.

Agar, a vegetable jelly made from seaweed and indispensable in bacteriological and medical research, has always been imported from Japan. Small American manufactures of this substance have been of good quality but insignificant in quantity. New seaweed sources that may help ease us out of this bottleneck have been turned up on the Florida coast.

FROM SLURRY TO SHEETS

The workman (left) at one of the synthetic rubber plants of the Standard Oil Company (New Jersey) is inspecting "slurry," the "curd" produced by coagulation after it has been washed and the liquid has been squeezed out. (See photos on facing page.) The stuff is then dried. The center picture shows it as it emerges from the dryer ready to be carried on a belt to a milling machine. At right is the finished rubber sheet being slit into ribbons, later to be cut into short pieces for convenience in shipping.

Silk is still needed for certain military purposes; nylon, rayon and other substitutes have not proven wholly satisfactory. We have abundance of mulberry trees, a seed-stock of silkworms —and thousand of Japanese women in internment camps who would be glad of a chance to undertake their traditional job of unreeling the cocoons to add a little to the family income.

These are only samples of the thousands of projects awaiting formal organization of the Committee on Technical Development. The work that can be expected of it should not only aid materially in winning the war but in stabilizing the peace.

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PUBLIC HEALTH

Public Health Service Fighting Plague in Rodents

Concern Felt Over Reports of Large Numbers of Norway Rats in Plains States Although No Germs Found

THE NATION's health continues good, reports from state health officers to the U. S. Public Health Service show.

Only shadows on the otherwise bright health picture are caused by dysentery, meningitis, anthrax and infantile paralysis. The latter disease has caused a number of cases in Kentucky and Arkansas in recent weeks, but it is so late in the season that health authorities believe a widespread outbreak unlikely.

Texas reports the number of cases of bacillary dysentery is "very high." Of the 356 cases for the nation as a whole during the week ended July 25, 261 were reported from Texas. Virginia that same week reported 351 of the total 386 cases of dysentery of unspecified cause. The low reports from other states may mean that not all cases are being reported.

Reports of meningitis cases for some time have been higher each week than for the corresponding week of any year since 1937. Weekly totals for the nation run about 60 cases. Most of the cases are in the East, but so far the disease has not become epidemic.

A total of six cases of anthrax appeared in the latest available weekly report. The usual rate is one or two cases a week for the nation.

No human cases of plague have been reported so far this year. Anti-plague activities are being pushed strenuously by the federal health service and by California, Washington, Oregon, Montana and Idaho state health departments.

Some concern is felt over reports from the field investigators that large numbers of Norway rats have appeared along roadsides and around farm buildings in the Plains states, Kansas, Nebraska and the Dakotas. No plague germs have been found on any rodents within 200 miles of these areas, but the presence of the rats which may become a reservoir of the disease is causing some uneasiness.

Anti-plague units of the Public Health Service are vigorously searching for and destroying plague-infected ground squirrels and other rodents on and near military reservations and airfields in the West and Northwest.

Science News Letter, August 8, 1942

PUBLIC HEALTH

Dust Analysis Promises New Weapon Against Disease

BECAUSE of the development of an inexpensive and comparatively simple technique of analyzing dust particles, occupational diseases resulting from the inhaling of contaminating dusts may be attacked on a new front.

Research just completed in the Research Institute at the University of Oklahoma has produced the new method, known as the polarographic analysis of industrial dusts, which employs an electro-chemical method of analysis. It was developed through the cooperation of the Oklahoma state health department and the University of Oklahoma Research Institute.

The study grew out of the difficulties that the Oklahoma department of health was having in attempting to solve the cause of poisoning that was prevalent among workers in smelters of the northeastern part of the state.

The dust particles available were so small that in many cases they could scarcely be weighed on even the best analytical balances, thus making it necessary to develop a new technique. With the polarograph, scientists were able to determine the quantities of lead, cadmium, and zinc which are most detrimental to health.

In the new technique, the elements present in the dust particles are determined with the spectrograph, and the quantities of lead, zinc, and cadmium are determined with the polarograph.

With the use of a polarographic analysis, industries now have a way of measuring the quantities of toxic constituents in the air in the various parts of the plants, and may remove the possibilities of poisoning by ventilating the various parts of the plants that present a health menace.

Robert C. McReynolds, research fellow, who worked under the supervision of Prof. J. Rud Nielsen, has directed work on the project since the first of this year. He was assisted by Robert Ady of the Oklahoma state health department.

Science News Letter, August 8, 1942

MEDICINE

Age and Sex Help in Diagnosis of Lung Cancer

THE PATIENT'S age and sex may help the doctor determine whether a lung tumor is cancer or not. Dr. Alfred Goldman, of the University of California Medical School, has found.

More than 80% of lung cancers occurred in men over 40 years of age, while 75% of the benign tumors, called adenomas, occurred in women under 40, Dr. Goldman found in his two-year study.

Since X-rays and the bronchoscope do not offer adequate means of diagnosing lung cancer in its early stages, Dr. Goldman advises exploratory surgical operations in suspected cases of lung cancer, just as such operations are now performed in suspected cases of cancer within the abdomen.

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