

Drug Effects

In the wake of a decade's proliferation of new drugs, scientists find they still know startlingly little about the fate of these drugs in the body. Pharmacologists—the researchers studying drug action—say too many physicians use drugs without any understanding of how or why the drugs behave as they do.

Advances in understanding of drug action and its clinical implications, as well as gradually stiffening FDA demands, have stimulated a growing interest in the field of drug metabolism which was the focus of a week-long workshop in Washington last week. Leading pharmacologists met with 40 scientists in related fields such as biochemistry and toxicology. The 40 representatives of industry and universities came from 200 applicants who wanted to participate in the seminars covering drug absorption, distribution and excretion, and techniques for studying these factors in humans and animals.

The workshop, headed by Dr. H. George Mandel of George Washington University, was sponsored by the National Academy of Sciences and financed by the Pharmaceutical Manufacturers Association Foundation. "We hope that by teaching principles of drug metabolism to young researchers in other fields, we can turn more scientists to work in pharmacology," Dr. Mandel says.

Miner's Asthma

Coal miners are known to have been dying with blackened lungs for at least 150 years, but unless their lung trouble was related to silicosis they couldn't get much public help.

Often called miner's asthma, the coal workers' ailment is a type of pneumoconiosis.

Up to 1,200 men die each year with coal miner's pneumoconiosis, but so far only two states—Alabama and Pennsylvania—provide workmen's compensation, and then only in cases of complete disability.

The U.S. Public Health Service recently joined with the University of West Virginia during its centennial to sponsor a symposium calling attention to the miners' plight.

The disease is preventable, says Dr. Lorin E. Kerr of Washington, D.C. He contends that if coal dust were suppressed at the source, pneumoconiosis would not plague miners. From 70,000 to 100,000 are handicapped in some degree by the man-made disease.

Pennsylvania's law, passed in 1965, adds the disease to the list of those for which workers can be compensated.

Nearly 43,000 miners applied the first year.

Silicosis has been recognized for some years as an occupational disease that could be compensated.

Hot disputes arise in state legislatures whenever the cost of eliminating the disease or compensating workers touches the pocketbooks of taxpayers. In Pennsylvania, compensation costs may take up to \$55 million in the coming fiscal year.

Weather Control Due

Weather modification efforts to date have been so promising that large expenditures by the Federal Government can be justified for further research and development of operational systems.

This is the recommendation of Dr. Homer E. Newell, Associate Administrator of the National Aeronautics and Space Administration, in a report to the Federal Council for Science and Technology.

There is a need for a single Federal agency to take the lead in weather modification research, Dr. Newell says, but it should not control the content of other agency programs. His report concentrates on programs conducted by the National Science Foundation, Environmental Science Services Administration and Departments of Interior and Agriculture.

He picks the Environmental Science Services Administration as the lead agency, which should revive an old fight between its parent Commerce Department and the Interior Department for dominance in the field.

Two areas show sufficient promise for immediate attempts at operational modification, Dr. Newell concludes. These are seeding of clouds in the West to increase rainfall for water supplies and seeding dry, shallow storms in the Rocky Mountains to suppress lightning which causes forest fires.

Heroes Needed

In spite of scientists' well-worn assertions that there is no real distinction between applied and basic research, the National Science Foundation estimates that applied research gets twice the support from the nation's science budget as does basic science.

And the National Academy of Sciences says "applied research is more complex and diverse in its goals, its standards and its style than is basic research." In response to a Congressional request, a 20-man committee headed by Dr. Harvey Brooks of Harvard, last week issued a 500-page report on the state of applied science and technology in the U.S. It said applied sciences

cover a broad spectrum of approach ranging from something akin to the purest type of basic research to enlightened tinkering.

Although each of the 20 panelists tackled the issues in a separate essay relating to his specialty, they agreed on several points in their report to the House Committee on Science and Astronautics.

- Physical sciences are the primary focus of much government and industrial research, often pushing biomedical and social sciences into the shadows.

- Big, mission-oriented industrial and government laboratories are a "most important invention" in the pursuit of applied science; first-rate research and money-making can go hand-in-hand.

The Government's special role in research received support from the Committee which said problems of man's environment transcend private interests, rightly placing them in the jurisdiction of national and regional governments.

However, even though applied research is getting well over half the science dollar, many panelists felt a quality gap exists between the calibre of person in applied and basic science—perhaps because the latter is more prestigious. "Applied science probably needs more heroes," the report states. A flow of manpower between fundamental and more applied activities within a research organization, thus minimizing "artificial barriers," would lead to progress, it suggests.

FROM MEXICO

Leprosy Vaccine

In a campaign in Uganda, 8,000 children were immunized against tuberculosis—and seemed to become immune to leprosy as well. Mexican researchers, inspired by this happy coincidence, have now developed a successful leprosy vaccine. Massive treatments begin this month.

"The synthetic vaccine, labeled Pugal, is the result of 17 years of investigation by five medical researchers," Dr. Alberto P. de Leon said. "The product—like BCG—provides protection against tuberculosis as well as leprosy."

BCG stands for Bacillus Calmette-Guerin. It is used against tuberculosis successfully in some countries, but mass inoculation is not officially approved in the United States because it interferes with TB tests given in schools.

"The leprosy vaccine is easy to apply, and produces no negative symptoms. Until now we have used it only with selected patients but results have been highly satisfactory," says Dr. Leon, an immunologist at Mexico's Tropical Disease Institute.