

GENERAL SCIENCE

# Doctors Jewett and Kettering Honored With Franklin Medal

## Organized Industrial Research and a Stock-Taking of Scientific Unknowns, Urged for Progress of Science

AMERICANS do not have the opportunity of being decorated with European prodigality. For this reason annual medal day of the Franklin Institute in Philadelphia on May 20 brought prized rewards to the chosen scientists, engineers and inventors.

Franklin medals, one of the highest awards in American science, were handed to two men who have speeded modern life. Dr. Frank B. Jewett made it possible to talk telephonically around the world, across continents and seas. Dr. C. F. Kettering made the automobile a more effective and economical machine. "Ket" of General Motors is a leader in automotive engineering which, to quote the medal citation, is "a science out of which has grown the greatest industry in this country, the manufactured product of which has, in only a quarter of a century, changed the face of the civilized world."

Without highly organized industrial research the modern telephone would never have come to its present stage of perfection, Dr. Jewett declared, in acknowledging his honor. He traced the research development of the telephone and its associated arts of the radio and sound motion pictures in an address following the presentation to him of the 1936 Franklin Institute Gold Medal.

From 1880 to 1900, Dr. Jewett pointed out, the telephone grew in industrial stature because its problems were of such a nature—looking back they seem extremely elementary—that they could be solved by uncoordinated individuals working, each for himself, in separate laboratories and by borrowing proved knowledge from the older telegraphic field.

### Demanded By Problems

Coordinated, organized research came into being, said Dr. Jewett, when the increased demands for inter-community phone service occurred. Problems of distance transmission arose, unsolved difficulties with interlocking switching facilities sprang up and the central offices had to be redesigned to meet increased volumes of traffic.

Ingenuity for a short while helped, but it soon became apparent that the solutions obtained were becoming increasingly costly.

The final solution came, Dr. Jewett indicated, by a mass attack on the problems from widely different fronts, utilizing knowledge in widely scattered fields. At one stage it was even necessary to go over into physiology and anatomy to learn more about the process of hearing itself.

Dr. Jewett indicated that the medal should be regarded less as a personal honor to him than as a trust for his younger colleagues and associates who have made telephone advances possible by their research. His own job, Dr. Jewett continued, has been to direct these men so that they could develop the maximum of their creative scientific ability.

"It is easy," declared the Bell Telephone Laboratories' president, "for a superior to take or appear to take credit for accomplishments of his younger associates. What is hard is regularly to appear in the role of a critic—an apparent reactionary in the ranks of ardent enthusiasts.

"As I look back over my thirty years of work in this field of applied science, I have a feeling that I may have contributed as much toward advancing the art of electrical communication by what I have prevented being done as in what I have encouraged."

### Outline of Ignorance

A stock-taking of the unknown in science was urged by Dr. Kettering.

We need to outline our own ignorance, make a schedule of the things we do not yet know. Then we will be ready to go ahead with scientific discoveries and their practical applications. This, in effect, was what Dr. Kettering told his fellow American scientists in accepting the Franklin medal.

When our thinking becomes self-satisfied, "orthodox," when we become convinced there are some things that "can't be done," then we are in line for trouble, Dr. Kettering said. We were in

such a state of mind before 1929, he pointed out. We thought we knew everything there was to know, or at least everything we needed to know.

As soon as we again resolutely recognize the long series of unsolved problems that simply demand to be solved; as soon as we accept the idea that "the problem must be the boss," then we shall be really ready to be on our way again. And when we once get ourselves into that state of scientific mental humility, we shall find, Dr. Kettering concluded, that "American industry is just beginning."

A daring voyage by submarine from Holland to the East Indies is recalled by the medal which will be sent across the sea to Dr. Felix A. Vening Meinesz of Utrecht. He is the acknowledged pioneer in determining gravity at sea.

Aid to blind flying, made possible by instruments—gyroscopic horizon, directional gyro, automatic airplane pilot—is recognized in an award to Elmer A. Sperry, Jr., of Brooklyn.

A way of detecting hidden defects in metals by use of magnetism is acclaimed by medals to Dr. Alfred V. de Forest of New York City and Major William E. Hoke of Baltimore. Planetary milling and threading, which has to do with cutting metal and not with astronomy, won a medal for Peter P-G. Hall of Philadelphia.

### Cresson Medal

Juggling molecules and atoms with actual and potential aid to industry won awards of the Elliott Cresson medal for Dr. George O. Curme, Jr., of New York City, and Dr. Robert J. Van de Graaff of Massachusetts Institute of Technology. Dr. Curme has founded a new industrial technology upon synthetic aliphatic compounds, while Dr. Van de Graaff invented the atom-smashing 10,000,000 volt electrostatic generator.

Coal coking improvements won honors for Dr. Joseph Becker of Pittsburgh. Mayo D. Hersey of Brown University was given a medal for lubrication research and Albert L. Marsh of Detroit was honored for a new electrical material.

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Penguins walk in dignity but they also run on "all fours," that is, on wings and legs.

Exploring a very early Egyptian tomb belonging to an Egyptian official of 3500 B.C., archaeologists found 2,000 wine jars among the provisions.