Physics and Engineering in a Free

On September 29, 1960, the Third Annual Meeting of the Corporate Associates of the American Institute of Physics was held at Columbia University's Arden House near Harriman, N.Y. Pages 19 through 28 of this issue are devoted to the central event of the meeting, a panel discussion on the topic "Physics and Engineering in a Free Society". Under the leadership of C. Guy Suits of the General Electric Company, whose introductory comments on that occasion appear on the following page, the panel approached its assigned subject from the three points of view represented by the professional interests of the three speakers: Julius A. Stratton of the Massachusetts Institute of Technology (education), E. R. Piore of the International Business Machines Corporation (industry), and Gerard Piel of the *Scientific American* (the public). The meeting was attended by officers of the Institute of Physics and its Member and Associate Member Societies as well as by some seventy-five representatives of the AIP Corporate Associates, a group of organizations, primarily industrial in character, which helps to support the efforts of the Institute in contributing to the advancement of physics. A complete list of the Corporate Associates of the American Institute of Physics is to be found on page 29.

Society

a panel discussion

C. G. Suits, leader of the panel discussion, is vice president and director of research of the General Electric Company, Schenectady, N. Y., and chairman of the Institute's Advisory Committee on Corporate Associates.

Introductory Remarks by **C. G. Suits**

IN this third annual meeting of the Corporate Associates, we are continuing a general theme of communication among physicists, which was initiated at the first meeting. Physics has become such a versatile and powerful discipline in our modern society, and its practitioners are so widely dispersed in academic institutions, in government, and in industry, that some lack of a complete understanding of the role and impact of physics and physicists is plausible.

Today we will examine the role of Physics and Engineering in a Free Society.

Adequate appraisal of basic changes which are taking place in our society, in our economy, and in our nation, requires a very perceptive and thoughtful analysis. The forces at work tend to be imponderable and particularly evident only in retrospect. The image of change in our society, and especially its projection into the future, is difficult to focus sharply and clearly; and the more fundamental the change, the greater is the difficulty. Certainly the relationships between *engineering*, the *physical sciences and especially physics*, and a *free society* represent basic influences of great present and future import, and they deserve a thoughtful appraisal for present understanding and future guidance.

The program today is a result of discussions in the advisory committee of the Corporate Associates, in which we developed some understanding of the importance and complexity of some of these relationships, and became convinced of the need for examining them from many points of view. From the point of view of industry, we observe a growing area of technical work in which the skills, methodology, and especially the *objectives* and *attitudes* of the people engaged in the work lie about half way between science and engineering. We need to recognize and appraise this trend and perhaps reflect the result in our educational programs. The engineer himself is in the middle of a technological revolution which has focused attention on the appropriateness and adequacy of his academic exposure to physics. We in industry are also looking at future needs for trained people in physics, engineering, and all of the categories of training lying between these disciplines, and are concerned about future supply in relation to future demand. Obviously there are many questions here of common interest to industry and education.

Those engaged in scientific and technical activities usually feel that our very best young minds-in-training must be channelled into technical professions, although we recognize somewhat dimly that this may be a myopic viewpoint. Reading the newspapers during the United Nations activity of the past week * would seem to confirm the suspicion that we have some very serious problems in need of solution, and that they may lie outside of the sphere of physics and engineering. Evidently there is a public interest and concern in our over-all balance of effort, which should be considered in our discussion of more purely technical matters.

I'm sure that these remarks only partially reflect the discussions which have motivated the Corporate Associates of the Institute to sponsor our meeting here today, but I hope they will indicate the need which we felt for a thoughtful discussion of some of these matters, and for the need of introducing the point of view of education, industry, and the public, into the discussion.

[* The latter part of September 1960 marked the beginning of the tumultuous initial sessions of the UN General Assembly in New York City, in which the heads of state of several governments participated personally as delegates.—ED.]