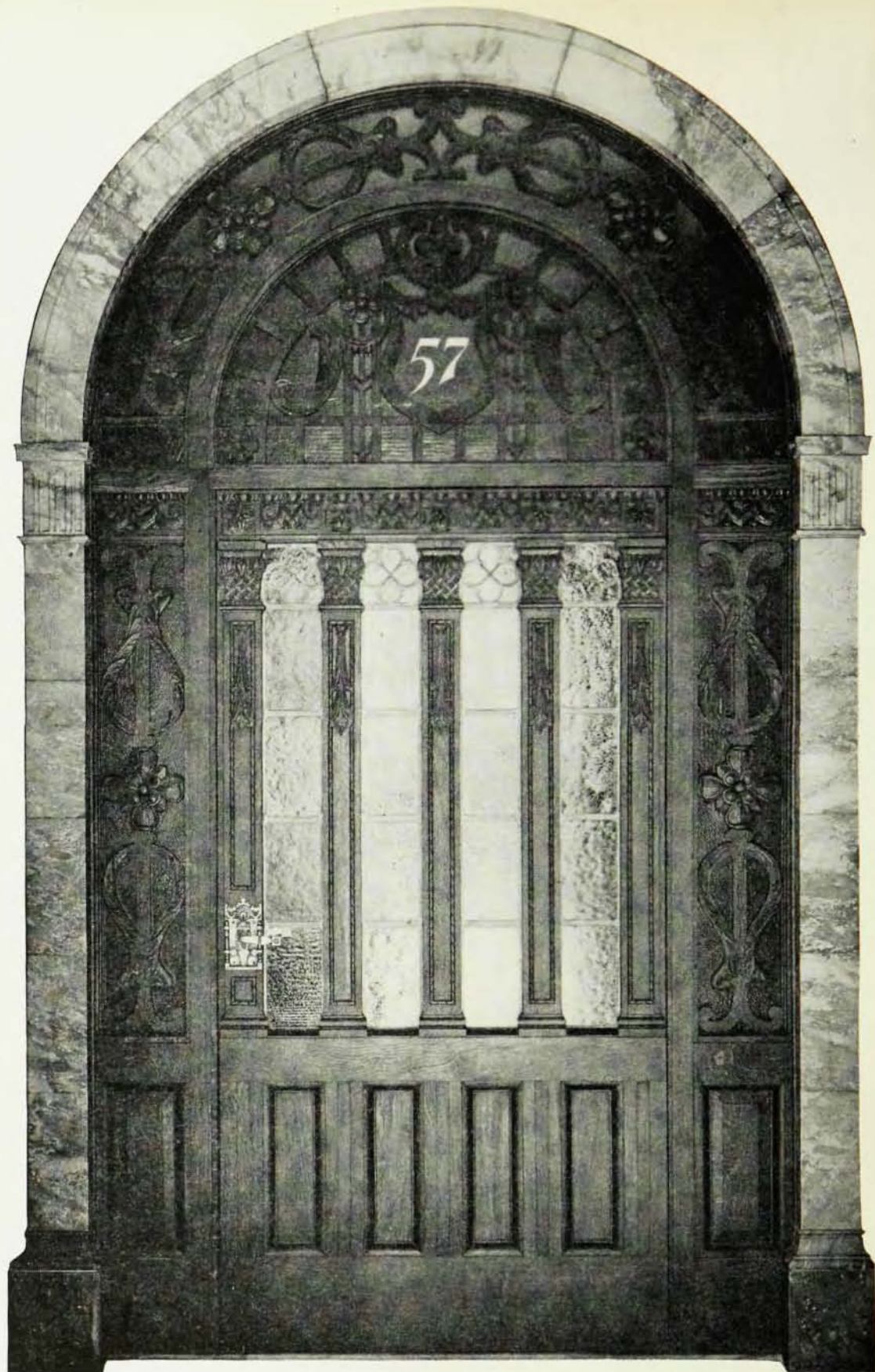




The Course for *Physics Today*

Nineteen years ago the Institute of Physics was formed for the achievement of two purposes. The first was to advance physics and its applications to human welfare, and the second was to achieve publication economies for the societies and to increase funds available for publication. The imminence of the Institute's twentieth anniversary with its attendant celebration in Chicago next October was one factor in the recent reexamination by the Governing Board of the contribution of *Physics Today* to the attainment of these objectives. This journal, of course, had no part in achieving publication economies for the archive journals which were realized long ago. It has however been a factor in the growing strength of the Institute, and in this its thirty-first issue its course is being redetermined in the hope that it will become still more effective as a medium through which the Institute can work toward the advancement of physics and its applications to human welfare.

The past two decades have been marked by striking scientific advances in almost all fields of research in which members of the Institute have been actively engaged. The period has been equally notable for the impact of the results of scientific research upon society and for the vastly increased popular appreciation of this impact. These events have imposed demands and pressures upon the Institute which have been orders of magnitude greater than any envisioned by its founders in 1931. The accounts of the Institute's activities during this period by the Director and certain committee reports which were first carried by *The Review of Scientific Instruments* and later by *Physics Today* tell the story of the work of physicists in this era of crucial employment of physics in both peace and war.

Research is an activity of individuals stimulated by contacts with their colleagues through meetings and publications. It is in this matter of communication between scientists that the Institute has been most effective in the promotion of physics. In the years immediately following the founding of the Institute the first part of its second objective was achieved and the anticipated publication economies were realized. The sound policies and efficient ad-

ministration initiated in those early years contributed immeasurably to the thriving series of excellent journals that have since been issued. The guidance and support of the Institute enabled them to pass through the dislocations of the war and surmount the recent problems of expansion and reconversion. Scientists concerned with physics and its applications are greatly indebted to their Institute for the job that has been done.

The publication of journals is in itself a contribution to the promotion of physics and its applications to human welfare but it does not represent the Institute's only approach to its first broad objective. The Institute has sponsored professional and scientific conferences, issued special publications, conducted an employment service, and represented physics and physicists to government and the public. The growth of physics and the increased awareness by society of its importance, during the war years in particular, led to problems for the Institute which exhibited its organizational weakness. The contacts between physicists in their several scientific societies and the larger groups in industry, government, and the public at large were handicapped by a poor "impedance match". Physicists in fact were not contributing their characteristic method of thought or their special knowledge effectively to human welfare. Their practice of the logical formulation of problems and systematic approach toward their solution spread little beyond the scientific fraternity itself; the word "physics" was widely used but rarely understood. After careful consideration in conference and by policy committees of the need for a more effective relationship between physicists and society, a reorganization, explained in the January 1947 *Review of Scientific Instruments*, was adopted under which the Institute became instead of a federation of societies an organization of individual professional physicists and all other persons interested in the advancement of physics or its applications in neighboring or derivative fields.

The national and international developments of the past few months presage a period in which there will again be a demand upon the nation's scientists for their technical contribution to our industrial and military strength. Though we can be sure that the history of scientific mobilization will not be repeated in detail Lord Acton may be paraphrased by saying that if we do not read aright the handicaps physicists faced in World War II we will be condemned to repeat many errors and suffer again the weaknesses that stem from lack of pro-

fessional organization and foresight. The National Resources Board and Selective Service cannot make the best use of physicists in equity with their fellow citizens in other essential specialties if physicists themselves do not help through the Institute that represents them. The essential obligation to maintain an educational structure during an extended period of emergency and at the same time respond loyally and effectively to the disrupting urgent military appeals for technical assistance presents a multitude of problems. Physicists cannot meet these as isolated individuals but such problems may present less difficulty if wise policies can be evolved democratically within the profession. On every hand the times call for a reaffirmation of the purposes of the American Institute of Physics and a renewed effort to unite the membership behind the evolution and implementation of sound professional policies in order that we may meet those critical situations which we can clearly foresee and which are already so close upon us.

It was recognized in 1946 that possibly the most essential requisite for the unification of the Institute members and the achievement of the Institute's objectives was a journal which would reach all of the members and unite them in a solidarity of common interests. In consequence the plans for this journal were at that time in the forefront of the announcement of the Institute reorganization and a committee undertook to secure the necessary financial backing and fix in broad terms the nature and conduct of this journal. This was no easy task for the aspirations varied from a modest mimeographed dodger to a slick newsstand competitor of the national weeklies. No prototype existed and the details, which together constitute a journal, presented a vast confusion of possible combinations. However, as a result of a long period of careful study and thoughtful compromise the design of a structure was adopted and put in the hands of a staff for execution. The financing of the venture was the work of another group to which the members of the Institute are greatly indebted. As a result of the vision and generosity of individual and corporate friends of the Institute a fund was assembled which enabled a start to be made though the slenderness of the purse limited ambitions and necessitated a very careful scrutiny of the obligations incurred.

The first issue appeared in May of 1948 and the hopes and ambitions of the editorial staff and their advisory committee took a form which was warmly welcomed by Institute members. The first issues were not perfect, nor were they expected to be, but

they represented a good start and the form of the magazine and the character of its contents continually improved. To date there have been twenty requests from other journals for permission to reprint or digest whole articles that have appeared in *Physics Today*. In 1948 *Physics Today* won two awards of merit in the *Industrial Marketing Magazine's* annual editorial achievement competition; one for an outstanding single article and the second for editorial approach. In 1949 *Physics Today* won a first prize in the same competition for graphic presentation and an award of merit for an outstanding single article. *Nature*, among other periodicals, has had some very kind words to say about the journal. The articles carried were generally approved by the journal's readers and the special sections on news and items of personal and professional interest attracted a wide following. As a result of the efforts of its authors and editorial staff it achieved scientific stature and both recognition and approval by an increasing circle of readers and the popular press. The recent assessment of opinion in regard to it by the Institute committee charged with recommendations as to its future course showed it to be widely held in high regard as a journal and a valuable public relations asset of the Institute.

However, the hard fact emerged very clearly that it cost something. The gap between income and outgo led to an accumulating deficit at a rate that could not be accepted as sound fiscal policy by the Institute Board. The factors involved were all interrelated in a picture of many details which was forbidding but not beyond recourse. Until this year, no members of the Institute were charged directly for the journal. Though the additional subscriptions were increasing in number this increase was not at a rate commensurate with some wishful thinking common just after World War II. Increased popular awareness of science and its developments does not imply a much larger proportion of society interested in thought-requiring scientific literature. *Physics Today* cannot be done with cartoons and the audience of a caliber to read a journal acceptable to physicists is nearer ten than a hundred times the present subscription list. But at that there is a very promising opportunity for expanding our present circulation. The other source of revenue, advertising, lagged both because an aggressive policy in this field proved difficult for the Institute and because *Physics Today* could not offer a large enough audience with a sufficiently well-delineated sales potential to be of obvious interest to advertisers. A second major feature of the

picture was that, though the individual acceptance of *Physics Today* among its readers was large, integration between society members had not proceeded to the extent of engendering an adequate loyalty to the Institute and its purposes. When the financing of the journal by group subscriptions within the societies was proposed not all of the Council were ready to agree.

Under these circumstances the Governing Board wisely had sought a committee study of the problem that was posed by *Physics Today*. In brief this disclosed a strong "grass roots" support of *Physics Today* as a magazine, an increasing approval of the articles carried by it as the journal's policy in regard to them had developed, and an appreciation of the style and presentation of the journal's contents. *Physics Today* appeared to be a potentially valuable property of the Institute but the journal was passing through those growing pains which are characteristic of a new publication. Its principal shortcoming was the very important one that it wasn't solvent. In its two and a half years it had been unable to expand its subscription and advertising income sufficiently to support the type of journal it had become. This is the less surprising when it is recognized that, although the journal is designed to serve the common cause of physicists, no part of their dues is allocated to it.

As a result of the Committee's study the Governing Board decided to tighten the journal's belt and rededicate it to the principal objective of the Institute in the unification of a broadening membership behind the advancement of physics and its applications to human welfare. An editorial board has been appointed to implement this purpose and other staff reorganizations were required by the greatly regretted resignation of the previous editor which was announced last month. These changes are indicated on the contents page of this issue. Every effort will be made to retain and continue to improve the attractive appearance, readable style, and interest of technical contents for which the journal's readers are indebted to the retiring editor. Economies in the mechanics of publication which will somewhat reduce the gloss are being initiated in this issue and as a result of a study by the Institute's printing consultant certain typographical improvements are being adopted. The Board and Staff will give particular attention to making the current interest sections of maximum value and utility to our readers.

The principal innovation is the establishment of a forum with leading articles of an editorial nature by the members of the Editorial Board. These will

express their individual opinions on topics of general and timely interest to the fraternity of persons who through their subscriptions to *Physics Today* support the purposes for which the Institute was founded. In a sense this article and the journal issue in which it appears inaugurate this forum, for a policy is being stated and an example presented upon which letters and comments would be most welcome. Letters or other forms of contribution need not be limited to the questions raised editorially. This is an open opportunity for Institute members and friends to express their views and advocate opinions on all matters of common interest to individual scientists, and to their several societies and the Institute. These communications should be addressed to the Editorial Director of *Physics Today* at the Institute in New York. It is the hope of the Editorial Board that this forum will be widely used and through providing a means of communication between colleagues will broaden and unite the membership of the Institute.

The success of *Physics Today* in promoting the aims of the Institute must come from the interest and effort of many people. The Editorial Staff and Board will endeavor to attract articles of high quality and broad general technical interest as well as to provide invited and staff written news of importance to physicists in the broadest sense of those who work technically with physical principles in all fields of science and technology. In this connection it should be pointed out that the usefulness of the news sections will be increased if readers will keep the Staff informed of all events of interest that might otherwise go unnoticed. The Institute Staff will also renew its efforts under an improved organization to increase the advertising content and promote subscriptions. But it is the active and enthusiastic support of an expanding Institute membership upon which success will ultimately depend. The formulation and constructive discussion of the professional problems of physical scientists and their Institute in the newly established forum of *Physics Today* can go far toward that unification of purpose which is essential if the Institute is to be effective in the promotion of physics and its applications to human welfare. Your help in building a broader and more cohesive membership and in interesting advertisers in reaching it will be a great contribution toward the Institute's objectives and your active participation in the forum discussions to formulate the policies and activities through which it works toward these objectives will be warmly welcomed.

G. P. H.