

TWENTY YEARS

THE TWENTIETH ANNIVERSARY Celebration of the founding of the American Institute of Physics should also be a time for taking stock. The world has often been told that the Institute is an independent nonprofit organization of physicists designed to assist in the publication of the results of physical research, to maintain a cooperative bond among scientists specializing in the various fields of physics, and to improve and clarify the relations between physicists and the rest of society. The words so often used to describe the official aims of the Institute have a purposeful and praiseworthy ring, but it is important that their meaning be reviewed occasionally to make sure that this ring maintains its proper distribution of harmonics.

It is to the first and most concrete of the three objectives listed above that the Institute can point with greatest pride of accomplishment as it approaches its majority. The physics journals for which it takes publishing responsibility stand as an unparalleled example of cooperative effort. These nine large magazines of fact and reason pour out a stream of information concerning the progress of physical theory and experimentation that now runs at the rate of twelve million words per year. Each of these words is processed by a staff of editorial professionals with an efficiency and dispatch impossible to attain with nine separate staffs, whether professional or not.

We have come increasingly to appreciate the importance of communication as an essential part of any field of learning. In a recent article in *Science* it is stated that 750,000 original scientific papers appear annually, and that the total volume of scientific literature is increasing by about 5% per year. The bottleneck of scientific progress in the near future may well be not a lack of either financial support for research or of scientists to carry on investigations, but instead may in-



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involve problems of "scientific intelligence". The situation in physics, while far from ideal, is so much more favorable than is the case in many sister sciences that this example of cooperation has greatly influenced the quality of scientific literature everywhere. In furnishing a larger parachute than would otherwise be available to retard the fall in value of the publication dollar, the Institute has helped insure that any paper on any physical subject can appear in print if, in the opinion of a jury of physicists, it is worthy of publication.

The second function of the Institute, that of maintaining a cooperative bond among the rapidly growing subgroups of professional physicists, presents more difficult problems for solution. From the central core of physicists who focus their attention on the frontiers of their science wherever these may lead, centrifugal forces tend to separate off from time to time groups of specialists. For the good of their specialty, of the parent science, and of society as a whole, it is important that each of these groups be aided, first in achieving self-awareness and stability, and then in being integrated in an orderly manner into the structure of physics. Here the Institute may be likened to a comb that helps keep the strands of the rope of physical science essentially parallel, and prevents knots and kinks in their fibers.

The professional societies that make up the Institute are not equal in size, in strength, or in firmness and duration of tradition. From nebulosities emanating from the central society strong planetary groups have condensed in optics, in acoustics, and in other specialized fields. Evidences of self-awareness are now becoming apparent in other groups. Each of these should be helped in ways that will insure most rapid progress in its own field and in that of physics as a whole. It is to some degree a matter of good fortune, but also evidence of the true spirit of cooperation that animates

the interrelationship of the cooperative societies, that few intramural grievances have sprung up in the twenty years of their kinship in the Institute, and that these have all been settled in good spirit.

It is in the third area of our list, in representing physicists as a group before other professional groups, the lay world, and society at large, that the Institute finds its greatest challenge. Now, in the last year of its minority, we must ask ourselves whether it is meeting this challenge adequately. That the Institute has suffered relatively little from growing pains is perhaps an indication that it has not been as active as might be desirable in representing physicists in nonscientific matters. Yet there are many reasons why it has seemed desirable to those charged with its operation to make haste slowly.

In dealing with such questions of policy and polity as utilization of scientific manpower, Selective Service, teacher training, financial aid for students, and with statistical advice to government, the Institute has assumed successfully that it represented the voice of American physicists. In equally important matters there is often doubt, for though a majority can act for a minority, it cannot speak for one, and when small professional societies have difficulty in ascertaining the views of their members, how much more difficult is it for the Institute to presume to speak for all physicists as a group. Yet if this group is to have the voice in the affairs of society which the stature and importance of its science deserves, that voice must be trained in vigor and exercised in authority. Physics is an important and constructive human activity. In learning to exercise its primary function of forwarding this activity with effectiveness, the American Institute of Physics will come of age.

George R. Harrison