

editorial

Organized physics 75 years later

The present year marks a notable event in the history of American physics, namely, the 75th anniversary of the founding of the American Physical Society—a step that in a sense legitimized the cause of research in physics in our country. It is quite clear that the small group that formed the Society was united primarily through love of the profession and enjoyment of the company of those who worked in it. Matters of social philosophy were quite secondary to the pursuit of the science.

Over most of the three quarters of the century since 1899, the community of physicists has exhibited these important attributes: (1) the willingness to become involved in a wide area of pure and applied science; (2) a deep appreciation of the benefits of symbiotic specialization represented most dramatically by the cooperative evolution of theoretical and experimental physics; and (3) a readiness to develop organizations which would promote professional unity as special uses of physics developed. This process is probably best represented by the creation of the American Institute of Physics in 1931 to compensate for the centrifugal action associated with the development of new physics-based societies, some having applied goals. The keenness with which this desire was felt was displayed in 1940 when the AIP purchased its first office building with private funds raised through subscription appeal to individual members of the societies.

Initially at least, the extraordinary public recognition given to physics and physicists between 1940 and 1965 caused remarkably little change in the basic attitudes of the members of the profession. In the main, the principal difficulties encountered were related to the growing pains associated with expansion and numbers of physicists, both by conversion from other disciplines and by the enormous expansion of graduate programs.

Events since 1965 have introduced a relatively new mood, as we descended from what might be termed Olympian heights. The factors that caused this descent are quite complex. In part they were the result of a shift in public values and hence were quite independent of anything we might have done professionally, and in part they were a result of the evolution of new attitudes within the physics community itself—developments reflecting a change in attitude toward cooperation between our profession and society.

A study carried out under the auspices of the Governing Board of the AIP on the long-range goals of the Institute reveals that one of the most valuable things we are losing in this transition is the strong spirit of inter-Society cooperation, which has been a dominant feature of the scene of American physics for so long.

The situation we face today is somewhat paradoxical. In one sense we have turned full cycle

toward a state resembling that which existed in 1930. The scientific challenges posed by the physical world are no less intriguing than they have ever been if we consider the range of conundrums extending from quarks to quasars. Moreover, as in 1930, the centrifugal influences arising from the increase in specializations are substantial. This is indicated not merely by the growth in the number of physics-based societies and the teaching of physics departments, but also by the development of strong divisional structure within the APS itself. This development, in contrast to earlier events, leads one to observe that the APS has now gained enough cohesive strength and flexibility that it is withstanding tendencies which in years past led speciality groups to spin off. The Society and the profession can only gain from this cohesiveness.

Just at this time when the physics community has most to gain by strengthening the ties which bind us together as we prepare for the developments of the future, one finds the greatest challenge at any time in our 75-year history for achieving something that might be termed “intra-Society” unity. This challenge arises both from the growing diversity of developing specializations within physics and from a desire to have activities and programs carried out for the physics community more clearly identified with societies themselves. There is, of course, no unique way of pursuing unity of the physics community. In a simplistic sense, one might say that perhaps a time has come when the APS has gained so much internal structure on its own that it could readily reabsorb into a single master-framework the entire structure that the AIP has bound together for over forty years. Yet the strength and the traditions of existing physics-based groups suggests that the interests of the profession will continue to be served through federation and cooperative effort, such as provided by AIP, rather than through such an amalgamation, or, at the other extreme, disparate, uncoupled efforts by each of the individual groups separately.

One would like to think that the weakening of the spirit of cooperation among the Societies, like the campus tempest of a few years ago, is the result of frustrations which will again abate as we become accustomed to the somewhat less affluent world in which we apparently must live. With this adjustment, one may hope that the wisdom which prevailed in 1930—expressed in appropriate modern terms—will again emerge and strengthen anew the bonds that join the physics community.

FREDERICK SEITZ

Past President, APS and

Former Chairman, AIP Governing Board