

SUMMARY TALK  
DELIVERED AT THE MEETING OF NUCLEAR PHYSICISTS  
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We are at the end of the Meeting of nuclear physicists and I will try in the response to the organizer to express in a few words my impression.

The meeting dealt with the research papers in theoretical and experimental nuclear physics including high energies, applications of the methods to the neighbouring fields, organizational problems and much concern was expressed about the future of nuclear physics.

An obvious impression was that the number of younger nuclear physicists is small, the staff is aging, indicating some loss of interest and prestige of nuclear physics. The obvious reason for that is the diminishing of effective financial means and the lack of any realistic long-term programme (hopes for improvement).

The reduced number of people and the lack of equipment to do work in nuclear physics and the general atmosphere of financial uncertainties has shifted the activity of nuclear physicists toward the application. For the first time on such occasions we had more reports on application than on the basic research.

The theoretical papers were dealing with different aspects of many-body problems, higher-order effects in electromagnetic processes and high energy scatterings (essentially continuation of the earlier work).

The experimental work is concentrated around reactors, betatron, the neutron generators, analysing the plates and films and higher-order electromagnetic transitions. Some new results were reported. This is also essentially a continuation of the earlier activity.

Attempts in new techniques and data processing were discussed. The urge was felt by many physicists to do appli-

ed physics. These attempts are essentially in the direction to provide quantitative analysis (by characteristic X-rays, etc.) of contamination on food, air, etc., in providing a possibility of following and controlling or tracing the processes in different systems (technology, biological systems, etc.) and in providing new materials. The aims of these applications were to help industry and to provide additional money for research. From these early beginnings it is difficult to judge for the future. One thing is, however, quite evident, for a larger scale of application one needs new staff, new equipment and additional financial means. Nuclear physicists can serve only as advisors and guides to the teams engaged in application. There are just too few to do the work by themselves, without running the risk to ruin the research itself. The best approach seems to be an organized attempt to develop those applications which are really needed.

It is obvious that some part of nuclear physics has become "big science" and to participate in those fields for small countries the only possibility is on the basis of time sharing. The subregional collaboration among the interested countries with the network of centres of excellence is for small countries a more efficient way of time-sharing scheme on a more modest basis. Besides these two ways of doing nuclear physics one has certainly to maintain activities as high as possible on the local level. For subregional or local activity, one desperately needs new equipment and new people.

Nuclear physics in the past developed greatly under the vision of nuclear energy and nuclear weapon. This resulted in some benefit for nuclear physics at the beginning in many countries, but later after some disillusion it had an almost disastrous effect. One should avoid the mistakes of the past and associate only one part of nuclear physics with the project of nuclear energy and treat the other part on equal footing with the other sciences able to contribute to higher educational level and international prestige.

Feeling was expressed that one should try a more organized attempt on national as well as international scene to

organize more efficiently the research in nuclear physics.

One should also spend more time in informing the society on the activities and usefulness of nuclear physics. Physicists should take social responsibilities for the things they are doing, but should not take the blame for misuse of their achievement, since they usually have little or no influence on decision making.

I would like to thank the organizers for the effort they have made to have a successful meeting. I feel we touched on this occasion upon many of the important problems and hope to collaborate to solve them.