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Viewpoint

Physics and Education

The advancement of physics in Europe is closely associated with the significance that national educational policies attribute to the understanding of the impact of science and technology on our daily lives. In this context, physics must be seen to be an essential part of all basic education to which practising physicists are prepared to devote serious attention.

A common complaint amongst students is that school teachers and university lecturers approach physics teaching by simply relating facts and mathematical techniques. Then, the students' imaginations are stifled, historical and philosophical perspectives are excluded, and the creative excitement of progress from ignorance to knowledge through theory and experiment is neglected.

In this issue, the IUPAP Commission on Physics Education reveals that a planned international meeting on physics education for physics-related sciences and professions was cancelled because of insufficient financial support. The focusing of attention on the importance of physics to other disciplines surely deserves the support of physicists in future. Otherwise, there is a danger that scientists in those other disciplines will view physicists as inward-looking.

Also in this issue, the Nuffield Advanced Physics Project is described as giving physics education a sense of direction and purpose that students need.

Another answer to the students' complaint would be the establishment of effective co-operation between practising physicists, physics teachers and educational policy makers. Here, university departments and research institutes could ensure that local schools and teacher training centres are well advised by physicists prepared to act as consultants.

Certainly, these questions could be among those covered by an EPS Advisory Committee on Education, which has been proposed recently.

Physics Education

In this article the past achievements and future courses of action of the IUPAP Commission on Physics Education are reviewed.

Past achievements

by **H.H. Staub**, Zurich University, former President of the IUPAP Commission on Physics Education.

The International Commission on Physics Education was officially installed at the IUPAP General Assembly in Ottawa in 1960. The necessity for such a Commission and its broad programme had been shown in a spectacular way only a few weeks before by the outstanding success of the First International Conference on Physics Education from 18 July — 4 August 1960 in Paris. This conference, which had been organized by Sanborn C. Brown and Norman Clarke with the sponsorship of IUPAP, brought together representatives of 28 nations and of several international agencies for an exchange of ideas, aims and actual performance in teaching of physics at the university and highschool level. Most delegations, therefore, were composed of university physics professors, physics highschool teachers and one or more representatives of those government agencies (Ministry of Education or Public Instruction) concerned with the organization of schools where physics was taught.

It was no surprise, of course, that Sanborn C. Brown was elected as the first President of the newly formed commission and Norman Clarke as Secretary. The general aims and activities for the Commission were essentially those resulting from the report on the Paris conference, edited by S.C. Brown and N. Clarke, namely: to exchange views on the methods of instruction of physics in the various countries and on the purpose of teaching physics to various professional groups, and to set up recommendations to government agencies on

matters concerning the teaching of physics by sponsorship of conferences or by collaboration with international organizations like Unesco, OECD or the International Atomic Energy Agency in the production of aids (books, films, etc.) for the teaching of physics.

In 1962, a Second International Conference was organized in Rio de Janeiro mainly for the discussion of the above-named problems encountered by the developing countries. In 1965, a Third International Conference was organized in London to deal with the problems of the education of professional physicists. The reports on these conferences were published in book form.

After having served the usual two period terms as President and Secretary of the Commission, Sanborn C. Brown and Norman Clarke were replaced by Hans H. Staub and William C. Kelly respectively at the IUPAP General Assembly of 1966 in Basel. During the next six years, an International Conference, for the first time in the form of a seminar on the education of physicists for work in industry, was held in Eindhoven, Netherlands, in December 1968; and another International Conference on the education of physics teachers at the secondary school level was held

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