International Conference on Physics Education Held in Edinburgh and Reported at Bucharest

Speaking at the EPS Third General Conference, Kevin W. Keohane (Chelsea College, London) outlined some of the views presented by the principal speakers at the International Conference on Physics Education, Edinburgh, 29 July - 6 August 1975.

He said that C.C. Butler, FRS (Director, Nuffield Foundation ; and newly elected president of IUPAP) had questioned the long term role of physics as a separate subject for students under the age of sixteen, and that their science studies might increasingly take the form of integrated science curricula. He pointed out that physics education would have to assume a more diffuse form to become available to students of a wide range of abilities. The UK is perhaps not unique in having a falling birthrate and a great surplus of primary school teachers, but it is at the same time desperately short of secondary school teachers of physics and mathematics.

Sir Hermann Bondi, FRS, had noted the lack of appeal of physics as a subject chosen by students : he suggested that " market research " be done to find out what students need or want of physics. Although universities do have the obligation to produce future university staff in their respective subjects, only one percent of the students are required for this replacement in a steady state situation. During the recent period of growth, industry, government service, and lower education have been seriously deprived of the physics graduates they need. Yet the universities still teach courses largely geared to the preparation of university professors, to the detriment of 99 % of their graduates who will enter other occupations.

H.B.G. Casimir (President EPS) had remarked that fundamental research has advanced as far as needed for the overwhelming majority of industrial needs. He questioned the relevance of current post-graduate studies in physics, particularly those in which a student never does an experiment with his own hands but analyses for example high-energy physics data or astrophysical data in terms of abstruse or ephemeral models. It seems little wonder that industry would rather have a first-degree recipient than such a PhD.

Victor F. Weisskopf had reminded the Conference that the style of physical argument is remote from that of everyday life : it takes a long time to acquire the language of physics : for example, laymen do not easily comprehend the equivalence between free fall at the surface of the earth and the motion of the moon in its orbit around the earth. Quantum mechanics and the theory of relativity are not incorporated into the general needs of people while astrophysics and cosmic rays are far outside normal experience. One should not be surprised then that physics is not of much interest to people, and that they turn therefore to... biology.

Kevin W. Keohane felt that there was at Edinburgh a general uncertainty about where we are going in physics. In his own view a precipitating factor has been the vast extension of opportunity for education in recent years — compulsory secondary education is only thirty years old in many European countries, and now higher education is becoming quasi-universal. Kevin W. Keohane declared that in view of these changes, we must develop diversity in physics education to meet the needs of our students.

Other plenary addresses were given by A. Moumouni (Niger), A.-R. Kaddoura (Syria) and P. Aigrain (France). A plenary session on the subject "New Science and Old Cultures" was addressed by Rais Ahmad (India), Joos Elsgeest (Netherlands), Ernest Hamburger (Sao Paulo, Brazil) and Keohane himself. The texts of the plenary papers are to appear in the November and January issues of the journal PHYSICS EDUCATION, while the texts of some twenty trend papers treated by the working groups of the Conference will appear about the beginning of 1976 in Unesco's NEW TRENDS IN PHYSICS TEACHING, VOLUME III.

The Edinburgh Conference was attended by over three hundred physicists and physics teachers from over seventy countries.

B.R.