Science in Post-primary Schools

Prior to the publication of the Consultative Committee's report and the Education (Post-primary Instruction) Regulations 1945 the type of science instruction given in post-primary schools had been stable for at least twenty years. General experimental science, chemistry, and one or more branches of physics were most widely taught in boys' schools; home science, general experimental science, and botany or physiology and hygiene were most widely taught in girls' schools. In mixed secondary schools various combinations were taught, but chemistry usually featured prominently. In district high schools chemistry and agriculture or home science were the most popular. All pupils usually took a science for at least two years. In technical schools the sciences were more directly related to the courses followed, so mechanics and electricity were favoured in engineering courses with home science in the girls' home courses.

As a result of the 1945 regulations general science was introduced into the curriculum of all post-primary schools as a core subject. In the first year of any post-primary course the regulations require that at least 3·5 units should be devoted to general science and elementary mathematics, and any candidate entering for the School Certificate Examination must complete a course in these two subjects involving at least 8 units.

This was a major change, for it shifted the emphasis in science teaching from the class-room and laboratory to the pupils' environment for at least the first two years at post-primary school. Laboratory work is still very important, but with the appearance in the schools of such things as aquaria, terraria, and insect boxes, and the development of field-work as part of the school programme, general science is more closely related to the pupils' immediate interests than the rather academic science, often divorced from experience, that had previously been taught.

It was a major change for teachers also. Many had been brought up on traditional chemistry and physics, and now found themselves only partially equipped to teach the new work. Generally speaking, teachers welcomed the change and were not slow in preparing themselves for the new syllabus and the new approach to elementary general science teaching, and few who have tried to comply with the spirit as well as the letter of the regulations remain unconvinced that biology properly taught can be both instructive and interesting, that all pupils should have an elementary knowledge of the principles of nutrition, and that the chemistry and physics of the home and its environment can provide the background for good science teaching.

Prescriptions for the School Certificate Examination include the following sciences: biology; chemistry; electricity and magnetism; general science; heat, light, and sound; and technical electricity. As a result of requests made by the teachers themselves human biology has been added to this list in the place of physiology and hygiene, and the first examination on the new prescription for this subject will be held in 1949. In most schools where a science is taught to School Certificate standard the aim is to concentrate on elementary general science in the first two years, enabling a full allocation of time to be given to the chosen School Certificate option in the Fifth Forms. In general, the science option chosen is the one having the greatest bearing on future occupations, but the smaller schools are not able to provide the wide range of sciences that can be developed in our larger post-primary schools. The outstanding feature of the science for School Certificate over the last three years has been the greater increase in the numbers presenting general science and biology compared with the numbers presenting other science subjects. Chemistry still remains the most popular, but chemistry and heat, light, and sound are the only two science subjects showing a decrease in the number of entries in 1948 as compared with 1947.

In the Sixth Forms home science has disappeared, as it, with agriculture, is no longer included in the University Entrance and scholarship prescriptions. Zoology is securing increased attention at this higher stage, though zoology and botany are still mutually exclusive subjects for the Entrance Scholarship Examination. A new subject, physics,