girls under eighteen released by employers for part-time day courses doubled; and, as industrial techniques develop, it will be for the technical colleges to provide short courses designed to explain the principles involved. The White Paper points out that it is in the national interest that more girls should be encouraged to study science or mathematics at the universities or training colleges and to take courses in technical colleges; but the Government gives no indication as to how the supply of teachers for the programme is to be found, beyond expressing the hope that industry will be ready to release yet more of its employees for part-time teaching during the day. The importance of adequate libraries in technical colleges and of co-operation between college, public and other libraries is also recognized.

The situation in Scotland is discussed separately. Here the great need is for better provision for local technical colleges run by education authorities, and the Government is ready to authorize a programme of building for technical education, to be started within the next five years, to the value of £10 million, with a further £2 million for equipment. A major increase in the recruitment of teachers will be required to man the new local technical colleges, and it is also pointed out that a further 15,000 students will be needed if Scotland is to attain proportionately even the same level of day-release students as in England to-day. As in England and Wales, much remains to be done to encourage girls with a practical or scientific bent to grasp the opportunities before them.

Notes on the United States, the U.S.S.R. and Western Europe are appended to the report, and also a report on 'sandwich' training and education from the National Advisory Council on Education for Industry and Commerce. Referring to the White Paper in the House of Commons on February 29, the Minister of Education said that the capital programme will be exempt from cuts, delays or postponements of any kind. Undue resources would not be devoted to one part of the education system, and he anticipated an early statement of the plans of the universities for the quinquennium 1957–62.

Design and Application of Small Digital Computers

The first Joint Computer Conference, sponsored by the Association for Computing Machinery, the American Institute of Electrical Engineers and the Institute of Radio Engineers, was held in December 1951 at Philadelphia, Penn., and consisted of a review of electronic and digital computers. This was followed in the two succeeding Decembers by conferences in New York and in Washington, D.C., where the problems of input–output equipment and of reliability, respectively, were discussed. Meanwhile, the Western Section of the Joint Computer Committee organized similar conferences during February 1953 and 1954 and a third during March 1955, but the only conference so far held by the Eastern Section was at Philadelphia, Pasadena, during December 8–10, 1954, the proceedings of which have now been published (pp. 92. New York: American Institute of Electrical Engineers, 1955; 3 dollars). The subject under discussion was the design and application of small digital computers, and the opening address, entitled "Small Computers in a Large World", was delivered by C. W. Adams (Massachusetts Institute of Technology), the conference chairman. Seventeen technical papers were presented, and in addition to the full texts of these papers and the discussions on them, the proceedings contains reports on three panel discussions on the following: small digital computers and business applications; redundancy checking for small digital computers; and small digital computers to assist large digital computers. Individual computers or systems dealt with include the National Cash Register Company's decimal computer (*CRC* 102-*D*), the Marchant MINIAC system, the TRADIC transistor digital computer, the Burroughs *E*101 computer, and the *IBM* 650 magnetic drum data-processing machine; many different forms and applications of magnetic drum storage are described. Of particular interest is the growing use of solid-state devices—transistors, magnetic cores and ferro-dielectrics—with their great potentialities for improved reliability, decreased power, space, heat and weight, and probably also increased capacity and decreased cost when they are utilized in quantity as components in digital computers.

Chemical Background of the Aluminium Industry

In connexion with the celebration of the centenary of the foundation of the aluminium industry by Henry Ste. Claire Deville, the Royal Institute of Chemistry has published a review entitled "The Chemical Background of the Aluminium Industry" (Monograph No. 3 of the Institute, 1955), prepared by Dr. T. G. Pearson, director of research of the British Aluminium Company. This monograph, which is a model of what such a publication should be, starts off with the raw material, no less than fourteen pages being devoted to bauxite itself. The purification of the mineral by the Bayer process is then considered, and this section provides an excellent summary of the underlying chemistry. Having now obtained the pure alumina, the smelting process is next considered, and this again is an admirable discussion. The refining of this product, for which a number of processes have been developed or suggested, completes the treatment of the normal production of the metal. Two short chapters dealing with the attempts which have been made to replace the Bayer process by the production of alumina of sufficient purity, on one hand, and by the Hall-Héroult electrolytic process on the other, both of which have their own fascinations, conclude the work.

Earthquakes during August 1955–January 1956

The two greatest earthquakes during August 1955–January 1956 attained magnitude 7½, one being on January 10 in the Tonga Islands and the other on January 16 near the coast of Ecuador; the latter caused heavy property damage at Portoviejo and at Bahia de Caraquez. Six earthquakes attained magnitude 7¼. The greatest depth of focus of any earthquake during the period was 650 km. Earthquakes from this depth occurred on August 19 at Acre, Brazil, on October 21 and 30; on January 9 in the Fiji Islands region; on October 31 near the Tonga Islands; and on January 13 in the Samoa Islands. During the period two shocks were reported felt in Great Britain. That on August 22 was at Aberdovy, Merionethshire, and that on January 10 near Derby. Some sixteen shocks were felt in the European Alps, four in Turkey, two in Haute-Saône, France, and one in Spain; on January 12 an earthquake caused heavy casualties and minor damage to property in Hungary. On January 8 an earthquake at Guerrero in Mexico caused many injuries and heavy damage