entially with an otherwise identical chamber lined with ordinary paraffin wax and filled with ordinary ethylene —a very clever scheme for automatically balancing out the ionization current due to gamma rays while leaving a calculable effect due to neutrons.

In 1944 Bretscher and many of his colleagues moved to Los Alamos, and French notes that even then thinking had moved beyond the fission bomb to the possibility of making a hydrogen bomb. But experimental information on the relevant reactions involving deuterium and tritium was sadly lacking. As French points out, "the D+D reaction had never been followed down to thermonuclear energies of the order of 10 keV, and the reaction of deuterium with tritium was mostly a big question mark, though there were hints and speculations of a prodigious cross-section".

Bretscher directed the design of a low voltage accelerator to record protons from these reactions between like nuclei. Some time in 1945, "the world supply of pile-produced tritium gas—a whole cubic centimetre of it, many times more costly than plutonium, weight for weight—was delivered to us, and with this we were to make our measurements. Bretscher himself undertook the nerve-racking task of breaking the vial of tritium inside a gas-transfer system. Late one night, shortly afterwards, the crucial moment came. The gas supply to the ion source was switched from deuterium to tritium. Instead of occasional pulses on the oscilloscope, there appeared an absolute hailstorm. The implications were frightening and as soon as we had convinced ourselves that the result was genuine we went home in a mood that was a strange blend of excitement and awe.

"Over the next few months the measurements were refined and extended, with the help of a couple more consignments of tritium. Everything confirmed the first indications; the T+D reaction had a monstrously large yield (of the order of fifty times greater than for D+D) at fission-bomb temperatures. The theoreticians seized on these results, and it seemed obvious at the time that the super-bomb would consist of a great mass of liquid deuterium set off by a fission bomb fuse and a tritium/deuterium detonator. But practical realization of such a design was certainly not going to happen soon, especially as the ending of the war brought about a general lessening of urgency."

Parliament in Britain

IN a written answer in the House of Commons on March 1, the Minister of State for Education and Science, Mr. G. Roberts, stated that studentships were only awarded by the Science Research Council and the Social Science Research Council to nominees of university departments. In 1966, the Social Science Research Council received 429 nominations, and 43 were not offered awards. The Science Research Council received 2,567 nominations in 1964, and 60 were not offered awards; for 1965, the figures were 2,928 and 143; and for 1966, 3,096 and 321.

ON March 2, also in a written answer, Mr. Roberts gave figures for the average expenditure per full-time student of the universities for the academic year 1964–65. The figures vary from £2,377 (Essex), £1,268 (London), £1,125 (East Anglia), £1,121 (Reading), £1,092 (Manchester Institute of Science and Technology) to £695 (St. Andrews), £690 (Durham), £612 (Strathclyde), £580 (Hull), £563 (Exeter), and £537 (St. David's College, Lampeter). The figures for Cambridge (£805) and Oxford (£781) are not directly comparable as they exclude all expenditure by the Colleges.

IN giving an analysis of the origin by country of the 2,686 Commonwealth students in Britain who are supported by British public funds, the Parliamentary Secretary to the Ministry of Overseas Development, Mr. A. E. Oram, in a written answer in the House of Commons on March 2, stated that the average cost of a student from the beginning to the end of his course and allowing for passage costs, etc., was about £2,425. This did not include the hidden subsidy represented by the uneconomic fees charged by institutions of higher education.

IN a written answer in the House of Commons on February 28 the Minister of Technology, Mr. A. W. Benn, gave a long summary of the action taken to implement the fourteen recommendations of the Fielden Committee on Engineering Design which reported in June 1963. A series of regional conferences on engineering design were arranged during 1964 by the Federation of British Industries and the Department of Scientific and Industrial Research. The Ministry of Technology works closely with the Council of Engineering Institutions in its efforts to raise the status of the engineering profession as a whole, and after 1973 the academic standard required for the professional qualifications of "Chartered Engineers" will be of degree standard. The Science Research Council has continued to award grants for studies of the design process. Ways of introducing elements of engineering design into certain National Certificate and Diploma courses in engineering are being considered by the Department of Education and Science, while the Engineering Industry Training Board has set up a Technologist Training Policy Committee to prepare a manual on training professional engineers in industry. The first of the institutes recommended by the report has been established at the National Engineering Laboratory at East Kilbride. In addition, he added that the Ministry of Technology and he Science Research Council had placed contracts to further the development of computer-aided design.