bonate to make good the protein deficiency in cereal and other starchy foods, nor the doubling of the existing acreage under beans, would appreciably add to our resources in protein materials. More hopeful would be the economizing of imported feeding-stuffs by adopting the Lehmann system of pig-feeding (restricting the cereal meals and using more boiled roots, potatoes, etc.); the reduction in the protein ration of dairy cows from 0·6 lb. to 0·5 lb. protein equivalent per gallon of milk; and by putting all poultry on minimum feeding allowances. These savings would represent about three times those to be secured from possible new sources of supply. The total savings from all sources would represent 11·7 per cent protein equivalent and 8·9 per cent starch equivalent of our pre-War home production, but only 8·5 and 6·9 per cent, respectively, of our total pre-War supplies.

The Pharmaceutical Society's New House

The Pharmaceutical Society's building in London was nearing completion when the exigencies of the War brought about a suspension of the final stage of the building operations, and so prejudiced the intention of celebrating the centenary in a new home. The council of the Society, having in mind the fact that the lease of the old building in Bloomsbury Square will expire in due course, is approaching the Ministry of Works with the proposal that, in return for facilities being granted to finish the building, the Government should have the option of the use of it during the present emergency. This offer may raise the general question of the attitude of the Government regarding large modern buildings in London which are nearing completion.

The Society's new building has a frontage of 235 ft. and a site depth of 120 ft.; it is designed to provide a basement, ground floor and five upper stories, and the total available floor area which could be provided would be more than 141,000 square feet. The main front block and the west and centre wings have been erected up to the fourth floor level. The east block remains to be built from above basement level. The building is of steel frame construction with panel walls finished on the outside in brickwork with stone and slate dressings; the floors are of reinforced concrete. Since the accommodation contemplated covered the provision of laboratories, two lecture theatres, an assembly hall, library, refectory with kitchen and administrative offices, there are available large open and well-lighted floor areas readily adaptable to office or other similar requirements.

Germany's Aluminium Industry

The *Engineer* is publishing a series of illustrated articles entitled "Air Force Targets in Germany", in which much information is given about the docks, harbours, canals, factories, railways and power stations which are so often in the news. Three of the latest articles to appear, published respectively on October 18 and 25 and November 1, deal generally with Germany's aluminium industry and especially with the large works at Lauta, to the north-west of Dresden, at Bitterfeld in the Leipzig district and at Rheinfelden in the extreme south-west of Germany. The last is the oldest works, having been started in 1898, while the other two were planned in 1915–17 to meet the needs of the time. Each of the works consist of three main sections; an electric generating and transforming station, factories housing the groups of electrolytic baths or furnaces and foundries in which the metal is cast into ingots and bars and rolled into sections and sheets. The raw materials needed for the production of one ton of aluminium are 4 tons of bauxite, 80 kilos of artificial cryolite, about 600 kilos of carbon electrodes, and some 23,000 kw. of electric energy. The process time varies from 100 to 130 hours. In 1929 Germany's output of aluminium was 33,000 metric tons out of a world total of 282,000 tons and by 1938 it had risen to 163,600 tons out of a world output of 579,900. More than 70 per cent of Germany's light alloy manufacturing capacity is Government owned, and every effort has been made to extend the use of these light alloys and to manufacture them from home-produced raw materials.

Telegraphic Typesetting

A paper on telegraphic typesetting by H. H. Harrison read and discussed before the Institution of Electrical Engineers appears in the *Journal* of the Institution of October. In the discussion, Mr. D. Murray pointed out that the paper is valuable because it reminds us that, in addition to strong stream and weak stream technique, there are controlling electro-mechanisms of the most remarkable character, correctly described as electrical typewriter-keyboard machines, of great complexity and beauty. The teletype, one of these keyboard machines, of which the fundamental characteristic is the transmission of intelligence by semi-mechanical machines (telegraph class of mechanisms), is in wide use in the form of a telegraph exchange, analogous to a telephone exchange, covering the whole of the territory of the United States, with about 15,000 subscribers. Considerable progress was being made in this direction in Great Britain also, and plans were being considered for spreading the exchange all over Europe. Unfortunately, this development has been interrupted by the War.

Mr. Harrison's paper deals with an astonishing extension of the telegraph-keyboard mechanism that combines the typewriter-keyboard mechanism with typesetting at a distance. Mr. Murray saw it in operation at the Western Electric Teletype factory in Chicago about three years ago. It was shown to him as an example of successful prophecy, because about forty years previously he had exhibited a typewriter telegraph of this class at the old Astor House in lower Broadway with the slogan "This tape sets type". He had brought the model from Australia and it attracted much attention. In his reply, Mr. Harrison said that Mr. Murray's forty-year-old prophecy was an interesting example of the slow growth of ideas. Although the Monotype keyboard producing a perforated tape and provided with an