of the various branches of the manufacture of chemical plant, the object for which is was formed will be achieved, namely, to ensure that British chemicals shall be made with British plant.

THE HABER PROCESS AT MERSEBURG (SAXONY).

J. R. PARTINGTON.

The Haber process carried out at Merseburg differs from that at Oppau (cf. J., 1921, 99 R) in two respects:—(i) The mixture of nitrogen and hydrogen is made directly by treating a mixture of producer (air) gas and water gas, with the addition of steam, by the Bosch process (B.P. 14,508 of 1920); (ii) the purified mixture of nitrogen and hydrogen, before passing to the main catalyst furnaces, is passed through a series of small catalyst furnaces ("Vorofen") to remove impurities (B.P. 5835 of 1911).

There are 31 gas generators, 5 for air gas and the rest for water gas, all the air being provided by two blowers, each of 350 h.-p. The gases are passed through three gasholders, each of 1,765,000 cb. ft. capacity, providing a reserve for fifteen minutes. From these the gases are taken and mixed by blowers. The mixed gas then takes up the requisite amount of water vapour in two rows of six towers, each 82 ft. high, through which hot water is pumped by seven pumps, each of 70 h.-p. The water is warmed in a tower by the gases leaving the heat-exchanger of the contact furnaces for the hydrogen production. There are 48 heat-exchanger towers.

The gases, containing hydrogen, nitrogen, carbon monoxide and some carbon dioxide, now pass, after preheating, to two sets of 24 contact furnaces in which the reaction $CO+H_2O \rightleftarrows CO_2+H_2$ occurs. The gas passes to two gasholders, one of 350,000 cb. ft. and the other of 1,050,000 cb. ft. capacity. Carbon dioxide is removed by washing in 21 to 30 towers at 25 atm., the compression of the gas being in large part effected by one of the cylinders of the 200 atm.-compressors, although a few pumps for 25 atm. are provided. Pelton wheels recover about 40 per cent. of the energy of the released gas, which is utilised to compress the water to 25 atm. The power for this part of the plant is 40,000 h.-p.

For the removal of the carbon monoxide, the gas compressed to 200 atm. by twenty-four 1000 h.-p. compressors and twelve 500 h.-p. compressors is scrubbed in 19 towers with ammoniacal copper formate solution circulated by nine double pumps of 600 h.-p. The carbon monoxide recovered by reducing the pressure in the towers is sent along with water to the hydrogen contact-plant. Six towers for caustic soda remove the remaining carbon monoxide, the soda being circulated by six small pumps.

The gas now passes to nine small contact furnaces ("Vorofen"), in which the remaining impurities are removed by catalyst mass before passing to the main contact furnaces. There are twenty-four main catalyst furnaces, five being in reserve, and twenty-four heat-exchangers. Circulation is effected by eleven pumps of 700 h.-p. each ("Umlaufpumpen"). The ammonia formed is absorbed in water, compressed to 200 atm. by five 100 h.-p. and two 300 h.-p. pumps in twenty towers 39·3 ft. high and 29 ins. diameter. The ammonia solution is passed to an expander, the ammonia gas evolved being absorbed in a separate tower. In the expansion the hydrogen and nitrogen gases dissolved in the water under 200 atm. pressure are liberated; these pass through the ammonia scrubbing tower and are collected in a gasholder, from which they re-enter the circulatory system.

The capacity of the Merseburg factory, when completed, will be 800 tons of ammonia per day.

SOCIETY OF CHEMICAL INDUSTRY.

APRIL MEETING OF COUNCIL.

Among the matters considered at the meeting held on April 15, Sir William J. Pope presiding, was a suggestion made by the Institution of Mechanical Engineers that a further joint meeting of the two societies might be held in the early part of next session. The Institution proposed that the paper should be contributed by one of its members, and should deal with some subject of common interest, such as the construction and manufacture of large-scale chemical plant. The suggestion was cordially approved. The proposal put forward by the Chemical Society is dealt with elsewhere in this issue (p. 139 R).

Sir William Pearce was re-appointed the Society's representative on the Governing Body of the Imperial College of Science and Technology for a period of four years from June 1 next; and the resignation from the Council of Mr. W. J. A. Butterfield on account of pressure of work was accepted with regret. It was reported that the following retire from the Council after the Annual General Meeting:—(*a*) Vice-presidents: Prof. W. R. Hodgkinson, Mr. Robert Mond, and Mr. W. F. Reid. Mr. S. R. Trotman also retires but is eligible for re-election. (*b*) Ordinary members: Mr. C. S. Garland, Sir R. Hadfield, and Dr. F. M. Perkin.

The Government and Parliamentary Committee reported that it had brought before the Board of Trade certain points in the Dangerous Drugs Act, 1920, which may prevent or restrict the development of scientific research in the particular chemicals to which the Act refers. The renewal of the Society's subscription to the Conjoint Board was authorised. Twenty-eight new members were elected; and the report of the Manchester Section was submitted and approved.

ANNUAL MEETING, 1921.

McGILL UNIVERSITY, MONTREAL.

It will be of particular interest to members who are going to Canada to attend the annual meeting of the Society in August, to know that many of the members they will meet there as manufacturers, or associated with manufacturers, are graduates of the university which owes its existence to the exceptional foresight of the Scotchman James McGill, who was born in Glasgow in October, 1744. Exactly one hundred years ago, in 1821, the charter for the establishment of McGill University was granted.

When the visiting members first see the University they will find it difficult to realise that the fine site the University buildings occupy in the heart of Montreal was wild pasture land less than a century ago. But the rapidity of development characteristic of Canada is exemplified in this seat of learning as well as in commerce, manufacturing, and agriculture, and an idea of the vast strides that have been made may be gathered from the fact that when James McGill was one of Montreal's leading merchants the town consisted of only 9000 people, whereas the city's population is now approaching one million. Prominent among the buildings is that of the medical faculty, which brings to mind some of the men most famous in