

regarding blood groups are given, together with nearly 500 references to the literature. Part 1 is general, its nine sections including tabular treatment of the chemical and serological nature of the agglutinogens *A*, *B*, *M* and *N*; relations to other species; subgroups; heredity of the types; medico-legal applications; relation to disease; and blood groups in animals. Part 2 is anthropological, giving maps of the world distribution of the *A* and *B* and complete tables of the frequency of *A* and *B* as well as *M* and *N* in the various ethnic stocks tested in all parts of the world up to the time of publication. By the use of two kinds of type an attempt is made to distinguish between the more reliable results and those which, because of small numbers (less than 200) or for other reasons, are regarded as less reliable. This compilation of the serological and anthropological facts regarding the blood groups will be of much service to all workers who are interested in this subject.

Position of the Illegitimate Child

THE League of Nations has just published a "Study on the Legal Position of the Illegitimate Child" (London: George Allen and Unwin, Ltd., 1939. 4s.). The study opens with a short historical survey of the social aspects of the legislation on the subject in various countries, followed by an analysis of the various legislative provisions respecting civil status, name, nationality and legal domicile, and inheritance rights. The fate of the illegitimate child being closely bound up with that of its mother, a chapter on the unmarried mother's rights is included. The last part of the volume deals with social insurance laws, and welfare measures, including public assistance and preventive health measures.

Television Broadcasting

SIR NOEL ASHBIDGE gives a review of the progress being made in broadcasting and television in the *Proceedings* of the Wireless Section of the Institution of Electrical Engineers of June. The period under review extends from the end of 1934 until the end of 1938. During this period the number of licence-holders in European countries has increased by more than 60 per cent. The details of the Royal tour in America in increasing the popularity of sound broadcasting have not yet been published, but it is known that the excellent broadcasts of sound and television have greatly increased the popularity of the British Broadcasting Company. The second part of Sir Noel's report deals exclusively with television broadcasting. The great improvements made in the quality of the pictures shown, the great trouble taken by the Government Post Office to locate the position and find out the cause of the interference, when complaints are made, and the remedies they suggest, in many cases completely eliminating the trouble, have satisfied the users in nearly every district. The nominal hours of transmission are now from 3 to 4 p.m.; and from 9 to 10 p.m. The vision transmitter and the studio and control room equipment at the Alexandra Palace Station have been

considerably improved; in particular, an improved type of 'Emitron' tube, known as the long-gun type, is now in use for studio work. It is now possible to obtain very satisfactory results with telephoto lenses. Satisfactory reception is possible up to a radius of about thirty miles from the Palace. In exceptional cases reception has been reported up to 200 miles. It is hoped that in the future international standardization with regard to definition and picture frequency may become available, as the absence of a common standard would be a most serious drawback.

A Factory without Windows

A DESCRIPTION is given in the *Electrical Review* of August 4 of a factory without any windows which is being constructed for the Simonds Saw and Steel Co. at Fitchburg, Mass., U.S.A. It is completely air-conditioned and artificially illuminated throughout. It concentrates productive machinery now covering 17½ acres in several plants, into 5½ acres of production space, from which daylight is completely excluded. Lighting fixtures are being installed in 1,440 positions. Each consists of a 100-watt lamp and a simple curved porcelain reflector. These produce an illumination of not less than 20 ft-candles throughout each room on the working plane. The Company plans to operate the new plant intensively on a three-shift basis, so that the work goes on continuously day and night. Service mains for water, gas, steam, power, light, air and oil are laid between the floors through ducts direct to more than 1,000 machines and furnace positions. The plant has a connected power load of 6,000 horsepower and a total of 4,200 electric outlets giving current for light, machine power, transformers, motor-generators and other units. Dust and exhaust gases are removed through underground ducts, served by thirty dust-removal units. The entire building is air-conditioned by Carrier units and the humidity and temperature controlled through hydrostats and thermostats at four special positions. 'Man-cooler' systems have been provided for the comfort of men working at the furnaces. Air will be circulated through the building at the rate of about 400,000 cub. ft. per minute. It enters the structure through louvres on the end walls of four lean-to buildings which adjoin the main building. Water is obtained from four artesian wells by electric pumping. Air is blown through water-sprays in each of these structures before being distributed.

The All-Welded Hull of H.M.S. *Seagull*

H.M.S. *Seagull* is one of the two minesweepers ordered to be built at Devonport Dockyard as part of the 1936 Naval programme. It was decided that *Seagull* should be built all-welded, whilst the sister ship *Leda* should be constructed in accordance with the normal practice, that is, mainly riveted. The occasion was to be utilized by obtaining a trustworthy comparison between the two methods of construction. So far as was practicable, the thicknesses of plating were left unaltered. The *Seagull* was launched on October 28, 1937, the launching weight