

Gas Light and Coke Company came to select the low-temperature carbonisation system developed at the Fuel Research Station for a full scale commercial trial at the Richmond Gas Works. Various causes led to the cessation of the experiments before, in the opinion of the Department and the Mines Department, a conclusive result was obtained. One of the principal difficulties encountered was the distortion of the metal retorts employed. This distortion resulted in an unduly heavy charge for replacements being added to the cost of the working of the plant. In view of the very promising results and increased throughput recently obtained at the Fuel Research Station with a brick retort, it is proposed to erect and work as steadily as possible two new retorts of that type at the station, so as to obtain further data regarding the life and working of such retorts. The disappointing results of this attempt to develop an apparently promising low-temperature process illustrate the need for caution in forecasting the commercial prospects of new schemes in this field.

Very interesting results have been obtained with horizontal gas retorts. By modifying the method of heating the retorts, the daily throughput has been increased by 70 per cent. The effect of this on the economics of carbonisation may be far-reaching, for more than seven million tons of coal are carbonised daily in such plant.

The organisation of the Physical and Chemical Survey of the National Coal Resources has now been almost completed, and covers practically all the coal areas in the country.

Many other aspects of the national fuel problems are touched in this interesting report.

Treatment of Fodder Crops.

VARIOUS are the proposals for restoring arable farming to its former prosperous state. Apart from the recent Government promise of establishing a quota for wheat, we have had such interesting suggestions as Prof. Orwin's mechanised farming, which is already being tried in various parts of the country, and the erection of canning factories in which fruit and vegetables take the place of wheat, and of which two are already being built in Norfolk alone. Yet a third proposal which seems worthy of trial is the so-called 'Mason System for Harvesting and Drying Green Fodder Crops'. The process invented by Mr. Arthur J. Mason is the result of twenty years' experimental work, and has been in commercial operation in the United States since 1926. It aims at producing home-grown feeding stuffs by artificially drying green fodder crops cut before the flowering stage and converting them directly into high-grade feeding-stuffs of comparable value with such imported products as cake, cereals, wheat offals, etc., at a distinctly lower price. The Rothamsted Experimental Station is already running some eighty experimental plots with the view of discovering the most suitable crops in Great Britain for the Mason process.

Investigations seem to show that crops thus grown in place of cereals will increase the yield of English arable lands about three and a half times (in food and monetary value) and assure the farmer a net profit of £2-£5 an acre, provided that the crop is cut three or four times in the season—a perfectly feasible matter if the crop is cut before flowering sets in. In such cases the normal yield per acre is, compared in feeding value with cereals, 3 to 4 tons per acre against 0.8 tons of wheat, the value of the product being 3½ times as high. The system has the further advantage of completely eliminating the more or less

considerable loss in hay-making caused at present by the ordinary vagaries of the English climate. The crop, in fact, can be cut at any time, regardless of the weather, and the feeding value of the product is approximately double that of the ordinary sun-dried hay, there being no loss of proteins or vitamins by 'wilting' in the sun or by exposure to wet. Thus with lucerne, which yields in the case of ordinary hay-making about 12 per cent protein, the content of protein rises to 18 or 20 per cent when treated by the Mason process.

The installation costs approximately £7600, allowing £3500 for the drying plant and the rest for harvesting and haulage. It is capable of dealing with the product of 800 to 1000 acres, and should produce about 2600 tons of concentrates, worth £15,600 to £20,000, per annum, which could be grown within a three-mile radius in any arable district. Each factory could be organised as a single operating company, which purchases the standing crops and carries out the harvesting and the drying, the farmer receiving £2 per ton (dry) for his crops. Obviously in view of the farmers' sad experience with the sugar beet factories, the farmers concerned should have a direct interest in the factory, and some say in the prices. The factories would first concentrate on the production of fine ground meal for poultry food, for which there is an immediate market, but the product has also been found invaluable for cattle and sheep feeding. Considering the costliness of erecting sugar-beet factories and the large amount of the sugar-beet subsidy, it would be quite worth while for the Ministry of Agriculture to consider if some of the subsidy might not be diverted to encouraging the erection of some of these factories, of which the cost appears extremely modest. The system was recently brought to the notice of Section M (Agriculture) of the British Association by Sir Richard Paget, Bt. (1 Devonshire Terrace, London, W.2), from whom further information can be obtained.

University and Educational Intelligence.

CAMBRIDGE.—A. S. Paterson has been appointed to the Pinsent-Darwin studentship for three years from Oct. 1.

The council of the Senate has issued a report on accommodation for the Department of Mineralogy and Petrology. It is recommended that a new building covering about 5600 sq. ft. and containing four floors should be constructed between the Sedgwick Museum and the Department of Physiology.

At Emmanuel College, Mr. F. T. Brooks, University reader in mycology, has been elected to a reserved official fellowship.

LONDON.—At a meeting of convocation on Jan. 18 the Earl of Athlone was elected chancellor of the University. The installation ceremony will be held at the University on Feb. 18.

The following degrees have recently been conferred: D.Sc. (Statistics and Eugenics) on Ethel Mary Elderton (University College) for "Report on the English Birthrate" (*Eug. Lab. Publications*, 1914) and "On the Factors which influence Infant Welfare" (*Annals of Eug.*, 1926-29); D.Sc. (Economics) on Hilda Rodwell Ormsby (London School of Economics) for "The Geography of France—Regional and Economic" (Methuen, 1931).

The following titles have been conferred in respect of posts held at the Colleges indicated: *Professor*: Dr. Robert Robinson (biochemistry, Lister Institute of Preventive Medicine). *Reader*: Dr. J. M.