

steels, as judged from their other constituents, were not of the very highest quality, and that Nos. 8, 10, 13, 18, and 21, which are all high in oxygen, were of cheap make.

The results obtained by previous workers are very scanty. The authors, in their preliminary investigation, found only the figures given by Cubillo, who gave for acid open-hearth steel in the ladle, 0.004 per cent. of oxygen; and R. H. McMillen, who has published the following percentage data:—

Sample.	C.	Mn.	Si.	S.	P.	O.
Basic O.H.	0.07	0.06	0.08	0.019	0.008	0.113
Basic O.H.	0.08	0.22	0.01	0.016	0.008	0.079
Basic O.H.	0.36	0.69	0.03	0.040	0.046	0.042

The method of reduction in a current of hydrogen, used by both workers, is, according to the authors, open to several objections. Mr. McMillen's figures are very much higher than those found for any steel examined by the authors. Taking this in conjunction with the fact that no steel examined by McMillen gave a lower value than 0.035 per cent.—even crucible steels, containing 1.17 per cent. and 1.14 per cent. of carbon, showing 0.035 per cent. and 0.045 per cent. respectively of oxygen—the authors are inclined to think that he must have been the victim of a systematic error not recognized.

A necessary and important consequence of low-oxygen content, if the determination of oxygen be made by the method used, is that the gas content must also be very low, at least in respect of carbon monoxide and dioxide. It was shown in the paper already mentioned that the oxides of carbon are reduced to water under the conditions of the experiment; consequently carbon monoxide and carbon dioxide contained in the steel, or given off from it on heating, are reduced and their oxygen appears in the final result.

If a steel gives off its own volume of carbon monoxide on heating, the oxygen in the gas represents an amount equal to 0.0091 per cent., a similar amount of carbon dioxide representing 0.0182 per cent. This conclusion is not invalidated by the fact that the steel is used in the form of fine turnings, as, although gas may be lost during the operation, the oxides of carbon are invariably practically absent from the gases obtained, which consist of nitrogen and hydrogen.

THE ELECTRICAL INDUSTRY IN ITALY.

From statistics recently published, brought up to the end of March, 1914, it appears that the Italian companies concerned in the production and distribution of electricity number 151, having 302 stations at work, with a production equal to 763,000 h.p., while nine stations are under construction, with a capacity of 125,000 h.p. The capital employed by these companies amounts to \$90,600,000. Firms engaged in the output of electrical machinery number 16, employing power to the extent of 3,310 h.p., and with a capital of \$7,200,000.

The amount of polish which can be given to the surface of concrete depends upon the density of the mixture and the nature of the aggregate used. After the surface has been smoothed down on a rubbing bed, or by the use of rotary rubbing stones, as applied in terrazzo floor work, the procedure is somewhat similar to that used in polishing granite or marble. The aggregate exposed on the surface by the rubbing process takes the polish, the appearance of the surface being dependent upon the percentage of aggregate exposed.

DEMAND FOR RAILWAY MATERIALS IN ARGENTINA.

ARGENTINA, like Canada, is a country of vast distances and large grain areas, and the transportation problems of the two countries, to develop full resources, resemble each other. The demand for railway material in Argentina has been large in the past, and is destined to be the same in the future. In so far as Canadian manufacturers are concerned in this market, the Department of Trade and Commerce reports that all orders for the British-owned roads go to head offices in London. This method of procedure is followed, not only in such articles as rolling stock, rails, accessories, etc., but also in those commodities which make up the stores of every well organized railway company. In the latter would be included such articles as picks, spades and shovels, wheelbarrows, track tools, furniture, electrical material, paint, etc., etc. One of the few articles purchased locally is calcium carbide. Such being the case, it is patent that any Canadian manufacturers of locomotives, passenger and freight cars, should, as a preliminary to competing for this business, have a capable representative in London, or as an alternative they must appoint agents of standing. Probably the control of the situation is in the hands of the consulting engineers of the various systems, and it is with them that connections have to be formed. Some months ago some of the London offices of the British-owned railways expressed themselves as being very willing to assist Canadian industrial enterprise, where it could be shown that Canadians were able to compete with British, American and continental makers, in price and quality, and also to purchase in Canada when their requirements could not be filled in the United Kingdom.

Now that Belgium, France and Germany are likely to be out of the running for a number of years, it would seem that Canadian factories may have an opportunity to compete on terms considerably more favorable than could have been expected a few months back. Large orders are unlikely to be placed for a year or two, but it is reasonably certain that before the Continental countries mentioned above can recover from the effects of the present war, whenever it may end, much stock now in use will be worn out, and will have to be replaced if the railways are to be maintained in a high state of efficiency. But whether orders be placed within the next six months, or within the next two years, the present is the time to commence preparing for the business.

It must be borne in mind that Argentina has a railway mileage of nearly 21,000 miles, of which 15,700 belong to British-owned roads; that she produces more grain of various kinds than does the Dominion, and she has a larger foreign trade. Like Canada, her railway requirements are never ceasing. Circumstances being as they are, it is safe to say that Canadian manufacturers of rolling stock are likely to find openings within the next two years that will give them more than a fair chance to secure a footing in South America.

Advices to the Hon. Thomas Taylor, Minister of Railways, are to the effect that the concrete piers of the Kettle Valley Railway bridge across the Tulameen River at Princeton are complete and are now ready for the wooden Howe truss superstructure. Promise is made by Vice-President Bury, of the C.P.R., that the line will be open to traffic to Nelson by June 1.