

out the great Napoleonic contest, did not consist so much in her ability to put great armed forces into action on land as it did in her control of commerce and the development of her naval power. That development of commerce rested on her paramount control of the production of goods, at the foundation of which are the imperial metals iron and steel. It was through this commerce that Great Britain was enabled to subsidize the forces which in the end prevailed, herself supplying the lesser number of men upon land, but the greater navy.

Bearing these facts in mind, one who possesses the least power of imagination, which

is the prime factor in all the large affairs of life, will readily comprehend the position in which this nation has been placed by its predominance in coal, iron, and steel. It is to the end that, whenever the legal obstructions which close or impede the ways of trade are removed, we shall hold the paramount position in the commerce of the world, by means of which we may carry our abundance to the service of all nations, to their benefit, while realizing, on our own part, the greater benefits of high wages, large earnings, low prices, and adequate profits, in all the products of the field, the forest, the factory, and the mine.

II—THE SUPPLY OF ANTHRACITE COAL IN PENNSYLVANIA.

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AT the close of 1896 the total shipments from the anthracite fields had aggregated 995,702,345 «long» tons of 2240 pounds each. It is estimated that the amount usually designated as «colliery consumption,» together with that consumed locally, averages about ten per cent. of the shipments, so that the production of anthracite coal since 1820, when the first shipments were reported, amounts approximately to 1,100,000,000 long tons. The Coal Waste Commission of Pennsylvania, in its report on the waste in anthracite mining, estimates that for every ton of coal mined for consumption one and one half tons are lost. This loss includes the culm thrown on the dump, and the amount of coal necessarily left in the mine, in the form of pillars for the support of the roof, etc. From this we can estimate the inroads made upon the original coal deposits at 2,750,000,000 long tons.

From careful computations it has been assumed that the original deposits in Pennsylvania contained 19,200,000,000 tons of coal. The rate of production, including colliery consumption, for the last ten years has been at the rate of about 45,000,000 tons per year. It follows, therefore, that the amount of coal now left in the hills is about 16,500,000,000 long tons, which, at the present rate of consumption, and allowing $1\frac{1}{2}$ tons wasted for each ton sold, would last ap-

proximately between 140 and 150 years. The utilization of the smaller sizes of anthracite, and improvements in mining methods, are steadily reducing the percentage of waste, and it is probable that the waste to-day is not more than equal to that of the available tonnage; so that the life of the Pennsylvania anthracite fields, at the present rate of consumption, may be estimated at about 200 years.

In passing upon such a question as this, there are many contingencies that must be considered, and which may upset calculations, no matter how carefully made. Among these are the possible increase in consumption, the development of heating by electricity, through the conversion of power into heat, and the fact that the exhaustion of the mines will be gradual. The probability is that the burning of anthracite coal will not entirely cease inside of 300 years.

In addition to the Pennsylvania anthracite, there are small deposits of hard coal in Colorado and New Mexico, but they are comparatively insignificant. The production from these deposits has not reached 100,000 tons in any year. As to the exhaustion of the boundless bituminous fields in the United States, it may be broadly stated that, before the contingency arrives, the necessity of generating heat by fuel will, in all probability, have passed.

