be expressed, that the yield has been increased by 20 per cent., and that the total gas yield produced has been turned to three times better account.

As a result of these economies, there has been general revision in the methods by which illuminating gas is now valued, and by the introduction of the Metropolitan No. 2 Argand Burner, a large amount of gas is now available, which before the invention of the incandescent mantle, would not have been admissible for town's lighting. Already some 130 gas authorities have by the Standard Burner Bill, availed themselves of power to supply gas under the new economic conditions, and the country may now be said to be free from the old candle-power superstitions, and in a position to make the most of the coal in the production of lighting gas.

From the point of view of our paper, the progress made by the gas world has opened up large possibilities for those coke oven plants with surplus gas available, which are situated in the neighbourhood of large townships. With the care of a gas manager bestowed on a modern coke oven installation, there is no difficulty in making town's gas of modern standard. I make bold to say that there is no plant which could not either by supply of the whole gas, by fractionation, or by enrichment, prove of great financial benefit to an adjacent community. The usual method by which the coke oven manager disposes of his gas is by burning it under boilers, that is a purpose for which raw coal, without carbonization charges, and expensive plant, would be equally suitable. At the colliery, refuse coal would replace the use of gas under boilers, and the value of the latter fuel for steam raising would not exceed 0.8d. per 1,000 cubic feet. At works to which coal would have to be transported, the steam raising value of the gas might be double, say 2d. per 1,000 cubic feet. Even if these figures are increased by 50 per cent., the present value is small compared with the cost of town's gas into the holder. The average cost of town's gas put into the holder at 60 gas works in this kingdom averages 1s. 1d. per 1,000 cubic feet, which offers a handsome margin, after deducting cost of oxide purification (0.5d. per 1,000 cubic feet) between burning coke oven gas under boilers and using it in the town's main. There is ample room for a gain to the coke oven plant, and a substantial reduction to the consumer, and a good deal of overlapping in the matter of coal consumption would cease.

In the above the writer has mentioned the "fractionation" of coke oven gas in the consideration of its supply to towns. By this is meant the separation of the richer gases evolved during the earlier stages of carbonization, for despatch to the town, the poorer gases during the latter stages being retained for oven heating. This was the method employed by Schniewind in the United States, at Everett, Massachusetts, and is also employed by some coke oven gas works in Germany. In this matter and in the question of enrichment likewise, the quality of the coal, and the manner in which the carbonization is carried out, determines the course to be adopted. With very lean coals, one or both methods may have to be employed, in order to keep up the value of the gas. With richer coals, no fractionation, or enrichment is necessary in order to provide gas of present day standard. In the case of the Little Hulton Bill, with which the writer has been associated throughout, the quality of the whole gas made complies in every particular with the desired standards, and is, in fact, identical in character with the gas supplied in the Metropolis, and made by modern vertical retorts, as will be seen from the following table:

Brackley Gas	Coal Gas supplied by one of the Metropolitan Companies					Gas from Glover-West Vertical Retorts.
CO_2	2.15	1.48	1.75	2.11	2.85	1.00
O_2	0.31	0.25	0.52	1.05	0.20	0.05
Unsaturated hydrocarbons	3.81	3.39	4.73	2.98	3.60	2.85
CO	6.87	8.17	7.18	10.00	7.43	8.70
H_2	49.30	49.21	40.50	48.41	46.66	54.70
CH_4	31.00	31.22	39.50	30.80	31.54	29.05
N_2	6.56	6.27	5.82	4.65	7.66	3.20
Gross calorific value. Calories per cu. ft.	144.8	144.5	166.6	145.7	143.4	144.3
Illuminating power by Metropolitan No. 2 Argand burner, at 5 c.f. per hr.	16.0	18.6	18.21	14.48	14.65	15.56

From time to time objections have been launched against coke oven plant as a source of towns' supply. Recently a paper was read by Mr. J. S. Lucking, of Clay Cross, before the Midland Association of Gas Managers, which pointed to the unreliability of coke ovens as a source of towns' illumination. He says that "coke ovens are not worked so regularly as gas retorts, and when the ovens are stopped for three or four hours, it is often 36 hours or more before there is any surplus gas." This, no doubt, was the case in this particular instance, but the writer has not experienced any such serious irregularity. The obvious precaution of any coke oven plant taking upon itself the responsibility of supplying a township, is to so duplicate all the running plant, that breakdowns and stoppages are reduced to the safety margin provided by gas works themselves, and this the writer has found neither difficult nor costly, when the advantages of continuous and steady running are considered. Mr. Lucking raises no point against the quality of coke oven gas, for which he gives the following analysis:

CO_2 0.5%
CO 9.0%
Unsaturated Hydrocarbons 3.0%
H_2 47.7%
CH_4 26.2%
N_2 13.0%

Calorific value=550 b.t.u. gross.
Minimum Candle Power=14.

In view of these considerations, the writer is of opinion that as regards the supply of gas to towns, there are many instances in which the coke-oven industry may be held to have future prospects. Metallurgical coké which cannot be made in gas retorts has to be produced, and since coke oven gas now comes within the class of towns' gases, it may be expected to be no longer a wasted by-product, but of use to metallurgical communities. For instance, if Middlesbrough were supplied with coke oven gas at 6d. per 1,000 cubic feet into the holder, the township would be saved approximately £7,000 per annum in the manufacturing cost. There are many coke oven plants who would be glad