

coal to one hundred parts of the lignitic coal, ensures the production of a good strong coke: with ten parts of caking coal the product is still a good coke, and even the mixture containing only five parts of caking coal makes a coke which, although somewhat tender, might yet be found useful for some purposes. The lignite, it may be observed, requires a much larger addition of caking coal in order to ensure equally satisfactory results—the mixture containing twenty parts of caking coal does not make a stronger coke than that obtained from the mixture of lignitic coal containing only half that amount of caking coal: with fifteen parts of caking coal, the coke was tender, though possibly still a useful fuel; that made from the mixture containing ten parts of caking coal cannot be regarded as a useful coke.

From the foregoing experiments it may, therefore, be inferred that:—as regards the lignitic coal, the addition of fifteen parts of a strongly caking coal to one hundred parts of that fuel would be found to yield a good firm coke, and that about ten parts of caking coal is the smallest proportion that would be found to give satisfactory results:—in the case of the lignite an addition of not less than twenty parts of caking coal to one hundred parts of lignite would be required in order to ensure the production of a good coherent coke, and that fifteen parts of caking coal is the smallest proportion that can be employed with any probability of obtaining a fairly good coke.*

The lignites constitute a good fuel for the burning of lime and bricks, and very many of them in their sounder condition—that is to say when freshly or comparatively recently mined—will be found suitable for domestic purposes, either for cooking or warming; the better qualities might, step grates being used, be employed for heating steam boilers—there can be little doubt but that they might all be successfully utilized by means of gas producers.

The lignitic coals are good fuels and may be used with advantage for household purposes, for raising steam and in various metallurgical operations. The coals constitute excellent fuels and will be found to serve well for all domestic purposes, to be well adapted for stationary boilers and locomotives, and admirably suited for many metallurgical purposes. The anthracitic coal and semi-anthracite appeared, as regarded their application, to call for a few special remarks, these have been appended to their respective analyses.

With reference to the evaporative power of these fuels, as determined by Thompson's calorimeter—the results obtained are, it need scarcely be

* Experience has shown that, in the preparation of coke from a mixture of non-caking and caking coal, it is very desirable that the latter be reduced to a much finer state of division than the former. The two kinds of fuel should therefore be ground separately and afterwards mixed in the desired proportions.

Applications,
cont.