composition:—Carbon, 92½, Hydrogen 3½, Oxygen (with trace of Nitrogen) 4. All yield an amount of coke equal to or exceeding 89 per cent. The coke is frequently pulverulent, never agglutinated.

The comportment of anthracite before the blowpipe has not hitherto been given in detail. It is as follows:—*Per se*, the assay quickly loses its metallic brilliancy. After continued ignition, small white specks of ash appear on its edges. In borax it dissolves very slowly, with constant escape of bubbles. It is not attacked by salt of phosphorus; the assay works to the top of the bead and slowly burns away. In carbonate of soda, it effervesces, scintillates, and turns rapidly in the bead; and the soda is gradually absorbed. In the bulb tube a little water is always given off, but without any trace of bituminous matter.

As regards their geological position, the true anthracites belong chiefly to the middle portion of the Palæozoic series, below the Carboniferous formation; or otherwise, they constitute the under portion of the coal measures. Frequently also, anthracites occur in the vicinity of erupted rocks, and amongst metamorphic strata, as manifest alterations of ordinary coal.

2. *Anthracitic Coals.*—These are often confounded with the true anthracites, into which indeed, as already stated, they gradually merge. Normally, they differ from the true anthracites in being non-conductors of electricity, in burning more easily and with a very evident yellow flame, in yielding a small quantity of bituminous matter when heated in a tube closed at one end, and in furnishing an amount of coke below 80 per cent. The coke is also in general more or less agglutinated, although it never presents the fused, mamillated appearance of that obtained from caking coal. The mean composition, ash and moisture deducted, may be represented as follows:—Carbon 89½, Hydrogen 5, Oxygen (with trace of Nitrogen) 5½; or Carbon 89, Hydrogen 5, Oxygen (with trace of Nitrogen) 6.

3. *Caking Coals.*—These are often termed, technically, "Fat coals." They constitute the type-series of the coals, properly so called. All yield a fused and mamillated coke, varying in amount from 65 to 70 per cent. Sp. gr.=1.27–1.32. Commonly mixed with thin layers of strongly soiling "mineral charcoal" or fibrous anthracite. Mean composition (ash and moisture excluded): Carbon 87.9, Hydrogen 5.1, Oxygen (with nitrogen) 7.0.

4. *Cannel or Gas Coals.*—These coals, at least in normal specimens, do not fuse or "cake" in the fire. They give off a large amount of volatile matter, frequently more than half their weight; hence their