

precious substance; his proof being based on the high refractive power of diamond, a property peculiar to the class of all assimilating bodies. This theoretical proof was afterwards experimentally proved by placing the diamond in the focus of a large burning lens, when it entirely disappeared.

Various observers experimented with it, until finally the product of the combustion was proven to be carbonic acid, the same as results from the burning of charcoal; hence the truth was finally reached that diamond is nothing but carbon in its purest form. This royal stone was brought to Europe from the East, but the mines that were once so famous are now entirely exhausted.

Owing to the crystalline forms of the pure article, it admits of being split into thin pieces, and these sheets are taken and used as a veneering on the facets of the glass body, giving an imitation that does not lose its lustre. Then imperfect stones are stuck together so as to produce large ones, and this work of patching up the diamond into the spurious article is done in such a skilful manner as often to defy the most acute experts.

So much time has been given to carbon in its purest form, it will only be possible to mention the other forms before taking up the compounds and a series of experiments. The other crystalline form is the substance graphite, or familiarly known as black lead, a name given to it on account of its producing a mark similar to lead on paper, and was supposed to contain lead. Graphite is the substance used in pencils, and is the basis of all stove polishes. In the arts this material is of great value, because it will stand the strong heat of metal furnaces, and is much used for crucibles where an intense heat is required, as in the casting of brass and in steel works. The amorphous forms of this wonderful element you are all familiar with under the names of gas carbon; the deposit on the iron retorts in which bituminous coal is heated to produce illuminating gas; anthracite and bituminous coal, coke, charcoal, and lampblack. Charcoal, besides the ordinary uses of everyday life, is much used as a disinfectant, owing to its great absorp-