very minute or accidental quantity—communicates to the point and edges of the flame a peculiar green or yellowish-green colour. Phosphates do not colour the flame under this treatment.

(12) *Carbon.*—Occurs in the simple state in the diamond and graphite, and practically so in the purer kinds of anthracite; also combined with hydrogen, &c., in ordinary coals and bituminous substances; and in an oxidized condition, as carbonic acid (or anhydride) in the group of carbonates. Free (mineral) carbon is infusible and very slowly combustible in the blowpipe-flame, a long continued ignition being necessary to effect the complete combustion of even minute splinters. Ignited with nitre, it deflagrates and is dissolved, carbonate of potash resulting. With other blowpipe reagents it exhibits no characteristic reactions. The presence of carbonic acid in carbonates is readily detected by the effervescence which ensues during the fusion of a small particle of the test-substance with a previously-fused bead of borax or phosphor-salt on platinum wire, CO^2 being expelled. All carbonates, even in comparatively large fragments, dissolve readily under continued effervescence in these fluxes. A mixture of carbonate of lime in silicates, sulphates, and other bodies, may thus be easily recognized. (*See* Appendix, No. 19). It should be remembered, however, that bodies which evolve oxygen on ignition, produce also a strong effervescence by fusion with borax; but, with the exception of binoxide of manganese, very few of these bodies are of natural occurrence.

(13) *Silicon.*—This element occurs in nature only in an oxidized condition, as Silica, SiO^2. The latter compound, in the form of quartz and its varieties, is the most widely distributed of all minerals. In the various opals, it occurs combined with water, and in combination with bases (especially with Al^2O^3, Fe^2O^3, CaO, MgO, FeO, Na^2O, and K^2O), it forms the large group of silicates. In the simple state, silica is quite infusible in the ordinary blowpipe-flame. With carb. soda, it dissolves with effervescence (due to the expulsion of CO^2 from the flux), and it forms with that reagent, in proper proportions, a permanently clear glass—*i. e.*, a glass that remains clear on cooling. To obtain this, the flux should be added little by little, until perfect fusion ensue: with too much soda, the bead is opaque.