

blowpipe practice. The student should master them thoroughly, before attempting to employ the blowpipe in the examination or analysis of minerals. A few additional operations of special employment are referred to in a subsequent section.

(1) *The Fusion Trial*.—In order to ascertain the relative fusibility of a substance, we chip off a small particle, by the hammer or cutting pliers, and expose it, either in the platinum-tipped forceps or on charcoal, to the point of the blue flame (Fig. 7, above). If the substance be easily reduced to metal, or if it contain arsenic, it must be supported on charcoal (in a small cavity made by the knife-point for its reception), as substances of this kind attack platinum.* In other cases, a thin and sharply-pointed splinter may be taken up by the forceps, and exposed for about half-a-minute to the action of the flame. It ought not to exceed, in any case, the size of a small caraway seed—and if smaller than this, so much the better. If fusible, its point or edge (or on charcoal, the entire mass) will become rounded into a bead or globule in the course of ten or twenty seconds. Difficultly fusible substances become vitrified only on the surface, or rounded on the extreme edges; whilst infusible bodies, though often changing colour, or exhibiting other reactions, preserve the sharpness of their point and edges intact.

The more characteristic phenomena exhibited by mineral bodies when exposed to this treatment, are enumerated in the following table: †

(a) The test-fragment may “decrepitate” or fly to pieces. Example, most specimens of galena. In this case, a larger fragment must be heated in a test-tube over a small spirit-lamp, and after decrepitation has taken place, one of the resulting fragments can be exposed to the blowpipe-flame as directed above. Decrepitation may sometimes be prevented if the operator expose the test-fragment cautiously and gradually to the full action of the flame.

(b) The test-fragment may change colour (with or without fusing) and become attractable by a magnet. Example, carbonate of iron. This becomes first red, then black, and attracts the magnet, but does not fuse. Iron pyrites, on the other hand, becomes black and magnetic, but fuses also.

* In order to prevent any risk of injury to the platinum forceps, it is advisable (even if not strictly necessary in all cases) to use charcoal as a support for bodies of a metallic aspect, as well as for those which exhibit a distinctly coloured streak or high specific gravity.

† Blowpipe operations, as described in this section, are not intended to serve as a course of analysis. Merely a few examples, therefore, are given in illustration of their effects. For Plan of Analysis, see § 6.

(c) Thallium which to many ph colour th copper c taining : compound colour ;
(d) Th The carb blue col
(e) Th cinnabar
(f) Th or partia ore volat a strong and so deposit a white is lemon cated by brown in
(g) Th and the previous zeolites, exposure with mo
(h) Th other ind
(2) T are frequ in small kinds. as a “ tube ma for water the elen for exam this sub resorted