

rior, between the fire and the chimney, from whence, as it melted, it flowed into the deeper part, where the melted iron is usually collected. When the whole was melted, it formed a liquid glass, rather tenacious. From this a large ladleful was taken; which being allowed to cool, retained the characters of perfect glass. The fire was maintained throughout, with gradual diminution, for more than six hours, after which time the draught of the chimney was intercepted; the surface of the glass was covered with heated sand, and the furnace was filled with coals, which were consumed very slowly. By these precautions the heat was so slowly conducted away, that it was eight days before the mass in the furnace was sufficiently cool to be extracted, and even then it retained considerable warmth.

The form of the mass, being derived from the bottom of the furnace, was considerably irregular, approaching to the shape of a wedge, whose lower angles were rounded. It was nearly three feet and a half long, two feet and a half wide, about four inches thick at one end, and above eighteen inches at the other. From this diversity of thickness, and from the unequal action of the heat of the furnace, too great an irregularity had prevailed in the refrigeration of the glass to permit the attainment of a homogeneous texture. These circumstances might probably have been counteracted by better devised precautions; but the inequality of the product is not to be regretted, since it disclosed some very singular peculiarities in the arrangement of bodies passing from a vitreous to a stony state, which might have remained unobserved, if the desired homogeneity of the result had been obtained.

1. This substance is easily fused into glass, with few air-bubbles; it then possesses an undulated conchoidal fracture, is black and opaque, except in thin fragments, and harder than felspar. Its sp. gr. is 2.743, and it has *no action* on the magnetic needle.

2. The tendency towards arrangement, in the particles of the fluid glass, is first developed by the formation of