

serum, which can be so readily expressed. A variety of cellular elements are here met with, and the colour is seen to depend upon black granules, partly free, and partly inclosed within the cells. A difference would seem to exist in this respect as to whether the drop examined was furnished by one of the darker spots, or from the intervening greyish portions; in the former case there are more free granules, in the latter they are generally inclosed within corpuscles. These carbonaceous particles range in size from almost imperceptible molecules up to portions the 1-12000 of an inch and over. The latter are, as a rule, angular and do not exhibit the Brownian movement. In addition, pieces are occasionally met with of an elongated form, and of a brownish red colour at the edges, or, if thin



enough, over the whole mass. Some of these can be seen with the naked eye, and I measured several more than 1-250 of an inch in length (See fig. 1). Other very peculiar forms were noticed, which, from the regularity of their outlines, I believe to be structures connected in some way with the coal, but upon this point I lack the necessary knowledge to decide. The cellular elements found in the expressed serum may be arranged as follows:—

I. Groups of flat cells each with a distinct nucleus, the boundaries of the cells, in many instances, being ill-defined, or sometimes similar cells are grouped together upon a portion of membrane. Free in the field are others identical with the individual ones composing the above groups. They are about the 1-1200 of an inch in diameter, nucleus large and sharply marked, borders often indistinct, cell substance granular, friable, often broken away in part, leaving the nucleus exposed. The free nuclei of these cells also are present in numbers. Carbon granules are only occasionally met with in these corpuscles, and I think they must be regarded as the original cell elements of the alveoli, and perhaps, to a large extent derivatives of them in a slight catarrhal process.