

artery was divided into two branches, to supply the lungs. These vessels were of small diameter.

The pulmonary veins were four in number; but the area of these, and that of the vessel which acted as the pulmonary artery, did not exceed half the usual dimensions.

The child, while alive, was seen by Dr. Combe, who did not observe that its respiration, temperature, or muscular action, were materially affected.

*On a Method of analysing Stones containing fixed Alkali, by Means of the Boracic Acid.* By Humphry Davy, Esq. F.R.S. Professor of Chemistry in the Royal Institution. Read May 16, 1805. [*Phil. Trans.* 1805, p. 231.]

The method of analysis here described by Mr. Davy is founded on the attraction of the boracic acid for the simple earths, which is considerable at the heat of ignition, and on the ease with which the compounds formed with them are decomposed by the mineral acids.

The process is as follows: 100 grains of the stone to be examined must be fused for about half an hour, in a strong red heat, with 200 grains of boracic acid: an ounce and a half of nitric acid, diluted with seven or eight times as much water, must be digested upon the mass till the whole is decomposed; and the fluid must then be reduced, by evaporation, to an ounce and a half or two ounces.

If the stone contain siliceous matter, it will now be separated: this must be collected upon a filter, and washed with distilled water till freed from the boracic acid and all other saline matter.

The water that has passed must be mixed with the other fluid, and the mixture evaporated till it is reduced to a convenient quantity, for instance, half a pint. It must then be saturated with carbonate of ammonia, and boiled with an excess of this salt till all precipitable matter has fallen to the bottom of the vessel.

The earths and metallic oxides must be separated by the filter, and to the filtered liquor must be added nitric acid, till it tastes very sour: it must then be evaporated till the boracic acid appears free.

The fluid must be again passed through the filter, and evaporated to dryness; when, by exposure to a degree of heat equal to 450° of Fahrenheit, the nitrate of ammonia will be decomposed, and the nitrate of fixed alkali will remain in the vessel.

The remaining earths and oxides Mr. Davy has separated by the usual processes. The alumina he has separated by solution of potash; the lime by sulphuric acid; the oxide of iron by succinate of ammonia; the manganese by hydrosulphuret of potash; and the magnesia by pure soda.