formation of a thin crust of stratified rocks; those rocks being now to be found constituting the so-called primitive gneiss formation.

In accordance with the views given in the second part of this paper, of the nature of the process of solidification at present pro-gressing beneath the earth's crust, we must suppose that during the solidification of the first crust, a contraction of the volume of the originally fluid material took place. This view must be adopted on experimental grounds also. Bischof found, in casting a globe of basalt, twenty-seven inches in diameter, that in the centre of the mass, on cooling, a cavity had formed capable of containing half a pint of water. Further, at the Muldner smelting works, near Freiberg, stones are cast of the slag run out of the reverberatory furnaces. They are two feet long, one foot deep and one broad, and when broken after cooling, they are found to contain in the middle irregularly shaped cavities from three to five inches wide, the sides of which are covered with brilliant microscopic crystals.* From these instances it might be expected, that during the first solidification, a vacuum might, to some extent, have been formed beneath the crust of the earth. With the progress of the consolidation the dimensions of the vacuum must have increased, and the power of the crust to support the enormous pressure of the then existing atmosphere must have decreased. We may suppose that ultimately a point was reached, when the crust was unable longer to support the enormous load, and that it then gave way in various places, its fragments sinking down to the fluid interior and floating upon its surface. In this way the first great subsidence of the earth's crust may be reasonably supposed to have taken place. The area of the original globehaving however decreased during the solidification, it would be impossible for the fragments of the crust to maintain their original horizontal position. Very likely also the still fluid material beneath the crust would protrude itself through between the fragments, thrusting them aside, and limiting still further the space occupied by the latter. The consequence of this would be, that the fragments would arrange themselves in positions more or less vertical, and, although some of them might still remain horizontal, still highly inclined positions would be the rule. We can even imagine how corrugations of the strata, such as described by Sir William Logan in Canada, and by McCulloch in

^{*} Leonhard, Hüttenerzeugnisse, p, 186.