greatest length of 3,000 feet and an area of 86 acres. The floor of this depression was formed by irregular mounds, pyramids, and blocks of clay, with trees, portions of fences, and other debris and small pools of water here and there; although it is stated that very little water was seen during the actual movement of the mass. The wrecks of trees coming from a wood-lot, part of which still remains near the head of the crater, showed very clearly the direction of flow of the mass. The channel of the Blanche below the orifice of the slip was entirely filled, and the water spread from bank to bank of the valley amid mounds and blocks of clay and debris that stood above it.

Amount of Material involved

The quantity of material which thus poured suddenly out into the Blanche valley is approximately estimated at 93,654,000 cubic feet, with a total weight, according to the specific gravity determined, of about 5,572,413 tons of 2,000 pounds.

The slope of the original surface from the head of the collapsed area to the point at which the road formerly passed, near the entrance to the narrow outlet, was, according to barometric observations by Mr Chalmers, about 10 feet only. The approximate difference between the average level of the bottom from the head to the present water level in the Blanche valley, according to the same authority, is between 20 and 25 feet, while the slope of that part of the Blanche valley from the orifice of the slip to the extremity of the flood of clay is not much more than 30 feet.

Explanation of the Catastrophe

The light slopes indicated by the above figures show that the mass of clay must have simulated a liquid body when in motion. Mr Chalmers suggests that a lower bed of the clay, in consequence of the impermeability of the subjacent boulder clay, became exceptionally saturated, forming a sliding plane upon which the more coherent overlying masses moved down. This would be in conformity with the explanation usually (and probably in most cases correctly) given for landslips, and it seems very likely that something of the kind may have been concerned in the initiation of the slip here described where it began on the bank of the Blanche valley. It appears to me, however, that the great and sudden discharge of clay in this case should rather be attributed to the character of the water-saturated mass as a whole, particularly as no evidence was found of any specially permeable or fluent bed and no underlying surface either of boulder clay or rock is anywhere exposed. It will be noted that this landslip differs very markedly in character from the ordinary form, in which the subsidence occurs along an extended front.

Three representative specimens of the clay, collected by Mr Chalmers while still in a nearly saturated condition were submitted to a careful examination in the laboratory of the Survey under Doctor Hoffmann's supervision. A mean of the results obtained shows the specific gravity of the clay as received to have been 1.912, equivalent to a weight of 119.5 pounds to the cubic foot. The clay as received was found capable of absorbing a small additional amount of water, varying from 7.0 to 0.2 per cent by weight. Apart from the water, it consisted of 35.5 per cent of argillaceous matter and 43.3 per cent of silt. When fully saturated it contained on the average, which varied little in the three samples, 23.5 per cent of water by weight or nearly 50 per cent by volume.