

kinds of accidents, such as arise from local subsidence. But he enters into no further detail, and shows no personal knowledge of the real structure of a true mountain-chain.

The task of the fresh waters, according to this thinker, is thus two-fold; to erode the dry land, thereby producing valleys and mountains, and to spread the detritus over plains, before finally sweeping it out to sea, where it tends towards the filling up of the sea-basins.

2. In attempting to solve his second problem Lamarck ventured far beyond his depth in regard to the physics of the earth, and broached some crude ideas, based on no reliable evidence, but directly contrary to such facts regarding the ocean as were known in his time. He conceived the ocean-basin to owe its existence and preservation to the perpetual oscillation of the tides, and partly also to a general westerly movement of the water. He supposed the tidal oscillation to be a gigantic force which has actually eroded the basin and now prevents it from being shallowed, through the deposit of land-derived sediment, by continually scouring this sediment out and casting it up along the more sheltered shores of the land. Since the sea does not cover the whole globe, but is gathered into its vast basin, the centre of gravity of the earth does not strictly coincide with what Lamarck called its "centre of form." Owing to the shifting of the ocean-bed westward, he thought that the centre of gravity is simultaneously displaced and slowly makes a revolution round the centre of form. In these speculations the great naturalist displayed a singular