

was carried to a depth of 481 feet below the level of Calcutta, and the geological section obtained in the operation, has been recorded with great care. Under the surface soil, at a depth of about ten feet, they came to a stiff blue clay about forty feet in thickness; below which was sandy clay, containing in its lower portion abundance of decayed vegetable matter, which at the bottom assumed the character of a stratum of black peat, two feet thick. This peaty mass was considered as a clear indication (like the "dirt-bed" of Portland) of an ancient terrestrial surface, with a forest or Sunderbund vegetation. Logs and branches of a red-coloured wood occur both above and immediately below the peat, so little altered that Dr. Wallich was able to identify them with the Soondri tree, *Heritiera littoralis*, one of the most prevalent forms at the base of the delta. Dr. Falconer tells me that similar peat has been met with at other points round Calcutta at the depth of nine feet, and twenty-five feet. It appears, therefore, that there has been a sinking down of what was originally land in this region, to the amount of seventy feet or more perpendicular; for Calcutta is only a few feet above the level of the sea, and the successive peat-beds seem to imply that the subsidence of the ground was gradual or interrupted by several pauses. Below the vegetable mass they entered upon a stratum of yellowish clay about ten feet thick, containing horizontal layers of kankar (or kunkar), a nodular, concretionary, argillaceous limestone, met with abundantly at greater or less depths in all parts of the valley of the Ganges, over many thousand square miles, and always presenting the same characters, even at a distance of one thousand miles north of Calcutta. Some of this kankar is said to be of very recent origin in deposits formed by river inundations near Saharanpoor. After penetrating 120 feet, they found loam containing water-worn fragments of mica-slate and other kinds of rock, which the current of the Ganges can no longer transport to this region. Their occurrence implies a steeper inclination or slope of the alluvial plain of the great river at the time when this gravel originated. In the various beds pierced through below, consisting of clay, marl, and friable sandstone, with kankar here and there intermixed, no organic remains of decidedly marine origin were met with. Too positive a conclusion ought not, it is true, to be drawn from such a fact, when we consider the narrow bore of the auger and its effect in crushing shells and bones. Nevertheless, it is worthy of remark, that the only fossils obtained in a recognizable state, were of a fluviatile or terrestrial character. Thus, at the depth of 350 feet, the bony shell of a tortoise, or trionyx, a freshwater genus, was found in sand, resembling the living species of Bengal. From the same stratum, also, they drew up the lower half of the humerus of a ruminant, at first referred to a hyæna. It was of the size and shape, says Dr. Falconer, of the shoulder bone of the *Cervus porcinus*, or common hog-deer, of India. At the depth of 380 feet, clay with fragments of lacustrine shells was incumbent on what appears clearly to have been another "dirt-bed," or stratum of decayed wood, implying a period of