

to species still living. In parts of the valley of the Rhine, between Bingen and Basle, the fluviatile loam or loess, now under consideration, is seen forming hills several hundred feet thick, and containing, here and there, throughout that thickness, land and fresh-water shells; from which it seems necessary to suppose, according to Lyell, first, a time when the loess was slowly accumulated, then a later period, when large portions of it were removed—and followed by movements of oscillation, consisting, first, of a general depression, and then of a gradual re-elevation of the land.

We have already noticed the caverns in which such extraordinary accumulations of animal remains were discovered: it will not be out of place to give here a résumé of the state of our knowledge concerning *bone-caves* and *bone-breccias*.

The *bone-caves* are not simply cavities hollowed out of the rock; they generally consist of numerous chambers or caverns communicating with each other by narrow passages (often of considerable length) which can only be traversed by creeping. One in Mexico extends several leagues. Perhaps the most remarkable in Europe is that of Gailenreuth in Franconia. The Harz mountains contain many fine caverns; among others, those of Scharfeld and *Bauman's Hohl*, in which many bones of Hyæna, Bears, and Lions have been found together. The *Kirkdale Cave*, so well known from the description given of it by Dr. Buckland, lying about twenty-five miles north-north-east of York, was the burial-place, as we have stated, of at least 300 Hyænas belonging to individuals of different ages; besides containing some other remains, mostly teeth (those of the Hyæna excepted) belonging to ruminating animals. Buckland states that the bones of all the other animals, those of the Hyænas not excepted, were gnawed. He also noticed a partial polish and wearing away to a considerable depth of one side of many of the best preserved specimens of teeth and bones, which can only be accounted for by referring the partial destruction to the continual treading of the Hyænas, and the rubbing of their skin on the side that lay uppermost at the bottom of the den.

From these facts it would appear probable that the Cave at Kirkdale was, "during a long succession of years, inhabited as a den by Hyænas, and that they dragged into its recesses the other animal bodies, whose remains are found mixed indiscriminately with their own." \* This conjecture is made almost certain by the discovery

\* "*Reliquiæ Diluvianæ*," by the Rev. W. Buckland, 1823, p. 19.