

force appears to be in the north of Lapland, and to diminish gradually to the south toward Calmar and Sölvitzborg. Lines marking the ancient level of the sea in pre-historic times are indicated throughout the whole of Norway,* from Cape Lindesnæs to the extremity of the North Cape, by banks of shells identical with those of the present seas, and which have lately been most accurately examined by Bravais during his long winter sojourn at Bosekop. These banks lie nearly 650 feet above the present mean level of the sea, and reappear, according to Keilhau and Eugene Robert, in a north-northwest direction on the coasts of Spitzbergen, opposite the North Cape. Leopold von Buch, who was the first to draw attention to the high banks of shells at Tromsøe (latitude $69^{\circ} 40'$), has, however, shown that the more ancient elevations on the North Sea appertain to a different class of phenomena, from the regular and gradual retrogressive elevations of the Swedish shores in the Gulf of Bothnia. This latter phenomenon, which is well attested by historical evidence, must not be confounded with the changes in the level of the soil occasioned by earthquakes, as on the shores of Chili and of Cutch, and which have recently given occasion to similar observations in other countries. It has been found that a perceptible sinking resulting from a disturbance of the strata of the upper surface sometimes occurs, corresponding with an elevation elsewhere, as, for instance, in West Greenland, according to Pingel and Graah, in Dalmatia and in Scania.

Since it is highly probable that the oscillatory movements of the soil, and the rising and sinking of the upper surface, were more strongly marked in the early periods of our planet than at present, we shall be less surprised to find in the interior of continents some few portions of the earth's surface lying below the general level of existing seas. Instances of this kind occur in the soda lakes described by General Andreossi, the small bitter lakes in the narrow Isthmus of Suez, the Caspian Sea, the Sea of Tiberias, and especially the Dead Sea.† The level of the water in the two last-named seas is

* Keilhau, in *Nyt Mag. för Naturvid.*, 1832, bd. i., p. 105-254; bd. ii., p. 57; Bravais, *Sur les Lignes d'ancien Niveau de la Mer*, 1843, p. 15-40. See, also, Darwin, "on the Parallel Roads of Glen-Roy and Lochaber," in *Philos. Trans. for 1839*, p. 60.

† Humboldt, *Asie Centrale*, t. ii., p. 319-324; t. iii., p. 549-551. The depression of the Dead Sea has been successively determined by the barometrical measurements of Count Bertou, by the more careful ones of Russegger, and by the trigonometrical survey of Lieutenant Symond, of the Royal Navy, who states that the difference of level be-