

level, and at the same time have sometimes grown much saltier than the parent ocean.

The Caspian Sea, 180,000 square miles in extent, and with a maximum depth of from 2000 to 3000 feet, is a magnificent example. The shells living in its waters are chiefly the same as those of the Black Sea. Banks of them may be traced between the two seas, with salt lakes, marshes, and other evidences to prove that the Caspian was once joined to the Black Sea, and had thus communication with the main ocean. In this case also there are proofs of considerable changes of water-level. At present the surface of the Caspian is 85½ feet below that of the Black Sea. The Sea of Aral, also sensibly salt to the taste, was once probably united with the Caspian, but now rests at a level of 242.7 feet above that sheet of water. The steppes of southeastern Russia are a vast depression with numerous salt lakes and abundant saline and alkaline deposits. It has been supposed that this depression continued far to the north, and that a great firth, running up between Europe and Asia, stretched completely across what are now the steppes and plains of the Tundras, till it merged into the Arctic Sea. Seals of a species (*Phoca caspica*) which may be only a variety of the common northern form (*Ph. fœtida*), abound in the Caspian, which is the scene of one of the chief seal-fisheries of the world.<sup>204</sup> On the west side of the Ural chain, even at present, by means of canals connecting the rivers Volga and Dwina, vessels can pass from the Caspian into the White Sea.<sup>205</sup>

The cause of the isolation of the Caspian and the other saline basins of that region is to be sought in underground movements which, according to Helmersen, are still in progress, but partly, and, in the case of the smaller basins, probably chiefly in a general diminution of the water-supply all

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<sup>204</sup> Another variety or species of seal inhabits Lake Baikal. For an account of the structure and distribution of seals see an interesting monograph by J. A. Allen in Miscellaneous Publications of U. S. Geological and Geographical Survey of the Territories. Washington, 1880.

<sup>205</sup> Count von Helmersen, however, has stated his belief that for this extreme northern prolongation of the Aralo-Caspian Sea there is no evidence. The shells, on the presence of which over the Tundras the opinion was chiefly based, are, according to him, all fresh-water species, and there are no marine shells of living species to be met with in the plains at the foot of the Ural Mountains.