though flat and sandy, is elevated suddenly at a little distance from the sea, so that the edge of the latter consists of extremely swampy ground, and all the running water that is not absorbed in the soil flows N. and W. to the Don or the Black Sea. (Pallas, i. 78, &c.; Gmelin, iii. 230, &c.) On the NW. and N. the Caspian opens on the great European plain; its mighty rivers run courses varying from 300 to upwards of 2,000 m. (see URAL, WOLGA, &c.), and its basin becomes so mingled with those of the Euxine, Baltic, and Arctic oceans, that it is impossible to assign, with any accuracy, the limits of each. (See BALTIC SEA.) So closely, indeed, do the several branches of these waters approach each other, that a short canal near Tver, by uniting the little rivers Tvertza and Schlina, has connected the Caspian with the Baltic for upwards of a century; and much of the timber used in the imperial yard at Petersburg is cut in the woods of Kasan, being conveyed up the Wolga to this point of artificial communication. This canal was the work of Peter the Great; and the same prince projected the union of the Caspian and Euxine, by another, between two small streams, affluents respectively of the Wolga and Don, which in the neighbourhood of Tzaritzen approach each other within 2 m.; the whole distance between the larger rivers being here less than 15 m. (Algarotti's Letters, 67; Hanway, i. 98; Tooke's Russia, ii. 144; Pallas, i. 91.) With respect to its basin and drainage, therefore, the Caspian is much more of a European than an Asiatic lake; the former is extensive only on the side of Europe, and the latter carries off at least 1-6th of all the running water belonging to that division of the world. The rivers which descend from the Caucasian mountains, the only ones of consequence which the Caspian receives from Asia, are quite insignificant when compared with such streams as the Wolga and Ural; the former of which alone drains 140,000 sq. m. (Lichenstein's Cosmog., i. 328.)

There are, of course, no tides in this close lake, nor do there seem to be any regular currents, in the usual acceptation of the word; but, from the freedom with which the wind blows over so large a surface, many considerable and very irregular changes are effected in its motions and character. A strong breeze from the S. drives the waters over the low lands of the N. coast, sometimes to the distance of several miles; vessels, at such times, are said to have been carried so far inland, that, on the retiring of the sea, it was found necessary to break them up where they lay, from the impossibility of transporting them back to the shore. It must be remembered, however, that these vessels are of peculiar construction, the numerous and extensive shoals preventing the general use of any (on the N. coast) that would require much depth of water. Such a wind, too, by driving the sea into the mouths of the great rivers, causes these to rise in their beds, and, consequently, when the wind subsides, a very violent S. current is produced by the water returning to its usual level. A N. wind produces the same effect on the S. shore; only, from the nature of the coast, the water cannot extend so far over the neighbouring land; but it is frequently raised from 3 to 4 ft. above its natural level; the return to which, therefore, causes a rushing and confused motion of the waters to all points of the compass. Vessels drawing 9 or 10 ft. are, during these changes, exposed to great hazard, and, as the winds are extremely uncertain, the navigation of the Caspian, like that of most confined sheets of water, is one of very considerable danger. (Hanway, i. 142, 393, &c.; Georgi, i. 258; Monteith, G. J., iii. 23.)

There is another motion of the sea much more remarkable, however, than the preceding. It appears to increase and decrease in *actual bulk*, in periods, according to native report, of about 30 years each. When navigated by Hanway, its surface was incontestably rising, if the united testimony of the inhabitants upon the coasts be credited; and this testimony received confirmation from the appearance of the coasts themselves. Tops of houses were seen in water several feet in depth; the sea had visibly risen on the walls of fortified towns; and these encroachments were going on equally on all parts of the coast at the same time; so that the natives round the whole circuit were living in a state of great alarm. (i. 155–157, 371, &c.; see also Algarotti, 78, *et seq.*) Now Hanway makes his remarks in 1743, when the sea had certainly been rising more than 20 years—that is, from before the expedition of Peter the Great, in 1722 (i. 155); and, therefore, if the native tradition were founded on fact, it had nearly reached its greatest height. It is, at least, a remarkable circumstance that, in 1784, the sea was again (*or still*) rising, having, by its action, levelled the outer wall of Baku, which was standing in the time of Hanway. (Forster's Travels, 227); while, between 1811 and 1828, it had very sensibly decreased (Col. Monteith, Geog. Journ., iii. 23), and, in 1832, it had receded from the S. shore full 300 yards. (Burnes's Travels to Bokhara, ii. 121.) It is clear that, in the 41 years between the observations of Hanway and Forster, there had been time, upon the native hypothesis, for the sea to reach its greatest depression, and begin again to rise. At all events, the facts, meagre as they are, seem to warrant the conclusion of periodic variations; though what law these follow, the data are at present far too limited to determine. If a conjecture may be hazarded, they probably depend upon meteorological causes, and the general state of the atmosphere. Hanway (though he disbelieves the *periodic* variation) appears to hold an opinion similar to this; for he remarks, that the summers, from the time of Peter the Great to that of his own observations, had been less hot than formerly; that consequently evaporation had been less, while the supply of water had continued the same. (i. 156.) It would be a corroboration of this theory, could it be established that, from 1811 to 1832, when the Caspian was unquestionably and rapidly sinking, the summer heat had been peculiarly great; but on this point nothing certain is known. In the meantime it is worthy of remark, that, between the observations of Hanway and those of Monteith and Burnes, 90 years (a multiple of the asserted period) had elapsed; that the time during which the sea was known to be constantly rising in the one case, and sinking in the other, was the same, namely, 21 years; and that, on the supposition of the trigentennial alternation of the phenomena, it should have been found sinking, as it was, by the last named travellers. That there is something very peculiar in the atmosphere of this region is evident. Monteith found its extra pressure to be equivalent to a column of 390 ft. in height (Geog. Journ., iii. 22); Burnes, some 4 or 5 years later, to one of 800 ft. (Travels, ii. 122.) These results were obtained, not by the barometer, but by the boiling point of water; the difference of pressure would, however, cause a rise of nearly ½ an inch in the former (Nettleton, Phil. Trans., xxxiii. 308), and consequently a depression of almost 7 inches in the surface of the Caspian. This co-existence of phenomena is similar to that observed in the Baltic, only much more powerful and longer continued; it is, therefore, at least probable, that in both cases the varying level de-