of the beach, it would appear that the shingle and sand of which it is formed have been brought from the north, in which direction there are recorded instances of great destruction of land by storms during the last 300 years. The aspect, however, of much of the coast-line appears as if it had remained unaltered for a very long period, except in the manner Mr. R. A. C. Austen* alludes to when he remarks "that although the sea for months together, and in places even for whole years, may not acquire any fresh spoil, yet there are few hours when its waters are unemployed in fashioning and abraiding the materials already acquired." In considering the effect upon the sea-level caused by sand, mud, and pebbles washed in by the breakers, it is only necessary to regard those materials that may be brought in from cliffs above high-water mark; for the movement of sand and mud below high-water mark can produce no effect upon the sea-level, because the abstraction of these materials from one part of the shore is exactly balanced by their addition to some other part. For instance, some of the flint-pebbles which have contributed to the recent deposit at Landguard Point have been brought along shore a great distance from their original position on the cliff. These flints formed an addition to the sea-bed, and tended to raise its general level by displacing an amount of water equal to their bulk the moment they fell on the shore below high-water mark; and it is quite clear their subsequent movements, either beneath the wave or on the beach, could produce no further effect upon the sea-level, the spaces they occupied on one part of the coast being balanced by the vacancy left at some other. It is also evident that the beach at Landguard Point will go on extending so long as the fresh supplies of shingle and sand from the north exceed the removals southward.

In the same manner the continued supplies of pebbles from the westward enables the Chesil Bank to preserve its position. As soon, however, as any disturbing causes interrupt the supplies of new material, the sand and shingle beaches dependent upon them must soon disappear; and in fact the termination of every beach will be at that point where the waste and abrasion by breaker-action are balanced by the supply of pebbles and sand drifted from other places. Although it appears clear that only the detritus obtained from cliffs above high-water mark need be taken into calculation, yet I regret to find that scarcely any data of this kind exist, and therefore it is not possible to ascertain the probable effect upon the sea-level that is being produced by the detritus so derived. In the same manner the per-centage of soluble salts in the water of the few large rivers of which notes have been published has not been given separately from the per-centage of matter in suspension, and therefore we are in ignorance of the supplies that are annually introduced into the ocean from the formation of submarine deposits from materials dissolved in the sea-water. When the rise in the sea-level from the effect of alluvium brought in suspension by rivers was being considered, I supposed that that cause alone might produce an elevation of one foot in 54,000 years; but in order to make some allowance for the similar effects that must be produced by the introduction into the ocean of materials from above high-water mark on coast lines† by breaker-action, and also by the formation of submarine deposits from materials which were brought into the ocean in solution, I now propose to consider that all these causes together might produce an elevation of the sea-level equal to one foot in 40,000 years, or three inches in 10,000 years.

Mr. Darwin has remarked, that "the knowledge of any result, which, with sufficient time allowed, can be produced by causes, though appearing infinitely improbable, is valuable to the geologist, for he by his creed deals with centuries and thousands of years as others do with minutes." For these reasons even if, upon further investigation, it should be found that the true rise in the sea-level is much less than three inches in 10,000 years (in periods undisturbed by subsidences and elevation,) yet it may still be an important element in accounting for those changes which we are now about to consider.

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* Austen, Quart. Jour. Geol. Soc. vol. vi. 71-73. and De la Beche. Geol. Observer, 1851, p. 65.

† The rough estimation of the extent of coast-line, kindly supplied by Mr. A. K. Johnston, (Nov. 1852,) is as follows:—

	Nautical miles (60 to a degree.)	English statute miles (69½ to a degree.)
Europe, - -	17,200	20,425
Asia, - - -	30,800	34,825
Africa, - -	14,000	16,625
America, - -	37,600	44,656
	99,600	116,531

(To be continued.)

New York Industrial Exhibition.

Special Report of Mr. Dilke, Presented to the House of Commons by Command of Her Majesty, in pursuance of their Address of February 6, 1854.

Mr. Dilke's sudden recall to England while collecting information connected with the New York Industrial Exhibition, prevented him from giving more than a passing attention to the details of the subject. To Mr. Antrobus Holwell, the Commissioner from Canada, the public are indebted for the Reports on the Classes which comprehended Naval Architecture, Military Engineering, Ordnance, Armour and Accoutrements, Philosophical Instruments and products resulting from their use. (*e. g.* Daguerreotypes, &c.,) Maps and Charts, Horology, Surgical Instruments and Appliances. Indeed we may justly say that Mr. Dilke's report is not a report of the Exhibition, it is merely a collection of official details and notices of facts, without any special bearing upon the subject he was sent to investigate. The supply of water to towns,—Limited Partnerships—Industrial Educational Establishments—the Smithsonian Institution—and Fire Establishments—are briefly alluded to, and some interesting, although to a Canadian scarcely novel, descriptions are given and facts recorded. The readers of the *Canadian Journal* are already familiar with the description of the building in which the American Exhibition was held (see *Canadian Journal*, Vol. I., page 69). The same description together with a similar plate of the building is given in Mr. Dilke's Report. The objects exhibited were divided into thirty-one classes; Mr. Dilke furnishes a report on two of these classes only—class 8, and 10. The report on these classes was written by the Canadian Commissioner, and it bears the title of—"Notes on some of the Contributions to the Exhibition of the Industry of all nations at New York, in 1853 by W. Antrobus Holwell, Ordnance Store Keeper, Quebec, and Commissioner from Canada"—we proceed to extract a few interesting items.

Breech-loading and Self-cleaning Rifles; Shot-Guns, and Pistols.

Marston Fire Arms Manufacturing Company, New York.—That this is a favourite description of rifle with the Americans may be inferred from the fact, that the number of men employed in January 1853 in the manufacture of these and other similar arms and cartridges of Mr. Marston's invention was but ninety, and has been increased to upwards of a hundred and forty; the average sale being at the present date (December 1853) about forty a week. The breech-