Dr. Klein's new crater be confirmed, it will form the strongest possible evidence of a real change on the surface of the moon, a change, moreover, of a volcanic nature.

The Mare Vaporum in which the new crater is situated lies close to the centre of the visible surface of the moon, so that objects in this region are very slightly affected by the lunar librations. Fortunately it is a portion of the surface which has been most carefully studied by Lohrmann, Mädler, Schmidt, and Neison; for had this new crater of Dr. Klein appeared in a less well-known region, much doubt would have been felt as to whether it had previously existed or not.

DEEP-SEA DREDGING OFF THE GULF OF MEXICO

THE last number of the *Bulletin* of the Museum of Comparative Zoology at Harvard College, Cambridge, Mass., contains a letter from Alex. Agassiz to the superintendent of the United States Coast Survey, detailing the results of some recent dredging operations in the United States schooner *Blake*. A series of deep-sea dredgings were made in the first place across the Florida Channel from Havana to Sand Key, out to the Tortugas reefs, then across the Gulf to the Yucatan Bank, to Vera Cruz, about the Alacran reef and then across the Yucatan Channel, and in the trough of the Gulf Stream to Sand Key, Florida—in all about 1,100 miles of lines taking the shortest distance from point to point. The results of the cruise are full of interest; we can only allude to a few of them. The great Alacran reef is an atol—an atol existing not as Darwin suggests to be the case with atols in general, in an area of depression, but in one of elevation, like those in which the Florida and Bahamas reefs are found. The formation of the Alacran reef is in full activity, the eastern slope is nearly perpendicular, rising to a height of twenty fathoms from the surface in a comparatively short distance. It is exposed to the full force of the north-east trades and the surf breaks heavily against the great masses of *Madrepora palmata*, which build up the narrow line of coral barely flush with the level of the sea. The western slope is much more gentle, and here the reef consists of a number of half-made narrow islands. These are mere strips of sand formed by the breaking-up of the exposed masses of coral, which are gradually cemented together by the accumulation of the loose material held in suspension by the water. Here, in the shallower parts, grow huge masses of Astræa, of Gorgoniæ, of Mæandrina, which now and then rise to the surface.

Along the Cuban coast the dredge brought up immense numbers of siliceous sponges, a species of Favosites, which we are tantalisingly told is perhaps the most interesting coral ever dredged. We presume it was found living, and we all know that this genus was founded by Lamarck for some fossil corals, only found in the very oldest strata (Silurian and Devonian); a young Holopus in excellent condition (probably the fourth or fifth specimen ever found). The dredge worked well to a depth of upwards of 2,000 fathoms. One haul in 860 fathoms brought up an unusually large number of two and one valved molluscs, including many of exquisite beauty. Some most gorgeously coloured crustacea were brought up from a depth of 1,920 fathoms, and what are we to say to an isopod allied to Aega, and upwards of eleven inches in length and three in width? Amongst the strange fish, we read of one like a huge tadpole with a gigantic round cartilaginous head, and without eyes; of another with a drawn-out flat head, very little eyes, but possessed of gigantic filaments, as long as the whole body, and extending from the tips of the pectoral and lower caudal fins. Some of the Holothurians were striped with bands of a deep crimson colour.

Certainly the wonders of the deep-sea are not yet exhausted, and though the treasures found by our own *Challenger* expedition were great, it could reap the produce of but a very narrow belt out of the great expanse of the ocean world.

A steel wire rope was used by Capt. Sigsbee. The time required to reel in was always below one minute per 100 fathoms, sometimes not more than twenty seconds, while the time required to strike bottom averaged thirty-five to forty-five seconds per 100 fathoms in the deepest soundings of 2,000 fathoms. The wire rope was of galvanised steel with a hemp coil; it measured $1\frac{1}{8}$ inch in circumference, and weighed 1 lb. to the fathom, and had a breaking strain of over 8,600 lbs., and its own weight made the use of heavy weights to sink it unnecessary.

The *Blake* is now on a cruise to explore the inner portions of the Gulf of Mexico, commencing with a run from the Tortugas to the mouth of the Mississippi River, in which we wish her crew of all ranks every success.

E. PERCEVAL WRIGHT

METEOROLOGICAL NOTES

MR. ELLIS has made a valuable contribution to the diurnal variation of the barometer in a paper published in the *Journal* of the Meteorological Society of London, which gives the hourly variations from the means of each month as deduced from a discussion of the photographic records taken at the Royal Observatory during the twenty years ending 1873. The forenoon maximum occurs from May to July about 9 A.M., being fully an hour later than at Kew. The morning minimum at the same season becomes less marked than at other times of the year, as happens in situations more or less continental in middle and higher latitudes; and this feature of the diurnal variation is, it may be remarked, decidedly better marked at Kew than at Greenwich. Mr. Ellis gives, for comparison with Greenwich, the curves for Oxford, Washington, Cape of Good Hope, and Ascension, from which he draws the broad conclusion that in high latitudes the forenoon maximum occurs earlier when the sun rises early, it being however omitted to be pointed out that this holds good only in situations more or less continental or removed from the more immediate influence of the sea. Thus the forenoon maximum which occurs at Greenwich at 9 A.M. and at Kew at 8 A.M., is delayed at Falmouth and Valentia to about 11 A.M. or noon; whilst at Helder the time of its occurrence in June is about 2 P.M. The hourly barometric values for the twenty years were arranged with reference to the time of the moon's meridian passage with the result that no certain indication of lunar variation was apparent. We hope that by-and-by the main details of this elaborate discussion will be printed; such details as will embrace, at least, the hourly values of each day and month of the twenty years for the examination of many inquiries referring to both civil and lunar days, which are now rising into questions of the highest importance.

PROF LOOMIS has recently examined all the cases of violent winds of the United States which have been recorded as having occurred from September, 1872, to May, 1874, the number of cases on which the wind rose to or exceeded forty miles an hour being 250. During the six months from November to April, violent winds were more than five times as frequent as during the other six months of the year. The great preponderance of violent winds are from the north; thus from north-east, north, and north-west, the number were 143, whereas from south-east, south, and south-west, there were only 58. Generally speaking, violent winds increase in frequency and intensity over North America with latitude. Local conditions exercise a considerable influence on the force of the wind. Thus violent winds are of most frequent occurrence near the Gulf of St. Lawrence and the Great Lakes, particularly Lakes Michigan and Erie.