

which bears, with seamen, the ugly name of "Dead Man's Bay," from an embayed vessel caught in a south-west gale seldom escaping shipwreck. More than half a century back, Fleet was inundated from a breach in the beach, and the church washed down, and many houses in Chesilton destroyed.

It is said locally, that the material is so finely graduated, that a native boatman or fisherman can tell in the darkest night the exact locality his boat may come ashore or be beached on, by picking up a handful of the gravel. In a south-west gale it is next to impossible to stand on the eastern crest, from the rain of pebbles projected over its summit by the breaking waves.

The Chesil is shown with great accuracy in early manuscript maps, especially in a remarkable series of drawings collected by the great Cecil, well known at the British Museum as "Lord Burleigh's Book;" also in drawings by Collins and Lilly. From these it would appear, that two or three centuries back the "Fleet" was wider, leading to the inference that the beach had retreated landward; but a close inspection of the bank does not support this conclusion, but appears to show that the surplus material is driven in heavy weather right over the crest sloping towards the "Fleet," the area of which has been narrowed and reduced by this continued process.

The gradation of material here again shows the ultimate leeward movement from west to east, due to preponderance of winds from the first quarter; the altitude from three to four times that of the normal elevation of ordinary English beaches above high water; also the upper plateau above the usual neap and spring "fulls" are striking features, showing its abnormal character.

The largest shingle travelling to leeward and to the summit, is illustrative of the accumulative energy of the heavier projectiles, and their being less acted on by the recoil than the smaller materials.

It may be well to notice here the soundings taken in H.M.S. *Beagle*, between Santa Cruz and the Falkland Islands, referred to by the late Mr. Darwin in his work "Geological Observations," published in 1876, and which he truly describes as presenting the usual phenomena in such cases. The material quickly and regularly decreasing in size with increased depth and distance from shore, under two miles out large and small pebbles were found intermixed.

Miles.	Depth, fathoms.	
At 2 to 4 ...	11 to 12 ...	Pebbles size of walnuts and smaller.
4 to 7 ...	17 to 19 ...	Do. size of hazel nuts.
10 to 11 ...	23 to 25 ...	$\frac{3}{16}$ " to $\frac{4}{16}$ " ms. diameter.
12 ...	30 to 40 ...	$\frac{1}{16}$ " diameter.
22 to 150 ...	45 to 65 ...	$\frac{1}{16}$ " do. to fine sand.

This is confirmatory of, or supported by, observations around our own coasts.

J. B. REDMAN

6, Queen Anne's Gate, Westminster, S.W., June 10

### Meteor

ON Wednesday, June 7, 9.45 p.m. G.M.T., at a station 396 yards north-west by west of the transit-circle of the observatory, Mr. W. H. Robinson's attention was attracted by the sudden appearance of a fine meteor about 3° below Mars, which passed through a point 5° below Regulus, and, continuing its course about 12° further, finally disappeared. Almost instantly after being first seen, it shone very brightly, then assumed a train of detached luminous beads, and towards the end of its path burst, presenting an appearance similar to the bursting of a rocket. Its greatest brilliancy was equal to Venus. The length of the whole track was about 25°, and the time of visibility of the train was about five seconds.

E. J. STONE

Radcliffe Observatory, Oxford, June 8

### Earthquakes in Naples

THE seismographs of the Vesuvian Observatory and of the Naples University have shown increased activity the last two days. This culminated this morning at 6.47 a.m. in a distinct shock seven seconds duration, direction north to south, chiefly undulatory, but elevatory towards the end. From these facts Prof. Palmieri considered it to come from a distance, and not of local origin. This was proved by telegrams from Isernia and Vinchiatiuro in the Apennines. All to-day the amount of vapour from Vesuvius is much more abundant, and this evening it is

brilliant; the quantity of lava flowing is increased. This is a good example on a small scale of seismic activity having its focus in a mountain chain affecting the neighbouring volcanoes.

Naples, June 6

H. J. JOHNSTON-LAVIS

### THE "POLYPHEMUS"

HER MAJESTY'S ship *Polyphemus*, which has been five years under construction, is now being prepared for her final trials. She contains so many peculiarities of design and novelties of various kinds in her machinery and fittings that much scientific interest attaches to her performances. Her form is different from that of any other ship ever built. The part above water has been described as resembling a cylinder floating on its side and deeply immersed, which is tapered at the ends to form a bow and stern. An idea of her appearance above water may be obtained by imagining such a cylinder to be flattened over a large portion of its area to form a deck, and to float at a height of 4 feet 6 inches out of water. The whole of the exposed part of this surface, which has great curvature near the water line, and enters the water at an angle of about 45 degrees, is plated over with steel armour, which is carried some distance below water. The curvature of the sides is continued to a depth of several feet below the water line, and from this point they turn sharply in and converge towards each other at the keel almost in straight lines. A cross section of the vessel is similar to a pegtop, which is floating in water at a depth below its greatest breadth, and the emerged part of which presents a convex surface only. Upon this form of hull an iron superstructure is mounted, which carries a hurricane deck from which the ship is worked, and to which the openings into the main body of the ship are carried up. Two protected coverings are fitted on this deck, one at each end, which are connected with the structure of the hull, and give means of communication with the interior. There are three revolving turrets on each side, which are each armed with one of the heaviest Nordenfelt guns. This superstructure may all be shot away without injuring the vessel or impairing her powers, except as regards the use of the Nordenfelt guns.

The lines of the ship are very fine, and have been determined chiefly with a view to great speed. The armour plating is very light; no heavy guns are carried; many devices have been adopted to reduce the weight of the machinery; and some of the main fighting qualities of most other men-of-war have been sacrificed, in order that a high speed may be realised. The speed she was designed for is 17 knots; although with the great amount of horse-power; for her size, she is intended to indicate, a higher speed might be expected if it is efficiently utilised. The offensive weapons of the *Polyphemus* consist of the ram and torpedo. She will carry no guns except six Nordenfelt machine-guns, which will each be carried in a projecting turret at the height of the flying deck. These will serve to repel boat attack; but for offensive operations against powerful vessels, she will only be able to employ the ram and torpedoes. The successful use of these weapons will depend primarily upon speed. High speed is essential, to prevent failure in ramming; and in using torpedoes under heavy gun-fire, it is very important to be able to approach an enemy quickly, and to get away again with all possible celerity, as the contingencies of this mode of fighting may require. The efficiency of the *Polyphemus* thus being a question of speed, it will be understood why so many sacrifices have been made in order to enhance this quality. The vessel has been constructed as light as possible throughout, and saving of weight has been carried to a great extent.

The hull is built of mild steel; the frames being of Bessemer, and the bottom plating of Landore-Siemens steel. There is a double bottom, and the hold of the ship is largely divided into separate watertight compart