

of the Victorian rocks, refers to the geological work of Mr. Julian Woods in order to show a curious extension of the volcanic action which is to be "traced in South Australia." On referring to the extract, however, it appears that Mr. Wood's reference is not to South Australia, although it relates to the country close upon its border. Mr. Woods says.—"At about fifty miles east of Mount Gambier, on the Victorian side of the boundary, there commences an immense volcanic district, which may be traced with very little interruption to Geelong by immense masses of trap-rock and extinct craters of large dimension. This kind of country extends considerably to the north of the line, and it is underneath the trap rocks there found at the junction of the Silurian slates and ancient granites that the extensive Australian gold-fields are worked." Another extract is given from Mr. Woods' book, embodying a statement similar to that which has been already quoted from Sir Roderick Murchison, namely, that trap rock and other indications of volcanic eruption are no guide to the presence of gold, unless in the neighbourhood of Silurian rocks.

#### A Novel Apparatus.

At the last sitting of the Academy of Sciences M. Galibert described an apparatus for securing free and complete breathing to persons obliged to stay some time under water, or to penetrate into places filled with deleterious gases or smoke. This apparatus consists of a piece of wood having the form and dimensions of the human mouth when open.

To this piece of wood two india-rubber tubes are fixed of any length, according to the exigencies of the case. The man engaged in the operation is further provided with a nose pincher, or instrument for compressing the nostrils, so as to prevent the introduction of deleterious gas or water, as the case may be. The operator puts the piece of wood in his mouth, and puts on the nose pincher, he stops up one of the orifices with his tongue, and inhales pure air from the other; after which he shifts his tongue to the other orifice, and exhales his breath through the other. He continues thus regularly shifting his tongue from one orifice to the other in the order of the inspirations and expirations; but even a mistake would be of little consequence. A man easily learns the use of the apparatus by a few minutes' exercise. This contrivance has the merit of requiring no preparation, and thus offering a speedy means of affording assistance in the case of fires or suffocation by water or gases. It might also be used in medicine for the complete immersion of patients in a bath, which might sometimes be advisable,

#### Boat Worked by the Pendulum.

Lately, a small paddle boat has been plying on the Humber at a rapid rate. We understand it is worked by the pendulum, instead of oars, and it is the invention of a gentleman who is well known in London and Hull for his numerous inventions. It is also applicable to drive carriages on the high roads, and if constructed for the rail would go at the rate of 20 miles the hour. A carriage holding two gentlemen has several times been driving about Hull, then working its way to Beverly, and over

the Ferriby Hills. It is the intention of the patentee to propel ships and life-boats by the pendulum, which may be applied to either screw or paddle.

The apparatus is fixed in the boat, and is ready for use at any moment. In case of emergency this system must be of admirable service. The boat, which is a ship's jolly boat, was tried from Hull to Paull, with four workers, and ran the distance in 27 minutes. The same distance a six-oared race-boat takes at least 25 minutes, the men pulling at the top of their strength. Whilst in the pendulum boat not a oar was taken off. Were the apparatus transferred from the jolly-boat to the race-boat, the inventor asserts that the same distance would be run in 15 minutes. The pendulum boat can be worked with half the ease of an oared boat, and any one unaccustomed to pulling can work the pendulum in two minutes, and continue to do so for 20 or 30 miles without fatigue. Any common boat can be fitted with the apparatus. The York papers state that the inventor intends making further experiments on or about the 23rd inst. on the Humber.

#### How to Foretell the Direction of the Wind.

It is one of the general rules concerning the force and direction of the wind, that the wind will always be in an easterly direction when localities situated to the northward of some place of observation have a high reading of the barometer; and, on the contrary, the wind will be in a westerly direction when the reading of the barometer is higher in localities situated to the southward of the same place of observation. In the first instance, the wind, without exception, is between south-east and east-north-east, whereas the westerly direction is again almost without exception between south-west and north-west. If it so happens that at the same time there is a difference of the reading of the barometer between localities situated in an easterly and westerly direction from each other, the wind in the first case will partake more of the northerly, in the other case more of the southerly direction.

The future direction of wind, therefore, may be determined by the following rule:—When one has the lowest reading of the barometer to one's left hand, the back is turned to the region whence the wind will blow. As for hurricanes, one has always towards one's left hand that locality where the wind will blow most vehemently; regard being, however, taken to the direction of the wind. The reading of the barometer in places towards the south from us is on the average higher, since westerly winds predominate; but as westerly winds are on an average more violent than easterly, one may pretty safely infer that an ordinary difference north above south is less to be apprehended than an equally large difference of south above north. When the barometer reads higher in the north than in the south, the force of the wind is certainly as much greater as the difference of the readings of the barometer is greater; it may even be as large as six millimetres, without there being any just apprehension of a gale of wind. The greater the difference, the more sure one may be that the wind will turn towards the east, and keep to that quarter for some days. It only occurs once in a hundred times that during the blowing of a westerly wind the barometer reads a couple of millimetres higher in the