

ance of the family. Now the *Durga Pujah* and its equivalent ceremony in Upper India occur in October, i.e. at the beginning of the healthy season with abundant food-supplies. This is one more instance of the perfect adaptation of the Hindu religious calendar to the natural changes of the seasons.

Allahabad, September 9.

S. A. HILL.

#### A Shell-Collector's Difficulty.

CAN any of your readers help me in the following case? I am a shell-collector, and my minute and delicate species (*Diplommatina* and such like) are kept in glass tubes. I have lately observed that some of the tubes in the cabinets were becoming opaque; a milky efflorescence seemed clouding the *inside surface*. I found the same thing in a box containing about 100 that I had placed on one side. I then opened a box of 500 which had never been unpacked since they were received, some four years ago. All these are more or less affected! I then opened a third box, from another maker, and in this 500 I observed many beginning to be affected. What can be the reason? Each of these tubes is tightly corked, and I see the glass under the cork is *not affected*. I have tried various means to restore the clearness without avail. I have boiled some, and roasted some in the sun, steeped others in alcohol, oil, &c.; nothing seems to do any good. Can any of your scientific readers divine the cause, and suggest a remedy? E. L. LAYARD.

British Consulate, Noumea.

#### "Fauna and Flora of the Lesser Antilles."

IN the article on this subject in NATURE of August 16 (p. 371), it is stated that Guilding discovered a *Peripatus* in Dominica many years ago. This is, I believe, an error, for Guilding's *Peripatus juliforme* was found by him in St. Vincent, an island to the south of Dominica, and the first specimen of *Peripatus* found in this island was, I understand, the one now in the British Museum, taken home by Mr. G. Angus.

The rediscovery of the Dominica *Peripatus* is rather curious. In 1883-84, at the special request of Prof. Moseley, I searched for the animal in all likely places, but did not succeed in finding any specimens. At that time Prof. Moseley and I were not aware of Mr. Angus's discovery. I mentioned my non-success to Mr. Ramage, and asked him to look out for the interesting animal, and, strange to say, soon afterwards his boy brought him three specimens, but Mr. Ramage has not been able to obtain any more. I employed the same boy after Mr. Ramage had left Laudat, and he brought me two specimens, and said that he could find no more although he had searched for several days. These two I sent to Prof. Moseley at Oxford. A few weeks ago another specimen was brought to me from the windward (or eastern) side of the island by the same boy, who found it about 300 feet above the sea, not far from the coast. Laudat is on the leeward side, at an elevation of about 2000 feet above the sea, and on the margin of the virgin forest. The six specimens of the Dominica *Peripatus* recently found may not belong to a new species, but the rarity of the animal is interesting. Had it been common in any degree, Mr. Ramage and I must have found it, but neither of us has succeeded in doing so.

Mr. Ramage, who has been labouring with unflagging zeal, leaves to-day for St. Lucia, but he will return here later on in the year, so as to continue his botanical work. His specimens of the forest flora form, I believe, the most complete collection that has yet been made in the island, and his enthusiastic work deserves recognition.

H. A. ALFORD NICHOLLS.

Dominica, West Indies, September 15.

#### Sun Columns.

WITH reference to the simultaneous appearance of five sun columns described by Mr. Brauner (August 30, p. 414), the following descriptions of three different manifestations of the phenomenon may perhaps be of interest.

April 19, 1887, 7.25 to 7.37 p.m., calm, sky clear except a smoky grayish haze low on the western horizon, behind which the sun had set. The solar rays concentrated into one perpendicular continuous beam of uniform diameter with the sun, and reaching to an altitude of about 20°. The beam sharply define<sup>1</sup>, and of a reddish tint strong enough to be detected

behind the haze. Near the summit a few tinted strips of fine cloud forming an angle, and giving the whole the appearance, as described by the person who called my attention to it, of "a ship's mast and yards." No trace of side rays visible.

June 10, 1888, 8 to 8.25 p.m., sun set below horizon; to an altitude of about 10°, sky comparatively clear, only a little cirro-stratus; above this, to an altitude of 20°, the cirro-stratus much more dense, and in this part only was a sun column distinctly visible, terminating abruptly, and showing no trace in the cirro-cumulus above. In the lower 10° there was also no evidence of the column. It was at first of an old gold colour, then gradually changed to a deeper red by 8.15 p.m., when the clouds on both sides were suffused with the same tint, and by 8.27 it had disappeared.

These two cases I observed from my own residence; the third has been communicated to me by Mr. W. Manning, who was chief officer of the ship *Balmore* when he witnessed the phenomenon. Not having access to the ship's log, he could not give me the exact date and position, but it was some four or five years ago, "in about 25° or 30° S. lat., and from 120° to 130° W. long., during the first dog watch (4 to 6 p.m.), observed the sun at an altitude of about 25° of a dull red colour, with all its rays apparently drawn together and forming a pillar of light reaching from the sun down to the horizon, and about the sun's diameter in breadth." Mr. Manning told me that of all the curious sights he had seen at sea none had been so impressed on his mind as this sun pillar.

These are instances of continuous pillars from the sun upwards and downwards, one showing the half furthest from the sun only.

HY. HARRIES.

Rosebank, Hounslow, September 28.

#### THE REPORT OF THE KRAKATÃO COMMITTEE OF THE ROYAL SOCIETY<sup>1</sup>

##### II.

AN appendix to Prof. Judd's section on the geological aspects of the eruption embraces a series of data collected by Dr. Meldrum, F.R.S., of Mauritius, regarding the falls of dust and the occurrence of masses of pumice throughout the Indian Ocean in 1883-84, which he had already communicated to the British Association in 1885. Mr. Scott's prefatory note thereon shows that while such data are of value in exhibiting the immense magnitude of the eruption they cannot help to throw much fresh light upon the question of the Indian superficial oceanic circulation, since the pumice was evidently affected almost as much by the motion of the air as by that of the water. Thus, while a comparison of the two maps reveals a general westerly drift in the direction of the well-known left-handed circulatory system of the Southern Indian Ocean, a detached phalanx of pumice masses off the north-west coast of Australia in 1884 (in the second map) shows, as Mr. Scott observes, a probable drift thither "before the north-west monsoon which would prevail in those seas from November 1883 to March 1884."

In one other point, however, apart from their general interest, these data are valuable in confirming the general westerly trend of all the ejecta at the time of the eruption—a fact whose significance becomes subsequently so marked when dealing with the spread of the optical phenomena.

In the plates of geological sections which are appended to this Part attention should be paid to (3) (4) (5) (6) of Plate 4, in which natural and artificial pumice and dust from Krakatão are compared, since they have an important bearing on Prof. Judd's conclusions.

Part II. of the Report, which deals with the air waves and sounds caused by the principal eruption of Krakatão on August 26 and 27, was prepared, under the direction of Lieut.-General Strachey, F.R.S., principally by Mr. R. H. Curtis, of the Meteorological Office.

The air-waves, as apart from actual sounds, were one of the most extraordinary features of this unique out-

<sup>1</sup> Continued from p. 542.