

now know that Darwin denounced this interpretation of them, and saw that if the doctrine of prophetic germs could be established, his own theory would be reduced to rubbish.

Accordingly the more advanced Darwinians always consider functionless organs or structures as relics of a past in which they were useful. They are never interpreted as utilities which are yet to be.

I have always thought that if the doctrine of development be true, functionless organs must be, as often as not, the germs of potential use, and not necessarily at all the remains of past actual use.

What we want in this great question is physiological facts to indicate the one interpretation or the other. Hitherto I have never met with a case in which any expert interprets functionless organs as structures on the way to use. Perhaps no organ in any creature is more wonderful than the electric organs of certain fish. Any light cast upon their origin is a light cast on all organic apparatus. Here we have a case in which a distinguished physiologist detects, or thinks he can detect, an organ in process of being built up for the discharge of a very definite and peculiar function—a function for which it is not yet fit, or is but very imperfectly fitted.

This fact does not tell against development or evolution. But it does tell, and tells fatally, against the element of fortuity, which is inseparable from the idea of "natural selection," and to which Darwin attached so much importance, at one period of his life, and to which many of his disciples attach equal importance still. The fortuitous element is, in fact, the main ground on which they value it. But everywhere, in reasoning and in observation, it is breaking down. ARGYLL.

#### "*Syrhaptēs paradoxus*."

CONCERNING Prof. Newton's remark in NATURE, July 26, p. 295, on the occurrence of *Syrhaptēs paradoxus* in France, I beg to communicate that I picked the following dates out of several journals:—

May 28: On the sand-downs of Noirmoutier, Dieu, and Olonne, in the Vendée (several hundreds; three were killed).

May 31: Calais (ten specimens; one was killed).

Commencement of June: Nantes, Bretagne (one killed).

Middle of June: North of the country.

I am sure that we shall get much more news from France.

Dresden, August 2. A. B. MEYER.

#### Milk v. Fire.

IN Mr. Rust's note in NATURE, vol. xxxvii. p. 583, there is mention of a superstition that milk alone can extinguish a fire kindled by lightning—a belief that existed in Cambridge-shire, and which is entertained by the Sudan Arabs.

The Sinhalese (natives of Ceylon) have a similar belief in the efficacy of milk. When an epidemic such as small-pox breaks out in a village, two games of a religious character, *An-Edima* (horn pulling) and *Pol-gehina* (striking cocoa-nuts together), are played in public for a couple of days. Then the Kapurāla (lay priest), and those who have taken part in the games, go in procession with music, &c., to every house in the village, where arrangements have been made for the Kapurāla's reception. The house and grounds are cleaned; the inmates wear newly-washed clothes; and portions of the ceiling and floor are covered with white cloths. A lamp is lit at the threshold of the building. The Kapurāla carries an earthen pot containing either cocoa-nut milk or water medicated with saffron leaves, and over which charms have been pronounced. On his arrival at the door he chants a song about a fire in Madurāpura (Madura, South India) which was quenched by the goddess Pattini with milk. He then pours the fluid from the earthen vessel upon the lighted lamp and extinguishes it.

The Sinhalese use the expression "May milk be poured on him [or her]," when desiring to avert from some one an impending calamity, or to counteract a curse or prophecy of evil pronounced against him.

The idea of employing milk to quench the fire of an epidemic (typified by the flame of a lamp), and the idea of the deity pouring milk on an individual in order to protect him from malignant influences, appear to be somewhat analogous to the belief that milk alone will extinguish a conflagration kindled by the fire from heaven.

F. M. WICKRAMASINGHA.

Colombo Museum, Ceylon, June 30.

#### The Red Spot on Jupiter.

AN observation with my 10-inch reflector, power 252, on August 5, 1888, showed the red spot passing the planet's central meridian at about 7h. 48m. Comparing this with the first observation I obtained of this object during the present opposition, viz. on December 28, 1887, at 20h. 23m., I find that the rotation-period of the spot during the 220d. 11h. 25m. elapsed during the period referred to was 9h. 55m. 40<sup>s</sup>.348. (533 rotations), which is slightly less than what I derived from the preceding opposition, 1886-87, when the figures were 9h. 55m. 40<sup>s</sup>.5. (609 rotations).

If the entire interval is taken between observations secured here on November 23, 1886, and August 5, 1888 (embracing 620<sup>3</sup> days), I find that the mean rotation-period has been 9h. 55m. 39<sup>s</sup>.78. (1500 rotations). This clearly proves that the velocity of the spot is increasing, for at the opposition of 1885-86 the period was 9h. 55m. 41<sup>s</sup>.18. (659 rotations), and it had been increasing since 1879, when it was only 9h. 55m. 34s. The inference now seems tenable that its accelerated motion may so reduce the rotation-period in a few years that it will return to the rate it had in 1879. There is also great probability that the spot is affected by cyclic variations, the period of which may be determined by further observations.

It is desirable to obtain views of the central passages of the red spot as late as possible in every opposition. A good telescope directed to the planet at the following times will show the spot very near its mid-transit:—

|         | h.  | m.  |   | h. | m.      |     |     |   |    |
|---------|-----|-----|---|----|---------|-----|-----|---|----|
| Aug. 12 | ... | ... | 8 | 36 | Sept. 8 | ... | ... | 6 | 2  |
| 17      | ... | ... | 7 | 45 | 15      | ... | ... | 6 | 51 |
| 24      | ... | ... | 8 | 34 | 20      | ... | ... | 6 | 0  |
| 29      | ... | ... | 7 | 43 | 27      | ... | ... | 6 | 49 |
| Sept. 3 | ... | ... | 6 | 53 | Oct. 2  | ... | ... | 5 | 58 |

The low position of Jupiter during the present year has somewhat hindered the successful observation of his more delicate features, and during the next opposition of 1889 the planet will be in 23° S. declination, so that the study of his surface ought to be undertaken in southern latitudes, where the conditions are more favourable.

W. F. DENNING.

Bristol, August 6.

#### Circles of Light.

THE appearance described below was visible in Penrith and the surrounding district on Thursday, the 2nd inst., from 5 p.m. nearly till sunset. Round the sun as centre, at a distance of about 28", about three-quarters of a circle of light were visible, the lowest quarter being absent. About a quarter of a circle of equal size touched this circle at its highest point. In the region of contact of the circles a space about 4" long and 1/2" broad seemed common to the two circles, as if they there overlapped, and this part was very bright, and bordered with red on the side towards the sun. The remaining parts of the circles were faint, and only to be seen when the disk of the sun was hidden by some obstacle; they were about 1/2" wide.

EDMUND CATCHPOOL.

Westleigh, Weston-super-Mare, August 6.

#### Michell's Problem.

THE issue of NATURE of July 19 (p. 272) contains a communication from Mr. Sydney Lupton on "Michell's Problem." I regret the author has not seen my paper on the same subject published in the *Philosophical Magazine*, November 1887, "On Random Scattering of Points on a Surface." The objections put forward by the late Prof. Forbes to the argument of Michell concerning the physical connection of double stars are there analyzed, and it is shown that the experiments by which Prof. Forbes assumed to invalidate it are on the contrary a very decisive experimental proof for and illustration of this argument. Mr. Lupton says, "The probability of exactly uniform distribution is nil. Michell, however, seems to assume this probability to be 1, or certainty." I fully agree with the former part of the statement. But never did Michell assume the obviously erroneous view on the distribution of stars ascribed to him by Mr. Lupton in the letter. It is true that it is a common error—not only of the ἀγνοῦ μετρητοῖ—to confound random scattering with uniform distribution, but Michell has not fallen into this error.

London, August 3.

JOSEPH KLEIBER.