

the latter, then the punctures are, no doubt, true stings; and I make the alternative suggestion that the wasp is guided by its instinct—as the larva of the ichneumon is when feeding—to select for attack parts of its victim not vital, where the injected acid produces insensibility or partial muscular paralysis, but not death. Because in the rare cases in which a wasp or bee struggling in a spider's web succeeds in stinging his captor, in anger and at random, the spider dies. May the observation made in your columns by a recent correspondent, on the self-administration, through the mouth, of the poison of the sting by wasps and bees under chloroform not point to a stupefying property in the acid when taken, as the natives of India take the poison of venomous snakes, into the stomach, and not directly into the circulation of the blood? There is good work here for an observer with patience and a good field microscope.

Bregner, Bournemouth, October 19 HENRY CECIL

A Fossil Plant—Misquotation

IN an article on a fossil plant from the Isle of Man, in NATURE, vol. xviii. p. 555, the following sentence is attributed, apparently on the authority of Mr. Leo Lesquereux, to my report on the Devonian and upper silurian plants of Canada: "that these fragments are probably originating in the upper silurian of Gaspé; that as they are found in the lower part of the limestone which underlies the Devonian Gaspé sandstone and become more abundant in the upper beds, this suffices to indicate the existence of the neighbouring land, probably composed of silurian rocks and supporting vegetation."

On referring to the report in question, I find that the original of this strange statement stands as follows:—

"These remains of *Psilophyton* occur in the lower part of the limestone, but are more abundant in the upper beds, and they suffice to indicate the existence of neighbouring land, probably composed of lower silurian rocks, and supporting vegetation."

I have no doubt that Mr. Lesquereux quoted from memory, and probably supposed that he was expressing my meaning, but an English writer should have referred to the original.

I may add that the specimen referred to in Mr. Binney's article does not exhibit the characters of my genus *Psilophyton*, which does not contain "fucoids," but land plants of the rank of acrogens, and of which not merely the external forms, but also the internal structures are described and figured in the report referred to. The plant in question much more closely resembles *Butthollephis harknessii*, Nicholson, from the Skiddaw slates.

J. W. DAWSON

McGill College, Montreal, October 5

Sense of Fear in Chamæleons

DURING the past summer I have kept five chamæleons in captivity, and have repeatedly observed their terror and rage when confronted with snakes. When a large Algerian chamæleon (*C. vulgaris*), now in my possession, perceives a common snake (*Tropidonotus natrix*) wriggling in his vicinity, he at once inflates his body and pouch, sways himself backwards and forwards with considerable energy, or walks rapidly away with his body leaning over in the direction furthest from the snake, opening his huge cavernous mouth, and hissing and even snapping at what he evidently regards as his natural enemy. At the same time his body assumes an almost instantaneous change of colour, and is quickly covered with a large number of small dark brown spots. It is curious that similar symptoms of fear and anger are displayed when a lizard (*Lacerta viridis*), or even a tree-frog (*Hyla arborea*) is exhibited to him. The climax of grotesque nervousness was, however, reached one day, when the sight of a child's doll produced the like effect; in this case, it is probable that the glass eyes of the doll, giving to it the appearance of life, were what caused this terror in the reptile.

R. MORTON MIDDLETON, Jun.

West Hartlepool, October 23

An Unusual Rainbow

OCTOBER 28 was a fine day with a brisk westerly wind blowing. At 2 P.M. a splendid well-defined nimbus cloud passed from north-west to north-east, about a mile to the north of this observatory, and rapidly driving away before the wind, left a large tract of cloudless sky behind it, the sun shining at the time. Suddenly at 2.12 P.M. a magnificent rainbow shone out most brilliantly across

the blue space, the effect being exceedingly novel and charming. The veil of rain-drops forming the bow was so thin as to be invisible except near the zenith, where there appeared to be a thin cirrus. No rain fell on the observatory, and unfortunately there were no means of determining subsequently the area covered by the shower.

Eventually the rainbow faded away over the cloudless sky, and the 30° or so of the extreme eastern end which overlapped the receding nimbus shone out with a vivid brightness until it disappeared.

A secondary bow was not visible in front of the clear sky, but the violet band of the primary stood out with great distinctness, apparently separated from the remainder of the bow.

Kew Observatory, October 29

G. M. WHIPPLE

OUR ASTRONOMICAL COLUMN

A MISSING STAR.—There was a curious, and at the time suspicious, history attaching to an object, shining as a star of 9.10 magnitude, which was compared on several nights with the minor planet *Hygeia*, while under observation at Washington in the autumn of 1850. This star, which was designated ϵ in a list published in Gould's journal, was missed by Mr. Hind, who reported the circumstance in a letter to Mr. W. C. Bond, of Harvard College, by whom the attention of Lieut. Maury, at that time superintendent of the Naval Observatory, Washington, was called to it. Mr. Ferguson having verified the disappearance of this object on August 29, 1851, a search was made for it on the assumption of it being a great planet exterior to Neptune; the reason for this assumption will be apparent from an inspection of the following positions, which result from the observations on three evenings:—

1850.	Washington Mean Time.	Right Ascension.	Declination.
	h. m. s.	h. m. s.	° ' "
Oct. 16 ...	6 52 36 ...	19 17 42.81 ...	-20 44 57.1
" 21 ...	7 6 40 ...	19 17 42.19 ...	-20 44 55.5
" 22 ...	6 35 35 ...	19 17 43.90 ...	-20 44 54.6

It was also observed on the 19th, but the accurate positions of the stars of comparison are not available. These observations appear to indicate that the object had motion in R.A., but that it was stationary at some time between October 16 and 22, and if we suppose it to have been a planet moving in a circular orbit, we find to allow of its being stationary at this elongation from the sun, its distance would be 49.94, and its period of revolution 351 years, or about twice the period of Neptune, and the period of Neptune is about twice that of Uranus. Notwithstanding the search was continued from August 29 to December 11, 1851, and extended to all stars of the eleventh magnitude between 19h. 20m. and 19h. 36m., and from -19° to -21° 20', no planetary body was found. That the Washington observers considered suspicion to attach to the object is obvious, but the only likely explanation appears to be that there was a variable star in this position, and that the observations in right ascension were affected with greater error than might be expected, considering that on two of the days of observation several comparisons were made. To our knowledge search was also made in Europe for the Washington star. Further particulars will be found in two letters from Maury, published in Gould's *Astronomical Journal*, No. 36.

THE SATURNIAN SATELLITE MIMAS.—From some Washington observations of this difficult object between the years 1874 and 1877, it appears that the following elements may be taken as approximately representing the motion of the satellite in the interval on the assumption of a circular orbit in the plane of the rings: epoch 1878, January 1.0207 G.M.T., $u = 0^{\circ} 0'$, $N = 126^{\circ} 14' 5''$, $i = 7^{\circ} 3' 2''$, radius of orbit at the mean distance of Saturn $27'' 40$, period of revolution 22h. 37m. 5.614s., or the logarithm of the period in days = 9.9742473. The