other purposes. Considering the present rage for this type of boiler, other examples might have been given with advantage.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

The Hodgkins Fund Prizes.

THE time within which papers may be submitted to competition for the Hodgkins Fund Prizes of the Smithsonian Institution, for essays in regard to the nature or properties of atmospheric air, has been extended from July 1 to December 31, 1894. This action has been taken for the reason that many of the circulars announcing these prizes seem to have failed to reach the persons for whom they were intended.

Numerous inquiries have been received, which render it desirable to announce that while it is preferred that the name and address of each competitor should be attached to the manuscript, any one who desires it, is permitted to send his name and address in such a form that they can be detached from the manuscript, which he may identify by means of a motto. The manuscripts of unsuccessful competitors will be returned wherever they have been accompanied with the proper address; but the proprietorship of papers which have been awarded one of the named prizes, will rest with the Institution, which only desires to give them a wide publicity; and no copyright privileges are, in this case, to be expected by the author.

Papers which have been already published will not be accepted in competition for the prizes, but may be eligible for the medal. This medal will be awarded in the same way that medals are usually awarded by the principal scientific societies, the medallists being chosen from all investigators known to the Committee of Award, and not necessarily from among those who have submitted papers.

Information regarding the Hodgkins Prizes and the Smithsonian Institution may be obtained from the Secretary of the Institution, S. P. Langley, Washington, D.C., or from the Agents of the Institution, Messrs. William Wesley and Son, 28 Essex Street, Strand, London. S. P. LANGLEY.

Washington, June 6.

Electrical Theory of Vision.

IN reference to the hypothesis concerning vision which I suggested at the Royal Institution on June 1, Dr. Obach has favoured me with the enclosed letter detailing an observation of his on his own eyes, which may be worth placing on record. I therefore send it on to you. OLIVER J. LODGE.

University College, Liverpool.

IN your very interesting discourse at the Royal Institution on Hertz's work, which is reproduced in NATURE of June 7, you suggested that the susceptibility of the eye to light-waves might be analogous to that of your "coherer" to Hertzian waves, and that the light merely causes a diminution of electric resistance of some badly-conducting material interposed between a source of electricity and the sensitive nerves of the eye. The sensation of darkness you explain by the return of the interposed body to its original state, produced by an automatic tapping back on the part of the tissues.

In reference to this matter, I should like to bring to your notice an observation, made some three years ago, which seems to me to support your views as to the *modus operandi* of the eye. One evening, after having watched the famous Rhine Falls, near Schaffhausen, for a considerable time in the full glare of the sun, which produced a dazzling whiteness of the spray, I felt intense pains in the head and eyes, which did not diminish much even after I retired to bed in a perfectly dark room. I thereupon resorted to a remedy, which had given me relief on previous occasions with pains in the eyes caused by overstrain, *i.e.*, I placed the thumb and forefinger on the eyes over the closed eye-lids and imparted gentle vibrations to the eye-balls. After two or three vibrations I was compelled to stop, as the remedy was not only very painful, but also produced the sensation of a bluish-white light of dazzling brightness (like an electric arc) being brought almost into contact with the eyes. After the lapse of a few minutes the luminous phenomenon subsided, and I again commenced the vibrations of the eye-balls, which now I could do a little longer than before ere it became unbearable. This operation I repeated, with intervals of rest, perhaps eight or ten times, till finally the vibrations were almost painless and produced no longer any luminosity; the pains in the eyes and head had then nearly disappeared, and I slept soundly the whole of the night.

The explanation of this curious observation seems to me the following:—The intense brightness of the light reflected from the spray had not only reduced the resistance of the intercepting medium to a minimum, but at the same time overtaxed the elastic tissues whose duty it would have been to shake the material back into its normal condition, after the cessation of the light. The energy thus lost by the tissues was then suppressed from without by the vibrating fingers.

For what reason the return of the intercepting substance to its original insulating condition should also be attended by the sensation of light is difficult to conjecture, unless it be directly due to the physiological effect produced on breaking the circuit.

Similar effects, only not so pronounced, can be observed on vibrating the eye-balls after any ordinary overstrain of the eyes.

Old Charlton, Kent, June 10. E. OBACH.

Ophiophagus.

THE family of the venomous snakes called Elapidæ is divided into two sections, the Najidæ, or snakes with hoods, and the Elapidæ, without hoods. The Najidæ is represented by the Cobras and Ophiophagus; it has two genera, Naja and Ophiophagus.

The genus Ophiophagus has but one species, the *Ophiophagus elaps*, or *Hamadryas ophiophagus*. This is probably the largest and most formidable venomous snake known. In size and deadliness it rivals the Crotaline snake, *Lachesis mutus*, the Bushmaster, found in South America. The Ophiophagus grows to the length of 12 or 14 feet, or even more. It is hooded like the cobra, and resembles it in configuration and character. The colour varies according to age and locality, being some shade of olive-green or brown; young specimens have a different colouring, and might easily be mistaken for another genus.

This deadly snake, though widely distributed, is fortunately not very common, and consequently its bite, though fatal, does not contribute largely to the 20,000 deaths that occur annually from snake-bite in India. It is found on the Indian Continent and Burmah, in the Andaman and Philippine Islands, in Java, Sumatra, Borneo, and perhaps in New Guinea. It is not known much, if at all, in North-Western and Central India; it is more common in the damp climates of Bengal, Burmah, Assam, and Southern India.

The Ophiophagus, like other snakes, takes readily to the water. It is found in the forest and grass jungle and in hollow trees; it climbs readily, being frequently found in the branches. As its name implies, it feeds upon other snakes, but probably, when its usual food is not forthcoming, it will take small mammals, birds, fish, or frogs.

It resembles the cobra, except that it is longer in proportion to its size, and that the hood is relatively narrower. The poison is of a golden yellow colour. It is even more graceful in its movements than the cobra, and turns more rapidly. The snake-charmers in India prize it highly, but they say it is exceedingly dangerous to catch and difficult to handle before its fangs are removed. It is said by the Rev. Dr. Mason, who knew it in Burmah, to be very aggressive, and Cantor describes it as being very fierce, and ready, not only to attack, but to pursue when opposed. Its Bengali name is Sunkerchor.

Three remarkably fine specimens of this rare snake have been received at the Zoological Society's Gardens. A few years ago a specimen died, which had lived for a long time in the Gardens and excited great interest. That and the individuals under notice are probably the only specimens that have been brought alive to this country.

It will be of interest to numbers of naturalists and others to know that this rare snake is now alive in the Society's Gardens, Regent's Park, where it can be seen to great advantage in the large and well arranged reptile-house. J. FAYRER.

London, June 12.

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