non-conformists, but this should not be taken as an indication of any want of religious tolerance. His whole life would contradict such interpretation. He could only have acted under a strong sense of personal responsibility.

In the sketch of her father's life, Mrs. Humphrey writes (vol. i. p. 6): "As a little boy he was subject to violent though transient fits of rage . . ." I was interested in this remark, but not altogether surprised, because I once saw an almost ferocious look on Stokes's face. It was at a meeting of the British Association

when he thought that some one was taking a liberty with him. But this look was quickly replaced by his usual smile, as he turned round and saw that it was only Lord Kelvin patting him on the back.

Stokes lived a long and useful life, alert and vigorous almost to the end. There are few men who have secured the esteem and love of their fellow workers to the same extent. I shall always remember Lord Kelvin, as he stood at the open grave, almost overcome by his emotion, saying in a low voice: "Stokes is gone and I shall never return to Cambridge again."

The Vision of Nocturnal Animals.

By Prof. S. Russ.

IN some experiments, conducted with Dr. J. C. Mottram during the War, upon the best conditions for night vision, the question arose as to what part the transparency of the media of the eye plays in determining acuity of vision in dim lights. It is known that individuals vary between wide limits in their night vision, some appearing almost blind in a night of average darkness. Further, it is known that many wild animals have very little difficulty in making their way about or in finding their prey in dim lights, though the sense of smell may not, in the latter category, be

In Fig. 1 are collected the results of a number of such experiments: The strip A is a photograph of the ordinary arc spectrum of cadmium; the remaining photographs are with the experimentally mounted eyes interposed between the arc and the slit of the spectrometer. B shows the transmission by a human eye; and the other strips transmission by eyes of a lioness, C; a bear, D; great eagle owl, E; and a tiger, F. Others tested were the eye of an ox, which showed about the same degree of absorption as the human eye, and a cat, which closely resembled that of the tiger. Three human eyes were tested, and they showed no important differences from one another. How far the different degrees of transparency shown are dependent upon post-mortem changes, it is scarcely possible to say; it may be mentioned, however, that the human specimens were probably fresher than any of the others, yet they showed the greatest opacity to the short wave-lengths.

On testing in the same way the various parts of the eye, it was found that the lens was a more absorptive element than the cornea, the humors of the eye being more transparent. It is interesting to note that, if a person is examined in pure ultra-violet radiation, the lens is seen to fluoresce vividly, the cornea less so.

The sensation when one is subject to this invisible radiation is that of the eye being filled with a pale blue light.

At a meeting of the Ophthalmological Section of the Royal Society of Medicine on January 9, these observations were discussed in their relation to night vision. If it be a fact that the eye of the nocturnal animal or bird is transparent to a certain range of ultra-violet radiation, and that this reaches the retina in an appreciable quantity, it may be that it is a valuable aid to vision. In the discussion, Sir John Parsons questioned the value of such a radiation to an eye chromatically adjusted to the visible region, but little is known about the range of radiation for which the optical parts of these eyes are most efficiently adapted. Prof. Hobday mentioned that, during the War, Australian horses were used in Palestine for night work, because they did not suffer from night-blindness.

FIG. 1.

neglected. In the night owls this sense is, I understand, excluded, for they find their prey solely by the sense of sight.

Experiments of a direct character were made upon the enucleated eye by cutting away a small portion of the retina at the back of the eye and cementing over this aperture a thin quartz plate. It was generally possible to do this without loss of fluid or deformation of the eye; this was now mounted in front of the slit of a quartz spectrometer, and the extent to which the radiation from an arc (cadmium or tungsten) was transmitted through the eye was measured photographically. It was soon evident that all of the eyes tested exerted, as was expected, a considerable degree of absorption for the major portion of ultra-violet radiation from the arc, but that what appear to be significant differences were shown by the eyes of different animals.