is interesting. You have seen that the ordinary zinc surface which has been exposed to air and moisture is quite inactive, but if a bright piece of zinc be immersed in water for about twelve hours, the surface is acted on; oxide of zinc is formed, showing generally a curious pattern. Now, if the plate be dried, it will be found that this oxide is strongly active, and gives a good picture of the markings on the zinc. The oxide evidently holds, feebly combined or entangled in it, a considerable quantity of the hydrogen peroxide, and it requires long drying or heating to a high temperature to get rid of it. Also, if a zinc plate be attacked by the hydrogen peroxide, the attacked parts become more active than the bright metal. Thus, place a stencil on a piece of bright zinc, and expose the plate to the action of an active plaster of Paris slab, or to active blotting-paper for a short time, then, on removing the stencil, the zinc plate will give a very good picture of the stencil. Any inactive body—for instance, a piece of Bristol board or any ordinary soft paper—can be made active by exposing it above a solution of peroxide, or, more slowly, by exposing it to a bright zinc surface. If, for instance, a copper stencil be laid on a piece of Bristol board, and a slab of active plaster of Paris be placed on the stencil for a short time, the Bristol board will even, after it has been removed from the stencil for some time, give a good picture of the stencil. Drying oil and other organic bodies may be used in the same way to change the paper. A curious case of this occurred in printing a coloured advertisement cut out of a magazine, for there appeared printing in the picture which was not in the original. This printing was ultimately traced to an advertisement on the opposite page, which had been in contact with the one which was used; thus this ghostly effect was produced.

I believe, then, that it is this active body, hydrogen peroxide, which enables us to produce pictures on a photographic plate in the dark. There are many other curious and interesting effects which it can produce, and which I should like to have shown you, had time permitted.

I would only add that this investigation has been carried on in the Davy-Faraday laboratory of this institution.

WILLIAM J. RUSSELL.

THE ROYAL SOCIETY'S CONVERSAZIONE.

THE second of the two annual conversazioni of the Royal Society was held on Wednesday, June 21, and was attended by a large and brilliant company. Many of the objects of scientific interest exhibited in the various rooms of the Society were the same as were shown at the first (or gentlemen's) conversazione held on May 3, the most important of which were described in NATURE of May 11 (p. 44). In addition to the objects already referred to, the following were among the exhibits.

Mr. C. V. Boys, F.R.S., exhibited for Mr. R. W. Wood, of the University of Wisconsin:—(1) Silvered photographic grating. The grating of 2,000 lines to the inch is a contact print on albumen. It is then silvered and polished while wet. The brilliancy of the spectrum is very great. (2) Diffraction colour photograph (see p. 199). Mr. J. E. Petavel exhibited the molten platinum standard of light.

Mr. W. A. Shenstone, F.R.S., and Mr. W. T. Evans showed experiments on the making of tubes from rock crystal in the oxyhydrogen blowpipe flame.

The Parsons Marine Steam Turbine Co., Ltd., had on view: (1) model of the *Turbinia*, the first vessel propelled by steam turbine engines; (2) model of torpedo boat destroyer of 35 knots guaranteed speed and 10,000 I.H.P.; (3) model of Atlantic liner of 38,000 I.H.P. and 27 knots speed.

Mr. A. A. Campbell Swinton showed experiments with electrolytic contact breakers. Mr. J. W. Swan, F.R.S., exhibited experiments showing effects produced by the action of modifications of the Wehnelt-Caldwell interrupter. Mr. W. R. Pidgeon showed a new influence machine. Mr. Mackenzie Davidson exhibited an apparatus to enable Röntgen ray shadows upon a fluorescent screen to be seen in stereoscopic relief.

Prof. Ray Lankester, F.R.S., exhibited (1) collections of mosquitoes recently received at the Natural History Museum for study in reference to the connection of malaria with mosquitoes; (2) drawings of mosquitoes, by Mr. Ernest E. Austen.

Dr. Patrick Manson showed microscopic specimens showing the development of the parasite of malaria.

Dr. Allan Macfadyen, for the Jenner Institute of Preventive Medicine, exhibited cultures and microscopical specimens of certain pathogenic bacteria.

Dr. Gladstone, F.R.S., showed ancient metals from Egypt, Babylon, and Britain.

The Victoria and Albert Museum for the Seismological Committee of the British Association exhibited a Milne horizontal-pendulum seismograph, with specimen of the seismograms yielded by it.

Prof. Haddon, F.R.S., showed a small collection of polished stone implements from the Baram District, Sarawak, Borneo.

Prof. T. G. Bonney, F.R.S., exhibited diamonds in eclogite. Boulders of eclogite, &c., occur in the "Blue Ground" at the Newlands Diamond Mines, West Griqua Land. Two of these contain diamonds. Thus the diamond cannot have its genesis in the "Blue Ground," nor can the latter, containing true boulders, be an igneous rock.

Mr. Walter Gardiner, F.R.S., and Mr. A. W. Hill showed histological preparations of plant tissues demonstrating the "connecting threads" which traverse the cell walls and establish a means of communication between the several cells.

Dr. F. W. Oliver exhibited a collection of Cingalese Podostemaceæ. The specimens included the majority of the Cingalese representatives of this remarkable family of flowering plants.

THE RED SPOT ON JUPITER.

I HAVE frequently observed this object during the present apparition of the planet, but always found it exceedingly faint and only visible under good definition. Its aspect is that of a faint dusky stain attached to the northern side of the south temperate belt, and partially filling up the hollow formed in the great southern equatorial belt. With my 10-inch reflector—power 312—the following estimated times of transit were obtained, and I have added the corresponding longitude of the object:—

Date.	Transit time.	Long.
	h. m.	°
1898 November 29	19 55	31·9
1899 February 2	18 39	29·5
7	17 46	29·0
24	16 49	30·0
26	18 27	29·9
April 19	11 20	32·0
26	12 3	30·8
May 6	10 19	31·7
8	11 58	32·3
June 4	9 18	34·4
6	10 57	34·8
9	8 26	34·4
11	10 4	34·0
14	7 32	32·9
16	9 13	34·4
21	8 20	33·5
23	9 58	33·1
26	7 29	33·7

This feature has shown a remarkable variation of motion during the last twelve months. In the winter there was a very decided acceleration of speed, but during the past three months the motion has been again retarded. The acceleration was first noticed here on the morning of February 3, when the marking came to the central meridian seven or eight minutes before its computed time. In the first half of 1898, and again during the last few months, the rotation period of the spot was nearly 9h. 55m. 42s., but for several months in the past winter the rate corresponded very nearly with 9h. 55m. 40·6s., the period employed by Mr. Crommelin in System II. of his ephemerides (*Monthly Notices*, November 1898). But, unfortunately, the precise character of the recent irregularity of motion cannot be determined, Jupiter having been too near the sun for effective observation during several months (August to November 1898).