

THE ROYAL PHOTOGRAPHIC SOCIETY'S
EXHIBITION.

THE forty-fourth annual exhibition of the Royal Photographic Society was opened to the public last Monday at the Gallery of the Royal Society of Painters in Water Colours, 5A Pall Mall East. As is usual, by far the greater number of the exhibits claim attention on account of their pictorial interest; but the technical and scientific section is considerably larger than it has been at the recent exhibitions. No doubt next year there will be a still further increase in the importance of this section, as the Society will then have at their disposal the larger accommodation available at the New Gallery in Regent Street.

The judges in this Section, Captain Abney, Mr. T. Bolas and Mr. Chapman Jones, have selected three of the exhibits as showing progress of sufficient importance to merit the special distinction of receiving the Society's medal. Taking these as they stand in the catalogue, the first is awarded for copies of an etching, a mezzotint, a silver print, an engraving, a lithograph, a pen and ink drawing and a pencil drawing, by Mr. J. Hort Player, by what he calls the "absorption" process. The method is to place the picture or document that is to be copied face uppermost, to lay upon it a piece of "bromide paper" with its sensitive surface in close contact with the picture, and then to expose with the bromide paper towards the light, so that the light passes through the sensitive surface before it comes in contact with the picture being copied. On development this furnishes a negative from which prints are obtained as usual. The great advantage of the process is that the picture or document need not be transparent, or if it is on ordinary paper there may be other writing or drawing on the reverse side. Those who examine these specimens of Mr. Player's will be surprised at the wonderful perfection to which he has brought the process, and its universal applicability is proved by the great variety in the character of the originals that he has worked from.

Another medal is awarded for a cross-lined screen for use in the making of half-tone photo-typographic blocks, by Messrs. J. E. Johnson and Co. It has two hundred lines to the inch over its whole area of thirteen by sixteen inches, the especial feature of the screen being the great regularity of the ruling and the freedom from blemishes in so large a plate. Two still larger ruled screens are also shown by the same firm, of 133 and 150 lines to the inch respectively.

Mr. E. Sanger Shepherd receives a medal for his "trichromatic light filters." The three-colour printing methods that have been brought to such perfection depend upon the fact that the phenomena of colour-vision can be explained on the assumption of three colour sensations. By photographing separately the light that affects each of these, and superposing the prints from the negatives, each being printed in its corresponding colour, the same sensation of colour will be produced by the resulting composite print as by the original. In order to photograph separately the colours that correspond to each sensation it is necessary to stop the light that is not wanted by means of a suitably coloured screen, which is generally placed against the lens. But these colour screens have also to compensate for the differences between the sensitiveness of the plate used for the different colours and their visual intensity. Heretofore we believe the colour screens have been prepared by the method of trial and error, and though astonishingly good results have sometimes been produced, we may well expect greater certainty and more definite success by the use of screens that have been adjusted by definite methods of measurement as these of Mr. Sanger Shepherd's have been. The screens are adjusted to the Cadett "rapid spectrum plate" and tested by the colour sensitometer recently devised by Captain Abney. The exact tints are obtained by the superposition in each case of films variously dyed.

Among the cameras shown, the "Gambier-Bolton" hand camera by Messrs. Watson and Sons is worthy of especial attention, as embodying the requirements found by Mr. Bolton in his large experience in photographing animals. The camera is for 5 x 4 inch plates, and is by no means a compact apparatus suitable for carrying about for obtaining snap-shots. It is designed for lenses of much greater focal length than usual that the image may be large, and as the lenses must be rapid, they must be large and consequently heavy. The camera has many conveniences adapting it to the special work it is constructed for. The same exhibitors show the "Kromaz" colour apparatus. This is somewhat analogous to Ives' well-known

"Kromscop," its only merit presumably being that it is cheaper. Instead of taking a complete stereoscopic negative for each of the three colours, only two pairs of negatives are taken—one through a green screen, and one of the other pair through a red and the other through a blue screen. The view shown is crude, and hardly comparable with the exquisite results obtained with Ives' "Kromscop."

The Lippmann interference colour process is exemplified by three photographs by Mr. Edgar Senior—two views and a spectrum of the arc light. These would show to better advantage if the correct position of the eye were indicated in each case. The views are very good specimens of the results obtainable by this method, but the spectrum is especially worthy of commendation. In addition to these there will be found upon the tables many little conveniences, some of a distinctly novel kind, that will prove of service to those who photograph either for scientific purposes or for mere pleasure. A small printing frame, with six slides so that the sensitive surface may be exposed in six separate strips, is exhibited by Messrs. Marion and Co., and is applicable to a great variety of experimental purposes; and a frame, by Mr. T. Webster, that opens like a book, the negative being entirely removed from the print, so that the whole of the print may be examined at any time, though perhaps not very novel in principle, is likely to prove useful.

But the most remarkable of all the exhibits is not mentioned in the catalogue, although examples will be found on the tables. These are some plates prepared by General Waterhouse, the honorary secretary of the Society, to illustrate the fact that a polished surface of metallic silver is sensitive to light, and that the resulting latent image may be developed by mercury vapour, after the manner of daguerreotype plates, or by the methods of so-called physical development, after the manner of wet collodion plates. The exposures necessary are long, generally two to three hours, to direct sunshine in August. To exclude any effect of the stencil plate used as the negative to print from, a sheet of mica was placed between it and the silver surface, and the silver surfaces experimented with have been electroplated copper plates prepared for daguerreotype work, silver foil and commercial silvered glass, the surface in each case being polished with plate powder. The surfaces of other metals have given similar results. Many years ago Moser made similar experiments, developing the images with the vapour of water and of mercury, but (speaking without reference) we think that he did not go so far as to develop the images by the deposition upon them of silver from a solution. General Waterhouse seems to have brought these experiments and practical photography a little nearer together, and we shall receive with great interest any further results of his investigations. C. J.

UNIVERSITY AND EDUCATIONAL
INTELLIGENCE.

Dr. A. WILLEY, formerly Balfour Student of the University of Cambridge, has been appointed Lecturer on Biology in Guy's Hospital.

The inaugural address of the coming session of the City and Guilds Central Technical College will be given at the College, in Exhibition Road, on Tuesday afternoon next, at three o'clock, by Sir Andrew Noble.

Science makes the following announcement:—The plans for building the University of California, submitted by M. Bernard, of Paris, have received the first prize in the competition arranged by Mrs. Phoebe Hearst. The cost of the buildings is estimated at over 15,000,000 dollars.

IN addition to 300,000 dollars subscribed from various sources for an endowment of Brown University, made on condition that 2,000,000 dollars be collected, Mr. John D. Rockefeller has offered to give 250,000 dollars on condition that 1,000,000 dollars be obtained before the commencement of next year.

A PROSPECTUS just received shows that the work of the South African School of Mines, Kimberley, is now carried on in suitable premises, which were completed in the beginning of this year at a cost of about 9000*l.* Of this sum, 2000*l.* was given by the Government of Cape Colony, 2000*l.* by the De Beers Company, and 5000*l.* was borrowed. The school has been established to carry out part of a scheme for the training of