that was required. At present the lines run nearly in the same direction, without any opposing lines to balance them, and there is a space behind the figure that requires filling, while the table and vase carry the eye out of the picture to the left, and overcrowd that side of the composition. If the table had been moved to the right side of the picture, stability would have been given to the figure; the numerous weak and almost similar curves of the figure and chair would have been opposed by the straight lines of the table, the space that was to let would have been filled, the lines of the figure would have been properly balanced, and the table, which crowded the left of the picture, would be doing service to the general effect, and the figure, although turned slightly away from it, would still have the effect of being seated naturally near the table; while, if some attention to light and shade and gradation had been observed in the background, everything would have been brought into harmony. There is another defect which should be carefully avoided: the curves of the chair-back exactly follow the curves of the arm.

As a contrast to the foregoing, I introduce a little sketch by Sir Noel Paton, in which it will be observed that balance

has been strictly considered, and the figure is admirably supported. Notice how the lines of the leaning figure are contrasted by those of the arms, and, for fear these should not be sufficient, two trees have been introduced to perform the same function in the composition. And the hat and plants on the ground perform the part of the point of dark so often mentioned in the chapters on landscape.

This simple little figure illustrates much that is valuable in art, and I shall probably have to refer to it again; at present it has answered the purpose for which it was here inserted, that is, to show the difference between a figure represented "just as it sat," and a picture produced by one who conforms to the rules of art.

PHOTOGRAPHY APPLIED TO MECHANICAL PRINTING PROCESSES.

BY R. GRIGGS.*

In compliance with a request from our esteemed Secretary, I have the honour to place before you a subject, the importance of which, I think, cannot be overrated; namely, the application of photography to ordinary methods of printing; and I have thought it better to divide the methods of printing into chemical printing, or lithography, and type printing, dealing only with the first this evening, leaving type or surface-printing for another occasion; and in adopting this course I must of necessity be brief, for it is not possible to do full justice to such a subject in one evening meeting like this, because I am desirous, as far as time will allow, of practically illustrating to you the method I have adopted to obtain these photo-lithographs, in eight colours, which Dr. Forbes Watson, the Chief of the India Museum, has placed in the hands of Dr. Diamond, your Honorary Secretary, for presentation to each member of this Society. A short *resumé* of the various steps which have led us to the useful yet infantile point, we now find photo-lithography, will not be out of place before proceeding to details. The invention of chemical printing, or lithography, was the invention of a German, Alois Senefelder, in the year 1795, who, while in search of a cheap means of printing his dramatic productions, by an accident discovered that, by writing on a piece of Kelhein stone with a greasy ink, a surface could be obtained from which prints could be easily taken, either in one or several colours, and obtaining effects unreached by wood-engraving.

The establishment of the art of lithography in England is due to Hulmandel, who greatly improved the processes for obtaining the different class of drawings from one or several stones, and printing from them in colours. The effect thus obtained advanced the art, and increased the facility for producing artistic effects. I need not enumerate the many workers in this important field, from the time of its introduction into England to that when we find the productions of Owen Jones and Francis Bedford appearing before the public as splendid examples of artistic feeling. As I do not intend these remarks to be anything like an exhaustive essay on this subject, neither do I intend to argue to whom the honour belongs of connecting photography with lithography, as to whether he was an Englishman, a Frenchman, or a German; but I feel bound to say that the name of Osborn should be connected with the wedded life of photo-lithography, not only on account of his early productions, but on the good results he has produced; then the names of Talbot, Poitevin, Ponton, Archer, and Diamond ought to be mentioned, for having provided us with the results of their important discoveries of the application of collodion, potash, gelatine, and pigments, without which photo-lithography would not be in the position we now find it. Although it has had to contend against many selfish clogs, in the disguise of patents, which have been taken out since then to block the path of progress, it has advanced to the splendid position of making the past subservient to the present, by giving us the means of faithfully reproducing, in permanent printing, those interesting manuscripts which give such insight into the manners and customs of those who have preceded us, as well as the beautiful designs which adorn the many public museums and libraries. Our Secretary, since the last meeting, has furnished me with a drawing, from which I have produced a block, which I beg to hand to you for your inspection, and I propose to transfer a copy of the same drawing to stone this evening, and print from it before you, as well as pull a few copies off the stones from which the presentation prints have been taken; and when I tell my commercial friends that these have been produced at less than one-half of the price that these would have cost if entirely done by hand, I feel that I indicate to you a field which is full of promise to the enterprising photographer.

The first important step is to obtain a negative free from deposit on the lines of the subject copied, and moderately dense; it will give the best results if used unvarnished, in consequence of the contact being better than when a film of varnish intervenes between the negative and the prepared paper. The method of preparing the paper is as follows:—Put 1 pound of rice starch into a large bason, and dissolve into a stiff paste, by the aid of a large spatula, using as little cold water as convenient; into a saucepan put half a gallon of water, boil, add half a pound of plaster of Paris, then pour it gently on the paste, which must be kept well stirred till the whole of the water has been added; it should now assume the form of a tremulous jelly; place (say) a dozen sheets of Saxe paper at a time on a board, and with a large brush cover the paper with a thin and even coat of the above. It will be as well to use up the whole of the starch, for the paper may be kept any length of time, and will always be ready

* Read before the London Photographic Society, Tuesday, April 14th.