

# THE PHOTOGRAPHIC NEWS.

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### INTENSIFYING UNDER-EXPOSED NEGATIVES.

On another page we print an excellent article, by Mr. M. Carey Lea, on the treatment of under-exposed negatives. The article is full of valuable practical suggestion; but there is one point upon which our experience does not exactly quadrate with that of Mr. Lea, unless the case be stated with additional qualifications.

He remarks that it is a common opinion that in redeveloping a plate—meaning, by redevelopment, intensifying before fixing—the dense parts acquire a more rapid deposit of silver than the thin parts; and adds, that he does not think this to be the case. He believes that the deposit is fully as great, in proportion, on the thin parts of the image, or half-tones, as on the denser parts, or lights. General experience is, we think, opposed to this view. It is certainly our own experience, and we believe common experience, that in under-exposed negatives the deposit is much greater on the lights than on the half-tones, and that the former are rapidly acquiring density whilst the latter are merely struggling into existence. This is the case even with the first development, but in the redevelopment or intensification the tendency to aggregation of deposit on the lights is generally increased. This is, we believe, the common experience under the ordinary circumstances under which the majority of photographers work; but the exact ratio in which this tendency is present depends on certain conditions which ought to be defined.

There are three things which materially affect this question: first, the kind of collodion, and the salts it contains; second, the developer or intensifier; and third, the amount of free nitrate present. Each of these exercises its specific influence on the result.

First. *The Collodion.*—A simply iodized collodion, or one having a large proportion of iodide and very little bromide, not only tends generally to density, but it tends especially to aggregation of deposit on the lights in cases of short exposure. The lights flash out rapidly, and steadily acquire density, whilst the details tardily appear. If the image is then submitted to redevelopment or intensification, the same tendency to deposit most where the deposit is already greatest is manifest. If the iodizer be a potassium salt, this tendency is even more strongly marked than with cadmium and some other iodizers. In short, almost all the conditions which tend to increase contrast in the original image have been found, in our experience, in cases of under-exposure, to tend also to the aggregation of deposit on the lights in prolonged development or redevelopment.

On the other hand, the conditions which tend to retard the production of density—such as the newness of the collodion, the use of cadmium salts, and especially the plentiful use of a bromide in the collodion—tend, in all cases, to check

this aggregation of deposit in the lights. The result of under-exposure is, at the outset, different under the different conditions we have mentioned. Under-exposure in the first-mentioned circumstances will give an image with excess of contrast; strong lights, but no detail. A collodion containing a full proportion of bromide will yield, on under-exposure, an image thin, grey, and poor, without much vigour in the lights, but not lacking detail; the image is as fully impressed by weak radiations as with the stronger light. Such an image will generally behave as described by Mr. Lea; the deposit of silver, in the process of redevelopment, will be as great on the half-tones as on the light, and by skilful management may be made to yield a presentable print. As a rule, however, it will always be a thin, poor negative, difficult to print, and lacking all the richness, roundness, and brilliancy of a properly exposed picture.

Second. *The Developer.*—Much also depends on the developer. One of the greatest difficulties commonly experienced some years ago, when the pyrogallic acid developer was employed, was the difficulty of getting out detail sufficiently before the lights were too intense. If there were the slightest under-exposure, this rapid deposit of silver on the lights before the half-tones had received sufficient deposit was the frequent source of hard, black and white pictures, without gradation or delicacy. If the collodion were old, this tendency was increased in very injurious degree. The gradual introduction into common use of bromo-iodized collodion for negatives—for which, some half dozen years ago, we stood almost alone as the advocate—and the general adoption of iron development, changed materially this aspect of affairs, and altogether improved the character of photographs. With iron developers, as most commonly used, and bromo-iodized collodion, this tendency to increased deposit on the lights is rarely present in the first operation, unless the iron solution be very weak; but if pyrogallic acid be employed in the redeveloping process—in our hands, at least—the tendency to increased proportional deposit on the lights has generally been apparent. If an iron solution be used for redevelopment, this tendency is less marked; but with Mr. Lea's collo-iron developer and other organico-iron solutions, the tendency has approximated more to that present when pyrogallic acid was used.

Third. *The Free Nitrate present.*—This is so closely connected with the question of the developer, that it is scarcely possible to separate them. The greater the proportion of free nitrate of silver present, the greater the tendency to an aggregation of deposit on the lights. Every photographer is familiar with the fact that, if his negative be weak and flat from over-exposure, he can, by the plentiful addition of silver, increase contrast and vigour; and this is, of course, effected by the more rapid accumulation of deposit on the lights than on the lower half-tones. On the contrary with under-exposure; slow development, with little