

rapid, but poor emulsion, exposing in the usual way, and then coating the plate with a thick emulsion, which, it was supposed, would be affected sympathetically by the exposed portions of the under film, and yield on development a good image. Who made the experiment, and what the result was, I do not know and cannot say, but venture to think that the process would prove considerably more awkward to work than that of Mr. Burton.

It having been found that very little light penetrated an ordinary coated gelatine film during a moderate exposure, it was thought that if the film were thickened the chances of halation would be very materially reduced. This theory proved substantially correct, but the thick film presented difficulties and disadvantages. There was the expense of making so thick a film rich, and if it was poor, *i.e.*, if the same amount of silver that would be contained by an ordinary film were spread over the greater thickness, then an insufficient number of particles of the sensitive salt (that is only those near the surface) would be affected to give a good result.

(To be continued.)

Our valued contemporary, *Wilson's Photographic Magazine*, begins its thirtieth year by doubling its size, and issuing monthly instead of semi-monthly.

Our esteemed contemporary, the *Beacon*, has made an addition to its title, and will hereafter be known as the *Photo Beacon*.

Under-Exposure, or Cold Developer ?

There is probably no mistake into which photographers, even those of long experience are so liable to fall, as in the supposition that a negative has been under-exposed, when

from a sudden change in the temperature, the action of the developing solution is so much retarded as to require for its completion a length of time very much in excess of what they have been used to give.

The influence of temperature on the time of development is so well established that it might be supposed to be unnecessary to insist further upon it. We have found, however, that, while yielding a general acquiescence to the fact, there is a tendency to look upon it as one of those theoretical considerations with which the practical worker need not much concern himself; and further that very few indeed at all recognize the extent of retardation which a few degrees of cold will cause.

The way in which the judgment is apt to be misled by the effect of a depression in temperature in slowing the action of the developer, was forcibly presented to us a short time since in conversation with a well-known plate maker. A photographer had complained that a batch of plates had proved to be exceptionally slow, and therefore to be rejected. On trial by the maker they were found to be fully up to the usual standard. Long experience having led him to suspect the true origin of the complaint, he noted the time of development of some plates when the action was carried on respectively at the ordinary temperature on a cool autumn day, and with solution at what might be considered an ordinary temperature for developer in summer time—70° Fahrenheit. The unwarmed solution was only about twelve degrees cooler, and the difference would not be considered great. The actual result that he found was, that when the warmer solution had done its work and the image was fully out, there was so little impression on the other plate, that is represented only as much as would correspond to an exposure of about one-fourth the length of time that it had actually received. Another plate which had received the same exposure as the two first was kept in a cold solution for nearly a quarter of an hour, or four times as long a time as had sufficed with the warmer solution. The image was now quite out, and showed the plate to possess its own proper rapidity, as well as a full amount of density.

We have known even experienced professional photographers to be misled on the first cold day at the approach of winter, by the slowness with which the normal developer