

detailed report of operations will be made public as soon as practicable.

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#### SOME SUGGESTIONS FOR PHOTOGRAPHING FOSSILS

FOR some time the writer, when photographing fossils, has used the whitening process contributed by Professor S. H. Williams, but, with many others, he has found it not altogether satisfactory. In order that the whitened specimen should contrast with a white background it has been necessary to over-expose or over-develop the prints. Because of this, many of the minor details of fossils have been lost in reproduction, and the pictures, as a rule, have seemed flat and "lifeless." In addition, it is usually the practise to opaque the background of the negative as an aid in determining how far to carry the development of the print. This process is painstaking and slow at best.

Some time ago, the writer, with the assistance of Mr. Parke Bryan, developed a slight variation in the photographing of whitened fossils that seems to be a decided improvement. The time required is materially shortened, in that the negative requires no opaquing, and the results are so gratifying in the way of improved reproductions that it seems worth while to outline briefly the method.

The method is a combination of the common lighting arrangement used in portrait photography, and the whitening process of Professor Williams. The specimen is mounted on a slender stick with modeling clay and then coated with a thin film of white. A dull white background, placed some distance behind the specimen, is turned at an angle such that it receives the full light but does not reflect it toward the camera. After the photographing table is orientated so as to give the conventional light direction and the desired light-shade contrast to the relief features, a screen is placed between the specimen and the source of light so as to intercept the direct rays. The screen consists of one or more thicknesses of

cheesecloth sewed on a wire frame, the number of thicknesses depending on the intensity of the light. Every feature of the fossil now shows clearly on the ground glass of the camera, although the specimen appears dark against a pure white back.

It has been found that the shadows on the under side and away from the light source are more intense than the image on the ground glass indicates, and except in the case of relatively flat specimens it has been necessary to use a slight back reflection. A sheet of dull finish white cardboard held at the proper angle has in every case been sufficient for this purpose. If an actinometer is used to determine the time of exposure, it is obviously the light of the shaded specimen that is to be tested.

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#### SCIENTIFIC BOOKS

*Vitamines: Essential Food Factors.* By BENJAMIN HARROW, Ph.D. New York, E. P. Dutton & Co., 1921. Pp. 219. Price \$2.50.

The author of this book has been at great pains to popularize a subject which the laity will certainly be glad to have so clearly presented. About half the volume is preliminary to the specific topic; it is a general account of nutrition and the story is well told. One is disposed to wonder whether readers who require such a very elementary introduction will appreciate the later chapters which are of necessity more difficult. However, a rare degree of order and simplicity is maintained to the end. The writer has a judicial attitude; he does not assert opinions of his own but quotes others with fairness and has evidently been in correspondence with the leading investigators that he may accurately express their views.

Of course not much space can be devoted to controverted matters in a book of this character. But a dogmatic tone is avoided. It should be plain to the reader that many problems await solution. Among the questions not fully settled may be mentioned the