connected to the unit by a flexible power cable[3] (J) that passes through the thermometer vent of the incubator. The gear ratio of the motor is 900 to 1. The cable is joined to the rotator shaft by a worm and gear (L) whose gear ratio is 50 to 1. The rotator makes about 10 revolutions per hour.

This arrangement is adapted when only direct current is available and it is necessary to keep the motor outside of the incubator, since heat is generated during its operation. Where alternating current is supplied a small synchronous motor which generates a negligible amount of heat can be attached directly to the shaft of the rotator by a suitable arrangement of gears.

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A PERSONAL FILE OF GEOLOGIC PHOTOGRAPHS

A RECENT note on indexing and filing scientific photographs[1] seems to the present writer to cover only part of the ground, and it would be interesting to learn of the experience of various others. In 1919, the writer, in considering a plan of arrangement and storage for photographs, consulted with several persons in Washington and decided to deviate from the common custom of geologists then with the U. S. Geological Survey, in setting up a personal card file. The plan followed has served well for the arrangement, preservation and use of approximately 15,000 negatives and corresponding prints. Procedure is as follows:

Each lot of field negatives after development is arranged in the order of taking, and for each negative a 4- by 6-inch plain file card is made out with serial number (upper left); date (upper right)—in later experience the possible legal value of exact dates on photographs of water and vegetation has led to recording of the complete date; state or equivalent division (left); locality (right), and title, with as much specific data as may seem desirable. The serial numbers are chronological within any given block or project; but several projects that are carried on concurrently may be allocated to separate thousands, and it is not essential that these number blocks be filled. (Numbers are cheap.) The negatives are numbered and filed each behind the appropriate card. When prints are made, they also are filed behind the cards and are conveniently available for inspection or removal.

In the entire file, three sets of guide cards are used, with contrasting colors. One refers to serial numbers, another to dates and a third to regions or projects. For the use of an individual this chronological arrangement, rather than a strict subject or dictionary rearrangement, seems best, and by means of project and date it is easy to locate any particular series. It is admirably suited to maintaining a complete record of all one's photography, including the portion that may be done for official agencies. In the latter case, the filling out of the data card must likewise be done by the field man, and it may be retained in his personal file with a record print. At the proper time the negative and official prints may be transmitted into the official collection for any desired arrangement, the data being taken from the field man's personal file as originally composed from field notes. The latter work can all be done by office assistants.

Older parts of the file are in steel cases; current blocks are kept in light cardboard file boxes, which may be taken to the darkroom when printing or enlarging is done, or moved about in connection with work on a given project. Handling of field and laboratory negatives in such a file in no way prevents the subject arrangement of a display or file set of prints in the manner suggested by Trefethen, but it is an approach to the earlier, and in the writer's view, the more fundamental problem, the systematic labeling and preservation of original field negatives. This is important, for the scientist especially whose work is for successive agencies but who wishes to preserve the continuity of his own photographic record.

CHESTER K. WENTWORTH

BOARD OF WATER SUPPLY,
HONOLULU

[3] S. S. White Dental Manufacturing Company.

[1] J. M. Trefethen, SCIENCE, 91: 2349, 24, 1940.

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