tation of the Miocene Eoliths or not, we must give him first rank and accord to him the full priority of the discovery of indisputable flint work of man in Tertiary time. It is too early to draw all the theoretic conclusions regarding the antiquity and ancestry of man which may be deduced from these discoveries, but in the present reviewer's opinion, they vastly extend our conception of a truly human and pre-human type of Dawn Man rather than of an ape-man ancestry of our race.

H. F. O.

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A PHOTOGRAPHIC PLATE THAT PENETRATES DESERT HAZE

GEOLOGISTS and others who have occasion to take photographs of distant mountains in the arid regions have often been afflicted by the presence of the blue haze that obscures the details of features more than a few miles away. This is presumably caused by the fine dust which the desert winds keep more or less continuously suspended in the atmosphere.

Ordinary photographic plates and films give but poor results under such conditions. The photograph generally shows much less of detail than the eye itself can see, and hence one is apt to be disappointed. By the use of ray filters or color screens, some improvement may be effected, but at best it falls far short of satisfaction.

By using panchromatic films and orange or red ray filters, very much better pictures can be obtained. Cut films or plates of this type are now rather generally used by the more experienced and painstaking photographers of mountain scenery. Unfortunately they are not yet available in the form of roll-films.

Further steps were taken some years ago by Messrs. Burns, Shane and Wright at the Lick Observatory (Mt. Hamilton, California), who, for the purpose of photographing distant landscapes, used plates treated with Krypto-cyanine, a dye which confers sensitivity to a narrow range of color near the red end of the spectrum. The plates have, of course, the usual sensitivity to blue and violet light, but, with the aid of a ray filter which excludes those colors, one may photograph a scene entirely by deep red light. In this way the blue rays, scattered by the dust particles, are eliminated, and a sharp clear picture may be obtained even at a distance of 25 miles and more. Even minor details stand out with a distinctiveness that is remarkable; and it is just such details that are generally the concern of the geologist.

With the addition of a suitable ray-filter (deep yellow or red) the red sensitive plates generally require, under normal conditions, an exposure of about one second, with stop f. 8 to 11.

It must be admitted that there are some objectionable features about the photographs thus obtained. The sky appears black; but if there are clouds present their whiteness relieves that appearance. Again, dry grass, and certain kinds of trees and shrubbery take on a whiteness that suggests a new fall of snow. However, these drawbacks may be considered of secondary importance, provided the chief need is for clear pictures through a hazy atmosphere. By means of these plates it is possible to obtain photographs that show details which the eye itself can not see at the time.

It was the sight of a remarkable photograph of the Sierra Nevada, taken by Mr. Wright from Mount Hamilton, that first drew the writer's attention to the red sensitive plates. The fact that Half Dome and other details of the Yosemite gorge could be clearly recognized although 115 miles away showed clearly that the ever-present blue haze had been definitely neutralized.

ELIOT BLACKWELDER

STANFORD UNIVERSITY,
CALIFORNIA

MODIFIED WATER REGULATOR FOR SMALL TANKS

IN the annual report of the department of oceanography of the University of Liverpool (London, 1925), H. C. Chadwick describes a new device for regulating the outflow of water from small aquaria. Since this device is quite practical and since its description is found in a publication (*Transactions* of the Liverpool Biological Society) of relatively small circulation in the United States, it may not be out of place to reprint Mr. Chadwick's original account in this journal.

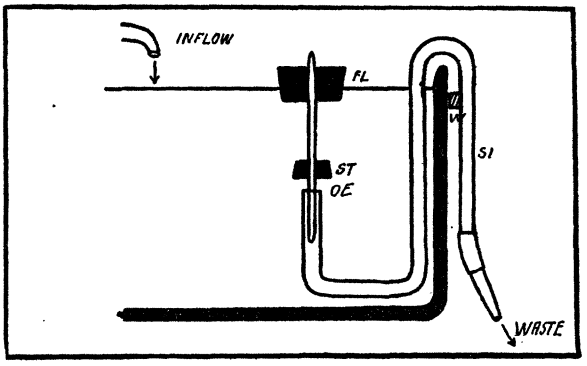

FIG. 1. Chadwick's Tank Water Regulator

The apparatus (Fig. 1) consists of a length of glass tubing 6 mm. in internal diameter, bent as shown in