Crowe[5] and more recently additional evidence to support the theory has been reported by Hughson and Witting.[6] True, it would seem unlikely that the cochlear aqueduct was of sufficient size to function in this "safety valve" capacity.

In all but one of the animals tested the bulla and middle ear on the operated side were entirely clear when examined at autopsy. In one case granulations filled both the middle ear and bulla, making the improved transmission of all frequencies even more remarkable.

CONCLUSIONS

(1) Experiments designed to obstruct the cochlear aqueduct in cats have resulted in a marked increase in the intensity of spoken voice and pure tones transmitted by the operated ear.

(2) Without histologic proof of actual occlusion withdrawal of fluid from the labyrinth and the resulting decrease in efficiency of the ear by intravenous injection of a hypertonic NaCl solution has been definitely obviated by the experimental procedure.

WALTER HUGHSON

THE JOHNS HOPKINS MEDICAL SCHOOL

A SIMPLE METHOD FOR MAKING LOW-POWER PHOTOMICROGRAPHS

SEVERAL days ago it became necessary to make a series of low magnification photomicrographs of insect dissections. Believing that other organizations may be in the same financial position as we are and in need of such an apparatus prompts me to describe it. It was made from materials found in the laboratory and cost only a little time.

An ordinary student's microscope is mounted upside down on a vertical iron rod by means of two condenser clamps. Above it is similarly fixed a 300 watt gas-filled electric lamp. A housing that might be used for projection drawing is fashioned of a light wooden frame and beaver board. The measurements of this box are 12″ high by 24″ by 18″ with the bottom and the 24″ front open. A hole cut into the center of the top fits snugly around the microscope tube. As the device now stands it may be used as a small demonstration projector for class work or for making projection drawing.

To convert it into a camera all that is needed is a blanket or a large piece of black oilcloth. We used three regular rubberized laboratory aprons. The operator sits in the position to make a projection drawing and envelops himself and the open side of the housing with the dark cloth. The plates used are Eastman Slow Lantern Slide Positives. The plate holder is an empty lantern slide plate box. The procedure is simple. The slide is focused on a piece of paper as for drawing. The closed lantern slide box containing a plate emulsion side up is moved into place and the light turned off. The cover of the box is then removed and the light again turned on for the duration of the exposure. The cover is then replaced and the slide taken to the dark room for development.

We found that so long as the operator was unable to read the lettering on the box cover the interior of the "camera" was safe for these plates. Satisfactory negatives were made with the following combinations and exposures.

Objective	Ocular	Projection distance	Exposure
16 mm	7.5×	11 inches	20 sec.
Zeiss a_2 3×	7.5×	11 inches	2 sec.

F. MARTIN BROWN
LEIGH E. CHADWICK

COLORADO BIOLOGICAL SURVEY
COLORADO SPRINGS, COLO.

SPECIAL ARTICLES

SELENITE—A CRITERION OF EFFECTIVE WIND SCOUR

THE future student who explores the intricacies of geomorphic literature will, according to his nature, be amused or exasperated in comparing Lang's note "Selenite Not a Certain Indicator of Wind Effect"[1] with our note published four years earlier[2] entitled "Selenite Fragments or Crystals as Criteria of Wind Action."

We hold that laboratory experiment in sandblasting produces a frosted surface on selenite so quickly that "it is inconceivable that bright selenite fragments could exist in an area having effective action by wind-blown sand." We suggest that selenite surfaces are dulled by solution within a few years in the climates prevailing in most parts of the United States where such fragments are found on the surface. Yet even this is a long time compared to the few minutes necessary for frosting by the sand blast. Therefore the presence of such fragments on the surface may be used as indicative of the general absence of effective wind scour.

[5] See note 2.

[6] Walter Hughson and E. G. Witting, *Acta Oto-Laryngologica* (in press).

[1] Walter B. Lang, SCIENCE, 80: 117–118, August 3, 1934.

[2] Walter H. Schoewe and Kirk Bryan, SCIENCE, 72: 167–170, 1930.

Now Lang cites crystals of selenite thrown out of a railroad cut in 1891 near Salt Draw, twenty miles south of Carlsbad, New Mexico. These crystals have bright cleavage faces due to the "lack of tools sufficient to make wind action effective." It should be noted also that these "bright" cleavage faces have persisted for over forty years. Can it be possible that the masses of selenite have been broken and rebroken by casual passersby?

In this region Lang points out that dust is carried in the air, that sand is blown out of the bed of Pecos River and that soil is lifted from cotton fields. All these phenomena occur, and one of the present writers can confirm the observations by personal experience as the result of field work in this area. However, our statements quoted above make no claim that selenite fragments or crystals are criteria bearing on deflation and wind transportation but merely on corrasion by wind-blown sand, *i.e.,* wind scour. All criteria of geomorphological process must be used with caution and applied to the process to which they pertain.

If we consider the area adjacent to Pecos River near Carlsbad and particularly that south towards Pecos City, Texas, the dominant land forms are pediments and terraces produced by stream action, either of Pecos River or of its tributaries. These features record three gradients of Pecos River, 30, 75 and 150 feet above its grade. The broad and recently abandoned flood-plain is actually a terrace 20 feet above river grade. The two higher terraces are described in print[3] and the lower terrace, only 10 feet above the flood-plain or about 30 feet above river grade, is described in a manuscript report.[4]

The sequence of terraces appears to be the same as that so admirably described by Nye[5] for the Roswell area. The recently abandoned flood-plain of the river is Nye's Lakewood terrace, the 30, 75 and 150 terraces correspond to the Orchard Park, Blackdom and Diamond A surfaces.

In addition to stream erosion, ground water solution of salt, gypsum and limestone beds is very active. There are numerous sinkholes joined by the destruction of intervening rises. The solution of caverns and their collapse is also accompanied by deposition of material in the caverns, as pointed out by Lee.[6]

In the area south of Carlsbad, the sinkhole or Karst topography is less developed west of the river than east of it. Nevertheless, near Salt Draw on the west side of the valley close to the locality noted by Lang the generally stream-modeled topography is modified by solution and fill.

East of the river a great mantle of wind-blown sand partly conceals the details of a topography whose major features are dissected pediments modified by sinkholes. The sand has been lifted from the channel of Pecos River and its eastern tributaries by strong westerly and southwesterly winds. This process goes on at present and apparently was characteristic of each of the previous erosional stages. But this movement of sand and its accumulation to form the extensive body shown on Darton's geologic map of New Mexico and referred to by him[7] as the "Mescalero Sands" takes place on the east side of the valley. The existence of these sands and the extensive wind work to which they testify does not, however, indicate wind scour on the west side of the valley. Even within the area of the sands, wind scour is at a minimum, as this area is primarily one of deposition. The more or less continuous rearrangement of the sands by wind leads to wear of sand on sand, not to wear of sand on the underlying bedrock, *i.e.,* true wind scour.

Thus a careful reading of Lang's paper and a consideration of the area to which he refers indicates that he actually uses selenite fragments as criteria for wind scour in the way and to the extent that we indicate, in spite of his somewhat confusing title.

KIRK BRYAN
WALTER H. SCHOEWE
HARVARD UNIVERSITY

[3] O. E. Meinzer, B. C. Renick and Kirk Bryan, *U. S. Geol. Survey Water Supply Paper* 580A, p. 6, 1926.

[4] Kirk Bryan, Geology of Avalon Reservoir, Carlsbad Irrigation Project, New Mexico, with respect to proposed increase in height of the dam, Feb., 1927 (Files of the Ground Water Division, U. S. Geological Survey).

[5] A. Y. Fiedler and S. S. Nye, U. S. Geol. Survey, *Water-Supply Paper* 639, pp. 10–14, 1933.

[6] W. T. Lee, U. S. Geol. Survey, *Bull.* 760, pp. 107–121, 1925.

[7] N. H. Darton, U. S. Geol. Survey, *Bull.* 794, p. 59, 1928.

THE OCCURRENCE AND ACTIVITY OF UREA-SPLITTING BACTERIA IN THE SEA

IT is recognized that microorganisms which ferment urea play an important rôle in the nitrogen cycle and in soil fertility, and they are known to be quite widely distributed in soil, sewage, manure and fresh water. There are fragmentary accounts of the occurrence in the sea of urea-splitting bacteria, but most of the work has been done in bays or near shore. During the past thirty months we have been making observations to ascertain if there are significant numbers of urea-splitting bacteria which are functional in and indigenous to the sea, or if those found in the sea are merely passive terrestrial contaminants.

Numerous samples of water and bottom deposits have been collected at sea from the boat *Scripps* by