

of Callendar with the same apparatus, described in the British Association 'Report' of the Toronto meeting, 1897. I have thought it worth while to test the same for solids. Carbon was the substance chosen, as being a conductor and as having the greatest known variability of specific heat with temperature and, therefore (presumably), with other disturbing factors. The method employed was to heat a fine carbon rod by a heavy current, and watch its expansion by means of an optical lever.

If a vessel containing a given quantity of water have its capacity suddenly altered by a bulging or a constriction of its sides, the result will be a change of level of the water. And if the specific heat of the carbon rod be suddenly altered when the current is started or stopped there should be observed a change of temperature which I hoped to detect by an abrupt alteration in the length of the rod. The results were entirely negative. The rod used was of French make, a Carré electric light carbon, 51 cm. long and 0.15 cm. diameter, wrapped in tissue paper and enclosed in a glass tube. Its resistance (cold), according to the nature of the contact made, was from about eleven ohms upwards. The rod was mounted vertically, its lower end resting in a mercury cup, and its upper end tilting a small lever on a knife-edge bearing. On this lever was mounted a galvanometer mirror. The current was taken from the upper end of the rod by a wire wrapped tightly around it. The tilting of the mirror was read by means of a telescope and a vertical scale placed two and one half meters away. The current used was three amperes. When the current was started or stopped a perfectly steady motion of the scale was observed. A jolt of 0.05 cm. in the field of the telescope could have been detected.

As about 6 cm. of the scale passed the cross wires before the still damp mucilage holding the tissue paper around the carbon began to steam, it will be seen that a jolt of 0.05 cm. would have meant a change in temperature of about two thirds of a degree, taking the initial temperature of the carbon as 20°, or 293° absolute. And a difference of level of

two thirds of a degree in 293° would have meant an alteration in the heat capacity of about one part in 450. PAUL R. HEYL.

THE RANDAL MORGAN PHYSICAL LABORATORY,  
UNIVERSITY OF PENNSYLVANIA.

#### THE PROPOSED BIOLOGICAL LABORATORY AT THE TORTUGAS.

TO THE EDITOR OF SCIENCE: In SCIENCE, June 12, 1903, is a letter by Professor C. B. Davenport upon the proposed biological station at the Tortugas. There are two sentences in it which I feel it necessary to comment upon. The first is: 'On the Pacific coast we have the Hopkins laboratory and that of the University of California.' The second is: 'While we are planning a chain of marine stations certainly \* \* \* Puget Sound should be considered.' No doubt Dr. Davenport, who is quite familiar with the fact that the Minnesota Seaside Station at Port Renfrew, British Columbia, is just entering upon the third year of not altogether unsuccessful effort, means by 'we' the biologists of the United States. Under this construction it is altogether proper for him to omit the Minnesota Seaside Station from his calculations. In view of the fact, however, that this station, although upon Canadian soil, from which a number of memoirs and one volume of the yearbook, *Postelsia*, have already been published, is managed in connection with one of the American universities and has drawn its clientele principally from the western United States, it seems proper that it should be included as one of the Pacific coast stations of America. Its position on the Straits of Fuca was selected with great care so that it might be accessible as a center for the study of the fauna and flora not only of the sound but also of the open sea.

The Minnesota Seaside Station has not passed through the stage of an extended discussion in the columns of SCIENCE, nor has it intimated its pressing wants to Mr. Carnegie or any other millionaire. It has risen quite peacefully and modestly upon a cooperative basis which is none the less favorable for respectable work. Every year has seen considerable improvement both in its buildings and

equipment. It may or may not have the qualities of permanence. In any event, while it is upon its present basis, it is freely open to such students and investigators as might wish to work in its vicinity.

CONWAY MACMILLAN.

TO THE EDITOR OF SCIENCE: I have been asked by Dr. A. G. Meyer to express an opinion regarding the establishment of a marine biological laboratory in the tropical Atlantic. As I have never been south of Bermuda, in these waters, I do not know that my ideas on the subject will be of much value. I see by the letters already published that the Tortugas are very generally favored. While for a botanist who is a student of marine algæ only, such a location might be an excellent one, it would hardly be suitable for one who wanted to study any other aspect of botany, for if I am not mistaken the land flora there is exceedingly scanty. A laboratory to be much sought after by botanists must also afford opportunities for the study of land plants, and where tropical vegetation is desired one must go further south than the Tortugas, and in a region where there is more moisture, to find much that is worth while.

HERBERT M. RICHARDS.

BARNARD COLLEGE, NEW YORK,  
June 16, 1903.

THE MEDICAL RESEARCH LABORATORY OF COLORADO  
COLLEGE.

TO THE EDITOR OF SCIENCE: It is proposed on the part of Colorado College to establish a pathological and research laboratory. For this purpose a room 23 by 14 feet has been set aside in the new Science Hall, now under erection. This room is to be equipped with chemical hood, water, gas and storage battery facilities. There are two windows in the room having a south exposure. In this laboratory it is planned that the following lines of work be undertaken: (1) Blood examinations, (2) sputum examinations, (3) urine examinations, (4) drinking-water examinations, (5) milk examinations, (6) pathological examinations, (7) stomach contents, (8) feces, (9) X-ray work as an aid to diagnosis, (10) papers and fabrics for mineral poisons.

In addition to these lines of general work special cases, requiring expert knowledge and care, will be undertaken. It is also planned that the director of the laboratory pursue lines of original research such as may be suggested by himself or by members of the committee under which the laboratory is to be conducted. It is hoped that this will grow to be the most important feature of the whole undertaking. Finally the laboratory will offer a limited amount of instruction in the pre-medical course of Colorado College. The amount and character of this instruction will be determined by consultation with the president of the college.

The salary of the director will be \$1,500 for the first year. It is hoped that thereafter the income of the laboratory will prove sufficient to warrant an increase. It is the desire of the committee to receive applications for the position of director of the laboratory, the appointment being made for one year. The applicant should be a man of scientific spirit and one who is desirous of making his reputation along lines of medical research. It is not essential that he be a graduate of a medical college, but rather that he have had training and experience in some of the best laboratories of this country or Europe. He should not be a person expecting later to enter the practice of medicine.

Applications with full information and testimonials may be sent to

W. F. SLOCUM.

COLORADO COLLEGE,  
COLORADO SPRINGS, COLO.

#### ABBREVIATIONS OF NEW MEXICO.

MAY I suggest that the name New Mexico should always be abbreviated (if at all) to New Mex. or N. M., never to N. Mex. or N. Mexico? The latter abbreviations have been used a great deal by naturalists, with the result of producing much confusion between New Mexico and North Mexico. Foreigners, especially, are almost sure to take N. Mexico for North Mexico; and I am afraid a good many people, not all foreigners, do not know that there is any difference! (I received the other day a letter from an important scientific