

time when it will also be a part of the work in our engineering courses. We think these students would readily take to such instruction, and that as soon as it is commenced there will be a strong demand for it.

I think meteorology is just as strong a disciplinary as any other study in the course. I am not advised as to the professional career that is offered along that line, but it seems to me that there would be a reasonable demand for men trained in this line of work. I am anxious to see the time when more instruction can be given in meteorology, and that the same may become a part of the courses of study in all of our agricultural and mechanical colleges.

An article published in the *Chattanooga News* states that more courses in meteorology have been offered in the colleges of the United States than ever before, and probably still more will be offered next year. Yet the instruction now given is almost insignificant compared with the commercial importance of the subject. There are two reasons for this. Often none of the faculties care to study or have time to teach the subject. In fact, meteorology has not been developed by school men, but by a few scholarly men at the demand of commercial interests, and therefore from a utilitarian rather than a scientific standpoint. These men are more like business men than teachers, and do not come in touch with the youth of the land as the teacher does. Again, the demand for meteorological experts has been too small to cause a large demand for instruction in this science. The business man accepts what good he can get from weather forecasts, without realizing that increased attention to the subject in institutions of learning means more competent specialists and also a more intelligent use of the specialist's work. Of more than four hundred institutions in the United States authorized to give collegiate degrees, less than one-third offer a course of instruction in meteorology, and in only one of these does a teacher give all his time to this subject. Often the course is given in the form of lectures, without any attempt at practical work. Under such conditions no department of instruction can become large or efficient or contain enthusiastic students.

To increase the general knowledge of meteorology is to increase the efficiency of the Weather Bureau. Can this increased knowledge be accomplished best by an undergraduate or a postgraduate course? There is only one answer. An undergraduate course is essential; the postgraduate course will come in time if the first is successful.

The undergraduate course must be sufficient, but not require too much of the student's time, and must cover the subject so completely that the student will feel that his time has been well spent. The planning of the courses in meteorology is, we fear, often responsible for the small classes. Young people are critical, and they desire to spend their time where it can be done to the best advantage. A shorter course with a large class is better than a long, complete course and a small

class. In the former case, the few who wish the more extended course can take it in the next term.

In very much the same strain is the introduction by Prof. J. W. Gregory of the University of Melbourne, Australia, to his recent memoir on the Climate of Australasia, from which we take the following extracts:

The great educational controversy of the nineteenth century was whether study of literature and philosophy was of higher educational value than reasoning that can be checked by experiment and observation. The results of the battle were the admission of science into the old schools of learning and its predominant influence in all the new, a revolution in the methods of primary education, and a remarkable revival in classical research.

With the vast growth of the extent of science no student can keep in touch with it all. The problem that is now pressing upon us is the selection of the subjects that are of the most educational value. There are branches of science in which any progress is at once turned to practical account; while there are industries whose work is hampered because science does not give them as much help as it would had important lines of research not lagged far behind the rest.

Many teachers believe that the principles of a science can, in most cases, be best taught by the study of those branches of it that are of most practical service to man. To justify that belief the teaching of the technical subjects must be improved, and must give at all costs a rigorous training in scientific method. Most branches of applied science afford excellent educational material, for their results are tested daily by experiment on a scale vastly larger than science could afford.

I venture to introduce these general educational principles because they have especial application to geography. While in Australasia geography should be one of the chief subjects in elementary education, it should also receive more recognition as a good subject for the teaching of research. Geography on land has made excellent progress, owing to its practical value. The need for irrigation has caused the study of our rivers, which in some states, such as Victoria, have been investigated with unusual detail and accuracy. Interest in the rainfall has enlisted an army of volunteer observers, who collect rainfall statistics with admirable intelligence and patience.

Meteorology is that branch of geography in which, at present, the widest interest seems to be felt in Australasia, and in which well-directed research promises the richest reward.—C. A.

#### SILAS WEST.

[From the June report of the New England section of the Climate and Crop Service.]

The section director regrets to chronicle the death of Mr. Silas West, Voluntary Observer at Cornish, Me., who was one of the pioneers in meteorological work in this country. He was born July 29, 1820. He began his observations of the weather in 1856, and has continued, without a break, to the present time. He was greatly interested in the work, always punctual, and very faithful, as his complete forms will testify. During his service as a volunteer in the Federal Army—from September, 1862, to July, 1863—the work was carried on by his wife, and, in compliance with his expressed wish, it will now be carried on by his son, Mr. T. H. West.

#### CORRIGENDA.

MONTHLY WEATHER REVIEW for May, 1904, p. 213, column 2, fig. 76, 2d line of legend, for "great on the right lines" read "great on the circle as on the right lines."

### THE WEATHER OF THE MONTH.

By Mr. W. B. STOCKMAN, District Forecaster, in charge of Division of Meteorological Records.

#### PRESSURE.

The distribution of mean atmospheric pressure is graphically shown on Chart VIII and the average values and departures from normal are shown in Tables I and VI.

The mean pressure for the month was highest over the north Pacific and northern Plateau regions, with a maximum mean of 30.16 inches. A secondary area of high mean pressure, but lower readings, overlay the States east of the Mississippi River. The mean pressure was low over the middle and southern Plateau regions and interior California, with the lowest pressure over southern Arizona, where mean monthly pressures of 29.72 inches occurred.

The mean pressure for the month was above the normal everywhere, except in southern Arizona, southern and central California, and southwestern Florida. Departures ranging from +.10 to +.14 inch occurred over southeastern Maine

and the middle slope and north Pacific regions. The greatest deficiencies in pressure were —.03 inch.

In North Dakota and the northern portion of the Missouri Valley, central and southern California, and southern Arizona the mean pressure diminished slightly from that of May, 1904. In all other districts the pressure increased, and the increases, as a rule, were more marked than the negative changes.

#### TEMPERATURE OF THE AIR.

The mean temperature was slightly above the normal in New York near lake Erie, southeastern Virginia, northeastern North Carolina, southeastern Louisiana, extreme southern Texas, southeastern Washington, and western Montana, and from +1.0° to +4.0° in central Idaho, Oregon, California, except the northwestern coast, western Nevada, and southern Arizona. In all other portions of the United States the mean