

changes he may observe in the seasons, the days and the nights; the changes in the weather, the dews, the fogs and rain, hail, snow, the rainbow and the lightning flash. All these should be the occasion of instruction. He should be taught the laws of the action of any machines in the house, on the farm or in the mills of a neighborhood. In the later years of the grammar school and in the high school, place should be found for experimental physics in the illustration of laws. The demonstration of laws is beyond the power of the pupil of this age. This belongs to the well-equipped student of the University. Measurements adapted to the stage of advancement of the pupil may be made in all parts of such a course, though much that passes for physical-laboratory work is only physical arithmetic or geometry, and should be done in the time devoted to mathematics.

If such a course should be carried out, the student would early begin to observe, reflect upon and endeavor to explain what he sees before him in daily life, to be intelligent with reference to the course and constancy of nature. Everything will not then to him be shrouded in mystery and weighty with omen. Such knowledge acquired in the grammar and high-school years will constitute the surest and best foundation for the course in modern physics, the science of the transformation of energy as taught in the college.

The other speakers of the afternoon were Principal William M. Bennett, of Canandaigua; Principal Henry Pease, of Medina; Professor Irving P. Bishop, of Buffalo; Professor H. J. Schmitz, of Genesee; Professor Morris Loeb, of New York University; Professor G. C. Caldwell, of Cornell; Professor H. C. Coon, of Alfred, and Professor Henry L. Griffis, of New Paltz.

It was evident that on one point the Association is practically unanimous: that of all the sciences which the colleges might

require for admission, physics is the one that the preparatory schools are best adapted to handle, and that the student is most in need of. The discussion showed clearly also that, in order to do the work in physics as it should be done, the secondary schools need to devote more time and thought to this work, and in some cases, perhaps, less time and thought to work in the other sciences. The laboratory method is indispensable. Several speakers were in favor of leaving all the work in chemistry to be done in college.

After the discussion, the following resolution, offered by Dr. Hallock, was unanimously adopted: "*Resolved*, That this Association urges Congress to take such action as will bring into use, by the government and by the people, the metric system of weights and measures at as early a date as is practicable."

FRANKLIN W. BARROWS,
Secretary.

BUFFALO, N. Y.
(*To be continued.*)

CURRENT NOTES ON METEOROLOGY.

BLUE HILL CLOUD OBSERVATIONS.

CLAYTON'S 'Discussion of the Cloud Observations' made at Blue Hill Observatory (*Annals Astron. Obs'y Harv. Coll.*, Vol. XXX., Pt. IV.) is a product of which American science has abundant reason to be proud. It represents the results of years of the most careful work at Blue Hill Observatory on the heights, velocities, movements, formation and classification of clouds, and is, as it stands, the most complete publication on the subject of clouds yet issued in any country. That the observers at Blue Hill were doing some excellent cloud work has been known for some years, and short articles by the meteorologist of the station (Mr. H. H. Clayton), which have appeared from time to time in scientific journals in Europe and in this country, have given evidence that some interesting results were

being derived from this work. We venture to say, however, that very few persons indeed have had any idea of the extent or the value of the deductions which were being drawn from the vast body of material thus collected. No one who looks over this volume of 230 quarto pages can fail to be struck with the thoroughness, the exactness and the eminently scientific quality of the whole work. It is obviously impossible to attempt to discuss the publication in these notes. It is our desire simply to call attention to it and to recommend a careful study of it to all meteorologists. Blue Hill Observatory has certainly given us a piece of work which will be a lasting credit to American science.

SOME CLIMATIC FEATURES OF THE ARID REGIONS.

A PAPER on 'Some Climatic Features of the Arid Regions,' prepared by the Chief of the Weather Bureau for the National Irrigation Congress, whose fifth session was held at Phoenix, December 15-17, 1896, is published by the Weather Bureau. It deals with the general climatic characteristics of the southwestern portion of our country, and lays especial emphasis on the amount of wind movement, with a view to determining to what extent the wind may be used as a motive power in driving the mills to be used for irrigation purposes. Sensible temperatures, which have come into prominence recently, and are now regularly noted on our daily weather maps, come in for some share of attention, and two charts illustrate the average actual and sensible temperatures for summer, and the mean actual and sensible temperatures for July, 8 p. m. These charts show very clearly that it is in the regions of the West and Southwest, where the relative humidity is low, that there is the greatest difference between the sensible, or wet bulb, temperature and that of the dry bulb, while in the

East, especially in the Northeast, where the relative humidity is much higher, the temperatures as shown by the wet and dry bulb readings are most nearly the same. It appears that there is an abundance of effective wind on the plains east of the Rocky Mountains in all months of the year, and no special adaptation of the ordinary windmill is necessary. The amount of effective wind decreases with approach to the Rocky Mountains.

CLIMATIC ZONES ON THE ISLAND OF SAKHALIN.

AN interesting fact regarding the relation of the floral zones and meteorological conditions on the island of Sakhalin is noted in *Ciel et Terre* (Jan. 1, 1897). This island, lying off-shore from the eastern coast of Siberia, is surrounded by cold currents and is further exposed to the cold northwest winds from the mainland. At sea-level snow falls in May and lasts till the end of that month, and the coast is very cold. The climate becomes milder with increasing distance from the sea and with increasing altitude, the cold air accumulating on the lowlands near sea-level. In consequence of this distribution of temperature the lowlands have an Arctic flora, while the highlands and the intermediate heights have a temperature and, in some cases, a sub-tropical flora. This is a curious reversal from the ordinary condition of things, which gives more and more boreal vegetation with increasing altitude.

R. DE C. WARD.

HARVARD UNIVERSITY.

CURRENT NOTES ON ANTHROPOLOGY.

STATURE AND WEIGHT.

THESE anthropological elements are discussed in a highly satisfactory manner by Dr. Buschan, of Stettin, editor of the *Centralblatt für Anthropologie*, in the 'Real-Encyclopädie der Gesammten Heilkunde,' now publishing in Berlin.