

connection with the work on the plantation. Although many such manuscripts have long since been destroyed, yet it is quite worth while to continue the search for such as remain, and we shall always be glad to print them in full or in abstract in the MONTHLY WEATHER REVIEW.—C. A.

### LUNAR HALO AND LUNAR CORONA.

The following is an extract from a letter from Prof. John W. Harshberger, Philadelphia, Pa., dated December 22, 1901:

This evening, about 6 o'clock, I observed such a remarkable lunar halo and cloud formation that I thought a record might be of scientific interest.

The moon was about half way up to the zenith and was surrounded by an inner and an outer halo ring. The moon shone through a compact grayish-white cloud. Suddenly to the south of the moon a deep rift or crack appeared in the cloud, which reminded me of a huge ice crack made from bank to bank of a wide river. The clouds at once began to drift northward and the moon soon shone brightly through the sharply defined rift, which was just wide enough to accommodate the full diameter of the moon. At the same time the halo commenced to fade away and in twenty minutes had disappeared, but the clouds still resembled floe ice, the drift being toward east-northeast.

The small circles around the moon are diffraction circles and differ in origin from the large circles or halos. The former depend on the size and distance apart of the cloud particles, and a slight change in the texture of the cloud may make them disappear, while the large halos of  $22^\circ$  and  $45^\circ$  radius are more enduring. The small circles may originate in fog or haze that is quite near the observer; the larger halos generally belong to the clouds proper and have some local value as indicative of conditions that form approaching rain.—C. A.

### WEATHER BUREAU MEN AS INSTRUCTORS.

Mr. T. B. Jennings, Section Director, Topeka, Kans., reports that on the 3d he addressed the older scholars of the Jackson School of that city on "The Weather Bureau and its instruments," and the teachers of the same school on "The Weather Bureau and its work." On the 4th he addressed the high school teachers and scholars, combining the above subjects into one lecture.

The Weather Bureau office at Macon, Ga., was visited on the 6th by the physical science class of the Bibb County Normal School, and the work of the office was explained by Mr. John R. Weeks, Observer in Charge, in an informal lecture.

The following is from the Sioux City, Iowa, Journal of December 10, 1901:

Last evening Mr. U. G. Pursell, in charge of the Sioux City office of the United States Weather Bureau, delivered the first number in a lecture course which has been inaugurated under the auspices of the South Sioux City High School and the management of Mr. C. P. Bowman, Superintendent of the Schools of that place.

Mr. Pursell devoted his remarks to the history of the Weather Bureau, its methods of work, and the benefit it has been to the people of the country. After speaking of the growth of the Bureau and the increasing influence of the service, Mr. Pursell entered into a description of weather stations about the country. He spoke of the equipments of these stations and the instruments used. He referred also to the Bureau's telegraphic system, the distribution of warnings and reports to the different interests affected by the weather. He told of the construction and the use of the weather maps, and spoke of the value of meteorological records and climatic data. He also made suggestions for the study of meteorology in the schools.

The lecture was heard by a good audience, which showed much interest.

Mr. J. J. Kelliher, Observer, United States Weather Bureau, Pocatello, Idaho, reports that on the 18th the class in physical geography in the High School of that city visited the Weather Bureau office, and that he exhibited and explained the various meteorological instruments in use.

We quote the following from the Minneapolis, Minn., Journal of November 10, 1901:

*Weather maps for schools.*—Observer Outram, of the Weather Bureau, receives many calls from the schools in the Northwest and in Minneapolis for sets of weather maps covering several consecutive days. The charts are very helpful in the study of the physics of the atmosphere, since they enable the instructor to point out the movements of the high and low areas, the areas of precipitation, and other interesting meteorological phenomena.

Mr. S. S. Bassler submits the following outline of a course in meteorology which he is to give at the University of Cincinnati, commencing with the second term of the current collegiate year:

#### A COURSE IN ELEMENTARY AND PRACTICAL METEOROLOGY.

*Object of course.*—The course is intended to give a knowledge of the leading facts concerning the atmosphere and its phenomena, and to enable the student intelligently to interpret a weather map and make a forecast therefrom.

*Outline of the course.*—Short talks, in connection with the text-book, on the subjects temperature, pressure, wind, moisture, cyclones and anticyclones, weather and weather maps, proverbs, and forecasting will be given in the order named. Laboratory work in connection with these subjects, singly and in combination, will establish the correlation between them and between general and local weather conditions. The course as outlined in detail largely contemplates self instruction, more especially in the practical part, through observation and reasoning.

*Text-book.*—Waldo's Elementary Meteorology.

*Reference book.*—Davis's Meteorology.

*Time.*—One hour (or more) each alternate Saturday afternoon during the second and third terms, with supplementary hours of study, observation, and practise in the use of instruments and the construction of weather maps.

*Work.*—Careful study of the text-book as a basis, concise written explanation of problems in the current lesson, essay writing and practise work as prescribed. Base maps and data for map practise will be furnished.

*Equipment.*—The text-book, the reference book (optional), a note book, blank base maps of the United States, lead pencils, and a red and blue pencil.

*Note.*—Should the class not be too large, this instruction will be given in the private office of the local forecast official, with whom arrangements may be made.—H. H. K.

### HALO OF HEVELIUS.

Rev. Frederick Odenbach, S. J., Professor of Physics in St. Ignatius College, Cleveland, Ohio, sends us the following account of his observations of the halo of Hevelius, on December 6, 1901. This was first published in the Cleveland Plain Dealer, December 7, 1901, but numerous corrections have since been made by Father Odenbach.

Preceding a period of low barometric pressure, halos are often noticed about the sun. The commonest of these appear at a distance of  $22^\circ$  from the sun; an outer halo, at a distance of  $46^\circ$ , is also occasionally noted; but the great halo of Hevelius, at a distance of  $90^\circ$ , is a great rarity. At times when these halos are visible, there is also visible a parhelic circle passing through the sun and intersecting the halos. At the points of intersection of the parhelic circle with the halos are formed balls of light, which are known as "mock suns," "dog suns," or "sun dogs." These mock suns are really not reflections of the sun at all, but are merely intensified points of light at the intersections of two light circles. They are scientifically known as parhelia. Tangent to the halos are also occasionally noted tangent circles of equal radius. These are known as contact circles.

Yesterday the inner circle of  $22^\circ$  was complete, portions of the  $46^\circ$ -degree circle were distinct, and the great circle of Hevelius was distinct