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WEATHER BUREAU MEN AS INSTRUCTORS.

The Editor would appreciate the courtesy if Weather Bureau men would kindly send him catalogues or announcements of their courses. This will enable him to state more fully and correctly the position of meteorology in the respective institutions.

Mr. George A. Loveland, Section Director, Lincoln, Nebr., has for some time been "instructor in astronomy and meteorology" at the University of Nebraska. On April 13 the board of regents of that institution adopted resolutions expressing their appreciation of Mr. Loveland's efficiency as an instructor. He offers courses in general meteorology, agricultural meteorology, and climatology. Recently Mr. Loveland has undertaken a detailed study of the climate of Nebraska as a part of his work in the graduate course looking to the degree of Ph. D. He will take up the subject in detail in its relation to ground water, topography, and geologic structure. Prof. G. E. Condra, of the department of geology, states that at present the most interesting subjects for investigation are to be found in our sand-hill region. "It will take the combined work of meteorologists, geographers, and geologists to solve the problems there."

We copy the following abstract of Mr. Loveland's courses from the Bulletin of the University of Nebraska, Series VIII, No. VIII:

1. *General meteorology.*—The earth's atmosphere, including such subjects as composition and extent, temperature, moisture, dew, frost, clouds, precipitation, winds, storms, with a study of weather maps, lectures, readings, and laboratory work in constructing weather maps and making forecasts. One hour attendance. One hour credit. First and second semesters.

2. *Agricultural meteorology.*—The earth's atmosphere. Attention is given to the subjects most valuable to agricultural students. Three hours attendance. Three hours credit. Second semester.

3. *Climatology.*—A laboratory course, including a study of meteorological instruments, their construction and errors; the equipment of an observing station; the organization and work of the weather services of the world; a study of climates, both local and general, with an extensive comparison of climates of different cities and countries. Must be preceded by course 1 or 2. One hour attendance. One hour credit. First and second semesters.

Meteorology is obligatory in certain elective groups of studies, but is elective in others. In the graduate school meteorology is considered as a minor for the degree of Ph. D.

Mr. Thomas J. Considine, Observer at Erie, Pa., lectured before the Boys' Club of that city on the formation of rain.

Mr. George E. Franklin, Local Forecaster at Los Angeles, Cal., reports that information relative to the work of the Weather Bureau, explanation of instruments, and short talks on elementary meteorology have been given to pupils of various schools, including the Harvard School, the Girls' Collegiate School, and the High School class in physical geography.

Mr. W. D. Fuller lectured at the High School on elementary meteorology and the work of the Bureau, and also addressed the Academy of Science on the same subjects.

Mr. F. P. Chaffee, Section Director at Montgomery, Ala., lectured before the Boys' High School of that city, January 23, 1904, on "The Weather Bureau and its work." He gave a

general account of the work and methods of the Bureau, a description of the standard instruments, and an explanation of the laws of storms.

On February 26 he lectured on meteorology before the students and teachers of Starke's University.

Mr. P. H. Smyth, Observer at Cairo, Ill., delivered an address at that place on February 9, before the seventeenth annual convention of the county supervisors, commissioners, and clerks of the State of Illinois. His subject was, "The United States Weather Bureau and its value to commerce, agriculture, and navigation."

Mr. S. W. Glenn, Local Forecaster, reports that the summer school of the college at Huron, S. Dak., visited the Weather Bureau local office for instruction in meteorology on July 21, 1903. The summer school is composed largely of teachers from the surrounding country.

Mr. W. A. Shaw, Observer, Northfield, Vt., has recently completed a course of instruction to the senior class in Norwich University. The course covers a period of eleven weeks, two hours per week. For the past eight years the senior class has been required to take this course and the concluding examinations.

Mr. James H. Scarr, Observer, Sacramento, Cal., gave a short talk before the junior class of the Young Men's Christian Association of that city on April 16. The movement of storm centers was briefly explained, and the subject of California rainfall considered at some length.

On April 29 he addressed the debating society of the Young Men's Christian Association. He explained what the Weather Bureau does and does not do, and that at present there is no knowledge available that justifies us in indulging in long-range forecasts of the weather. Much interest was manifested in his remarks and many questions were answered.

Mr. Ford A. Carpenter, Observer, San Diego, Cal., on March 11, lectured before the graduating class of the B street school on "Meteorology, a nature study." Some account was given of the Bureau and its work; local climatology was treated briefly, but special attention was given to suggesting the formation of habits of observation by observing the clouds, air currents as shown by smoke, etc., and resulting phenomena.

On May 6 he delivered an address before the class in physical geography of the National City, Cal., school on "Some characteristics of Pacific coast storms and their control of local climatic condition."

Mr. J. R. Weeks, Observer, Macon, Ga., under date of March 18, reports that he delivered a lecture, illustrated with stereopticon views, before the science department of Wesleyan Female College. He expects to repeat the lecture for the benefit of the entire college and the public.

On February 5 he delivered the first of a series of lectures on meteorology in the new science hall of Mercer University at Macon. It is hoped that meteorology will become a permanent feature of the course of instruction at the University, the necessity having been especially urged by Prof. W. E. Godfrey of the department of physics.

On April 7 Mr. Weeks delivered a lecture, illustrated by the stereopticon, to visiting teachers from Brunswick and Glynn counties, Ga.

Mr. R. H. Sullivan, Observer, Grand Junction, Mesa County, Colo., gave an exposition of meteorological apparatus and work before the class in physics of the local high school on March 18.

Mr. Bernard Bunnemeyer, Observer, Pensacola, Fla., delivered a series of lectures on meteorology before the three higher grades of public school No. 1 every alternate day during March. At the conclusion of the course the classes went to the Weather Bureau office in sections, and received instruction in the practical workings of the Bureau.

The pupils of the section on physiography of the State Normal School at Duluth, Minn., visited the office of the Weather Bureau February 25, and received instruction from Mr. H. W. Richardson, the local forecaster.

Mr. H. W. Grass, Assistant Observer, Moorhead, Minn., reports that on January 29 and February 9 the classes of the State Normal School, under Prof. H. M. Sanford, visited the office of the Weather Bureau and received instruction.

Mr. R. Q. Grant, Observer, La Crosse, Wis., reports as follows: January 15, a lecture on weather forecasting for the Nineteenth Century Club. Instruction in instruments and forecasting, February 17 and 18 for the scientific class of the La Crosse High School. March 9, lecture on weather signs, folklore, and the long-range forecasts in the almanacs, in Campbell, for the La Crosse County Agricultural and Horticultural Society. According to the local newspapers—

He not only gave a talk on the signs of the weather, but answered a continuous volley of questions, and was thus able to make the interview most instructive to all. Many of the farmers stoutly held out for the importance of folklore, but the weather man waged war ruthlessly, turning aside one argument after another, but giving due credit to those adages in which there is a foundation of fact. Belief in the ground hog, rheumatism, and the moon as weather indicators seems to have been effectually quashed.

March 15, explanation of Weather Bureau methods, at the Weather Bureau, for the Young Men's Club.

Mr. W. L. McKay, Assistant Observer at New York, reports that he has delivered public lectures on the Weather Bureau and meteorology as follows:

December 14, before the Chautauqua Circle of West Nyack.

December 18, February 15 and 25, in public school buildings, for the Board of Education of New York City.

March 4, before the Commonwealth Council of the Royal Arcanum, in Brooklyn, N. Y.

February 4, in Brooklyn, before an audience of several hundred school children and their parents. Mr. McKay sketched the history of the Bureau from its foundation, and explained the data on the weather map, detailing the methods by which reports are received and forecasts made. The lecture was illustrated with more than 100 lantern slides, and this method of illustration was used freely in all of the lectures.

Mr. Charles Stewart, Observer, Spokane, Wash., on April 19 lectured to 50 advanced pupils and their teachers at Brunot Hall, a school for young ladies, on "Weather changes and their causes." He also lectured to the 70 pupils of the physical geography class of Spokane High School, on meteorological instruments and kindred subjects. The class was divided into three sections and visited the local Weather Bureau office on April 27, 28, and 29.

METEOROLOGY IN THE UNIVERSITIES.

According to a copy of the Colorado Springs Daily Telegraph, Prof. H. F. Loud of Colorado College has been greatly encouraged by the gifts of General Palmer for the science of meteorology. An observing station has been completely equipped on the roof of Hagerman Hall, and there seems to be every prospect that this important station and its still more important mountain station on the summit of Pikes Peak will hereafter be occupied, and will afford the data for important researches. There are very few points in the world that lend themselves to the investigation of the atmosphere better than do Pikes Peak, Manitou, and Colorado Springs. In such work Colorado College may be expected to take an active part. Perhaps the first difficulty consists in the establishment and maintenance of continuous self registers at the college station, and this seems to have already been accomplished. We can but wish ultimate success to all the schemes in which Professor Loud is engaged for the benefit of research in meteorology.

We believe we have not before put on record the fact that a comprehensive course in meteorology is conducted by Prof. H. V. Egbert at Buchtel College, Akron, Ohio. It is an elective study in the department of mathematics, astronomy, and meteorology during the first half year, and occupies four hours each week. The course is thus described in the last circular of information:

Meteorology (Waldo).—A study of temperature, air pressure, winds, clouds, moisture, precipitation, atmospheric optics, and electricity; general, secondary, and special circulations of the atmosphere, weather and weather prediction, general climate and climate of the United States. In addition to the theoretical work the class will be required to conduct a series of meteorological observations after the methods of the United States Weather Bureau.

A new Weather Bureau station will be established about July 1 at Madison, Wis. It is hoped that the station will be located on the grounds of the University, and that a proper meteorological observatory will be built. Mr. James L. Bartlett, Observer, Weather Bureau, New York City, is designated as the observer in charge of the new station, and it is hoped that he will be able to give some instruction in meteorology at the University.

THE OBSERVATORY AT NICE.

The observatory at Nice, founded by R. Bischoffsheim, the wealthy banker of Paris, has suffered a severe loss in the death of its director, H. Perrotin. As his successor, General Bassot has been appointed. He is president of the International Geodetic Association and member of the Institute of France. As vice director, Mr. Simonin, who has hitherto been senior astronomer, has been appointed. Although the observatory is distinguished for its work in astronomy, yet it also cultivated meteorology and terrestrial magnetism.

HYPOTHESES AS TO THE CAUSE OF THE AURORA BOREALIS.

Referring to the hypotheses recently published by Mr. Charles Nordmann as to the cause of the aurora borealis (see MONTHLY WEATHER REVIEW, March, 1904, Vol. XXXII, p. 132), we note that in the *Meteorologische Zeitschrift* for April, Dr. T. H. Arendt, of the Central Meteorological Institute in Berlin, writes as follows:

Considering the fact that, especially in recent times, many persons have again labored to find some connection between the variable frequency of the sun spots, the variation in the solar activity, and the periodicity of certain meteorological elements, it may be proper to mention certain results of observations that Dr. Nordmann has himself brought together with great care.