

gave them critical examination. Under date of June 14, he writes:

In regard to the *Larix* rust, I am convinced that you are right in both cases. As you will note from the "North American Flora" which we have published, the *Salix* and *Populus* forms are very similar. Since your material came in, I have gone over it very carefully and I feel sure that they do have some fundamental differences. The *Larix* rust associated with *Salix* has been collected before, once in Alberta and once in Wisconsin. The one associated with *Populus* has been proven by cultures, but not before collected.

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SOCIETIES AND ACADEMIES

THE NATIONAL ACADEMY OF SCIENCES

The academy met at St. Louis from November 8 to 10, when the following program was presented:

Tuesday, November 8

"Some Problems of Stellar Motion," George C. Comstock.

"Preliminary Note on the Sun's Velocity with Respect to Stars of Spectral Type A," Edwin B. Frost.

"On the Origin of Binary Stars," Forest R. Moulton.

"The Cycadophytes," John M. Coulter.

"A Monograph of Agave in the West Indies," William Trelease.

"The Mode of Chromosome Reduction," Reginald R. Gates (introduced by Mr. Trelease). Followed by a demonstration under the microscope.

Visit to Washington University and demonstration of Professor Nipher's experiments on wind pressure and the electric discharge.

Evening lecture in the Central High School auditorium (Grand Avenue and Windsor Place)—"China," Thomas C. Chamberlin.

Wednesday, November 9

"The Front Range of the Rocky Mountains in Colorado," William M. Davis.

"Mutualism, Parasitism and Symbiosis," George T. Moore (introduced by Mr. Trelease). Followed by a laboratory demonstration.

Visit to the G. Cramer Dry Plate Works, under the guidance of Mr. Cramer and Dr. Wallace.

Thursday, November 10

"Sugar Chemistry from the new Chemico-physical Standpoint, or the Behavior of the Sugars toward Enzymes, Alkalies and Oxydizing Agents," John U. Nef.

"Molecular Rearrangements in the Camphor Series: Isocamphoric Acid," William A. Noyes and Luther Knight.

Inspection of the river front, bridges, electric power plants and municipal waterworks, under the guidance of the Hon. Maxime Reber, president of the board of public improvements of the city of St. Louis.

THE PHILOSOPHICAL SOCIETY OF WASHINGTON

The 682d meeting of the society was held on October 22, 1910, President Woodward in the chair. Two papers were read:

Present High Temperature Work Abroad: Dr. A. L. DAY, of the Geophysical Laboratory of the Carnegie Institution of Washington.

The paper dealt with the speaker's observations while recently visiting the three principal physical laboratories of Europe, in France, Germany and England, with special reference to the present status of high temperature work now in progress in those countries. The reasons why none of these countries are at present active in high temperature work was explained, and it was also stated that such work would soon be resumed by them.

At the Reichsanstalt good activity was found in vapor tension and absolute temperature determinations and radiation measures at these temperatures. In this connection Nernst's spectrophotometric measures were mentioned.

The speaker told of his efforts to calibrate a thermo-element by means of the boiling point of sulphur, and of finding a difference of about one and one half degrees from the gas thermometer. This led him to inquire into the previous determinations of the sulphur boiling point and of the conditions surrounding them. The difficulties of making such determinations were explained at some length.

Weather Proverbs and their Justification: Dr. W. J. HUMPHREYS, of the U. S. Weather Bureau.

The paper dealt especially with the causes of the phenomena described by some of the useful proverbs and the relation of these phenomena to others they precede.

Weather conditions have always exerted great influence upon human affairs, and due to which

many rules have been formulated in all ages and by all peoples for foretelling coming changes of weather, some of which rules have more or less to support them and are worthy of careful consideration and study, since they have in them accurate descriptions of the phenomena and state the events following them.

Although most countries now have a national weather service which gathers accurate information of meteorological conditions all over a continent, yet, in general it is not practicable to forecast the weather conditions for definite hours, nor for particular farms and villages; also it is not possible in many places to get official forecasts or maps upon which to base one's own conclusions, and under such circumstances certain weather signs are of special value.

Several classes of proverbs were quoted by the speaker and were discussed at some length. Among these were those in reference to the seasons, the sun, sky color, coronas and haloes, the moon, the stars, the wind, the clouds, sound, etc., especial reference being made to those which are concerned with sky coloring, including the physical justification for the opposite meanings of a red sky in the evening to that of a red morning sky.

R. L. FARIS,
Secretary

THE CHEMICAL SOCIETY OF WASHINGTON

THE 201st meeting of the society was held at the Cosmos Club on Thursday, November 10, 1910. No papers were read. The election of officers resulted as follows: *President*, W. W. Skinner; *First Vice-president*, J. A. Le Clerc; *Second Vice-president*, Reid Hunt; *Secretary*, H. S. Bailey; *Treasurer*, F. P. Dewey; *Councilors of the American Chemical Society*, W. D. Bigelow, Percy H. Walker, S. F. Acree. The election of the members of the executive committee was postponed one month. Resolutions of sympathy were passed in regard to the late Dr. Wm. H. Seaman. After the adjournment, a smoker was given in honor of the Association of Official Agricultural Chemists, about 150 participating. The attendance at the election was about 100, President Failyer presiding.

J. A. LE CLERC,
Secretary

THE BIOLOGICAL SOCIETY OF WASHINGTON

THE 472d regular meeting of the society was held in the new hall of the Cosmos Club, on

October 15, with Vice-president E. W. Nelson in the chair.

The principal communication of the evening was by Ch. Wardell Stiles on "Work of the Committee on Nomenclature at the Graz Zoological Congress." Dr. Stiles told of the organization, methods of procedure and future plans of the committee. It is hoped that with cooperation of the leading zoologists of the world decided progress toward stability of nomenclature will soon be made. The paper was discussed by L. O. Howard, Marcus W. Lyon, Theodore Gill, E. W. Nelson and others.

THE 473d regular meeting was held in the hall of the Cosmos Club on October 29, with President T. S. Palmer in the chair. The following communications were presented, both illustrated:

Some Foreign Entomologists and their Work:
L. O. HOWARD.

Periodic Movements of Birds in Relation to the Weather: W. W. COOKE.

The communications were discussed by a number of members. Fifty-six persons were present.

D. E. LANTZ,
Recording Secretary

THE BOTANICAL SOCIETY OF WASHINGTON

THE sixty-fourth regular meeting was held in the Assembly Hall of the Cosmos Club, Friday, October 28, 1910, at eight o'clock P.M. President Wm. A. Taylor presided. Thirty-eight members were in attendance.

Mr. H. C. Gore reported new facts developed during the study of the processing of Japanese persimmons. In experimenting with a modification of the Japanese method in which alcohol was used as the active agent instead of saki, it was found that the fruits often become soft and that the alcohol seemed to stimulate the softening as well as increase the rate of the disappearance of soluble tannin. Prinzen-Geerligs has observed that on keeping bananas in an atmosphere deprived of oxygen, the fruit remained firm, and the use of some inert gas in which to keep the persimmons during the processing suggested itself. Experiments were therefore tried in which the air was displaced by carbon dioxide. A marked retardation in softening occurred while the fruits processed successfully, both in vapors of alcohol and also in presence of carbon dioxide alone. Alcohol therefore is unnecessary in processing persimmons. Whether the fruits become non-astringent as a result of the exclusion of oxygen, or because of the specific activity of carbon dioxide, is as yet unde-

terminated. Five varieties of Japanese persimmons were found to process satisfactorily in carbon dioxide in from three to five days.

The following papers were read:

The Behavior of Pure Line Cultures of Glomerella: Dr. C. L. SHEAR.

Studies of pure line pedigreed cultures of a species of *Glomerella* obtained from an acervulus on a leaf of the avocado (*Persea gratissima*) were made, starting with a single conidium isolated in a poured plate and transferred to a tube of cornmeal agar. Twenty-three successive generations were grown from this culture and carefully compared with each other.

Single ascospore cultures obtained in the same manner from the same initial culture were also made and studied through seven generations. All were grown on the same medium and kept under apparently the same conditions of environment.

Variations in all the characters of the organism occurred. The variations of the conidial fructifications and perithecia were most striking. The greatest variation was shown in the series originated from a single conidium. Some of the characters were transmitted for several generations and then either suddenly or gradually disappeared. Others appearing suddenly in one generation were not transmitted to the next, but reappeared in later generations.

The kinds of variation occurring and their behavior were so erratic that they are not easily classified or explained. Whether these variations should be regarded as new expressions of latent hereditary characters, as fluctuating variations, or as mutations, is not clear. Much more data must be collected before any satisfactory conclusion can be drawn. Though the physical, chemical and biological characters of environment of the organism were supposed to be the same, it is possible that some of the variations observed may have been in some way induced or influenced by some slight unrecognized variation of some environmental factor or factors. It seems more probable, at present, however, that some of the sudden and striking variations noted would more properly be referred to some other category not usually regarded as primarily due to the influence of environment.

Line Breeding of Vegetables: Professor L. C. CORBETT.

This paper outlined the commercial need for line breeding by citing the chaotic condition of such groups as the garden beet, in which the so-called

varieties are distinguished merely by the predominance of a given form. If, for instance, 60 per cent. of the plants in any sample are blood turnip, although the other 40 per cent. may be composed of a number of different types, the variety is according to the trade blood turnip. What is true of the beet is also true of cabbage. The work the department of agriculture is doing in the line breeding of lettuce, cauliflower, cabbage, beets, tomatoes and beans was described and illustrated by photographs. The work is to make true rather than new types and strains. The trade already has too many so-called varieties. But there is great need of strains true to type, especially adapted to particular uses and industries.

Some Aspects of the Species Question: Dr. E. L. GREENE.

The full paper is to be published elsewhere.

W. W. STOCKBERGER,
Corresponding Secretary

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

THE 448th regular meeting of the society, the first of the present session, was opened by the president, Dr. J. Walter Fewkes, in the hall of the Public Library, October 18, 1910, 8 P.M.

The speaker of the evening was M. Capitan, Professeur au Collège de France, who delivered a discourse entitled, "Aperçu sur l'Archéologie Préhistorique de la France," illustrated with lantern slides. The lecturer illustrated and described Swiss dwellings, dolmens and numerous implements of the chase used by the prehistoric races of France. Frequent comparisons were made with archeological objects from America. It was shown that religious and superstitious motives largely entered into the making of the earliest rock inscriptions.

Among the views shown were a reindeer found at Brunequill; horses' skulls; elephants; female figures on rocks and stelæ from Mas d'Azil; a reproduction of the grotto at Lourdes, as also carved and incised figures of the horse and hippopotamus. The grotto of Eyzies, Dordogne, where Mr. Otto Hauser has carried on extensive excavations, was also thrown on the screen. Other slides illustrated household furnitures and utensils. It was also pointed out by the lecturer that the prehistoric inhabitants made use of the elevations and rugged surfaces in the rocks in the delineation of their drawings.

J. M. CASANOWICZ,
Secretary