THE SEVENTEENTH ANNUAL MEETING OF THE PACIFIC DIVISION OF THE AMERICAN ASSOCIATION. II

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ASTRONOMICAL SOCIETY OF THE PACIFIC

(Report by A. H. Joy)

Thursday, June 14, was devoted to contributed papers. In the morning session twelve were presented. In the absence of the president, Dr. E. P. Hubble, Dr. R. G. Aitken served as chairman. An attendance of twenty included representatives of nearly all the astronomical centers of the coast.

In the afternoon a joint session with the Physical Society was held under the chairmanship of Professor Orin Tugman, of the University of Utah. Four invited papers were read as follows:

Photographic studies of the planets in light of different wave-length: DR. W. H. WRIGHT.

Spectra of Venus, Mars, Jupiter and Saturn under high dispersion: DR. T. DUNHAM, JR.

Molecular spectra in the photographic infra-red: DR. D. M. DENNISON and A. ADEL.

Radioactivity and the age of meteorites: R. D. EVANS.

THE AMERICAN PHYTOPATHOLOGICAL SOCIETY, PACIFIC DIVISION, AND THE BOTANICAL SOCIETY OF AMERICA, PACIFIC SECTION

(Report by Geo. R. Hill)

The Pacific Section of the Botanical Society of America and the American Phytopathological Society, Pacific Division, met conjointly. Dr. E. P. Meinecke presided at the first session.

Papers were presented as follows:

An automatic apparatus for the continuous measurement of carbon-dioxide absorption or evolution by plants under laboratory and field conditions: M. D. THOMAS.

The effect of vitamins on the growth of fungi in pure culture: DR. W. G. SOLHEIM, S. S. SEARS and R. C. ROLLINS.

Rainfall and the annual growth of Pinus ponderosa in the Roosevelt National Forest, Colorado: DR. ARTHUR D. MOINAT (read by Marion C. Harris).

Some factors governing root formation: W. F. WENT.

Physiological variations in pineapple fruits and their importance in the quality of the fresh and canned product: DR. C. P. SIDERIS and B. H. KRAUSS.

The inhibition of development of lateral buds by the growth hormone: FOLKE SKOOG and KENNETH V. THIMANN.

Studies of Nicotiana sp. inoculated with tomato streak viruses: M. SHAPOVALOV.

On the preparation and properties of the plant-growth hormone: KENNETH V. THIMANN.

An analysis of a few of the factors involved in the growth of plant cells: JAMES BONNER.

Life zones of Galapagos Islands: JOHN T. HOWELL.

Variation in Castilleja: ALICE EASTWOOD.

Some results in experimental taxonomy on California native plants: DR. CARL B. WOLF.

Some representative plant communities of Bridger Basin: LEO A. HANNA.

Some ecological aspects of uncontrolled grazing of the winter ranges in the Great Basin: DR. GEO. STEWART.

Studies on Psyllid Yellows of tomato: DR. H. L. BLOOD, Utah Agricultural Experiment Station, Logan, Utah.

Infective principle in Psyllid Yellows: DR. B. L. RICHARDS.

Some inoculation experiments with Dothiorella: C. O. SMITH.

Some biochemical changes accompanying Curly Top of tomato: DR. F. B. WANN, Utah State Agricultural College, Logan, Utah.

Sclerocystosis of Valencia orange fruits: DR. E. T. BARTHOLOMEW, Citrus Experiment Station, Riverside, California.

The Dieback form of tomato streak: M. SHAPOVALOV, Citrus Experiment Station, Riverside, California.

Some improvements in auto-irrigator apparatus: L. A. RICHARDS and H. L. BLOOD, Utah Experiment Station, Logan, Utah.

At the business meeting of the Botanical Society of America, Dr. W. A. Setchell, of the University of California, was elected *president* and R. M. Holman, of the University of California, was elected *secretary* for the year 1933–34.

The Thursday morning meeting was presided over by H. E. Morris, president of the Pacific Division of the American Phytopathological Society.

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE, PACIFIC COAST BRANCH

(Report by Dr. M. L. Tainter, Secretary)

The Pacific Coast Branch of the Society for Experimental Biology and Medicine met on Thursday morning with about thirty in attendance. In the absence of the Chairman, Dr. C. L. A. Schmidt, Dr. J. Murray Luck presided.

Professor C. C. Johnson opened the meeting with a demonstration of newly developed apparatus used in teaching in the Medical School of the University of Utah. He showed a new and inexpensive form of a spring-driven kymograph designed especially for recording skeletal muscle twitches, an arrangement

for recording simultaneously responses of six excised muscle strips, a circular saw for exposing turtle hearts, and a new type kymograph paper which lent itself to rapid copying of the record by the blueprint method. Dr. C. M. Blumenfeld discussed the ever-increasing difficulties in the field of scientific bibliography, arising from the tremendous number of journals and articles. He suggested that a solution of the difficulty, in making available all this scientific material, might be found in the establishment of central abstracting and collating bureaus. Dr. J. Murray Luck and W. Van Winkle, Jr., reported experiments on the differential inactivation of insulin by iodine. They observed that by treatment with iodine in buffered solutions, insulin could be inactivated with respect to its effects on blood sugar, inorganic phosphate and amino-acid nitrogen, differentially. The pH of the solution and concentration of iodine controlled the degree to which each of these properties was diminished. C. E. ZoBell and E. C. Allen discussed the attachment of marine bacteria to submerged slides. They observed when glass slides were immersed in the sea one to seven days, that bacteria, diatoms and actinomycetes attached before the barnacles, hydroids, Bryozoa, etc. Pure cultures of marine bacteria could be classified according to their ability to fasten to the slides. Dr. M. L. Tainter reported on the actions of α-dinitrophenol. He stated that the drug has the power of increasing metabolism in man and the common laboratory animals by acting directly on the tissues. The rise of metabolism may have many important clinical applications, as in the treatment of obesity, hypothyroid states, etc. Dr. D. A. Wood discussed his experiments on chronic thallium poisoning. Using the maximum doses of thallium, which did not produce acute death, he was unable to induce any important changes in the kidneys, bone or other organs, observable grossly or microscopically. Especially interesting was the failure to produce leukoplakia or other changes in the esophagus. R. A. Escobar and Dr. F. M. Baldwin reported experiments bearing on the longevity of various types of cells in the body and their probable rate of growth. Techniques were described whereby the rate of formation or length of life of blood cells, skin and digestive epithelium, etc., could be studied. The results indicated a much more rapid replacement of these cells than is commonly held. Dr. M. Kleiber and Professor J. E. Dougherty presented their experiments on the growth of baby chicks. Growth was fastest and the food consumption was highest at low temperatures. The amount of food eaten was found to be a linear function of the temperature. The highest degree of utilization of food was found to be at an environmental temperature of 100° F.

UTAH ACADEMY OF SCIENCES

(Report by Dr. Vasco M. Tanner)

The twenty-sixth annual meeting of the Utah Academy of Sciences was held on Monday, June 12. President Dr. Bert L. Richards presided. Eight papers were presented at the morning session. The first was by Dr. John T. Wahlquist, University of Utah, on "Examination Systems in American Colleges and Universities." He concluded that "the Honor System is more common in private colleges than in public universities. More institutions have used and abandoned the Honor System than are now using it. It seems to succeed best in small, compact professional schools or in private colleges where it has the support of tradition. The most frequent cause of failure is lack of student cooperation." W. Preston Thomas, Utah State College, reported the results of a study on "Some Economic Factors Affecting Farm Incomes in Utah." Dr. Albert B. Reagan, Office of Indian Affairs, Ouray, Utah, presented two papers, "The Caves of the Vernal District of Northern Utah," and "The Grand Medicine Society of the Bois Fort Indians and Andy Fields Anakomigenung's Birch Bark, Medicine Lodge Parchment." Dr. Reagan concluded that the caves of the Vernal district had been inhabited by the people of the ancient Fremont stage and by the Basket Makers tribes. An interesting report on "The Effect of Spaying on Body Growth and Organ Weights of the Albino Rat" was made by Dr. Clay B. Freudenberger and Oscar Billeter, of the University of Utah Medical School. It was found that there were "no differences between the spayed and control rats in the following organs: brain, spinal cord, eyeballs, liver, spleen, kidneys, thyroid gland and hypophysis"; on the other hand, the "uterus of the controls weighed 19 times as much as the uterus of the spayed rats. The uterus apparently ceased to develop as soon as the ovaries were removed." Dr. F. B. Wann, Utah State College, made a report on "Preliminary Biochemical Studies of Psyllid Yellows of Potato." A report on "The Chemical Analysis of Utah Lake Waters Made during the Winter and Spring of 1933," was made by L. B. Decker, of the Brigham Young University, Provo. It was found that "the water of Utah Lake is not increasing in dissolved solids. The water is distinctly alkaline, has a high turbidity of extreme fineness and supports very little water grass or plant life," and that "the alkali salts in the water of the lake make it fair for irrigation purposes." An interesting study, "Report on Laboratory Investigations of Feasibility of Freshening the Proposed Diked-off Portion of the Great Salt Lake," by R. A. Hart and N. E. McLachlan, was presented by Mr. Hart, who concluded that "neglect-

ing possible infiltration of underground water, a period of two years would be required to freshen the water in the reservoir, based on average supply."

The following 16 papers were presented at the next session before the Physical Sciences Section: "The Application of Microscopy to Drill Core Assays in Disseminated Copper Deposits," by Daniel Frobes and Professor A. L. Crawford, University of Utah; "Volcanism near Salt Lake City," by Dr. Hyrum Schneider, University of Utah; it was pointed out in this paper that "products of explosive volcanoes occur at three different localities, all within a radius of nine miles from Salt Lake City. The volcanoes from which these products came have not yet been found." The "Occurrence and Possible Economic Value of Diatomaceous Earth in Utah" was presented by Raymond Wimber and Professor A. L. Crawford, University of Utah. Professor Crawford reported that "fresh-water diatomite beds, up to a reported thickness of 40 feet, are found near the Utah-Nevada line." "A Progress Report on the Study of Physiographic Types in the State of Utah" was given by Walter R. Buss, of Brigham Young University. A rather complete bibliography of the writings on Utah geology have been studied and compiled by Mr. Buss. The titles of the remaining papers follow:

Flotation significance of microscopic particles of gold from various stages in ball mill grinding: FRANK NETICK and PROFESSOR A. L. CRAWFORD, University of Utah.

A study of factors affecting corrosion in crude still condensing lines at Utah oil refining plant: ORVILLE POLLY, Brigham Young University.

An application of microscopy for evaluating the gold in certain Utah placers: PROFESSOR A. L. CRAWFORD.

A microscopic study of certain placer gold from Gold Creek, Montana: AARON STARLIPER and PROFESSOR A. L. CRAWFORD.

A quantitative study of crustal shortening of a geosyncline during uplift: VARD H. JOHNSON, of Brigham Young University.

Determination of the coefficient of slip of carbon dioxide by the oil drop method: ROBERT A. CLARK.

An experimental determination of Ne for carbon dioxide by the method of Brownian movement: PAUL HUISH.

A measure of the Zeeman effect in the Sodium D lines: ERVINE F. SMITH.

A study of the formation stages of spark breakdown in carbon dioxide and ethyl chloride by means of the electro-optical shutter: WALDO G. HODSON.

A study of the acoustics of the Desert Theater near Thatcher, Arizona: GEORGE L. SHEPPARD.

Evaporation from free water surfaces: HENRY R. WATSON.

In the Biological Science Section the following papers were presented:

Influence of carbon-nitrogen ratios of organic matter on the rate of decomposition in soil: IMRI J. HUTCHINGS and DR. T. L. MARTIN, Brigham Young University.

The genus Salmo in Utah: SHELDON HAYES and DR. V. M. TANNER, Brigham Young University (two native species, *S. Utah* Suckley and *S. pleuriticus* Cope, are found in Utah).

Recovery in Psyllid Yellow plants: DR. BERT L. RICHARDS, Utah State College.

The effect of castration on the suprarenal glands of the albino rat: CHAS. M. BLUMENFELD, University of Utah.

Life tables for white Leghorn chickens in the state of Utah; GEORGE GARDNER and HUGH HURST.

Influence of decomposing organic matter with different carbon-nitrogen ratios on changes in the micro-flora of the soil: KARL A. MILLER and DR. T. L. MARTIN, Brigham Young University.

Fermentation of tomato fruit pulp, a control for bacterial cankers, Aplanobacter michiganense E.F.S.: DR. H. L. BLOOD, Utah State College.

Notes on some Utah Lepidoptera: OWEN DAVIS, Brigham Young University.

The following officers were elected for the year 1933–34: *President,* Dr. Lyman L. Daines, dean of the Medical School, University of Utah; *first vice-president,* Dr. Lowry Nelson, dean of College of Applied Sciences, Brigham Young University; *second vice-president,* Dr. O. W. Israelsen, professor of irrigation, Utah State College; *secretary-treasurer,* Dr. Vasco M. Tanner, professor of zoology and entomology, Brigham Young University. It was also proposed and passed that the membership of the academy be divided into five sections as follows: Social Sciences, Physical Sciences, Biological Sciences, Applied Sciences, Arts and Letters.

Dr. Lowry Nelson, chairman of the Resolutions Committee, reported that after a careful study extending over a year, it was thought advisable to change the constitution of the academy to allow for the extension of its activities, and that the name of the academy should be changed to that of "Utah Academy of Sciences, Arts and Letters." This was moved and carried.

WESTERN SOCIETY OF NATURALISTS

(*Report by Dr. B. M. Harrison, secretary pro tem*)

The session for the presentation of papers was held on the afternoon of June 13. A paper by Frank H. Grinnell, on "Recent Studies in Mineralogy and Geology of the Arizona Fossil Forest," recorded the excavation of many stumps which had become fossilized after having been weather worn. Under the title of "A Preliminary Study of the Growth and Development of the Deermice of the Genus *Peromyscus,*" Dr. Arthur Svihla showed, by numerous measurements,

that various parts of the body do not grow at the same rate. All curves record a rapid rate of growth up to about the time of weaning, and then a decided slowing down. Dr. B. M. Harrison and Miss Bessie Nyi presented a paper on "The Embryological Development of the Lacrimal Gland of the Horse." It was reported that the anlagen appear in the 27 mm stage and in succeeding stages increase in number to a maximum of twenty-two, from which they decrease to thirteen, in the 13 cm embryo. Under the title of "Some Stages in the Development of the Glands of the Urethral Tract of the Horse Embryo," Dr. B. M. Harrison and L. A. Bavetta showed that Cowper's gland appears at the 4.4 cm stage, the prostate at 5.3 cm and the Glands of Littre at the 9.2 cm stage. Two reels of moving pictures of the bird life on Hat Island of Great Salt Lake were shown by C. G. Plummer. He estimated that 100,000 birds come to Hat Island each year.

WESTERN SOCIETY OF SOIL SCIENCE

(Report by J. C. Martin, secretary-elect)

Two half-day sessions of the society were devoted to a symposium on soil moisture.

Dr. W. L. Powers' paper on the relation of confined air to movement of soil water was read. In laboratory studies using burettes, it was found that with a constant head of 5 cm the rate of wetting of sandy loam and silty clay loam soils where the base was open, was about twice that in closed columns. Dr. G. B. Bodman and Dr. N. E. Edlefsen reported on the result of field measurements of the permeability to water of a silt loam soil at Davis, California. Dr. N. E. Edlefsen discussed the meaning of dielectric constant of a material, calling attention to water having a value of about 80, whereas that of most materials in the soil is of the order of 4. Equipment developed for the measurement of the dielectric constant of moist soil was described. Measurements in the laboratory and in the field indicate the dielectric constant of a moist soil to be a linear function of the quantity of water present. L. A. Richards and Dr. H. L. Blood described certain improvements they have made in the construction of auto-irrigator apparatus to overcome the difficulty of preventing air leaks in prevailing types of two piece double-walled irrigator pots. Dr. F. J. Veihmeyer and Dr. A. H. Hendrickson report that the permanent wilting percentages obtained by growing sunflowers in small containers of soil prove to be a reliable measure of those observed with permanently wilted crops in the field. Dr. Willard Gardner discussed dynamical principles underlying the movement of soil moisture, pointing out that for the movement of moisture in unsaturated soils the potential function as well as the transmission constant depends upon the moisture content of the soil.

A round-table discussion of problems in soil moisture was led by Dr. F. S. Harris. M. D. Thomas introduced the discussion showing peculiar vapor-pressure moisture relationships in soils saturated with sodium.

One half day was spent in observing, under the guidance of M. D. Thomas, some of the soil profiles on the upper bench lands and the alkali soils near Salt Lake, including an early reclamation project.

The last half-day session was devoted to miscellaneous papers.

R. C. Cole made a progress report on methods of measuring soil structure. As soils are slaked in water, they quickly reach an equilibrium where the particles are somewhat stable and whose stability seems not to be affected by prolonged standing in water. Mechanical agitation of slaked soils causes a breaking up of the aggregates.

The following papers are reported by title, since no abstracts have been obtained:

Activity of replaceable bases in bentonite: D. S. JENNINGS, DEWITT SMITH and M. D. THOMAS.

Nitrogen losses on the dry lands of Utah: A. F. BRACKEN and DR. J. E. GREAVES.

Studies in organic decomposition in the soil: DR. T. L. MARTIN.

Soil moisture studies under dry farming: A. F. BRACKEN.

SCIENTIFIC EVENTS

SALARIES OF SCIENTIFIC MEN WORKING UNDER THE BRITISH GOVERNMENT[1]

THE restoration of the economy cuts in salaries made by county councils and other public bodies in Great Britain within the last six months raises the important question as to when the government proposes to follow suit. These cuts have inflicted considerable hardship on a large body of scientific workers in government employment, and they were always avowedly temporary in their incidence. The ten per cent. reductions have now been operative for two years, and in very many cases they were imposed on basic salaries that were in no way adequate considering the scientific attainments of the victims. Admittedly they were a breach of contract, and there is considerable force in the contention that the government is in honor bound to follow the example of

[1] From *Nature*.