Sublacustrine Glacial Erosion in Montana: W. M. Davis, Department of Geology and Geography, Harvard University. Clark fork branch-glacier seems to have done its visible erosive work on the valley-side spurs—and presumably a considerable amount of invisible work on the valley bottom—although it must have been wholly submerged in Lake Missoula for two or three score, if not for four score miles.

The Effect of Stretching on the Rate of Conduction in the Neuro-Muscular Network in Cassiopea: J. F.McClendon, Department of Physiology, University of Minnesota and Tortugas Laboratory, Carnegie Institution of Washington. Apparently stretching the nerve does not change the rate.

A Criticism of the Evidence for the Mutation Theory of De Vries from the Behavior of Species of Oenothera in Crosses and in Selfed Lines: Bradley Moore Davis, Department of Botany, University of Pennsylvania. Although most of the genetical work on œnotheras has not been interpreted in Mendelian notation, there is clear evidence of order in the results in inbreeding and crossing: the difficulty has been to discover and to isolate simple material in the confusion of mixed and impure forms of these plants.

The Spectra of Isotopes and the Vibration of Electrons in the Atom: William D. Harkins and Lester Aronberg, Kent Chemical Laboratory and Ryerson Physical Laboratory, University of Chicago. The spectra of isotopes have previously been reported as identical within the errors of measure. The authors find, however, a slight difference. The wavelength of uranio-lead was very slightly longer than that of the ordinary lead.

The Effect of Oxygen Tension on the Metabolism of Cassiopea: J. F. McClendon, Department of Physiology, University of Minnesota and Tortugas Laboratory, Carnegie Institution of Washington.

National Research Council: Scientific Publications from Germany; Report of the Geology and Paleontology Committee; First Report of Committee on Zoology; The Scope and Work of the Botanical Raw Products Committee; Meetings of the Executive Committee.

List of Publications of the National Academy of Sciences.

Report of the Autumn Meeting: Business Session; Scientific Sessions.

We may summarize the articles in Volume 3 of the *Proceedings* as follows: Mathematics, 13; Astronomy, 17; Physics and Engineering, 32; Chemistry, 12; Agriculture, 4; Geology and Paleontology, including Oceanography, Mineralogy and Petrology, 18; Botany, 5 (see also Genetics); Zoology, including General Biology, 27 (see also Genetics); Genetics, 11; Physiology and Pathology, 18; Anthropology and Psychology, 5; a total of 162 articles.

The division of these articles between members of the academy and non-members is 49 and 113 respectively.

The list of institutions which have contributed three or more articles is as follows: Carnegie Institution, 32, divided as follows: Solar Observatory 13, Marine Biology 7, Station for Experimental Evolution 6, Tortugas Laboratory 5, Geophysical Laboratory 1; Harvard University 26; Brown University 9; Yale University 7; University of Chicago 6; University of Illinois 5; Princeton University 5; Rockefeller Institute for Medical Research 4; U. S. Department of Agriculture 4; Johns Hopkins University 4; University of Virginia 4; General Electric Company 4; American Museum of Natural History 3; Columbia University 3.

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SPECIAL ARTICLES

RESULTS OF CORN DISEASE INVESTIGATIONS

A PRELIMINARY summary of three years' investigations of certain little understood corn diseases made in Illinois and Indiana, includes some interesting facts which the writers desire to present at this time. This study has been conducted both in the field and in the laboratory. A more complete statement of the results will be published in the near future.

These studies are all based on the ear-to-row test. Dent corn only was used in these tests. They are not conclusive, but indicate the lines of attack, and this statement is presented at this time to call attention to the fundamental relation of these investigations to seed selection and the germination test. Approximately a hundred and fifty readings have been made on the mother-ear, seed, seedlings, and field performance of each of the ears. No ears are referred to herein which did not have a hundred per cent. germination record. The germination records are based on twenty kernels from each ear. The report of this year's work is corroborated by the results of the two previous years.

Some of the most important results of the experiments are:

(*a*) That barren stalks and stalks bearing only nubbins seem to be correlated with certain pathologic conditions in the plants. There is also a correlation between certain types of seedlings grown on a neutral-base germinator and the number of barren stalks that grow from the seed planted from the same ears.

(*b*) That in fifteen rows of corn grown this season from ears which present this pathologic condition in the seedlings, there were 15.2 per cent. of the plants barren, and 6.2 per cent. of the stalks bore nubbins only. In these rows 15.2 per cent. of the stalks were down by the end of the growing season. In fifteen rows of corn grown from ears not having seedlings which showed this pathologic condition, 6.3 per cent. of the stalks were barren, and 3.4 per cent. bore nubbins only. In these rows 3.1 per cent. of the stalks were down at the end of the growing season.

The computed difference in yield between these two series of rows was 22.6 bushels per acre. The rows were distributed throughout the test plot, the high-yielding and diseased rows alternating.

(*c*) That this pathologic seedling type is developed both on the neutral-base germinator and in sterile agar flask cultures.

(*d*) That surface sterilized seeds harbor bacteria and species of *Fusarium*. The bacteria cause a rotting of the seedling root tips in the sterile flask cultures. This rotting of the roots of the seedlings is the germination characteristic of the ears of corn which develop the greatest numbers of barren and down stalks in the field.

(*e*) By controlling fertilization by hand pollinating ears of apparently disease free plants with pollen from similar plants, the amount of barrenness in the rows from these ears was reduced to less than 1.5 per cent., and with but 1.2 per cent. down-stalks at the end of the growing season.

(*f*) All kernels from the same infested ear do not harbor pathogenic organisms within them. Neither is the rate of seedling development usually referred to as "vitality," a criterion for assuming freedom from infestation of the seed by bacteria and species of *Fusarium*. The rate of seedling development on the germinator is not indicative of the yield possibilities of that seed ear.

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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

SECTION F (ZOOLOGY)

THE Convocation Week meetings of Section F (Zoology) of the American Association for the Advancement of Science were held in conjunction with those of the American Society of Naturalists at Pittsburgh, Pa., December 31, 1917, and January first, 1918. The meetings of Monday, December 31, were in charge of the officers of Section F and were presided over by Professor Herbert Osborn, professor of zoology in the Ohio State University and vice-president of Section F. In the absence of the secretary of the Section, Professor W. M. Smallwood, of Syracuse University, acted as temporary secretary.

At the business meeting of the Section, Professor L. B. Walton, of Kenyon College, was re-elected member of the council; Professor V. E. Shelford, of the University of Illinois, was chosen member of the sectional committee for five years; Professor C. H. Eigenmann, of Indiana University, was elected member of the general committee.