

should be discarded as seed. The cause of this trouble is not given.

#### EARLY AND LATE POTATO BLIGHTS.

BULLETIN 113 of the Cornell, N. Y., Station treats only of the diseases of the potato, giving several illustrations of these troubles and one colorotype plate of blight. Two leaves are shown in this, one of the 'early Blight' and the other of the 'late blight.' The former is due to the fungus *Macrosporium Solani*, E. & M., and the latter to *Phytophthora infestans*, DeBy, a downy mildew which, when affecting the tubers, produces the potato rot, an old enemy in Europe, where it has caused famines, as in Ireland in 1846. Prof. Lodeman draws largely upon the literature of this blight, mentioning its rapid growth in and destruction of the attacked vines and the disagreeable odor of the ruined potatoes. The germ tube from the spore secretes a ferment that dissolves the cell wall of the host, and permits the parasite to pass through. The term 'late blight' came from the fact that the *Phytophthora* does not usually appear before August. The early blight comes sooner in the season, and usually the fungus follows after some injury, frequently the work of flea beetles. The earlier plantings of the same variety are the more affected by this blight.

Bordeaux is a satisfactory remedy for the late blight and a promising one for the early blight.

The cause of the scab is considered and the corrosive sublimate both highly recommended with the precaution that it be not used so strong as to injure the seed.

#### VARIETY TESTING OF POTATOES.

BULLETIN 65 Ohio Station is devoted to the comparison of varieties of potatoes and experiments with fertilizers, by Profs. Green and McFadden. They maintain that variety trials are of much value only when the sorts are tested under several sets

of conditions. It is the summing up of sets of trials that brings results of practical importance. Thus the three varieties that have averaged highest at the central and both sub-stations in Ohio are American Wonder, Columbus and Irish Daisy. Varieties that are the least influenced by variations of soil, climate, etc., they claim are the most valuable.

#### GOVERNMENT FARMERS' BULLETIN UPON POTATOES.

IN addition to the above station bulletin the United States Department of Agriculture has issued a farmers' bulletin (No. 35) upon Potato Culture, by Mr. Duggar with the following sub-heads: Soil and rotation, manuring, varieties, planting, change of seed, side of seed pieces, distance in the row, mulching, storing, with a lengthy summary. This is a remarkably comprehensive, condensed and clear exposition of potato culture.

The impression at least is gained from the above notes that the potato is fully recognized by experimenters as a leading crop in the country and likewise a subject that is many sided and as yet far too little understood.

BYRON D. HALSTED.

#### SCIENTIFIC NOTES AND NEWS.

##### SIR JOSEPH PRESTWICH.

AT the meeting of the Geological Society of London, on June 24th, the President, Dr. Henry Hicks, said: It is with deep regret that I have to announce to you the death of our dear and much-beloved friend, Sir Joseph Prestwich. He was elected into the Society in the year 1833, and we had come to look upon him as the father of our Society. He served it as Treasurer and President and was one of its Wollaston Medallists, and we feel that by his death our Society loses one of its truest friends. He always gave us of his best, and delighted to communicate his knowledge to his fellow workers. He was in every respect a typical representative of our Society and its objects, for he passionately loved the science, fearlessly

maintained what he believed to be the truth, and had that open mind and craving for knowledge which has ever characterized the best and noblest of its members. This is not the time to refer specially to his labors; but we may feel assured that such sterling work as he accomplished will ever hold an honored place in the annals of British geology. The Council at their sitting this afternoon passed the following resolutions, which I feel no doubt all the Fellows present will cordially endorse:

(1) That the President, Council and Fellows of the Geological Society of London desire to convey to Lady Prestwich the assurance of their heartfelt sympathy with her in the sad and irreparable loss that she has sustained, and at the same time to place on record their high appreciation of the lifelong geological work achieved by Sir Joseph Prestwich, who for sixty-three years was a member of their body, alike respected and beloved.

(2) That this Resolution be placed upon the Minutes, and a copy of it be communicated to Lady Prestwich.

The above resolutions were then passed unanimously.

#### 'A NEW FACTOR IN EVOLUTION.'

UNDER this title Prof. J. Mark Baldwin has contributed an article to *The American Naturalist* (June and July) enlarging upon the views published by him in this JOURNAL (Aug. 23, 1895, Mar. 20, Apr. 10, 1896). Prof. Baldwin thus sums up the factors in evolution which he designates 'organic selection' and 'social heredity.'

"*Organic Selection.*—The process of ontogenetic adaptation considered as keeping single organisms alive and so securing determinate lines of variation in subsequent generations. Organic selection is, therefore, a general principle of development which is a direct substitute for the Lamarckian factor in most, if not in all instances. If it is really a new factor, then it deserves a new name, however contracted its sphere of application may finally turn out to be. The use of the word 'organic' in the phrase was suggested from the fact that the organism itself cooperates in the formation of the adaptations which are effected, and also from the fact that, in the results, the organism is itself selected; since those organisms which do not secure the adaptations fall by the principle of natural

selection. And the word 'selection' used in the phrase is appropriate for just the same two reasons.

"*Social Heredity.*—The acquisition of functions from the social environment, also considered as a method of determining phylogenetic variations. It is a form of organic selection, but it deserves a special name because of its special way of operation. It is really heredity, since it influences the direction of phylogenetic variation by keeping socially adaptive creatures alive, while others which do not adapt themselves in this way are cut off. It is also heredity since it is a continuous influence from generation to generation. Animals may be kept alive, let us say, in a given environment by social cooperation only; these transmit this social type of variation to posterity; *thus social adaptation sets the direction of physical phylogeny and physical heredity is determined in part by this factor.* Furthermore, the process is all the while, from generation to generation, aided by the continuous chain of extra-organic or purely social transmissions. Here are adequate reasons for marking off this influence with a name."

#### GENERAL.

THE Astronomer Royal, Mr. Christie, has been unanimously elected corresponding member of the Paris Academy of Sciences in the place of the late Mr. Hind.

ADVICES from Japan state that the two American expeditions to observe the solar eclipse under the charge of Professors Todd and Schæberle, respectively, have reached Yokohama.

THE sum of \$5,000 has been subscribed for the purpose of erecting a statue as a memorial to the late Wilhelm Mayer, of Copenhagen, the discoverer of adenoid vegetation of the pharynx. It appears that the largest sum has been subscribed in America (about \$1,500), Great Britain and Denmark each having subscribed in the neighborhood of \$1,200 and Germany \$500.

MRS. HUXLEY, widow of Prof. T. H. Huxley, has been granted a Civil List pension of £200 a year.

AT the celebration of the centennial of the founding of the city of Cleveland, it was an-

nounced that Mr. John D. Rockefeller would give the city for a park 276 acres of land valued at more than \$600,000.

THE *Hauer Medaille*, of the Vienna Geographical Society, and the gold *Kirchenpauer Medaille*, of the Geographical Society of Hanover, have been awarded to Prof. Neumayer, of Hamburg.

THE Ashmolean Museum, Oxford, was struck by lightning on July 7th. The fire was extinguished before damage was done to the valuable contents of the museum. There are four lightning conductors on the building, but the electric current struck a gable on which there was no conductor and traveled along a lead gutter and down a standpipe to the earth.

THE completed building of the Indian Institute at Oxford was declared open on July 1st by Lord George Hamilton, the Secretary of State for India. The building contains an oriental library and museum.

MR. PERCIVAL LOWELL, of Boston, has left for Flagstaff, Arizona, to continue observations on the planet Mars. He is accompanied by Mr. Alvan G. Clark, who will mount the new 24-inch telescope. Dr. T. J. J. See, of the University of Chicago, also accompanies the expedition in order to continue his observations on double stars.

PROF. G. D. HARRIS, of Cornell University, is spending the summer in Alabama, making paleontological collections for the University.

THE death is announced of Prof. A. G. Stoleto, professor of physics in the University of Moscow.

A LIFE of Fridtjof Nansen by W. C. Brögger and Nordhal Rolfsen has been published in Scandinavia.

PROF. HUGH C. McLAUGHLIN died on July 20th at the age of 85. He had recently been a professor of classical languages and had formerly been Superintendent of the Bureau of Statistics.

THE daily papers state that Mr. William R. Brooks, director of Smith Observatory, while observing the moon recently with the large telescope, made a most interesting and unique discovery. A dark round object was seen to pass rather slowly across the moon in a hori-

zontal direction. Mr. Brooks believes that it was the passage of a dark meteor between the earth and the moon, far beyond the earth's atmosphere, so that it remained non-luminous.

A NEW entomological journal, *Illustrierte Wochenschrift für Entomologie*, will hereafter be published by Neumann in Neudamm. It proposes to treat rather the biological relations of insects than systematic entomology.

THE *Scientific African*, a journal founded at the beginning of the present year in South Africa, has been compelled to suspend publication.

THE discontinuance of the publication *Climate and Health* is announced to take effect with the end of the present fiscal year, June 30, 1896. Vol. II., No. 3 (four weeks ended March 28, 1896), will be the last issue. It has been deemed necessary to take this action in view of a doubt having arisen as to whether the publication of *Climate and Health* was authorized by the act making appropriation for the Department of Agriculture for the fiscal year ending June 30, 1897. It is the intention of the Chief of the Bureau to have prosecuted during the coming fiscal year a number of special climatologic studies, and it is expected that the statistics collected during the present fiscal year will be of much value in this connection. The results of these special researches will, if their importance justifies it, be published in the form of special bulletins, at such times and in such shapes as the circumstances may warrant.

WE have received the first number of *The Laryngoscope*, a new monthly journal devoted to diseases of the nose, throat and ear, edited by Drs. F. M. Rumbold and M. A. Goldstein. The number opens with an article by Dr. S. Montbleyer on the Photo-Fluoroscope, describing applications of the X-Rays in laryngology.

PSYCHICAL research has assumed such dimensions that Mr. W. H. Myers finds it desirable to compile a glossary in the June number of the *Proceedings of the Society*. Many of the terms given are those commonly used in psychology and medicine, but we owe to Mr. Myers the invention, or at least wide application, of the words 'telepathy' and 'subliminal,' and we

find here a number of other words suggested by him—'cosmopathic,' 'hyperpromethia,' 'methectic,' 'telergy,' etc., which we may not only soon find in the Century Dictionary, but may also hear on the street corners some day.

DR. LÉON BERTRAND, of Antwerp, describes in the *Medical Record* a fluoroscope in which double fluoride of uranyl and ammonium was used as the fluorescent substance. This is said to be fully as good as other substances, such as tungstate of calcium and to be much cheaper.

ON July 4th the Royal Societies' Club gave a complimentary dinner and reception to the newly elected Fellows of the Royal Society and the newly elected Royal Academicians and Academicians-elect. Speeches were made by Sir Clements Markham, Sir Robert Ball, Prof. Ray Lankester and others.

*The Railway Review* describes a foul-air indicator exhibited at the Industrial Exposition at Zurich, Switzerland, which is designed to show whether and in what degree the air in a workshop or other inhabited room is contaminated. The apparatus is described as consisting of an air-tight closed glass vessel filled with a red fluid. Through a glass tube that dips into the liquid and is bent at the top a drop falls every 100 seconds on a cord that hangs beneath and that is somewhat stretched by a weight. The fluid from which the drop comes has the property of changing its color by the action of carbonic acid. The more carbonic acid there is in the air the quicker this change in color takes place. If the air is very foul the drop becomes white at the upper end of the cord, while the change of color corresponding to a slight proportion of carbonic acid does not take place till the drop has run further along the cord. The exact condition of the air can be ascertained by observing a scale that is placed alongside the cord and divided into convenient parts, bearing the designations, 'extremely bad,' 'very bad,' 'passable,' 'pure.'

MM. BEAUREGARD and Dupuy have reported to the Paris Academy, experiments on electrical variation in the acoustic nerve when excited by a sound with one electrode placed on the tympanum and one on the nerve it was

possible to note the variation of the current with the pitch of the sound which gives a method for determining the range of audibility for pitch in the lower animals.

#### UNIVERSITY AND EDUCATIONAL NEWS.

##### THE FUTURE OF AMERICAN COLLEGES AND UNIVERSITIES.

IN the *Atlantic Monthly* for August President Gilman takes the appearance of the memoirs of Barnard and McCosh as an occasion to review the progress and outlook of universities in America. President Gilman's article is of special interest, as he not only writes from wide knowledge, but also with the power to carry into effect the ideas that he advocates. He says: "Barnard came very near the right expression when he claimed that the university must be 'a school of all learning that the necessities of the age demand.' Whatever may be the best definition of a university, its functions are clearly to be discovered. It must above all things be a seat of learning, where the most cultivated scholars reside, where libraries, laboratories, and scientific collections are liberally kept up, and where the spirit of inquiry and investigation is perpetually manifested. It must be a shrine to which the outside world will resort for instruction and guidance upon the problems of the day, scientific, literary, educational, political. It must be a place from which are sent forth important contributions to science—theses, memoirs, books. Here every form of scientific investigation should be promoted. Researches too costly for ordinary purses should be prosecuted at the expense of the general chest. Expeditions should be sent forth from time to time to engage in investigations on the seashore or on the mountains. Physical and astronomical instruments of the most improved forms should be devised, procured and frequently renewed. The literatures of all nations, ancient and modern, should have their devotees. Every school of philosophy should be interpreted. Historical and political inquiry should be diligently promoted. The problems of modern society, economical, industrial, financial, administrative, philan-