MR. PAUL A. MURPHY, field laboratory of plant pathology, Charlottetown, P. E. I., has resigned his position as officer in charge of potato disease investigation under the Dominion Department of Agriculture and will take up work on April 1, as assistant with Dr. Pethybridge in the division of seeds and plant diseases in charge of plant pathological work in Ireland. His new address will be Royal College of Science, Dublin.

ASSOCIATE CURATOR W. R. MAXON, of the U. S. National Museum, and his assistant, Mr. Killip, are making the Cinchona Tropical Botanical Station their base during March and April, while carrying on botanical exploration of the northern slopes of the Blue Mountains of Jamaica. Only small areas of this region have been actually explored by botanists, and it is to be expected that many interesting types of ferns and angiosperms are yet to be discovered in the primeval forest which covers this region.

WE learn from the *Journal* of the American Medical Association that Dr. Victor G. Heiser, of the Rockefeller Foundation, has returned to New York after a trip to Porto Rico with Dr. Grant to make a study of sanitary conditions of the island, especially as regards hookworm disease. Dr. Louis Shapiro, of the Rockefeller Institute, is now in Colombia at the request of the Colombian government, making a study of the prevalence of leprosy, malaria and hookworm disease.

THE Puget Sound Biological Station will hold its annual session, beginning June 21 and continuing for six weeks with the class work. The station, however, is open several weeks longer. The staff, exclusive of assistants, this year will consist of Dr. B. M. Allen, embryology, University of Kansas; Dr. Nathan Fasten, morphology, University of Washington; Dr. T. C. Frye, director, algæ, University of Washington; Professor F. W. Gail, algæ, University of Idaho; Dr. E. J. Lund, physiology, University of Minnesota; Dr. V. E. Shelford, ecology, University of Illinois, and Professor A. R. Sweetser, plant taxonomy, University of Oregon.

PROFESSOR ALBERT M. REESE, of West Virginia University, lectured upon "The Work of the Tropical Biological Station of British Guiana," with special reference to Crocodilia, on March 5, at Oberlin College.

PROFESSOR ARTHUR KEITH delivered the Galton lecture before the Engineers' Education Society on February 16, the anniversary of Sir Francis Galton's birth.

AT a public meeting held on March 7, at Oxford University, it was decided to form the "Osler Institute of General Pathology and Preventive Medicine" as a permanent memorial to the late Sir William Osler.

PROFESSOR OTTO BÜTSCHLI, of Heidelberg, distinguished for his contributions to cytology and other departments of experimental zoology, died early in February, aged seventy-two years.

UNIVERSITY AND EDUCATIONAL NEWS

THE General Education Board has appropriated $250,000 to an endowment fund of at least $500,000 to be used by Howard University for medical education, "the income from the appropriation to be made available pending the completion of the full amount."

PLANS have been completed for a new chemical laboratory at Cornell University, and work will start immediately upon the closing of the spring term. The increased facilities which the new laboratory will afford will enlarge the scope of the department and will make possible the opening of new branches, in particular a department of industrial research for chemists.

ACCORDING to plans now being considered by the authorities of the Johns Hopkins University, the libraries of the hospital, the school of hygiene, and the medical school ultimately will be collected under one roof in a new library building to be erected in the hospital group.

GIRTON COLLEGE, Cambridge, has received a gift of £10,000, the capital and interest of

which are to be applied during the next twenty years for the encouragement of scientific research by women in mathematical, physical and natural sciences.

Dr. G. Canby Robinson, dean of Washington University Medical School, St. Louis, has resigned to accept a position as dean and professor of medicine in Vanderbilt University, Nashville, Tenn.

Dr. Arthur M. Pardee, professor of chemistry at Washington and Jefferson College, has been appointed professor of chemistry and head of the department at the University of South Dakota to take effect next September.

The *British Medical Journal* states that in the appointment of professors to German universities precedence is at present being given to university teachers who have left towns which have passed out of Germany's possession. The anatomist, Professor Hugo Fuchs, who had recently been appointed to Königsberg, has thus been transferred to Göttingen as Merkel's successor.

DISCUSSION AND CORRESPONDENCE

IONIZATION AND RADIATION

Recently I came across a communication by Professor R. A. Houstoun[1] in which it was proposed to explain ionization of gases by X-rays on the basis of the classical conception of electrodynamics, by considering the intereference of spherical wavelets in which the phases are distributed at random. Professor Houstoun stated:

> When X-rays pass through a gas, only a very small fraction of the molecules—in favorable circumstances, one in a billion—is ionized by them, and the extent of this ionization is unaffected by temperature. Writers on radiation seem to have difficulty in reconciling this with the wave theory of light. I venture to suggest that the difficulty arises from an imperfect comprehension of what the wave theory requires.

After applying Rayleigh's solution of the problem of the phases at random to ionization, he arrived at the conclusion:

> Thus it is not necessary to assume that X-rays consist of neutral atoms, or that the ether has a fibrous structure, or to take refuge in the nebulous phraseology of the quantum theory; the explanation follows naturally from the principle of interference as expounded by Fresnel.

This explanation of ionization occurred to me some ten years ago but I had soon to abandon it because it led to results which are at variance with facts.

Let I/r^2 denote the intensity in a wavelet at a distance r from the source, and n be the number of wavelets coincident at that distance. Then the probability of a resultant intensity greater than J is given by

$$e^{-(Jr^2/nI)}.$$

Therefore if J equals the minimum intensity necessary to ionize the molecules of a gas, the number of molecules ionized is proportional to this expression. Thus on this theory the intensity of ionization of a gas falls off exponentially as its distance from the source of X-rays is increased—a result which is contrary to the experimental fact that the intensity of ionization varies inversely as the square of the distance.

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HOW DID DARWIN WORK?

Last year Professor Francis B. Sumner published a very suggestive and interesting paper in *The Scientific Monthly* for March, dealing with "Some Perils which confront us as Scientists." In it he quoted with approval an indignant query: "Under what project did Darwin work?"—and again, "one wonders what institution or organization Newton or Darwin belong to." The solitary worker of Down seems the incarnation of scientific genius illuminating the world with the products of its own combustion. On closer inspection, however, this conception is seen to be illusory. In the whole history of science there has perhaps never been a man who worked more faithfully and persistently on a project. It was his own project to be sure; but none the less a definite project. So also,

[1] *Nature*, April 24, 1919.