DR. DAVID WHITE, senior geologist of the United States Geological Survey and president of the Geological Society of America, received the degree of doctor of science from the University of Cincinnati on June 16, and the same degree from the University of Rochester on June 18.

BROWN UNIVERSITY has conferred its doctorate of science on Dr. George D. Birkhoff, professor of mathematics in Harvard University.

THE degree of doctor of science has been conferred by Williams College on Edward Barton, professor of sanitary chemistry at the University of Illinois.

WILLIAM BOYCE THOMPSON, of New York, president of the Roosevelt Memorial Association, who recently founded the Institute for Plant Research at Yonkers, N. Y., received the degree of doctor of laws at the commencement exercises of the University of Kentucky.

THE University of Cambridge has conferred the doctorate of science on Professor H. A. Lorentz, of Leiden, who has been lecturing in England under the auspices of the Anglo-Batavian Society.

THE University of St. Andrews will confer the honorary degree of LL.D. on Herbert William Richmond, University lecturer in mathematics in the University of Cambridge, retiring president of the London Mathematical Society, and Sir Robert Robertson, chief government chemist, London.

ON the occasion of the birthday of the King of England the following have been knighted: G. H. Knibbs, director of the Bureau of Science and Industry, of Australia; W. J. R. Simpson, professor of hygiene, King's College, London; Dr. H. W. G. Mackenzie, Royal College of Physicians, and J. Evershed, director of the Kodaikanal and Madras Observatories.

M. MOLLIARD, dean of the faculty of science of the University of Paris, has been elected a member of the Paris Academy of Sciences in the section of botany to succeed the late Gaston Bonnier.

THE Helmholtz gold medal, awarded once in ten years by an international committee for the most significant research in the domain of optics, has been given to Professor K. von Hess, of Munich, for his investigations on color vision.

THE Swedish Medical Association has founded a gold medal, called the "Gullstrand Medal," in honor of Dr. Alvar Gullstrand, professor in physiologic and physical optics at Upsala. This prize will be awarded for the first time in 1932 and thereafter each tenth year, without regard to nationality.

DR. G. N. LEWIS, of the University of California, has been elected an honorary member of the London Chemical Society.

PROFESSOR JACOB G. LIPMAN, of Rutgers College, has been elected a member of the Swedish Royal Society of Agriculture.

AT the recent meeting in Montreal of the Canadian Medical Association a resolution of thanks was passed to Dr. T. C. Banting, of Toronto, for the discovery of insulin. It was announced that the Canadian Government would be asked to offer suitable recognition of Dr. Banting's services.

A FAREWELL banquet was tendered Dr. Perry G. Snow, retiring dean of the University of Utah School of Medicine, by the students of the medical association of the university on May 24. Professor L. L. Daines acted as toastmaster. Dr. Snow, who will be succeeded as dean by Dr. Ralph O. Porter, of Logan, Utah, will make a tour of the eastern medical schools.

THE silver loving cup, given by the Detroit Local Section of The American Society of Mechanical Engineers to the Associated Technical Societies of Detroit to be presented to the winner of the civic welfare papers contest, was won by Frank Burton, commissioner of buildings and safety engineering for the city of Detroit. The prize-winning paper was on "The fundamentals of city zoning."

GEORGE A. STETSON, assistant professor of mechanical engineering at Yale University, and for the past four years editor of the *Transactions* of The American Society of Mechanical Engineers, has resigned both these positions to enter the wholesale coal business in Boston.

DR. HERMAN M. BIGGS, New York State commissioner of health, formerly professor of medicine in the University and Bellevue Hospital Medical School, died on June 28, of pneumonia, at the age of sixty-three.

UNIVERSITY AND EDUCATIONAL NOTES

THE University of Chicago has announced a gift of $200,000 from the Seymour Coman estate, the income to be used for "scientific research, with special reference to preventive medicine and the cause, prevention and cure of diseases."

AT the commencement exercises of Rensselaer Polytechnic Institute last week, the alumni association made initial plans for the celebration in October, 1924, of the centennial of the institute.

HERBERT S. HADLEY, formerly governor of Missouri, has been elected president of the University of Missouri, to succeed Dr. Frederic A. Hall.

MR. CHARLES W. PUGSLEY, of Lincoln, Nebraska, assistant secretary of agriculture, has presented his resignation to Secretary Wallace and has accepted the presidency of the South Dakota College of Agriculture and Mechanical Arts.

DR. J. HOWARD BROWN, Europa, Miss., and Dr. William L. Holman, San Francisco, have been appointed associate professors in bacteriology at Johns Hopkins Medical School, to succeed Dr. Stanhope Bayne-Jones, who resigned to become head of the department of bacteriology in the University of Rochester Medical School.

DISCUSSION AND CORRESPONDENCE

ON THE DONNAN EQUILIBRIUM AND THE EQUATION OF GIBBS

THE theory of membrane equilibrium due to F. Donnan (1911) is exciting much attention at the present time. There is no doubt that it is one of the most important contributions to colloid chemistry, and as the work of a fellow countryman, I do not wish to diminish the praise that has been given to it. Nevertheless, it is of historical interest to find that the Donnan equilibrium is one more addition to the list of theories implicit in the work of J. Willard Gibbs, published in the transactions of the Connecticut Academy in 1875. It is remarkable that Gibbs' equation has been overlooked for more than forty years, in view of the fact that membrane equilibrium enters into so many problems.

The following quotation is taken from the 1906 edition of "The Scientific Papers of J. Willard Gibbs," Vol. 1, p. 83:

> We will, however, observe that if the components S_1, S_2, etc., can pass the diaphragm simultaneously in the proportions a_1, a_2, we shall have for one particular condition of equilibrium
>
> $a_1 m_1' + a_2 m_2' + \text{etc.}, = a_1 m_1'' + a_2 m_2'' + \text{etc.}\ldots\ldots$" (78)
>
> a_1 = equivalent weight of substance S_1
> a_2 = equivalent weight of substance S_2
> $m_1' = m_2'$ are the potentials of S_1, S_2 inside the membrane
> $m_1'' = m_2''$ are the potentials of S_1, S_2 outside the membrane
>
> If S_1, S_2 behave like perfect gases, equation (78) can be simplified since $dm_1 =$ at. d. log p_1 (285)
> where t is the temperature and p the pressure
>
> $$\log p_1' + \log p_2'' = \log p_1'' + \log p_2''$$
>
> expressing concentrations in the conventional manner this becomes
>
> $$[S_1]' \times [S_2]'' = [S_1]'' \times [S_2]''$$

Equation (78) applies to solutions of electrolytes which do not obey the gas laws, but we have stated this simple form of it for comparison with Donnan's equation:

$$[\text{Na}]' \times [\text{Cl}]' = [\text{Na}]'' \times [\text{Cl}]''$$

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IRON-DEPOSITING BACTERIA

THE presence of three kinds of iron-depositing bacteria (*Spirophyllum ferrugineum* Ellis, *Gallionella ferruginea* Ehrenburg, *Leptothrix ochracea* Kützing or *Chlamydothrix ochracea* Migula) in the natural chalybeate waters around Yellow Springs, Ohio, seems not to have been reported previously.

Gallionella, according to Harder,[1] has been reported in three localities in the United States, *viz.*, from mines in southwestern Wisconsin, central Minnesota and from the city water supply of Madison, Wisconsin. As found at Yellow Springs, Gallionella, as well as the other two genera mentioned above, is abundant in the water that issues to the surface in the Cedarville limestone. One of these chalybeate springs has made a large deposit of ocherous material, which gives us some indication that the deposition at this particular spring has probably been going on for a long time.

As noted by Harder[1] it is quite striking that these iron bacteria are so peculiarly distributed, their distribution sometimes seeming to depend upon the amount of iron in the water, but often on other less well-known causes. We have many springs in this vicinity and these bacteria appear in a very few of them. The causes of distribution as well as many morphological and physiological features of these iron-depositing bacteria remain unsettled.

O. L. INMAN
ANTIOCH COLLEGE

WATER GLASS AS A MOUNTING MEDIUM

THE use of the common water glass or egg preserver as a mounting medium for microscopic objects has not been reported to my knowledge. Very recently I have had occasion to use it with such apparently successful results that I am forwarding this note in the hope that others who possibly have tried it successfully or otherwise will give us the benefit of their experiences.

It is used in the same manner that one would employ with Canada balsam, but has the added advantage that dehydration is not necessary. The medium at the periphery of the cover glass quickly hardens to the consistency of glass itself, thus sealing in the liquid center in which the specimen is held. The liquid condition of the medium surrounding the specimen, while viscous enough to prevent movement,

[1] Harder, E. C., "Iron-depositing bacteria and their geologic relations," U. S. Geological Survey Professional Paper 113.