been patented. He was classed among the most brilliant of the younger organic chemists of the country.

THE sixth annual meeting of the Western Psychological Association met at Mills College, Oakland, California, June 18 and 19. The retiring president, Professor W. R. Miles, of Stanford University, exhibited a series of motion-picture films showing the learning and other performance of rats. Professor Harvey A. Carr, of the University of Chicago, president of the American Psychological Association, attended the meeting and gave an address on "Animal Learning." The officers elected for the succeeding year are: *President,* Dr. Kate Gordon, University of California, Southern Branch; *Vice-president,* Dr. T. L. Kelley, Stanford University; *Secretary-Treasurer,* Dr. Warner Brown, University of California.

AT a meeting of the University of Buffalo Physical Science Club, held on June 3, the following officers were elected for next year: Dr. Brian O'Brien, *president;* Professor L. G. Hector, *vice-president.* Since February 1 the club has heard the following speakers: Dr. C. M. Olmstead, on "The Solar Corona"; Professor T. F. Cooke, on "The Permanent Electrification of Solid Dielectrics"; Professor W. F. G. Swann, of Yale University, on "The Relation of Electrodynamics to Terrestrial Electricity, Terrestrial Magnetism and Gravitation"; Dr. L. I. Dana and Dr. O'Brien, on "Reports on the Meeting of the Physical Society at Washington"; Professor E. J. Moore, on "The Value of 'G' at Buffalo, N. Y."

THE annual meeting of the Society of Chemical Industry, which begins in London on July 19 and continues throughout the week, will take this year the extended form of a congress of chemists, at which not only British but international chemical interests will be strongly represented. The Duke of York and the Lord Mayor will be present at the delivery by Lord Balfour of the third Messel Memorial Lecture on the opening day at the Mansion House. The program for the week includes an exhibition of British chemical plant at the Central Hall, Westminster. This year Mr. W. J. U. Woolcock, the president, completes two years' service. His successor will be Mr. F. H. Carr.

THE Royal Observatory of Belgium, which was founded by the Dutch government in 1826, celebrated its centenary on June 8.

TWO members of the Soviet Botanical Expedition recently arrived in an exhausted condition at a small station in Bokhara, 500 miles from Tashkent. They report that natives attacked the expedition and plundered and destroyed the entire equipment. The fate of the other members is unknown.

THE Rockefeller Foundation has contributed to the University of Hawaii $20,000 a year for five years as a special research fund for a study of the biological, mental and social characteristics of the peoples of Hawaii.

UNDER the Clarke-McNary Act, the forest service will distribute $607,670 among 33 states to aid in preventing forest fires and $35,000 will be spent generally in forest taxation studies. Both sums became available on July 1, at the beginning of the fiscal year.

THE League of Nations commission of experts on reform of the calendar has decided to recommend that the second Sunday in April be the fixed date for Easter. The decision is subject to agreement with the Holy See, which was not represented at the latest meeting of the commission.

UNIVERSITY AND EDUCATIONAL NOTES

EUGENE M. NILES, of Cambridge, who died May 19, leaves, according to the terms of his will, $135,000 to Tufts College, Boston, with the provision that it be used in providing scholarships and rendering assistance to deserving and needy students.

THE late Mr. W. W. Rouse Ball, fellow of Trinity College, made the following benefactions to the University of Cambridge: £25,000 to found a professorship or readership of, or directly connected with, mathematics; and a further sum of a like amount to found a professorship or readership of some branch or branches of modern English law; and a further sum of £10,000 to be invested as a separate fund and the income to be used for the benefit of the university library.

BROWN UNIVERSITY announces the appointment of Dr. Norris W. Rakestraw as assistant professor of chemistry. He will have complete charge of the teaching of inorganic chemistry and will give the courses that were given previously by Professor H. F. Davison. Professor Rakestraw has spent the past year at Oberlin College where he took the place fo Professor Harry Holmes. Dr. Egbert K. Bacon has been appointed instructor in chemistry.

DR. PHILIP ERNEST SMITH, now associate professor of anatomy at the University of California, where he has been for fourteen years, has accepted an appointment to a similar position at Stanford beginning next September.

DR. VERNON A. JONES, recently appointed associate professor of educational psychology at Clark, will carry on the work which has been conducted for the past thirty-six years by Dr. William H. Burnham, whose retirement was recently announced. Dr. J. W. Bridges, professor of psychology at McGill University, has been appointed special lecturer in genetic psychology during October and November in absence of Professor Walter S. Hunter, who will be in Europe

establishing connections for the *Journal of Psychological Abstracts,* of which he has been made editor.

AT the University of Minnesota, the following promotions have been announced in the School of Chemistry: Dr. George H. Montillon, from assistant professor to associate professor of chemical engineering; Dr. Lloyd H. Reyerson, from assistant professor to associate professor of inorganic chemistry; Dr. Henry M. Stephens, from instructor to assistant professor of inorganic chemistry, and Dr. Arthur E. Stoppel, from instructor to assistant professor of technological chemistry. The following promotions have been made in the College of Engineering and Architecture: J. O. Jones from associate professor to professor of hydraulics; George L. Tuve from instructor to assistant professor of steam engineering, and Orrin W. Potter from instructor to assistant professor of drawing and descriptive geometry.

DISCUSSION

AMOEBOID MOVEMENT

IN an important recent paper on the subject of amoeboid movement[1] Professor S. O. Mast refers to a hypothesis suggested by me in a former paper.[2] In a footnote on page 407 he says:

> Pantin concludes that locomotion in Amoeba is due to differential imbibition and contraction. He says (p. 61): "Water is actually abstracted from the hind end of the amoeba, and imbibed by the protoplasm at the anterior end. A water current is therefore set up towards the anterior end. This current, aided by the contraction of the ectoplasmic tube, would give rise to the endoplasmic stream." He does not, however, explain contraction, and it seems to me that entrance of water at the anterior end and exit at the posterior end would tend to produce a current in the plasmasol from the anterior toward the posterior end, not in the opposite direction as maintained by Pantin.

I do not want to discuss here fully the complex mechanics of amoeboid movement, but as the above criticism is based upon a misunderstanding I would like to make the matter clear.

(1) The question of the contraction of the gelated "ectoplasm" (= plasmagel) surrounding the fluid "endoplasm" of the amoeba (except at the anterior end) is fully discussed in my paper and on my hypothesis a simple explanation of the contraction is offered, based on the analogy between this and the syneresis of gels (particularly on pages 61, 63 and 64 of my paper).

(2) It would seem that Professor Mast assumes that I intended to convey the idea that, during locomotion, water is imbibed by the anterior end of the amoeba *from the external medium.* As he points out (and as is also pointed out earlier in my paper on page 37), this would result in a protoplasmic stream from the anterior to the posterior end of the amoeba; the reverse of that actually observed.

But on page 37 in my paper reasons are given for supposing that such an imbibition from the external medium does *not* occur. It is there suggested that water gained by the swelling protoplasm of the anterior end comes not from the external medium *but from the posterior protoplasm of the amoeba itself.* Obviously, this will cause a stream from the posterior to the anterior end of the amoeba, as is actually observed to be the case. My hypothesis is thus consistent with these facts.

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[1] *Journ. Morph. and Physiol.,* 41, p. 347.

[2] *Journ. Marine Biol. Assoc. U. K.,* XIII, p. 24.

DO CILIATED ORGANISMS ROTATE COUNTER-CLOCKWISE WHILE SWIMMING?

IN SCIENCE of April 9, p. 385, E. E. Wildman asks, in the title of his paper, Why do ciliated animals rotate counter-clockwise while swimming? The best complete answer to this question is: "They don't."

In this paper Wildman says, "A study of ciliated and flagellate protozoa, the larvae of sponges, coelenterata, echinoderms, lamellibranch molluscs and annelids resulted in the rather surprising discovery that they all show a counter-clockwise rotation on the polar axis while swimming."

This far-reaching conclusion is based on the observation of twenty-six species of organisms, including two ciliates, "a *Paramecium* and a *Vorticella* species."

It was fortunate for this generalization that only twenty-six organisms were observed—the twenty-seventh might have turned to the right! For among the ciliate protozoa sixty-two species out of 165 turn to the right (Bullington, '25, Archiv für Protistenkunde); and in the rotifers, another ciliated group, very nearly all of about one hundred species studied (Professor Frazier Cochrane) turn to the right. A large proportion of the flagellates also turn to the right.

From his twenty-six observations recorded above, Mr. Wildman comes to the conclusion that "for the biologist" the meaning of "the freedom of the will" must be limited. The connection is a bit obscure; the paper becomes clear and logical, however, if one substitutes therefor the *obvious* conclusion that "the freedom of drawing conclusions" be limited.

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