

Railroad, as is well known, the University has lost an income of \$150,000 from funds invested in the railroad by the late Johns Hopkins. The sum of \$250,000, \$50,000 per annum, has been subscribed by friends of the University, but in spite of this the University is seriously hampered by the loss of its former income.

THE new building erected for the Ohio University at Athens has just been completed. It is a T-shaped structure, having a front of 156 feet and a depth of 131 feet. It contains an auditorium capable of seating about nine hundred persons; a gymnasium having a floor space of three thousand feet; a physical and electrical laboratory, a number of recitation rooms, offices, music-rooms, etc. The Ohio University is the oldest institution for higher education in the Northwest Territory, having been chartered in 1804. The main building, which is still in use, was erected in 1817. Ohio has now four universities, all of which have been provided by the Legislature with a permanent income.

COLBY University will begin at once the erection of a chemical laboratory to cost not less than \$30,000.

THE Alumnae Association of Bryn Mawr College has presented the College with \$8,000 for a scholarship as a memorial to the first President of the College, the late Dr. James E. Rhodes.

DR. CHARLES DE GARMO, President of Swarthmore College, has been elected professor of the science and art of education at Cornell University. At the same University Professor H. W. Hibberd, of the University of Minnesota, has been elected assistant professor of railway engineering.

DR. H. EBERT, of Kiel, has been appointed professor of physics at Munich.

M. JENVRESSE has been appointed professor of industrial and agricultural chemistry in Besançon, M. Dubois associate professor of chemistry at Claremont, and M. Matignon lecturer in mineralogical chemistry at Lille, filling temporarily the chair vacant by the death of M. Joli.

AN anonymous donor has offered £10,000 for the extension of the buildings of Aberdeen

University on condition that the government grant £20,000 for this purpose. It is expected that the town will also assist.

DISCUSSION AND CORRESPONDENCE.

BREVITY IN CITATIONS.

TO THE EDITOR OF SCIENCE: In one small matter, at least, the bibliographical reform which is making great strides has as yet failed to produce any improvement over past conditions. And it is not in the spirit of criticism, but in the hope that needed relief may be afforded, that public attention is hereby called to this item.

All authors who devote that care to bibliographical citations which is desirable give an exact statement of the volume, pages, plates, etc., for each paper or work to which reference is made; and one might well wish that this were at times more general, especially where an entire half day has been devoted to the search of a loosely quoted passage which happens to be essential to the point in mind. No one would desire to limit or in any way discourage this practice, but there is one feature that seems to be a waste of space, time and energy—namely, the endless repetition of the words volume, number, part and page, or their equivalent in some other language. Even in the usual abbreviated form in which such words appear they mean, in the aggregate, not a little space and time to both author and publisher. I am aware that individuals have endeavored more or less consistently and sometimes successfully to abandon them, but despite this the words continue to be generally used. Is this not largely because there has been no agreement as to the form a citation shall take, and, consequently, some uncertainty as to the interpretation of the reference, which causes the careful student to hesitate in introducing a system that may trouble or mislead his readers.

Our botanical confrères adopted in 1895, at the Madison Botanical Congress, a set of rules for citation which appear in every way admirable. They are clear, concise and seemingly complete, and the saving in their use is evident from the examples given. I have no means of knowing how generally they have been adopted by botanists, even in this country, and it is, of course, questionable whether they would be in-

troduced by the investigators and writers of other countries for evident reasons. To be permanently valuable to science, and to effect for the world a real saving, such measures must needs be international in character.

The admirable cards of the International Bibliographical Bureau at Zürich still continue to add in abbreviated form the words referred to above. Some such rules as those adopted by the Botanical Congress could be promulgated by the Bureau, with the hope that they would be generally understood and in time generally adopted. Am I wrong in believing such a movement for simplicity and uniformity in citation (1) desirable, (2) possible, (3) most likely to succeed under these circumstances?

HENRY B. WARD.

UNIVERSITY OF NEBRASKA.

SCIENTIFIC LITERATURE.

Pflanzenphysiologie, ein Handbuch der Lehre vom Stoffwechsel und Kraftwechsel in der Pflanze. Zweite völlig umgearbeitete Auflage. DR. W. PFEFFER. Leipzig, Wilhelm Engelmann. 1897. Erster Band. Stoffwechsel.

It is safe to say that no handbook of plant physiology has yet appeared which, for comprehensiveness and breadth of treatment, keen criticism of conflicting researches, truthfulness of perspective, accuracy of detail and logical delimitation of the subject and its branches can be compared to Pfeffer's encyclopedic work, which now comes to the second edition. Perhaps no greater tribute to the merit of this great work and the master mind that planned it can be given than the fact that, after sixteen years of the most productive research in the history of botany, the author does not find it necessary to alter his method of treatment, although the establishment and development of many important principles have taken place in this period. The first volume is devoted to chemical physiology, and the second, now in preparation, to physical physiology, or phyto-dynamics. The treatment is strictly inductive, with no lapses into speculation, or leanings toward vitalism, and, moreover, all the subjects included are fairly physiological, but scant discussion being given to ecological adaptations,

though the method of variation is necessarily pointed out. The ten chapters of the first volume, now at hand, discuss the province of physiology, the nature of irritability, variation and hereditary, morphological-physiological considerations, swelling and molecular structure, mechanism of interchange of matter, mechanism of interchange of gases, the movements of water in the plant, nutrition, organization and energy of metabolism, respiration, fermentation and translocation. The contents of the separate chapters afford a ready appreciation of the development of the subject from 1881 to 1897, a record of progress in which Dr. Pfeffer and his students have taken an important part. The keen critical faculty of the author has enabled him to express clearly the condition of important questions yet in controversy, and, throughout the entire volume, generous and just estimate is made of the work of physiologists outside of Germany.

The author does not accept the term 'Energid,' of Sachs, as the physiological unit, and finds that 'cell' or 'protoplast' is still useful in that capacity. Barymorphose, photomorphose, etc., by the same author, are shown to be inapplicable to the influence of external agencies upon form and development. The foam structure of protoplasm, as described by Butschli, finds place in the discussion of the composition of protoplasm. Cilia and vacuoles are described as organs which may arise *de novo*, while no decision is reached as to the much harassed centrosome question.

Full place is given to recent researches showing the invariable connection between nuclei and the formation of wall membranes, and the facilities afforded for the translocation of plastic material, as well as of the protoplasm itself by means of the interprotoplastic threads, is pointed out. A new lease of life is given this theory by the adduction of evidence from recent researches that such substances as the oils are known to pass membranes in a finely divided condition.

The micellar theory of Nageli is used as a basis of the discussion of molecular structure, although the enlargement of the section devoted to this subject is due to collection of detail rather than development of principles involved.