therefore (and I wish for the present) to retain the word phototropy in its most usual botanical sense.

In this sense phototropy refers specifically to the orientation by organisms in response to an intensity gradient. There is another set of reactions closely related to the phototropic, known as phototactic, in which preference is shown for light of either greater or less intensity without immediate reference to orientation. It is aside the present purpose to discuss the relationship between the two. The two kinds of phototactic reactions, according as the preference is for and the movement into regions of greater or less intensity, may be referred to as photophilic and photophobic, respectively. The two phototropic reactions may be distinguished by the prefixes dia and para according as the orientation is such as to allow a maximum or minimum of radiation to be *effectively* absorbed.

In botany there are other photic effects which I have not enumerated; such as phototonic, photoclistogamic, photoauxesis, photoperiodism, photolysis, and certain others which upon close inspection may possibly be classified—as particular aspects of phototropism or some other effect. These bring along no inconsistencies—only for the term photolysis it is suggested that the meaning given by the chemist be the recognized one (*viz.*, dissolution or solution of cells or substances).

I am suggesting the use of the term photopathy in a rather general sense and with a connotation that is suggested by the root *pathos* when used in such a word as pathology. Photopathy then includes such effects as photomania, photalgia, photerythema, photoncia (swelling), photoptarmosis (sneezing). An independent position should perhaps be given in the chart to photomorphosis or photomorphism for the structural effects in organisms due to light.

Through this note I hope that an impetus may have been given to those who are interested in the various effects of radiation, and of light—photochemical, photophysical and photobiological—to give some attention to certain matters of nomenclature that may result in clarity and unity of usage in the widely separated branches of science. It is hardly to be expected that my first suggestions given above on such matters of nomenclature will be equally satisfactory to the botanist, the zoologist, the chemist and the physicist, and shall we say, the pathologist or the phototherapist.

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pears as rheotropism which has already a well established meaning in zoology different from that intended here. A more desirable word it now seems to me is *rheomorphism*.

THOMAS CORWIN MENDENHALL

T. C. MENDENHALL, as he always signed himself, had a special talent as an educator, a valuable and rather rare gift, and with this he had a strong interest in scientific knowledge, and tireless energy in seeking it. Without the advantage of a college education himself, his ability and industry were such that at the age of 32 he was the first member elected to the first faculty when what is now the Ohio State University was founded in 1873. His steadfast devotion to education is shown by the fact that just 50 years later, when living in retirement, he was selected as the president of the board of trustees of this same university, and he was serving actively in this capacity at the time of his death on March 22 last at Ravenna, Ohio. He was born in the neighboring town of Hanoverton, October 4, 1841, and thus lived to the good age of over 82 years.

Dr. Mendenhall's success in educational work was due to clearness of expression and aptness of illustration, charm of manner and interest in men, as well as in his love of knowledge and of making it useful to others. After preliminary training as a teacher, he became the first professor of physics in the Ohio State University, and served in this capacity for five years. At this time scientific education in the United States was in an early stage and Dr. Mendenhall exerted an important influence in its development in the middle west. He refers to the period as one "when those engaged in scientific research even for a very small portion of their time were but a handful." An associate of those days writes "he was full to overflowing with the purpose to do his share in giving to science study its deserved place in public schools and placing it upon the proper plane in colleges." When Japan determined to develop a great university at Tokyo she called for help from England and America, and Professor Mendenhall was one of a group of able men invited. He went to Japan in 1878 as professor of physics in the Imperial University, and remained three years. He then returned to the Ohio University. Later, after service with the government, he was president for several years of the then recently organized Rose Polytechnic Institute, and again after another term of public duty, he was president for seven years of the Worcester Polytechnic Institute, from which he retired in 1901. Thus in the educational field he organized the departments of physics in two universities, was president of two engineering colleges, and closed his career as a trustee of his state university. His students remember his clear exposition, his kindly interest and his helpful practical advice; his stimulating influence affected the future of many men. When Dr. Mendenhall retired from the Rose

Polytechnic Institute in 1889, the student body united in a tribute of affection and appreciation.

Although he commenced and closed his career in educational work, three times returning to it, Dr. Mendenhall's life was filled also with other activities having to do with science and engineering, in which he showed his ability for organization and administration, and his interest in science and its application. He was for five years Superintendent of the Coast and Geodetic Survey, and a mere list of his other assignments shows the range and extent of his activities over a number of years. He was a professor in the U. S. Signal Corps for several years engaged in investigations of atmospheric electricity, a member of the Lighthouse Board, a member of the first Bering Sea Commission, a member of the United States and Canadian Boundary Commission, a member of the Massachusetts Highway Commission, a United States delegate to the International Electrical Congress in 1893, president of the American Association for the Advancement of Science, president of the American Metrological Society, Superintendent of the Office of Weights and Measures, first chairman of the U. S. Geographic Board, vice-president of the Cosmos Club, the Scientific Club of Washington, and a member of the National Academy of Sciences and of many other organizations. This list illustrates his willingness to serve the public, and his active participation and fellowship in the organized efforts of scientific men. He left Washington thirty years ago, after some very active years, and those who knew him in those days remember his many-sided interest in scientific endeavor, and particularly his clear and pleasing addresses, always making his subject entertaining by apt illustration. During one period Dr. Mendenhall's courage in following high ideals of public service was shown by the sacrifice of his own interests and comfort in resisting demoralizing small politics in government administration; subsequent events confirmed the correctness of his course.

While connected with the University of Tokyo, Professor Mendenhall made a measurement of the absolute force of gravity at Tokyo, and later, in 1880, measured the relative force of gravity between Tokyo and the summit of Fujiyama by swinging an invariable pendulum at the two places, and from this made a computation of the mean density of the earth. While more precise determinations of this constant have been obtained by other methods, this measurement was the best of its kind. Some years later, when Superintendent of the Coast and Geodetic Survey, he was mainly responsible for the development of an improved portable apparatus for the measurement of the relative force of gravity by means of half second pendulums, which apparatus greatly increased the accuracy and facility of such determinations, and he planned the first extensive use of the apparatus in a transcontinental series of gravity measurements in 1894, and arranged for the cooperation of an eminent geologist in this work. It is substantially this apparatus which has been employed in the investigation of the condition of the earth's crust made in this country and elsewhere, in the years since. He first proposed the use of a ring pendulum for the absolute measurement of the value of the acceleration of gravity, a method which besides being of scientific value, is used in college laboratories.

Dr. Mendenhall was one of the American delegates to the International Electrical Congress in 1893, and took an active part in that gathering of eminent physicists from various countries, which resulted in the adoption of definitions for the electrical units; the original draft of these definitions, in his handwriting, is in the archives of the Franklin Institute.

In 1885, a few months after its completion, the Washington Monument was struck by lightning and seriously injured. Mendenhall, then in charge of the physical laboratory of the Signal Corps, after investigation in cooperation with Rowland, devised the scheme of protecting the monument from lightning, which has been successful.

The versatility of his interest is shown by his study of characteristic word lengths of various writers, and he originated the idea of using curves for this purpose, which curves he showed were distinctive for various authors, but practically constant for one writer.

Dr. Mendenhall was a contributor to scientific periodicals and reports, and published a small volume, "A Century of Electricity." His writings were clear and pleasing. He always sought to popularize science and to bring it to a wider circle, but never to lower its standards or ideals.

For some years he was compelled by ill health to rest in Italy, but with methodic effort and endless patience, he again built up his physique, so that he was able to return to his native state. In his later years of retirement in Ohio, in addition to his renewed connection with the university, he was an active voluntary worker among the children of his town, taking pleasure in instructing them in the rudiments of science.

Dr. Mendenhall received a number of honors and medals, both in this country and in Japan. On the presentation of the medal of the Franklin Institute to him in 1918 in recognition of his labors in physical research, it was said that "he is a typical American in that he found and created his own opportunities and indefatigably always gave the best that was in him to serve his fellows and his country."

GEORGE R. PUTNAM