this is the case, the radiation emitted by a positive ion combining with an electron should be the most efficient in aiding a photochemical action involving the same atom. Here again the problem is complicated if polyatomic molecules are considered. Radiation emitted by a hydrogen atom would probably be without effect on a hydrogen molecule. It has been shown that hydrogen is not activated in the Lyman region. It has been suggested that the study of band spectra might aid in the understanding of this field. Atoms are extremely accurately tuned systems and might not respond to radiation differing in frequency by one part in ten thousand. Whether the same holds true for molecules remains to be determined.

Reactions involving the halogens are peculiarly photosensitive. This may be due to the electron affinity of the halogens, especially in the monatomic state. It is rather difficult to understand why a diatomic halogen molecule should have an electron affinity, and there may be room for difference of opinion on this point. The atoms tend to take up electrons in order to complete their outer shells. The theory at once suggests itself that the effect of light is to disrupt the bond between the halogen atoms, permitting them to combine readily with substances having less electron affinity. As Nernst[13] has suggested, the fact that these reactions do not obey the law of photochemical equivalents can probably be attributed to the fact that one free chlorine atom is formed each time a molecule of chlorine reacts and that this free chlorine atom may disrupt a molecule of the other reacting substance leaving another unstable intermediate product. This series could be continued indefinitely until it came to an accidental end. He tried the use of acceptors in the case of bromine for the purpose of removing the free bromine atoms and found that the law of photochemical equivalents was then obeyed.

In conclusion, it may be stated that while the work done in the field of ionization and resonance potentials has done much to aid our ideas of atomic structure, it has done little from the standpoint of chemical combination. We may look for its development along these lines in the future.

W. ALBERT NOYES, JR.
UNIVERSITY OF CHICAGO

[13] *Z. Elektrochem.*, 24, 335, 1919.

ARTHUR LALANNE KIMBALL

ALTHOUGH Professor Kimball had been in delicate health for several years, and his friends knew that before long he would have to retire from active teaching, the end came with little warning. On the afternoon of October 21 he worked as usual at the laboratory. In the early evening of the following day he passed away.

He was born at Succasunna, N. J., October 16, 1856. Graduating from Princeton in '81 with high honors, he won the experimental science fellowship and was a graduate student and fellow in physics there the following year. From 1882 to 1884 he was fellow at Johns Hopkins, working under Professor Rowland. Here he received in 1884 his doctor's degree, having completed a research on the absolute determination of the ohm. Immediately thereafter he was appointed associate in physics at Johns Hopkins. In 1888 he became associate professor and filled this position with distinguished success until 1891, when he was called to Amherst. Here a new laboratory was built under his direction and for thirty-one years to the day of his death he was conspicuous for ability, friendliness and whole-hearted devotion to the college.

It is probable that his Princeton classmates could have predicted pretty accurately his future. When a man of keen intellect and indomitable will starts in a certain direction his course can be charted in advance. One who knew him intimately writes: "Since the excellence of his moral character, in purity, sincerity, kindness and courage was as marked as his intellectual ability, his studious habits did not keep him out of friendly touch with his classmates, and he shared in our affection no less than in our admiration." At Johns Hopkins his knowledge, his simplicity, honesty and kindliness endeared him to all. With self-sacrificing consecration and high ideals he entered upon his work at Amherst. His clear thinking was matched by his gift for clear

expression, and this fact was appreciated by his students. One of them on coming out of one of Professor Kimball's strikingly beautiful lectures on polarized light was heard to exclaim in a voice of mingled awe and admiration, "Say, fellows, I've sometimes paid good money for a lecture no better than that." A genuine compliment though a bit crude in form. Considerate of all but himself, Professor Kimball overestimated the ability of his body to stand the strain. Repeated sojourns in the Adirondacks served only temporarily to improve his impaired health. But against this background of physical ill his qualities of mind and heart shone with increased lustre. He showed courage akin to that of a wounded soldier on a field of battle. When strength was gone by force of will he carried on.

But the profound influence which this man everywhere wielded is not to be accounted for by gifts of intellect and charm of manner. Just as our physical weight depends partly on what is in us and partly on the planet under us, so a man's moral weight depends largely on the star toward which he strives; and no sketch of Professor Kimball, however brief, should omit mention of the fact that he was a religious man in every fiber. He believed in the church and helped in its work. His was an abundant, beneficent life, and while he enjoyed to the full that which is seen and temporal his character was built on the granite foundation of a faith in things unseen and eternal.

JOSEPH O. THOMPSON

SCIENTIFIC EVENTS

EXECUTIVE BOARD OF THE AMERICAN ENGINEERING COUNCIL

MANY problems of prime importance to the nation and to the engineering profession will be considered by the Executive Board of the American Engineering Council, governing body of the Federated American Engineering Societies, at its next meeting, which has been fixed for March 23-24 in Cincinnati.

The board's sessions will be held at the Ohio Mechanics Institute, President Mortimer E. Cooley presiding. On March 22 the committee on procedure will meet at the Hotel Gibson. Arrangements are under way for a meeting of Cincinnati engineers on the evening of March 23 at which addresses will be delivered by members of the executive board. The opening session of the board will be called at 9:30 A.M., to be followed by an afternoon session at 1:30.

Considerable additions to the membership of the Federated American Engineering Societies are in prospect, President Cooley informed the committee on procedure at its last meeting in New York City. At least a dozen engineering societies are about ready to join, he said. President Cooley was authorized to appoint a committee on increase in membership. John A. Stevens, of Lowell, Mass., has been selected as chairman.

The meeting of the committee on procedure was presided over by President Cooley and was attended by Vice-presidents Philip N. Moore, J. Parke Channing, Calvert Townley and Gardner S. Williams, S. H. McCrory, chairman of the finance committee, and Executive Secretary L. W. Wallace.

President Cooley was authorized to appoint a committee on transportation to advise the executive board at its Cincinnati meeting as to whether or not there are any points in the problems of the transportation of the United States to which the federation could with propriety and effectiveness give attention, and if so, to submit a plan in its report to the executive board.

Max Toltz, of St. Paul, was chosen chairman of the transportation committee. Other members include Con M. Buck, W. H. Hoyt, W. K. Hatt, Dean Perley F. Walker and J. S. Barelli.

The committee on procedure decided that the entire question of immigration was without the purview of the federation and that a committee could not properly be appointed to study any phase of it.

Acting upon representations from the Associated General Contractors of America, to the effect that the seasonable aspects of the building industry as well as climbing construction costs were problems constituting an alarming situation, the committee adopted a resolution "viewing with approval the proposed cooperative movement to remove or reduce the element of seasonable demand in the construction industry."

Willingness to name a committee to cooperate with some responsible agency that will