Dr. A. N. Goldsmith	(Institute of Radio Engineers)
E. F. W. Alexanderson	(Member-at-large)
Major-General Geo. O. Squier	" " "
Dr. A. E. Kennelly	" " "
Dr. W. Wilson	" " "
Prof. E. M. Terry	" " "
F. Conrad	" " "

The American section holds an annual meeting in Washington, D. C., in April. At this meeting the chairmen of the several technical committees present progress reports on the status of work in the field of the committee, and technical papers are presented by the various members of the committees. The committees are as follows:

Methods of measurement and standards.
Radio wave transmission phenomena.
Variations in radio wave direction.
Wave phenomena above three megacycles.
Atmospheric disturbances.

The work of the committee on methods of measurement and standards (chairman, Dr. J. H. Dellinger, Bureau of Standards, Washington, D. C.) is the determination of radio measurements and standards, with particular view to the types of measurement work done by the other committees of this organization. The committee promotes and participates in the improvement and standardization of methods for measuring frequency, field intensity of received waves, intensity of atmospheric disturbances, automatic recording devices, fading, and other types of radio measurements.

The committee on radio wave transmission phenomena (chairman, Dr. L. W. Austin, Bureau of Standards, Washington, D. C.) devotes itself to the encouraging and conducting of measurements upon received field intensities. It investigates, in connection with these measurements, diurnal and seasonal variations and effects of transmission under various conditions by day and by night, sunset and seasonal effects, observation phenomena, etc. For the assistance of participants in this work, certain high power stations send special signals to facilitate measurement.

The committee on variations of radio wave direction (chairman, Dr. Gregory Breit, Department of Terrestrial Magnetism, Carnegie Institution, Washington, D. C.) encourages and correlates research on the variations of wave direction with time, effects of topography on direction finder work, and the bearing of polarization and other variations upon apparent observed directions.

The committee on wave phenomena above three megacycles (chairman, Dr. A. H. Taylor, Naval Research Laboratory, Bellevue, Anacostia, D. C.) studies such phenomena as the daily and seasonal variations of received field intensities from high frequency stations, character of fading and atmospherics, determination of skip distances, comparison with other phenomena such as magnetic and solar variations, weather, etc.

The committee on atmospheric disturbances (chairman, Mr. H. T. Friis, Bell Telephone Laboratories, New York) promotes and coordinates measurements upon the intensity and direction of atmospherics, including daily and seasonal variations, characteristics of the various types of atmospherics, their frequency distribution, and methods of measurement including recording devices.

It is believed that this organization has a distinct field of usefulness in furnishing a meeting ground for the numerous workers on the various aspects of radio wave phenomena research. Committees and committee activities in the past few years have furnished a means of promoting acquaintance and a meeting place of ideas. The work covered by the several committees should be fruitful in the years just ahead in contributions to the better understanding and use of radio and in certain related problems of geophysics, composition of the atmosphere, etc. Observers contemplating participation in the work should, wherever possible, plan to continue for at least a year thus covering seasonal variations. It has been demonstrated that radio is unique among the fields of scientific work in having special adaptability to a large scale international research program. The phenomena that must be studied are world-wide in extent, and yet are in a measure subject to control by the experimenters. The chairman of each of the technical committees will be glad to receive communications from any persons desiring to cooperate in the work or to receive information on the organization or on measurement methods.

J. H. DELLINGER
BUREAU OF STANDARDS

JAMES FURMAN KEMP

JAMES FURMAN KEMP, professor of geology in Columbia University, was unexpectedly and fatally stricken on the morning of November 17 as he was about to board the train leaving his suburban home at Great Neck, Long Island, to come to the university. Only the day before he had met his classes and conferred with his associates with the same spirit and evident interest and enthusiasm that always marked him at his best, with not the faintest suspicion of impending calamity. Only thirty-six hours previously he had been the speaker of the evening at a largely

attended meeting of the New York Section of the American Institute of Mining and Metallurgical Engineers, where he described the mines in Spain and Portugal that he had visited in connection with the International Geological Congress held at Madrid, to which he was an accredited representative of no less than five different scientific organizations and institutions in addition to an appointment by the president of the United States.

James Furman Kemp was born in New York, on August 14, 1859, and came of Scotch and English forebears. After graduating from Adelphi Academy, in Brooklyn, in 1876, he went to Amherst, where he was graduated with the degree of A.B. in 1881, after which he came to the Columbia School of Mines, from which he received the degree of engineer of mines with the class of 1884. Here he had come under the influence of Dr. John Strong Newberry, the veteran geologist and paleontologist, and under his guidance became devoted to geological studies. During the next three years he pursued these studies abroad, chiefly at Leipzig and Munich. Returning to America, he entered the teaching staff at Cornell University, where he taught geology from 1886 to 1891, attaining the grade of assistant professor. He was called to Columbia as adjunct professor in 1891 and became head of the department of geology on the death of Professor Newberry the following year. From that time his service was continuous and unbroken except for four years of illness and recuperation following a physical collapse in 1914.

His scientific ability and geological bent were unerringly detected by Professor Newberry, founder of the department of geology at Columbia, who later made him his personal choice as successor. So his scientific activities began, following in the footsteps of a giant of the early days. The careers of these two men span the whole history of geology in Columbia; and most of its growth, from the time when a single instructor and a handful of students constituted the entire establishment, to the present day, with several hundred students and a staff of ten, has come within the lifetime of Professor Kemp. His own fame as a leader in the science of geology is responsible for much of this growth.

In 1906 Amherst, his alma mater, conferred on him the degree of Sc.D., *honoris causa,* and in 1913 McGill University awarded him the degree of LL.D.

In 1889 he married Kate Taylor, of Kingston, R. I., who survives him. He leaves also three children, James Taylor, now metallurgist with the American Brass Company at Waterbury, Conn.; Philip Kittredge, rector of St. Mark's Episcopal Church at Glendale, Calif., and Katherine Furman (Mrs. Chase Donaldson), of Great Neck, L. I. He lived to see them all established in their own homes and all pursuing useful careers.

For almost a quarter of a century I have been closely associated with Professor Kemp. This I count a great privilege, the result of one of the strange turns of life. Although I came to him as an utter stranger, he welcomed me and mine as one would a long-absent son, and in our lonesomeness took us to his own home to wear off the bewilderment of new and strange surroundings. From the very first hour I was made to feel that he fully accepted us, and in his inimitable manner he hopefully said that we could look forward to many happy times together.

At the time, I thought he must have detected the homesickness that was gnawing at my heart and had made a special effort to be consoling. Later I was to learn that such things were as normal for him as to breathe. Thus it was my good fortune to fall in with a truly remarkable man, one of the "salt of the earth," as he used to say of others, and with him I was privileged to work in a most intimate relation until the end of his life.

He had a genius for friendship with men. He liked to meet people. His circle of acquaintance was surprisingly large and he seldom forgot a face or a name. It is rare to find a man with such a gift, whom every one instinctively feels is his personal friend. Such, however, was the fine fortune of Professor Kemp, whose death has brought a feeling of bereavement to thousands of associates and former students.

Forty years of his life were devoted to service as a teacher, a calling that he looked upon as the greatest of privileges. He seemed to find no greater happiness than was afforded by those hours in the classroom with his young people around him, advising them, informing them, leading them and quite unconsciously setting an example for them in sane and helpful living that has a value above either great knowledge or large fortune. Their gratitude, as years developed greater appreciation of his real service, was enough remuneration to out-weigh all other rewards for him. The far-reaching influence and firm attachment that developed through so many years of this quiet service have been shown in the most gratifying manner in these recent days, for evidences of grief and expressions of appreciation have literally rained in on the surviving family.

As a teacher Professor Kemp had a rare combination of kindliness and serious concern, coupled with a never-failing buoyancy and humor. He had a very broad acquaintance with his own and related fields of knowledge and exceptional facility in presentation. He would give the most abstruse subject its human

and historical setting as well as its scientific relations. His discussions on this account never seemed to be isolated, but became readily a part of an understandable system.

His lectures were marked by literary skill; his sentences always fell with smoothness and grace; he was never in want of the right word. Simple illustration or apt anecdote was habitually used either to clarify the problem in hand or to lighten the treatment. His talks on scientific subjects were readily followed. His explanations were so fully developed that it was easy to overlook the fact that essentials had been presented. Not only were the fundamental principles included, but they were presented in a form that could neither be misunderstood nor readily forgotten.

The genial kindliness of the man and the personal attachment that always developed as acquaintance lengthened, tended to overshadow the excellence of his many other qualities. As a consequence, his students developed a desire to speak of him in more endearing terms than those usually applied to an excellent instructor. Thus the familiar name, "Uncle Jimmie," came. "Professor Kemp" of the first day soon became "Uncle Jimmie," to stay unchanged to the end of the story. For more than twenty years I have known every class that passed through his hands and have never seen an exception among them all. To every one he soon became "Uncle Jimmie," the beloved.

As a colleague his gentleness and generosity were the most conspicuous characteristics. His judgment was good, but his personal advice and example were more precious. He was willing to undertake more than his share. As his years mounted, and responsibilities multiplied, there came a time when physical endurance failed, and it took him years to recuperate. For four years then his regular activities were broken, but the loyalty of his friends and the rejuvenating power of a great will "to get back into the harness again," as he was wont to call it, finally won out and he came back to his old activities to continue with them with his usual effectiveness to the very day of his death. In later years every effort was made to shield him from excessive burden, and it is probable that his useful years were lengthened materially in this way.

His administration was characterized by a spirit of fairness and lenience. He would not over-urge his own claims and could always see the needs of others. Perhaps he was over-indulgent. He seemed to feel that he "could get along for this time," if someone else were to benefit by the self-denial. It caused him great distress to face tasks of discipline and they were always avoided if any other course were possible. An occasional trying experience of this kind made greater inroad on his physical resources than any other of his numerous and exacting tasks.

Professor Kemp was called upon for help in a thousand ways. He excelled as a mixer. He was always in demand as a speaker, as a member of committees and of commissions and delegations of all kinds. His brilliant wit and elegant form of expression and ready tact made him especially acceptable on many important occasions. He was most happy at functions where good fellowship and good feeling were to be cultivated. In late years it has been physically impossible for him to meet all demands of this kind.

Professor Kemp was one of the most distinguished and widely known geologists of his day. Scientific and learned societies loaded him with honors. Not only was he called to the highest positions in the leading scientific and technological societies in his field, but for more than a generation he has been active in their councils and they have looked to him to help formulate and maintain their policies. While at Cornell he was one of a group of thirteen who, thirty-eight years ago, organized the Geological Society of America. Only two of that small group now remain. Ever since that time he has been active in the councils of this society and has served in almost every capacity, becoming its president in 1921. He was a past-president of the New York Academy of Sciences and of the Society of Economic Geologists and vice-president of the American Association for the Advancement of Science. He was made president of the Mining and Metallurgical Society of America in 1912, received its gold medal in 1914 for his contributions to economic geology and was made an honorary member in 1917. In 1891 he became a member of the American Institute of Mining and Metallurgical Engineers and served as one of the board of managers, 1896 to 1898; as vice-president, 1903 to 1904; as director, 1905 to 1914, and as president, 1912. He gave to this organization some of the best thought of his life. He was also a member of the National Academy of Sciences, the American Association of Petroleum Geologists, the National Research Council, the American Philosophical Society and a fellow of the American Academy of Arts and Sciences.

In his busy life he found time for many and varied activities. For years he was connected with athletics at Columbia. He was interested in all sorts of outdoor sports and was surprisingly active in the field, taking great pleasure in a hard climb or a long walk. From its beginning he served as a member of the board of managers and as a scientific director of the New York Botanical Gardens. He was a member of the Columbia University Club, the Amherst Club and the Century Association of New York.

His touch with foreign scientific men and organizations is indicated by the fact that he was a corresponding member of the Geological Society of Stockholm; the Academy of Sciences of Kristiania; the Academy of Oslo; the Geological Society of Belgium, and the Geological Society of London. He was a familiar figure at international congresses.

Professor Kemp was a prolific writer. Most of his effort was given to economic geology or studies in the geology of ore deposits. But he also contributed much to structural and regional geology, especially of pre-Cambrian areas, and to the application of geology to engineering problems. He was the author of "Ore Deposits of the United States and Canada," issued in 1893, a standard text and reference book which passed through many subsequent editions. In 1895, the "Handbook of Rocks" was issued and soon became the leading guide in both laboratory and field, a place which it still maintains. Many bulletins and papers on special subjects may be found in the formal reports of the United States Geological Survey and of the New York State Survey. He was one of the founders and associate editors of *Economic Geology*. The complete bibliographic list is long and shows a wide range of interest as well as a facile pen.

In his scientific work simplicity of presentation, avoidance of speculation and a positive genius for application in a field not until recently recognized as an applied science were outstanding qualities. He had a peculiar competence in interpretation. His early engineering training gave him an especially good background for such service and he had the fortune to fit into a ripe time. So his fine training, coupled with a practical mind, made him an important influence in the field of mining geology, where his writing and advisory services have contributed greatly toward a better standing for geologists in the engineering field.

Those who know the history of geological thought in the last quarter of a century will recall that he was not readily swept off his feet. Old ideas were not abandoned without first finding something better. He was nevertheless a champion of progress and aided materially in the attainment of the present-day respect for the science to which he devoted his life. As a student of ore deposits none has surpassed him in zeal or understanding. One of the finest tributes that can be paid to his scientific work is that it is increasingly regarded as sound. It was never spectacular or speculative, but always calculated to a better practical understanding.

His advice was sought in many important projects and enterprises. As a recognized authority on ore deposits, he was often called on as an expert in litigation in the ownership of ore bodies by mining companies, and was still more frequently called into consultation by large interests on matters relating to development and future possibilities. The evident honesty of the man, the absolute certainty that he would do his best, and the conviction, in cases of contest, that his findings were to him the essential truth, were of inestimable value. There was never any doubt, even in the minds of opponents, about his sincerity or his fairness. This, coupled with his broad experience and extensive knowledge, left nothing more to be desired.

Not often could he be drawn into controversy. If, however, he felt obliged to present an opposing view, he was particularly considerate. He never took advantage by understatement of his opponent's position, and he never stooped to abuse or belittling comment. He took evident pride in formulating sometimes a more intelligible statement of his adversary's position than he himself had made. He seldom made even a temporary enemy.

Professor Kemp was a many-sided man. He was a man of firm faith as well as kindly deeds; a man of science who had not forgotten the religion of his youth; an engineer who had the imagination of a poet; a man of broad culture who was at the same time as simple wonder-minded as a child. His presence always created an atmosphere that was helpful. For so many years this influence has pervaded the work of his department at Columbia that gentleness has become a tradition. Those of us who know these things look on his passing with dismay. His work will go on, but his place can never be filled. His name also will soon become a tradition, one, I am sure, that will be endlessly helpful because of the leaven that is embodied in it. No institution can fail to reap lasting benefit from the service of such a man, and to him it is a fitting reward that his life should be crowned with so full measure of loyalty and devotion.

CHARLES P. BERKEY
COLUMBIA UNIVERSITY

SCIENTIFIC EVENTS

THE APPROPRIATION BILL OF THE DEPARTMENT OF AGRICULTURE

THE budget of the U. S. Department of Agriculture for the year ending June 30, 1928, reported to the House on December 13, includes the following items under the Bureau of Chemistry, the Bureau of Plant Industry and the Biological Survey:

Bureau of Chemistry

Biological investigation of food and drug products, etc., including investigations of the physiological effects