eralizations regarding relationship, group limits and classification be stressed. Where time is not restrictive, two courses, one introducing the student to the subject after the second plan, followed by a more advanced course emphasizing morphology, phylogeny, the broader groups and relationships, would seem ideal. It will probably be found that many of those advocating the first method really received their own initial interest through the second method, often in pre-college days.

The replies to our questionnaire also indicated a conviction that the psychologically proper time to interest youth in taxonomy is between the ages of 10 and 15 years. During that period young people are strongly interested in knowing things, and the collecting instinct, too, is strong. Later this interest wanes, to be replaced by more philosophical, abstract, emotional and idealistic interests. An interest in plants aroused in childhood often becomes permanent and intensified in later life. It was noted that a majority of the leading taxonomists had their introduction to the subject during this early period. The study of taxonomy should begin therefore in the upper grades and in high school. In scouting, particularly, there is an opportunity to begin the study under the most favorable conditions of outdoor programs, in summer when plants are growing. It is clear that if instruction is given at this period it must be after the second method.

In some respects I have seemed perhaps to have painted a rather gloomy view of taxonomy. While undoubtedly many of these points are serious ones, the outlook is not too dark. A spirit of optimism is found among most of those interested in the subject. The appreciation of taxonomy has greatly improved in many of our colleges. Classes show increased enrolment, and there is some indication of an increased demand for teachers. We are on the verge of an awakening, I think, to the importance of taxonomy in practical and cultural training.

OBITUARY

CHARLES LORING JACKSON[1]

BY the death on October 31, 1935, of Charles Loring Jackson, Erving professor of chemistry, emeritus, in Harvard University, American chemistry has lost one of the pioneers in chemical education and research in this country. At the time of his death he was the oldest as well as the senior officer in the university. He was born in Boston, Massachusetts, on April 4, 1847, and was a lifelong resident of that city. The son of Patrick Tracy Jackson, 2nd, a cotton manufacturer and merchant, and Susan Mary Loring, on both sides he was descended from long lines of distinguished Massachusetts citizens.

His preparation for college was obtained in private schools. In college he elected all the meager offering in chemistry of that time, and after graduation in 1867 became lecture assistant, with free tuition as his recompense, to Professor J. P. Cooke, who was still engaged in his single-handed struggle to create a chemistry department in the college. In April of the next year he was appointed "regular" assistant in chemistry, with the stipulation that Professor Cooke was to "teach him to be a chemist." Although he held this position for three years, and then, at the age of twenty-four, was appointed assistant professor, this arrangement did not entirely fulfil its promise. His time was largely occupied in teaching and running Cooke's elective course in qualitative analysis, the only course in chemistry with laboratory work at that time. In addition he served as storekeeper, "giving out the apparatus and keeping the accounts," and also to a considerable extent as janitor, "making up the reagents, filling the bottles and keeping them in order," so that his opportunities for study were restricted to odd moments which he could seize between duties. Weakened by an attack of rheumatic fever, in 1873 he decided to take a year's leave of absence for study in Europe. There at first he studied inorganic chemistry and inorganic analysis under Bunsen at Heidelberg, then organic chemistry under Hofmann at Berlin. This was a most important period in his career, for although he had never studied organic chemistry before, in a short time, as he himself states, he "lost his heart to organic chemistry and was ever after faithful to this love." The decision to devote himself to investigation in this subject resulted in his spending the following year in Berlin under Hofmann, and when he returned to Cambridge in 1875 he had the fine record of eight published papers to his credit.

In 1881 Jackson was promoted to a full professorship and from 1897 to 1912, when he resigned because of ill health, he was Erving professor of chemistry. From 1894 to 1903 he was chairman of the division of chemistry. During nearly all his service in the university he was a proctor, residing in Gray's 5 from 1868 to 1871 and in Holworthy 11 from 1871 to 1918.

As a teacher Professor Jackson is associated almost entirely with Chemistry 1. This was the first course in descriptive inorganic chemistry involving systematic individual laboratory practice for the students to be offered in Harvard College. He gave the course

[1] Minute on the life and services of Charles L. Jackson presented to the Faculty of Arts and Sciences of Harvard University.

for the first time in 1870–71 and very shortly adopted an order of presentation of material which was quite different from that almost universally employed both then and now. Instead of dealing at the beginning with the more difficult non-metallic elements, the less difficult metallic elements, commencing with the alkali metals, were considered. As soon as an adequate background had been formed the Periodic Classification was introduced, followed by the consideration of the metallic elements of varying valence and finally the non-metallic elements, with especial consideration of their positions in the Periodic Table. Much attention was paid to the applications of chemistry to everyday life, many technical processes being described in considerable detail. He believed thoroughly in the Socratic method of teaching and used it as far as possible both in his lectures and in the laboratory, where the class spent fully as much time as at the present day. A particularly valuable part of the laboratory work consisted of individual problems assigned toward the close of the course.

The unusual method of presentation which he followed during all the nearly forty years he gave this course was highly successful and amply justified his contention that it maintained the interest of the students more steadily than the conventional method. It may be that this method would not have been so successful in less competent hands, for Jackson not only was a great teacher but spared no effort to make his teaching a success. The fascinating picture of chemistry and its relation to natural processes and the developments of civilization presented by Chemistry 1 made it one of the most popular of college courses, besides providing a secure basis for future study of the subject.

Although research in organic chemistry was in its infancy in America at the time of his return from Europe in 1875, Jackson immediately commenced to investigate on his own account, and within a short time had prepared the first organic substance discovered in the laboratory of Harvard College, parabrombenzylbromide. He writes, "When I saw the crystals coming, I danced about the laboratory, as this was the first proof that Hill or I could do original work without a master." The study of the properties of this substance led to that of the preparation and properties of many other halogen substitution products of aromatic hydrocarbons and throughout his life investigations in this field remained his major experimental interest. This work resulted in the discovery that compounds in which the halogen is normally chemically inactive can be made available for synthetic work by the introduction of nitro groups, a discovery which has been of very great importance in the development of the chemistry of aromatic compounds. In later years his attention was directed to the study of the halogen substitution products of the quinones. In this field the knowledge acquired in the earlier investigations and his experimental skill enabled him to develop many of the methods now employed in the preparation and manipulation of this interesting and important class of compounds.

With the collaboration of a long succession of assistants and graduate students nearly one hundred and fifty scientific papers were published in the period 1871–1914. Most of these collaborators are now to be found in positions of great responsibility all over the country in both teaching and industry. The importance of his research was early recognized by his election to membership in the National Academy of Sciences in 1883.

Devotion to his work, both teaching and investigation, was the dominant motive of his life, and his interest in the university did not flag in the slightest after his retirement. He was never robust, and the effects of an attack of nervous prostration in 1878, caused by overwork and mental strain, never entirely disappeared. In consequence he adopted a somewhat rigid routine of life which was varied only by necessity. The hours of each day devoted to work were carefully adjusted to the limit of safety, and unnecessary exertion was avoided so far as possible. Fortunately he had the relief afforded by many hobbies. His interest in art dates from study in his youth which, though it convinced him that he had little talent, developed a critical taste which was permanent. Amateur theatricals, at home where he wrote the plays for the benefit of his invalid mother, and in the Cambridge Dramatic Club, were for many years a source of pleasure. Fondness for the solving of problems of all sorts undoubtedly was at the bottom of his keen interest in chemical investigation. Even at eighty-five, when owing to a serious operation in 1928 he had been a semi-invalid for five years, he began an intense study of what he called "The Mysteries of Shakespeare" in order to discover the answers to such questions as: What parts did Shakespeare act in his own plays? Who took the various women's parts?, and he had already prepared for publication two articles on these subjects. In "The Gold Point," published in 1926, are collected a series of fanciful stories originally told to groups around the fireside.

His personal likes and dislikes were pronounced, perhaps not always unaffected by bias, but to his friends he was the soul of loyalty and generosity. Family affection and pride were particularly strong. During most of his life he lived at the family residence, 383 Beacon Street. Summers, however, were always spent at Pride's Crossing, where gardening

became the greatest of his hobbies. His friends will always remember more vividly their visits to his summer home. There, among his flowers, with the sea almost at his doorstep, he was the perfect host, entertaining, witty and sympathetic.

GREGORY P. BAXTER
FRANCIS G. PEABODY
EDWIN H. HALL

RECENT DEATHS

EDGAR SYDENSTRICKER, scientific director of the Milbank Memorial Fund, died on March 19, at the age of fifty-four years.

DR. JAMES MORRIS PAGE, until his recent retirement professor of mathematics and dean of the University of Virginia, died on March 12, at the age of seventy-two years. He had been connected with the University of Virginia for thirty-eight years.

A. H. HOOKER, technical director of the Hooker Electrochemical Company at Niagara Falls, died on March 9, in his seventy-first year.

DR. WILLIAM H. BERGTOLD, formerly professor of pathology at the University of Buffalo and at the University of Denver, also known as an ornithologist, died on March 19 at the age of seventy years.

DR. C. LLOYD MORGAN, professor emeritus in the University of Bristol, who was the first vice-chancellor of the university, died on March 6 at the age of eighty-four years. Dr. Morgan had filled the chair of geology and biology at University College, Bristol, from 1883 to 1887, when he became principal. He was appointed chancellor in 1910. This post he relinquished after a few months and was then appointed to fill the new chair of psychology and ethics. This chair he held until his retirement in 1919.

THE death is announced of Dr. Ettore Marchiafava, senator and professor emeritus of pathologic anatomy at the University of Rome.

PROFESSOR J. P. KHOMENKO, of Leningrad, known for his work on the Cenozoic paleontology and stratigraphy of the USSR, died on August 7, 1935, on an expedition to Sakhalin Island.

SCIENTIFIC EVENTS

THE REORGANIZATION OF THE MEDICAL SCHOOL OF McGILL UNIVERSITY

IT is planned at McGill University to reduce the time required for the courses in medicine from five to four years, without diminishing the actual time spent in the college. According to the official announcement, the new plan provides that

(1) The minimum period of professional training required by the independent practise of medicine shall be five years including, (a) four years of medical study in the university leading to the degree of M.D., C.M., and (b) one year of interneship in an approved hospital or one year of further medical study in the Faculty of Medicine of McGill University or of another medical school approved by it.

(2) A certificate that his medical education is completed and that he is eligible to sit for the examination of a licensing board shall not be issued to any graduate until the university is in possession of satisfactory evidence that he has completed the full requirements.

In a further statement it is pointed out that:

The effect of this action will be to replace the present undergraduate course, which spreads over five academic years of seven and-a-half months each, by a course covering four years, each with a nine-month session and to bring the year of hospital interneship within the five-year period of training which is now required before license in 28 provinces and states and which the faculty believes to be a necessary part of every doctor's education. The new regulation provides that this year shall be spent as an interne in an approved hospital, or in further study in the Faculty of Medicine of McGill University or of another medical school approved by it. It is to be expected that in the majority of cases the postgraduate interne will be chosen, since it is the most direct and most economical pathway to practise. Those who travel this route will be able to accomplish in five years what it now takes six to do and will thus save the cost of tuition, board and lodging for one year.

To those who prefer to devote the fifth year to further study in fields in which they are especially interested, several alternatives are open, since the time may be spent in advanced work along scientific or clinical lines either at McGill or abroad. An opportunity is thus offered to those, for example, who wish to obtain a British qualification and who may spend the graduate year in an English hospital school preparing for the examination of one of the British Licensing Bodies.

With the progress of medical science and an increasing social consciousness of the need for the preservation of health, there is an insistent demand for an even more thorough training than has been required in the past. In its reorganized course the university has aimed at meeting this demand without increasing the long and arduous period of preparation, while actually decreasing the cost to the student.

REPORT OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION ON THE NEW ERGOT ALKALOID

THE Council of Pharmacy and Chemistry of the American Medical Association has made the following report on the new ergot alkaloid: