

applications which were impossible before. The art has followed the science rapidly. The skill of men has been equal to the materials and tools provided.

Science has developed a law of action for nearly every force known to man, but there has been no accepted science of man-power, no science to serve as a guide to the management of men. Numerous principles have been proposed commencing with the Biblical injunction to "Do unto your neighbor as ye would that he should do unto you." The psychologist has studied intelligence, nerve action, inhibitions and complexes. The economist has studied trade, wealth and cycles of various kinds. The social scientist has dealt with masses, movements and legal restraints. None of these has attempted to develop either a theory or a practice of industrial operations, *i.e.*, a science of management.

The earliest important contribution to a science of directing and using human energy was by Frederick Taylor, who applied the scientific method of measurement to tasks and approached the problem of wages and incentives in the same manner. Gantt, Barth, Emerson, the Gilbreths and many others have contributed to this scientific achievement of the twentieth century. It has been summarized and formulated by Mr. L. P. Alford in a paper presented to

the American Society of Mechanical Engineers in 1926, in which principles are laid down for handling materials, the product and men. The laws of leadership are capable of broad application even to colleges and universities. The law of responsibility, the law of exceptions, the law of task and wage incentives, the law of productivity, the law of acquiring skill are fundamental precepts, the recognition of which lays a firmer foundation on which to build administrative skill.

In engineering education recently nothing has attracted more attention than instruction in the field of human relations and industrial proficiency. The personality of the student as well as scholarship is being considered, and the approach to industry is becoming rationalized. Sentimentalism is being replaced by facts and preparation. The induction process begins in college and continues well into industry. Systematic study is replacing a *laissez faire* attitude, and something of the scientific approach is being made. Enlightened management is no less an art but more of a science, and so far as it is a science we may not ignore it entirely in our engineering instruction. The methods employed may differ widely but the purpose is to make the young man more familiar with some of the elementary principles.

OBITUARY

DEXTER DWIGHT MAYNE

DEXTER DWIGHT MAYNE, for twenty-six years principal of the School of Agriculture, University Farm, St. Paul, Minnesota, died at Gulfport, Mississippi, on Saturday, December 14, and was buried at Platteville, Wisconsin, on Friday, December 20.

Professor Mayne was born at Beetown, Wisconsin, May 14, 1863, the son of Nicholas and Mary (Treloar) Mayne. He was graduated from the State Normal School at Platteville in 1883. He was principal of schools at Fennimore, Wis., from 1883 to 1884; Elkhorn, 1884 to 1889; Fort Atkinson, 1889 to 1893; superintendent and principal of schools, Janesville, Wisconsin, 1893 to 1901, and superintendent of schools, Ishpeming, Michigan, 1901 to 1902. From the last-named place he went to the School of Agriculture of the University of Minnesota, a technical school giving a course of three years, of six months each year, and open to pupils who had had only grammar-school preparation, on the same campus but separate from the College of Agriculture of the University of Minnesota. In this position he continued until his death.

Under Professor Mayne the School of Agriculture of the University of Minnesota had a remarkable

growth, the attendance at one time approaching or exceeding one thousand. Its success was so marked that it attracted attention throughout the country and led to the establishment of two similar schools, one at Crookston and one at Morris, Minnesota, within a few years after Professor Mayne assumed the headship of the school at University Farm. Three years ago a third school of the kind was opened at Grand Rapids. The establishment of these outlying schools, with the introduction of agriculture into the curriculums of high schools of Minnesota, led to a falling off in the attendance at the school at University Farm, but the school has continued throughout to attract large numbers of students interested in training themselves for leadership in farm and rural home life.

Professor Mayne was a man of alert mind and prompt and sure decisions, of persuasive friendliness and of resolute will. He was quick to decide and quick to act, and persistent in following through any project undertaken for the development of his students. He gave much time to intimate personal contact with the young men and young women under him, and his students were swift to respond. Their confidence, once won, never weakened. He had the extraordinary gift of imparting inspiration and

awakening ambition, and throughout the central northwest to-day are great numbers of young men and young women, graduates or former students of the school, in positions of leadership and influence. He was also held in highest regard by his colleagues in the university department of agriculture.

W. P. K.

RECENT DEATHS

DR. ASAPH HALL, of the U. S. Naval Observatory, who retired from a professorship of mathematics in the U. S. Navy on June 30 of last year, died on January 12 in his seventy-first year.

WILLIAM ALLEN ORTON, director of the Tropical Plant Research Foundation, died on January 7 at the age of fifty-two years. Dr Orton ended twenty-five years' service as plant pathologist of the Department of Agriculture in 1924.

DR. H. J. PACK, entomologist of the staff of the Utah Agricultural Experiment Station, died on January 5.

WILLIAM EDWARD MEEHAN, designer and for seventeen years director of the municipal aquarium in Fairmount Park, Philadelphia, died on January 2 at the age of seventy-six years. Mr. Meehan had been an associate editor of *The Public Ledger* for fifteen years and was the botanist of the Peary Relief Expedition to North Greenland in 1892.

HENRY J. COX, aged sixty-six, meteorologist of the U. S. Weather Bureau in Chicago, died on January 7.

DR. JOHN ROBERT BENTON, dean of the college of engineering in the University of Florida, has died at the age of fifty-three years.

COLONEL ROBERT A. MARR, inventor and civil engineer, died on January 2 at the age of seventy-three years. Colonel Marr was head of the department of civil engineering of the Virginia Military Institute and later became dean of engineering at the Virginia Polytechnic Institute.

PROFESSOR PHILIP JACOB WHITE, professor of zoology at the University College of North Wales, Bangor, died on December 26 at the age of sixty-seven years. He was director of the Puffin Island Biological Station. He reached the age limit for retirement two years ago, but was granted an extension till the close of the present session.

THE following resolution was adopted at the mid-winter meeting of the Western Society of Naturalists:

The members of the Western Society of Naturalists have learned of the tragic disaster to the ship *Carnegie* which interrupted important researches in terrestrial magnetism, meteorology and oceanography and caused the untimely death of Captain J. P. Ault, a man unique in the history of science, combining the highest scientific attainments with unusual qualities of leadership; be it, therefore,

Resolved, That the Western Society of Naturalists at their mid-winter meeting at the Hopkins Marine Station, at Pacific Grove, extend their sincere sympathy to Captain Ault's family and to the Carnegie Institution of Washington; and, be it further

Resolved, That copies of this resolution be sent to Mrs. Ault, to the Carnegie Institution of Washington and to SCIENCE.

G. F. McEWEN,
T. G. THOMPSON,
E. G. MOBERG, *chairman*

SCIENTIFIC EVENTS

MUSEUM AND LABORATORY FOR THE STUDY OF INDIAN LIFE

PLANS for the construction of a museum and laboratory for the study of American Indian Life in the heart of the cliff-dwelling area of New Mexico have been completed with the selection as architect of John Gaw Meem, of Santa Fé, member of the American Institute of Architects, according to an announcement by the Board of Trustees of the Laboratory of Anthropology at Santa Fé. The first unit of the proposed group of buildings will be built in the early spring with funds granted by John D. Rockefeller, Jr.

Mr. Rockefeller has given \$200,000 for the erection and equipment of the first of the ten units planned, and will also contribute the income of a fund of \$300,000 toward the budget of the laboratory for five years. Additional contributions, and possibly a per-

manent endowment, are expected from the same source if the laboratory proves its value as a lasting operative institution.

When completed the project will provide research laboratories, museum exhibitions, libraries, lecture halls and adequate facilities for graduate instruction in archeology as well as public education in the history of America's native races. Standing in the center of the cliff-dwelling area, and near the largest Pueblo Indian villages, the laboratories will enable research workers to study New Mexico's valuable historic relics without their removal from the state.

The buildings will be erected on a fifty-acre plot on the outskirts of Santa Fé. Mr. Meem has designed the plans for the group in what is termed the "Santa Fé" style of architecture. The first unit will cover a ground area of about 8,000 square feet and will contain on one floor administrative offices, exhibition