as men have not the right to work and earn their bread, so long as they are left ignorant of vital information, so long as they are ill and not attended, so long as they are in misery and wretchedness without care, further evolution of society should not only be expected but sought, not only advanced by trial and error but promoted by applied intelligence.

We have seen that conditions in the nation, in industries and in homes are intimately related. Harmful consequences of unsteadiness in the nation finally bring misery to the ultimate social units, ourselves and our fellows. But steadiness in society as a whole and steadiness in its members are also intimately related. Just in so far as social stability fosters security, both physical and mental, of the members of the social organization, so also it fosters their higher freedom, assuring them opportunity for self-support, replacing fear by confidence and providing for health and reasonable leisure. These are the prime conditions for wholesome living, for the enjoyment of natural and created values, for the discipline and exercise of individual aptitudes and for the pursuit and acquisition of new knowledge. They are prime conditions also for safety of the body politic.

OBITUARY

GLADWYN KINGSLEY NOBLE[1]

(September 20, 1894–December 9, 1940)

DR. GLADWYN KINGSLEY NOBLE died on December 9, 1940, at the age of forty-six. But his years were crowded with achievement and that must be remembered in mourning the loss of one of the most gifted and dynamic of men. More, the work he set in motion, which will extend his ideas and methods into the future, will be his continuing memorial.

Dr. Noble left behind him two great departments in the American Museum of Natural History. The Department of Herpetology's catalogue of specimens now includes more than 110,000 entries; while his Department of Experimental Biology, which crowds the two upper floors of the African Wing of the Museum, is the crowning achievement of his life. His results are recorded in 182 scientific papers and one invaluable text-book, "The Biology of the Amphibia." His first paper was published in 1913, while he was an undergraduate student at Harvard University; his last three papers may even now be coming off the press. During this period of twenty-seven years our always young friend took his several degrees at Harvard and Columbia, served a year in the United States Naval Reserves, was a lecturer in biology at Columbia University, was visiting professor of biology at New York University and Chicago University, and built up his two departments in the American Museum.

He took an active part in many scientific societies, especially the New York Academy of Sciences, the Society of Ichthyologists and Herpetologists, the American Association of Anatomists, the Society for Experimental Biology and Medicine. He was a corresponding member of the Zoological Society of London, an associate editor of the *Journal of Morphology* and one of the editors of *Biological Abstracts*. His field studies took him to various parts of North America, as well as to the West Indies and Peru; it was doubtless his intimate knowledge of the living animals in their own natural environments that contributed greatly to his success in rearing the same or related creatures in the laboratory. It was also this varied experience in the field and in the laboratory that enabled him to pose his experimental set-up in such ways that his animal subjects could give unequivocal answers.

At Harvard University Noble was a student of Dr. Thomas Barbour, who evidently succeeded in inspiring his pupil with an abiding interest in field studies, in thorough and sound taxonomic work, in the living creature and its individual and racial history. These qualities are evident in all of Noble's early papers on birds and reptiles, a number of which were prepared in collaboration with Dr. Barbour.

In many careers chance plays a conspicuous part. Noble's career was one of purpose and determination from his college days; in his relatively short life there was no lost period. He knew that in the long run the savings banks of learning and hard work pay cumulative dividends; figuratively speaking, he was always reinvesting his earnings to enlarge his plant and productive capacity. And assuredly his products became more valuable as they increased in number and diversity. As we follow his papers through the years, we see that he never ceased to broaden and deepen his interest in taxonomy; he was always searching for individual variations, varietal and subspecific differences, specific, generic, family, subordinal and ordinal characters; but having discovered and recorded these differences, the questions, how, why and by what steps led him to examine each fact from whatever points of view seemed most likely to be productive.

The first really great work that Noble produced was a classification and phylogeny of the frogs and toads. It is based on the analysis of a huge mass of data, patiently assembled from many sources, and an original and extensive examination of many specimens.

[1] A fuller notice of Dr. Noble's scientific work was given in an address by Dr. Gregory at a memorial meeting held at the American Museum of Natural History on December 19, 1940.

From these studies Noble drew up a revised classification illustrating the parallel modifications in the different suborders and from the vantage ground thus gained he went on to review the batrachian faunas of the different continents, tracing their spread from a northern origin.

Noble's exhibition work in herpetology culminated in 1927 with the opening of the Museum hall of living amphibians and reptiles; so far as possible at that time this hall embodied his conviction that the proper scope of a museum of natural history was not only to present faithful and beautiful representations of things as they are but especially to stimulate the quest for knowledge of underlying principles.

While Noble was growing up, so to speak, in his Department of Herpetology, he, with the rest of the scientific world, was becoming acutely aware of the importance of the endocrine glands and their secretions from infancy to old age. He soon saw the possibilities in this line as bearing on his own field of metamorphosis, growth and evolution in the amphibians and reptiles. The Department of Experimental Biology was created in 1927 in order to give him room and scope to carry on investigations into the complex effects of the endocrine secretions upon animal life and hundreds of thousands of experiments were conducted and recorded in papers by himself and his staff. Noble observed especially the strange ways of courtship and mating among animals and supported his observations by moving pictures of fishes, amphibians, lizards, snakes and birds, making their own unquestionable records of their lives. Observations which were formerly distributed among many different departments of science were brought by him into a general clearing-house of knowledge of living animals. More than any other man Noble was rapidly integrating these fragments into a continuous and understandable picture. Yet he was never in danger of confusing the part with the whole. Because hormones from the endocrine glands were, at least in some cases, the activating agents, he did not fail to search for other leading factors in the always complex results. Vertebrate animals being endowed with highly organized central nervous systems, it was next in order to study the reactions between the activating hormonal substances and the responding nervous controls. The complexity of a subject never intimidated Noble and he did not easily lose himself even in that incomparable labyrinth, the human brain.

From 1927 until his death near the end of 1940 Noble was directing and leading two active and successful departments, with their rapidly expanding parts and aspects, while at the same time keeping up his own researches and his published reports. In the midst of this broad program he was suddenly laid low. The entire scientific world will be one with his colleagues and friends in hoping that his work may go on as he planned it.

WILLIAM K. GREGORY
AMERICAN MUSEUM OF NATURAL HISTORY

SCIENTIFIC EVENTS

THE UNION OF AMERICAN BIOLOGICAL SOCIETIES

THE annual meeting of the Council of the Union of American Biological Societies was held in Philadelphia on Monday, December 30, at four o'clock in the afternoon.

During the past year the Union has continued to support projects of broad interest, as the promotion of *Biological Abstracts* and the teaching of biological sciences. Due to World War II, *Biological Abstracts* has suffered through cancellation of foreign subscriptions and has been operating on a reduced budget. This decrease in foreign income has been offset to a marked degree by increased subscriptions in the Americas due to the splendid efforts of the staff, section editors, collaborators, trustees and interested societies, as well as the individual biologists themselves. The American Society of Zoologists, Society of American Bacteriologists, American Physiological Society, American Society of Naturalists, Genetics Society of America and Society of American Foresters are contributing financially as well as editorially to the support of *Biological Abstracts*. Other societies are considering action. Further cooperative arrangements are desired by *Biological Abstracts,* since this organization is a cooperative, non-profit enterprise that was created to serve biologists the world over.

The Union's Committee on Biological Science Teaching, financed by a grant from the Carnegie Foundation for the Advancement of Teaching, is under the chairmanship of Dr. Oscar Riddle and includes the following members: E. V. Cowdry, F. L. Fitzpatrick, H. B. Glass, B. C. Gruenberg and E. W. Sinnott. This group, with the cooperation of its representative, D. F. Miller, earlier established the National Association of Biology Teachers, which has become a thriving organization sponsoring a journal, *The American Biology Teacher.* During the present year it distributed 16,000 questionnaires to teachers of biology in high schools of the United States and an analysis of the large amount of data secured from 3,200 replies is nearing completion. At least a preliminary report on certain important results of this investigation will be made to the Union at the annual meeting in Philadelphia.

During the course of the year the Union publicized,