they make possible the very best social civilization. By them all the necessities and the luxuries are produced with an average individual expenditure of time that allows leisure for transforming the social studies into real sciences.

Our hope then seems to lie not in decreased interest in the material sciences but in using the leisure afforded by them in perfecting the social sciences. We now have much more tested knowledge in psychology, sociology and economics than we are using. We may reasonably hope that intensive, continued research in these fields, equivalent to that given in the past to the material sciences, may produce comparable results. Confidence in the work of the social scientists should result in the establishment of a social order respected and observed by an improved race of people. The economist and sociologist may expect to assume the burden of so organizing society that it would be impossible for over-production and want to exist simultaneously on the earth. Under such an economic and social system everyone may be profitably engaged as producer, investigator or subject of investigation. In our present system a severe migraine headache has qualified one man for profitable employment as a research subject. The social scientists are ready to assume their responsibilities and the next step is to train a generation that will turn as readily to them for guidance in these fields as the present generation depends on the physicist, the chemist and the biologist. Because of the sobering influence of such a responsibility we need have little fear of extravagance of promise or action.

The accepted sciences may do well to drop their double standard of viewing one group of sciences as exact and another as inexact. They should lead in the unqualified acceptance and encouragement of the social sciences. The physicist and chemist deal with 25,000,000,000,000,000,000 molecules per cubic centimeter of gas or 33,667,000,000,000,000,000,000 molecules of water per cubic centimeter. They do not face all the hazards the sociologist encounters in individual differences of human beings in a small community. The physicist and chemist, in particular, should be very tolerant of the efforts of the sociologist to determine the statistical significance of the different phenomena observed in small populations.

If our social order is to come under the dominant influence of science it seems worth while to consider what will happen to some of the arts that have concerned themselves with society. The oldest and most highly respected of these arts is religion. We have in this art to deal with elements of belief, faith and prejudice which seem diametrically opposed to the principles of caution, control and tests in science. However, in 1873 F. Max Muller had written an "Introduction to the Science of Religion." We may hope that religion may eventually be saved for a scientific age by the acceptance of the method of science.

What attitude are we to take concerning the conflicts of theories in the social sciences? We must follow the plan we have always used in the older sciences. The conflicts must serve as a stimulus to more intense and exhaustive research. The conflicting doctrines in science have almost invariably resulted in bitterness—also a great amount of experimental study. It is not possible to condemn too heartily the attitude of the chemist who would get the camel through the eye of the needle by dissolving him in nitric acid and then using a squirt gun.

Finally, a word of caution seems appropriate. Should we displace entirely an old established art such as religion because it involves some unscientific principles and practices? No more should we discard this art than that of pottery-making while we are developing a science of ceramics. The vessel of the pottery craftsman may be crude. It may contain unnecessary ingredients; some very valuable ingredients may have been omitted, but if it makes a satisfactory container it has served a useful purpose. Certainly if perishable and necessary goods are being produced the industry should not be closed over a long period for repairs and remodelling. It has long been held that religion is such an enterprise. Furthermore it is worth while to be reminded again that our oldest sciences such as chemistry and astronomy were preceded by the arts, alchemy and astrology. When we feel most certain that we have found the final solution we may well recall Oliver Cromwell's exhortation, "My brethren, by the bowels of Christ I beseech you, bethink you that you may be mistaken."

OBITUARY

RAOUL GAUTIER

PROFESSOR RAOUL GAUTIER died at his home in Geneva, Switzerland, on April 19, 1931. He was vice-president of the International Geodetic Association of the International Geodetic and Geophysical Union. At the end of 1927, when he retired from the position which he had so long filled as director of the Astronomical Observatory of Geneva, Switzerland, the Conseil d'Etat of the Canton of Geneva conferred on him the titles of honorary professor of the University of Geneva and of honorary director of the Observatory. Previous to his retirement he

had filled the chair of astronomy and meteorology of the faculty of sciences of the University of Geneva.

For many years Professor Gautier was a member of the permanent commission of the old International Geodetic Association, attended several of its triennial assemblies and took a prominent part in its affairs. When the world war began and little support was given to the association by its adhering members, Professor Gautier was largely instrumental in forming what was termed the "Association Géodesique reduite entre Etats Neutres" and served as its president for several years. It was mainly due to his foresight and scientific efforts that anything at all was accomplished in geodesy, in an international sense. Through his efforts the results obtained at the variation of latitude stations at Ukiah, California, Mizusawa, Japan, and Carloforte, Italy, were computed and made available for the use of astronomers. After the war, when the International Geodetic and Geophysical Union was created, he transferred to the section of geodesy (name changed in 1930 to International Geodetic Association) of that union the functions and property rights of the old association and of the reduced association which had functioned during the war. He later became vice-president of the section (association).

In addition to his other duties, Professor Gautier was for many years president of the Swiss Geodetic Commission. He was a powerful influence for several decades among geodesists of the world and they, as well as the astronomers, mourn his death. His keen intellect and scientific attainments aroused the admiration of all those who knew him, either personally or through correspondence, and his charming personality endeared him to his many friends.

His health had not been good for the last few years, especially since the death of Mme. Gautier on January 4, 1927. After his retirement, on December 31, 1927, he was not actively engaged on astronomical or geodetic work, but he maintained until the very last his strong interest in those matters, especially such as were of an international character. He made several trips to the south of France in search of health, but most of his time was spent in Geneva. Two sons and two daughters survive him: Colonel Paul Gautier, of Bogota, Colombia; M. Max Gautier, Mme. William E. Rappard and Mme. Marcel DuPasquier, of Geneva.

WILLIAM BOWIE
U. S. COAST AND GEODETIC SURVEY

WHITMAN HOWARD JORDAN

THE death of Dr. W. H. Jordan, director of the State Experiment Station at Geneva from 1896 to 1921, occurred at his home in Orono, Maine, on May 8, following a prolonged period of ill health. Born in Raymond, Maine, on October 27, 1851, Dr. Jordan received his early training at the University of Maine, graduating from that institution in 1875.

In 1878 he entered the employ of the Connecticut Agricultural Experiment Station as an assistant chemist, and from that date on his professional career and personal interests to the time of his death were intimately associated with experiment station work. He returned to Maine in 1879 to serve for one year as an instructor in chemistry, and then went to the Pennsylvania State College as professor of agricultural chemistry in the college and as agricultural chemist in the experiment station. While at State College he laid out a series of soil plats for experimental purposes, the fiftieth anniversary of which is to be celebrated in June, when Dr. Jordan was to have been the guest of honor.

In 1885 he was called back to Maine to become director of the Experiment Station at Orono, where he served for eleven years. In 1896 he entered upon his work at Geneva as director of the New York State Experiment Station where he was to serve for twenty-five years and to attain an international reputation as an investigator and administrator.

Dr. Jordan was the author of books on human and animal nutrition and of numerous experiment station publications and special articles. He was also an effective speaker, and while director of the Geneva Station was frequently called upon by farm organizations and others to address them on the work of the station and on other topics. His conception of the function of the experiment station as a research institution and his insistence that the station be allowed to perform its work unhampered has undoubtedly had a profound influence on the contributions that the station has made to the agriculture of the state.

A. A. HIMWICH

ON April 18th occurred the death, in New York City, of A. A. Himwich, M.D., at the age of sixty-nine years. Dr. Himwich was one of the most beloved of the Russian intelligentsia, coming here among the first of the great immigration of 1881.

Dr. Himwich was a physician of recognized ability and continued his medical work at Berlin with Professors Klemperer and Kraus. At New York University he received the B.S. degree in 1886; M.D. in 1887 and M.S. in 1891. There Dr. Himwich was a beloved student of Chancellor McCracken, Professor Stevenson and Professor Herring. Post-graduate work was continued at Columbia under Professors Woodward and Pupin and at the Johns Hopkins under Professors Mall, Osler and Martin.

Dr. Himwich was deeply interested in the later developments of mathematics and physics and particularly in relativity. He was a fellow of the American Association for the Advancement of Science, and