this sort and to answer it, but since the point has come up, a few suggestions may not be out of place. In the purification of sewage, it is true that there are needed well-designed conduits, tanks, filters, holding basins, etc., but it is equally true that the problem is from beginning to end a chemical one, whether precipitation methods or bacterial methods are used. You may say that bacteriology belongs to the biologist, but I think it is true that the problems connected with technical mycology are so largely chemical in nature that the chemist has at least an equal claim to them with the biologist. In bacterial sewage purification, we are not dealing with pure cultures; we supply the proper chemical conditions of oxidation or reduction, of alkalinity, etc., and assume that if the conditions are right the expected reactions under the influence of microorganisms will take place. If any engineer who is not a thorough chemist has a proper conception of the chemistry of sewage purification, I have not heard of him or read his works. I need not say more except that sewage works are usually constructed under the superintendence of engineers who hire analysts to make chemical determinations for them.

The problems connected with fuels and smoke consumption are chemical throughout, and again it is the exceptional engineer who has an adequate understanding of them; yet it can not be denied that the field belongs to the engineer at the present time by right of possession. The problem of smoke consumption was first adequately treated by an engineer and while we say now, glibly enough, that the solution of the problem lies in bringing the gases and solids in the furnace in contact with a sufficient air supply at a sufficiently high temperature, the problem was not so simply stated a few years ago. The problem is solved now at the cost of fire brick frequently renewed, but I am afraid the chemists' contribution to its solution was smaller than it should have been.

In conclusion, I trust that the future will see a closer contact between the votaries of the pure science of chemistry, the teachers of chemistry, the industrial chemists and the community at large. In that union lies the future successful development of the science and profession of chemistry.

W. D. Richardson

Presentation to Professor Goldschmidt

Professor Victor Goldschmidt, of the University of Heidelberg, to-day the foremost crystallographer, was, on his fifty-fifth birthday, presented with a silver punch-bowl by his former students in the United States and Canada. It is doubtful if any teacher of mineralogy either in America or Germany has instructed so many Americans who have since occupied positions of prominence having relation to the geological sciences. The following persons, twenty-five in all, contributed to the gift and signed the letter of birthday felicitation: M. B. Baker, Queens University (Kingston); Dr. Florence Bascom, professor of geology, Bryn Mawr College; Reginald W. Brock, acting director, Geological Survey of Canada; Dr. Hermon C. Cooper, associate professor of chemistry, Syracuse University; Dr. Reginald A. Daly, professor of geology, Massachusetts Institute of Technology; C. W. Dickson, Queen's University; Dr. William E. Ford, Jr., assistant professor of mineralogy, Sheffield Scientific School; Dr. C. H. Gordon, professor of geology, University of Tennessee; Dr. W. F. Hillebrand, U. S. Geological Survey; Dr. Wm. H. Hobbs, professor of geology, University of Michigan; Dr. T. A. Jaggar, Jr., professor of geology, Massachusetts Institute of Technology; Dr. A. C. Lawson, professor of geology and mineralogy, University of California; Dr. E. B. Mathews, professor of mineralogy, Johns Hopkins University; Dr. W. C. Mendenhall, U. S. Geological Survey;

Dr. W. G. Miller, provincial geologist, Ontario; William Nicol, professor of mineralogy, Queen's University; Dr. Chas. Palache, assistant professor of mineralogy, Harvard University; Dr. Joseph W. Richards, professor of metallurgy and mineralogy, Lehigh University; Walter S. Landis, Lehigh University; Dr. H. Monmouth Smith, professor of chemistry, Syracuse University; J. S. Stanley-Brown, editor Geological Society of America; Dr. Frank R. Van Horn, professor of mineralogy and geology, Case School of Applied Science; Dr. T. L. Walker, professor of mineralogy and petrography, University of Toronto; Dr. Fred E. Wright, Carnegie Institution; Dr. C. W. Wright, U. S. Geological Survey.

SCIENTIFIC NOTES AND NEWS

AT the Put-in-Bay meeting of the Astronomical and Astrophysical Society of America, the following officers were elected for the ensuing year:

President—E. C. Pickering.
First Vice-president—G. C. Comstock.
Second Vice-president—W. W. Campbell.
Secretary—W. J. Hussey.
Treasurer—C. L. Doolittle.
Councilors—Ormond Stone, W. S. Eichelberger, Frank Schlesinger, W. J. Humphreys.

A committee was appointed with power to determine the time and place of the next meeting.

THE British Ornithologists' Union will celebrate its fiftieth anniversary in December next, when gold medals will be presented to the four surviving original members: Dr. F. Du Cane Godman, F.R.S., Mr. P. S. Godman, Mr. W. H. Hudleston, F.R.S., and Dr. P. L. Sclater, F.R.S.

DR. JOSIAH ROYCE, of Harvard University, gave one of the principal addresses before the third International Philosophical Congress, which began its sessions at Heidelberg on September 1.

THE First International Moral Educational Congress is being held at the University of London, September 25–29, under the presidency of Professor Michael E. Sadler.

PROFESSOR D. J. HAMILTON, F.R.S., has, in consequence of ill health, resigned the chair of pathology in the University of Aberdeen.

MR. F. B. SMITH, director of agriculture for the Transvaal, is visiting England.

DR. EMIL KRAEPELIN, professor of psychiatry at Munich, who has been visiting this country, has returned to Germany.

DR. J. C. BOSE, professor in the University of Calcutta, India, author of "Response in the Living and Non-living," "Plant Response, as a Means of Physiological Investigation" and of "Comparative Electro-physiology," has been lecturing for the past few months on the continent and in England on the phenomena as brought out by his methods of experimentation. He expects to visit this country during October and November, and wishes to visit the more prominent institutions of the east and middle west. He will be very glad to lecture on his researches free of charge to university audiences or before scientific societies. Any institution that may wish to make arrangements for a series of three or four lectures by Dr. Bose, may address him in care of Mr. R. N. Tagore, Box 135, University Station, Urbana, Ill.

PROFESSOR C. H. HITCHCOCK will leave for Hawaii on the first of October. He goes to complete his book upon the Hawaiian volcanoes, which is to be published by the Hawaiian Gazette Company of Honolulu. Kilauea was never in better condition for study than now. The great pit is gradually filling up, and when the hydrostatic pressure of the column is too great to be maintained in its place the lava will escape into some unseen subterranean caverns, if it does not flow out at the surface on the lower ground.

BRIGADIER GENERAL JAMES ALLEN, chief of the United States Signal Corps, attended the International Electrical Congress at Marseilles, France, from September 14 to 19, as a representative of the United States army. Incidentally he will make a general investigation of what is being done in the development of war balloons and aeroplanes.

PRESIDENT CHARLES W. ELIOT, of Harvard University, is to deliver, on October 15, the ad-