nothing more substantial to offer in our educational setting than a rather thin criticism. As a matter of fact, it would be good for all concerned to invite them to prove their interest in solid contributions to education for fully rounded professions. This more sympathetic attitude by the engineering professors toward the collateral departments appears to me to be gradually expanding—but it is worth while to emphasize the lesson of hearty cooperation of all departments for general benefit and for the best interest of overlapping features of the work, remembering that cooperation connotes friendly concurrent effort by a multiple of individuals.

Respecting purely recreational topics, we all recognize that substituting evanescent material in an undergraduate curriculum in place of substantial basic studies is like substituting second-rate concrete in an edifice where only marble is appropriate. However, there are certain features needed to support our work, and happily it is common observation that students in the engineering schools that are located in large cities take general advantage of the excellent opportunities to hear fine music and see great art; and interest in their doing so is expressed often by members of the engineering faculties. It is my inference that the radio carries much good music to engineering students in engineering schools located in the lesser cities. Optional studies now are available for stimulating these interests and interest in literature as well as world interests.

And now I imagine that you are bursting with the question, Why should engineers be held responsible for guarding their work from diversion into paths which are harmful to civilization, while research scientists are not held responsible for making useful applications of their discoveries?

The statement of the question shows the answer. Engineering is the art of directing the forces of nature for the service of man—and any diversion to disservice is false. We may condone a cloistered attitude on the part of research scientists, although we may regret the withdrawal of able men from reflection on the duties of citizenship. But engineering is as deeply involved in the economic aspects that arise from it as it is in the scientific aspects from which it springs. As individuals we can not control the misuse of our works, but it is a duty of the engineering schools to impartially expound to their students the various economic and social influences that may arise from engineering. We need more clearly defined research into the serviceable and the disserviceable effects that may arise from engineering which springs out of scientific discovery and invention, so that the great populations of the world may better know how to avoid the disserviceable.

In the meantime, it rests with the engineering schools to put before their students the truism that untoward events arise out of human errors, angers, jealousies, vanities, selfishnesses and greeds; while fortunate events arise out of the developed sense of mutuality of interest among individuals and nations—which sense leads to platforms of generous fair dealing. Here is where we are now most deficient in our efforts. The problem of improvement is a difficult one, but I have seen such magnificent improvement in engineering education during the last half-century that I am filled with the optimistic belief that this problem ultimately will be solved.

OBITUARY

JOHN ELIOT WOLFF

THE death of Professor John E. Wolff brings to an end a close association and friendship of more than forty years which for the writer of this note has been a major influence in his scientific work. Our acquaintance began in 1895 when he called me to Harvard to help in the reorganization of the mineral collection of which he had recently been made curator. Wolff was conducting courses in petrography and mineralogy in a newly organized department closely associated with the department of geology. Instruction in mineralogy was within a few years placed in my hands, and Wolff devoted himself to petrography and optical mineralogy. His interest in the Mineralogical Museum grew with the years, and he gave a large portion of his time to its improvement. He added to it largely from his private means since it was not at that time endowed. He also provided instrumental equipment for the laboratories and equipped a chemical laboratory where he did quantitative work of great accuracy.

Wolff studied with Rosenbusch in Heidelberg in 1884–85 and was one of the first to teach in this country the then recently developed science of microscopical petrography. He was much in the field in his earlier years: with Shaler in Kentucky; with Pumpelly in the Transcontinental Survey for the Northern Pacific Railway; and as a geologist of the United States Geological Survey, working in western Massachusetts and northern New Jersey. His name appears as co-author with Pumpelly of the monograph describing the Hoosac Tunnel section through the Berkshires, he having done the optical petrography as well as much of the field work for that study.

He took part in the International Geological Congresses of 1900 in France; of 1906 in Mexico; of 1910

in Sweden; and of 1913 in Canada; and from all these trips he brought large and carefully selected collections of rocks for use in his teaching. The big hammers that he carried in order to secure fresh specimens were famous, and other members of these excursions gathered around him to share the results of his spoils.

While in Montana in 1883 on the N.P. Survey he visited the Crazy Mountain group and discovered the peculiar alkali rock-type to which Rosenbusch gave the name *theralite*. He revisited this mountain group twice, mapping and collecting additional specimens of its varied igneous rocks; and all the rest of his life was more or less devoted to the study of this material, his final report appearing in 1938 in the *Bulletin of the Geological Society of America*.

Professor Wolff's most important contribution to the development of the department at Harvard so long in his care was in securing the Holden endowment. Albert F. Holden, who graduated in 1888, was a very successful mining engineer. Early in his professional career he began to collect the minerals found in his mines and ultimately accumulated an important collection. Holden intended his minerals to go to Harvard and therefore kept in close touch with Wolff in order that his collection might supplement rather than duplicate the Harvard cabinet. When in 1913 Holden realized that his career was destined to come to an untimely end through an incurable disease, he conferred with Wolff as to the form and wording of the munificent bequest with which he had determined to endow the Harvard Mineralogical Museum. He died before the end of the year, and his minerals came at once to the university. Professor Wolff, during the next few years, spent all his free time incorporating into the exhibition cases the more striking specimens from Holden's collection.

It was not until eight years after Holden's death that the trustees of his estate were able to turn over to the university the endowment fund. When it had been received in 1922, Wolff decided that the event marked a proper termination of his active service for the museum and the department of mineralogy and petrography. He therefore retired at commencement, 1923, and left to the writer the acceptable task of carrying out the intent of Mr. Holden, to raise the Harvard Mineralogical Museum to an equality with the best, a task made possible by the generous funds provided. Wolff also gave his own considerable estate, subject to a life annuity, to the university in the form of the John E. and Philip Wolff Fund, the income of which, after his death, was to be devoted to the growth and use of the collection to which he had devoted so large a part of his life.

Immediately upon his retirement Wolff sold his Brookline house and removed to Pasadena, California. His letters after settling in the comfortable new home which he established there were full of delighted appreciation of his freedom from routine cares and of the comfort of a mild climate. Always an enthusiastic motorist, he provided himself with a car especially equipped for travel in the desert, and Death Valley became his familiar touring ground during the winter months. He made a special study of the tragic story of the Manley party, first to cross that famous depression, and published a pamphlet on their probable route. It was often his custom to drive there, alone or with a companion, camping by preference near a lonely farm high on the Panamint Range.

Knowing the desert so well from his long experience, it seems unfortunate that he should have set out alone, at his advanced age of 83, in the midst of the summer heat, into the Mojave Desert upon what proved to be his last trip. He was found in his car, which was hopelessly sanded, having died apparently from heat exhaustion after using all his resources to extricate his machine from the desert sands.

Wolff was of a retiring nature, and it was not easy to penetrate his reserve. Those who had lived with him in camp say that there he relaxed and revealed his intense enjoyment of life in the open. Gentle and kindly he was, and his purse was always open to those who needed aid. He was a musician, and after he ceased to be able to play the piano his Victrola became his greatest solace. His house at Pasadena was full of the latest optical and microscopical equipment, which he used up to the time of his death. This is not the place to tell of the domestic afflictions which left him a lonely soul. My last visit with him six months since left me with the sad assurance that he was failing rapidly, and I can not grieve that he died as he did in the open desert wastes which he had grown to love so well.

CHARLES PALACHE

SCIENTIFIC EVENTS

THE FISH AND WILDLIFE SERVICE

PURSUANT to the President's Reorganization Plan No. III, and House Joint Resolution 551, the Bureau of Fisheries and the Bureau of Biological Survey was on June 30 consolidated into a new bureau to be known as the Fish and Wildlife Service. It is believed that this consolidation will provide many advantages to both bureaus, and that it is further evidence of the interest of the Administration in the conservation of fish and wildlife.