

still dare to look forward, with the soldiers and statesmen, artists, humanists, philosophers and priests, we must integrate our scientific skills with the social and

spiritual aspects of human life and nature. That goal attained, we shall not lack either direction or support for the physical sciences.

## OBITUARY

### EDWARD OSCAR ULRICH

EDWARD O. ULRICH was the last survivor of the five great invertebrate paleontologists who were the dominating figures in Paleozoic work in 1900. Charles E. Beecher died forty years ago. John M. Clarke, Charles D. Walcott and Charles Schuchert fortunately survived much longer, and, with Ulrich, were universally considered the leaders in the field so long as they lived. These four paired admirably: Walcott and Clarke, suave, diplomatic, executive; Ulrich and Schuchert, blunt, outspoken, indefatigable workers, zealous for detail. Each was a man of strong personality. They were at times great friends, at others great foes. But all of them were seeking scientific truths. The writer came to know all of them, and the thing which stands out best in his memory is that, however much we differed on scientific matters, we were always good friends.

Ulrich was a delightful personal companion, equally eager to argue or joke. But he was always good-natured. I never knew him to express anger, no matter what he might feel.

But this is neither a biography nor an appreciation. Since I heard of his death, I have been trying to appraise his position in the field of invertebrate paleontology. It seems to me that he was the greatest descriptive paleontologist that America has ever produced. He had a remarkable eye for form and a genius for detail. His memory was extraordinary. It is doubtful if he forgot the details of any species he ever studied. In contrast to much of the rather hasty work of some of his contemporaries, his descriptions have stood the test of time. His skill as an artist and lithographer was probably the basis of his success. After the publication of his work for the Illinois and Minnesota State Surveys he was accused of making far too many species, the innuendo being that he was paid for his labor at so much per new species. Later workers have shown that his species were good, and that he could have made many more if he had had access to more and better material. His work is the foundation for later studies on Paleozoic Bryozoa, Ostracoda and Conodonts, Ordovician Gastropoda and Pelecypoda. He also contributed much to knowledge of Cambrian and Ordovician trilobites and Mississippian pentremites.

During his long life, Ulrich probably saw more of the Paleozoic formations of the eastern half of the United States than any other man. His contributions to stratigraphy and correlation were voluminous, not only in what he himself published, but in the aid which he gave to other geologists during the many years of his association with the U. S. Geological Survey. Some one else will have to appraise this side of his work, for his ideas were so diametrically opposed to those of the present writer that he can offer no judgment. But he made a great contribution in this field, for he provoked—and I really mean provoked—many geologists to make much more careful studies than would otherwise have been done. His discussions furnished food for thought, and much good came of them.

Edward Oscar Ulrich was born in Cincinnati on February 1, 1857, and died in Washington on February 22, 1944. He was a member of many learned societies, and a great contributor to knowledge in his field. His was a useful life, well lived. If it had not been for him, we should have had no Schuchert in geology, and there are many others who owe their start to him.

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### DEATHS AND MEMORIALS

DR. HARRIS HANCOCK, who retired with the title emeritus in 1937 as professor of mathematics at the University of Cincinnati, died on March 19. He was seventy-seven years old.

DR. BENJAMIN MILLER, since 1907 head of the department of geology of Lehigh University, died on March 23. He was in his seventieth year.

DR. CARL KOLLER, consulting ophthalmic surgeon at the Mt. Sinai and Montefiore Hospitals, New York City, died on March 21 at the age of eighty-six years.

At the graduating exercises of Lafayette College on March 26 a memorial address was made by Dr. B. W. Kunkel, professor of zoology, on "The Life of Dr. J. McKeen Cattell," who graduated from Lafayette College in 1880.