

## Awards and Citations

### Presentation of the 2016 Harrell L. Strimple Award of the Paleontological Society to Samuel J. Cieurca, Jr.

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Among the hosts of amateur fossil collectors, very few attain the status of “world authority” or “living legends.” But this year’s Strimple Award winner, Mr. Samuel J. Cieurca, Jr., deserves both of these titles. Google eurypterids and you will find an image of a wiry man up to his knees in water, hauling a “living eurypterid” from the sea: meet Sam Cieurca, posing with a cleverly crafted model of one of the largest eurypterids, he discovered, a 1.3 m *Pterygotus*.

I have known of Sam for nearly four decades. I got to know him quite well when I began teaching at the University of Rochester and I am still working with him to this day. Indeed, in some ways he was already mentoring students when I arrived at Rochester. My first Master’s student, Richard Hamell (who did a study of the famed eurypterid-bearing upper Silurian Bertie Dolostone), was a disciple of Mr. Cieurca, who, even then, was nicknamed “Sam the eurypterid man.” At the time, Sam worked as a chemist for the Eastman Kodak Company, but his true passion was field study of eurypterid beds.

Sam began his geological pursuits as a teenager in the early 1960s with initial interests in minerals and petrified wood. Sam started to document and disseminate his findings early on: he wrote an article on celestite in upper Silurian units in 1962, and even had a “petrified wood museum” for public view. It turned out that some of the mineral-bearing beds he was working on also produced well-preserved chelicerate arthropods, including the iconic *Eurypterus remipes*, New York’s official state fossil. Sam quickly switched geological allegiances and in that first year, he spent almost every weekend travelling from Rochester to the now famous Passage Gulf eurypterid locality in central New York, on which he wrote the first of his eurypterid-related articles in 1965.

Sam has continuously dedicated the past 50 years to following his passion. This thoroughness, and willingness to collect associated materials, has allowed Sam to amass the largest, best documented, and most complete collection of eurypterids in the world. In the early 2000s, Sam repositied most of this huge collection (10,000+ specimens) into the Yale Peabody Museum’s (YPM) Cieurca Collection, with a smaller, but significant collection at the Paleontological Research Institution, including what may be the world’s largest complete eurypterid specimen. The Yale collection represents an unparalleled archive, not only of eurypterid morphology, but also associated fauna and sedimentary structures, and including

Sam’s extensive field notes. Sam still regularly sends copies of his notes to Susan Butts, the Invertebrate Collections Manager at the YPM, and to my students and me.

The Cieurca Collection represents years of serious physical investment. Eurypterid collecting is extraordinarily hard work; most of these fossils occur in hard, massive dolostones. Excavation requires backbreaking labor and Sam has devoted thousands of hours to carefully and patiently splitting hundreds of tons of, often barren, dolostone. His collections are a thing of legend; there was a time when he could barely navigate through stacks of heavy dolostone that lined every room and piece of furniture in his house (including the couch), all carefully labeled and curated. Very few people have the energy or perseverance to amass such a vast collection and repositing this material in museums was by no means the end of Sam’s collecting—he estimates he currently has ~5,000 additional specimens in his basement, give or take.

I would not want to give the impression that Sam Cieurca is simply a fanatical collector of eurypterids. He is a dedicated and brilliant student of these organisms. His knowledge of the subtle nuances of morphological differences among eurypterid species, and of all of their anatomy, is remarkable. Moreover, he is not merely interested in the eurypterids, but in all associated fossils, and he has made a strong effort to preserve all of the faunas and floras and sedimentary structures of the unusual upper Silurian facies of the Appalachian basin. For example, he is very knowledgeable of the varied forms of microbialites—stromatolites and thrombolites—in this region, and the way they relate to the eurypterid-yielding facies. He also has extensive collections and knowledge of leperditians, phyllocarids, lingulid brachiopods, odd nautiloids, and carbonized algae. His specimens of one of the World’s oldest vascular plants, *Cooksonia*, have been donated for study by paleobotanist Dianne Edwards of Cardiff University, Wales.

Sam also makes careful observations of the details of taphonomy of these fossils, and the orientations of eurypterid-bearing “windrows.” He has an uncanny knowledge of the odd associated sedimentary structures that typify these hypersaline marine deposits, some of which are still poorly understood, having been overlooked by most previous workers.

Of no less consequence are Sam’s abilities as a stratigrapher. He has an unparalleled knowledge of all potentially eurypterid-bearing rocks in Ontario, Canada, New York, and

Pennsylvania. He has studied and measured nearly all of them, meticulously tracing and correlating beds at a scale of centimeters across the outcrop belt. Cieurca has compiled high-resolution correlated cross sections of the entire Bertie Group and has subdivided it into a series of formations, members, and beds that he has traced through every available exposure. As a result, Sam has acquired incredible insight into these rocks and has demonstrated subtle patterns of facies change and discovered regionally angular unconformities. He has also documented precisely where eurypterids and other fossils fit within this stratigraphic and geographic framework. Arguably, these refinements and contributions to the complicated upper Silurian stratigraphy of New York are just as important as his contributions to eurypterid paleontology.

Not infrequently, Sam steps away from his usual focus on known eurypterid-bearing facies and dedicates his time to new, temporary sites developed during construction. He watches for them, and then rapidly photographs, documents, measures, and sketches the sections, and collects as many fossils and sedimentary structures as possible. In this way, he has salvaged a tremendous store of information from many sites that no longer exist.

Fortunately, Sam has regularly documented his findings in a series of outstanding articles, mainly in the New York State

Geological Association guidebooks, and in abstracts of GSA and the Rochester Academy of Sciences. He also maintains a website on eurypterids and has produced a self-published and well-regarded book, "Eurypterids Illustrated." Remarkably, Sam has done most of this work on his own, but he has increasingly collaborated with a number of researchers. He worked closely with the late Erik N. Kellesvig-Waering, an expert on eurypterid systematics, and with other noted arthropod researchers, including Simon Braddy, Erik Tetlie, and Derek Briggs. Sam has subsequently authored or co-authored several peer-reviewed articles.

In summary, I can think of few individuals more deserving of recognition by a Harrell Strimple Award than Sam Cieurca. He is an expert—one might even say **the World expert**—on Silurian and Early Devonian eurypterids, and associated faunas and facies. He is undoubtedly the primary highly active stratigrapher on eurypterid-bearing deposits in the northeastern Appalachian basin. He has published on his findings and has benefitted the professional community tremendously, not least by compiling the world's largest eurypterid collection for all to study. For these reasons, I strongly and heartily recommend Samuel J. Cieurca, Jr. for the Strimple Award.

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