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FREDERICK R. SCHRAM
RECIPIENT OF THE CRUSTACEAN SOCIETY AWARD FOR RESEARCH EXCELLENCE

Les Watling

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The Crustacean Society Award for Excellence in Research was presented to Professor Frederick R. Schram at the July 2005 summer meeting held in conjunction with the 6th International Crustacean Congress at the University of Glasgow, Scotland.

Dr. Schram was born and raised in Chicago, received his B.S. in Biology from Loyola University of Chicago in 1965 and his Ph.D. in Paleozoology from the University of Chicago in 1968. His studies of crustaceans began with fossils collected in his home state of Illinois from the well-known Mazon Creek faunas of Pennsylvanian (Carboniferous) age. His first faculty appointment was at Eastern Illinois University, after which he moved in 1978 to the San Diego Natural History Museum. After a long tenure at the San Diego Museum, including a stint as Acting Director, he was affiliated with the Natural History Museum of Los

Angeles County from 1991 to 1992. He was then invited to take the professorship of Systematics and Zoogeography in the Faculty of Biology at the University of Amsterdam, where he worked until his recent retirement. His chair was attached to the Zoological Museum of Amsterdam and had many noteworthy occupants, among which was the carcinologist Jan Stock, best known for his work on amphipods and copepods, and the biogeographer Max Weber, the describer of Weber's Line that is parallel to Wallace's Line in Indonesia.

Dr. Schram has been intimately associated with The Crustacean Society. He was among the members of the Organizing Council, after which he was on the Board of Governors before serving as the Society's third President. He also put in a term as an Associate Editor of the *Journal of Crustacean Biology*.

Prof. Schram has published some 230 titles during his career to date, of which approximately 150 are papers dealing with fundamental research, with more currently in press. He is also the author of five books, among which are *Crustacea* (1986) and the rewrite of Meglitsch's textbook, *Invertebrate Zoology* (1991). In addition, he has been the editor, or co-editor, of five other volumes. One of his greatest accomplishments, and a real contribution to crustacean studies, was the founding of the series *Crustacean Issues*, for which he acted as general editor of the first 13 books. This succession of review volumes on diverse subjects was published originally by A.A. Balkema, Publ., Rotterdam. The series has just issued its 16th volume under the imprint of CRC Taylor and Francis as a Festschrift in honor of its founding editor (Koenemann and Jenner, 2005). In addition to service on several editorial boards, Dr. Schram is also Advisory Editor for the English edition for the crustacean volumes of the well-known *Traité de Zoologie*.

The first paper to be published in *JCB*, vol. 1(1): 1–10, is authored by Dr. Schram, and it is representative of his long career investigating the higher level classification and phylogeny of crustaceans, and later, of arthropods as a whole. His work has stimulated new fields of study, and brought an appreciation of crustacean morphology and the fossil record to the attention of biologists more familiar with only the living arthropods. However, Dr. Schram's work

encompasses a broad range of scientific disciplines, from basic taxonomy, to modern cladistic methods, to the relatively new field of *evo-devo*. He was one of the first to describe and utilize fossil taxa as part of investigating the evolutionary history of crustaceans. His work and his writing represent a model of excellence that will be difficult for most of us to match.

Despite all these achievements, I believe his proudest efforts are as a mentor. Not only M.S. and Ph.D. students have profited from Fred's guidance, but also innumerable junior colleagues have benefited from his counsel and from his ability to put people in different parts of the world in contact with each other.

With this record at hand, the board of The Crustacean Society decided to present Prof. Schram with its Award for Research Excellence. However, we look forward to many more years of Fred Schram's involvement in the work of the Society as well as the science of carcinology.

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COMMENTS BY FREDERICK R. SCHRAM ON ACCEPTING THE AWARD

The American journalist and publisher I. F. Stone once said,

"If you live long enough, the venerability factor creeps in; first, you get accused of things you never did, and later, credited for virtues you never had."

After what has been said about me during the day and this evening, I am feeling absolutely decrepit with age. I must thank, however, my old friend Les Watling for his presentation; our connection goes back to our graduate school days at the now defunct Pacific Marine Biological Station at the mouth of Tomales Bay, north of San Francisco. I also want to express my appreciation to Stefan Koenemann and Michael Gable for organizing the symposium this afternoon; Stefan and Ronald Jenner for producing the Festschrift volume, *Crustacea and Arthropod Relationships*; and the board of The Crustacean Society for giving me this award. That this is happening in Scotland is especially meaningful to me. My first National Science Foundation research grant carried me here on a sabbatical 30 years ago, and that research project helped extend my research interests beyond North America and expose me to the culture of Scotland and its people. I am also grateful to a host of M.S., Ph.D., and post-doc students with whom I have worked through the years, whose enthusiasm and hard

work made my papers far better than they would have been, than if I had worked alone.

I've been lucky—lucky in my mentors. I must mention two. First, there was Everett Olson at the University of Chicago, one of my advisors. Ole taught me an important lesson—"When you think you have the answer, always stop to ask, 'but what if ...' " What if it is not A leading to B, but B leading to A? What if the group you are analyzing is not monophyletic, but polyphyletic? In other words, turn your explanation around, and perhaps there is a valuable hypothesis lurking under the old presuppositions. Along these same lines, another mentor was Adrian Wenner, whom I met in connection with our both being involved in the foundation of The Crustacean Society. Adrian's lesson to me was—"In science, there is no such thing as absolute truth, only different ways of organizing knowledge." One of the speakers this afternoon at the symposium attributed a figure to me that actually was derived from the work of Adrian. Because of the influences of these two gentlemen, I owe my entire commitment to the value of multiple alternative hypotheses as a working method in science.

I was also lucky in my teachers. Eugene S. Richardson Jr. at the Field Museum of Natural History taught me the real reason why god created the red ink pen. No matter how

many times I rewrote a chapter of my dissertation, Gene would cover it anew with corrections in red ink. Thus did I acquire my own editing and reviewing skills with a penchant for the use of red ink, which decades of students and post-docs have experienced first hand. Now they know where I picked up the habit; it all came from Gene Richardson. I think the use of the red pen will be a talent that I can employ well in my new job as editor of the *Journal of Crustacean Biology*. So authors out there, be forewarned.

Another teacher of note was Sister Mary Immaculata, my high school Latin instructor. Sister Immaculata had the temerity to give me an "A" for my first semester in Latin, while at the same time checking my report card demanding a parent/teacher conference. When my father came home and announced that, "Sister says you are not working up to capacity," I won't report what happened after I said, "But I got an 'A'!" Suffice it to say, that nun could (to politely state this) motivate people at a distance. So, my graduate students and post-docs now know where my skills in that regard came from. I had a good role model.

Since the 1960s when I was in graduate school, carcinology [indeed all biology] has changed in remarkable ways. No one then could have foreseen what was to come. There are now better ways to gather data, and even better ways to analyze that data. The technology involved in this is to my mind amazing and largely black box. I don't pretend to understand it all. However, I didn't have to completely master it all. I viewed my job as one in which I was to: 1) bring together people who had the right skills, 2) create safe

and creative environments in which to work, 3) stand back and let these good people do their thing. In addition, occasionally, it was my job to: 4) administer a psychological kick in the posterior extremities, and/or 5) drain a red pen over a manuscript. Somehow, this method of management worked for me. What I received from it was a sense of pride and accomplishment watching young people gain an appreciation for scientific research, and now and then seeing them get "turned on" by the crustaceans.

I am acutely aware that after age 50, life is a lot easier if you can avoid doing anything unfamiliar or new. However, I'm also aware of what Ernst Myer taught us with his long life and career, "At all costs, keep at it!" Although I am retiring from my university position, I am not retiring from the field. I find I have too many projects to carry on, too many people I have to see through to a successful end of their studies, and too many things yet to be discovered about the crustaceans. At this, the Sixth International Crustacean Congress, you have chosen to honor me with this award. I sincerely hope that at the 14th International Crustacean Congress we will all be able to gather once again, with luck at some wonderful venue equal to this one, and celebrate my 100th birthday.

All it remains for me to do is to thank again The Crustacean Society for bestowing on me this treasured honor, to thank everyone here for coming, and of course to thank Scotland for being such a hospitable place, both now and some 30 years ago.