

John Ernst Randall (1924-2020)¹

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Our knowledge of the reef fishes of the world can be attributed to the work of thousands of scientists and naturalists who, over the course of hundreds if not thousands of years, have sought to understand the high diversity of tropical and subtropical waters. In the field of taxonomy, no one really knew more than John E. Randall (known to his friends and colleagues as ‘Jack’). While the names Bleeker, Valenciennes, Jordan, Günther, Cuvier, Fowler and other historically prominent ichthyologists come to mind, Randall’s contributions excel above those of others simply because he so often got it right. Randall described or co-described over 834 fish species (a couple of dozen or more remain to be published). Remarkably, 97% of his species descriptions remain valid. This is an astounding accomplishment in and of itself that towers above all others. For a true appreciation of his impact on scientists as



Figure 1. Jack Randall circa 1963 in Puerto Rico

well as amateurs interested in fishes and reefs, one must consider his extensive publishing record of over 940 scientific papers, books and book chapters that reveals his knowledge of the biogeography, ecology and behavior of reef fishes as well as his exceptional abilities as an explorer, scuba diver, photographer, writer and teacher. Jack Randall passed away peacefully on 26 April 2020 in his home in Oahu, Hawai’i just a few weeks short of his 96th birthday.

John Ernest Randall was born in Los Angeles, California on 22 May 1924. His interest in fishes dated back to his youth when his mother took him fishing, as well as during his teenage years when he was inspired by naturalist and explorer William Beebe’s observations of fishes made while hard-hat diving in Haiti. Following high school, he served in the U.S. Army (1943-1946), then entered the University of California, Los Angeles where he learned to scuba dive. His first diving gear was a crude rig he purchased from an Army-Navy surplus store in 1947. He filled the tank with oxygen

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from a welding shop, a tactic that would have killed him had he dived below a depth of 10m where breathing pure oxygen under pressure becomes lethal. Fortunately, his regulator did not allow for effective breathing while positioned vertically, either head up or down, so he assumed a horizontal position and stayed in the shallows, thus avoiding harming himself. In those early days of scuba, Jack had to carve and sand his own facemask for it to fit as well as fabricate a crude wetsuit because there wasn't anything available for sale. The following year he took an ichthyology class offered by UCLA and this provided him with the opportunity to collect fishes while using the first commercially available scuba equipment. He was awarded a BA in Biology in 1950, and soon demonstrated a taste for adventure when he sailed from California to Hawai'i with a small crew aboard a 37-ft (11 m) ketch that he had refitted himself. While living aboard the vessel he entered the graduate program at the University of Hawai'i in Manoa where he studied surgeonfishes (Family Acanthuridae). During this time, he met and married fellow graduate student Helen Au (an ichthyologist in her own right) and started a family. Throughout Jack's career, Helen remained by his side as a bastion of support, not only at home or at work but often in the field where she enabled such feats as seven productive dives in a day by attending to mundane tasks as changing film and batteries while he changed tanks.

In 1951 Jack participated in his first expedition, to Onatoa Atoll, Gilbert Islands (now part of Kiribati), in the southeast corner of Micronesia. He then earned a Ph.D in zoology in 1955 under the tutelage of ichthyologist William Gosline and soon afterwards published his first paper on fishes of the Gilbert Islands (Randall 1955) that was followed by a string of papers on surgeonfishes. Thus began an epic run of publications that has made him the most published ichthyologist of all time.



Figure 2. Jack Randall cooling off after a day of collecting fishes for a ciguatera survey, Dec 1974, Enewetak Atoll.

Unlike many of his peers who specialized in one to a few groups of fishes, or stayed with taxonomy or phylogeny, Jack published on a wide array of related topics including life history, feeding ecology, ciguatera, mimicry, symbiosis, reproductive behavior, hybridization and biogeography. He even

produced a major study on a mollusk, the Queen Conch (Randall 1964), while working in the Caribbean. Jack drew further inspiration from the work of a Dutch East Indies Army physician and naturalist, Pieter Bleeker (1819-1878), who had described 1,343 species of fishes (of which only about 42% remain valid today) while serving in what is now Indonesia. Jack's validity rate was over twice that of Bleeker's. Granted, Bleeker never had the advantages of being able to observe his subjects in their own environment, or quickly correspond with and exchange publications with colleagues, but he understood the taxonomic relationships among the species so well that many of his genera that were incorrectly lumped by subsequent researchers have since been resurrected. Jack recognized Bleeker's abilities, and this provided the impetus for ensuring the quality of his own work. Being able to observe fish in their natural environments and detect differences and similarities within and between species, and then combining these observations with the knowledge base required to interpret what was seen proved very informative. For example, when he and Helen were diving one day in the Caribbean they observed the spawning behavior of what was then considered to be different species of parrotfishes. They determined otherwise and this ultimately led them to be the first to explain that the strikingly different colored fish were actually males and females of the same species (Randall & Randall 1963). On every field trip or expedition, Jack worked tirelessly far beyond the scope of work required to take full advantage of every opportunity at hand. Seemingly trivial information was documented for use, perhaps decades later, when it could be combined with other pieces of a particular puzzle that resulted in the description of a new species or some other publication.



Figure 3. Jack Randall in the field with camera and spear, Enewetak Atoll, Republic of the Marshall Islands, 1983 (photo by Scott Johnson).

After research and teaching appointments at Yale University, the University of Miami, and the University of Puerto Rico, Jack was appointed ichthyologist at the B.P. Bishop Museum in Honolulu, Hawai'i in 1967. He also trained graduate students at the University of Hawai'i-Manoa and mentored others in programs elsewhere. At the Bishop Museum, he became Chair of Zoology in 1967 and worked as Senior Ichthyologist until his retirement in 2009. More importantly, he built the fish collection of the Museum, and it stands today as a world-class assemblage depicting the diversity of

reef and inshore fishes. Jack remained active after his retirement as he continued to describe new species and publish extensively, and collaboratively, until his passing.

Much of what we now know about properly photographing fish specimens is largely owed to Jack. He pioneered a technique for photographing freshly collected fishes, positioning them with their fins spread out and fixed, and taking advantage of the best lighting conditions possible. This not only revealed the colors of freshly dead specimens but made future examination of color patterns far easier. His famous ‘tank photos’ taken in both the field and lab slowly grew to a collection of over 10,000 images of at least 2,000 species from often remote or poorly known tropical and subtropical environments throughout much of the Pacific, Indian and Atlantic oceans and adjacent seas. Jack also became a world class underwater photographer and his *in situ* photos remain among the best and in some cases the only images of some species. These images not only set his species descriptions apart from others but ultimately graced the pages of standard marine fish references throughout the world, starting with the game-changing “Caribbean Reef Fishes” (1968), and now comprise a significant portion of photographs in FishBase, the online database of fishes (www.fishbase.org).

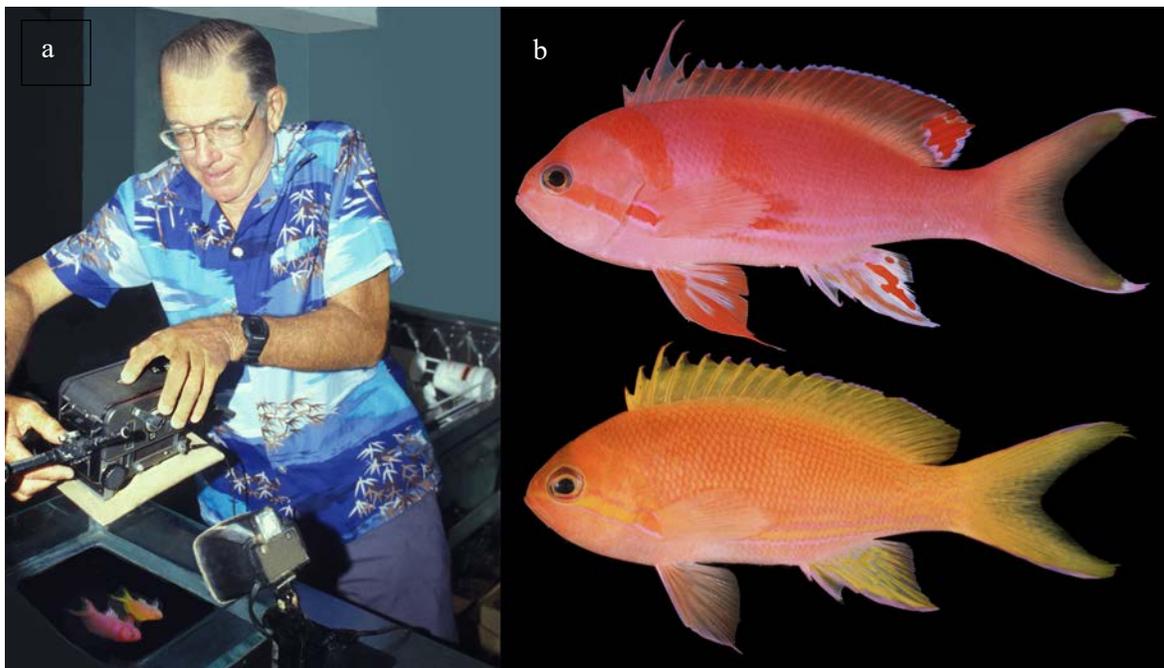


Figure 4. a) Jack Randall preserving the fresh colors of a new discovery through photography, on board the *Kimberly Explorer*, Rowley Shoals, Australia, September, 1987 (photo by Foster Bam). b) The results of that effort, male and female specimens of the newly discovered fish subsequently named *Pseudanthias sheni* (photo by John E. Randall).

Jack’s role as a teacher and mentor, whether in a formal capacity as an advisor to graduate students, or informally with virtually anyone who was curious about reef fishes, has had a profound influence upon the development of ichthyology as a discipline for exploring biodiversity. Many of his doctoral students have become leading experts in this field, as have others who simply benefitted from his advice or the experience of working with him. While Jack never lived in Micronesia, our knowledge of the taxonomy and distribution of inshore fishes in the region is a direct result of his inspiration and influence as well as his own pioneering work (see reference list). To fully appreciate his impact on our knowledge of Micronesian fishes one only need look at any recent list of those fishes (scientific name with author and date) and ponder the high number of species that he described

as an author or co-author. Jack also frequently published in *Micronesica* with fifteen articles from 1971 to 2008. These are listed with asterisks in the references below. His contribution to our knowledge of Micronesian fishes is huge and will be long-lasting.

Finally, Jack Randall served on the editorial board for *Micronesica* from 1977 until his death in 2020. When the current editor of the journal took the reigns in 2014, Jack requested to remain on the board. In offering his congratulations to the editor, he also, poignantly offered sympathy for the challenges. This was classic Jack Randall – generous with his time and concern for colleagues.

Jack Randall is survived by his wife Helen, his daughter Loreen Randall O’Hara, his son Rodney, four grandchildren, and two great-grandchildren.

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