HISTORICAL PERSPECTIVES

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Evolution of the Role of Women in the American Society of Ichthyologists and Herpetologists

Lynne R. Parenti[1] and Marvalee H. Wake[2,3]

The role of women in the American Society of Ichthyologists and Herpetologists has evolved during the past 100 years. In the early years of the Society, the role of women was largely limited to assisting men in research and administration. One exceptional woman was Helen Thompson Gaige, a herpetologist at the University of Michigan, who served as Editor-in-Chief of *Copeia* for most of the period from 1937 to 1950. Women have become more visible and engaged in all aspects of the Society only during the past few decades. Of note, the first woman President, Marvalee Wake, was not elected until 1982, and since then, just five more women, three herpetologists and two ichthyologists, have been elected to that Society leadership position. We offer comments from our own experiences to show how our engagement with the Society has influenced our careers.

WOMEN have been a natural, integral part of the American Society of Ichthyologists and Herpetologists (ASIH) since it was founded a century ago. The women involved have had many roles during the Society's century of progress. Early in its existence, these women usually were not members, but spouses or students who contributed to and supported the work of the men, in both research and in the Society. Their work for the Society was mostly unsung and an almost expected consequence of their association with men. Only in recent decades have the roles of women evolved into those with greater responsibility and greater visibility.

This is not a review of American women in ichthyology and herpetology, but rather is intended to illustrate the changing involvement of women in ASIH. Rosa Smith Eigenmann (1858–1947) is often called the first woman ichthyologist in the United States (Brown, 1994), but published her last paper in 1891, more than two decades before the first issue of *Copeia,* and, as far as we know, had little to do with ASIH. Her husband, prominent ichthyologist Carl Eigenmann, was not a Society officer. Other women ichthyologists who lived and worked during the first 50 or so years of the Society, such as Grace Pickford and Grace White, also seem not to have been particularly involved (Brown, 1994), although women in comparable positions today in universities and museums view participation in the Society as routine. The situation was only slightly different for women in herpetology—see below. One notable exception was Margaret Hamilton Storey (1900–1960), curator and librarian at Stanford University Natural History Museum, who oversaw the museum's ichthyology and herpetology collections (Brown, 1994). She also edited the *Stanford Ichthyological Bulletin* and the *Occasional Papers* and in many other ways encouraged and facilitated the research of Stanford's many notable faculty and graduate students in systematic herpetology and ichthyology. Storey served as Secretary (1937–1942) and President (1941) of the Western Division of ASIH, which was chartered in 1929 and abolished in 1966 (Berra, 1984). We have two goals for this essay: first, to present a brief review of the evolving role of women in the several "parts" of ASIH, and second, to use our own involvement as examples of that evolution.

Women and Copeia

A major venue for contributions and communication by women in ASIH has long been the Society's journal, *Copeia*. Women (one in particular, Helen Beulah Thompson Gaige; Fig. 1) have been involved in the publication process, either via manuscripts or management, for much of the life of the journal, and their participation mirrors most of the procedural and leadership changes in the society. *Copeia* was started by John T. Nichols (AMNH) in 1913 and published and circulated initially at his own expense. Three years later, in February 1916, Nichols met with Henry W. Fowler (ANSP) and George Dwight Franklin (AMNH) as a publication committee. These "founding fathers" realized the value of a formal society to become the focus of communication; hence, the American Society for the Study of Fishes and Reptiles emerged, and with the development of bylaws a month later, became the American Society of Ichthyologists and Herpetologists.

The early history of *Copeia* is summarized by Berra (1984) and Mitchell and Smith (2013a, 2013b); we need not review it, save to say that, as tabulated by Mitchell and Smith (2013b), few women published in the journal in its early days—only 21 contributed to the first series. Of 353 papers on fishes, none was by a woman (Mitchell and Smith [2013b] claim that one paper was written by a woman, Lynn Bogue Hunt, but Hunt was a man). Appropriately, the first paper published by a woman was in 1914 by University of Michigan herpetologist Helen Gaige (who was to have a major role subsequently in the development and maintenance of *Copeia*). Several of the early female authors had

[1] National Museum of Natural History, Smithsonian Institution, P.O. Box 37012, NHB MRC 159, Washington, D.C. 20013-7012; Email: parentil@si.edu.

[2] Department of Integrative Biology and Museum of Vertebrate Zoology, University of California, Berkeley, California 94720-3140; Email: mhwake@berkeley.edu.

[3] Order of authorship is alphabetical.

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Fig. 1. Helen Thompson Gaige (1890–1976), herpetologist at the University of Michigan and longtime Editor-in-Chief of *Copeia*. Portrait by Le Clear photographic studio of Lansing, Michigan, 1913. Photo from the UMMZ archives provided by Gregory Schneider.

substantive careers in herpetology (e.g., Ruth Breder, Mary Dickerson, Olive Stull, and Doris Mable Cochran [Fig. 2; whose first publication in *Copeia* in 1939 dealt with a dog that died from eating a *Bufo {Incilius} alvarius*]). Perhaps to encourage more contributions by women ichthyologists, the Marion Grey Award was established in 1965 for the best ichthyological paper in *Copeia* written by a woman. Myvanwy Dick and Henry B. Bigelow donated $1,000 to fund the award, which was never given for reasons unknown to us;

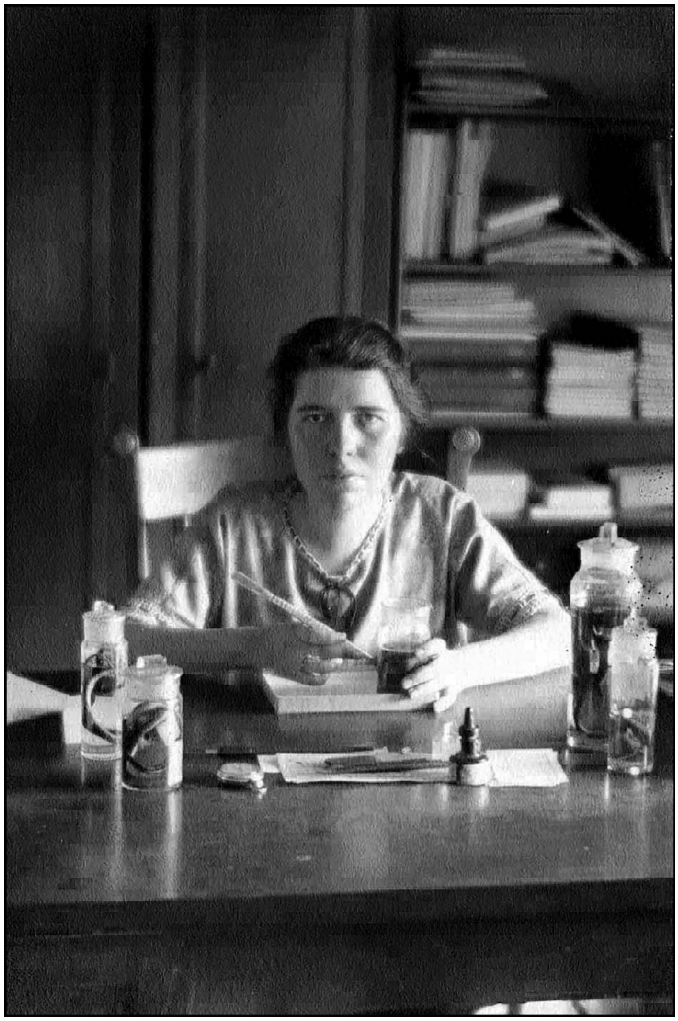

Fig. 2. Doris Mable Cochran (1898–1968), herpetologist at the National Museum of Natural History, ca. 1930s, at her desk with ground-glass specimen jars from the collection. Photographer unknown. Photo courtesy of the Smithsonian Institution Archives. Image #92-957.

the funds were used to support the publication of selected papers in *Copeia*, and not necessarily those by women.

After what Mitchell and Smith (2013b) termed the "academic coup," when Editor Emmett Reid Dunn resigned from the editorship of *Copeia* (after considerable criticism of the journal by University of Michigan herpetologist and administrator Alexander Ruthven, then-President of ASIH), Ruthven established a corps of officers and editors largely at Michigan. He appointed Carl Hubbs as ichthyological editor and Helen Gaige as herpetological editor in 1930. In 1937, ASIH had three life members: Thomas Barbour, Carl Hubbs, and Helen Gaige. Gaige, who had been herpetological editor for seven years, was appointed Editor-in-Chief of *Copeia* in 1937 and remained so until 1950 (except for the first post-WWII year, 1946, when Reeve Bailey and Norman Hartweg [Michigan] were co-editors). One of the first acts of Hubbs and Gaige was to overhaul the format of *Copeia* and effect numerous changes in publication policies, many of which stand to this day. Helen Gaige's strong leadership of the journal for 20 years unquestionably facilitated the growth and reputation of ASIH. She was elected Honorary President in 1946 and remained so until her death in 1976 (founder J. T. Nichols had been so elected 1927–1958, Leonhard

Stejneger 1931–1942, and Thomas Barbour 1944–1947; each served until his death). Ms. Gaige was still listed as Honorary President in 1982 in the Berra (1984) chronology; she was the last, and perhaps the most respected for her contributions to the Society. The category has been terminated. The Managing Editor of *Copeia* has otherwise always been a man, as were the divisional and other editorships, until recently. For the last two decades, women have been well represented in these important service roles.

Another venue in which women have performed major service, also associated with *Copeia*, is the office of Publications Secretary, created in 1949 and eliminated in 1997 (due to changes of the constitution and bylaws and creation of new committees). Initially held by men (Lionel Walford, N. Bayard Green, Fred Berry, Les Knapp, and Hugh DeWitt), Linda Trueb assumed the position in 1980. She reformed the role and publications practices during her five-year tenure.

Women and ASIH governance

The ASIH Board of Governors (BOG) was not established until 1940, a result of major changes in organization and the bylaws. A 50-member Board was designated, each member with a five-year term. Past-Presidents are *ex officio* members of the Board for life. There was a hiatus in meetings during the WWII years. In 1946, business resumed with a 30-member board and elections/rotations subsequently. BOG minutes, now reported extensively in *Copeia,* were sparse for a number of years, and BOG membership and elections were rarely reported.

Women did not have much of a voice in Society business in the post-WWII decades. Few women were elected to the BOG from 1946 to 1957; Grace Orton was elected in 1948 and 1954, Margaret Storey in 1949 and 1955, Frances Clark in 1955, and Eugenie Clark in 1957. Otherwise, BOG was an organization for men. That continued with increased consistency with no women elected from 1958 through 1971. Marvalee Wake was elected in 1972, Margaret Stewart in 1975, Judy Stamps in 1977, Martha Crump and Marvalee Wake in 1979, Sharon Emerson and Cathy Toft in 1980, Lynne Houck in 1983, and Susan Jewett (the first woman ichthyologist since Eugenie Clark in 1957!) and Linda Maxson in 1984. In the years that followed, none to five of the ten members elected have been women (none in 1987, 1999, 2004, and 2009, but four in 1984 [Lynne Parenti, Fran Irish, Meg Stewart, and Linda Trueb], and the high point of five in 1994, with Miriam Benabib, Mo Donnelly, Susan Jewett, Jackie Webb, and Fran Irish elected).

Given that the number of women in ichthyology and herpetology in graduate school and in university and museum positions increased dramatically from the mid-1960s onward, we wonder what Nominating Committees were thinking to act with such bias. One contributing factor may well have been the reluctance of some Presidents to appoint women to ASIH committees, such that a pipeline of men, but few women, with experience was established upon which Nominating Committees could draw. The Nominating Committee itself was appointed by the ASIH President until the bylaws were changed in 1975 and the committee elected by the BOG. Almost at the same time, men, for obvious reasons, dominated the nominations to Honorary Foreign membership, then Ethelwynn Trewavas was elected in 1951, Marie-Louise Bauchot in 1974, Alice Grandison in 1977, Rosemary Lowe-McConnell in 1994, Eugenia del Pino in 1996, Gloria Arratia in 1999, and Natalia Ananjeva in 2010 (four ichthyologists and three herpetologists); of the 92 elected since the founding of the title in 1936, seven are women, with four elected in 1996 and later (Hilton, 2016). Numbers of women are increasing, both in the "pool" and in the nominations, but not yet proportionally.

Likewise, there have been few women in major offices of ASIH. It took nearly seven decades to elect the first woman President—Marvalee Wake elected in 1982 to serve in 1984. There have been just five more: Linda Trueb elected in 1990; Margaret Stewart in 1994; Lynne Parenti in 2003 (the first woman ichthyologist); Maureen Donnelly in 2015; and, most recently, Carole Baldwin in 2016. The only female Secretary is Maureen Donnelly (2000–2015) and the only female Treasurer Margaret Neighbors (2001–2012), both so recently. This list too reflects the interesting and curious tendency for women herpetologists to be more extensively represented than women ichthyologists in leadership roles in the society.

We noted above that Helen Gaige was the last Honorary President of ASIH, and one may ask why she never held the office of President. We guess that she did not want the job. In the joint obituary of Gaige and her husband, Michigan entomologist Frederick McMahan Gaige, Joe Bailey (1977:610) tells us, "I don't know that Mrs. Gaige ever attended a meeting of the ASIH except for those held in Michigan and she managed to avoid the official pictures of those." Her contemporary, Doris Cochran, was elected a Distinguished Fellow of ASIH in 1962, a position she held until her death in 1968. Like the position of Honorary President, that of Distinguished Fellow is being phased out.

Frances Clark, elected to the BOG in 1955, was the younger sister of Laura Clark Hubbs, who was the wife of Carl Hubbs, and the aunt of Frances Hubbs Miller, wife of Robert Rush Miller. Laura and Frances attended ASIH meetings frequently with their husbands, with whom they collaborated, and provided guidance and support to numerous students and professionals, but neither ever was a member of the BOG.

Participation of women in general ASIH activities

More recent Presidents (and some of the "earlier" ones) have appointed more women to ASIH committees. We note another interesting tendency—the appointments of women were rare until recently (after 2000), and most have been to the traditional spheres of award-dispensing and other graduate-student-oriented committees and few as chairs. Doris Cochran chaired the Resolutions Committee at the 1948 meeting and, more recently, Carol Johnston in 1992 and Lynne Parenti in 1996. It is only lately that we have had balanced and proportional representation on such committees as the Nominating Committee and other purportedly more "influential" ones, but we are delighted that the trend has become established. This "new normal" cannot be allowed to degenerate.

The pipeline and the experience that it affords really matter, and we applaud the trend of funding of graduate student research by ASIH. Since about 1996, women have received about half of the Gaige awards in herpetology, sometimes two thirds; Raney awards, although fewer each year (but more lucrative) show a similar trend, yet for several of the earlier years in the two decades just one or two women received them. Given that merit is the essential criterion, it is obvious that women are achieving and are being recognized for their potential early in their careers. Both the achievements and the willingness to recognize potential will provide

necessary and appropriate encouragement to good students, irrespective of gender.

The transition from few women involved in Society activities to a fuller level of engagement got an unexpected and uncomfortable boost at the annual meetings held in Champaign-Urbana, Illinois, in 1992. During the regular sessions, a man showed a sexist slide of a woman in his talk. Women in wet t-shirts and other blatantly demeaning images had appeared, from time to time, in talks at the meetings in earlier decades, and regularly marred the pages of *Dopeia*, the otherwise humorous, unofficial spoof of *Copeia*, but these anachronistic displays were nearly forgotten. Women in 1992 were justifiably stunned by this unwelcome whiff of nostalgia. Hand-written signs calling for an impromptu meeting of women were posted in the women's restrooms. A resolution that condemned the action was written by the Resolutions Committee, chaired by Carol Johnston, and published in *Copeia* 1992(4):1184 as part of the meetings summary (Burr, 1992).

Inevitably, women in the Society emerged from this episode stronger and more self-assured. The next year, the meetings in Austin featured a "Women in Science" lunch at which Honorary Foreign Member and world-renowned fish ecologist Rosemary Lowe-McConnell entertained the assembled women with her wit and wisdom. In 1994, at the meetings in Los Angeles, four women of ASIH—Sharon Emerson, Margaret McFall-Ngai, Marvalee Wake, and Lynne Parenti—discussed their lives and careers in an evening panel discussion and social on "Women Scientists: Careers in the 90s." Another positive outcome was the official formation of the Equal Participation Committee in 1995. This committee continued to organize a luncheon/panel discussion at the annual meetings and encouraged an informal mentoring program. At the 1997 Seattle meetings, the topic was "Maternity Leave and Child Care Issues." These meetings continued into the early 2000s until it was decided that such discussions focused on women were no longer necessary even though all the issues were not resolved. In 2011, Marlis and Michael Douglas began a popular "speed-mentoring" program that brings together students and professionals, women and men, at the annual meetings. In 2015, providing child care at the annual meetings was taken up by the ASIH Ad Hoc Committee on Membership chaired by Brian Sidlauskas (it had been provided via local committees' efforts occasionally, but abandoned a decade or more ago because of concerns about liability). Finally, mentoring and child care are understood to be equally important to men and women.

PERSONAL HISTORIES

To complete this essay, we drew up a list of questions to serve as a template for our personal stories which we each answer in interview style. We aim to illustrate the changes we have made in ourselves, especially in the context of ASIH.

Lynne R. Parenti

1. Why ichthyology?—I have always been interested in natural history and science. Had I not become an ichthyologist, I would probably be a botanist. My entry into systematic ichthyology came out of what some might consider a disappointment. I am a native New Yorker and for financial reasons never considered a college outside the state. As a high school senior in 1970–1971, I applied to Cornell University's liberal arts and sciences program and was accepted into the freshman class. I had to decline because it was too expensive for me and my family. Instead, I attended what was then called the State University of New York at Stony Brook. During my last two years there, I was a work/study student in the lab of James S. Farris. Mary F. Mickevich was a graduate student at the time and readily took to mentoring me. After I completed a senior project on two sympatric species of the killifish genus *Fundulus,* and was now obsessed with bones, Mary suggested that if I was interested in comparative anatomy and fish systematics, I should become a graduate student of Donn Rosen at the American Museum of Natural History (AMNH). I didn't know who he was, but I soon found out.

2. What early influences in your life helped you become an ichthyologist?—A love of the natural world (I'd rather be outside than inside and take daily walks at lunchtime) and a deep appreciation for art and the relationship between art and science. I come from a family of artists: my father worked as a commercial artist, my oldest sister, Jane, is a quilter/systems analyst and my middle sister, Diane, is a painter. My mother's sister made hats for the Stetson Co. Biology is the most artistic of the sciences so I felt right at home with the illustration and photography that is so integral to natural history and systematics. I write for fun as well as research. English teachers in high school and college (I took a course in journalism because I wanted to be the next Jane Brody) guided me toward clear prose.

3. Who were your mentors?—As above, Mary Mickevich was one of the first. Donn Rosen shaped my way of thinking and in many other ways was an incalculable influence; I am just understanding some of that, even now. Early on, Jim Tyler gave me guidance. Ethelwynn Trewavas and I shared an office at the Natural History Museum, London, when I was a postdoctoral fellow, and she tutored me in classical literature. Maureen Hanscomb, a London writer, dancer, pianist, and *raconteuse* taught me about music: jazz (Ella Fitzgerald) and opera.

4. What obstacles did you face as your career developed? How did you deal with them?—Some were internal; some were external.

Internal: I was reluctant to publicly "come out" early on for what I thought were good reasons that would be hard for young people to understand today. I thought it was best to keep quiet but that, of course, meant not to be authentic. It couldn't last and when I met Tina Ramoy, my life partner, in San Francisco in 1986, I decided that authentic was better.

External: Where to begin? Most women of my generation have a long list of injustices that we could rattle off. I will mention just two. Some AMNH ichthyologists undertook fieldwork in Guatemala when I was a graduate student, but I never got to go. Women in the field were considered a distraction. My graduate school colleague, Rich Vari, was sympathetic and invited me on a fieldtrip to Suriname in 1980, for which I am most grateful (Fig. 3). The other is more recent. In 2003 I was elected to the office of President of ASIH. An ichthyologist asked me, "How did you pull that one off?" I'm not kidding.

5. What are some highlights of your career?—Once I had gone to Suriname, I realized how much I enjoyed tropical fieldwork. As a postdoctoral fellow at the California Academy of Sciences, I spent six weeks in Papua New Guinea in 1987 collecting fishes with Gerry Allen and Jack Randall. Jack

Fig. 3. Lynne Parenti on the Corantijn River, Suriname, September 1980 (photo by R. P. Vari).

could not believe I had never been scuba diving, so I went with him after minimal instruction. I survived and returned to California excited about diving. Tina and I took a scuba class and completed our certification dives in Monterey Bay while seals nipped at the tips of our fins.

Fieldwork in Sulawesi in 1995 and 2010 fulfilled a long-term dream. I have also been to Borneo three times, and elsewhere throughout Asia and the central and western Pacific (Fig. 4). Someday I may write a memoir about these experiences.

As a NATO-NSF postdoctoral fellow I worked at the Natural History Museum and lived in London for 16 months in the early 1980s. I also traveled throughout Europe which gave me an international perspective. In many ways, this period changed my life.

It has been an honor to be an elected fellow of AAAS, the California Academy of Sciences, and the Linnean Society of London and an honorary member of the Masyarakat Iktiologi Indonesia (Indonesian Society of Ichthyology). I was thrilled when elected President of ASIH, and I prize my Stoye and Gibbs awards from the Society. I value invitations to speak or teach, especially from students, and accept as many as I can. One other special honor was to be a Distinguished Lecturer in the Artedi Symposium at the Royal Academy of Sciences, Stockholm, in 2005.

My position as a Curator and Research Scientist at the Smithsonian's National Museum of Natural History is extraordinary. I am a US federal employee which means my job is different from many other academic appointments in complex, yet positive, ways.

6. What advice would you give a young ichthyology or herpetology student, female or male?—Be yourself. It is easy and you do not have to practice. Listen to your mentors and consider what they say. It matters little if you are turned down for a particular graduate school or do not get a certain job. What matters most is what you do next. Laugh often, especially at yourself.

7. What, if anything, would you have done differently in your career? Or did you meet all of your career goals?—I would change little. As with the Cornell experience, above, I try to learn from disappointments and explore other options. I lived on grants and fellowships for some years following my

Fig. 4. Lynne Parenti on Coconut Island, Oahu, Hawaii, April 2013 (photo by Zeehan Jaafar).

Ph.D., but when I got a job, it was among the best in ichthyology. I never changed my goal to get a curatorial position in a major natural history museum, which was instilled in me as a graduate student of Donn Rosen at the AMNH.

8. What are the favorite parts of your job as an ichthyologist?—Fieldwork, obviously. Any work with specimens; I enjoy sorting and identifying a field collection. Discovery of a new character, species, or pattern of characters or of distribution. Telling others about those discoveries through talks or publications. Writing and editing. Composing illustrations and drawing maps. Travel and the many colleagues and friends I have worldwide. It has been a rich experience.

Mentoring students is great fun. Daniel Lumbantobing came to Washington, D.C. from Indonesia to get his Ph.D. at the George Washington University with me and GWU professor John Burns. Daniel loves to write English almost as much as I do. We met one afternoon to discuss the difference among the words "margin," "rim," and "edge" to describe an anatomical feature.

9. What are the worst parts?—To have to decide what not to do. The opportunities are vast and there is no time to do it all.

10. What has been the influence of ASIH on your career?—ASIH is my principal scientific society. I joined soon after entering graduate school in 1975 and became a Life Member after that category was re-instituted in the early 1990s. I attended my

first meeting in Gainesville, Florida, in 1977 and every one since. I grew up in the society. I sharpened my skills as a "ham" as emcee of the annual banquet. Early on, I formed the goal to become ASIH President. The 2016 meeting will be my 40th in a row. This is an obsession. Why? Because ASIH is the preeminent society for systematic ichthyology. I have presented all of my major research results, ideas, and questions on fishes at ASIH meetings. There is really nowhere else to go and be readily understood. If it didn't exist, we would have to invent it.

Marvalee H. Wake

1. Why herpetology?—Completely by accident. As a senior in college, long planning a career in medicine, I had delayed most of my Zoology major requirements until my last year. I'd applied to med schools and was shadowing physicians. But I was becoming disenchanted with medicine because I saw so many physicians largely being technicians, without judgment or empathy. At the same time, I was finding my zoology courses (evolution, physiology, embryology, vertebrate natural history, etc.) fascinating. Shortly after the evolution course started, the professor (Jay Savage) called me in and told me I ought to be doing a senior research project. I wandered over to his office to find out what he meant (and past the offices of Arnold Kluge, David Wake, Tony Gaudin, and others of Jay's graduate students). Jay had just returned from a Guggenheim year in the field in Costa Rica and had a set of amphibians (caecilians, of course) that he hadn't yet identified. That became my senior thesis—identifying the caecilians and doing as much background reading on their biology as possible. Jay suggested that I apply to graduate school at USC, even though deadlines had passed. Because I was turned off by what I was seeing of day-to-day medicine, and excited about research potential in biology, I decided to apply. The rest is "history"—I've essentially continued my senior thesis research for the rest of my life.

2. What early influences in your life helped you become a herpetologist?—My parents encouraged all sorts of exploration, largely through libraries, but also in discussions of most topics (aspects of politics and social structure were verboten). They let me think I could do almost anything, as long as I worked hard and kept my perspective. In fourth grade, I had a wonderful teacher whose main interest was field biology. We were in and out of tide pools, chaparral, etc. I thought she was ancient, but she was spry and wonderfully knowledgeable. I thought I might be able to be like that…

3. Who were your mentors?—My primary mentor was Jay Savage. It was an unusual situation, though—I was Jay's first female student (some dynamite women followed), he was away much of the time, and I left USC after my first two years of graduate work to go with my then-new husband to Chicago, with the intention of doing my qualifying exam at USC but nearly all of my dissertation research in Chicago for the USC degree. So I saw rather little of Jay, but he was always helpful when asked. It was not a good time in the sense that there were few women on science faculties in the early 1960s. Olga Hartman, the amazing invertebrate zoologist, had a staff research position at USC. Only one woman, Ruth Bass, was a biology faculty member, a Professor of Biochemistry. I still remember my shock when one of her distinguished colleagues introduced her, saying, "Ruthie isn't a woman, she's a biochemist!" While teaching in the brand new University of Illinois–Chicago Circle's Department of Biology, I did most of my research at the University of Chicago and some at the Field Museum of Natural History. Robert Inger was always helpful and ready to talk about science. David Wake facilitated much of my research in his new lab at the University of Chicago, was ever-encouraging, and has always been my rock. His wonderful histology technician, Addye Brown, was one of my most important mentors! I learned technique from her… Because of my experiences, and relative "distance" from the people who had early influence, I tend to define "mentorship" as significant encouragement and advice, but not necessarily provided by one individual. I think that a young scientist should keep an open mind, seek advice broadly, and assimilate those features that work for the extant situation. One shoe doesn't fit all, and one mentor is not necessarily the ideal to follow assiduously…

4. What obstacles did you face as your career developed? How did you deal with them?—The obstacles were many and varied; I am pleased to say that things have changed a lot, and I know a number of younger women scientists who acknowledge that being female has not only not held them back, but probably helped them to be recruited. I have the usual litany of difficulties, such as overhearing the conversation of my labmates when they learned I was pregnant and their "Well, she'll never finish" (I finished before all of them…), not being allowed to go on some field trips, the assumption that I work for my husband (this still persists in some quarters), the more damaging assumptions either that I can't think independently of my husband (I think I've demonstrated that's not accurate), or that we are competitors (hardly). Was having accepted various "helping" roles a mistake? Not at all; I learned so much about how institutions work and people behave… I once thought of doing an "alternative cv" of my "first woman" roles and titles, but I decided that would be foolish, because I've spent my career trying to make things better for women, all students, and science itself, so a listing of points of change is neither important nor useful. It's all about interest and stimulation, and PERSISTENCE.

5. What are some highlights of your career?—I've had many "highlights," ranging from teaching splendid students, graduate and undergraduate, to working with societies and an NGO. I have had the honor to be elected President of several societies (e.g., ASIH, AIBS, SICB, ISVM), congresses (WCH, ICVM), and an international NGO (IUBS). Each has carried significant but interesting responsibilities. Besides, it's fun—one interacts with a great diversity of interesting people and learns a lot about how institutions function. IUBS (the International Union of Biological Sciences) for me involved an early emphasis on biodiversity science (including being one of the co-founders of the DIVERSITAS international biodiversity science NGO), introducing a decadal program in "Integrative Biology" for development by the Union, and a lot of interesting global travel to represent IUBS. I have been deeply honored to be elected a Fellow of the American Association for the Advancement of Science, the American Academy of Arts and Sciences, the California Academy of Sciences, and the Radcliffe Institute for Advanced Study, and the Linnean Society of London, and to receive the CAS Fellows' Medal and the ASIH Henry Fitch Award. My research has often been rewarding; new discoveries have provided new avenues. I have been enormously privileged!

Fig. 5. Marvalee Wake collecting (probably salamanders) in the cloud forest near San Marcos, Guatemala, August 2006 (photo by D. B. Wake).

Fig. 6. Marvalee Wake preparing caecilians in San Marcos, Guatemala, August 2006 (photo by D. B. Wake).

6. What advice would you give a young herpetology student, female or male?—Keep an open, questioning mind, do not be trapped by complacency, and explore widely and try new ideas, techniques, places, and interests. Never be defeated; just step back and take stock. Try to have "whole" lives—interests in family, and those activities that bring a different peace and happiness. Do music, hiking, or whatever that helps to keep a little more sanity, despite all those factors that we label "pressure."

7. What, if anything would you have done differently in your career? Or did you meet all of your career goals?—I would have been born 50 years later (not that I had a choice)! New techniques that have emerged in the last 10–20 years have revolutionized evolutionary morphology and development, and I need another lifetime! I've tried to be adaptable and sought situations that were stimulating and in which I could be useful. Most had vicissitudes of various sorts, but I'd rather be out on a limb than waiting for things to happen… In retrospect, I would have done three things differently: 1) chosen a different focal taxon (it's been VERY frustrating to have an idea and not be able to get the material to deal with it), 2) been more centrally focused but still integrative and bridging levels of the biological hierarchy, and 3) not postponed "fun" things...forever. I certainly haven't met all of my career goals, but those goals kept changing as science advanced and my own roles changed.

8. What are the favorite parts of your job as a herpetologist?—Being able to work in the field (Figs. 5, 6), the lab, and collections; working with great students and postdocs; working with the public to aid in understanding biology and science broadly; and interacting with interesting people in interesting places.

9. What are the worst parts?—The frustration of inadequate sample sizes and data, the occasional difficulty managing research, teaching, service, funding, and family, and especially finding quality time for all I want to do, especially with David, son Tom, and now with our wonderful granddaughter Summer and her mom, Chrissy. I still haven't learned how to say "no," which poses its own problems…

10. What has been the influence of ASIH on your career?—ASIH has had a strong influence on me in terms of aspects of my research and of my approach to colleagues and students. It was the first professional society that I joined as a graduate student, so I "grew up" in that context. I quickly found that some people were not supportive, but that most were; it also became apparent that professional societies could have a great deal to say about research and careers. I appreciate many people's passion for "their" animals, and for the research they do and especially the field component of it. It is a society that has been somewhat receptive (over time) to change, more so in terms of research and less so regarding its own sociology, but that too is changing. It has given me a perspective on what societies can do for the profession and for science.

CONCLUSION

We hope that we have entertained and enlightened you with this brief history and our perspectives on our careers. Although different, they share some common themes, perhaps the most important of which is that we did not follow a straight path from child to professional scientist. Our lives have brought us twists and turns that we could never have predicted. Many others, women and men, have had careers with all sorts of similar variations; it would be of great interest to develop personal historical records of the diverse ways that one can participate in professional societies, especially ASIH. The oral histories and the individual histories published in *Copeia* fill part of that need, but an invitation to our colleagues at all education and career stages to write brief, personal accounts in their unique voices could lead us into the next 100 years of ASIH.

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LITERATURE CITED

Bailey, J. R. 1977. Helen Thompson Gaige and Frederick McMahon Gaige 1890–1976. Copeia 1977:609–611.

Berra, T. M. 1984. A chronology of the American Society of Ichthyologists and Herpetologists through 1982. Special Publication 2, American Society of Ichthyologists and Herpetologists.

Brown, P. S. 1994. Early women ichthyologists. Environmental Biology of Fishes 41:9–30.

Burr, B. 1992. Summary of the meetings 1992. Copeia 1992: 1154–1197.

Hilton, E. J. 2016. Honorary Foreign Members of the American Society of Ichthyologists and Herpetologists. Copeia 104:286–292.

Mitchell, J. M., and D. G. Smith. 2013a. *Copeia* 1913, Number 1: origin and authors. Copeia 2013:189–193.

Mitchell, J. M., and D. G. Smith. 2013b. The history of *Copeia*: metamorphosis and the academic coup. Copeia 2013:361–365.