


Tribute to Dr Barbara York Main OAM: arachnologist and nature writer (27 January 1929 to 14 May 2019)

Leanda D. Mason  ^{A,C} and Patricia L. Kennedy ^B

^ASchool of Education, Curtin University, PO Box U1987, Bentley, WA 6845, Australia.

^BDepartment of Fisheries & Wildlife and Eastern Oregon Agricultural Research Station, Oregon State University, Union Experiment Station, PO Box E, Union, OR 97883, USA.

^CCorresponding author. Email: leanda.denise.mason@gmail.com

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Barbara York Main was a Renaissance woman, one of those rare individuals who succeeded in multiple vocations in her life with aplomb (Box 1). She was a devout scientist who cared deeply about the unique Australian landscape and its biota. Her passion for south-western Australia was evident in her essays and books on nature that focused primarily on her birthplace in the central wheatbelt. She conducted many of her scientific investigations and enjoyed camping adventures with her family in this region.

Barbara's creative writing was notable for the way it hybridised scientific content with sensual discourse associated with literature, often including sketches to accentuate descriptions such as those throughout the page margins of her classic 'Between Wodjil and Tor' (Main 1967). Her talent brought to life the natural beauty of the wheatbelt, as well as the social and ecological history describing how wheatbelt settlement had separated this landscape from its ancient ecological patterns (Main 1967, 1971, 1993). As described by Hughes-D'Aeth (2008), 'Barbara writes with a subjectivity that is detached and intimately engaged, disinterested and intensely interested'. That deep care for the countryside began during her formative years. In 1929 she was born on a small farm in Tammin, in the central wheatbelt; she had four brothers. Her family farm had approximately 8 ha of 'nice bush around the homestead' with abundant native biota. She loved exploring, and insects particularly intrigued her. Although there were birds, marsupials, and reptiles (many of which have since gone locally extinct), they did not excite her like the insects. She explained 'It was a matter of scale. I could relate to insects in a way that I couldn't with birds or reptiles'.¹ Because she was not going to inherit the farm like her brothers would, or live on a farm unless she married a farmer, she decided early to become an entomologist.

Due to the remoteness of the family farm, Barbara started high school with correspondence courses. A student could only complete their junior year via correspondence classes and then give up further schooling or go to boarding school to complete secondary schooling. Barbara was awarded a scholarship that supported her boarding costs at Northam High School, where she matriculated. She knew that if she wanted to pursue

entomology and nature writing (she loved to write at an early age) she would have to go to university. Barbara's mother was one of the first female students to attend the University of Western Australia (UWA) where she completed a two-year teacher training curriculum. Her mother supported Barbara's desire for more education and countered her husband, who thought higher education was wasted on a girl. Eventually, he acquiesced and helped finance Barbara's tertiary education.

After completing her Honour's degree in Zoology at UWA in 1950, she travelled to New Zealand to begin an Assistant Lecturer position at The University of Otago, Dunedin. She also began a Ph.D. on orb-weaving spiders under Professor Brian Marples (Hodgkin 1995). While at UWA she met Bert Main, 'friend, colleague, and beloved husband', at the Western Australian Naturalists' Club. He was also a Zoology undergraduate and they maintained a long-distance relationship for about a year. While Bert was working on his Ph.D., UWA offered him a faculty position. Barbara returned to Perth in 1952 to marry Bert and began another Ph.D. at UWA. They both were awarded doctorates from UWA in 1956; Barbara was the first woman to earn a Ph.D. in Zoology from UWA.

In 1958, Barbara spent 6 months in England studying spider collections at the British Museum, Natural History Museum and Oxford University Museum of Natural History on an Alice Hamilton Fellowship awarded by the International Federation of University Women. She went to London with Bert and their 2-year-old daughter Rebecca, 'Bert was examining frog specimens at the museum. You did not bring small children to the museum collections – that was not acceptable. So Bert and I would alternate childcare – one would take the morning and one would take the afternoon'. Later in 1958, when Bert was in the United States on a Carnegie Travelling Fellowship, Barbara conducted field work in California, Arizona and Texas and studied spider collections at the American Museum of Natural History, the Smithsonian Museum, and the Museum of Comparative Zoology.

Barbara's scientific scholarship at UWA in the late 1940s and early 1950s coincided with the emergence of ecology as a formal field of study. Her doctoral dissertation concerning the evolution

¹Barbara's quotes in this obituary are from an interview PLK conducted with Barbara in December of 2008 while she was on sabbatical at Murdoch University.

Box 1. Poem for Barbara York Main.**Owed to Barbara***by Dr Leanda Mason*

Over time and career we learn and we teach
 Share knowledge and wisdom with those we can reach
 From formal instruction in methods and fact
 To personal doctrines that shape how we act

Sometimes we're lucky and we will be blessed
 With a capable mentor who inspires our best
 Respected and learned in their field or skill
 We follow direction, a vessel to fill

Barbara York Main was a lady I followed
 Down paths she has cleared, into niches she's hollowed
 In hindsight it's taken me years just to process
 The foresight that Barbara invoked towards progress

A woman of science, a pioneer true
 Earned on her own merit and helped herself through
 Hostile environments inside and out,
 Endured for pure research, not standing or clout

Though humble, reclusive and hidden from sight
 Her books and her papers would shed quite a light
 On my personal interest to study her spider
 I soon had a goal and sat down beside her

Her patience, wisdom, and determined resilience
 Ethics and values of unquestioned brilliance
 Seeds that she felt were the right ones to sow
 Indeed sprouted roots and continued to grow

The great minds among us see forward and back
 Through time and tradition to pick up the slack
 Understanding the past for exploring the new
 Reliable structures that extrapolate through

Contributions of insight, experiments that start
 Without any kudos or gain from this part
 Longitudinal work in its slow onward grindings
 Bestow on the next generation deep findings

And then there's the story of #16
 The oldest of spiders the world had yet seen
 A trapdoor whom Barbara discovered and tagged
 Went virally famous when dead it was flagged

Though honoured to speak on behalf of the study
 It pains me that Barbara's thoughts then got muddy
 Too late moments of praise, recognition of worth,
 Efforts and great contributions to earth

So much achieved, so much more to contribute
 A lifetime of lessons passed on to distribute
 Through publishing, teaching or close demonstration
 Humanity learns only from collaboration

of trapdoor spiders synthesised the emergent paradigm of ecology with the older and well established biological disciplines of natural history, evolution and biogeography. As noted by Hughes-D'Aeth (2008), her ground-breaking research placed spiders as part of an intricate ecological web subject to evolutionary constraints, climate fluctuations and tectonic drift. In terms of female ecologists, Barbara was part of the wave of late pioneers in ecology, women who obtained their graduate degrees in this new discipline between 1935 and 1960 (Langenheim 1996). Most of these degrees were awarded to women in the US and Europe. She was a member of the remarkable generation of women who cracked the glass ceiling in scientific academia. Until the mid-20th century women were denied access to formal scientific education and refused membership in professional societies. These early female ecologists had a passion for nature and a strong desire to ensure the planet supported other organisms besides humans. This desire to understand the world and to leave it in better condition motivated Barbara and other early female ecologists to pursue this unusual career despite severe social obstacles, constraints and limitations. Barbara wrote about conservation issues such as land clearing, climate change and invertebrate extinctions decades before these topics became mainstream (Main 1981a, 1981b, 1987) and continued throughout her remarkable career (Main 1990, 1993), a truly exceptional feat for an Australian woman born in 1929, who never had a permanent job with salary or significant research funding.

Without the progressive mindset and support of her husband Bert – a celebrated conservation scientist in his own right – it is unlikely that Barbara would have been as successful in her quiet undermining of the patriarchy. Barbara was pregnant with her first child when she finished her doctorate. The grant that supported her Ph.D. extended 1 year beyond her graduation, so she used that time to write scientific publications. She noted, 'I don't think UWA had ever seen a woman who continued to write scientific publications until the day the child was born'. Nevertheless, the Zoology Department was accepting of their unique family life and they did not bat an eye when Barbara created space for herself in Bert's laboratory, 'I worked when the baby slept and thus, got little sleep. On Saturday mornings Bert would watch the infant at home so I would have a half-day at the lab'. Unlike today where spousal accommodation is common policy at many universities, UWA would not hire Barbara because of antinepotism laws so she had to pursue her science with no institutional support, 'The university let me take a microscope home and use a small corner of Bert's lab to store my specimens. I couldn't check out library material nor submit grants in my name – I had to use Bert's'. In 1979 Barbara was elected as an Honorary Lecturer in Zoology at UWA and in 1982 she was an Honorary Research Fellow. She was paid a nominal amount for her teaching and supported her research with grants and consultancies.

Notwithstanding these serious limitations, Barbara wrote four books and over 90 scientific papers and book chapters. 'Between Wodjil and Tor' (1967) and 'Twice Trodden Ground' (Main 1971) are classic accounts of the environmental costs of clearing native vegetation for the development of broadscale agriculture in the wheatbelt. She was recognised nationally and internationally for her prolific work on the natural history, biogeography

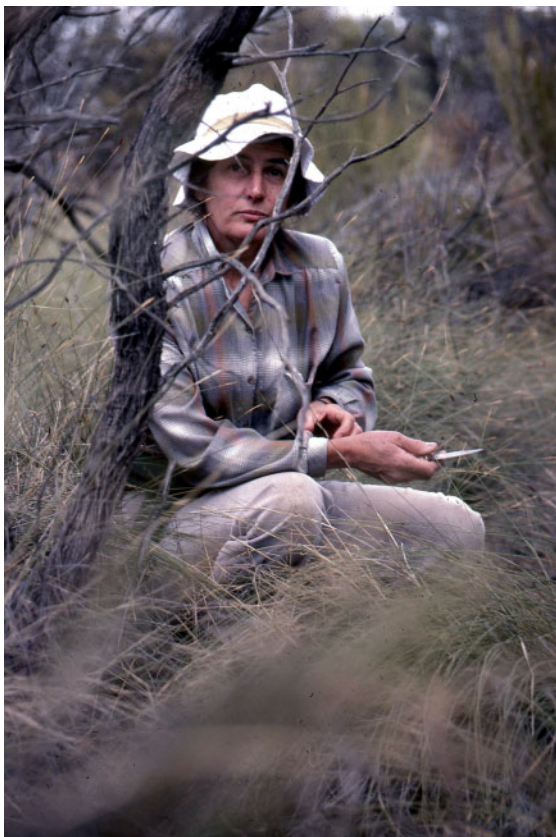


Fig. 1. Barbara York Main surveying North Bungulla Reserve in 1985. Photo credit: Ronald York, Barbara's younger brother.



Fig. 2. Barbara York Main surveying North Bungulla Reserve in 2015. Photo credit: Grant Wardell-Johnson.

and taxonomy of mygalomorph spiders. Noteworthy, she studied the oldest known spider, which she named 'Number 16' from its birth in 1974 in North Bungulla Nature Reserve (Figs 1, 2) to its death in 2016. In 1981, the BBC and ABC produced a film about her work, 'Lady of the Spiders'. Barbara was awarded the Medal of the Order of Australia (OAM) in 2011 for her contributions to the field of Arachnology. She was an honorary member of the International Society of Arachnology and a member of the Western Australian Museum Board of Trustees from 1982 to 1993 – the first woman to be so appointed. In 2018 she became the first woman to receive the Medal of the Royal Society of Western Australia. Despite her prolific publishing, awards and having three insect genera and 22 species named after her, Barbara was truly an unsung ecological hero, and her works are undercited. When asked why she was not more frequently cited, she just shrugged her shoulders and without rancor said, 'Well, I don't think they understand what I have written or they think I am narrowly focused on spiders and thus, the work is not broadly applicable'. Even taking into account the niche area of her research, citations often went to male colleagues with similar, slightly more recent publications and a better record of self-citation. Such phenomena are not uncommon for women scientists to experience, even today (E. H. Merrill, P. L. Kennedy, S. K. Skagen, K. Granillo, unpubl. data).

Barbara and Bert had three children, Rebecca, Gilbert and Monica, and, although maintaining a close relationship with Monica Main, Barbara 'love[d] them all equally'². According to Monica, Barbara was a 'very loving and supportive mother, with a playful sense of humour' who 'enjoyed reading children's books aloud, just as much as [her children] enjoyed listening'. After the children had gone to bed, Barbara and Bert would 'sit in the living-room, reading and discussing ideas together, enjoying each-others company', emphasising how important it was to 'just sit and ponder'. A 'delicate and whimsical' side of Barbara was suppressed in the dry, objective persona expected of scientists in an academic context. Family camping trips involved Barbara and Bert pulling up in 'an impressive old Land Rover to pick up their children from school and leaving immediately to go bush'. As 'walking encyclopedias of knowledge' camping trips around the state to 'granite outcrops, creeks or any place where frogs, reptiles and trapdoor spiders could be found together' the pair of scientists 'inspired an appreciation of information, nature and questioning' for their children. Barbara and Bert studied and negotiated the natural world together, until Bert's death on 3 December 2009 (Burbidge 2010). Barbara remained a patron of the Western Australian Naturalists' Club until she died on 14 May 2019. A loving family, respectful community and scientific legacy remains.

²Monica Main's quotes in this obituary are from an interview LDM conducted with Monica in January of 2020.

Conflicts of interest

The authors declare no conflicts of interest.

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