

somewhere that it would be appreciated, rather than mouldering on a shelf. With that in mind I have

presented it to the Herbarium to be displayed where Lucy toiled so diligently all those years ago.

References:

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Obituary: Veteran ABS member, Dr Una Vivienne Cassie Cooper (née Dellow) MNZM, 1926–2021

Ewen K. Cameron

The seaweed era

A long-time Auckland Botanical Society (ABS) Veteran member, Vivienne Cassie Cooper (née Dellow) (Fig. 1), passed away in Hamilton on 5 July 2021, aged 94. In November 2018 she attended the launch of Mike Wilcox's book, *Seaweeds of Auckland*, published by ABS (Fig. 2). During the launch Mike mentioned that Vivienne's 1955 paper on Hauraki Gulf seaweeds (Dellow 1955) had inspired him as a teenager. In his book he references eleven of her papers (Dellow 1949–1955) dealing with local seaweeds. In the early 1970s Vivienne inspired many of us, including myself, introducing us to the wonders of algae in the Botany stage 2 & 3 classes and labs, at the University of Auckland. The field trip to Piha studying the intertidal seaweeds was particularly memorable as I was able to learn the identity of many of the seaweeds I had previously observed while learning to surf there. She was a knowledgeable, enthusiastic and caring teacher. Vivienne herself appeared to be inspired by Victor Lindauer, a New Zealand pioneer collector and distributor of sets of New Zealand seaweeds – in 1949 Lindauer was a senior research fellow in the Botany Department of the Auckland University College where Vivienne was a junior research fellow and PhD student. Vivienne later said, writing of his contributions to phycology (Cassie 1971: p.91):

"His kind and generous nature combined with his devotion to the cause of algae could not fail to evoke respect and admiration from those privileged to work with him – all the students called him "Uncle Victor"."

Some 30 of her earliest seaweed collections, collected 1947–1949 while she was based in Auckland, ended up in the L.V. Lindauer herbarium that was gifted to Auckland University after his death and

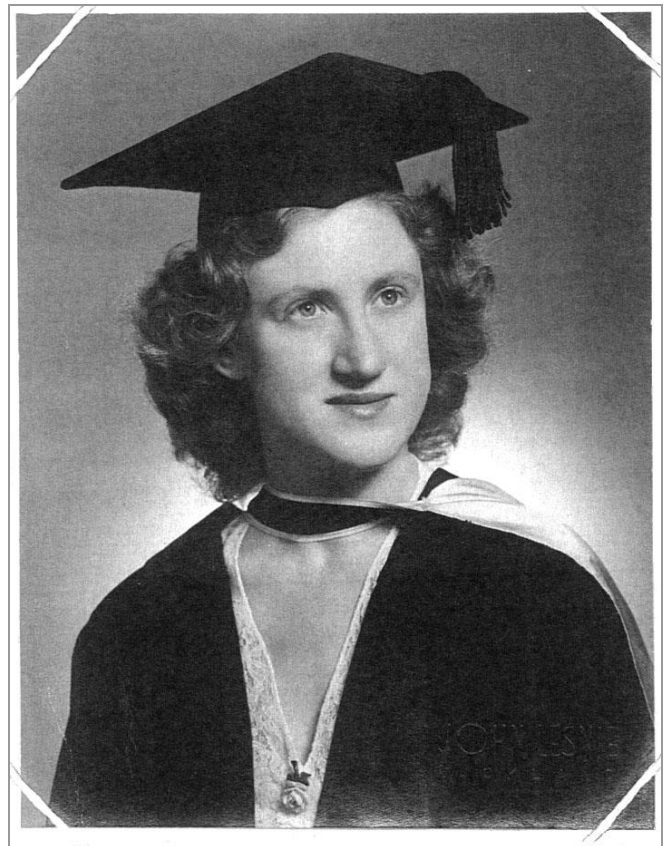


Fig. 1. Vivienne Dellow, in her Auckland University College MA graduating gown, 1948. Image supplied by Rachael Cassie.

later gifted to the Auckland Museum (AK). Over two days in August 1950 Vivienne collected 30 seaweeds (specimens in Te Papa Museum herbarium, WELT), presumably while with Lindauer, as most are from Long Beach (Lindauer's main collecting locality by



Fig. 2. Vivienne at the age of 92, attending the book launch of Mike Wilcox's *Seaweeds of Auckland* at the Auckland Museum. L to R: Ewen, Vivienne, Mike. Photo: Bec Stanley, 27 Nov 2018.

Russell, Bay of Islands) and the locality for three of them is recorded as "Russell (VWL's prop.)".

Vivienne's seaweed specimens in AK (77 specimens) and WELT (553 specimens) show that she started collecting seaweeds in 1947, during her Masters' year (see Timeline below), with 19 specimens from Narrow Neck (the focus of her MA thesis) and four from Piha; and the following year a few specimens from similar localities. The start of her PhD, 1949, was her busiest year collecting seaweeds, with 330 collections from all over the Hauraki Gulf, including the Coromandel coast and islands. The following year 110 specimens were collected from similar localities. After she moved to Wellington there were some 27 collections made around the local Wellington coast during 1950–51. Her seaweed collections appear to be few from then on except for 16 in 1971 from the Californian coast and 27 from Oaro Bay by Kaikoura in 1973.

Type seaweed collections in AK involving Vivienne:

- Holotype of *Microdictyon mutabile* Dellow 618, 1950; collected by Vivienne at Leigh, 7 Sep 1949 (AK 26031) – she went on to describe four more seaweed taxa.
- Holotype of *Codium adhaerens* var. *convolutum* Dellow 1952; collected by Lucy Cranwell at Home Bay, Motutapu Island, 23 May 1932 (AK 26579) – now treated as *C. convolutum*
- Type of *Ectocarpus dellowianus* Lindauer 1960; collected by Vivienne on Little Barrier Island, 17 Oct 1949 (AK 295739, ex Lindauer Herbarium 11295) and named after Vivienne by Lindauer – a total of six algal taxa are named after her (Cassie Cooper et al. 2012).
- Holo- and Isotypes of: *Pseudobryopsis planktonica* Cassie 1969; collected by Vivienne at Whale Bay,

eastern Northland, 18 Dec 1967 (AK 295614 holo, 295613 iso, ex AKU) – plants 3–6 mm long; evidently this is the only collection of the genus for New Zealand (Adams 1994: 42)

Seaweeds (macroalgae) to phytoplankton (microalgae)

Vivienne's career had distinct stages: starting in Auckland with qualifications and the study of seaweeds; then she was forced to study marine phytoplankton while in Wellington; then forced into freshwater phytoplankton when she returned to Auckland; and finally, by her own choice, the thermal microalgae mostly in retirement. Despite being disadvantaged at many turns for being a woman in science during that male-dominated period, she excelled in being at the vanguard of discovery and documentation of New Zealand algae, especially the microalgae. She self-rated (Cassie Cooper 2021) her main scientific achievements as:

- the first comprehensive account of marine algae of the intertidal region of the Hauraki Gulf (Dellow 1955);
- the first survey of NZ marine plankton in coastal waters (Dellow 1961);
- comprehensive checklists of freshwater NZ algae, including diatoms (Cassie 1984); and
- the first survey of microalgae in NZ thermal areas (Cassie & Cooper 1989, Cassie 1989).

I would add to the list her popular *Microalgae* book in the style of an illustrated student's text book based on decades of knowledge and her own illustrations (Cassie Cooper 1996, Fig. 3), and her enthusiastic teaching skills for her subject area which inspired many, including Mike Wilcox and New Zealand's foremost phycologist, Wendy Nelson, who started her career as an undergraduate in Vivienne's classes at the University of Auckland. Vivienne leaves behind a wonderful legacy of publications, collections and inspired students from three universities. Her death notice in the *NZ Herald* read: Loved wife of the late Morrison Cassie and the late Bob Cooper, and dearly loved mother, mother-in-law and grandmother of Rachel, Steven, Matthew and Erica, Peter and Maddie.

Timeline for Vivienne (mainly from Cassie Cooper et al. 2012)

- 1926:** born Una Vivienne Dellow in Epsom, Auckland 29 Sep 1926
- 1930s–43:** grew up on Auckland's North Shore at Takapuna and went to Takapuna Grammar School
- 1944–50:** attended Auckland University College (now the University of Auckland)

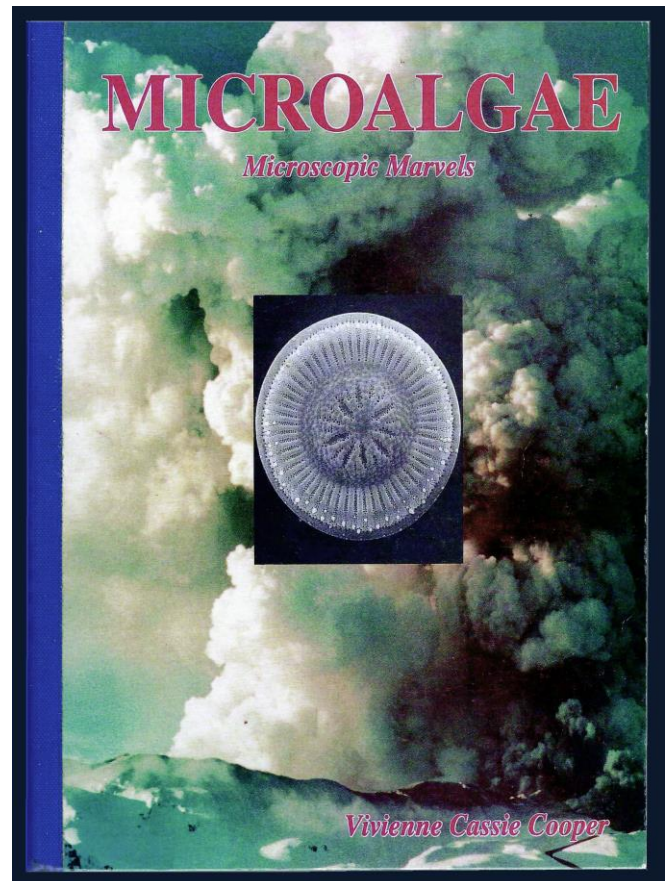


Fig. 3. Vivienne Cassie Cooper's popular book on microalgae: *Microalgae—Microscopic Marvels* (1996).

- 1947:** BA majoring in Botany and Music in an Arts degree and awarded a Senior Scholarship in Botany
- 1948:** MA with First Class Honours (Fig. 1) and first equal for graduate of the year Fowlds Memorial Prize for her thesis on intertidal ecology of Narrow Neck reef
- 1949–51:** junior research fellow in the botany department of the Auckland University College while enrolled for a PhD in marine algal ecology which involved field trips to remote islands in the Hauraki Gulf – the caretaker on Little Barrier Island dubbed her "Seaweed Sally"
- 1951–53:** took a junior lectureship at Victoria University of Wellington
- 1952:** married Richard Morrison Cassie, a marine biologist, later professor of biometry at the University of Auckland
- 1953:** PhD handed in on intertidal algal ecology of the Hauraki Gulf; awarded 1954
- 1955:** published her PhD research (Dellow 1955) and also a joint paper with her husband on littoral zonation (flora and fauna) of two Whangaparaoa sea caves (Dellow & Cassie 1955)

- 1955–56:** played the piano and gained an ATCL diploma in music – “much harder than a PhD”
- 1956:** employed part-time by the newly formed Oceanographic Institute at Wellington where she was told to study phytoplankton; her husband also worked there
- 1960:** gained a grant to study phytoplankton for one academic year at the prestigious Woods Hole Oceanographic Institution on Cape Cod Peninsula in Massachusetts, where she learnt how to culture microscopic algae. The Cassies travelled across southern USA visiting research institutions, then three months in Italy before returning to Wellington in 1962
- 1961:** published the first survey of marine phytoplankton in New Zealand coastal waters (Cassie 1961)
- 1962:** first child (Rachael) born in Wellington
- 1963:** second child (Peter) born in Wellington
- 1964:** the family moved to Auckland where her husband took an Auckland University post
- 1966:** became a demonstrator in her old Botany Department where she was asked to study phytoplankton from Lake Rotorua; this led her to eventually become a freshwater phycologist
- 1971:** on leave with husband in La Jolla, California, to study at Scripps Institution of Oceanography and collected 16 specimens of seaweeds now in AK herbarium
- 1974:** during her temporary lectureship at Auckland University, husband Morrison died (22 Dec 74); her university contract was terminated
- 1975:** appointed part-time as a research scientist at DSIR at the Mt Albert Research Centre, where

she continued her studies on NZ freshwater algae - here she worked happily, publishing and preserving specimens until retiring on 29 Sep 1986; during that time she assembled in spirit vials some 3,000 samples of NZ freshwater algae, and many more microscope slides – now lodged in the Landcare Research herbarium (CHR)

- 1984:** married Robert (Bob) Cecil Cooper, ex Auckland Museum botanist (see Cameron 2004)
- 1988:** Vivienne and Bob moved to Te Kuiti, then in 1992 moved to Hamilton when Bob’s eyesight deteriorated
- 1992:** took an honorary position at the University of Waikato involving freshwater research
- 1997:** awarded Member of the New Zealand Order of Merit for services to marine biology
- 2002:** Life Member of the Australasian Society for Phycology and Aquatic Botany
- 2004:** husband Bob Cooper died
- 2017:** listed as one of the “150 women in 150 words” – the aim of the Royal Society project was “celebrating women’s contributions to expanding knowledge in New Zealand”
[150 Women in 150 Words \(royalsociety.org.nz\)](https://royalsociety.org.nz/150-Women-in-150-Words)
- 2021:** died 5 July 2021, 94-years-old, in Hamilton.

Acknowledgements

I thank: Rachel Cassie, Vivienne’s daughter, for biogeographical information, including a copy of Vivienne’s own eulogy, and for Figure 1; and Leon Perrie and Ines Schönberger for collection data from Te Papa (WELT) and Lincoln (CHR) herbaria respectively.

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The editors express their gratitude to Ewen Cameron, Curator of the Herbarium at the Auckland War Memorial Museum, for his invaluable assistance with reviewing, editing and proof-reading.