

# Phycological Trailblazer

## No. 4

### Mary Agard Pocock

(originally printed in the Phycological newsletter.  
1994. Vol. 30 No. 3)

Mary Agard Pocock (1886-1977) was born on New Year's Eve of 1886 in Cape Town, South Africa. In 1908 she earned her BSc in botany, geology, and mathematics from London University (and in 1921 an honours degree in botany). Her early career was as a high school teacher at Cheltenham Ladies' College in England. She returned to South Africa in 1913 to teach science and mathematics at Wynberg Girls' High School. In 1919-1921 she worked with Prof. A. C. Steward at Cambridge. Over the years she held a variety of temporary lectureships at several colleges and universities in South Africa. Her primary affiliation was with Rhodes University in Grahamstown, where she held lectureships on and off from the 1920s into the 1950s. While she was serving as "acting head" of the Botany Department, she was instrumental in establishing the University herbarium.

Mary (or "Mamie" as she was called by family and friends) deserves a place in the ranks of phycological "trailblazers" in light of a daring six-month expedition she made in 1925-26, mainly on foot but also by boat and train, across south central Africa from Rhodesia across present-day Zambia and Angola. Pocock was accompanied by Dorothea Sleek, who was making studies on the Bushmen (and authored *The Bushman's Dictionary*). The two women

went by boat from Livingstone near Victoria Falls to the Angolan border and then on foot with native porters for some distance before taking the train to Lobito Bay on the Atlantic coast. During this expedition Pocock collected a large number of flowering plants, many of which she painted in water colors. She also painted landscapes. Although this had to have been an adventurous undertaking for Pocock and Bleek as they ventured into wild terrains, they did not completely abandon the amenities of civilization in that they hauled along a big copper tub to take their baths regularly. The tub is now stored atop one of the herbarium cases in the Albany Museum in Grahamstown.

Mary Pocock returned to England to work up her Angolan collections at the British Museum and Kew in 1927-28. It was at this time that under the influence of Professor E. F. Fritsch of Queen Mary College, London University, she got interested in freshwater algae, which led to her obtaining her Ph.D. from Univ. of Cape Town in 1932 based on her research primarily on *Volvox*. Some of her early work on *Volvox* was in collaboration with Professor Florence Rich (1933). She studied many *Volvocales*, *Astrephomene gubernaculifera* being one of her notable discoveries (1934). Her brother, L. G. Pocock, Professor of Classics

at Canterbury University in Christchurch, New Zealand, helped come up with such a distinctive binomial. Her publications on *Volvox* (1933a & b, 1947), *Hydrodictyon* (1937, 1960a), and *Haematococcus* (1960b, Fig. 1) are models of her extreme attention to detail. As early as the 1930s, Mary Pocock fearlessly journeyed through Russia in search of *Volvox*, her major complaint being that the trains did not



Mary Agard Pocock as a young graduate

stop long enough at sidings to permit her to check out pools along the railway (Seagriff, 1978).

Rich Norris related to me the story that on Mary Pocock's first of many trips to the USA she bought a used car in New York City and that part of the sales agreement was that the dealer had to drive her to the city's edge. Mary was on her own from there! She managed to cross the country as always in quest of *Volvox*, checking on all the vernal pools encountered. Rich Norris and his then-student Rick Meyer aided her in scouring much of Minnesota in search of *Volvox*. She also spent several months in Richard Starr's lab in Bloomington. During her travels Pocock also methodically made collections of soil samples, one of her classic samples being from a pond four miles south of Lemon Cove, Tulare County, California (Pocock, 1955). She spent sabbaticals at UC Berkeley, working with cytologist Dr. Marion Cave. I recall how Pocock would place a small amount of soil inoculum into a watchglass out in the LSB courtyard to catch the morning sun, and when the desired algal flagellates would suddenly bloom, she would catch them at the best moment for fixation and turn the material over to Marion Cave for her acetocarmine squashes (Cave & Pocock, 1951a & b, 1956). Now that was an example of effective teamwork! I also recall an incident when Mary accompanied a group of us grad students on a collecting trip to Bodega Head. When I offered my arm to help her

(then in her mid-70's) as we all headed toward the breakers, she reacted as if insulted. It was only when the cliff was near vertical that she

begrudgingly gripped my hand for the rest of the treacherous way.

Pocock never took a holiday away from her interest in the algae. During a visit to Stonehenge she happened to notice green-colored water in small holes in one of the fallen stones. Water was "spooned up" and concentrated with a plankton net. When she examined the sample the following evening, she observed a nearly pure unialgal growth of *Haematococcus droebakensis*, then much less known than

the ubiquitous *H. lacustris*. In a note in *Nature* (1951) she reported that it was easy to follow both asexual and sexual reproduction and that it would be ideal teaching material. She provided Dr. Pringsheim a sample for him to add to the Cambridge Culture Collection. She later dedicated a paper (1962) on algae from De Klip soil (near Cape Town) to Pringsheim because he "shared the wonder and joy aroused by the extraordinary fertility of De Klip soil."

Although Pocock maintained her interests in freshwater algae, her phycological bent was catholic, and she also turned her attention to marine algae in the 1930s, encouraged by G. F. Papefuss, then on the staff of the University of Cape Town. She carried out intensive collecting for seaweeds at many stations ranging from Hondeklip Bay on the west coast of South Africa to Perrier's Rocks in Zululand (Pocock, 1952, 1955b, 1958, 1959). She had an eye for detail

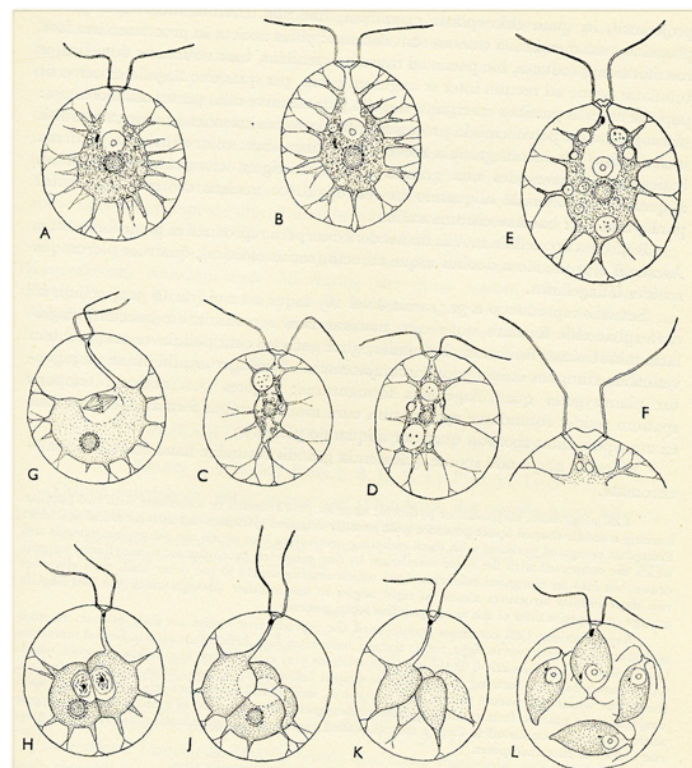


Fig. 1. *Haematococcus capensis* var. *capensis* Pocock [Fig.1 in Pocock (1960b)].



and described a number of red algal parasites and their hosts (1953, 1956) with Margaret Martin of Bangor (1953). Pocock's collecting in South Africa ranged from the tidal zone up to the mountainous regions, especially above 2,000 m, for higher plants. In the nine decades of her life, Mary Pocock was able to experience not only the excitement of botanical trailblazing across the width of southern Africa but to adjust to the demands of jet travel, as she in later years visited Australia, New Zealand, North America, Brazil, the Far East, and many countries in Europe, including Sweden, Germany, Poland, and Czechoslovakia (Jacot Guillarmod, 1978). Indeed, she circled the globe four times in her retirement years. Thanks to these travels, she gradually built up the marine algal holdings in Grahamstown to be one of the finest collections. Despite being very near-sighted, she had a keen eye for detail; e.g., at Friday Harbor Labs she was the first to re-discover *Thuretellopsis* at the bottom of a bucket

was cluttered with flasks of cultures, specimens, slides, an ancient microscope, and all the usual paraphernalia of a working scientist. Mary had a succession of pet Pekingese dogs, the last one gaining its claim to fame by having eaten a sleeve of Dick Pienaar's new sport coat while he was visiting Pocock.

Many honors were bestowed on Mary Pocock, including the Crisp Medal and Award by the Linnean Society of London in 1957 for her work on algae. She was elected a Vice-President of the Eleventh International Botanical Congress in Seattle in 1969. Although Papenfuss' (1943) *Pocockiella* had to bow to *Lobophora* of J. Agardh, such names as *Codium pocockiae* P. C. Silva (1959), *Volvox pocockiae* Starr (1970), and *Chamaethamnion pocockiae* R. E. Norris (1988) also pay her tribute. She leaves a legacy not only of her own colorful personality but that of a caring teacher and a productive scientist.



Fig. 2. Home of Mary Pocock in Grahamstown, South Africa. [Photo taken in 1983.]

from which algae dredged from Salmon Bank had already been discarded. According to Rich Norris that genus had not been seen since it was described by Kylin.

The sketches written by Jacot Guillarmod (1978) and Seagrief (1978) should be consulted for more details about the daily routine of Mary Pocock. Visitors to her home (Fig. 2) were served meals on trays because the dining room table



Dr. Pocock in 1970 (photo taken by Dr. Stephen Tim)

- Cave, M. S. & M. A. Pocock, 1951a. Karyological studies in the Volvocaceae. *Am. J. Bot.* 38: 800-811.
- \_\_\_ & \_\_\_. 1951b. The acteo-carminic technic applied to the colonial Volvocales. *Stain Technol* 26: 173-174.
- \_\_\_ & \_\_\_. 1956. The variable chromosome number in *Astrephomene gubernaculifera*. *Am. J. Bot.* 43: 122-134.
- Gunn, M. & L. E. Codd. 1981. Botanical Exploration of Southern Africa. xiv + 400 pp. A. A. Balkema, Cape Town.
- Jacot Guillarmod, A. 1978. Obituary. Mary Agard Pocock (1886-1977). *Phycologia* 17: 440-445.
- Martin, M. T., & M.A. Pocock. 1953. South African parasitic Florideae and their hosts. 2. Some South African parasitic Florideae. *J. Linn. Soc. Lond., Bot.*, 55: 48-64, pls. 10-12.
- Norris, R. E. 1988. Two new red algal parasites on *Kuetzingia nalalensis* (Rhodomelaceae, Rhodophyta). *Bot. Mar.* 31: 345-352.
- Papenfuss, G. F. 1943. Notes on algal nomenclature. 2. *Gymnosorus*. *J. Ag. Am. J. Bot.* 30: 463-468.
- Pocock, M. A. 1933a. *Volvox* and associated algae from Kimberley. *Ann. S. Afr. Mus.* 16: 473-521, pls. 25-37.
- \_\_\_ . 1933b. *Volvox* in South Africa. *Ann. S. Afr. Mus.* 16: 523-646.
- \_\_\_ . 1937. *Hydrodictyon* in South Africa. With notes on the known species of *Hydrodictyon*. *Trans. Roy. Soc. S. Afr.* 24: 263-280.
- \_\_\_ . 1947. *Volvox* in culture at the Cape. With special reference to *Volvox tertius* Meyer. *J. Indian Bot. Soc. (M. O. P. Iyengar Comm. Vol.)*, pp. 151-165.
- \_\_\_ . 1951. A rare alga from Stonehenge. *Nature* 168: 524.
- \_\_\_ . 1952. Observations of the occurrence of certain South African seaweeds. *S. Afr. J. Bot.* 49: 189.
- \_\_\_ . 1953. South African parasitic Florideae and their hosts. 1. Four members of the Rhodomelaceae which act as hosts for parasitic Florideae. *J. Linn. Soc. Lond., Bot.*, 55: 34-47, pls. 5~9.
- \_\_\_ . 1954. Two multicellular motile green algae, *Volvulina playfair* and *Astrephomene*, a new genus. *Trans. R. Soc. S. Afr.* 34: 103-127, pl. II.
- \_\_\_ . 1955a. Studies in North American Volvocales. I. The genus *Gonium*. *Madrofto* 13: 49-64.
- \_\_\_ . 1955b. Seaweeds of the Zwartkops Estuary. *S. Afr. J. Sci.* 52: 73-75.
- \_\_\_ . 1956. South African parasitic Florideae and their hosts. 3. Four minute parasitic Florideae. *Proc. Linn. Soc. Lond., Session 167*: 11-41, pls. 1-6.
- \_\_\_ . 1958. Preliminary list of marine algae collected at Inhaca and on the neighbouring mainland. In: A natural history of Inhaca Island, Mozambique (W. Macnae & M. Kalk, eds.), pp. 23-27. Witwatersrand Univ. Press, Johannesburg.
- \_\_\_ . 1959. *Letterstedtia insignis* Areschoug. *Hydrobiologia* 14: 1-71.
- \_\_\_ . 1960a. *Hydrodictyon*: a comparative biological study. *J. S. Afr. Bot.* 26: 167-319, pls. XII-XX.
- \_\_\_ . 1960b. *Haematococcus* in southern Africa. *Trans. R. Soc. S. Afr.* 36: 5-56, 2 pls.
- \_\_\_ . 1962. Algae from De Klip soil cultures. *Arch. Mikrobiol.* 42: 56-63.
- Rich, F., & M.A. Pocock. 1933. Observations on the genus *Volvox* in Africa. *Ann. S. Afr. Mus.* 16: 427-471.
- Seagrief, S. C. 1978. [Obituary of] Mary Agard Pocock. *Phycological Newsletter* 14(1): [5]-[6].
- Silva, P. C. 1959. The genus *Codium* (Chlorophyta) in South Africa. *J. S. Afr. Bot.* 25: 103-165.
- Starr, R. C. 1970. *Volvox pocockiae*, a new species with dwarf males. *J. Phycol.* 6: 234-239.

**Michael J. Wynne**  
**University of Michigan, Ann Arbor**