

Dr Anne M. (Karin) Camerik: a memory

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Obituary



In early July 2021, the international community of acarologists learnt about the unexpected passing away of Dr Anne M. Camerik (known to those more familiar with her by her monastic name “Karin”). She was our fellow acarologist, churchwoman by vocation and besides, a friend of mine.

I first met Dr Camerik at an international meeting held sometimes after the turn of century. Among many other fellow scientists, she attracted my attention. We entered conversation during the coffee break right after her talk; and I learned of her experience with mite fauna in South Africa where she resided at that time. As I was impressed by her knowledge, I promised myself to follow her progress, even though she was dealing with pygmephoroids, the group I personally considered overly difficult in terms of research studies.

A couple of years later, Karin proposed a collaborative project on Pygmephoroida in South Africa, using an opportunity when Poland and South Africa developed scientific co-operation at the state level. Soon after signing documents, she appeared at the A. Mickiewicz University in Poznań for the first of her several visits which spawned research cooperation, and our mutual genuine friendship.

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Dr Anne Margariette Camerik was born on 3 May 1941 in Balikpapan, East Kalimantan (Borneo), then Dutch East Indies (today's Indonesia). As an infant, she suffered the calamities of the Japanese occupation as many of European population there experienced. After repatriation to the Netherlands, she completed her education achieving a degree in horticulture and garden architecture in 1964 from the Hogere Tuinbouw School, in Frederiksoord. Only few months later, in the same year, she joined the Roman Catholic Order of St Ursula, taking Ursuline monastic vows in 1967.

Dr Camerik continued her academic education at the Catholic University in Nijmegen (now Radboud University) during 1970 -1976 as a biology major and ended with an MSc degree in geobotanics.

It was during her stay at Nijmegen where she met her first tutor in acarology, Dr Fritz S. Lukoschus, who (in her own words) had awakened her interest in mites. Soon after, her first paper devoted to Acari (Astigmata) was published (Camerik *et al.* 1975). She had also begun cooperation with Prof. Alex Fain which resulted in three subsequent joint papers (Fain and Camerik 1977, 1978 and Fain *et al.* 1980). This cooperation lasted until her last joint publication with Prof. Fain on prostigmatic Ereyetidae (Fain and Camerik 1994).

In 1974-1975, she was also in exchange visit with the Universidade Santa Ursula in Rio de Janeiro, conducting botanical research and extensive plant collecting at Itatiaia National Park and Serra dos Orgãos mountains in Brazil. Results of her MSc thesis on botanical research were published later (Camerik and Werger 1981) co-authored with Prof. Marinus J. A. Werger (Utrecht University, the Netherlands). Remarkably, her early interest in Acari had also spawned some mite collecting, later published in Fain and Camerik 1977, 1978 and others.

In January 1977, Dr Camerik arrived in Botswana and later became a teacher at the Madiba Secondary School in Mahalapye. She used the opportunity to continue her interest in botany which had resulted in the collecting of ca. eight hundred plant specimens around Mahalapye, Gaborone, and Thamaga towns.

After moving to the Ursuline convent in Krugersdorp (South Africa), she started working on mites at the University of the Witwatersrand, Johannesburg from 1986. Later she was appointed as Temporary Tutor there from March 1991 till December 1996. Around that time, her interest in mites crystalized with a focus on Heterostigmata, and Pygmephoroida in particular. In the first half of 1990s, she visited Zoological Museum of Hamburg University, where she went through extensive training in pygmephoroid taxonomy and diagnostics. Her tutors there were the late Dr Gisela Rack and Dr Hieronymus Dastych, both outstanding specialists, who she later always mentioned with the most respectful affection and reverence. Since then (beginning with the paper by Camerik and Ueckermann 1995), her scientific publications were focused almost exclusively on pygmephoroid systematics and ecology.

Her work on the ecology of pygmephoroids culminated in achieving a PhD degree in Acarology at University of the Witwatersrand, Johannesburg in 2000, under the supervision of Prof. Shirley Hanrahan and Dr Eddie Ueckermann. Her dissertation entitled "Phoretic *Pediculaster* females (Acari: Pygmephoridae) in cow and horse dung. Some ecologic, taxonomic, and systematic aspects" marked the culmination of her multiannual field and lab studies, which were very laborious but also rewarding. This later led Dr Camerik to capitalize on her earlier experience and results in several ecological papers (Camerik 2007, 2010a, 2010b) and release of a video (Camerik 2004) containing exceptional and unique footage of the behaviour of living *Pediculaster* mites.

Dr Camerik's commitment to academic teaching and student development resulted in her promotion to Senior Tutor in January 1997. Due to advancing age, she retired as Senior Tutor at the end of 2002, but immediately appointed as Honorary Lecturer at Wits until the end of 2014 to continue her scientific activities. During 2011-2017, a co-operation agreement (mentioned above) between the South African NRF and Polish MFA was launched, resulted in Dr Camerik making several research visits to AMU. From July 2012, Dr Camerik moved to Europe and settled permanently at the Ursuline Convent in Venray, The Netherlands. To continue her formal affiliation as a researcher with the University of the Witwatersrand, her appointment as

Honorary senior lecturer in the School of Animal Plant and Ecological Sciences, was extended until end of 2017.

In the latter part of that period (2015-2017), she was appointed as Voluntary Researcher in The Natural History Museum in Rotterdam, The Netherlands. Her task was to archive the vast collection of mites and ticks donated to the museum by the late Prof. A.J.H.M. van Bronswijk. Unfortunately, this work was not concluded due to growing health issues and tiredness. Dr Camerik still maintained her bond with the University of Witwatersrand and her contract as Honorary Senior Lecturer was renewed for 2017- 2020.

On 27 May 2021 Dr Anne M. Camerik unexpectedly passed away at the Ursuline Convent in Venray, The Netherlands.

Dr Camerik has been an author or co-author of thirty scientific publications and communications (including one video). Her research interests spread from botany to mite systematics and ecology. She had described one subfamily, four genera and thirty-seven species (see Appendix). Besides her ventures in acarid and heterostigmatic taxonomy, she also contributed significantly to the knowledge on behaviour, host selection and environmental ecology of pygmephoroid mites. Her most significant finding was that the development rate of *Pediculaster* mites determines their emigration timing more than that of their hosts (Camerik 2007). In addition, the preference of mites for a wide spectrum of available phoretic insect carriers was experimentally proven (Camerik 2010b). Her insight into general issues of phoresy resulted in the redefinition and improved classification of various forms of this phenomenon (Camerik 2010a).

Her noteworthy efforts in collecting specimens of flora have also been (and still are) appreciated among the community of botanists (Gunn and Codd 1981, Barnes and Turton 1986, Glen and Germishuizen 2010, and recently Figueiredo and Smith 2021).

Dr Camerik's extensive work in acarology was honoured by naming mite species after her: *Dynastopus camerikae* Fain, 1978 (Acaridia: Acaridae), *Spatulaphorus camerikae* Dastych & Rack, 1993 (Prostigmata: Pygmephoridae), *Kurosapolipus camerikae* Husband & Li, 1993 (Prostigmata: Podapolipidae) and *Pediculaster camerikae* Khaustov, 2008 (Prostigmata: Pygmephoridae).

Karin (as she wished to be called informally) had an extraordinary warm and friendly personality. During her numerous visits to Poznan, she became my friend and my family. Her strictly cleric status was well complemented by a great openness and tolerance, setting her views within the highest ethical standards.

Even though she is no longer with us, Dr Anne Camerik remains alive in our collective memory.

Acknowledgements

I am truly indebted to Prof. Neville Pillay of School of Animal, Plant & Environmental Sciences, University of the Witwatersrand, Johannesburg, for his generosity in sharing data on Dr Camerik research and academic activities in South Africa and improving the draft.

I also thank Ms Agnieszka Stefaniak MSc, Dept. of Animal Taxonomy & Ecology, A. Mickiewicz University, for her research through internet resources. Part of Dr Camerik's biography was reconstructed from the entry in JSTOR Global Plants web page (2013).

A list of publications and communications by Dr Anne M. Camerik in chronological order

- Camerik A.M., Lukoschus F., Méndez E. 1975. A new species of *Orycterxenus* Zachvatkin from *Cryptotis n. nigrescens* (Acarina: Sarcotiformes: Glycyphagidae). Rev. Biol. Trop., 22(2): 239-245. <https://doi.org/10.1080/01647957608683751>
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- Fain A., Camerik A.M. 1978. New hypopi phoretic on brasilian coleoptera and hymenoptera (Acari: Astigmata). Int. J. Acarology, 4(3): 169-178. <https://doi.org/10.1080/01647957808683115>
- Fain A., Camerik A.M., Lukoschus F., Kniest F. 1980. Notes on the hypopi of *Fibulanoetus* Mahunka, 1973, an anoetid genus with a pilicolous clasping organ. Int. J. Acarology, 6(1): 39-44. <https://doi.org/10.1080/01647958008683191>
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- Fain A., Camerik A.M. 1994. Notes on the mites of the genus *Ereynetes* Berlese, with description of five new species from South Africa. Bull. Inst. r. Sc. nat. Belg./ Bull. Kon. Belg. Inst. Natuurwet. Entomologie, 64: 145-164.
- Camerik A.M., Ueckermann E.A. 1995. *Pediculaster norrbomialis* sp. n. and *P. gracilis* sp. n. (Acari, Heterostigmata: Pygmephoridae) from South Africa, with notes on host and dung preference of their phoretic females. Mitt. Hamb. Zool. Mus. Inst., 92: 73-86.
- Camerik A.M. 1996 Phoretic females of *Pediculaster gautengensis* sp. n. (Acari: Pygmephoridae) associated with insects collected from dung in South Africa. Mitt. Hamb. Zool. Mus. Inst., 93: 161-170.
- Camerik A.M., Coetzee S.H. 1997. The phoretic female of *Pediculaster australis* spec. nov. (Acari: Pygmephoridae) from South Africa and new synonyms for *P. morelliae* Rack, 1975. Bull. Inst. r. Sc. nat. Belg./ Bull. Kon. Belg. Inst. Natuurwet. Entomologie, 67: 33-43.
- Dasty H., Rack G., Camerik A.M. 1997. A new species of the genus *Spatulaphorus* Rack associated with scarab beetles in South Africa. Mitt. Hamb. Zool. Mus. Inst., 94: 145-151.
- Camerik A.M., Coetzee S.H. 1998a. *Pediculaster perottii* spec. nov. (Acari: Pygmephoridae), phoretic females collected from *Haematobia* (Diptera: Muscidae) in Argentina, South America. Bull. Inst. r. Sc. nat. Belg./ Bull. Kon. Belg. Inst. Natuurwet. Entomologie, 68: 29-36
- Camerik A.M., Coetzee S.H. 1998b. Phoretic females of two new species of the genus *Pediculaster* (Acari: Pygmephoridae) from cattle dung in South Africa. Int. J. Acarology, 24(1): 21-31. <https://doi.org/10.1080/01647959808684123>
- Camerik A.M., Coetzee S.H. 1999. Skeletal structure of solenidion omega-1 in *Pediculaster australis*, seen through the confocal laser scanning microscope (CLSM). First African Acarology Symposium, Book of Abstract: 12.
- Camerik A.M. 2000. Phoretic *Pediculaster* females (Acari: Pygmephoridae) in cow and horse dung. Some ecologic, taxonomic and systematic aspects. [PhD Thesis]. University of the Witwatersrand, Johannesburg, South Africa. pp. 170.
- Coetzee S.H., Camerik A.M. 2001. The use of autofluorescence of the pharyngeal pump complex in Pygmephoridae (Acari: Heterostigmata) as a new taxonomic aid. In: Halliday R.B., Walter D.E., Proctor H.C., Norton R.A., Colloff M.J. (Eds). Acarology: Proceedings of the 10th International Congress, Canberra, Australia. CSIRO Publishing, Melbourne. p. 213-216. <https://doi.org/10.13140/2.1.4242.7846>
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- Camerik A.M. 2006. Some *Pediculaster* (Acari: Siteroptidae) species from Belgium and Kenya. Bull. Soc. r. Belg. Entomol., 142: 140-155
- Camerik A.M., de Lillo E., Lalkhan C. 2006. The neotype of *Pediculaster mesembrinae* (Canestrini, 1881) (Acari: Siteroptidae) and the description of all life stages. Int. J. Acarology, 32(1): 45-67. <https://doi.org/10.1080/01647950608684442>
- Kheradmand K., Kamali K., Fathipour Y., Goltapeh E.M., Camerik A.M. 2006. Biology and life table parameters of the mushroom pest, *Pediculaster flechtmani* (Acari: Siteroptidae), at three constant temperatures. Insect Sci., 13(5): 375-380. <https://doi.org/10.1111/j.1744-7917.2006.00106.x>
- Husband R.W., Camerik A.M., Stals R. 2006. Two new species of *Regenpolipus* and distribution of *Eutarsopolipus lukoschusi* and *Regenpolipus* species (Acari: Podapolipidae), ectoparasites of *Thermophilum decemguttatum* and *Anthia* species (Coleoptera: Carabidae) in South Africa, Botswana and Namibia. Int. J. Acarology, 32(4): 361-370. <https://doi.org/10.1080/01647950608684483>
- Camerik A.M. 2007. Ecological studies on phoretic females of dung-inhabiting *Pediculaster* (Acari: Heterostigmata. Pygmephoridae) species in South Africa: emigration patterns from cow and horse dung. In: Morales-Malacara J.B., Behan-Pelletier V., Ueckermann E., Pérez T.M., Estrada-Vengas E.G., Badii M. (Eds). Acarology XI: Proceedings of the International Congress. Instituto de Biología and Facultad de Ciencias, Universidad Nacional Autónoma de México; Sociedad Latinoamericana de Acarologia. México: p. 649-655.

- Lotfollahi P., Haddad Irani Nejad K., Bagheri M., Valizadeh M., Khaustov A., Camerik A.M. 2009. Pygmephoroid soil mite fauna of alfalfa fields and their distribution in Northwest of East Azerbaijan Province, Iran. *Agricul. Sci.*, 19: 298-317 (in Persian).
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Appendix

List of taxa described new for science by Dr A.M. Camerik (in chronological order)

Subfamily

- Fibulanoetinae Fain, Camerik, Lukoschus & Kniest, 1980 (Acaridia: Histiosomatidae)

Genera

- *Bothyanoetus* Fain & Camerik, 1978 (Acaridia: Histiosomatidae)
- *Dichotomiopus* Fain & Camerik, 1978 (Acaridia: Carpoglyphidae)
- *Spinacaropus* Fain & Camerik, 1978 (Acaridia: Acaridae)
- *Neoprotereunetes* Fain & Camerik, 1994 (Prostigmata: Eupodidae)

Species

- *Orycteroxenus panamensis* Camerik, Lukoschus & Mendes, 1975 (Acaridia: Glycyphagidae)
- *Congovidia brasiliensis* Fain & Camerik, 1977 (Acaridia: Hemisarcopidae)
- *Scolianoetus ramozae* Fain et Camerik, 1978 (Acaridia: Histiosomatidae)
- *Bothyanoetus pereirai* Fain et Camerik, 1978 (Acaridia: Histiosomatidae)
- *Histiotoma tanypus* Fain et Camerik, 1978 (Acaridia: Histiosomatidae)
- *Dichotomiopus biaggioi* Fain et Camerik, 1978 (Acaridia: Carpoglyphidae)
- *Horstia brasiliensis* Fain et Camerik, 1978 (Acaridia: Acaridae)
- *Horstia ampliscuta* Fain et Camerik, 1978 (Acaridia: Acaridae)
- *Spinacaropus brasiliensis* Fain et Camerik, 1978 (Acaridia: Acaridae)
- *Fibuloanoetus mahunkai* Fain, Camerik, Lukoschus & Kniest, 1980 (Acaridia: Histiosomatidae)
- *Fibuloanoetus longitarsis* Fain, Camerik, Lukoschus & Kniest, 1980 (Acaridia: Histiosomatidae)
- *Ereynetes (Ereynetes) ueckermanni* Fain & Camerik, 1994 (Prostigmata: Ereynetidae)
- *Ereynetes (Ereynetes) bolitophilus* Fain & Camerik, 1994 (Prostigmata: Ereynetidae)
- *Ereynetes (Ereynetes) luriei* Fain & Camerik, 1994 (Prostigmata: Ereynetidae)
- *Ereynetes (Anereynetes) copridis* Fain & Camerik, 1994 (Prostigmata: Ereynetidae)
- *Ereynetes (Anereynetes) botswanensis* Fain & Camerik, 1994 (Prostigmata: Ereynetidae)
- *Pediculaster norrbomialis* Camerik & Ueckermann, 1995 (Prostigmata: Pygmephoridae)
- *Pediculaster gracilis* Camerik & Ueckermann, 1995 (Prostigmata: Pygmephoridae)
- *Pediculaster gautengensis* Camerik, 1996 (Prostigmata: Pygmephoridae)
- *Pediculaster australis* Camerik & Coetzee, 1997 (Prostigmata: Pygmephoridae)
- *Spatulaphorus luriei* Dastych, Rack & Camerik, 1997 (Prostigmata: Pygmephoridae)
- *Pediculaster perottii* Camerik & Coetzee, 1998a (Prostigmata: Pygmephoridae)
- *Pediculaster copridis* Camerik & Coetzee, 1998b (Prostigmata: Pygmephoridae)
- *Pediculaster luriei* Camerik & Coetzee, 1998b (Prostigmata: Pygmephoridae)
- *Pediculaster pseudomanicatus* Camerik, 2001 (Prostigmata: Pygmephoridae)
- *Pediculaster canacidalis* Camerik, 2005 (Prostigmata: Pygmephoridae)
- *Pediculaster thailandensis* Camerik, 2005 (Prostigmata: Pygmephoridae)
- *Pediculaster collinellulalis* Camerik, 2006 (Prostigmata: Pygmephoridae)
- *Pediculaster helomyzalis* Camerik, 2006 (Prostigmata: Pygmephoridae)
- *Pediculaster kilimanjarensis* Camerik, 2006 (Prostigmata: Pygmephoridae)

- *Regenpolipus anthiae* Husband & Camerik, 2006 (Prostigmata: Podapolipidae)
- *Regenpolipus capensis* Husband & Camerik, 2006 (Prostigmata: Podapolipidae)
- *Pediculaster eccoptomeralis* Camerik, 2010 (Prostigmata: Pygmephoridae)
- *Pediculaster coproxodontalis* Camerik, 2010 (Prostigmata: Pygmephoridae)
- *Zambedania madagascariana* Camerik & Magowski, 2014 (Prostigmata: Pygmephoridae)
- *Zambedania argentiniana* Camerik & Magowski, 2014 (Prostigmata: Pygmephoridae)
- *Zambedania sekhukhunensis* Camerik & Magowski, 2016 (Prostigmata: Pygmephoridae)