

**Professor Emeritus Gerald (Jerry) W. Krantz Recipient of the James Allen McMurtry Award recognising a living acarologist who has made outstanding contributions to acarine systematics or applied acarology or both**

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Biography

**Professor Emeritus Gerald (Jerry) W. Krantz**  
**Recipient of the James Allen McMurtry Award recognising a living acarologist who has made outstanding contributions to acarine systematics or applied acarology or both**

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Among the more than 150 acarological works authored or co-authored by Professor Emeritus Gerald W. (Jerry) Krantz that have been published over the last 63 years (1955–2018), certainly the one that has had the largest and most stimulating effect on students, colleagues and scientists in general has been *A Manual of Acarology*, first published in 1970<sup>1</sup>. In the decades after World War II, interest in the Acari was fuelled by the explosion of secondary mite pest outbreaks, the discovery of the importance of biological control in regulating such outbreaks, and ongoing problems in stored products and veterinary and human medicine. As adequate microscopes became more widely available, more and more people began noticing mites everywhere. But what were these strange little arachnids and what were they doing? Other than George Wharton and Ed Baker's *An Introduction to Acarology* (1952), there was little published information available in English to help answer these basic questions until Jerry stepped-up with his spiral-bound first Edition of the *Manual*, perfect for working next to a microscope. The success of the First Edition was immediate and it went through four printings over the next five years. A Second Edition was published in 1978<sup>2</sup> (with a second Printing in 1986), fully bound and had grown from 335 to 509 pages. This was the *Manual* with which I and my cohort of young acarologists were trained. I went through three copies over the years (thanks to the miracle of duct tape: the binding on the Second Edition was its weak spot since the *Manual* was still best used flat open next to a microscope), first learning from and then teaching from

its pages. The Third Edition of *A Manual of Acarology* didn't appear until 2009<sup>3</sup>, after ten years of work by ten authors and reaching 807 pages in length.

So how does one come to boldly write a mite manual where none (in English) had been written before? Jerry was born at the very end of the Roaring Twenties near the confluence of the Ohio, Allegheny and Monongahela Rivers in a city, then and now, called Pittsburgh, although in earlier years as the Shawnee, French and British fought each other for control, it had other names. Also known as 'Steel City' and 'The City of Bridges' for its astounding 446 bridges, Pittsburgh also boasts a number of universities and, thanks to parental prodding, Jerry began his studies at the University of Pittsburgh in 1946. There, the famous Professor Ralph Buchsbaum, who with his wife Mildred created *Animals Without Backbones: An Introduction to the Invertebrates* (1938-1987), introduced Jerry to the arthropods and encouraged him to continue his studies with an advanced degree in Entomology at Cornell University. Following a stint in the U.S. Marine Corps, Jerry entered the Entomology Department at Cornell University and, under the guidance of Professor Herb Schwardt, worked on the behaviour and ecology of granary mites. Suddenly, he was an acarologist, and the only one at Cornell University! Two years later, the beautiful and vivacious Vida June Kersch entered his life, beginning a partnership that has lasted for 63 years and counting. In 1955, with a fresh PhD degree, Jerry and Vida (now married) were off to the wilds of the Pacific Northwest.

Corvallis, Oregon, is still a small town in a region where large cities are few and far between. In 1955, the 'Heart of the Valley' (the Willamette Valley) had few paved streets but many free-range chickens – along with what was then Oregon State Agricultural College - to greet the new arrivals. It was at OSU West where Jerry developed his career in acarology, first as Assistant Professor (1955–61), then Associate Professor (1961–66), then full Professor (1966–94) and Entomology Department Chairman (1991–94), and as Professor Emeritus since 1994. Although Jerry continued to work for a time on stored product mites<sup>4-11</sup>, he soon expanded his work to include prostigmatan species now placed in the Cryptognathidae, Halacaridae, Pygmephoridae, Dolichocybidae, and Acarophenacidae<sup>12-22</sup>, as well as describing new species and behaviours of a variety of agricultural mites such as the rust and big bud eriophyid pests of filbert<sup>23-30</sup> and biological control agents<sup>31-33</sup>. With Jack DeAngelis and other colleagues, Jerry helped unravel how spider mites damage peppermint<sup>34-37</sup>, a major crop in the Willamette Valley. Jerry later extended his work to emerging threats to apiculture<sup>38-39</sup>. Among the more significant of his agriculturally relevant papers is the 1979 *Annual Review of Entomology* paper<sup>40</sup> jointly authored with Jerry's co-awardee of the McMurtry Award, Evert Lindquist, on the evolution of phytophagy in mites. Also well worthy of note are his 1973 publication on the very unusual phoretic behaviour of the phytoseiid mite *Kampimodromus aberrans* on filbert aphids<sup>31</sup> and on deuteroecy in the skeleton weed eriophyid mite *Aceria chondrillae*<sup>33</sup>.

Although Jerry continued to work on applied acarological projects into the 21<sup>st</sup> Century, the fascinating new species of mites he found from the coast and rainforests of Oregon began to indicate a shift in focus. Perhaps it was the discovery of *Lobogyniella tragardi* Krantz, 1958<sup>41</sup>, one of the few known acarine associates of termites and one of the northernmost members of the fascinating and largely tropical Trigynaspida, that turned Jerry's attention from stored product pests towards those most interesting of acarines: the Mesostigmata (the subject of much of his published work). In any case, by 1960, he had begun flirting with the group in which he would become the unchallenged world expert, the Macrochelidae. Within two years he had published a review of macrochelid genera<sup>44</sup> and had begun to explore the family at the world level. Although some macrochelids are free-living predators and others occur in more habitat-specific associations, e.g. with bark beetles, bird nests, and social insects, many have developed phoretic relationships with insects that allow them to exploit more ephemeral habitats such as vertebrate dung or carrion, where they are significant predators of other invertebrates.

The years 1962–63 solidified Jerry's knowledge on the Macrochelidae through a sabbatical at the Berlese Collection in Florence, Italy, and he later began a series of visiting professorships and scientific explorations to collect and to study macrochelids and other mite groups around the world. These included two expeditions in 1965 and 1968 into the Mexican State (then Territory) of Quintana Roo, a remote and poorly known part of the Yucatán Peninsula (where Jerry successfully collected a tree viper and a fer-de-lance with a butterfly net and a pair of haemostatic forceps!), a year at the Istituto di Biologia del Mare in Venice studying tidal and subtidal Halacaridae, and an extended assignment as a Senior Research Scientist with CSIRO in Australia and South Africa (with a memorable encounter with a warthog in Kruger Park while investigating rhino dung for beetles and mites) in 1979. The latter assignment was stimulated by the plague of bush and buffalo flies infesting much of Australia at that time, a by-product of the great increase in the cattle trade in the years following World War II. Endemic Australian dung beetles being rather choosy about what dung they eat, a plethora of unburied cow pats covered the paddocks and stations and provided breeding ground for the flies. Jerry explored the potential of introducing certain South African macrochelid mites into cattle-producing sites in Australia to attach phoretically to dung beetles introduced earlier from the same South African localities for cattle dung control. The mites, it was hoped, would put on their white hats and come to the rescue by extirpating the bush and buffalo fly eggs and larvae in beetle-invaded but unburied dung. *Macrocheles peregrinus* Krantz was successfully introduced into Australia at Rockhampton in central Queensland and quickly spread into other cattle-producing areas; but unfortunately, the flies tend to breed faster than the mites can eat them and control has been erratic. Over the past six decades, Jerry has thoroughly documented the diversity of the Macrochelidae in more than three dozen publications<sup>42–80</sup>. His work goes well beyond descriptions and systematic assessments and into the often fascinating behaviours of macrochelid mites. Of special interest are the works that Jerry and his students and colleagues have contributed on the chemical and behavioural mechanisms of phoretic specificity in more highly derived *Macrocheles* lineages<sup>54, 55, 70, 73, 75</sup>. One of the few non-phoretic species of *Macrocheles* that Jerry described is *M. lukoschusi*, which lives in the rectal sac of 2- and 3-toed sloths and feeds there on nematodes<sup>59, 61</sup>. Presumably the ancestors of these mites were phoretic, but *M. lukoschusi* is now a permanent sloth symbiont, vacating the rectal sac and moving into the perirectal fur only during the sloth's weekly descent to the forest floor to defecate.

From the beginnings of his acarological work, Jerry had been as much interested in the behaviour and ecology of mites as in their taxonomy and systematics. One early example is a member of the Dinychidae, *Caminella peraphora*, that he described with Brian Ainscough in 1960<sup>81</sup>. Eighteen years later this publication bore prestigious fruit when Gary Compton and Jerry published<sup>82</sup> on the mating behaviour and morphological specialisations of this mite in *Science*. Jerry has also published in that journal's competitor across the Atlantic, *Nature*, on a very early example of parasitengone mites parasitic on a blood-sucking midge in Cretaceous amber<sup>83</sup> making him perhaps unique among living acarologists in having published research in both of the major English-language general science magazines. Other classic behavioural studies not already mentioned include how *Pneumolaelaps longanalis* Hunter and Husband feed on pollen grains in the nests of bumble bees<sup>84</sup> (and also describing other strange bee associates<sup>85, 86</sup>); plastron respiration in a freshwater oribatid<sup>87</sup> and the intertidal uropodid *Phaulodinychus mitis*<sup>88</sup>; and Jerry's work with the late, great Frank Radovsky on a predaceous deviant, *Mitonyssoides stercoralis*, in the otherwise vertebrate-parasitic family Macronyssidae<sup>89–91</sup>. An especially significant contribution was the discovery by Jerry and his student Jim Wernz<sup>92</sup> that the mesostigmatan tritosternum, in concert with the capitular groove of the gnathosoma, functions as a fluid transport mechanism to move liquid food to the buccal region.

We could go on, especially Jerry's significant reviews, revisions, and new taxa (e.g.<sup>93–96</sup>). Even the Yellow-bellied Marmot was not spared his inquisitive eye<sup>97</sup>. We think, however, that we have

presented sufficient evidence to convince any doubters that Jerry Krantz has been of outstanding service to the discipline of acarology and thoroughly deserves the James Allen McMurtry Award. We would like to end this short encomium with our thanks to our mentor and friend for all of his support over the years, his entertaining stories, the delightful evenings at the Krantz Manse, and his always gentlemanly charm and sage advice.

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## Selected references

1. Krantz, G.W. (1970) *A Manual of Acarology*. Corvallis, Oregon, OSU Book Stores, Inc., 335 pp.; 2nd printing, October, 1970; 3rd printing, September, 1971; 4th printing, June, 1975.
2. Krantz, G.W. (1978) *A Manual of Acarology*. Second Ed. Corvallis, Oregon, OSU Bookstores, 509 pp. + viii; 2nd printing, May, 1986.
3. Krantz, G.W. & Walter, D.E. (Co-Editors). (2009) *A Manual of Acarology* (third edition). Lubbock, Texas Tech University Press, 807 pages + viii.
4. Krantz, G.W. (1955) Some mites injurious to farm-stored grain. *Journal of Economic Entomology*, 48, 754–755.  
<https://doi.org/10.1093/jee/48.6.754>
5. Krantz, G.W. (1956) A laboratory method for testing grain protectants against the grain mite (*Acarus siro* L.). *Journal of Economic Entomology*, 49, 813–814.  
<https://doi.org/10.1093/jee/49.6.813>
6. Krantz, G.W. (1960) The Acaridae: a recapitulation. *Pan-Pacific Entomologist*, 36, 157–166.
7. Krantz, G.W. (1961) The biology and ecology of granary mites of the Pacific Northwest. I. Ecological considerations. *Annals of the Entomological Society of America*, 52, 169–174.  
<https://doi.org/10.1093/aesa/54.2.169>
8. Krantz, G.W. (1961) The biology and ecology of granary mites of the Pacific Northwest. II. Observation and rearing techniques. *Annals of the Entomological Society of America*, 54, 512–518.  
<https://doi.org/10.1093/aesa/54.2.169>
9. Radinovsky, S. & Krantz, G.W. (1962) The use of Fluon to prevent the escape of stored-product insects from glass containers. *Journal of Economic Entomology*, 55, 815–816.  
<https://doi.org/10.1093/jee/55.5.815>
10. Baker, G.T. & Krantz, G.W. (1984) Alarm pheromone production in the bulb mite, *Rhizoglyphus robini* (Claparède), and its possible use as a control adjuvant in lily bulbs. In: Griffiths, D.A. & Bowman, C.E. (Eds) *Acarology VI* (2) (Proc. VI Int. Congress Acarology), London, Ellis Horwood Ltd., pp. 686–692.
11. Baker, G.T. & Krantz, G.W. (1985) Structure of the male and female reproductive systems of *Rhizoglyphus robini* Claparède (Acari: Acaridae). *Acarologia*, 26, 55–65.
12. Krantz, G.W. (1957) *Dolichocybe keiferi*, a new genus and new species of pyemotid mite, with a description of a new species of *Siteroptes* (Acarina: Pyemotidae). *Annals of the Entomological Society of America*, 40, 259–264.  
<https://doi.org/10.1093/aesa/50.3.259>
13. Krantz, G.W. (1958) *Cryptognathus sternalis*, a new species of prostigmatid mite from Oregon. *Pan-Pacific Entomologist*, 34, 81–85.
14. Krantz, G.W. (1959) A redescription of the male of *Siteroptes reniformis* Krantz 1957 with notes on the family Pyemotidae (Acarina). *Annals of the Entomological Society of America*, 52, 335–337.  
<https://doi.org/10.1093/aesa/52.3.335>
15. Cross, E.A. & Krantz, G.W. (1964) Three new species of *Acarophenax* (Acarina: Pyemotidae) from North America. *Acarologia*, 3, 287–295.
16. Krantz, G.W. (1970) *Agauopsis vidae*, a new species of Halacaridae (Acari: Prostigmata) from the Northern Adriatic Sea, with notes on its behavior. *Archivio di Oceanografia e Limnologia* (Venezia), 16, 247–261.
17. Krantz, G.W. (1971) The Mites of Quintana Roo II. *Actacarus giganteus*, a new species of arenicolous mite (Prostig-

- mata: Halacaridae) from the Caribbean coast. *Annals of the Entomological Society of America*, 64, 594–598.  
<https://doi.org/10.1093/aesa/64.3.594>
18. Krantz, G.W. (1973) Four new predatory species of Halacaridae (Acari: Prostigmata) from Oregon, with remarks on their distribution in the intertidal mussel habitat (Pelecypoda: Mytilidae). *Annals of the Entomological Society of America*, 66, 975–985.  
<https://doi.org/10.1093/aesa/66.5.975>
  19. Krantz, G.W. (1974) *Actacarus monniotae* n. sp. (= *A. illustrans* sensu Monniot 1968), an arenicolous mite (Acari: Halacaridae) from the Mediterranean region. *Vie et Milieu*, 24, 115–118.
  20. Krantz, G.W. (1976) Arenicolous Halacaridae from the intertidal zone of Schooner Creek, Oregon (Acari: Prostigmata). *Acarologia*, 18, 241–258.
  21. Krantz, G.W. (1977) On the occurrence of Claparède organs in the Halacaridae (Acari). F. Grandjean Memorial Vol. *Acarologia*, 19, 62–66.
  22. Krantz, G.W. (1982) A new species of *Copidognathus* Trouessart (Acari: Actinedida: Halacaridae) from the Galapagos Rift. *Canadian Journal of Zoology*, 60, 1728–1731.  
<https://doi.org/10.1139/z82-225>
  23. Krantz, G.W. (1962) *Monoceromychus boreus*, a new species of spider mite from Oregon (Acarina: Tetranychidae). *Proceedings of the Entomological Society of Washington*, 64, 97–99.
  24. Krantz, G.W. (1973) Observations on the morphology and behavior of the filbert rust mite, *Aculus comatus* (Prostigmata: Eriophyoidea) in Oregon. *Annals of the Entomological Society of America*, 66, 709–717.  
<https://doi.org/10.1093/aesa/66.4.709>
  25. AliNiazee, M.T. & Krantz, G.W. (1978) Zur chemischen Bekämpfung der Haselknospen-Milben (Acari: Eriophyoidea). *Anzeiger für Schädlingskunde, Pflanzenschutz, Umweltschutz*, 51, 37–39.  
<https://doi.org/10.1007/BF01903215>
  26. Bury, R. & Krantz, G.W. (1978) *Aegyptobia montana*, a new species of false spider mite (Acari: Tenuipalpidae) from an alpine habitat. *Acarologia*, 19, 417–421.
  27. Krantz, G.W. (1979) The role of *Phytocoptella avellanae* (Nalepa) and *Cecidophyopsis vermiformis* (Nal.) (Eriophyoidea) in big bud of filbert. In: Piffel, E. (Ed.) *Proceedings of the 4th International Congress of Acarology, Saalfelden (Austria)*. Budapest, Académiai Kiadó, pp. 201–208.
  28. Hu, D. & Krantz, G.W. (1991) A new species of *Nalepella* Keifer (Acari: Eriophyoidea: Nalepellidae) from conifers in Oregon, USA. *International Journal of Acarology*, 17, 5–8.  
<https://doi.org/10.1080/01647959108683878>
  29. Hu, D. & Krantz, G.W. (1991) A new species of *Tegonotus* Nalepa (Acari: Eriophyoidea: Phyllocoptinae) from Pacific silver fir in Oregon, USA. *International Journal of Acarology*, 17, 161–164.  
<https://doi.org/10.1080/01647959108683901>
  30. Bajwa, W.I., Krantz, G.W. & Kogan, M. (2001) Discovery of *Cenopalpus pulcher* (C. & F.) (Acari: Tenuipalpidae) in the New World. *Proceedings of the Entomological Society of Washington*, 103, 754–756.
  31. Krantz, G.W. (1973) Dissemination of *Kampimodromus aberrans* by the filbert aphid. *Journal of Economic Entomology*, 66, 575–576.  
<https://doi.org/10.1093/jee/66.2.575>
  32. Fain, A. & Krantz, G.W. (1990) Notes on the genus *Asperoseius* Chant 1957 (Acari: Phytoseiidae), with descriptions of two new species. *Journal of African Zoology*, 104, 213–220.
  33. Krantz, G.W. & Ehrensing, D.T. (1990) Deuterogyny in the skeleton weed mite, *Aceria chondrillae* (G. Can.) (Acari: Eriophyoidea). *International Journal of Acarology*, 16, 129–133.  
<https://doi.org/10.1080/01647959008683524>
  34. DeAngelis, J.D., Larson, K.C. Berry, R.E. & Krantz, G.W. (1982) Effects of spider mite injury on transpiration and leaf water status in peppermint. *Environmental Entomology*, 11, 975–978.  
<https://doi.org/10.1093/ee/11.4.975>
  35. DeAngelis, J.D., Marin, A.B., Berry, R.E. & Krantz, G.W. (1983) Effects of spider mite (Acari: Tetranychidae) injury on essential oil metabolism in peppermint. *Environmental Entomology*, 12, 522–527.  
<https://doi.org/10.1093/ee/12.2.522>
  36. DeAngelis, J.D., Berry, R.E. & Krantz, G.W. (1983) Evidence for spider mite (Acari: Tetranychidae) injury-induced water deficits and osmotic adjustment in peppermint. *Environmental Entomology*, 12, 336–339.  
<https://doi.org/10.1093/ee/12.2.336>
  37. DeAngelis, J.D., Berry, R.E. & Krantz, G.W. (1983) Photosynthesis, leaf conductance, and leaf chlorophyll content in spider mite-injured peppermint leaves. *Environmental Entomology*, 12, 345–348.  
<https://doi.org/10.1093/ee/12.2.345>
  38. Royce, L.A., Krantz, G.W., Ibay, L.A. & Burgett, D.M. (1988) Some observations on the biology and behavior of *Acar-*

- apis woodi* and *Acarapis dorsalis* in Oregon. In: Needham, G.L. (Ed.), *Africanised Honey Bees and Bee Mites*. Chichester, Ellis Horwood Ltd., 68B, pp. 498–505.
39. Krantz, G.W. & Kitprasert, C. (1990) Description of the larva of *Tropilaelaps clareae* Delfinado and Baker (Acari: Laelapidae), a brood parasite of honey bees. *International Journal of Acarology*, 16, 13–15.  
<https://doi.org/10.1080/01647959008683858>
  40. Krantz, G.W. & Lindquist, E.E. (1979) Evolution of phytophagous mites (Acari). *Annual Review of Entomology*, 24, 121–158.  
<https://doi.org/10.1146/annurev.en.24.010179.001005>
  41. Krantz, G.W. (1958) *Lobogyniella tragardi*, a new genus and species of diplogyniid mite associated with dampwood termites in Oregon (Acarina: Diplogyniidae). *Proceedings of the Entomological Society of Washington*, 60, 127–131.
  42. Krantz, G.W. (1960) A re-evaluation of the Parholaspinae Evans 1956 (Mesostigmata). *Acarologia*, 2, 393–433.
  43. Krantz, G.W. (1961) Free-living Mesostigmata from Garamba National Park, Congo. I. Two new genera of Macrochelidae. *Inst. Parcs nat. du Congo et Ruanda-Urundi Fasc.* 24, 4–13.
  44. Krantz, G.W. (1962) A review of the genera of the family Macrochelidae Vitzthum 1930 (Acarina: Mesostigmata). *Acarologia*, 4, 143–173.
  45. Krantz, G.W. (1962) Descriptions of three myrmecophilous Macrochelidae (Acarina: Mesostigmata) from Panama, British Guiana and the British West Indies. *Journal of the Kansas Entomological Society*, 35, 349–357.
  46. Oliver, J. H. & Krantz, G.W. (1963) *Macrocheles rodriguezi*, a new species of mite from Kansas (Acarina: Macrochelidae) with notes on its life cycle and behavior. *Acarologia*, 5, 519–525.
  47. Krantz, G.W. & Filippini, A. (1964) Acari della famiglia Macrochelidae (Mesostigmata) nella collezione del South Australian Museum. *Rivista di Parassitologia*, 25, 35–54.
  48. Krantz, G.W. (1965) A review of the genus *Neopodocinum* Oudemans 1902 (Acarina: Macrochelidae). *Acarologia*, 7, 139–226.
  49. Krantz, G.W. (1965) A new species of *Macrocheles* (Acarina: Macrochelidae) associated with bark beetles of the genera *Ips* and *Dendroctonus*. *Proceedings of the Kansas Entomological Society*, 38, 145–153.
  50. Krantz, G.W. (1966) Macrochelidae. In: *Insects of Micronesia* (Acarina: Mesostigmata), 3, 149–154.
  51. Krantz, G.W. (1967) I. A review of the genus *Holocaelaeno* Berlese 1910. II. A review of the genus *Holostaspella* Berlese 1903 (Acarina: Macrochelidae). *Acarologia*, 9, fasc. suppl.: 146 pp.
  52. Krantz, G.W. & Mellott, J.L. (1968) Two new species of *Macrocheles* (Acarina: Macrochelidae) from Florida, with notes on their host-specific relationships with geotrupine beetles (Scarabaeidae: Geotrupinae). *Journal of the Kansas Entomological Society*, 41, 48–56.
  53. Krantz, G.W. (1970) Acari (Mesostigmata, Macrochelidae). *South African Animal Life*, XIV, 19–23.
  54. Krantz, G.W. & Mellott, J.L. (1971) Specificity in two phoretic species of *Macrocheles* associated with geotrupine Scarabaeidae. In: Milan, D. & Rosický, B. (Eds.) *Third International Congress of Acarology*, Prague, Springer, p. 109.
  55. Krantz, G.W. (1972) Macrochelidae from Hamburg (Acari: Mesostigmata). *Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg*, 4, 263–275.
  56. Krantz, G.W. & Mellott, J.L. (1972) Studies on phoretic specificity in *Macrocheles mycetropetes* and *M. peltotrupetes* Krantz & Mellott (Acari: Macrochelidae), associates of geotrupine Scarabaeidae. *Acarologia*, 14, 317–344.
  57. Krantz, G.W. & Wernz, J.G. (1979) Sperm transfer in *Glyptotholaspis americana* (Gamasida: Macrochelidae). *Recent Advances in Acarology*, 2, 441–446.  
<https://doi.org/10.1016/B978-0-12-592202-9.50062-8>
  58. Krantz, G.W. (1981) Two new *glaber* group species of *Macrocheles* (Acari: Macrochelidae) from southern Africa. *International Journal of Acarology*, 7, 3–16.  
<https://doi.org/10.1080/01647958108683239>
  59. Krantz, G.W. (1983) Three new species of *Macrocheles* (Acari: Gamasida: Macrochelidae) associated with 3-toed sloths, *Bradypus* spp. (Edentata: Bradypodidae) in Brazil and Surinam. *Acarologia*, 24, 3–12.
  60. Krantz, G.W. (1983) Current status and potential for use of mites as biological control agents of dung-breeding flies, with special reference to the Macrochelidae. In: Hoy, M.A., Cunningham, G.L. & Knutson, L. (Eds.) *Proceedings of Conference on Research Needs for Development of Biological Control of Pests by Mites*, Berkeley, Calif., April 1982. *University of California Special Publication*, 3304, 91–98.
  61. Adis, J. & Krantz, G.W. (1985) Notes on the natural history of *Macrocheles* (Acari: Gamasida: Macrochelidae) associated with 3-toed sloths (*Bradypus* spp., Edentata: Bradypodidae) in the Central Amazon. *Zoologische Anzeiger*, 214, 222–224.
  62. Walter, D.E. & Krantz, G.W. (1986) New species in the *Macrocheles kraepelini* complex (Acari: Macrochelidae). *Canadian Journal of Zoology*, 64, 212–217.  
<https://doi.org/10.1139/z86-034>
  63. Walter, D. E. & Krantz, G.W. (1986) A review of the *glaber* group (s.str.) species of the genus *Macrocheles* (Acari:

- Macrochelidae) and designation of species complexes. *Acarologia*, 27, 277–294.
64. Krantz, G.W. & Redmond, B.L. (1987) Identification of glandular and non-glandular idionotal systems in *Macrocheles perglaiber* F. & P. (Acari: Macrochelidae). *Experimental & Applied Acarology*, 3, 243–253.  
<https://doi.org/10.1007/BF01270460>
  65. Krantz, G.W. (1988) *Gonatothrix carinata*, a new genus and species of the family Macrochelidae (Acari: Gamasida) from *Phanaeus pyrois* Bates (Scarabaeidae) *Canadian Journal of Zoology*, 66, 1318–1321.  
<https://doi.org/10.1139/z88-193>
  66. Krantz, G.W. (1988) On the identity of Berlese's species of *Macrocheles* (Acari–Macrochelidae, redescrptions and new synonymies. *Canadian Journal of Zoology*, 66, 968–980.  
<https://doi.org/10.1139/z88-144>
  67. Krantz, G.W. & Redmond, B.L. (1988) On the structure and function of the cribrum, with special reference to *Macrocheles perglaiber* F. & P. (Gamasida: Macrochelidae). In: Channabasavanna, G. P. & Viraktamath, C.A. (Eds) Proceedings of the VII International Congress of Acarology, Bangalore 1, pp. 179–185.
  68. Krantz, G.W. & Whitaker, Jr., J.O. (1988) Mites of the genus *Macrocheles* (Acari: Macrochelidae) associated with small mammals in North America. *Acarologia*, 29, 225–259.
  69. Krantz, G.W. (1991) Nature of the phoretic association between *pisentii*-group mites (Acari: Macrochelidae) and dung beetles of the genus *Scarabaeus* (Coleoptera: Scarabaeidae) in southern France. *Acarologia*, 32, 3–11.
  70. Krantz, G.W., Royce, L.A., Lowry, R.R. & Kelsey, R. (1991) Mechanisms of phoretic specificity in *Macrocheles* (Acari: Macrochelidae). In: Dusbabek, F. & Bukva, V. (Eds) Proceedings of VIII International Congress of Acarology Vol. 2, Ceské Budejovice pp. 561–569.
  71. Krantz, G.W. & Royce, L.A. (1992) Descriptions of the immature stases of *Macrocheles mycotrupetes* Krantz and Mellott (Acari: Macrochelidae), with remarks on form, function, and phoresy. *Acarologia*, 33, 305–311.
  72. Walter, D.E. & Krantz, G.W. (1992) A review of *glaber*-like species with reduced sclerotization and ventral ornamentation: the *scutatus* subgroup (Acari: Macrochelidae: *Macrocheles*). *International Journal of Acarology*, 18, 241–249.  
<https://doi.org/10.1080/01647959208683956>
  73. Krantz, G.W. & Royce, L.A. (1994) Observations on the biology and behavior of *Macrocheles mycotrupetes* Krantz and Mellott (Acari: Macrochelidae). *International Journal of Acarology*, 20, 115–121.  
<https://doi.org/10.1080/01647959408684010>
  74. Krantz, G.W. (1998) Observations on five rarely collected genera of Macrochelidae (Acari: Mesostigmata) associated with insects. *Acarologia*, 39, 95–109.
  75. Krantz, G.W. (1998) Reflections on the biology, morphology, and ecology of the Macrochelidae. Proc. III Symposium, European Assoc. Acarol., Amsterdam, 1996. *Experimental & Applied Acarology*, 22, 125–137.  
<https://doi.org/10.1023/A:1006097811592>
  76. Krantz, G.W. (2007) The *dimidiatus* species group of the genus *Macrocheles* Latreille 1829 (Acari: Macrochelidae, introduction, origins, infragroup relationships, and redescription of *Macrocheles dimidiatus* Berlese. *International Journal of Acarology*, 33, 297–306.  
<https://doi.org/10.1080/01647950708683690>
  77. Krantz, G.W. (2009) A new genus of the family Macrochelidae (Acari: Mesostigmata) based on *Macrocheles mycotrupetes* Krantz & Mellott and *M. peltotrupetes* K. & M., phoretic associates of geotrupine beetles (Coleoptera: Geotrupidae) in southeastern USA. *International Journal of Acarology*, 35, 47–51.  
<https://doi.org/10.1080/01647950902870537>
  78. Lewis, J.J., Whitaker, Jr., J.O. & Krantz, G.W. (2010) A biological reconnaissance of the invertebrate fauna of twelve Tennessee caves, with notes on the guanophilic mites of the genus *Macrocheles*. *Journal of Tennessee Academy of Science*, 85 (3–4), 53–61.
  79. Krantz, G.W. & Moser, J.C. (2012) A new genus and species of Macrochelidae (Acari: Mesostigmata) associated with the Texas leafcutting ant, *Atta texana* (Buckley) in Louisiana, USA. *International Journal of Acarology*, 38, 576–582.  
<https://doi.org/10.1080/01647954.2012.704396>
  80. Krantz, G.W. (2018) *Allogynaspis flechtmanni*, a new genus and species of the subfamily Macrochelinae (Acari: Mesostigmata: Macrochelidae) from southeastern Brazil, with comments on cheliceral dentition, reproductive strategies, and postepigynal platelets. *Zootaxa*, 4455(1), 150–160.  
<https://doi.org/10.11646/zootaxa.4455.1.6>
  81. Krantz, G.W. & Ainscough, B.D. (1960) *Caminella paraphora*, a new genus and species of mite from Oregon (Acarina: Trachytidae). *Annals of the Entomological Society of America*, 53, 27–34.  
<https://doi.org/10.1093/aesa/53.1.27>
  82. Compton, G.L. & Krantz, G.W. (1978) Mating behavior and morphological specialization in the uropodine mite, *Caminella paraphora*. *Science*, 200, 1300–1301.  
<https://doi.org/10.1126/science.200.4347.1300>



83. Poinar, G.O., Jr., Pike, E.M. & Krantz, G.W. (1993). Animal–animal parasitism. *Nature*, 361, 307–308.  
<https://doi.org/10.1038/361307b0>
84. Royce, L. & Krantz, G. (1989) Observations on pollen processing by *Pneumolaelaps longanalis* (Acari: Laelapidae), a mite associate of bumblebees. *Experimental & Applied Acarology*, 7 161–165.  
<https://doi.org/10.1007/BF01270436>
85. Krantz, G.W. (1998) A new genus and two new species of hypoaspidine mites (Acari: Laelapidae) associated with Old World carpenter bees of the tribe Xylocopini (Hymenoptera:Apidae: *Xylocopa*). *International Journal of Acarology*, 24, 291–300.  
<https://doi.org/10.1080/01647959808683595>
86. Royce, L.A. & Krantz, G.W. (2003) A new genus and species of hypoaspidine mite (Acari: Laelapidae) associated with a night–flying xylocopinine carpenter bee (Hymenoptera: Apidae: *Xylocopa*) in Thailand. *International Journal of Acarology*, 29, 107–111.  
<https://doi.org/10.1080/01647950308683646>
87. Krantz, G.W. & Baker, G.T. (1982) Observations on the plastron mechanism of *Hydrozetes* sp. (Acari: Oribatida: Hydrozetidae). *Acarologia*, 23, 273–277.
88. Krantz, G.W. (1974) *Phaulodinychus mitis* (Leonardi 1899) (Acari: Uropodidae), an intertidal mite exhibiting plastron respiration. *Acarologia*, 16, 11–20.
89. Radovsky, F.J., Krantz, G.W. & Whitaker, Jr., J. O. (1997) A remarkable example of predation in the parasitic mite family Macronyssidae. *International Journal of Acarology*, 23, 3–6.  
<https://doi.org/10.1080/01647959708684112>
90. Radovsky, F.J. & Krantz, G.W. (1998) A new genus and species of predaceous mite in the parasitic family Macronyssidae (Acari: Mesostigmata). *Journal of Medical Entomology*, 35, 527–537.  
<https://doi.org/10.1093/jmedent/35.4.527>
91. Radovsky, F.J. & Krantz, G.W. (2003) Generic and specific synonymy of *Mitonyssoides stercoralis* Yunker, Lukoschus, and Giesen, (1990 with *Coprolactistus whitakeri* Radovsky & Krantz, 1998 (Acari: Mesostigmata: Macronyssidae). *Journal of Medical Entomology*, 40, 593–594.  
<https://doi.org/10.1603/0022-2585-40.4.593>
92. Wernz, J.G. & Krantz, G.W. (1976) Studies on the function of the tritosternum in selected Gamasida (Acari). *Canadian Journal of Zoology*, 54, 202–213.  
<https://doi.org/10.1139/z76-022>
93. Krantz, G.W. (1961) A re-evaluation of the Microgynioidea, with a description of a new species of *Microgynium* (Acarina: Mesostigmata). *Acarologia*, 3, 1–10.
94. Krantz, G.W. & Khot, N.S. (1962) A review of the family Otopheidomenidae Treat (Acarina: Mesostigmata). *Acarologia*, 4, 532–542.
95. Walter, D.E. & Krantz, G.W. (1999) New early derivative mesostigmatans from Australia: *Nothogynus*, n. gen., Nothogynidae n. fam. (Mesostigmata: Microgyniina). *International Journal of Acarology*, 25, 67–76.  
<https://doi.org/10.1080/01647959908683618>
96. Krantz, G.W. (2000) Two new species of the genus *Laelaptonyssus* Womersley from North America and Australia, with observations on the reinstatement to family level of the subfamily Laelaptonyssinae *sensu* Lee, 1970 (Acari: Mesostigmata: Rhodacaroidea). *Acarologia*, 41, 25–38.
97. Krantz, G.W., OConnor, B.M., Foreyt, W.C. & Fain, A. (2003) A new species of *Aplodontopus* (Acari: Astigmata: Chortoglyphidae) from the yellow-bellied marmot, *Marmota flaviventris* (Rodentia: Sciuridae) in eastern Washington, USA, with observations on its pathology. *International Journal of Acarology*, 29, 99–105.  
<https://doi.org/10.1080/01647950308683645>

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