
References

- Abouheif E, Wray GA (2002) Evolution of the gene network underlying wing polyphenism in ants. *Science* 29: 249–252
- Bailey RC, Byrnes J (1990) A new, old method for assessing measurement error in both univariate and multivariate morphometric studies. *Systematic Zoology* 39: 124–130
- Barr D, Gotwald WH Jr (1982) Phenetic affinities of males of the army ant genus *Dorylus*. *Canadian Journal of Zoology* 60: 2652-2658
- Barr D, van Boven J, Gotwald WH Jr (1985) Phenetic studies of African army ant queens of the genus *Dorylus*. *Systematic Entomology* 10: 1-10
- Berghoff SM, Weissflog A, Linsenmair KE, Mohamed M, Maschwitz U (2002a) Nesting habits and colony composition of the hypogaeic army ant *Dorylus (Dichtadia) laevigatus* FR. SMITH. *Insectes Sociaux* 49: 1-8
- Berghoff SM, Weissflog A, Linsenmair KE, Hashim R, Maschwitz U (2002b) Foraging of a hypogaeic army ant: a long neglected majority. *Insectes Sociaux* 49: 133-141
- Berghoff SM, Gadau J, Winter T, Linsenmair KE, Maschwitz U (2003) Sociobiology of hypogaeic army ants: characterization of two sympatric *Dorylus* species on Borneo and their colony conflicts. *Insectes Sociaux* 50: 139-147
- Beye M, Neumann P, Chapuisat M, Pamila P, Moritz RFA (1998) Nestmate recognition and the genetic relatedness of nests in the ant *Formica pratensis*. *Behavioral Ecology and Sociobiology* 43: 67-72
- Billen J, Gobin B (1996) Trail following in army ants. *Netherlands Journal of Zoology* 46: 272-280
- Bolton B (1990) Army ants reassessed: the phylogeny and classification of the doryline section. *Journal of Natural History* 24: 1339-1364

-
- Bolton, B. 1995. A new general catalogue of the ants of the world. Harvard University Press, Cambridge, Massachusetts
- Boswell GP, Franks NR, Britton NF (2001) Arms races and the evolution of big fierce societies. *Proceedings of the Royal Society London B* 268: 1723-1730
- Bourke AFG, Franks NR (1995) Social Evolution in Ants. Monographs in Behavioral Ecology. Princeton University Press, Princeton
- Brady S (2003) Evolution of the army ant syndrome: The origin and long-term evolutionary stasis of a complex of behavioral and reproductive adaptations. *Proceedings of the National Academy of Sciences* 100: 6575-6579
- Braendle C, Hockley N, Brevig T, Shingleton AW, Keller L (2003) Size-correlated division of labour and spatial distribution of workers in the driver ant, *Dorylus molestus*. *Naturwissenschaften* 90: 277-281
- Brown MJF (1999) Nest relocation and encounters between colonies of the seed-harvesting ant *Messor andrei*. *Insectes Sociaux* 46: 66-70
- Burgess ND, Ponder KL, Goddard J (1999) Surface and leaf-litter arthropods in the coastal forests of Tanzania. *African Journal of Ecology* 37: 355-365
- Bussmann R (1994) The forests of Mt Kenya – vegetation, ecology, destruction and management of a tropical mountain forest ecosystem. PhD thesis, University Bayreuth, Germany
- Cagniant, H. (1991) Etude de populations marocaines de la superespece *Camponotus cruentatus* Latreille. Mise en evidence de *Camponotus obscuriventris* sp. n. *EOS* 67: 35-54
- Calabi P, Porter D (1989) Worker longevity in the fire ant *Solenopsis invicta*. *Journal of Insect Physiology* 35: 643-649

-
- Casey TM (1992) Energetics of locomotion. In: Mechanics of animal locomotion (ed. Alexander R McN). Advances in Comparative & Environmental Physiology 11. Springer, Berlin, pp. 251-275
- Chapman CA, Chapman LJ, Wrangham R, Isabirye-Basuta, Ben-David K (1997) Spatial and temporal variability in the structure of a tropical forest. African Journal of Ecology 35: 287-302
- Couzin ID, Franks NR (2003) Self-organized lane formation and optimised traffic flow in army ants. Proceedings of the Royal Society London B 270: 139-146
- Davidson DW (1977) Species diversity and community organization in desert seed-eating ants. Ecology 58: 711-724
- Diniz-Filho JAF, von Zuben CJ, Fowler HG, Schlindwein MN, Bueno OC (1994) Multivariate morphometrics and allometry in a polymorphic ant. Insectes Sociaux 41: 153-163
- Emery C (1901) Studi sul polimorfismo e la metamorfosi nel genere *Dorylus*. Memorie della Reale Accademia delle Scienze dell'Istituto di Bologna 9: 183-201
- Emery C (1910) Subfamily Dorylinae. In: Genera Insectorum (ed. Wytsman P). Verteneuil and Desmet, Brussels. Fasc. 102: 1-34
- Emlen DJ, Nijhout HF (2000) The development and evolution of exaggerated morphologies in insects. Annual Review of Entomology 45: 661-708
- Espadaler X, Gómez C (2001) Formicine ants comply with the size-grain hypothesis. Functional Ecology 15: 136-139
- Evans JD, Wheeler DE (2001) Gene expression and the evolution of insect polyphenisms. BioEssays 23: 62-68

-
- Farji-Brener AG, Barrantes G, Ruggiero A (1994) Environmental rugosity, body size and access to food: a test of the size-grain hypothesis in tropical litter ants. *OIKOS* 104: 165-171
- Federle W, Maschwitz U, Fiala B, Riederer M, Hölldobler B (1997) Slippery ant-plants and skilful climbers: selection and protection of specific ant partners by epicuticular wax blooms in *Macaranga* (Euphorbiaceae). *Oecologia* 112: 217-224
- Feener DH Jr, Lighton JRB, Bartholomew GA (1988) Curvilinear allometry, energetics and foraging ecology: a comparison of leaf-cutting ants and army ants. *Functional Ecology* 2: 509-520
- Fisher NI (1993) *Statistical analysis of circular data*. Cambridge University Press, Cambridge
- Franks NR (1980) The evolutionary ecology of the army ant *Eciton burchelli* on Barro Colorado Island, Panama. PhD thesis, University of Leeds
- Franks NR (1985) Reproduction, foraging efficiency and worker polymorphism in army ants. In: *Experimental behavioural ecology* (eds. M. Lindauer & B. Hölldobler). Fischer-Verlag, Stuttgart and New York. pp. 91-107
- Franks NR (1986) Teams in social insects: group retrieval of prey by army ants. *Behavioral Ecology and Sociobiology* 18: 425-429
- Franks NR, Fletcher CR (1983) Spatial patterns in army ant foraging and migration: *Eciton burchelli* on Barro Colorado, Panama. *Behavioral Ecology and Sociobiology* 12: 261-270
- Franks NR, Gomez N, Goss S, Deneubourg JL (1991) The blind leading the blind in army ant raid patterns: testing a model of self-organization. *Journal of Insect Behaviour* 4: 583-607
- Franks NR, Sendova-Franks AB, Simmons J, Mogie M (1999) Convergent evolution, superefficient teams and tempo in Old and New World army ants. *Proceedings Royal Society London B* 266: 1697-1701

-
- Franks NR, Sendova-Franks AB, Anderson C (2001) Division of labour within teams of New World and Old World army ants. *Animal Behaviour* 62: 635-642
- Fraser VS, Kaufmann B, Oldroyd BP & Crozier RH (2000) Genetic influence on caste in the ant *Camponotus consobrinus*. *Behavioral Ecology and Sociobiology* 47: 188-194
- Gotwald WH Jr (1974a) Foraging behavior of *Anomma* driver ants in Ghana cocoa farms. *Bulletin de l'Institut Fondamental d'Afrique Noire, Serie A* 36 : 705-713
- Gotwald Jr WH Jr (1974b) Predatory behavior and food preferences of driver ants in selected African habitats. *Annals of the Entomological Society of America* 67: 877–886
- Gotwald WH Jr (1978c) Trophic ecology and adaptation in tropical Old World ants of the subfamily Dorylinae. *Biotropica* 10: 161-169
- Gotwald WH Jr (1978) Emigration behavior in the East African driver ant *Dorylus (Anomma) molestus* GERSTÄCKER. *Journal of the New York Entomological Society* 86: 290
- Gotwald WH Jr (1982) Army ants. *Social insects* H. R. Hermann Academic Press New York 157 –254
- Gotwald WH Jr (1995) Army ants – the biology of social predation. Cornell University Press, Ithaca and London
- Gotwald WH Jr, Barr D (1980) Quantitative studies on major workers of the ant genus *Dorylus*. *Annals of the Entomological Society of America* 73: 231-238
- Gotwald WH Jr, Cunningham-van Someren GR (1990) A year in the life of an Old World army ant colony: spatial patterns in raiding and emigration. In: *Social insects and the environment: Proceedings of the eleventh IUSI congress*. (eds. Veeresh GK, Mallik B, Viraktamath CA), Oxford and IBH Publishing Co., New Dehli. pp. 714-715
- Harvey PH, Pagel MD (1991) *The comparative method in evolutionary biology*. Oxford University Press, Oxford

-
- Hirosawa H, Higashi S, Mohamed M (2000) Food habits of *Aenictus* army ants and their effects on the ant community in a rain forest of Borneo. *Insectes Sociaux* 47: 42-49
- Hughes WHO, Sumner S, Van Borm S, Boomsma JJ (2003) Worker caste polymorphism has a genetic basis in *Acromyrmex* leaf-cutting ants. *Proceedings of the National Academy of Sciences of America* 100: 9394-9397
- Huxley JS (1932) *Problems of relative growth*. John Hopkins University Press, Baltimore
- Hollingsworth MJ (1960) Studies on the polymorphic workers of the army ant *Dorylus (Anomma) nigricans* ILLIGER. *Insectes Sociaux* 7: 17-37
- Hölldobler B, Wilson EO (1990) *The ants*. Harvard University Press, Cambridge, Massachusetts
- Kaspari M (1996) Worker size and seed size selection by harvester ants in a neotropical forest. *Oecologia* 105: 297-404
- Kaspari M, Weiser MD (1999) The size-grain hypothesis and interspecific scaling. *Functional Ecology* 13: 530-538
- Kenne M, Dejean A, Féneron R, Durand JL (2000) Changes in worker polymorphism in *Myrmicaria opaciventris* EMERY. *Insectes Sociaux* 47: 50-55
- Leroux JM (1979) Sur quelques modalités de disparition des colonies d'*Anomma nigricans* ILLIGER dans la région de Lamto (Côte d'Ivoire). *Insectes Sociaux* 26 : 93-100
- Leroux JM (1982) *Ecologie des populations de dorylines Anomma nigricans dans la région de Lamto (Côte d'Ivoire)*. Publications du Laboratoire de Zoologie, No. 22. Ecole Normale Supérieure, Paris
- Lutz FE (1929) Observations on leaf-cutting ants. *American Novitates* 388: 1-21

-
- Mayr G (1910) 8. Hymenoptera, 2. Formicidae. In: Wissenschaftliche Ergebnisse der Schwedischen Zoologischen Expedition nach dem Kilimandjaro, dem Meru (ed. Sjöstedt Y). Palmquists, Stockholm
- McArthur AJ, Adams M, Shattuck SO (1996) A morphological and molecular review of *Camponotus terebrans* LOWNE. Australian Journal Zoology 45: 579-598
- Moffet MW (1987) Division of labor and diet in the extremely polymorphic ant *Pheidologeton diversus*. National Geographic Research 3: 282-304
- Nijhout HF, Wheeler DE (1996) Growth models of complex allometries in holometabolous insects. American Naturalist 148: 40-56
- Nijhout NF, Emlen DJ (1998) Competition among body parts in the development and evolution of insect morphology. Proceedings of the National Academy of Sciences 95: 3685-3689
- Nowbahari B, Feneron R, Malherbe MC (2000) Polymorphism and polyethism in the formicine ant *Cataglyphis niger*. Sociobiology 36: 485-496
- Oster G, Wilson EO (1978) Caste and ecology in the social insects. Princeton University Press, Princeton, New Jersey
- Owen RE, Harder LD (1995) Heritable allometric variation in bumble bees: opportunities for colony-level selection of foraging ability. Journal of Evolutionary Biology 8: 725-738
- Parr ZJE, Parr CL, Chown SL (2003) The size-grain hypothesis: a phylogenetic and field test. Ecological Entomology 28: 475-481
- Paul J (2001) Mandible movements in ants. Comparative Biochemistry and Physiology (A) 131: 7-20

-
- Raignier A, van Boven J (1955) Etude taxonomique, biologique et biométrique des *Dorylus* du sous-genre *Anomma* (Hymenoptera: Formicidae). Annales du Musée Royal du Congo Belge, n.s. 4° (Sciences Zoologiques) 2: 1-359
- Raignier A, van Boven J, Ceusters R (1974) Der Polymorphismus der afrikanischen Wanderameisen unter biometrischen und biologischen Gesichtspunkten. In: Sozialpolymorphismus bei Insekten (ed. G.H. Schmidt), Fischer Verlag, Stuttgart and New York. pp. 668-693
- Rettenmeyer CW, Chadab-Crepet R, Naumann MG, Morales L (1980) Comparative foraging by Neotropical army ants. In: Social Insects in the Tropics (ed. Jaisson P), Université Paris-Nord, pp. 59-73
- Rissing SW (1987) Annual cycles in worker size of the seed-harvester ant *Veromessor pergandei*. Behavioral Ecology and Sociobiology 20: 117-124
- Roces F, Hölldobler B (1994) Leaf-density and trade-off between load-size selection and recruitment behavior in the ant *Atta cephalotes*. Oecologia 97: 1-8
- Röschard J, Roces F (2003) Fragment-size determination and size-matching in the grass-cutting ant *Atta vollenweideri* depend on distance from the nest. Journal of Tropical Ecology 19: 647-653
- Rościszewski K, Maschwitz U (1994) Prey specialisation of army ants of the genus *Aenictus* in Malaysia. Andrias 13: 179-187
- Schmid-Hempel P (1992) Worker castes and adaptive demography. Journal of Evolutionary Biology 5: 1-12
- Schöning C, Espadaler X, Hensen I, Roces F (2004) Seed predation of the tussock grass *Stipa tenacissima* L. by ants (*Messor* spp.) in south-eastern Spain: the adaptive value of trypanocarp. Journal of Arid Environments 56: 43-61

Seifert B (2002) How to distinguish most similar insect species – improving the stereomicroscopic and mathematical evaluation of external characters by example of ants. *Journal of Applied Entomology* 126: 445-454

Sokal RR, Rohlf FJ (1995) *Biometry*. 3rd Edition. WH Freeman, New York

Swartz, M. B. 1997. Behavioral and population ecology of the army ant *Eciton burchelli* and ant-following birds. Ph.D. Dissertation. University of Texas, Austin

Topoff H, Miranda J (1980) Army ants on the move: the relationship between food supply and migration frequency. *Science* 207: 1099-1100

Tschinkel WR (1998) Sociometry and sociogenesis of colonies of the harvester ant, *Pogonomyrmex badius*: I. Worker characteristics in relation to colony size and season. *Insectes Sociaux* 45: 385-410

Wainwright PC (1994) Functional morphology as a tool in ecological research. In: *Ecological Morphology* (eds. Wainwright PC, Reilley SM), University of Chicago Press, Chicago. pp.42-59

Wasmann E (1904) Zur Kenntniss der Gaeste der Treiberameisen u. ihrer Wirthe am obern Congo nach den Sammlungen und Beobachtungen von P. Herrn Kohl, C.S.S.C. bearbeitet. *Zoologische Jahrbücher Supplement* 7: 611-682

Weissflog A, Sternheim E, Dorow WHO, Berghoff S, Maschwitz U (2000) How to study subterranean army ants: a novel method for locating and monitoring field populations in the South East Asian army ant *Dorylus (Dichthadia) laevigatus* SMITH, 1857 with observations on their biology. *Insectes Sociaux* 47: 317-324

Wehner R (1983) Taxonomie, Funktionsmorphologie und Zoogeographie der saharischen Wüstenameise *Cataglyphis fortis* (FOREL 1902) stat. nov. *Senckenbergiana biologica* 64: 89-132

-
- Wehner R (1987) Spatial organization of foraging behaviour in individually searching desert ants, *Cataglyphis* (Sahara) and *Ocymyrmex* (Namib Desert). In: From Individual to Collective Behaviour in Social Insects (eds. J.M. Pasteels & J.L. Deneubourg). *Experimentia Supplementum* 54: 253-270
- Wetterer JK (1991) Allometry and the geometry of leaf-cutting in *Atta cephalotes*. *Behavioral Ecology and Sociobiology* 29: 347-351
- Wheeler DE (1986) Developmental and physiological determinants of caste evolution in social Hymenoptera: evolutionary implications. *American Naturalist* 128: 13-34
- Wheeler DE (1991) The developmental basis of worker caste polymorphism in ants. *American Naturalist* 138: 1218-1238
- Wheeler WM (1922) Ants of the American Museum Congo expedition. A contribution to the myrmecology of Africa. II. The ants collected by the American Museum Congo Expedition. *Bulletin of the American Museum of Natural History* 45: 39-269
- Willis EO (1972) The behavior of bicolored antbirds. *University of California Publications in Zoology* 79: 1-127
- Willson SK (2003) Army ants and obligate ant-following birds: a study of ecology, spatial movement patterns and behaviour in Amazonian Peru. PhD thesis, University of Missouri-Columbia
- Wilson EO (1953) The origin and evolution of polymorphism in ants. *Quarterly Review of Biology* 28: 136-156
- Wilson EO (1958) The beginnings of nomadic and group-predatory behavior in the ponerine ants. *Evolution* 12: 24-36
- Wilson EO (1964) The true army ants of the Indo-Australian area. *Pacific Insects* 6: 427-483

Wilson EO (1980) Caste and division of labor in leaf-cutter ants I. The overall pattern in *Atta sexdens*. Behavioral Ecology and Sociobiology 7: 143-156

Wilson EO (1984) The relation between caste ratios and division of labour in the ant genus *Pheidole*. Behavioral Ecology and Sociobiology 16: 89-98

Witte V, Maschwitz U (2000) Raiding and emigration dynamics in the ponerine army ant *Leptogenys distinguenda*. Insectes Sociaux 47: 76-83

Zar JH (1996) Biostatistical analysis. 3rd Ed. Prentice-Hall, London

Zollikofer CPE (1994) Stepping patterns in ants. II. Influence of body morphology. Journal of Experimental Biology 192: 107-118