

List of PUBLICATIONS
Flavio Roces

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- Peer-reviewed Journals

- 1) **Roces F**, Protomastro JJ (1988) Prey availability and eclosion-help of callow workers in the formicine ant *Camponotus mus*. **Oecologia** 77:387-389
- 2) **Roces F**, Núñez JA (1989) Brood translocation and circadian variation of temperature preference in the ant *Camponotus mus*. **Oecologia** 81:33-37
- 3) **Roces F** (1990) Olfactory conditioning during the recruitment process in a leaf-cutting ant. **Oecologia** 83:261-262
- 4) **Roces F** (1990) Leaf-cutting ants cut fragment sizes in relation to the distance from the nest. **Animal Behaviour** 40:1181-1183
- 5) **Roces F**, Núñez JA (1993) Information about food quality influences load-size selection in recruited leaf-cutting ants. **Animal Behaviour** 45:135-143
- 6) **Roces F** (1993) Both evaluation of resource quality and speed of recruited leaf-cutting ants (*Acromyrmex lundí*) depend on their motivational state. **Behavioral Ecology and Sociobiology** 33:183-189
- 7) **Roces F**, Tautz J, Hölldobler B (1993) Stridulation in leaf-cutting ants: short-range recruitment through plant-borne vibrations. **Naturwissenschaften** 80:521-524
- 8) **Roces F**, Hölldobler B (1994) Leaf density and a trade-off between load-size selection and recruitment behavior in the ant *Atta cephalotes*. **Oecologia** 97:1-8
- 9) **Roces F** (1994) Cooperation or individualism: how leaf-cutting ants decide on the size of their loads. **Trends in Ecology and Evolution** 9:230
- 10) **Roces F** (1994) Odour learning and decision-making during food collection in the leaf-cutting ant *Acromyrmex lundí*. **Insectes Sociaux** 41:235-239
- 11) Tautz J, **Roces F**, Hölldobler B (1995) Use of a sound-based vibratome by leaf-cutting ants. **Science** 267:84-87
- 12) **Roces F**, Lighton JRB (1995) Larger bites of leaf-cutting ants. **Nature** 373:392-393
- 13) **Roces F**, Núñez JA (1995) Thermal sensitivity during brood care in workers of two *Camponotus* ant species: circadian variation and its ecological correlates. **Journal of Insect Physiology** 41:659-669

- 14) **Roces F** (1995) Variable thermal sensitivity as output of a circadian clock controlling the bimodal rhythm of temperature choice in the ant *Camponotus mus*. ***Journal of Comparative Physiology A*** 177:637-643
- 15) **Roces F**, Hölldobler B (1995) Vibrational communication between hitchhikers and foragers in leaf-cutting ants (*Atta cephalotes*). ***Behavioral Ecology and Sociobiology*** 37:297-302
- 16) **Roces F**, Manrique G (1996) Different stridulatory vibrations during sexual behaviour and disturbance in the blood-sucking bug *Triatoma infestans* (Hemiptera: Reduviidae) ***Journal of Insect Physiology*** 42:231-238
- 17) **Roces F**, Núñez JA (1996) A circadian rhythm of thermal preference in the ant *Camponotus mus*: masking and entrainment by temperature cycles. ***Physiological Entomology*** 21:138-142
- 18) **Roces F**, Hölldobler B (1996) Use of stridulation in foraging leaf-cutting ants: mechanical support during cutting or short-range recruitment signal? ***Behavioral Ecology and Sociobiology*** 39:293-299
- 19) **Roces F**, Gnatzy W (1997) Reduced metabolic rate in crickets paralysed by a digger wasp. ***Naturwissenschaften*** 84:362-366
- 20) Josens RB, Farina W, **Roces F** (1998) Nectar feeding by the ant *Camponotus mus*: intake rate and crop filling as a function of sucrose concentration. ***Journal of Insect Physiology*** 44:579-585
- 21) **Roces F**, Blatt J (1999) Haemolymph sugars and the control of the proventriculus in the honey bee *Apis mellifera*. ***Journal of Insect Physiology*** 45:221-229
- 22) Josens R, **Roces F** (2000) Foraging in the ant *Camponotus mus*: nectar intake and crop filling depend on colony starvation. ***Journal of Insect Physiology*** 46:1103-1110
- 23) Kleineidam C, **Roces F** (2000) Carbon dioxide concentrations and nest ventilation in nests of the leaf-cutting ant *Atta vollenweideri*. ***Insectes Sociaux*** 47:241-248
- 24) **Roces F**, Kleineidam C (2000) Humidity preference for fungus culturing by workers of the leaf-cutting ant *Atta sexdens rubropilosa*. ***Insectes Sociaux*** 47:348-350
- 25) **Roces F**, Tautz J (2001) Ants are deaf. ***Journal of the Acoustical Society of America*** 109:3080-3082
- 26) Kleineidam C, Ernst R, **Roces F** (2001) Wind-induced ventilation in the giant nests of the leaf-cutting ant *Atta vollenweideri*. ***Naturwissenschaften*** 88:301-305
- 27) Blatt J, **Roces F** (2001) Haemolymph sugar levels in foraging honeybees (*Apis mellifera carnica*): dependence on metabolic rate and *in vivo* measurement

of maximal rates of trehalose synthesis. *Journal of Experimental Biology* 204:2709-2716

- 28) Wainelboim AJ, **Roces F**, Farina WM (2002) Honeybees assess changes in nectar flow within a single foraging bout. *Animal Behaviour* 63:1-6
- 29) Röschard J, **Roces F** (2002) The effect of load length, width and mass on transport rate in the grass-cutting ant *Atta vollenweideri*. *Oecologia* 131:319-324
- 30) Bollazzi M, **Roces F** (2002) Thermal preference for fungus culturing and brood location by workers of the thatching grass-cutting ant *Acromyrmex heyeri*. *Insectes Sociaux* 49:153-157
- 31) **Roces F** (2002) Individual complexity and self-organization in foraging by leaf-cutting ants. *Biological Bulletin* 202:306-313
- 32) Blatt J, **Roces F** (2002a) The control of the proventriculus in the honeybee (*Apis mellifera carnica* L.). I. A dynamic process influenced by food quality and quantity? *Journal of Insect Physiology* 48:643-654
- 33) Blatt J, **Roces F** (2002b) The control of the proventriculus in the honeybee (*Apis mellifera carnica* L.). II. Feedback mechanisms. *Journal of Insect Physiology* 48:683-691
- 34) Paul J, **Roces F**, Hölldobler B (2002) How do ants stick out their tongues? *Journal of Morphology* 254:39-52
- 35) Wainelboim AJ, **Roces F**, Farina WM (2003) Assessment of food source profitability in honeybees (*Apis mellifera*): how does disturbance of foraging activity affect trophallactic behaviour? *Journal of Comparative Physiology A* 189:39-45
- 36) Paul J, **Roces F** (2003) Fluid intake rates in ants correlate with their feeding habits. *Journal of Insect Physiology* 49:347-357
- 37) Gobin B, Heinze J, Strätz M, **Roces F** (2003) The energetic cost of reproductive conflicts in the ant *Pachycondyla obscuricornis*. *Journal of Insect Physiology* 49:747-752
- 38) Röschard J, **Roces F** (2003) Cutters, carriers and transport chains: distance-dependent foraging strategies in the grass-cutting ant *Atta vollenweideri*. *Insectes Sociaux* 50:237-244
- 39) Schilman PE, **Roces F** (2003) Assessment of nectar flow rate and memory for patch quality in the ant *Camponotus rufipes*. *Animal Behaviour* 66:687-693

- 40) Röschard J, **Roces F** (2003) Fragment-size determination and size-matching in the grass-cutting ant *Atta vollenweideri* depend on the distance from the nest. ***Journal of Tropical Ecology*** 19:647-653
- 41) Schöning C, Espalader 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 trypanocary. ***Journal of Arid Environments*** 56:43-61
- 42) Schilman PE, **Roces F** (2005) Energetics of locomotion and load carriage in the nectar-feeding ant, *Camponotus rufipes*. ***Physiological Entomology*** 30:332-337
- 43) Schilman PE, **Roces F** (2006) Foraging energetics of a nectar-feeding ant: metabolic expenditure as a function of food-source profitability. ***Journal of Experimental Biology*** 209:4091-4101
- 44) Meyer ST, **Roces F**, Wirth R (2006) Selecting the drought stressed: Effects of plant stress on intraspecific and within-plant herbivory patterns of the leaf-cutting ant *Atta colombica*. ***Functional Ecology*** 20:973-981
- 45) Kleineidam C, Ruchty M, Casero-Montes Z, **Roces F** (2007) Thermal radiation as a learned orientation cue in leaf-cutting ants (*Atta vollenweideri*). ***Journal of Insect Physiology*** 53:478-487
- 46) Cosarinsky MI, **Roces F** (2007) Neighbor leaf-cutting ants and mound-building termites: comparative nest micromorphology. ***Geoderma*** 141:224-234
- 47) Kleineidam C, Rössler W, Hölldobler B, **Roces F** (2007) Perceptual differences in trail-following leaf-cutting ants relate to body size. ***Journal of Insect Physiology*** 53:1233-1249
- 48) Bollazzi M, **Roces F** (2007) To build or not to build: circulating dry air organizes building responses for climate control in the leaf-cutting ant *Acromyrmex ambiguus*. ***Animal Behaviour*** 74:1349-1355
- 49) Schilman PE, **Roces F** (2008) Haemolymph sugar levels in a nectar-feeding ant: dependence on metabolic expenditure and carbohydrate deprivation. ***Journal of Comparative Physiology B*** 178:157-165
- 50) Herz H, Hölldobler B, **Roces F** (2008) Delayed rejection in a leaf-cutting ant after foraging on plants unsuitable for the symbiotic fungus. ***Behavioral Ecology*** 19:575-582
- 51) Bollazzi M, Kronenbitter J, **Roces F** (2008) Soil temperature, digging behaviour, and the adaptive value of nest depth in South American species of *Acromyrmex* leaf-cutting ants. ***Oecologia*** 158:165-175

- 52) Ruchty M, Romani R, Kuebler LS, Ruschioni S, **Roces F**, Isidoro N, Kleineidam CJ (2009) The thermo-sensitive sensilla coeloconica of leaf-cutting ants (*Atta vollenweideri*). **Arthropod Structure and Development** 38:195-205
- 53) Kelber C, Rössler W, **Roces F**, Kleineidam CJ (2009) The antennal lobes of fungus-growing ants (Attini): neuroanatomical traits and evolutionary trends. **Brain Behavior and Evolution** 73:273-284
- 54) Weidenmüller A, Mayr C, Kleineidam CJ, **Roces F** (2009) Preimaginal and adult experience modulates the thermal response behavior of ants. **Current Biology** 19:1897-1902
- 55) Saverschek N, Herz H, Wagner M, **Roces F** (2010) Avoiding plants unsuitable for the symbiotic fungus: learning and long-term memory in leaf-cutting ants. **Animal Behaviour** 79:689-698
- 56) Bollazzi M, **Roces F** (2010) Leaf-cutting ant workers (*Acromyrmex heyeri*) trade off nest thermoregulation for humidity control. **Journal of Ethology** 28:399-403
- 57) Bollazzi M, **Roces F** (2010) Control of nest water losses through building behavior in leaf-cutting ants (*Acromyrmex heyeri*). **Insectes Sociaux** 57:267-273
- 58) Moll K, **Roces F**, Federle W (2010) Foraging grass-cutting ants (*Atta vollenweideri*) maintain stability by balancing their loads with controlled head movements. **Journal of Comparative Physiology A** 196:471-480
- 59) Bollazzi M, **Roces F** (2010) The thermoregulatory function of thatched nests in the South American grass-cutting ant *Acromyrmex heyeri*. **Journal of Insect Science** 10.137:1-17 (available at: insectscience.org/10.137)
- 60) Ruchty M, **Roces F**, Kleineidam CJ (2010) Detection of minute temperature transients by thermo-sensitive neurons in ants. **Journal of Neurophysiology** 104:1249-1256
- 61) Camargo RS, Forti LC, Fujihara RT, **Roces F** (2011) Digging effort in leaf-cutting ant queens (*Atta sexdens rubropilosa*) and its effects on survival and colony growth during the claustral phase. **Insectes Sociaux** 58:17-22
- 62) Bollazzi M, **Roces F** (2011) Information needs at the beginning of foraging: grass-cutting ants trade off load size for a faster return to the nest. **PLoS ONE** 6(3): e17667. doi:10.1371/journal.pone.0017667
- 63) Saverschek N, **Roces F** (2011) Foraging leaf-cutting ants: olfactory memory underlies delayed avoidance of plants unsuitable for the symbiotic fungus. **Animal Behaviour** (in press)
- 64) Röschard J, **Roces F** (2011) Sequential load transport in grass-cutting ants (*Atta vollenweideri*): maximization of plant delivery rate or improved information transfer? **Psyche** (in press)

- Book Chapters

- 1) **Roces F**, Winter Y, v. Helversen O (1993) Concentration preference and water balance in a flower visiting bat, *Glossophaga soricina antillarum*. In: ***Animal-plant Interactions in Tropical Environments*** (Ed. by W Barthlott, CM Naumann, K Schmidt-Loske & K-L Schuchmann), Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany, pp. 159-165.
- 2) Hölldobler B, **Roces F** (2001) The Behavioral Ecology of Stridulatory Communication in Leafcutting Ants. In: "***Model Systems in Behavioral Ecology - Integrating Conceptual, Theoretical, and Empirical Approaches***" (Ed. by L. A. Dugatkin), Princeton University Press, Princeton, USA, pp. 92-109.
- 3) Qiao F, **Roces F**, Schilling C, Wurmus H (2002) Cutting with flexible ultrasound transmission for minimally invasive surgery with biological inspiration. In: "***Actuator 2002***", Bremen, Germany, pp. 668-671.
- 4) Bollazzi M, **Roces F** (2007) The control of nest climate through building behaviour in South American *Acromyrmex* species: its adaptive value. In: "***Biológico***", São Paulo, Brazil, volume 69, supplement 2, pp. 209-212.
- 5) **Roces F** (2009) The organization of social foraging in ants: energetics and communication. In: "***Organization of Insect Societies - From Genome to Sociocomplexity***" (Eds. J Gadau & J Fewell), Harvard University Press, Cambridge, USA, pp. 289-310.
- 6) **Roces F**, Bollazzi M (2009) Information Transfer and the Organization of Foraging in Grass- and Leaf-Cutting Ants. In: "***Food Exploitation by Social Insects: Ecological, Behavioral, and Theoretical Approaches***" (Eds. S Jarau & M Hrncir), CRC Press: Contemporary Topics in Entomology Series, Boca Raton, USA, pp. 261-275.
- 7) Fröhle K, **Roces F** (2009) Underground Agriculture: the Control of Nest Size in Fungus-Growing Ants. In: "***From Insect Nests to Human Architecture – Workshop on Engineering Principles of Innovation in Swarm-made Architectures***. (Eds. G. Theraulaz, R. Solé & P. Kuntz), European Centre for Living Technology, Venice, Italy, pp. 95-104.