

REFERENCES

- Abdalla, F.C., Jones, G.R., Morgan, E.D. and Cruz-Landim, C.D. 2003. Comparative study of the cuticular hydrocarbon composition of *Melipona bicolor* Lepeletier, 1836 (Hymenoptera, Meliponini) workers and queens. *Genetics and Molecular Research* 2: 191-199.
- Abrams, P.A. and Matsuda, H. 1997. Prey adaptation as a cause of predator-prey cycles. *Evolution* 51: 1742-1750.
- Arias , M.S., Tingek, S., Kelitu, A. and Sheppard, W.S. 1996. *Apis nuluensis* Tingek, Koeniger and Koeniger, 1996 and its genetic relationship with sympatric species inferred from DNA sequences. *Apidologie* 27: 415 – 422.
- Arias, M.C. and Sheppard, W.S. 2005. Phylogenetic relationships of honey bees (Hymenoptera: Apinae: Apini) inferred from nuclear and mitochondrial DNA sequence data. *Molecular Phylogenetics and Evolution* 37: 25-33.
- Azuma, H., Toyota, M., Asakawa, Y. and Kawano, S. 1996. Naphthalene constituent of magnolia flowers. *Phytochemistry* 42: 999-1004.
- Azuma, N., Ogata K, Kikuchi, T. and Higashi, S. 2006. Phylogeography of Asian weaver ants, *Oecophylla smaragdina*. *Ecological Research* 21: 126–136.
- Bagnères, A.G. and Morgan, E.D. 1991. The postpharyngeal glands and the cuticle of Formicidae contain the same characteristic hydrocarbons. *Experientia* 47: 106-111.
- Bankova, V., Castro, S.L. and Marcucci, M. C. 2000. Propolis: recent advances and plant origin. *Apidologie* 31: 3-15.
- Bankova, V., Christov, R., Kujumgiev, A., Marcucci, M. C. and Popov, S. 1995. Chemical composition and antibacterial activity of Brazilian propolis. *Zeitschrift Fur Naturforschung* 50: 167–172.
- Banskota, A.H., Tezuka, Y. and Kadota, Sh. 2001. Recent progress in pharmacological research of propolis. *Phytotherapy Research* 15: 561–571.
- Baroni Urbani, C., Bolton, B. and Ward, P. S. 1992. The internal phylogeny of the ants Hymenoptera: Formicidae). *Systematic Entomology* 17: 301-329.

- Beekman, M., Sumpter, D.J.T. and Ratnieks, F.L.W. 2001. Phase transition between disorganised foraging in Pharaoh' ants. *Proceedings of the National Academy of Sciences* 98: 9703-9706.
- Betz, O. and Kolsch, G. 2004. The role of adhesion in prey capture and predator defense in arthropods. *Arthropod Structure & Development* 33: 3-30.
- Bohart, R.M. and Menke, A. S. 1976. *Sphecid Wasps of the World: A Generic Revision*. Berkeley, California: University of California Press.
- Bolton, B. 1995. *A New General Catalogue of the Ants of the World*. Massachusetts, Cambridge: Harvard University Press.
- Bolton, D. M. and Eaton, L. G. 1968. In *MERCK Index*, 8th edn (Stecher, P. G., Windholz, M. and Leahy, , D. S. Rahway, eds). N.J.: Merck.
- Bradshaw, A.D. 1965. Evolutionary significance of phenotypic plasticity in plants. *Advances in Genetics* 13: 115-155.
- Brian, M.V. 1978. *Production Ecology of Ants and Termites*. IBP 13, Cambridge, UK: Cambridge University Press.
- Brodie, E. D. and Brodie, E.D. Jr. 1999. Predator-Prey Arms Races ? Asymmetrical selection on predators and prey may be reduced when prey are dangerous. *BioScience* 49: 557-568.
- Brothers, D. J. 1975. Phylogeny and classification of the aculeate Hymenoptera, with special reference to Mutillidae. *University of Kansas Science Bulletin* 50: 483-648.
- Brothers, D.J. 1999. Phylogeny and evolution of wasps, ants and bees (Hymenoptera, Chryridoidea, Vespoidea and Apoidea). *Zoologica Scripta* 28: 233-249.
- Burdock, G.A. 1998. Review of the biological properties and toxicity of bee propolis (propolis). *Food and Chemical Toxicology* 36: 347-363.
- Butler, C.G. 1954. *The World of the Honeybee*. Collins, London.
- Chen, J., Henderson, G., Grimm, C. C., Lloyd, S. W. and Laine, R. A. 1998. Termites fumigate their nests with naphthalene. *Nature* 392: 558-559.

- Chen, T. K., Galinis, D. L., and Wiemer, D. F. 1992. Cornutin A and B: Novel Diterpenoid Repellents of Leafcutter Ants from *Corn utia grandifolia*. *Journal of Organic Chemistry* 57: 862-866.
- Chen, T.K. and Wiemer, D.F. 1992. A volatile leafcutter ant repellent from *Astronium graveolens*. *Naturwissenschaften* 71: 97-98
- Chen, T.K., Wiemer, D.F. and Howard, J.J. 1984. A volatile leafcutter ant repellent from *Astronium graveolens*. *Naturwissenschaften*. 71: 97-98.
- Chinh, P.H., Tan, N.Q. and Thai, P.H. 2004. The biological characteristics of *Apis dorsata* Fabr. in Vietnam. In: *Bees for new Asia: Seventh Asian Apicultural Association conference*, Katmandu, Nepal (Matsuka, M., Verma, L.R., Wongsiri, S., Shrestha, K.K. and Partap, U, eds). 57-59.
- Cirasino, L., Pisati, A. and Fasani, F. 1987. Contact der-matitis from propolis. *Contact Dermatitis* 16: 110-111.
- Cole, A.C. Jr. and Jones, J. W. Jr. 1948. A Study of the Weaver Ant, *Oecophylla smaragdina* (Fab.). *American Midland Naturalist* 39: 641-651.
- Cott, H.B. 1940. *Adaptive Coloration inAanimal*. Methuen, London.
- Crane, E. 1999. *The World History of Beekeeping and Honey Hunting*. New York: Routledge.
- Dahl, J. and Peckarsky, B. L. 2002. Developmental responses to predation risk in morphologically defended mayflies. *Oecologia* 137: 188-194.
- Daisy, B.H., Strobel , G.A.,Castillo, U. Ezra, D., Sears, J., Weaver, D.K. and Runyon, J.B. 2002. Naphthalene, an insect repellent, is produced by *Muscodor vitigenus*, a novel endophytic fungus. *Microbiology* 148: 3737-3741.
- Dathe, H.H. 2003. Ordnung Hymenoptera, Hautflugler. In: *Lehrbuch der Speziellen Zoologie. Band I: Wirbellose Tiere, 5. Teil: Insecta* 2nd ed (Dahte, H.H.,ed), Heidelberg: Spektrum Akademischer Verlag. pp. 585-651.
- Dawkins, R. and Krebs, J.R. 1979. Arms races between and within species.
- Deml, R., and Dettner, K. 1995. Effects of emperor moth larval secretions, hemolymph, and components on microorganisms and predators. *Entomologia Experimentalis et Applicata* 76: 287-293.

- DeWitt, T. J., Sih, A. and Wilson, D. S. 1998. Costs and limits of phenotypic plasticity. *Trends in Ecology and Evolution* 13: 77–81.
- Duangphakdee, O., Koeniger, N., Koeniger, G., Wongsiri, S. and Deowanish, S. 2005. Reinforcing a barrier - a specific social defense of the dwarf honeybee (*Apis florea*) released by the weaver ant (*Oecophylla smaragdina*). *Apidologie* 36: 505-511.
- Dyer, F.C. 1985. Mechanisms of dance orientation in the Asian honeybee *Apis florea*. *Journal of Comparative Physiology* 157: 183-198.
- Dyer, F.C. and Seeley, T.D. 1987. Interspecific comparisons of endothermy in honey bees (*Apis*): deviations from the expected sized-related patterns. *Journal of Experimental Biology* 127: 1-26.
- Edmunds, M. 1974. Defense in animals: a survey of antipredator. defenses. New York: Longman Group.
- Ehrlich, P. R. and Raven, P. H. 1964. Butterflies and plants: a study of coevolution. *Evolution* 18: 586 - 608.
- Eisner, T., Deyrup, M., Jacobs, R. and Meinwald, J. 1986. Necridols: anti-insectan terpenes from defensive secretion of carrion beetle (*Necrodes surinamensis*). *Journal of Chemical Ecology* 12: 1407-1415.
- Eltz, T, Brühl, C.A., Imiyabir, Z., and Linsenmair, K. E. 2003. Nesting and nest trees of stingless bees (Apidae: Meliponini) in lowland diterocarp forests in Sabah, Malaysia, with implications for forest management. *Forest Ecology and Management* 172: 301-313.
- Elzinga, J. R. 1997. Fundamentals of Entomology. 4th ed. New Jersey: Prentice Hall.
- Endler, J.A. 1986. Defence against predators. In: *Predator-Prey Relationships* (Feder, M.E. and Lauder, G.V., eds). Chicago: University of Chicago Press. pp 109–134.
- Engel, M.S. 1999. The taxonomy of recent and fossil honey bees (Hymenoptera: Apidae; *Apis*). *Journal of Hymenopteran Research* 8: 165-176.

- Engel, M.S. 2001. A monograph of the Baltic amber bees and evolution of the Apoidea (Hymenoptera). *Bulletin of the American Museum of Natural History* 259: 5-192.
- Engel, M.S. and Schultz, T.R. 1997. Phylogeny and behavior in honey bees (Hymenoptera: Apidae). *Annals of the Entomological Society of America* 90: 43-53.
- Farji-Brener, A.G. and Ruggiero, A. 1994. Leaf-cutting ants (*Atta* and *Acromyrmex*) inhabiting Argentina: patterns in species richness and geographical range sizes. *Journal of Biogeography* 21: 391-399.
- Fraenkel, G. 1959. The raison d'etre of secondary plant substances. *Science* 129: 1466 - 1470.
- Fowler, H.G. and Claver, S. 1991. Leaf-cutter ant assemblies: effects of latitude, vegetation, and behaviour. In: Ant-Plant Interactions (C.R. Huxley and D.F. Cutler, eds.). New York, Oxford University Press. pp. 51-59.
- Ghisalberti, E.L., 1978. Propolis: a review. *Bee World* 60: 59-84.
- Gomez, N. E., Witte, L., and Hartmann, T. 1999. Chemical defense in larval tortoise beetles: Essential oil composition of fecal shields of *Eurypedus nigrosignata* and foliage of its host plant, *Cordia curassavica*. *Journal of Chemical Ecology* 25: 1007-1027.
- Greenaway, W., May, J., Scaysbrook, T. and Whatley, F. R. 1991. Identification by gas chromatography-mass spectrometry of 150 compounds in propolis. Z *Naturforsch* 46: 111-121.
- Hadley, N.F., Blomquist, G.J., and Lanham, U.N. 1981. Cuticular hydrocarbons of four species of Colorado Hymenoptera. *Insect Biochem* 11 : 113-177.
- Harborne, J.B. 1988. *Introduction to Ecological Biochemistry*, 3rd ed. London: Academic Press.
- Heard, T.A. 1999. The role of stingless bees in crop pollination. *Annual Review of Entomology* 44: 183-206.
- Hepburn, H.R. and Hepburn, C. 2005. Bibliography of *Apis florea*. *Apidologie* 36: 377-378.

- Hermann, H.R. and Blum, M.S. 1981. Defense mechanisms in the social Hymenoptera. In: *Social Insects* (Hermann, H.R., ed). New York: Academic Press. pp. 77-197.
- Hölldobler, B., 1983. Chemical manipulation, enemy specification and intercolony communication in ant communities. In: *Neuroethology and Behavioral Physiology* (Huber, F. and Markl, H., eds.). pp. 354-365.
- Hololter, B. and Wilson, E.O. 1978. The multiple recruitment system of the African weaver ant *Oecophylla longinoda* (Latreille) (Hymenoptera: Formicidae). *Behavioral Ecology and Sociobiology* 3: 19-60.
- Hölldobler, B. and Wilson, E.O. 1983. The evolution of communal nest weaving in ants. *American Scientist* 71: 490-499.
- Hölldobler, B. and Wilson, E.O. 1990. *The Ants*. Cambridge, M.A.: Harvard Univ. Press.
- Hölldobler, B. and Wilson, E.O. 1994. *Journey to the Ants: A Story of Scientific Exploration*. Cambridge, M.A.: Harvard University Press.
- Hutchinson, J. 1926-1934. *The Families of Flowering Plants*. 2 vol., London.
- Jaitrong, W. and Nabhitabhata, J. 2005. A list of known ant species of Thailand (Formicidae: Hymenoptera). *The Thailand Natural History Museum Journal* 1: 9-54.
- Klakasikorn, A., Wongsiri, S., Deowanish, S. and Duangphakdee, O. 2005. New record of stingless Bees (Meliponini: *Trigona*) in Thailand. *The Natural History Journal of Chulalongkorn University* 5: 1-7
- Koeniger, N. and Fuchs, S. 1973. Sound production as colony defense in *Apis cerana* Fabr. *Proc. VII. Congr. IUSSI*. 199-203.
- Koeniger, N. and Fuchs, S. 1975. Zur Kolonievereidigung der asiatischen Honigbienen. *Zeitschrift für Tierpsychologie* 37: 99-106.
- Koeniger, N., Koeniger, G., Punchihewa, R.K.W., Fabritius, Mo. and Fabritius Mi. 1982. Observations and experiments on dance communication in *Apis florea* in Sri Lanka. *Journal of Apicultural Research* 21: 45-52.

- Kojima, J. 1993. A latitudinal gradient in intensity of applying ant repellent substance to the nest petiole in paper wasps (Hymenoptera: Vespidae). *Insectes Sociaux* 40: 403 – 421.
- Kosalec, I., Bakmaz, M. and Pepelnjak, S. 2003. Analysis of propolis from the continental and Adriatic regions of Croatia. *Acta Pharmaceutica* 53: 275-285.
- Kristiansen, S . M. and Amelung, W. 2001. Abandoned anthills of *Formica polyctena* and soil heterogeneity in a temperate deciduous forest: morphology and organic matter composition. *European Journal of Soil Science*: 52: 355-363.
- Kusnezov, N. 1957. Numbers of species of ants in faunae of different latitudes. *Evolution* 11: 298–299.
- Lepeletier de Saint-Fargeau, A. L. M. 1835, 1841. *Histoire Naturelle des Insectes Hyménoptères*. 1835, Vol. 1, 1-547; 1841, Vol. 2., 1-680. Paris: Roret.
- Lindauer, M., 1956. Über die Verständigung bei indischen Bienen. *Zeitschrift für Vergleichende Physiologie* 34: 299-345.
- Lindauer, M. 1961. *Communication Among Social Bees*. Cambridge, Mass: Harvard University Press.
- Lokkers, C. 1986. The distribution of the weaver ant, *Oecophylla smaragdina* (Fabricius) (Hymenoptera: Formicidae) in Northern Australia. *Australian Journal of Zoology* 34: 683-687.
- Lokvan, J. and Braddock, J.F. 1999. Anti-bacterial function in the sexually dimorphic pollinator rewards of *Clusia grandiflora* (Clusiaceae). *Oecologia* 119: 534-540.
- Machado, G.M.D., Leon, L.L. and Castro, S.L. 2007. Activity of Brazilian and Bulgarian propolis against different species of Leishmania. *Memorias Do Instituto Oswaldo Cruz* 102: 73-77.
- Maciejewicz, W. 2001. Isolation of Flavonoid Aglycones from Propolis by a Column Chromatography method and their identification by GC-MS and TLC methods. *Journal of Liquid Chromatography & Related Technologies* 24: 1171-1179.

- Maidl, F. 1934. *Die Lebensgewohnheiten und Instinkte der staatenbildenden Insekten*, Fritz Wagner, Wien.
- Marcucci, M.C. 1995. Propolis: chemical composition, biological properties and therapeutic activity. *Apidologie* 26: 83-99.
- Markham, K.R., Mitchell, K.A., Wilkins, A.L., Daldy, J.A. and Lu, Y. 1996. HPLC and GC-MS Identification of the major organic constituents in New Zealand propolis. *Phytochemistry* 42: 205-211.
- Medic-Saric, M., Jasprica, I., Smolcic-Bubalo, A. and Mornar, A. 2004. Optimization of Chromatographic conditions in Thin layer Chromatography of flavonoids and phenolic Acids. *Croatica Chemica Acta* 77: 361-366.
- Melo, G.A.R. 1997. Phylogenetic Relationships and Classification of the Major Lineages of Apoidea (Hymenoptera), with Emphasis on the Crabronid Wasps. *Doctoral Dissertation*, University of Kansas, Lawrence.
- Meyer, W. 1954. Die "Kittharzbienen" und ihre Tätigkeiten. *Zeitschrift für Bienenforschung* 5: 185-200.
- Michener, C.D. 1944. Comparative external morphology, phylogeny, and a classification of the bees. *Bulletin of the American Museum of Natural History* 82: 151-326.
- Michener, C. D. 1974. *The Social Behavior of the Bees: A Comparative Study*. Cambridge: Harvard Univ. Press.
- Michener, C.D. 2000. *The Bees of the World*. Baltimore, M.D.: Johns Hopkins University Press.
- Michener, C. D. and Boongird, S. 2004. A new species of *Trigona* from Peninsular Thailand (Hymenoptera: Apidae: Meliponini). *Journal of the Kansas Entomological Society* 77: 143-146.
- Michener, C.D. and Grimaldi, D.A. 1988. The oldest fossil bee: apoid history, evolutionary stasis, and antiquity of social behavior. *Proceedings of the National Academy of Sciences* 85: 6424-6426.
- Monti, M., Berti, E., Carminati, G. and Cusini , M. 1983. Occupational and cosmetic dermatitis from propolis. *Contact Dermatitis* 9: 163.

- Moreau, C. S., Bell, C.D., Vila, R., Archibald, S. B. and Pierce, N. E. 2006. Phylogeny of the ants: diversification in the age of angiosperms. *Science*. 312: 101 – 104.
- Morley, R. J. 2000. Origin and Evolution of Tropical Rain Forests. Wiley, New York.
- Morse, R.A. and Flottum, K. 1997. *Honeybee Pests Predators and Diseases*. Medina, Ohio: A.I. Root.
- Muthel, H. 1955. Ameisen überfallen einen Bienenstand und vernichten 26 Volker (Ants overwhelm an apiary and destroy 26 colonies). *Bienenzucht* 8: 202-203.
- Nakamura, J. and Seeley, T.D. 2006. The functional organization of resin work in honeybee colonies. *Behavioral Ecology and Sociobiology* 60: 339-349.
- Nickisch-Rosenegk, E. Von, and Wink, M. 1993. Sequestration of pyrrolizidine alkaloids in several arctiid moths (Lepidoptera: Arctiidae). *Journal of Chemical Ecology* 19: 1889–1903.
- Oldroyd, B. P. and Wongsiri, S. 2006. *Asian Honey Bees: Biology, Conservation and Human Interactions*. Harvard University Press.
- Osborn, F. and Jeffe, K. 1998. Chemical ecology of the defense of two nymphalid butterfly larvae against ants. *Journal of Chemical Ecology* 24: 1173-1186.
- Pare, P.W. and Tumlinson, J.H. 1999. Plant Volatiles as a Defense against Insect Herbivores. *Plant Physiology* 121: 325-331.
- Pasteels, J. M., Grégoire, J. C. and Rowell-Rahier, M. 1983. The Chemical Ecology of Defense in Arthropods. *Annual Review of Entomology* 28: 263-289.
- Pasteels, J..M., Daloze, D. and Rowell-Rahier, M. 1986. Chemical defence in eggs and neonate larvae. *Physiological Entomology* 11: 29–37.
- Patrício, E.F.L.R.A., Cruz-Lopez, Leopoldo, Maile, R., Tentschert, J., Jone, G.R. and David-Morgan, E. 2002. The propolis of stingless bees: terpenes from the tibia of three *Frieseomelitta* species. *Journal of Insect of Phisiology* 48: 249-254.
- Pereira, A.S., Bicalho, B and Aquino Neto, F. R. 2003. Comparison of propolis from *Apis mellifera* and *Tetragonisca angustula*. *Apidologie* 34: 291–298.

- Pietta, P.G., Gardana., C. and Pietta, A.M. 2002. Analytical methods for quality control of propolis. *Fitoterapia* 73: S7-S20.
- Pisco, L., Kordian, M., Peseke, K., Feist, H., Michalik, D. Estrada, E., Carvolho, J., Hamilton, G., Rando, D. and Quincoces, J. 2006. Synthesis of compounds with antiproliferative activity as analogues of prenylated natural products existing in Brazilian propolis. *European Journal of Medicinal Chemistry* 41: 401-407.
- Popova, M., Bankova, V., Butovska, D., Petkov, V., Damyanova, B., Sabatini, A.G., Marcazzan, G.L., and Bogdanov, S. 2003. Poplar type propolis and analysis of its biologically active components. *Honeybee Science* 24: 61–66.
- Popova, M., Silici, S., Kaftanoglu, O. and Bankova, V. 2005. Antibacterial activity of Turkish propolis and its qualitative and quantitative chemical composition. *Phytomedicine* 12: 221-8.
- Prosie, V. 1959. Furnica mare de padure: un daunter pericules al albinnelor (the reedwood ant: a dangerous pest of bees). *Apicultura* (Bucharest) 32: 89.
- Raffiudin, R. and Crozier, R. H. C. 2000. Phylogenetic analysis of *Apis* based on inositol 1,4,5-triphosphate receptor gene sequences. In: *Seventh International Conference on Tropical Bees: Management and Diversity* (Wongsisi, S., ed). International Bee Research Association: Cardiff, Wales: pp. 353-357.
- Rhoades, D. F. 1979. Evolution of plant chemical defense against herbivores. In: *Herbivores: Their interaction with secondary plant metabolites* (Rosenthal, G.A. and Janzen, D.H., eds.). New York, USA: Academic Press. 1– 55.
- Rinderer, T.E. Oldroyd, B. P., Wongsiri, S. Sylvester, H.A., De Guzman, L. I., Potichot, S., Sheppard, W.S. and Buchmann, S. L. 1993. Time of drone flight in four honey bee species in South-eastern Thailand. *Journal of Apicultural Research* 32: 27-33.
- Roubik, D.W. 2006. Stingless bee nesting biology. *Apidologie* 37: 124-143.

- Ruther, J., Sieben, S. and Schricker, B. 2002. Nestmate recognition in social wasps: manipulation of hydrocarbon profiles induces aggression in the European hornet. *Naturwissenschaften* 89: 111-114.
- Ruttner, F. 1975. Races of bees. In: *The Hive and the Honey Bee* (Dadant and Sons, eds.). Hamilton, IL: Dadant. pp. 19-38.
- Ruttner, F. 1988. *Biogeography and Taxonomy of Honeybees*. Springer, Heidelberg: New York.
- Ruttner, F. 1992. *Naturgeschichte der Honigbienen*. Ehrenwirth, Munich.
- Ruttner, F. and Maul, V. 1983. Experimental analysis of reproductive interspecific isolation of *Apis mellifera* L. and *Apis cerana* Fabr. *Apidologie* 14: 309-327.
- Sakagami, S. F. 1982. Stingless bees. In: *Social Insects* (Hermann, H.R., ed). New, York: Academic Press.
- Sakagami, S. F, Inoue, T. and Salmah, S. 1985. Key to the stingless bee species found or expected from Sumatra. In: *Evolutionary Ecology of Insect in Humid Tropics, Especially in Central Sumatra* (Ohgushi, R.-I, ed.). Kanasawa University, Japan: Sumatra nature study (Entomology).
- Sakagami, S. F, Inoue, T., Yamane, S. and Salmah, S. 1983. Stingless bees in: *Ecological Study on Social Insects in Central Sumatra with Special Reference to Wasps and Bees*, Reports for Oversea Scientific Survey: 37-56.
- Samson, D.A., Rickart, E.A. and Gonzales, P.C. 1997. Ant diversity and abundance along an elevational gradient in the Philippines. *Biotropica* 29: 349-363.
- Sawaya, A.C.H.F., Souza, K.S, Marcucci, M.C., Cunha, I. B.S. and Shimizu, M.T. 2004. Analysis of the composition of Brazilian propolis extracts by chromatography and evaluation of their in vitro activity against gram-positive bacteria. *Brazilian Journal of Microbiology* 35: 104-109.
- Schwarz, H.F. 1939. The Indo-Malayan Species of *Trigona*. *Bulletin of the American Museum of Natural History* 76: 83-141.
- Schwarz, H.F. 1948. Stingless bees (Meliponidae) of the Western Hemisphere. *Bulletin of the American Museum of Natural History* 90: 1-546.

- Seeley, T.D. 1983. The ecology of temperate and tropical honeybee societies. *American Scientist* 71: 264-272.
- Seeley, T.D. 1985. *Honeybee Ecology: A study of adaptation in social life*. New Jersey: Princeton University Press.
- Seeley, T.D. and Seeley, R.H. 1982. Colony defense strategies of the honeybees in Thailand. *Ecological Monographs* 52: 43-63.
- Sen Sarma, M., Fuchs, S. and Tautz, J. 2000. Debris removal by head pushing in *Apis florea* F. honeybees. *Naturwissenschaften* 87: 241-243.
- Sen Sarma, M., Fuchs, S., Werber, C. and Tautz, J. 2002. Worker piping triggers hissing for coordinated colony defence in the dwarf honeybee *Apis florea*. *Zoology* 105: 215-223.
- Sheppard, W.S. and Meixner, M.D. 2003. *Apis mellifera pomonella*, a new honey bee subspecies from Central Asia. *Apidologie* 34: 367-375.
- Shrestha, S.P., Narukawa, Y. and Takeda, T. 2007. Chemical constituents of Nepalese propolis: isolation of new dalbergiones and related compounds. *Journal of Natural of Medicines* 61: 73-76.
- Silva, A.C. da and Gil-Santana, H.R. 2004. Predation of *Apiomerus pilipes* (Fabricius) (Hemiptera, Reduviidae, Harpactorinae, Apiomerini) over Meliponinae bees (Hymenoptera, Apidae), in the State of Amazonas, Brazil. *Revista Brasileira de Zoologia* 21: 767-774.
- Skinner, G. J. and Whittaker, J. B. 1981. An experimental investigation of the inter-relationships between the wood ant (*Formica rufa*) and some tree-canopy herbivores. *Journal of Animal Ecology* 50: 313–326.
- Skutch A.F. 1971. A naturalist in Costa Rica. University of Texas Press, Austin.
- Szczuka, A. and Godzińska, E. J. 2004. The role of group size in the control of expression of predatory behavior in workers of the red wood ant *Formica polyctena* (Hymenoptera: Formicidae). *Sociobiology* 43: 295-325.

- Shory, H.H., Gaston, L.K., Gerber, R.G., Phillips, P.A. and Wood, D.L. 1992. Disruption of foraging by Argentine ants, *Iridomyrmex humilis* (Mayr) (Hymenoptera: Formicidae), in citrus trees through the use of semiochemicals and related chemicals. *Journal of Chemical Ecology* 18: 2131-2142.
- Stearns, S.C. 1992. *The Evolution of Life Histories*. Oxford University Press.
- Teixeira, E.W., Negri, G., Meira, R.M., Message, D., Salatino, A. 2005. Plant origin of green propolis : bee behavior, plant anatomy and chemistry. *Evidence-based Complementary and Alternative Medicine* 2: 85-92.
- Thompson, J.N. 1982. *Interaction and Coevolution*. New York John: Wiley & Sons
- Thompson, J.N. 1994. *The Coevolutionary Process*. Chicago: University of Chicago Press.
- Trigo, J.R. 2000. The chemistry of antipredator defense by secoundary compounds in neotropical Lepidoptera: Facts perspectives and caveats. *Journal of the Brazilian Chemical Society* 11: 551-561.
- Van Buskirk, J. and Relyea, R.A. 1998. Selection for phenotypic plasticity in *Rana sylvatica* tadpoles. *Biological Journal of the Linnean Society* 65: 301–328.
- Velikova, M, Bankova, V., Marcucci, M. C., Tsvetkova, I and Kujumgiev, A. 2000. Chemical Composition and Biological Activity of Propolis from Brazilian Meliponinae. *Z. Naturforsch* 55: 785-789.
- Ward, P. S. 1994. *Adetomyrma*, an enigmatic new ant genus from Madagascar Hymenoptera: Formicidae), and its implications for ant phylogeny. *Systematic Entomology* 19: 159-175.
- Wcislo, W.T. and Schatz, B. 2003. Predator recognition and evasive behavior by sweat bees, *Lasioglossum umbripenne* (Hymenoptera: Formicidae). *Behavioral Ecology and Sociobiology* 53: 182-189.
- Wheeler, W.M. 1914. The ants of the Baltic amber. *Science* 41: 906-908.
- Wheeler, W.M., 1922. Observations on *Gigantiops destructor* Fabricius and other leaping ants. *Biol. Bull.* 42: 185–201.

- Wenzel J.W. and Pickering J. 1991. Cooperative foraging, productivity, and the central limit theorem. *Proceedings of the National Academy of Sciences of the United States of America* 88: 36–38.
- West-Eberhard, M.J. 1989. Scent-trail diversion, a novel defense against ants by tropical social wasps. *Biotropica* 21: 280–281.
- Williams, D.H., Stone, M.J., Hauch, P.R. and Rahman, S.K. 1989. Why are secondary metabolites (natural products) biosynthesized? *Journal of Natural Product* 52: 1189–1208.
- Wilson, E.O. 1971. *The Insect Societies*. Cambridge, Mass: Harvard University Press.
- Wilson E.O. 1975. Enemy specification in the alarm-recruitment system of an ant. *Science* 190: 798-800.
- Wilson, E.O. 1985. Ants of the Dominican amber (Hymenoptera: Formicidae). I. Two new myrmicine genera and an aberrant Pheidole. *Psyche* 92: 1-9.
- Wilson, E.O. 2006. The civilized insect. *National Geographic*: August 136-149.
- Wilson, E.O., Carpenter, F.M. and Brown , W.L. 1967. The First Mesozoic Ants. *Science* 157: 1038 – 1040.
- Wilson, E.O. and Hölldobler, B. 2005. The rise of the ants: a phylogenetic and ecological explanation. *Proceedings of the National Academy of Sciences of the United States of America* 102: 7411-4.
- Wilson, E.O. and Taylor, R.W. 1967. The ants of Polynesia (Hymenoptera: Formicidae). *Pacific Insects Monograph* 14: 1-109.
- Winston, M.L. 1987. *The Biology of the Honey bee*. Cambridge, Massachusetts: Harvard University Press.
- Winston, M.L. and Michener, C.D. 1977. Dual origin of highly social behavior among bees. *Proceedings of the National Academy of Sciences* 74: 1135-1137.
- Wollenweber, E., Hausen, B.M. and Greenaway, W. 1990. Phenolic constituents and sensitizing properties of propolis, poplar balsam and balsam of Peru. *Bull. Group Polyphenols* 15: 112–120.
- Wongsiri S. 1989. The effects of the import of *Apis mellifera* L. to Thailand. *Proc. 4th Int. Conf. Apic. Trop. Climates*. 162-167.

- Wongsiri, S., Chanchao, C., Deowanish, S., Aemprapa, S., Chaiyawong, T., Petersen, S. and Leepitakrat, S. 2000. Honey bee diversity and beekeeping in Thailand. *Bee World* 81: 20-29.
- Wongsiri, S., Lekprayoon, C., Thapa, R., Thirakupt, K., Rinderer, T.E. and Sylvester, H.A. 1996. Comparative biology of *Apis andreniformis* and *Apis florea* in Thailand. *Bee World* 77: 23-35.
- Wu, Y. and Kuang, B. 1987. Two species of small honeybee: a study of the genus *Micropis*. *Bee World* 68: 153-155.

Biography

Miss Orawan Duangphakdee was born on the 30th of September 1979 in Udornthani, Thailand. She graduated Bachelor's Degree of Science in Biology from Chulalongkorn University in 2001. She was awarded the scholarship by the Royal Golden Jubilee Ph. D. Program of the Thailand Resarch Fund for her Ph. D. studying in Biological Sciences Program at Faculty of Science, Chulalongkorn University since 2002.