Bibliography

Adamo, S. A. (2008). Norepinephrine and octopamine: linking stress and immune function across phyla. *Invertebrate Survival Journal*, *5*(1), 12-19.

Adamski, Z., Bufo, S. A., Chowański, S., Falabella, P., Lubawy, J., Marciniak, P., ... & Rosiński, G. (2019). Beetles as model organisms in physiological, biomedical and environmental studies–a review. *Frontiers in physiology*, *10*, 319.

Adamski, Z., Fila, K., Maćkowiak, J., & Ziemnicki, K. (2005). Fenitrothion-induced cell malformations in vitro in Spodoptera exigua cell line UCR-Se-1. *Biol. Lett*, *42*, 41-47.

Adesanya, A. W., Held, D. W., & Liu, N. (2018). Ontogeny, sex and adult tissues influence activities of detoxification enzymes in the Japanese beetle (*Popillia japonica* Newman). *Physiological entomology*, *43*(4), 306-314.

Adesanya, A. W., Morales, M. A., Walsh, D. B., Lavine, L. C., Lavine, M. D., & Zhu, F. (2018). Mechanisms of resistance to three mite growth inhibitors of *Tetranychus urticae* in hops. *Bulletin of entomological research*, *108*(1), 23-34.

Adkins-Regan, E. (2009). Neuroendocrinology of social behavior. *Ilar Journal*, *50*(1), 5-14.

Adkins-Regan, E. (2013). *Hormones and animal social behavior*. Princeton University Press.

Agarwal, M., Giannoni Guzmán, M., Morales-Matos, C., Del Valle Díaz, R. A., Abramson, C. I., & Giray, T. (2011). Dopamine and octopamine influence avoidance learning of honey bees in a place preference assay. *PloS one*, *6*(9), e25371.

Aikins, M. J., Schooley, D. A., Begum, K., Detheux, M., Beeman, R. W., & Park, Y. (2008). Vasopressin-like peptide and its receptor function in an indirect diuretic signaling pathway in the red flour beetle. *Insect biochemistry and molecular biology*, *38*(7), 740-748.

Akamine, M. (2016). Size-and context-dependent nest-staying behaviour of males of the Japanese dung beetle, *Copris acutidens* (Coleoptera: Scarabaeidae). *European Journal of Entomology*, *113*.

Akamine, M. (2019). Size-dependent seasonal activity for males of the dung beetle *Copris acutidens* (Coleoptera: Scarabaeidae). *The Canadian Entomologist*, *151*(6), 757-767.

Al, Wathiqui, N., Dopman, E. B., & Lewis, S. M. (2016). Postmating transcriptional changes in the female reproductive tract of the European corn borer moth. *Insect molecular biology*, *25*(5), 629-645.

Alaa-Eldin, E. A., El-Shafei, D. A., & Abouhashem, N. S. (2017). Individual and combined effect of chlorpyrifos and cypermethrin on reproductive system of adult male albino rats. *Environmental Science and Pollution Research*, *24*, 1532-1543.

Al-Dhafar, Z. M., & Sharaby, A. (2012). Effect of zinc sulfate against the red palm weevil *Rhynchophorus ferrugineus* with reference to their histological changes on the larval midgut and adult reproductive system. *Journal of Agricultural Science and Technology. A*, *2*(7A), 888.

Alekseyenko, A. A., Gorchakov, A. A., Kharchenko, P. V., & Kuroda, M. I. (2014). Reciprocal interactions of human C10orf12 and C17orf96 with PRC2 revealed by BioTAP-XL cross-linking and affinity purification. *Proceedings of the National Academy of Sciences*, *111*(7), 2488-2493.

Alekseyenko, O. V., Chan, Y. B., Li, R., & Kravitz, E. A. (2013). Single dopaminergic neurons that modulate aggression in Drosophila. *Proceedings of the National Academy of Sciences*, *110*(15), 6151-6156.

Alekseyenko, O. V., Lee, C., & Kravitz, E. A. (2010). Targeted manipulation of serotonergic neurotransmission affects the escalation of aggression in adult male *Drosophila melanogaster*. *PloS one*, *5*(5), e10806.

Aljedani, D. M. (2021). Research Article Effects of Some Insecticides (Deltamethrin and Malathion) and Lemongrass Oil on Fruit Fly (*Drosophila melanogaster*). *Pakistan Journal Biological Science*, *24*, 477.

Altstein, M., & Nässel, D. R. (2010). Neuropeptide signaling in insects. *Neuropeptide systems as targets for parasite and pest control*, 155-165.

Altuntas, I., Delibas, N., Doguc, D. K., Ozmen, S., & Gultekin, F. A. T. İ. H. (2003). Role of reactive oxygen species in organophosphate insecticide phosalone toxicity in erythrocytes in vitro. *Toxicology in vitro*, *17*(2), 153-157.

Alves, S. N., Serrão, J. E., & Melo, A. L. (2010). Alterations in the fat body and midgut of Culex quinquefasciatus larvae following exposure to different insecticides. *Micron*, *41*(6), 592-597.

Amaral, A. U., Seminotti, B., da Silva, J. C., de Oliveira, F. H., Ribeiro, R. T., Vargas, C. R., ... & Wajner, M. (2018). Induction of neuroinflammatory response and histopathological alterations caused by quinolinic acid administration in the striatum of glutaryl-CoA dehydrogenase deficient mice. *Neurotoxicity Research*, *33*, 593-606.

Ambika, S. (2012). Impact of vijay neem on histological and scanning electron microscopic changes in the testis of adult male insect *Odobtopus vericornis* (Dist) (Heteroptera: Pyrrchocoridae). *International Journal of Pharma and Bio Sciences*, *3*, 460-466.

Amin, A., Hamza, A. A., Daoud, S., & Hamza, W. (2006). Spirulina protects against cadmium-induced hepatotoxicity in rats. *American Journal of Pharmacology and Toxicology*, *1*(2), 21-25.

Amweg, E. L., Weston, D. P., You, J., & Lydy, M. J. (2006). Pyrethroid insecticides and sediment toxicity in urban creeks from California and Tennessee. *Environmental Science & Technology*, *40*(5), 1700-1706.

Andersen, J. K. (2004). Oxidative stress in neurodegeneration: cause or consequence?. *Nature medicine*, *10*(Suppl 7), S18-S25.

Andersen, S. O. (2010). Insect cuticular sclerotization: a review. *Insect biochemistry and molecular biology*, *40*(3), 166-178.

Anderson, D. J. (2016). Circuit modules linking internal states and social behaviour in flies and mice. *Nature Reviews Neuroscience*, *17*(11), 692-704.

Andjani, H. N., Sentosa, Y., Yati, K., Fauzantoro, A., Gozan, M., & Yoo, Y. J. (2019). Acute oral toxicity test of Nicotiana tabacum L. bio-oil against female winstar rats. In *IOP Conference Series: Earth and Environmental Science* 53(1), p. 012047. IOP Publishing.

Andresen, E. (2005). Effects of season and vegetation type on community organization of dung beetles in a tropical dry forest 1. *Biotropica: The Journal of Biology and Conservation*, *37*(2), 291-300.

Anduaga, S., & Huerta, C. (2007). Community and Ecosystem Ecology-Importance of Dung Incorporation Activity by Three Species of Coprophagous Beetle (Coleoptera: Scarabaeidae: Scarabaeinae) Macrofauna in Pastureland on" La Michilia". *Environmental Entomology*, *36*(3), 555-559.

Anstey, M. L., Rogers, S. M., Ott, S. R., Burrows, M., & Simpson, S. J. (2009). Serotonin mediates behavioral gregarization underlying swarm formation in desert locusts. *science*, *323*(5914), 627-630.

Aonuma, A., Iwasaki, M., & Niwa, K. (2004). Role of NO signaling in switching mechanisms in the nervous system of insect. In *SICE 2004 Annual Conference* 3(1), pp. 2477-2482). IEEE.

Arce, A. N., Johnston, P. R., Smiseth, P. T., & Rozen, D. E. (2012). Mechanisms and fitness effects of antibacterial defences in a carrion beetle. *Journal of evolutionary biology*, *25*(5), 930-937.

Arellano, L., Castillo-Guevara, C., Huerta, C., Germán-García, A., & Lara, C. (2017). Nesting biology and life history of the dung beetle *Onthophagus lecontei* (Coleoptera: Scarabaeinae). *Animal biology*, *67*(1), 41-52.

Arellano, L., Noriega, J. A., Ortega-Martínez, I. J., Rivera, J. D., Correa, C. M., Gómez-Cifuentes, A., ... & Barragán, F. (2023). Dung beetles (Coleoptera: Scarabaeidae) in grazing lands of the Neotropics: A review of patterns and research trends of taxonomic and functional diversity, and functions. *Frontiers in Ecology and Evolution*, *11*, 1084009.

Armstrong, G. A., & Robertson, R. M. (2006). A role for octopamine in coordinating thermoprotection of an insect nervous system. *Journal of Thermal Biology*, *31*(1-2), 149-158.

Arrow, G. J. (1931). LXXXVIII.—The Coleopterous genus Trichillum (Copridae) with a key to the species. *Annals and Magazine of Natural History*, *8*(48), 609-611.

Atamaniuk, T. M., Kubrak, O. I., Storey, K. B., & Lushchak, V. I. (2013). Oxidative stress as a mechanism for toxicity of 2, 4-dichlorophenoxyacetic acid (2, 4-D): studies with goldfish gills. *Ecotoxicology*, *22*(10), 1498-1508.

Auletta, A. (2019). *The anatomical distribution patterns, physiological effects, and quantification of biogenic amines in the central nervous systems of araneae and scorpiones (Arthropoda: Chelicerata)* (Doctoral dissertation, University of Minnesota).

Avila, F. W., Sirot, L. K., LaFlamme, B. A., Rubinstein, C. D., & Wolfner, M. F. (2011). Insect seminal fluid proteins: identification and function. *Annual review of entomology*, *56*, 21-40.

Awad, H. H., & Ghazawy, N. A. (2016). Effects of Farnesol on the ultrastructure of brain and corpora allata, sex hormones and on some oxidative stress parameters in Locusta migratoria (Orthoptera: Acridiidae). *African Entomology*, *24*(2), 502-512.

Ayasse, M., & Paxton, R. (2002). Brood protection in social insects. *Chemoecology of insect eggs and egg deposition*, *117*, 148.

Badiou, A., & Belzunces, L. P. (2008). Is acetylcholinesterase a pertinent biomarker to detect exposure of pyrethroids? A study case with deltamethrin. *Chemico-biological interactions*, *175*(1-3), 406-409.

Bai, H., & Palli, S. R. (2013). G protein-coupled receptors as target sites for insecticide discovery. *Advanced technologies for managing insect pests*, 57-82.

Baird, E., Byrne, M. J., Smolka, J., Warrant, E. J., & Dacke, M. (2012). The dung beetle dance: an orientation behaviour? *PLoS One*, *7*(1), e30211.

Balakrishnan, R. (2016). Behavioral ecology of insect acoustic communication. *Insect hearing*, 49-80.

Balthasar, V. (1963) Monographie der Scarabaeidae und Aphodiidae der Palaearktischen und Orientalischen Region (Coleoptera: Lamellicornia). Verlag der Tschechoslowakischen Akademie der Wissenschaften, Prague Volume I, 391 pp; Volume II, 627 pp.

Balthasar, V. (1974) Neue arten der gattung Onthophagus aus der orientalischen und aethiopischen region. Acta entomologica bohemoslovaca, 71, 182–186

Banerjee, M. (2014). Diversity and composition of beetles (order: Coleoptera) of Durgapur, West Bengal, India. *Psyche: A Journal of Entomology*, *2014*, 1-6.

Bang, H. S., Kwon, O. S., Hwang, S. J., Mah, Y. I., & Watdhaugh, K. G. (2004). Developmental biology and phenology of a Korean native dung beetle, *Copris ochus* (Motschulsky) (Coleoptera: Scarabaeidae). *The Coleopterists Bulletin*, *58*(4), 522-533.

Banji, D., Banji, O. J., Pratusha, N. G., & Annamalai, A. R. (2013). Investigation on the role of Spirulina platensis in ameliorating behavioural changes, thyroid dysfunction and oxidative stress in offspring of pregnant rats exposed to fluoride. *Food chemistry*, *140*(1-2), 321-331.

Barmentlo, S. H., Schrama, M., De Snoo, G. R., Van Bodegom, P. M., van Nieuwenhuijzen, A., & Vijver, M. G. (2021). Experimental evidence for neonicotinoid driven decline in aquatic emerging insects. *Proceedings of the National Academy of Sciences*, *118*(44), e2105692118.

Barragán, F., Douterlungne, D., Ramírez-Hernández, A., Gelviz-Gelvez, S. M., Miranda, A. V. G., & Ortíz, J. P. R. (2022). The rolling dung master: An ecosystem engineer beetle mobilizing soil nutrients to enhance plant growth across a grassland management intensity gradient in drylands. *Journal of Arid Environments*, *197*, 104673.

Barron, A. B., Søvik, E., & Cornish, J. L. (2010). The roles of dopamine and related compounds in reward-seeking behavior across animal phyla. *Frontiers in behavioral neuroscience*, *4*, 163.

Barton, P. S., Gibb, H., Manning, A. D., Lindenmayer, D. B., & Cunningham, S. A. (2011). Morphological traits as predictors of diet and microhabitat use in a diverse beetle assemblage. *Biological Journal of the Linnean Society*, *102*(2), 301-310.

Basto Estrella, G. S., Rodríguez Vivas, R. I., Delfín González, H., & Reyes-Novelo, E. (2014). Dung beetle (Coleoptera: Scarabaeinae) diversity and seasonality in response to use of macrocyclic lactones at cattle ranches in the *mexican neotropics. Insect Conservation and Diversity*, *7*(1), 73-81.

Basu, S. (2003). Carbon tetrachloride-induced lipid peroxidation: eicosanoid formation and their regulation by antioxidant nutrients. *Toxicology*, *189*(1-2), 113-127.

Beggs, K. T., & Mercer, A. R. (2009). Dopamine receptor activation by honey bee queen pheromone. *Current biology*, *19*(14), 1206-1209.

Beggs, K. T., Hamilton, I. S., Kurshan, P. T., Mustard, J. A., & Mercer, A. R. (2005). Characterization of a D2-like dopamine receptor (AmDOP3) in honey bee, *Apis mellifera*. *Insect biochemistry and molecular biology*, *35*(8), 873-882.

Bendena, W. G. (2010). Neuropeptide physiology in insects. *Neuropeptide systems as targets for parasite and pest control*, 166-191.

Benowitz, K. M., McKinney, E. C., Cunningham, C. B., & Moore, A. J. (2019). Predictable gene expression related to behavioral variation in parenting. *Behavioral Ecology*, *30*(2), 402-407.

Bergan, J. F. (2015). Neural computation and neuromodulation underlying social behavior. *Integrative and Comparative Biology*, *55*(2), 268-280.

Bertossa, R. C. (2011). Morphology and behaviour: functional links in development and evolution. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *366*(1574), 2056-2068.

Besson, M., & Martin, J. R. (2005). Centrophobism/thigmotaxis, a new role for the mushroom bodies in Drosophila. *Journal of neurobiology*, *62*(3), 386-396.

Beynon, S. A., Wainwright, W. A., & Christie, M. (2015). The application of an ecosystem services framework to estimate the economic value of dung beetles to the UK cattle industry. *Ecological Entomology*, *40*, 124-135.

Bharti, S., & Rasool, F. (2021). Analysis of the biochemical and histopathological impact of a mild dose of commercial malathion on Channa punctatus (Bloch) fish. *Toxicology Reports*, *8*, 443-455.

Bicker, G. (2001). Nitric oxide: an unconventional messenger in the nervous system of an orthopteroid insect. *Archives of Insect Biochemistry and Physiology: Published in Collaboration with the Entomological Society of America*, *48*(2), 100-110.

Biedermann, P. H., & Nuotclà, J. A. (2020). Social beetles. In *Encyclopedia of social insects* (pp. 85-156). Academic Press.

Biondi, A., Mommaerts, V., Smagghe, G., Vinuela, E., Zappala, L., & Desneux, N. (2012). The non-target impact of spinosyns on beneficial arthropods. *Pest management science*, *68*(12), 1523-1536.

Birgül Iyison, N., Shahraki, A., Kahveci, K., Düzgün, M. B., & Gün, G. (2021). Are insect GPCRs ideal next-generation pesticides: opportunities and challenges. *The FEBS Journal*, *288*(8), 2727-2745.

Bishop, A. L., McKenzie, H. J., Spohr, L. J., & Barchia, I. M. (2005). Interactions between dung beetles (Coleoptera: Scarabaeidae) and the arbovirus vector *Culicoides brevitarsis* Kieffer (Diptera: Ceratopogonidae). *Australian Journal of Entomology*, *44*(2), 89-96.

Blenau, W., & Thamm, M. (2011). Distribution of serotonin (5-HT) and its receptors in the insect brain with focus on the mushroom bodies. Lessons from *Drosophila melanogaster* and *Apis mellifera*. *Arthropod structure & development*, *40*(5), 381-394.

Bloch, G., Wheeler, D. E., & Robinson, G. E. (2002). Endocrine influences on the organization of insect societies. *Hormones, brain and behavior*, 195-235.

Blount, J. D., Vitikainen, E. I., Stott, I., & Cant, M. A. (2016). Oxidative shielding and the cost of reproduction. *Biological Reviews*, *91*(2), 483-497.

Bouchard, P., Smith, A. B., Douglas, H., Gimmel, M. L., Brunke, A. J., & Kanda, K. (2017). Biodiversity of coleoptera. *Insect biodiversity: science and society*, 337-417.

Braga RF, Korasaki V, Andresen E, and Louzada J (2013) Dung beetle community and functions along a habitat-disturbance gradient in the Amazon: a rapid assessment of ecological functions associated to biodiversity. PLoS One, 8(2), e57786

Braga, R. F., Korasaki, V., Andresen, E., & Louzada, J. (2013). Dung beetle community and functions along a habitat-disturbance gradient in the Amazon: a rapid assessment of ecological functions associated to biodiversity. *PLoS One*, *8*(2), e57786.

Brown, J., Scholtz, C. H., Janeau, J. L., Grellier, S., & Podwojewski, P. (2010). Dung beetles (Coleoptera: Scarabaeidae) can improve soil hydrological properties. *Applied soil ecology*, *46*(1), 9-16.

Brown, M. R., Crim, J. W., Arata, R. C., Cai, H. N., Chun, C., & Shen, P. (1999). Identification of a Drosophila brain-gut peptide related to the neuropeptide Y family. *Peptides*, *20*(9), 1035-1042.

Bruinenberg, M., van Agtmaal, M., Hoekstra, N., & van Eekeren, N. (2023). Residues of pesticides in dairy cow rations and fly treatments reduce the number of Coleoptera in dung. *Agriculture, Ecosystems & Environment*, *344*, 108307.

Bu, C., Peng, B., Cao, Y., Wang, X., Chen, Q., Li, J., & Shi, G. (2015). Novel and selective acetylcholinesterase inhibitors for *Tetranychus cinnabarinus* (Acari: Tetranychidae). *Insect biochemistry and molecular biology*, *66*, 129-135.

Bubak, A. N., Grace, J. L., Watt, M. J., Renner, K. J., & Swallow, J. G. (2014a). Neurochemistry as a bridge between morphology and behavior: perspectives on aggression in insects. *Current Zoology*, *60*(6), 778-790.

Bubak, A. N., Renner, K. J., & Swallow, J. G. (2014b). Heightened serotonin influences contest outcome and enhances expression of high-intensity aggressive behaviors. *Behavioural brain research*, *259*, 137-142.

Buijs, J., & Samwel-Mantingh, M. (2019). research into possible relationships between the decline in meadow birds and the presence of pesticides on livestock farms in Gelderland.

Buijs, J., Ragas, A., & Mantingh, M. (2022). Presence of pesticides and biocides at Dutch cattle farms participating in bird protection programs and potential impacts on entomofauna. *Science of The Total Environment*, *838*, 156378.

Bullard, B., & Pastore, A. (2011). Regulating the contraction of insect flight muscle. *Journal of muscle research and cell motility*, *32*, 303-313.

Buntin, J. D. (1996). Neural and hormonal control of parental behavior in birds. *Advances in the Study of Behavior*, *25*, 161-213.

Burger, B. B. V. (2014). First investigation of the semiochemistry of South African dung beetle species. In C. Mucignat-Caretta (Ed.), Neurobiologyof chemical communication (pp. 57–98). Boca Raton, Florida USA, CRCPress/Taylor & Francis.

Cabirol, A., & Haase, A. (2019). The neurophysiological bases of the impact of neonicotinoid pesticides on the behaviour of honeybees. *Insects*, *10*(10), 344.

Cabrero-Sañudo, F. J., & Lobo, J. M. (2009). Biogeography of Aphodiinae dung beetles based on the regional composition and distribution patterns of genera. *Journal of Biogeography*, *36*(8), 1474-1492.

Caers, J., Verlinden, H., Zels, S., Vandersmissen, H. P., Vuerinckx, K., & Schoofs, L. (2012). More than two decades of research on insect neuropeptide GPCRs: an overview. *Frontiers in endocrinology*, *3*, 151.

Çağlar, Ü., Koçakoğlu, N. Ö., & Candan, S. (2020). Histomorphological structure of male reproductive system in *Capnodis tenebrionis* (Linnaeus, 1761) (Coleoptera: Buprestidae). *Commagene Journal of Biology*, *4*(2), 140-145.

Cajaiba, R. L., Périco, E., da Silva, W. B., & Santos, M. (2017a). Can dung beetles (Scarabaeinae) indicate the status of Amazonia's ecosystems? Insights integrating anthropogenic disturbance with seasonal patterns. *Animal Biology*, *67*(3-4), 301-318.

Cajaiba, R. L., Périco, E., Dalzochio, M. S., da Silva, W. B., Bastos, R., Cabral, J. A., & Santos, M. (2017b). Does the composition of Scarabaeidae (Coleoptera) communities reflect the extent of land use changes in the Brazilian Amazon?. *Ecological Indicators*, *74*, 285-294.

Candolin, U., & Wong, B. B. (Eds.). (2012). *Behavioural responses to a changing world: mechanisms and consequences*. Oxford University Press.

Cano, A., Pontes, G., Sfara, V., Anfossi, D., & Barrozo, R. B. (2017). Nitric oxide contributes to high-salt perception in a blood-sucking insect model. *Scientific reports*, *7*(1), 15551.

Cantil, L. F., Sánchez, M. V., & Genise, J. F. (2014). The nest and brood ball of Canthon (Canthon) virens aff. paraguayanus Balthasar (Coleoptera: Scarabaeidae: Scarabaeinae). *The Coleopterists Bulletin*, *68*(3), 384-386.

Cantil, L. F., Sánchez, M. V., Dinghi, P. A., & Genise, J. F. (2014). Food relocation behavior, nests, and brood balls of *Canthon quinquemaculatus* Laporte de Castelnau (Coleoptera: Scarabaeidae: Scarabaeinae). *The Coleopterists Bulletin*, *68*(2), 199-208.

Carlsson, M. A., Enell, L. E., & Nässel, D. R. (2013). Distribution of short neuropeptide F and its receptor in neuronal circuits related to feeding in larval Drosophila. *Cell and tissue research*, *353*(3), 511-523.

Casasa, S., & Moczek, A. P. (2018). The role of ancestral phenotypic plasticity in evolutionary diversification: population density effects in horned beetles. *Animal Behaviour*, *137*, 53-61.

Casasa, S., Schwab, D. B., & Moczek, A. P. (2017). Developmental regulation and evolution of scaling: novel insights through the study of Onthophagus beetles. *Current opinion in insect science*, *19*, 52-60.

Casida, J. E., & Durkin, K. A. (2013). Neuroactive insecticides: targets, selectivity, resistance, and secondary effects. *Annual review of entomology*, *58*, 99-117.

Catae, A. F., Roat, T. C., De Oliveira, R. A., Ferreira Nocelli, R. C., & Malaspina, O. (2014). Cytotoxic effects of thiamethoxam in the midgut and malpighian tubules of Africanized *Apis mellifera* (Hymenoptera: Apidae). *Microscopy research and technique*, *77*(4), 274-281.

Cavallaro, M. C., Hladik, M. L., Hittson, S., Middleton, G., & Hoback, W. W. (2023). Comparative toxicity of two neonicotinoid insecticides at environmentally relevant concentrations to telecoprid dung beetles. *Scientific Reports*, *13*(1), 8537.

Cayre, M., Malaterre, J., Scotto-Lomassese, S., Holstein, G. R., Martinelli, G. P., Forni, C., ... & Strambi, A. (2005). A role for nitric oxide in sensory-induced neurogenesis in an adult insect brain. *European Journal of Neuroscience*, *21*(11), 2893-2902.

Chakrabarti, P., Rana, S., Sarkar, S., Smith, B., & Basu, P. (2015). Pesticide-induced oxidative stress in laboratory and field populations of native honey bees along intensive agricultural landscapes in two Eastern Indian states. *Apidologie*, *46*, 107-129.

Chandra K, & Ahirwar S.C. (2007) Insecta: Coleoptera: Scrabaeidae, Zoological Survey of India, Fauna of Madhya Pradesh (including Chhattisgarh). *State Fauna Series 15(Part-1)*, 273–300

Chandra K, & Gupta D (2012c) New distributional record of five species of *Onthophagus* (Coleoptera: Scarabaeidae: Scarabaeinae) from Central India. *Scholarly Journal of Agricultural Science*, 2(1), 8–12

Chandra K, & Gupta D. (2011). Study of Scarabaeid Beetles (Coleoptera) of Veerangana Durgavati Wildlife Sanctuary, Damoh, Madhya Pradesh, India. *Deccan Current Science*, 5, 272–278

Chandra K, & Gupta D. (2012a). Diversity and composition of dung beetles (Scarabaeidae: Scarabaeinae and Aphodiinae) assemblages in Singhori Wildlife Sanctuary, Raisen, Madhya Pradesh (India). *Munis Entomology & Zoology* 7, 1-16

Chandra K, & Gupta D. (2012b). Diversity and relative abundance of Pleurostict Scarabaeidae (Coleoptera) in Achanakmar-Amarkantak Biosphere Reserve, Central India. *World Journal of Zoology*, 7(2), 147–154.

Chandra K, & Gupta D. (2012d). First report on five species of genus *Onthophagus Latreille*, 1802 (Coleoptera, Scarabaeidae) from Madhya Pradesh, India, and their description of external male genitalia. *Biodiversity Journal*, 3(2), 99–106

Chandra K, Gupta D. (2013). Taxonomic studies on dung beetles (Coleoptera: Scarabaeidae, Geotrupidae, Hybosoridae) of Chhattisgarh, India. *Munis Entomology & Zoology*, 8(1), 331-360

Chandra K, Singh, S.P. (2010). Scarabaeid beetles (Coleoptera) of Achanakmar Wildlife Sanctuary, Chhattisgarh. *National Journal of Life Sciences*, 7(1), 71–74

Chandra K., Gupta D, Uniyal V.P., Sanyal AK., & Bhargav V. (2012). Taxonomic studies on Lamellicorn Scarabaeids (Coleoptera) of Simbalbara Wildlife Sanctuary, Sirmour, Himachal Pradesh, India. Records of *Zoological Survey of India.* 112(1), 81-91

Chandra, K. (1988). Taxonomic studies on Pleurostict Scarabaeidae (Coleoptera) of north-west India. *YES Quarterly, USA*, *5*(1), 20-27.

Chandra, K. (1999). Annotated check-list of Aphodiinae (Scarabaeidae: Coleoptera) from India. *Records of the Zoological Survey of India*, *97*(2), 87-108.

Chao, A., Simon-Freeman, R., & Grether, G. (2013). Patterns of niche partitioning and alternative reproductive strategies in an East African dung beetle assemblage. *Journal of Insect Behavior*, *26*, 525-539.

Charpentier, A., Menozzi, P., Marcel, V., Villatte, F., & Fournier, D. (2000). A method to estimate acetylcholinesterase-active sites and turnover in insects. *Analytical Biochemistry*, *285*(1), 76-81.

Chatterjee, A., Bais, D., Brockmann, A., & Ramesh, D. (2021). Search behavior of individual foragers involves neurotransmitter systems characteristic for social scouting. *Frontiers in Insect Science*, *1*, 664978.

Chen, M. E., & Pietrantonio, P. V. (2006). The short neuropeptide F-like receptor from the red imported fire ant, Solenopsis invicta Buren (Hymenoptera: Formicidae). *Archives of Insect Biochemistry and Physiology: Published in Collaboration with the Entomological Society of America*, *61*(4), 195-208.

Chen, Q., Zhang, M., & Shen, S. (2011). Effect of salt on malondialdehyde and antioxidant enzymes in seedling roots of Jerusalem artichoke (*Helianthus tuberosus* L.). *Acta Physiologiae Plantarum*, *33*, 273-278.

Chen, W., Hasegawa, D. K., Kaur, N., Kliot, A., Pinheiro, P. V., Luan, J., ... & Fei, Z. (2016). The draft genome of whitefly Bemisia tabaci MEAM1, a global crop pest, provides novel insights into virus transmission, host adaptation, and insecticide resistance. *BMC biology*, *14*(1), 1-15.

Chen, W., Shi, W., Li, L., Zheng, Z., Li, T., Bai, W., & Zhao, Z. (2013). Regulation of sleep by the short neuropeptide F (sNPF) in *Drosophila melanogaster*. *Insect Biochemistry and Molecular Biology*, *43*(9), 809-819.

Chen, X., Guo, C., & Kong, J. (2012). Oxidative stress in neurodegenerative diseases. *Neural regeneration research*, *7*(5), 376.

Chérasse, S., & Aron, S. (2017). Measuring inotocin receptor gene expression in chronological order in ant queens. *Hormones and behavior*, *96*, 116-121.

Chihiya, J., Gadzirayi, C. T., & Mutandwa, E. (2006). Effect of three different treatment levels of deltamethrin on the numbers of dung beetles in dung pats.

Chittka, L., & Niven, J. (2009). Are bigger brains better?. *Current biology*, *19*(21), R995-R1008.

Chowanski, S., Lubawy, J., Urbanski, A., and Rosinski, G. (2016). Cardioregulatory functions of neuropeptides and peptide hormones in insects. *Protein and Peptide Letters, 23(10), 913-931.*

Chowański, S., Spochacz, M., Szymczak, M., & Rosiński, G. (2017). Effect of biogenic amines on the contractile activity of visceral muscles in the beetle Tenebrio molitor. *Bulletin of Insectology*, *70*(2).

Cisneros, J., Goulson, D., Derwent, L. C., Penagos, D. I., Hernández, O., & Williams, T. (2002). Toxic effects of spinosad on predatory insects. *Biological control*, *23*(2), 156-163.

Clutton-Brock, T. H. (1991). *The evolution of parental care* (Vol. 64). Princeton University Press.

Clynen, E., Huybrechts, J., Verleyen, P., De Loof, A., & Schoofs, L. (2006). Annotation of novel neuropeptide precursors in the migratory locust based on transcript screening of a public EST database and mass spectrometry. *BMC genomics*, *7*(1), 1-15.

Clynen, E., Huybrechts, J., Verleyen, P., De Loof, A., & Schoofs, L. (2006). Annotation of novel neuropeptide precursors in the migratory locust based on transcript screening of a public EST database and mass spectrometry. *BMC genomics*, *7*(1), 1-15.

Coban, A., & Filipov, N. M. (2007). Dopaminergic toxicity associated with oral exposure to the herbicide atrazine in juvenile male C57BL/6 mice. *Journal of neurochemistry*, *100*(5), 1177-1187.

Corona, M., Libbrecht, R., & Wheeler, D. E. (2016). Molecular mechanisms of phenotypic plasticity in social insects. *Current opinion in insect science*, *13*, 55-60.

Cortés-Iza, S. C., & Rodríguez, A. I. (2018). Oxidative stress and pesticide disease: a challenge for toxicology. *Revista de la Facultad de Medicina*, *66*(2), 261-267.

Cortez, V., Verdú, J. R., Ciares, W., & Halffter, G. (2021). Nesting behaviour of *Canthon unicolor* and *C. histrio*: a new subsocial nesting variation in dung beetles (Coleoptera: Scarabaeidae: Deltochilini). *Journal of Natural History*, *55*(35-36), 2187-2197.

Costa, J. T. (2018). The other insect societies: overview and new directions. *Current Opinion in Insect Science*, *28*, 40-49.

Costa, L. G. (2008). Toxic effects of pesticides. *Casarett and Doull's toxicology: the basic science of poisons*, *8*, 883-930.

Cui, H. Y., & Zhao, Z. W. (2020). Structure and function of neuropeptide F in insects. *Journal of Integrative Agriculture*, *19*(6), 1429-1438.

Cunningham, C. B. (2020). Functional genomics of parental care of insects. *Hormones and Behavior*, *122*, 104756.

Cunningham, C. B., Badgett, M. J., Meagher, R. B., Orlando, R., & Moore, A. J. (2017). Ethological principles predict the neuropeptides co-opted to influence parenting. *Nature Communications*, *8*(1), 14225.

Cunningham, C. B., Ji, L., Wiberg, R. A. W., Shelton, J., McKinney, E. C., Parker, D. J., ... & Moore, A. J. (2015). The genome and methylome of a beetle with complex social behavior, *Nicrophorus vespilloides* (Coleoptera: Silphidae). *Genome Biology and Evolution*, *7*(12), 3383-3396.

Cutler, G. C. (2013). Insects, insecticides and hormesis: evidence and considerations for study. *Dose-response*, *11*(2), dose-response.

Cutler, G. C., Amichot, M., Benelli, G., Guedes, R. N. C., Qu, Y., Rix, R. R., ... & Desneux, N. (2022). Hormesis and insects: Effects and interactions in agroecosystems. *Science of The Total Environment*, *825*, 153899.

Dacke, M., Bell, A. T., Foster, J. J., Baird, E. J., Strube-Bloss, M. F., Byrne, M. J., & El Jundi, B. (2019). Multimodal cue integration in the dung beetle compass. *Proceedings of the National Academy of Sciences*, *116*(28), 14248-14253.

Dacke, M., El Jundi, B., Gagnon, Y., Yilmaz, A., Byrne, M., & Baird, E. (2020). A dung beetle that path integrates without the use of landmarks. *Animal cognition*, *23*, 1161-1175.

Dacks, A. M., Nickel, T., & Mitchell, B. K. (2003). An examination of serotonin and feeding in the flesh fly Neobellieria bullata (Sarcophagidae: Diptera). *Journal of insect Behavior*, *16*, 1-21.

Dadour, I. R., Cook, D. F., & Hennessy, D. (2000). Reproduction and survival of the dung beetle Onthophagus binodis (Coleoptera: Scarabaeidae) exposed to abamectin and doramectin residues in cattle dung. *Environmental Entomology*, *29*(6), 1116-1122.

Dai, P. L., Wang, Q., Sun, J. H., Liu, F., Wang, X., Wu, Y. Y., & Zhou, T. (2010). Effects of sublethal concentrations of bifenthrin and deltamethrin on fecundity, growth, and development of the honeybee *Apis mellifera* ligustica. *Environmental Toxicology and Chemistry: An International Journal*, *29*(3), 644-649.

Dasari, S., & Cooper, R. L. (2004). Modulation of sensory–CNS–motor circuits by serotonin, octopamine, and dopamine in semi-intact Drosophila larva. *Neuroscience research*, *48*(2), 221-227.

Daubner, S. C., Le, T., & Wang, S. (2011). Tyrosine hydroxylase and regulation of dopamine synthesis. *Archives of biochemistry and biophysics*, *508*(1), 1-12.

Davies, S. A. (2000). Nitric oxide signalling in insects. *Insect biochemistry and molecular biology*, *30*(12), 1123-1138.

Davis, A. L., & Scholtz, C. H. (2001). Historical vs. ecological factors influencing global patterns of scarabaeine dung beetle diversity. *Diversity and Distributions*, *7*(4), 161-174.

Davis, N. T., Blackburn, M. B., Golubeva, E. G., & Hildebrand, J. G. (2003). Localization of myoinhibitory peptide immunoreactivity in *Manduca sexta* and *Bombyx mori*, with indications that the peptide has a role in molting and ecdysis. *Journal of experimental biology*, *206*(9), 1449-1460.

De Groot, R. S., Wilson, M. A., & Boumans, R. M. (2002). A typology for the classification, description and valuation of ecosystem functions, goods and services. *Ecological economics*, *41*(3), 393-408.

De Mandal, S., Chhakchhuak, L., Gurusubramanian, G., & Kumar, N. S. (2014). Mitochondrial markers for identification and phylogenetic studies in insects–A Review. *DNA Barcodes*, *2*(1), 1-9.

De Matteis, F., Ballou, D. P., Coon, M. J., Estabrook, R. W., & Haines, D. C. (2012). Peroxidase-like activity of uncoupled cytochrome P450: studies with bilirubin and toxicological implications of uncoupling. *Biochemical Pharmacology*, *84*(3), 374-382.

Degner, E. C., Ahmed-Braimah, Y. H., Borziak, K., Wolfner, M. F., Harrington, L. C., & Dorus, S. (2019). Proteins, transcripts, and genetic architecture of seminal fluid and sperm in the mosquito *Aedes aegypti*. *Molecular & Cellular Proteomics*, *18*, S6-S22.

Deng, X., Yang, H., He, X., Liao, Y., Zheng, C., Zhou, Q., ... & Zhou, N. (2014). Activation of Bombyx neuropeptide G protein-coupled receptor A4 via a Gαi-dependent signaling pathway by direct interaction with neuropeptide F from silkworm, Bombyx mori. *Insect biochemistry and molecular biology*, *45*, 77-88.

Després, L., David, J. P., & Gallet, C. (2007). The evolutionary ecology of insect resistance to plant chemicals. *Trends in ecology & evolution*, *22*(6), 298-307.

Di Bari, M., Reale, M., Di Nicola, M., Orlando, V., Galizia, S., Porfilio, I., ... & Tata, A. M. (2016). Dysregulated homeostasis of acetylcholine levels in immune cells of RR-multiple sclerosis patients. *International Journal of Molecular Sciences*, *17*(12), 2009.

Di Giglio, M. G., Muttenthaler, M., Harpsøe, K., Liutkeviciute, Z., Keov, P., Eder, T., ... & Gruber, C. W. (2017). Development of a human vasopressin V1a-receptor antagonist from an evolutionary-related insect neuropeptide. *Scientific Reports*, *7*(1), 41002.

Di Giulio, R. T., & Hinton, D. E. (Eds.). (2008). *The toxicology of fishes*. Crc Press. Taylor and Franscis

Dickinson, B. C., & Chang, C. J. (2011). Chemistry and biology of reactive oxygen species in signaling or stress responses. *Nature chemical biology*, *7*(8), 504-511.

Dierick, H. A., & Greenspan, R. J. (2007). Serotonin and neuropeptide F have opposite modulatory effects on fly aggression. *Nature genetics*, *39*(5), 678-682.

Dillen, S., Zels, S., Verlinden, H., Spit, J., Van Wielendaele, P., & Vanden Broeck, J. (2013). Functional characterization of the short neuropeptide F receptor in the desert locust, *Schistocerca gregaria*. *PLoS One*, *8*(1), e53604.

Dogan, D., Deveci, H. A., & Nur, G. (2021). Manifestations of oxidative stress and liver injury in clothianidin exposed Oncorhynchus mykiss. *Toxicology Research*, *10*(3), 501-510.

Dong, J., Wang, K., Li, Y., & Wang, S. (2017). Lethal and sublethal effects of cyantraniliprole on *Helicoverpa assulta* (Lepidoptera: Noctuidae). *Pesticide biochemistry and physiology*, *136*, 58-63.

Doube, B. M. (1990). A functional classification for analysis of the structure of dung beetle assemblages. *Ecological Entomology*, *15*(4), 371-383.

Doube, B., & Marshall, T. S. (2014). *Dung down under: dung beetles for Australia*. Dung Beetle Solutions Australia.

Draper, I., Kurshan, P. T., McBride, E., Jackson, F. R., & Kopin, A. S. (2007). Locomotor activity is regulated by D2-like receptors in Drosophila: an anatomic and functional analysis. *Developmental neurobiology*, *67*(3), 378-393.

Dudley, N., Attwood, S. J., Goulson, D., Jarvis, D., Bharucha, Z. P., & Pretty, J. (2017). How should conservationists respond to pesticides as a driver of biodiversity loss in agroecosystems?. *Biological Conservation*, *209*, 449-453.

Dulac, C., O'Connell, L. A., & Wu, Z. (2014). Neural control of maternal and paternal behaviors. *Science*, *345*(6198), 765-770.

Dworzańska, D., Moores, G., Zamojska, J., Strażyński, P., & Węgorek, P. (2020). The influence of acetamiprid and deltamethrin on the mortality and behaviour of honeybees (*Apis mellifera carnica* Pollman) in oilseed rape cultivations. *Apidologie*, *51*, 1143-1154.

Dyakonova, V. E., & Krushinsky, A. L. (2013). Serotonin precursor (5-hydroxytryptophan) causes substantial changes in the fighting behavior of male crickets, *Gryllus bimaculatus*. *Journal of Comparative Physiology A*, *199*, 601-609.

el Jundi, B., Foster, J. J., Byrne, M. J., Baird, E., & Dacke, M. (2015). Spectral information as an orientation cue in dung beetles. *Biology letters*, *11*(11), 20150656.

el Jundi, B., Foster, J. J., Khaldy, L., Byrne, M. J., Dacke, M., & Baird, E. (2016). A snapshot-based mechanism for celestial orientation. *Current biology*, *26*(11), 1456-1462.

el Jundi, B., Smolka, J., Baird, E., Byrne, M. J., & Dacke, M. (2014). Diurnal dung beetles use the intensity gradient and the polarization pattern of the sky for orientation. *Journal of experimental biology*, *217*(13), 2422-2429.

el Jundi, B., Warrant, E. J., Byrne, M. J., Khaldy, L., Baird, E., Smolka, J., & Dacke, M. (2015). Neural coding underlying the cue preference for celestial orientation. *Proceedings of the National Academy of Sciences*, *112*(36), 11395-11400.

El Naggar, S. E., Mohamed, H. F., & Mahmoud, E. A. (2010). Studies on the morphology and histology of the ovary of red palm weevil female irradiated with gamma rays. *Journal of Asia-Pacific Entomology*, *13*(1), 9-16.

El-Ashram, S., Ali, A. M., Osman, S. E., Huang, S., Shouman, A. M., & Kheirallah, D. A. (2021). Biochemical and histological alterations induced by nickel oxide nanoparticles in the ground beetle *Blaps polychresta* (Forskl, 1775) (Coleoptera: Tenebrionidae). *Plos one*, *16*(9), e0255623.

El-Demerdash, F. M. (2011). Oxidative stress and hepatotoxicity induced by synthetic pyrethroids-organophosphate insecticides mixture in rat. *Journal of Environmental Science and Health, Part C*, *29*(2), 145-158.

Eleftherianos, I., Felföldi, G., Ffrench-Constant, R. H., & Reynolds, S. E. (2009). Induced nitric oxide synthesis in the gut of *Manduca sexta* protects against oral infection by the bacterial pathogen *Photorhabdus luminescens*. *Insect molecular biology*, *18*(4), 507-516.

Ellman, G. L. (1959). Determination of sulfhydryl group. *Arch. Biochem. Biophys*, *82*(1), 70-77.

Ellman, G. L., Courtney, K. D., Andres Jr, V., & Featherstone, R. M. (1961). A new and rapid colorimetric determination of acetylcholinesterase activity. *Biochemical pharmacology*, *7*(2), 88-95.

Elwan, M. A., Richardson, J. R., Guillot, T. S., Caudle, W. M., & Miller, G. W. (2006). Pyrethroid pesticide-induced alterations in dopamine transporter function. *Toxicology and applied pharmacology*, *211*(3), 188-197.

Elzaki, M. E. A., Li, Z. F., Wang, J., Xu, L., Liu, N., Zeng, R. S., & Song, Y. Y. (2020). Activiation of the nitric oxide cycle by citrulline and arginine restores susceptibility of resistant brown planthoppers to the insecticide imidacloprid. *Journal of Hazardous Materials*, *396*, 122755.

Emerald, D. M., & Rameshkumar, T. (2012). Impact of heavy metal zinc on histological changes in the testis of adult male *Odontopus varicornis* (heteroptera: pyrrhocoridae) in relation to reproduction. *International Journal of Recent Scientific Research 3*, 791-794.

Endrődi S. (1985) Einige neue südamerikanische Dynastinae. Entomologische Blätter für Biologie und Systematik der Käfer 81: 69–74.

Erbey, M., Koçakoğlu, N. Ö., & Candan, S. (2021). Histomorphology of the male reproductive system and spermatogenesis of Phyllobius (Ectomogaster) *fulvago Gyllenhal*, 1834 (Coleoptera, Curculionidae): A light and scanning electron microscope study. *Entomological Review*, *101*(1), 23-44.

Errouissi, F., Alvinerie, M., Galtier, P., Kerboeuf, D., & Lumaret, J. P. (2001). The negative effects of the residues of ivermectin in cattle dung using a sustained-release bolus on *Aphodius constans* (Duft.) (Coleoptera: Aphodiidae). *Veterinary Research*, *32*(5), 421-427.

Fabricius, J. C. (1787). A list of recently discovered species of mantissa insects with additional synonyms, observations, descriptions, and corrections. *Mantissa insectorum*, 2, 1

Fadda, M., Hasakiogullari, I., Temmerman, L., Beets, I., Zels, S., & Schoofs, L. (2019). Regulation of feeding and metabolism by neuropeptide F and short neuropeptide F in invertebrates. *Frontiers in endocrinology*, *10*, 64.

Faize, M., Burgos, L., Faize, L., Piqueras, A., Nicolas, E., Barba-Espin, G., ... & Hernandez, J. A. (2011). Involvement of cytosolic ascorbate peroxidase and Cu/Zn-superoxide dismutase for improved tolerance against drought stress. *Journal of experimental botany*, *62*(8), 2599-2613.

Farooqi, M. K., Ali, M., & Amir, M. (2022). Melatonin and Serotonin: Their Synthesis and Effects in Insects. *Chronobiology in Medicine*, *4*(1), 24-28.

Fatma, F., Verma, S., Kamal, A., & Srivastava, A. (2018). Phytotoxicity of pesticides mancozeb and chlorpyrifos: correlation with the antioxidative defence system in Allium cepa. *Physiology and molecular biology of plants*, *24*, 115-123.

Feo, M. L., Ginebreda, A., Eljarrat, E., & Barceló, D. (2010). Presence of pyrethroid pesticides in water and sediments of Ebro River Delta. *Journal of Hydrology*, *393*(3-4), 156-162.

Fernandes, C., Gregati, R., & Bichuette, M. (2011). The first record of external abnormalities in the subterranean *Aegla marginata* Bond-Buckup & Buckup, 1994 (Crustacea: Decapoda: Aeglidae), from a karst area of Southeastern Brazil. *Subterranean Biology*, *8*, 33-38.

Fetter-Pruneda, I., Hart, T., Ulrich, Y., Gal, A., Oxley, P. R., Olivos-Cisneros, L., ... & Kronauer, D. J. (2021). An oxytocin/vasopressin-related neuropeptide modulates social foraging behavior in the clonal raider ant. *PLoS Biology*, *19*(6), e3001305.

Feyereisen, R. (1999). Insect P450 enzymes. *Annual review of entomology*, *44*(1), 507-533.

Figueira, F. H., de Quadros Oliveira, N., de Aguiar, L. M., Escarrone, A. L., Primel, E. G., Barros, D. M., & da Rosa, C. E. (2017). Exposure to atrazine alters behaviour and disrupts the dopaminergic system in *Drosophila melanogaster*. *Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology*, *202*, 94-102.

Filgueiras, B. K., Iannuzzi, L., & Leal, I. R. (2011). Habitat fragmentation alters the structure of dung beetle communities in the Atlantic Forest. *Biological Conservation*, *144*(1), 362-369.

Foley, E., & O'Farrell, P. H. (2003). Nitric oxide contributes to induction of innate immune responses to gram-negative bacteria in Drosophila. *Genes & development*, *17*(1), 115-125.

Forgie, S. A., Paynter, Q., Zhao, Z., Flowers, C., & Fowler, S. V. (2018). Newly released non-native dung beetle species provide enhanced ecosystem services in New Zealand pastures. *Ecological Entomology*, *43*(4), 431-439.

Fouad, E. A., & Abotaleb, A. O. (2021). Sublethal effects of two insecticides, deltamethrin, thiamethoxam and the botanical insecticide (*Foeniculum vulgare* Mill.) on *Callosobruchus maculates* (Fabr.) (Coleoptera: Bruchidae). *Egyptian Academic Journal of Biological Sciences. A, Entomology*, *14*(1), 255-269.

Fountain-Jones, N. M., Jordan, G. J., Baker, T. P., Balmer, J. M., Wardlaw, T., & Baker, S. C. (2015). Living near the edge: being close to mature forest increases the rate of succession in beetle communities. *Ecological Applications*, *25*(3), 800-811.

França, F. M., Frazão, F. S., Korasaki, V., Louzada, J., & Barlow, J. (2017). Identifying thresholds of logging intensity on dung beetle communities to improve the sustainable management of Amazonian tropical forests. *Biological Conservation*, *216*, 115-122.

Frank, K., Brückner, A., Hilpert, A., Heethoff, M., & Blüthgen, N. (2017). Nutrient quality of vertebrate dung as a diet for dung beetles. *Scientific reports*, *7*(1), 12141.

French, A. S., Simcock, K. L., Rolke, D., Gartside, S. E., Blenau, W., & Wright, G. A. (2014). The role of serotonin in feeding and gut contractions in the honeybee. *Journal of insect physiology*, *61*, 8-15.

Fritsche, E., Barenys, M., Klose, J., Masjosthusmann, S., Nimtz, L., Schmuck, M., ... & Tigges, J. (2018). Development of the concept for stem cell-based developmental neurotoxicity evaluation. *Toxicological Sciences*, *165*(1), 14-20.

Fu, K. Y., Guo, W. C., Lü, F. G., Liu, X. P., & Li, G. Q. (2014). Response of the vacuolar ATPase subunit E to RNA interference and four chemical pesticides in *Leptinotarsa decemlineata* (Say). *Pesticide Biochemistry and Physiology*, *114*, 16-23.

Gaikwad, A. R., & Bhawane, G. P. (2015). Study of nidification behavior in three dung beetle species (Scarabaeidae: Scarabaeinae) from south-western Maharashtra, India. *International Journal of Science and Research*, *4*, 1538-1542.

Gaikwad, S. M., & Patil, N. K. (2017). Anatomy of the male reproductive system in *Aeolesthes holosericea* Fabricius, 1787 (Coleoptera: Cerambycidae). *Int J Res Biosci Agric Techn*, *5*(3), 304-307.

Galadima, M., Singh, S., Pawar, A., Khasnabis, S., Dhanjal, D. S., Anil, A. G., ... & Singh, J. (2021). Toxicity, microbial degradation and analytical detection of pyrethroids: a review. *Environmental Advances*, *5*, 100105

Gallo, V. P., Accordi, F., Chimenti, C., Civinini, A., & Crivellato, E. (2016). Catecholaminergic system of invertebrates: comparative and evolutionary aspects in comparison with the octopaminergic system. *International review of cell and molecular biology*, *322*, 363-394.

Gasque, G., Conway, S., Huang, J., Rao, Y., & Vosshall, L. B. (2013). Small molecule drug screening in Drosophila identifies the 5HT2A receptor as a feeding modulation target. *Scientific reports*, *3*(1), srep02120.

Genier, F., & Davis, A. L. (2017). *Digitonthophagus gazella* auctorum: an unfortunate case of mistaken identity for a widely introduced species (Coleoptera: Scarabaeidae: Scarabaeinae: Onthophagini). *Zootaxa*, *4221*(4), 497-500.

Génier, F., & Krell, F. T. (2017). Case 3722–*Scarabaeus gazella* Fabricius, 1787 (currently *Digitonthophagus gazella* or *Onthophagus gazella*; Insecta, Coleoptera, Scarabaeidae): proposed conservation of usage of the specific name by designation of a neotype. *The Bulletin of Zoological Nomenclature*, *74*(1), 78-87.

Genier, F., & Moretto, P. (2017). *Digitonthophagus* Balthasar, 1959: taxonomy, systematics, and morphological phylogeny of the genus revealing an African species complex (Coleoptera: Scarabaeidae: Scarabaeinae). *Zootaxa*, *4248*(1), 1-110.

Genise, J. F., & Genise, J. F. (2017). Trace Fossils of Dung Beetles. *Ichnoentomology: Insect Traces in Soils and Paleosols*, 173-192.

Giménez Gómez, V. C., Verdú, J. R., Gómez-Cifuentes, A., Vaz-de-Mello, F. Z., & Zurita, G. A. (2018). Influence of land use on the trophic niche overlap of dung beetles in the semideciduous Atlantic Forest of Argentina. *Insect Conservation and Diversity*, *11*(6), 554-564.

Giménez Gómez, V. C., Verdú, J. R., Guerra Alonso, C. B., & Zurita, G. A. (2018). Relationship between land uses and diversity of dung beetles (Coleoptera: Scarabaeinae) in the southern Atlantic forest of Argentina: which are the key factors?. *Biodiversity and Conservation*, *27*(12), 3201-3213.

Gomes-Copeland, K. K. P., Meireles, C. G., Gomes, J. V. D., Torres, A. G., Sinoti, S. B. P., Fonseca-Bazzo, Y. M., ... & Silveira, D. (2022). *Hippeastrum stapfianum* (Kraenzl.) RS Oliveira & Dutilh (Amaryllidaceae) Ethanol extract activity on acetylcholinesterase and PPAR-α/γ Receptors. *Plants*, *11*(22), 3179.

Gómez-Cifuentes, A., Gómez, V. C. G., Moreno, C. E., & Zurita, G. A. (2019). Tree retention in cattle ranching systems partially preserves dung beetle diversity and functional groups in the semideciduous Atlantic forest: The role of microclimate and soil conditions. *Basic and Applied Ecology*, *34*, 64-74.

González-Megías, A., & Sánchez-Piñero, F. (2003). Effects of brood parasitism on host reproductive success: evidence from larval interactions among dung beetles. *Oecologia*, *134*, 195-202.

González-Tokman, D., Martínez, I., Villalobos-Ávalos, Y., Munguía-Steyer, R., del Rosario Ortiz-Zayas, M., Cruz-Rosales, M., & Lumaret, J. P. (2017). Ivermectin alters reproductive success, body condition and sexual trait expression in dung beetles. *Chemosphere*, *178*, 129-135.

Grandjean, P., & Landrigan, P. J. (2006). Developmental neurotoxicity of industrial chemicals. *The Lancet*, *368*(9553), 2167-2178.

Grandjean, P., & Landrigan, P. J. (2014). Neurobehavioural effects of developmental toxicity. *The lancet neurology*, *13*(3), 330-338.

Gregory, N., Gómez, A., Oliveira, T. M. F. D. S., & Nichols, E. (2015). Big dung beetles dig deeper: trait-based consequences for faecal parasite transmission. *International Journal for Parasitology*, *45*(2-3), 101-105.

Gruber, C. W. (2014). Physiology of invertebrate oxytocin and vasopressin neuropeptides. *Experimental physiology*, *99*(1), 55-61.

Gruber, C. W., & Muttenthaler, M. (2012). Discovery of defense-and neuropeptides in social ants by genome-mining. *PLoS One*, *7*(3), e32559.

Gruber, C. W., Koehbach, J., & Muttenthaler, M. (2012). Exploring bioactive peptides from natural sources for oxytocin and vasopressin drug discovery. *Future medicinal chemistry*, *4*(14), 1791-1798.

Grünewald, B., & Siefert, P. (2019). Acetylcholine and its receptors in honeybees: involvement in development and impairments by neonicotinoids. *Insects*, *10*(12), 420.

Gruntenko, N. E., & Rauschenbach, I. Y. (2018). The role of insulin signalling in the endocrine stress response in *Drosophila melanogaster*: A mini-review. *General and Comparative Endocrinology*, *258*, 134-139.

Gruntenko, N., Chentsova, N. A., Bogomolova, E. V., Karpova, E. K., Glazko, G. V., Faddeeva, N. V., ... & Rauschenbach, I. Y. (2004). The effect of mutations altering biogenic amine metabolism in Drosophila on viability and the response to environmental stresses. *Archives of Insect Biochemistry and Physiology: Published in Collaboration with the Entomological Society of America*, *55*(2), 55-67.

Gui, Z., Hou, C., Liu, T., Qin, G., Li, M., & Jin, B. (2009). Effects of insect viruses and pesticides on glutathione S-transferase activity and gene expression in *Bombyx mori*. *Journal of Economic Entomology*, *102*(4), 1591-1598.

Gullan, P. J., & Cranston, P. S. (2014). *The insects: an outline of entomology*. John Wiley & Sons.

Gupta, D., Chandra, K., & Khan, S. (2014). An updated checklist of scarabaeoid beetles (Coleoptera: Scarabaeoidea) of Pench Tiger Reserve, Madhya Pradesh, India. *Journal of Entomology and Zoology Studies*, *2*(5), 225-240.

Gupta, S. C., Mishra, M., Sharma, A., Balaji, T. D., Kumar, R., Mishra, R. K., & Chowdhuri, D. K. (2010). Chlorpyrifos induces apoptosis and DNA damage in Drosophila through generation of reactive oxygen species. *Ecotoxicology and Environmental Safety*, *73*(6), 1415-1423.

Gupta, S. C., Mishra, M., Sharma, A., Balaji, T. D., Kumar, R., Mishra, R. K., & Chowdhuri, D. K. (2010). Chlorpyrifos induces apoptosis and DNA damage in Drosophila through generation of reactive oxygen species. *Ecotoxicology and Environmental Safety*, *73*(6), 1415-1423.

Gutiérrez, Y., Ramos, G. S., Tomé, H. V., Oliveira, E. E., & Salaro, A. L. (2017). Bt i-based insecticide enhances the predatory abilities of the backswimmer *Buenoa tarsalis* (Hemiptera: Notonectidae). *Ecotoxicology*, *26*, 1147-1155.

Gutiérrez, Y., Santos, H. P., Serrão, J. E., & Oliveira, E. E. (2016). Deltamethrin-mediated toxicity and cytomorphological changes in the midgut and nervous system of the mayfly Callibaetis radiatus. *PLoS One*, *11*(3), e0152383.

Halffter, G., & Edmonds, W. D. (1982). The nesting behavior of dung beetles (Scarabaeinae). An ecological and evolutive approach. *The nesting behavior of dung beetles (Scarabaeinae). An ecological and evolutive approach.*

Halffter, G., & Matthews, E. G. (1966). The natural history of dung beetles of the subfamily Scarabaeinae (Coleoptera, Scarabaeidae).

Halffter, G., Cortez, V., Gómez, E. J., Rueda, C. M., Ciares, W., & Verdú, J. R. (2013). *A review of subsocial behavior in Scarabaeinae rollers (Insecta: Coleoptera): an evolutionary approach*. México: Sociedad Entomológica Aragonesa.

Halliwell, B., & Gutteridge, J. M. (2015). *Free radicals in biology and medicine*. Oxford university press, USA.

Hallmann, C. A., Sorg, M., Jongejans, E., Siepel, H., Hofland, N., Schwan, H., ... & De Kroon, H. (2017). More than 75 percent decline over 27 years in total flying insect biomass in protected areas. *PloS one*, *12*(10), e0185809.

Hanski, I., & Cambefort, Y. (Eds.). (2014). *Dung beetle ecology* (Vol. 1195). Princeton University Press.

Hao, S., Gestrich, J. Y., Zhang, X., Xu, M., Wang, X., Liu, L., & Wei, H. (2021). Neurotransmitters affect larval development by regulating the activity of prothoracicotropic hormone-releasing neurons in Drosophila melanogaster. *Frontiers in Neuroscience*, *15*, 653858.

Harano, K. I., Sasaki, K., Nagao, T., & Sasaki, M. (2008). Influence of age and juvenile hormone on brain dopamine level in male honeybee (*Apis mellifera*): association with reproductive maturation. *Journal of insect physiology*, *54*(5), 848-853.

Hartenstein, V. (2006). The neuroendocrine system of invertebrates: a developmental and evolutionary perspective. *Journal of endocrinology*, *190*(3), 555-570.

Hasebe, M., & Shiga, S. (2021). Oviposition-promoting pars intercerebralis neurons show period-dependent photoperiodic changes in their firing activity in the bean bug. *Proceedings of the National Academy of Sciences*, *118*(9), e2018823118.

Haselton, A. T., Downer, K. E., Zylstra, J., & Stoffolano, J. G. (2009). Serotonin inhibits protein feeding in the blow fly, *Phormia regina* (Meigen). *Journal of insect behavior*, *22*, 452-463.

Hassanein, N. M., El-Sanhory, H. M., Ali, A. A., & Hamed, M. R. (2018). Behavioral and Neurochemical effects of Deltamethrin Exposure in Rats: Gender Dimorphic Differences. *Current Science International 7*(4), 785-798.

Hauser, F., Cazzamali, G., Williamson, M., Park, Y., Li, B., Tanaka, Y., ... & Grimmelikhuijzen, C. J. (2008). A genome-wide inventory of neurohormone GPCRs in the red flour beetle Tribolium castaneum. *Frontiers in neuroendocrinology*, *29*(1), 142-165.

Heinrich, R., & Ganter, G. K. (2007). Nitric oxide/cyclic GMP signaling and insect behavior. *Advances in Experimental Biology*, *1*, 107-127.

Hensgen, R., Dippel, S., Hümmert, S., Jahn, S., Seyfarth, J., & Homberg, U. (2022). Myoinhibitory peptides in the central complex of the locust Schistocerca gregaria and colocalization with locustatachykinin-related peptides. *Journal of Comparative Neurology*, *530*(15), 2782-2801.

Hernández, M. I., Monteiro, L. R., & Favila, M. E. (2011). The role of body size and shape in understanding competitive interactions within a community of Neotropical dung beetles. *Journal of Insect Science*, *11*(1), 13.

Hilker, M., & Meiners, T. (2002). Induction of plant responses to oviposition and feeding by herbivorous arthropods: a comparison. In *Proceedings of the 11th International Symposium on Insect-Plant Relationships* (pp. 181-192). Springer Netherlands.

Hirashima, A., Sukhanova, M. J., & Rauschenbach, I. Y. (2000). Biogenic amines in Drosophila virilis under stress conditions. *Bioscience, biotechnology, and biochemistry*, *64*(12), 2625-2630.

Hodgetts, R. B., & O'Keefe, S. L. (2006). Dopa decarboxylase: a model gene-enzyme system for studying development, behavior, and systematics. *Annuual Review of Entomology*, *51*, 259-284.

Holt, R. A., Subramanian, G. M., Halpern, A., Sutton, G. G., Charlab, R., Nusskern, D. R., ... & Hoffman, S. L. (2002). The genome sequence of the malaria mosquito *Anopheles gambiae*. *science*, *298*(5591), 129-149.

Holter, P. (2016). Herbivore dung as food for dung beetles: elementary coprology for entomologists. *Ecological Entomology*, *41*(4), 367-377.

Hołyńska-Iwan, I., & Szewczyk-Golec, K. (2020). Pyrethroids: how they affect human and animal health?. *Medicina*, *56*(11), 582.

Hu, N., Huang, Y., Gao, X., Li, S., Yan, Z., Wei, B., & Yan, R. (2017). Effects of dextran sulfate sodium induced experimental colitis on cytochrome P450 activities in rat liver, kidney and intestine. *Chemico-Biological Interactions*, *271*, 48-58.

Huang, H., Xu, Y., & van den Pol, A. N. (2011). Nicotine excites hypothalamic arcuate anorexigenic proopiomelanocortin neurons and orexigenic neuropeptide Y neurons: similarities and differences. *Journal of neurophysiology*, *106*(3), 1191-1202.

Huang, Q., Bentz, J., & Sherald, J. L. (2006). Fast, easy and efficient DNA extraction and one-step polymerase chain reaction for the detection of Xylella fastidiosa in potential insect vectors. *Journal of Plant Pathology*, 77-81.

Huang, Q., Bentz, J., & Sherald, J. L. (2006). Fast, easy and efficient DNA extraction and one-step polymerase chain reaction for the detection of Xylella fastidiosa in potential insect vectors. *Journal of Plant Pathology*, 77-81.

Huang, Y. M., Hsu, H. Y., & Hsu, C. L. (2016). Development of electrochemical method to detect bacterial count, *Listeria monocytogenes*, and somatic cell count in raw milk. *Journal of the Taiwan Institute of Chemical Engineers*, *62*, 39-44.

Huerta, C., & García-Hernández, M. (2013). Nesting behavior of *Onthophagus incensus* Say, 1835 (Coleoptera: Scarabaeidae: Scarabaeinae). *The Coleopterists Bulletin*, *67*(2), 161-166.

Huerta, C., Cruz-Rosales, M., González-Vainer, P., Chamorro-Florescano, I., Rivera, J. D., & Favila, M. E. (2023). The reproductive behavior of Neotropical dung beetles. *Frontiers in Ecology and Evolution*, *11*, 1102477.

Huerta, C., Martínez, I., & García-Hernández, M. (2010). Preimaginal development of *Onthophagus incensus* Say, 1835 (Coleoptera: Scarabaeidae: Scarabaeinae). *The Coleopterists Bulletin*, *64*(4), 365-371.

Huerta, C., Martínez, M. I., de Oca, E. M., Cruz-Rosales, M., & Favila, M. E. (2013). The role of dung beetles in the sustainability of pasture and grasslands. *WIT Transactions on State-of-the-art in Science and Engineering*, *64*.

Hunt, J., & Simmons, L. W. (1998). Patterns of parental provisioning covary with male morphology in a horned beetle (*Onthophagus taurus*) (Coleoptera: Scarabaeidae). *Behavioral Ecology and Sociobiology*, *42*, 447-451.

Hunt, J., & Simmons, L. W. (2000). Maternal and paternal effects on offspring phenotype in the dung beetle *Onthophagus taurus*. *Evolution*, *54*(3), 936-941.

Hussain, A., Üçpunar, H. K., Zhang, M., Loschek, L. F., & Grunwald Kadow, I. C. (2016). Neuropeptides modulate female chemosensory processing upon mating in Drosophila. *PLoS biology*, *14*(5), e1002455.

Hussain, M., Ghazanfar, M., Malik, M. F., Umar, M., & Younas, M. (2021). Effect of Endectocides and Antibiotic Dung Poisoning on Mortality of Dung Beetle Species: Antibiotic Dung Poisoning in Diferent Species. *Biological Sciences-PJSIR*, *64*(3), 211-216.

Immonen, E. V., Dacke, M., Heinze, S., & El Jundi, B. (2017). Anatomical organization of the brain of a diurnal and a nocturnal dung beetle. *Journal of Comparative Neurology*, *525*(8), 1879-1908.

Ishikawa, I., & Iwasa, M. (2019). Effects of eprinomectin on the survival, reproduction and feeding activity of the dung beetles, *Onthophagus lenzii* Harold, and rare species, *Copris ochus* Motschulsky (Coleoptera: Scarabaeidae). *Bulletin of entomological research*, *109*(2), 191-198.

Iwasa, M., Maruo, T., Ueda, M., & Yamashita, N. (2007). Adverse effects of ivermectin on the dung beetles, *Caccobius jessoensis* Harold, and rare species, *Copris ochus* Motschulsky and *Copris acutidens* Motschulsky (Coleoptera: Scarabaeidae), in Japan. *Bulletin of Entomological Research*, *97*(6), 619-625.

Iwasa, M., Moki, Y., & Takahashi, J. (2015). Effects of the activity of coprophagous insects on greenhouse gas emissions from cattle dung pats and changes in amounts of nitrogen, carbon, and energy. *Environmental Entomology*, *44*(1), 106-113.

İzzetoğlu, G. T., & Gülmez, M. (2018). Macroscopic and histological structures of testes in three different Tentyria species. *Kahramanmaraş Sütçü İmam Üniversitesi Tarım ve Doğa Dergisi*, *21*(3), 433-437.

Jacklet, J. W. (1997). Nitric oxide signaling in invertebrates. *Invertebrate Neuroscience*, *3*, 1-14.

Jacobs, C. T., & Scholtz, C. H. (2015). A review on the effect of macrocyclic lactones on dung-dwelling insects: Toxicity of macrocyclic lactones to dung beetles. *Onderstepoort Journal of Veterinary Research*, *82*(1), 1-8.

James, R. R., & Xu, J. (2012). Mechanisms by which pesticides affect insect immunity. *Journal of invertebrate pathology*, *109*(2), 175-182.

Jang, Y. H., Chae, H. S., & Kim, Y. J. (2017). Female-specific myoinhibitory peptide neurons regulate mating receptivity in *Drosophila melanogaster*. *Nature communications*, *8*(1), 1630.

Jaszczak, J. S., Wolpe, J. B., Dao, A. Q., & Halme, A. (2015). Nitric oxide synthase regulates growth coordination during Drosophila melanogaster imaginal disc regeneration. *Genetics*, *200*(4), 1219-1228.

Johari, H., Pandya, N., Sharma, P., & Parikh, P. (2023). Ecological role of *Onthophagus taurus* (Schreber) in soil nutrient mobilization. *Indian Journal of Entomology*.

Johnson, T. O., Ojo, O. A., Ikiriko, S., Ogunkua, J., Akinyemi, G. O., Rotimi, D. E., ... & Adegboyega, A. E. (2021). Biochemical evaluation and molecular docking assessment of Cymbopogon citratus as a natural source of acetylcholine esterase (AChE)-targeting insecticides. *Biochemistry and Biophysics Reports*, *28*, 101175.

Ju, J., Wu, X., Mao, W., Zhang, C., Ge, W., Wang, Y., ... & Zhu, Y. (2023). The growth toxicity and neurotoxicity mechanism of waterborne TBOEP to nematodes: Insights from transcriptomic and metabolomic profiles. *Aquatic Toxicology*, *256*, 106401.

Jugovic, J., & Koprivnikar, N. (2021). Rolling in the deep: Morphological variation as an adaptation to different nesting behaviours of coprophagous Scarabaeoidea. *Biologia*, *76*(4), 1161-1173.

Kabadov, O. N. (2006). *The lamellicorn beetle subfamily Scarabaeinae (Insecta: Coleoptera: Scarabaeidae) in the fauna of Russia and adjacent countries*. KMK Sci Press.

Kahsai, L., & Winther, Å. M. (2011). Chemical neuroanatomy of the Drosophila central complex: distribution of multiple neuropeptides in relation to neurotransmitters. *Journal of Comparative Neurology*, *519*(2), 290-315.

Kakkar, N., & Gupta, S. K. (2009). Temporal variations in dung beetle (Coleoptera: Scarabaeidae) assemblages in Kurukshetra, Haryana, India. *Journal of Threatened Taxa*, 481-483.

Kakkar, P., Das, B., & Viswanathan, P. N. (1984). A modified spectrophotometric assay of superoxide dismutase.

Kamhi, J. F., Arganda, S., Moreau, C. S., & Traniello, J. F. (2017). Origins of aminergic regulation of behavior in complex insect social systems. *Frontiers in Systems Neuroscience*, *11*, 74.

Kannan, K., & Jain, S. K. (2004). Effect of vitamin B6 on oxygen radicals, mitochondrial membrane potential, and lipid peroxidation in H2O2-treated U937 monocytes. *Free Radical Biology and Medicine*, *36*(4), 423-428.

Kannan, K., Galizia, C. G., & Nouvian, M. (2022). Olfactory strategies in the defensive behaviour of insects. *Insects*, *13*(5), 470.

Keov, P., Liutkevičiūtė, Z., Hellinger, R., Clark, R. J., & Gruber, C. W. (2018). Discovery of peptide probes to modulate oxytocin-type receptors of insects. *Scientific reports*, *8*(1), 10020.

Kerman, K., Roggero, A., Rolando, A., & Palestrini, C. (2023). Sexual horn dimorphism predicts the expression of active personality trait: Males perform better only in the sexually horn dimorphic Onthophagus dung beetle. *Journal of Ethology*, *41*(2), 163-176.

Ketterson, E. D., & Nolan Jr, V. (1992). Hormones and life histories: an integrative approach. *The American Naturalist*, *140*, S33-S62.

Khadakkar, S. S., Tiple, A. D., & Khurad, A. M. (2019). Scarab beetles (Coleoptera: Scarabaeoidea: Scarabaeidae) of Vidarbha, India, with notes on distribution. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*, *89*, 1239-1249.

Khalil, H. M., Azouz, R. A., Hozyen, H. F., Aljuaydi, S. H., AbuBakr, H. O., Emam, S. R., & Al-Mokaddem, A. K. (2022). Selenium nanoparticles impart robust neuroprotection against deltamethrin-induced neurotoxicity in male rats by reversing behavioral alterations, oxidative damage, apoptosis, and neuronal loss. *NeuroToxicology*, *91*, 329-339.

Khare, A., Chhawani, N., & Kumari, K. (2019). Glutathione reductase and catalase as potential biomarkers for synergistic intoxication of pesticides in fish. *Biomarkers*, *24*(7), 666-676.

Kim, S. H., Park, G., Park, J. S., & Kwon, H. C. (2021). Antifungal Streptomyces spp., plausible partners for brood-caring of the dung beetle *Copris tripartitus*. *Microorganisms*, *9*(9), 1980.

Kim, S. M., Su, C. Y., & Wang, J. W. (2017). Neuromodulation of innate behaviors in Drosophila. *Annual Review of Neuroscience*, *40*, 327-348.

Kim, Y. J., Bartalska, K., Audsley, N., Yamanaka, N., Yapici, N., Lee, J. Y., ... & Dickson, B. J. (2010). MIPs are ancestral ligands for the sex peptide receptor. *Proceedings of the National Academy of Sciences*, *107*(14), 6520-6525.

Kim, Y. J., Žitňan, D., Cho, K. H., Schooley, D. A., Mizoguchi, A., & Adams, M. E. (2006a). Central peptidergic ensembles associated with organization of an innate behavior. *Proceedings of the National Academy of Sciences*, *103*(38), 14211-14216.

Kim, Y. J., Žitňan, D., Galizia, C. G., Cho, K. H., & Adams, M. E. (2006b). A command chemical triggers an innate behavior by sequential activation of multiple peptidergic ensembles. *Current Biology*, *16*(14), 1395-1407.

Kishi, S. (2014). Brood ball size but not egg size correlates with maternal size in a dung beetle, *Onthophagus atripennis*. *Ecological Entomology*, *39*(3), 355-360.

Klingenberg, C. P., & Monteiro, L. R. (2005). Distances and directions in multidimensional shape spaces: implications for morphometric applications. *Systematic Biology*, *54*(4), 678-688.

Ko, K. I., Root, C. M., Lindsay, S. A., Zaninovich, O. A., Shepherd, A. K., Wasserman, S. A., ... & Wang, J. W. (2015). Starvation promotes concerted modulation of appetitive olfactory behavior via parallel neuromodulatory circuits. *Elife*, *4*, e08298.

Kolodziejczyk, A., & Nässel, D. R. (2011). Myoinhibitory peptide (MIP) immunoreactivity in the visual system of the blowfly Calliphora vomitoria in relation to putative clock neurons and serotonergic neurons. *Cell and Tissue Research*, *345*, 125-135.

Konus, M., Koy, C., Mikkat, S., Kreutzer, M., Zimmermann, R., Iscan, M., & Glocker, M. O. (2013). Molecular adaptations of Helicoverpa armigera midgut tissue under pyrethroid insecticide stress characterized by differential proteome analysis and enzyme activity assays. *Comparative Biochemistry and Physiology Part D: Genomics and Proteomics*, *8*(2), 152-162.

Kori, R. K., Singh, M. K., Jain, A. K., & Yadav, R. S. (2018). Neurochemical and behavioral dysfunctions in pesticide exposed farm workers: a clinical outcome. *Indian Journal of Clinical Biochemistry*, *33*, 372-381.

Koto, A., Motoyama, N., Tahara, H., McGregor, S., Moriyama, M., Okabe, T., ... & Keller, L. (2019). Oxytocin/vasopressin-like peptide inotocin regulates cuticular hydrocarbon synthesis and water balancing in ants. *Proceedings of the National Academy of Sciences*, *116*(12), 5597-5606.

Kravitz, E. A., & Huber, R. (2003). Aggression in invertebrates. *Current opinion in neurobiology*, *13*(6), 736-743.

Krikken, J. (2009) Drepanocerine dung beetles: a group overview, with description of new taxa (Coleoptera: Scarabaeidae: Scarabaeinae). Haroldius, 4, 3–30

Krůček, T., Korandová, M., Šerý, M., Frydrychová, R. Č., Krůček, T., Korandová, M., & Szakosová, K. (2015). Effect of low doses of herbicide paraquat on antioxidant defense in Drosophila. *Archives of insect biochemistry and physiology*, *88*(4), 235-248.

Lai, A. G., Doherty, C. J., Mueller-Roeber, B., Kay, S. A., Schippers, J. H., & Dijkwel, P. P. (2012). Circadian clock-associated 1 regulates ROS homeostasis and oxidative stress responses. *Proceedings of the National Academy of Sciences*, 109(42), 17129-17134.

Laini, A., Roggero, A., Palestrini, C., & Rolando, A. (2022). Continuous phenotypic modulation explains male horn allometry in three dung beetle species. *Scientific Reports*, *12*(1), 8691.

Lange, A. B., & Orchard, I. (2021). Biogenic monoamines in the control of triatomine physiology with emphasis on rhodnius prolixus. In *Triatominae-The Biology of Chagas Disease Vectors* (pp. 145-166). Cham: Springer International Publishing.

Lange, A. B., Alim, U., Vandersmissen, H. P., Mizoguchi, A., Vanden Broeck, J., & Orchard, I. (2012). The distribution and physiological effects of the myoinhibiting peptides in the kissing bug, Rhodnius prolixus. *Frontiers in neuroscience*, *6*, 98.

Latha, T., & Sabu, T. K. (2018). Dung beetle (Coleoptera: Scarabaeinae) community structure across a forest-agriculture habitat ecotonein South Western Ghats. *International Journal of Environment, Agriculture and Biotechnology*, *3*(5), 266204.

Lavarías, S., Arrighetti, F., & Siri, A. (2017). Histopathological effects of cypermethrin and *Bacillus thuringiensis* var. israelensis on midgut of *Chironomus calligraphus* larvae (Diptera: Chironomidae). *Pesticide Biochemistry and Physiology*, *139*, 9-16.

Lavorel, S., & Garnier, E. (2002). Predicting changes in community composition and ecosystem functioning from plant traits: revisiting the Holy Grail. *Functional ecology*, *16*(5), 545-556.

Lawler, S. P., Dritz, D. A., Johnson, C. S., & Wolder, M. (2008). Does synergized pyrethrin applied over wetlands for mosquito control affect Daphnia magna zooplankton or *Callibaetis californicus* mayflies?. *Pest Management Science: formerly Pesticide Science*, *64*(8), 843-847.

Lee, G., Bahn, J. H., & Park, J. H. (2006). Sex-and clock-controlled expression of the neuropeptide F gene in Drosophila. *Proceedings of the National Academy of Sciences*, 103(33), 12580-12585.

Li, F., Hu, J., Tian, J., Xu, K., Ni, M., Wang, B., ... & Li, B. (2016). Effects of phoxim on nutrient metabolism and insulin signaling pathway in silkworm midgut. *Chemosphere*, *146*, 478-485.

Li, F., Li, K., Wu, L. J., Fan, Y. L., & Liu, T. X. (2020). Role of biogenic amines in oviposition by the diamondback moth, *Plutella xylostella* L. *Frontiers in Physiology*, *11*, 475.

Li, K., Yu, S., Yang, Y., He, Y. Z., & Wu, Y. (2023). Mechanisms of feeding cessation in *Helicoverpa armigera* larvae exposed to *Bacillus thuringiensis* Cry1Ac toxin. *Pesticide Biochemistry and Physiology*, *195*, 105565.

Li, M., Zhang, L., Wu, Y., Li, Y., Chen, X., Chen, J., ... & Han, Q. (2022). Deletion of the Serotonin Receptor 7 Gene Changed the Development and Behavior of the Mosquito, Aedes aegypti. *Insects*, *13*(8), 671.

Li, S. G., Li, M. Y., Huang, Y. Z., Hua, R. M., Lin, H. F., He, Y. J., ... & Liu, Z. Q. (2013). Fumigant activity of Illicium verum fruit extracts and their effects on the acetylcholinesterase and glutathione S-transferase activities in adult *Sitophilus zeamais*. *Journal of pest science*, *86*, 677-683.

Libersat, F., & Pflueger, H. J. (2004). Monoamines and the orchestration of behavior. *Bioscience*, *54*(1), 17-25.

Lin, H. Y., Kuo, H. W., Song, Y. L., & Cheng, W. (2020). Cloning and characterization of DOPA decarboxylase in *Litopenaeus vannamei* and its roles in catecholamine biosynthesis, immunocompetence, and antibacterial defense by dsRNA-mediated gene silencing. *Developmental & Comparative Immunology*, *108*, 103668.

Linn, M., Glaser, S. M., Peng, T., & Grüter, C. (2020). Octopamine and dopamine mediate waggle dance following and information use in honeybees. *Proceedings of the Royal Society B*, *287*(1936), 20201950.

Linz, D. M., Hu, Y., & Moczek, A. P. (2019). The origins of novelty from within the confines of homology: the developmental evolution of the digging tibia of dung beetles. *Proceedings of the Royal Society B*, *286*(1896), 20182427.

Liu, F., Baggerman, G., Schoofs, L., & Wets, G. (2008). The construction of a bioactive peptide database in Metazoa. *Journal of proteome research*, *7*(9), 4119-4131.

Liu, N., & Zhang, L. (2004). CYP4AB1, CYP4AB2, and Gp-9 gene overexpression associated with workers of the red imported fire ant, *Solenopsis invicta* Buren. *Gene*, *327*(1), 81-87.

Liu, S. S., Li, A. Y., Witt, C. M., & de León, A. A. P. (2013). Effects of reserpine on reproduction and serotonin immunoreactivity in the stable fly *Stomoxys calcitrans* (L.). *Journal of insect physiology*, *59*(9), 974-982.

Liu, X., Zhang, Y., Zhou, Z., Zhao, Z., & Liu, X. (2013). Cloning and sequence analysis of neuropeptide F from the oriental tobacco budworm *Helicoverpa assulta* (Guenée). *Archives of Insect Biochemistry and Physiology*, *84*(3), 115-129.

Liutkevičiūtė, Z., Gil-Mansilla, E., Eder, T., Casillas-Pérez, B., Di Giglio, M. G., Muratspahić, E., ... & Gruber, C. W. (2018). Oxytocin-like signaling in ants influences metabolic gene expression and locomotor activity. *FASEB journal: official publication of the Federation of American Societies for Experimental Biology*, *32*(12), 6808.

Liutkeviciute, Z., Koehbach, J., Eder, T., Gil-Mansilla, E., & Gruber, C. W. (2016). Global map of oxytocin/vasopressin-like neuropeptide signalling in insects. *Scientific reports*, *6*(1), 39177.

Livak, K. J., & Schmittgen, T. D. (2001). Analysis of relative gene expression data using real-time quantitative PCR and the 2− ΔΔCT method. *methods*, *25*(4), 402-408.

Lockshin, R. A., & Zakeri, Z. (2004). Apoptosis, autophagy, and more. *The international journal of biochemistry & cell biology*, *36*(12), 2405-2419.

Lu, K., Song, Y., & Zeng, R. (2021). The role of cytochrome P450-mediated detoxification in insect adaptation to xenobiotics. *Current Opinion in Insect Science*, *43*, 103-107.

Lubawy, J., Urbański, A., Colinet, H., Pflüger, H. J., & Marciniak, P. (2020). Role of the insect neuroendocrine system in the response to cold stress. *Frontiers in physiology*, *11*, 376.

Lumaret, J. P., Errouissi, F., Floate, K., Rombke, J., & Wardhaugh, K. (2012). A review on the toxicity and non-target effects of macrocyclic lactones in terrestrial and aquatic environments. *Current Pharmaceutical Biotechnology*, *13*(6), 1004-1060.

Lushchak, V. I. (2012). Glutathione homeostasis and functions: potential targets for medical interventions. *Journal of amino acids*, *2012*.

Lushchak, V. I., Matviishyn, T. M., Husak, V. V., Storey, J. M., & Storey, K. B. (2018). Pesticide toxicity: a mechanistic approach. *EXCLI journal*, *17*, 1101.

Ma, Q., Cao, Z., Yu, Y., Yan, L., Zhang, W., Shi, Y., ... & Huang, H. (2017). Bombyx neuropeptide G protein–coupled receptor A7 is the third cognate receptor for short neuropeptide F from silkworm. *Journal of Biological Chemistry*, *292*(50), 20599-20612.

Macagno, A. L., Moczek, A. P., & Pizzo, A. (2016). Rapid divergence of nesting depth and digging appendages among tunneling dung beetle populations and species. *The American Naturalist*, *187*(5), E143-E151.

Macagno, A. L., Zattara, E. E., Ezeakudo, O., Moczek, A. P., & Ledón-Rettig, C. C. (2018). Adaptive maternal behavioral plasticity and developmental programming mitigate the transgenerational effects of temperature in dung beetles. *Oikos*, *127*(9), 1319-1329.

Machado, G., & Trumbo, S. T. (2018). Parental care. *Insect Behavior: from Mechanisms to Ecological and Evolutionary Consequences. A. Cordobe-Aguilar, D. Gonzalez-Tokman, and I. Gonzalez-Santoyo (eds.). Oxford University Press, Oxford*, 203-218.

Mahmoodvand, M., Mahmoudvand, M., Abbasipour, H., Garjan, A. S., & Bandani, A. R. (2012). Decrease in pupation and adult emergence of *Plutella xylostella* (L.) treated by hexaflumuron. *Chilean Journal of agricultural research*, *72*(2).

Majeed, Z. R., Abdeljaber, E., Soveland, R., Cornwell, K., Bankemper, A., Koch, F., & Cooper, R. L. (2016). Modulatory action by the serotonergic system: behavior and neurophysiology in Drosophila melanogaster. *Neural plasticity*, *2016*.

Malita, A., Kubrak, O., Koyama, T., Ahrentløv, N., Texada, M. J., Nagy, S., ... & Rewitz, K. (2022). A gut-derived hormone suppresses sugar appetite and regulates food choice in Drosophila. *Nature Metabolism*, *4*(11), 1532-1550.

Manikandan, P., & Nagini, S. (2018). Cytochrome P450 structure, function and clinical significance: a review. *Current drug targets*, *19*(1), 38-54.

Mann, C. M., Barnes, S., Offer, B., & Wall, R. (2015). Lethal and sub-lethal effects of faecal deltamethrin residues on dung-feeding insects. *Medical and Veterinary Entomology*, *29*(2), 189-195.

Manning, P., & Cutler, G. C. (2020). Exposure to low concentrations of pesticide stimulates ecological functioning in the dung beetle Onthophagus nuchicornis. *PeerJ*, *8*, e10359.

Manning, P., Slade, E. M., Beynon, S. A., & Lewis, O. T. (2016). Functionally rich dung beetle assemblages are required to provide multiple ecosystem services. *Agriculture, Ecosystems & Environment*, *218*, 87-94.

Mao, W., Rupasinghe, S. G., Johnson, R. M., Zangerl, A. R., Schuler, M. A., & Berenbaum, M. R. (2009). Quercetin-metabolizing CYP6AS enzymes of the pollinator Apis mellifera (Hymenoptera:

Apidae). *Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology*, *154*(4), 427-434.

Marder, E. (2012). Neuromodulation of neuronal circuits: back to the future. *Neuron*, *76*(1), 1-11.

Martano, M., Massa, R., Restucci, B., Caprio, E., Griffo, R., Power, K., & Maiolino, P. (2023). Microwaves Induce Histological Alteration of Ovaries and Testis in *Rhynchophorus ferrugineus* Oliv.(Coleoptera: Curculionidae). *Agronomy*, *13*(2), 420.

Martelli, F., Zhongyuan, Z., Wang, J., Wong, C. O., Karagas, N. E., Roessner, U., ... & Batterham, P. (2020). Low doses of the neonicotinoid insecticide imidacloprid induce ROS triggering neurological and metabolic impairments in Drosophila. *Proceedings of the National Academy of Sciences*, *117*(41), 25840-25850.

Martínez, A. (1995). Nitric oxide synthase in invertebrates. *The Histochemical Journal*, *27*, 770-776.

Martínez, I., Lumaret, J. P., Zayas, R. O., & Kadiri, N. (2017). The effects of sublethal and lethal doses of ivermectin on the reproductive physiology and larval development of the dung beetle *Euoniticellus intermedius* (Coleoptera: Scarabaeidae). *The Canadian Entomologist*, *149*(4), 461-472.

Martínez, I., Lumaret, J. P., Zayas, R. O., & Kadiri, N. (2017). The effects of sublethal and lethal doses of ivermectin on the reproductive physiology and larval development of the dung beetle *Euoniticellus intermedius* (Coleoptera: Scarabaeidae). *The Canadian Entomologist*, *149*(4), 461-472.

Martínez, L. C., Plata-Rueda, A., da Silva Neves, G., Gonçalves, W. G., Zanuncio, J. C., Bozdoğan, H., & Serrão, J. E. (2018). Permethrin induces histological and cytological changes in the midgut of the predatory bug, *Podisus nigrispinus*. *Chemosphere*, *212*, 629-637.

Martínez-Cisuelo, V., Gómez, J., García-Junceda, I., Naudí, A., Cabré, R., Mota-Martorell, N., ... & Barja, G. (2016). Rapamycin reverses age-related increases in mitochondrial ROS production at complex I, oxidative stress, accumulation of mtDNA fragments inside nuclear DNA, and lipofuscin level, and increases autophagy, in the liver of middle-aged mice. *Experimental gerontology*, *83*, 130-138.

Martinson, E. O., Martinson, V. G., Edwards, R., Mrinalini, & Werren, J. H. (2016). Laterally transferred gene recruited as a venom in parasitoid wasps. *Molecular biology and evolution*, *33*(4), 1042-1052.

Masnjak, A. (2022). *Comparing Brood Care Behaviors Across Five Fertility Castes in The Invasive Fire Ant, Solenopsis invicta, and the Expression of Inotocin* (Doctoral dissertation, University of South Florida).

Mauduit, E., Lécureuil, C., & Meunier, J. (2021). Sublethal exposure to deltamethrin stimulates reproduction and has limited effects on post-hatching maternal care in the European earwig. *Environmental Science and Pollution Research*, *28*, 39501-39512.

Mazzi, D., & Dorn, S. (2012). Movement of insect pests in agricultural landscapes. *Annals of Applied Biology*, *160*(2), 97-113.

McKenna, D. D., Scully, E. D., Pauchet, Y., Hoover, K., Kirsch, R., Geib, S. M., ... & Richards, S. (2016). Genome of the Asian longhorned beetle (*Anoplophora glabripennis*), a globally significant invasive species, reveals key functional and evolutionary innovations at the beetle–plant interface. *Genome biology*, *17*(1), 1-18.

Menozzi, P., Shi, M. A., Lougarre, A., Tang, Z. H., & Fournier, D. (2004). Mutations of acetylcholinesterase which confer insecticide resistance in *Drosophila melanogaster* populations. *BMC evolutionary biology*, *4*, 1-7.

Meunier, J., Dufour, J., Van Meyel, S., Rault, M., & Lécureuil, C. (2020). Sublethal exposure to deltamethrin impairs maternal egg care in the European earwig *Forficula auricularia*. *Chemosphere*, *258*, 127383.

Meunier, J., Körner, M., Kramer, J., & Mishra, O. (2022). *Parental care* (pp. 337-348). Boca Raton: CRC Press.

Mikšić, R. (1977) Monographie der Cetonniiae der Palaarktischen und Orientalischen Region. Coleoptera: Lamellicornia. Band 2. Institut za šumarstvo, Sarajevo, Yugoslavia, 400 pp.

Misof, B., Liu, S., Meusemann, K., Peters, R. S., Donath, A., Mayer, C., ... & Zhou, X. (2014). Phylogenomics resolves the timing and pattern of insect evolution. *Science*, *346*(6210), 763-767.

Mizunami, M., Unoki, S., Mori, Y., Hirashima, D., Hatano, A., & Matsumoto, Y. (2009). Roles of octopaminergic and dopaminergic neurons in appetitive and aversive memory recall in an insect. *BMC biology*, *7*, 1-16.

Mizunami, M., Weibrecht, J. M., & Strausfeld, N. J. (1998). Mushroom bodies of the cockroach: their participation in place memory. *Journal of Comparative Neurology*, *402*(4), 520-537.

Moczek, A. P. (2009). Phenotypic plasticity and the origins of diversity: a case study on horned beetles. *Phenotypic plasticity in insects: mechanisms and consequences*, 81-134.

Moczek, A. P. (2010). Phenotypic plasticity and diversity in insects. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *365*(1540), 593-603.

Mohammadi, J., Azizi, K., Alipour, H., Kalantari, M., Bagheri, M., Shahriari-Namadi, M., ... & Moemenbellah-Fard, M. D. (2021). Frequency of pyrethroid resistance in human head louse treatment: systematic review and meta-analysis. *Parasite*, *28*.

Mora-Villalobos, J. A., & Zeng, A. P. (2018). Synthetic pathways and processes for effective production of 5-hydroxytryptophan and serotonin from glucose in *Escherichia coli*. *Journal of biological engineering*, *12*, 1-12.

Mrinalini, Koh, C. Y., & Puniamoorthy, N. (2021). Rapid genomic evolution drives the diversification of male reproductive genes in dung beetles. *Genome Biology and Evolution*, *13*(8), evab172.

Müller, U. (1996). Inhibition of nitric oxide synthase impairs a distinct form of long-term memory in the honeybee, *Apis mellifera*. *Neuron*, *16*(3), 541-549.

Müller, C. (2018). Impacts of sublethal insecticide exposure on insects—Facts and knowledge gaps. *Basic and Applied Ecology*, *30*, 1-10.

Muratspahić, E., Monjon, E., Duerrauer, L., Rogers, S. M., Cullen, D. A., Broeck, J. V., & Gruber, C. W. (2020). Oxytocin/vasopressin-like neuropeptide signaling in insects. *Vitamins and hormones*, *113*, 29-53.

Mustard, J. A., Kurshan, P. T., Hamilton, I. S., Blenau, W., & Mercer, A. R. (2005). Developmental expression of a tyramine receptor gene in the brain of the honey bee, *Apis mellifera*. *Journal of Comparative Neurology*, *483*(1), 66-75.

Mustard, J. A., Pham, P. M., & Smith, B. H. (2010). Modulation of motor behavior by dopamine and the D1-like dopamine receptor AmDOP2 in the honey bee. *Journal of insect physiology*, *56*(4), 422-430.

Nagata, S., Matsumoto, S., Nakane, T., Ohara, A., Morooka, N., Konuma, T., ... & Nagasawa, H. (2012). Effects of starvation on brain short neuropeptide F-1,-2, and-3 levels and short neuropeptide F receptor expression levels of the silkworm, *Bombyx mori*. *Frontiers in endocrinology*, *3*, 3.

Nagy, N. A., Németh, Z., Juhász, E., Póliska, S., Rácz, R., Kiss, J., ... & Barta, Z. (2021). Inotocin, a potential modulator of reproductive behaviours in a biparental beetle, *Lethrus apterus*. *Journal of Insect Physiology*, *132*, 104253.

Nappi, A. J., Vass, E., Frey, F., & Carton, Y. (2000). Nitric oxide involvement in Drosophila immunity. *Nitric oxide*, *4*(4), 423-430.

Nässel, D. R. (2009). Neuropeptide signaling near and far: how localized and timed is the action of neuropeptides in brain circuits?. *Invertebrate neuroscience*, *9*, 57-75.

Nässel, D. R. (2018). Substrates for neuronal cotransmission with neuropeptides and small molecule neurotransmitters in Drosophila. *Frontiers in cellular neuroscience*, *12*, 83.

Nässel, D. R., & Homberg, U. (2006). Neuropeptides in interneurons of the insect brain. *Cell and tissue research*, *326*(1), 1-24.

Nässel, D. R., & Zandawala, M. (2019). Recent advances in neuropeptide signaling in Drosophila, from genes to physiology and behavior. *Progress in neurobiology*, *179*, 101607.

Nässel, D. R., Enell, L. E., Santos, J. G., Wegener, C., & Johard, H. A. (2008). A large population of diverse neurons in the Drosophila central nervous system expresses short neuropeptide F, suggesting multiple distributed peptide functions. *BMC neuroscience*, *9*, 1-35.

Nässel, D. R., Pauls, D., & Huetteroth, W. (2019). Neuropeptides in modulation of Drosophila behavior: how to get a grip on their pleiotropic actions. *Current opinion in insect science*, *36*, 1-8.

Nathan, C., & Cunningham-Bussel, A. (2013). Beyond oxidative stress: an immunologist's guide to reactive oxygen species. *Nature Reviews Immunology*, *13*(5), 349-361.

Nauen, R., Bass, C., Feyereisen, R., & Vontas, J. (2022). The role of cytochrome P450s in insect toxicology and resistance. *Annual review of entomology*, *67*, 105-124.

Ndonwi, E. N., Atogho-Tiedeu, B., Lontchi-Yimagou, E., Shinkafi, T. S., Nanfa, D., Balti, E. V., ... & Sobngwi, E. (2019). Gestational exposure to pesticides induces oxidative stress and lipid peroxidation in offspring that persist at adult age in an animal model. *Toxicological Research*, *35*, 241-248.

Nelson, R. J., & Trainor, B. C. (2007). Neural mechanisms of aggression. *Nature Reviews Neuroscience*, *8*(7), 536-546.

Nervo, B., Laini, A., Roggero, A., Fabbriciani, F., Palestrini, C., & Rolando, A. (2022). Interactions between individuals and sex rather than morphological traits drive intraspecific dung removal in two dung beetle species. *Frontiers in Ecology and Evolution*, *10*, 863669.

Ngai, M., Shoue, D. A., Loh, Z., & McDowell, M. A. (2019). The pharmacological and functional characterization of the serotonergic system in *Anopheles gambiae* and *Aedes aegypti*: influences on flight and blood-feeding behavior. *Scientific Reports*, *9*(1), 4421.

Nichols E, Gardner, TA, Peres CA, Spector S, Scarabaeinae Research Network (2009) Co-declining mammals and dung beetles: an impending ecological cascade. *Oikos*, 118(4), 481-487

Nichols E, Spector S, Louzada J, Larsen T, Amezquita S, Favila ME, Network TSR (2008) Ecological functions and ecosystem services provided by Scarabaeinae dung beetles. Biological conservation, 141(6), 1461-1474

Niño, E. L., Sorenson, C. E., Washburn, S. P., & Watson, D. W. (2009). Effects of the insect growth regulator, methoprene, on Onthophagus taurus (Coleoptera: Scarabaeidae). *Environmental entomology*, *38*(2), 493-498.

Noriega, J. A., Floate, K. D., Génier, F., Reid, C. A., Kohlmann, B., Horgan, F. G., ... & Lobo, J. M. (2020). Global distribution patterns provide evidence of niche shift by the introduced African dung beetle *Digitonthophagus gazella*. *Entomologia Experimentalis et Applicata*, *168*(10), 766-782.

Noriega, J. A., March-Salas, M., Castillo, S., García-Q, H., Hortal, J., & Santos, A. M. (2021). Human perturbations reduce dung beetle diversity and dung removal ecosystem function. *Biotropica*, *53*(3), 753-766.

Norrdahl, K., Heinilä, H., Klemola, T., & Korpimäki, E. (2004). Predator induced changes in population structure and individual quality of Microtus voles: a large scale field experiment. *Oikos*, *105*(2), 312-324.

Numa, C., Verdú, J. R., Sánchez, A., & Galante, E. (2009). Effect of landscape structure on the spatial distribution of Mediterranean dung beetle diversity. *Diversity and Distributions*, *15*(3), 489-501.

Nusbaum, M. P., Blitz, D. M., & Marder, E. (2017). Functional consequences of neuropeptide and small-molecule co-transmission. *Nature Reviews Neuroscience*, *18*(7), 389-403.

Nuss, A. B., Forschler, B. T., Crim, J. W., TeBrugge, V., Pohl, J., & Brown, M. R. (2010). Molecular characterization of neuropeptide F from the eastern subterranean termite *Reticulitermes flavipes* (Kollar) (Isoptera: Rhinotermitidae). *Peptides*, *31*(3), 419-428.

Oba, Y., Ôhira, H., Murase, Y., Moriyama, A., & Kumazawa, Y. (2015). DNA barcoding of Japanese click beetles (Coleoptera, Elateridae). *PLoS One*, *10*(1), e0116612.

Ogut, E., Sekerci, R., Akcay, G., Yildirim, F. B., Derin, N., Aslan, M., & Sati, L. (2019). Protective effects of syringic acid on neurobehavioral deficits and hippocampal tissue damages induced by sub-chronic deltamethrin exposure. *Neurotoxicology and teratology*, *76*, 106839.

Oh, Y., Yoon, S. E., Zhang, Q., Chae, H. S., Daubnerová, I., Shafer, O. T., ... & Kim, Y. J. (2014). A homeostatic sleep-stabilizing pathway in Drosophila composed of the sex peptide receptor and its ligand, the myoinhibitory peptide. *PLoS biology*, *12*(10), e1001974.

Ohkawa, H., Ohishi, N., & Yagi, K. (1979). Assay for lipid peroxides in animal tissues by thiobarbituric acid reaction. *Analytical biochemistry*, *95*(2), 351-358.

Ortega-Echeverría, C., & Noriega, J. A. (2022). Predation of *Digitonthophagus gazella* (Fabricius) (Coleoptera: Scarabaeidae: Scarabaeinae) by *Scarites similis* Chaudoir (Coleoptera: Carabidae: Scaritinae). *The Coleopterists Bulletin*, *76*(1), 122-123.

Osman, W., M. El-Samad, L., Mokhamer, E. H., El-Touhamy, A., & Shonouda, M. (2015). Ecological, morphological, and histological studies on *Blaps polycresta* (Coleoptera: Tenebrionidae) as biomonitors of cadmium soil pollution. *Environmental Science and Pollution Research*, *22*, 14104-14115.

Ott, S. R., Verlinden, H., Rogers, S. M., Brighton, C. H., Quah, P. S., Vleugels, R. K., ... & Vanden Broeck, J. (2012). Critical role for protein kinase A in the acquisition of gregarious behavior in the desert locust. *Proceedings of the National Academy of Sciences*, *109*(7), E381-E387.

Owusu-Ansah, E., & Perrimon, N. (2014). Modeling metabolic homeostasis and nutrient sensing in Drosophila: implications for aging and metabolic diseases. *Disease models & mechanisms*, *7*(3), 343-350.

Owusu-Ansah, E., & Perrimon, N. (2015). Stress signaling between organs in metazoa. *Annual review of cell and developmental biology*, *31*, 497-522.

Palestrini, C., & Rolando, A. (2001). Body size and paternal investment in the genus Onthophagus (Coleoptera, Scarabaeoidea). *Journal of Zoology*, *255*(3), 405-412.

Paluzzi, J. P. V., Haddad, A. S., Sedra, L., Orchard, I., & Lange, A. B. (2015). Functional characterization and expression analysis of the myoinhibiting peptide receptor in the Chagas disease vector, Rhodnius prolixus. *Molecular and cellular endocrinology*, *399*, 143-153.

Panaitof, S. C., Yaeger, J. D., Speer, J. P., & Renner, K. J. (2016). Biparental behavior in the burying beetle Nicrophorus orbicollis: a role for dopamine? *Current Zoology*, *62*(3), 285-291.

Pandit, A. A., Ragionieri, L., Marley, R., Yeoh, J. G., Inward, D. J., Davies, S. A., ... & Dow, J. A. (2018). Coordinated RNA-Seq and peptidomics identify neuropeptides and G-protein coupled receptors

(GPCRs) in the large pine weevil *Hylobius abietis*, a major forestry pest. *Insect biochemistry and molecular biology*, *101*, 94-107.

Pandya, N., Parmar, J., Purohit, M., Thakkar, B., Pandya, P., & Parikh, P. (2022). Elucidating the role of neurotransmitters in the nesting behaviour of *Digitonthophagus gazella* (Fabricius, 1787) (Coleoptera: Scarabaeidae). *International Journal of Tropical Insect Science*, *42*(5), 3427-3439.

Pandya, N., Thakkar, B., Pandya, P., & Parikh, P. (2021). Evaluation of insecticidal potential of organochemicals on SF9 cell line. *The Journal of Basic and Applied Zoology*, *82*(1), 1-10.

Pandya, N., Vyas, H., Parmar, J., Thakkar, B., Pandya, P., & Parikh, P. (2023). *Nesting Pattern and Soil Nutrient Enrichment by Dung Beetles (Coleoptera: Scarabaeidae): An Ecological Approach.* Animal Agriculture: Modern Practices and Issues Edition: 1st Edition, Excel India Publishers, New Delhi, India.

Papanicolaou, A., Schetelig, M. F., Arensburger, P., Atkinson, P. W., Benoit, J. B., Bourtzis, K., ... & Handler, A. M. (2016). The whole genome sequence of the Mediterranean fruit fly, Ceratitis capitata (Wiedemann), reveals insights into the biology and adaptive evolution of a highly invasive pest species. *Genome biology*, *17*, 1-31.

Parkinson, R. H., Zhang, S., & Gray, J. R. (2020). Neonicotinoid and sulfoximine pesticides differentially impair insect escape behavior and motion detection. *Proceedings of the National Academy of Sciences*, *117*(10), 5510-5515.

Parween, T., & Jan, S. (2019). *Ecophysiology of pesticides: interface between pesticide chemistry and plant physiology*. Academic Press.

Paulian, R. (1945). Coléoptères scarabéides de l'Indochine. *Faune de L'Empire francais*, *3*, 1-map.

Paulian, R. (1980) Coléoptères Scarabaeidae Canthoninae d'Inde du Sud. Revue Suisse de Zoologie, 87(1), 57–66

Paulian, R. (1983) Sur quelques coléoptères Scarabaeoidea de la region Orientale. Revue Suisse de Zoologie, 90, 615–622

Paulk, A. C., Stacey, J. A., Pearson, T. W., Taylor, G. J., Moore, R. J., Srinivasan, M. V., & Van Swinderen, B. (2014). Selective attention in the honeybee optic lobes precedes behavioral choices. *Proceedings of the National Academy of Sciences*, *111*(13), 5006-5011.

Paulson, L., Pandya, P., Thakkar, B., Pandya, N., & Parikh, P. (2023, May). Molecular Characterization of Coleopteran Pests and its Relations to Agricultural Crops. In *Proceedings of the Zoological Society* (pp. 1-11). New Delhi: Springer India.

Pawara, R. H., Patel, N. G., Pawara, J. V., Gavit, P. J., & Ishi, S. S. (2012). Beetles of Jalgaon district of Maharashtra, India. *Biolife An International Quarterly Journal of Biology & Life Sciences*, *2*(3), 970-973.

Pawlisz, A. V., Busnarda, J., McLauchlin, A., Caux, P. Y., & Kent, R. A. (1998). Canadian water quality guidelines for deltamethrin. *Environmental Toxicology and Water Quality: An International Journal*, *13*(3), 175-210.

Pecenka, J. R., & Lundgren, J. G. (2018). The importance of dung beetles and arthropod communities on degradation of cattle dung pats in eastern South Dakota. *PeerJ*, *6*, e5220.

Perić-Mataruga, V., Petković, B., Ilijin, L., Mrdaković, M., Čučaković, S. D., Todorović, D., & Vlahović, M. (2017). Cadmium and high temperature effects on brain and behaviour of Lymantria dispar L. caterpillars originating from polluted and less-polluted forests. *Chemosphere*, *185*, 628-636.

Peymen, K., Watteyne, J., Borghgraef, C., Van Sinay, E., Beets, I., & Schoofs, L. (2019). Myoinhibitory peptide signaling modulates aversive gustatory learning in *Caenorhabditis elegans*. *PLoS Genetics*, *15*(2), e1007945.

Pflüger, H. J., & Duch, C. (2011). Dynamic neural control of insect muscle metabolism related to motor behavior. *Physiology*, *26*(4), 293-303.

Philips, T. K., Pretorius, E., & Scholtz, C. H. (2004). A phylogenetic analysis of dung beetles (Scarabaeinae: Scarabaeidae): unrolling an evolutionary history. *Invertebrate Systematics*, *18*(1), 53-88.

Pickett, J. A. (2004). New opportunities in neuroscience, but a great danger that some may be lost. *Neurotox*, *3*, 1-10.

Pitzer, E. M., Williams, M. T., & Vorhees, C. V. (2021). Effects of pyrethroids on brain development and behavior: Deltamethrin. *Neurotoxicology and Teratology*, *87*, 106983.

Poels, J., Van Loy, T., Vandersmissen, H. P., Van Hiel, B., Van Soest, S., Nachman, R. J., & Vanden Broeck, J. (2010). Myoinhibiting peptides are the ancestral ligands of the promiscuous Drosophila sex peptide receptor. *Cellular and molecular life sciences*, *67*, 3511-3522.

Pokhrel, M. R., Cairns, S. C., & Andrew, N. R. (2020). Dung beetle species introductions: when an ecosystem service provider transforms into an invasive species. *PeerJ*, *8*, e9872.

Pokhrel, M. R., Cairns, S. C., Hemmings, Z., Floate, K. D., & Andrew, N. R. (2021). A review of dung beetle introductions in the Antipodes and North America: status, opportunities, and challenges. *Environmental entomology*, *50*(4), 762-780.

Potticary, A. L., Cunningham, C. B., & Moore, A. J. (2022). Flexible parental care ensures robustness of post-embryonic development. *Evolution*, *19*, 20.

Prameela, K., & Sabu Thomas, K. (2020). Life cycle of the dung beetle *Onthophagus cervus* (Fabricius, 1798) (Coleoptera: Scarabaeidae: Scarabaeinae) in moist belts of south India. *Entomon*, *45*(4).

Praticò, D. (2008). Oxidative stress hypothesis in Alzheimer's disease: a reappraisal. *Trends in pharmacological sciences*, *29*(12), 609-615.

Price, D. L., & May, M. (2009). Behavioral ecology of Phanaeus dung beetles (Coleoptera: Scarabaeidae): review and new observations. *Acta zoológica mexicana*, *25*(1), 211-238.

Price, D. N., & Berry, M. S. (2006). Comparison of effects of octopamine and insecticidal essential oils on activity in the nerve cord, foregut, and dorsal unpaired median neurons of cockroaches. *Journal of insect physiology*, *52*(3), 309-319.

Price, J. C., Walker, I. A., & Boschetti, F. (2014). Measuring cultural values and beliefs about environment to identify their role in climate change responses. *Journal of Environmental Psychology*, *37*, 8-20.

Price, P. W., Denno, R. F., Eubanks, M. D., Finke, D. L., & Kaplan, I. (2011). *Insect ecology: behavior, populations and communities*. Cambridge University Press.

Pulido-Herrera L.A. & Zunino M. 2007. Preliminary catalog of the Onthophagini of America (Coleoptera: Scarabaeinae). In: Zunino M. & Melic A. (eds) Beetles, diversity and biological conservation. Essays in homage to Gonzalo Halffter:93–129. Third Millennium Monograph 7. Aragonese Entomological Society, Zaragoza, Spain

Qi, Y. X., Huang, J., Li, M. Q., Wu, Y. S., Xia, R. Y., & Ye, G. Y. (2016). Serotonin modulates insect hemocyte phagocytosis via two different serotonin receptors. *Elife*, *5*, e12241.

Qiao, Z., Zhang, F., Yao, X., Yu, H., Sun, S., Li, X., ... & Jiang, X. (2019). Growth, DNA damage and biochemical toxicity of cyantraniliprole in earthworms (Eisenia fetida). *Chemosphere*, *236*, 124328.

Ragionieri, L., & Predel, R. (2020). The neuropeptidome of Carabus (Coleoptera, Adephaga: Carabidae). *Insect biochemistry and molecular biology*, *118*, 103309.

Ragionieri, L., Verdonck, R., Verlinden, H., Marchal, E., Broeck, J. V., & Predel, R. (2022). Schistocerca neuropeptides–An update. *Journal of Insect Physiology*, *136*, 104326.

Rai, S., Ahi, J., Jain, R., & Jain, N. (2011). Histopathological effect of fenoxycarb on ovary of *Poekilocerus pictus* (Fabr.)(Orthoptera: Acrididae). *Asian journal of experimental biological sciences 2*, 433-440.

Rane, R. V., Ghodke, A. B., Hoffmann, A. A., Edwards, O. R., Walsh, T. K., & Oakeshott, J. G. (2019). Detoxifying enzyme complements and host use phenotypes in 160 insect species. *Current opinion in insect science*, *31*, 131-138.

Rauter, C. M., & Moore, A. J. (2002). Evolutionary importance of parental care performance, food resources, and direct and indirect genetic effects in a burying beetle. *Journal of Evolutionary Biology*, *15*(3), 407-417.

Ray, D. E., & Fry, J. R. (2006). A reassessment of the neurotoxicity of pyrethroid insecticides. *Pharmacology & therapeutics*, *111*(1), 174-193.

Rehman, H., Aziz, A. T., Saggu, S. H. A. L. I. N. I., Abbas, Z. K., Mohan, A. N. A. N. D., & Ansari, A. A. (2014). Systematic review on pyrethroid toxicity with special reference to deltamethrin. *Journal of entomology and zoology studies*, *2*(6), 60-70.

Reissert-Oppermann, S., Bauer, B., Steuber, S., & Clausen, P. H. (2019). Insecticide resistance in stable flies (Stomoxys calcitrans) on dairy farms in Germany. *Parasitology research*, *118*, 2499-2507.

Rezg, R., Mornagui, B., El-Fazaa, S., & Gharbi, N. (2008). Biochemical evaluation of hepatic damage in subchronic exposure to malathion in rats: effect on superoxide dismutase and catalase activities using native PAGE. *Comptes Rendus Biologies*, *331*(9), 655-662.

Riddiford, L. M. (2012). How does juvenile hormone control insect metamorphosis and reproduction?. *General and comparative endocrinology*, *179*(3), 477-484.

Ridgel, A. L., Alexander, B. E., & Ritzmann, R. E. (2007). Descending control of turning behavior in the cockroach, Blaberus discoidalis. *Journal of Comparative Physiology A*, *193*, 385-402.

Ridsdill-Smith, T. J., & Edwards, P. B. (2011). Biological control: ecosystem functions provided by dung beetles. *Ecology and evolution of dung beetles*, 245-266.

Rillich, J., & Stevenson, P. A. (2014). A fighter's comeback: dopamine is necessary for recovery of aggression after social defeat in crickets. *Hormones and behavior*, *66*(4), 696-704.

Roeder, T. (1999). Octopamine in invertebrates. *Progress in neurobiology*, *59*(5), 533-561.

Roeder, T. (2005). Tyramine and octopamine: ruling behavior and metabolism. *Annual Review of Entomology*, *50*, 447-477.

Rohner, P. T., & Moczek, A. P. (2021). Evolutionary and plastic variation in larval growth and digestion reveal the complex underpinnings of size and age at maturation in dung beetles. *Ecology and Evolution*, *11*(21), 15098-15110.

Roller, L., Yamanaka, N., Watanabe, K., Daubnerová, I., Žitňan, D., Kataoka, H., & Tanaka, Y. (2008). The unique evolution of neuropeptide genes in the silkworm *Bombyx mori*. *Insect biochemistry and molecular biology*, *38*(12), 1147-1157.

Romero, A., Ares, I., Ramos, E., Castellano, V., Martínez, M., Martinez-Larranaga, M. R., ... & Martínez, M. A. (2015). Evidence for dose-additive effects of a type II pyrethroid mixture. In vitro assessment. *Environmental Research*, *138*, 58-66.

Ronald, W.G., & Bruce, A.B. (1990). Organosomic indices and an autopsy-based assessment as indicators of health condition of fish. American Fisheries Society, 8, 93–108

Roshchina, V. V. (2010). Evolutionary considerations of neurotransmitters in microbial, plant, and animal cells. *Microbial endocrinology: interkingdom signaling in infectious disease and health*, 17-52.

Royle, N. J., Smiseth, P. T., & Kölliker, M. (Eds.). (2012). *The evolution of parental care*. Oxford University Press.

Ryan, U., Yang, R., Gordon, C., & Doube, B. (2011). Effect of dung burial by the dung beetle Bubas bison on numbers and viability of Cryptosporidium oocysts in cattle dung. *Experimental Parasitology*, *129*(1), 1-4.

Sabu, T. K., Nithya, S., & Vinod, K. V. (2011). Faunal survey, endemism and possible species loss of Scarabaeinae (Coleoptera: Scarabaeidae) in the western slopes of the moist South Western Ghats, South India. *Zootaxa*, *2830*(1), 29-38.

Sabu, T. K., Vinod, K. V., & Vineesh, P. J. (2006). Guild structure, diversity and succession of dung beetles associated with Indian elephant dung in South Western Ghats forests. *Journal of Insect Science*, *6*(1), 17.

Sabu, T. K., Vinod, K. V., & Vineesh, P. J. (2007). Succession of dung beetles (Scarabaeinae: Coleoptera) in the dung pats of gaur, *Bos gaurus* H. Smith (Artiodactyla: Bovidae), from the moist deciduous forests of southern Western Ghats. *Biosystematica*, *1*(1), 59-69.

Sabu, T. K., Vinod, K. V., Latha, M., Nithya, S., & Boby, J. (2011). Cloud forest dung beetles (Coleoptera: Scarabaeinae) in the Western Ghats, a global biodiversity hotspot in southwestern India. *Tropical Conservation Science*, *4*(1), 12-24.

Sadekuzzaman, M., Mizan, M. F. R., Kim, H. S., Yang, S., & Ha, S. D. (2018). Activity of thyme and tea tree essential oils against selected foodborne pathogens in biofilms on abiotic surfaces. *Lwt*, *89*, 134-139.

Saha, S., Biswas, A., Ghosh, A., & Raychaudhuri, D. (2021). Dung beetles: key to healthy pasture? An overview. *World Scientific News*, *153*(2), 93-123.

Sahney, S., Benton, M. J., & Ferry, P. A. (2010). Links between global taxonomic diversity, ecological diversity and the expansion of vertebrates on land. *Biology letters*, *6*(4), 544-547.

Salomão, R. P., Alvarado, F., Baena-Díaz, F., Favila, M. E., Iannuzzi, L., Liberal, C. N., ... & González-Tokman, D. (2020). Negative effects of urbanisation on the physical condition of an endemic dung beetle from a neotropical hotspot. *Ecological Entomology*, *45*(4), 886-895.

Sanchez, A. (2019). *Rotten!: Vultures, Beetles, Slime, and Nature's Other Decomposers*. HMH Books for Young Readers.

Sánchez-Bayo, F., & Wyckhuys, K. A. (2019). Worldwide decline of the entomofauna: A review of its drivers. *Biological conservation*, *232*, 8-27.

Sands, B., & Wall, R. (2018). Sustained parasiticide use in cattle farming affects dung beetle functional assemblages. *Agriculture, Ecosystems & Environment*, *265*, 226-235.

Sands, B., Mgidiswa, N., Nyamukondiwa, C., & Wall, R. (2018). Environmental consequences of deltamethrin residues in cattle feces in an African agricultural landscape. *Ecology and evolution*, *8*(5), 2938-2946.

Sane, S. P., Ramaswamy, S. S., & Raja, S. V. (2020). Insect architecture: structural diversity and behavioral principles. *Current Opinion in Insect Science*, *42*, 39-46.

Santos, J. G., Vömel, M., Struck, R., Homberg, U., Nässel, D. R., & Wegener, C. (2007). Neuroarchitecture of peptidergic systems in the larval ventral ganglion of *Drosophila melanogaster*. *PLoS One*, *2*(8), e695.

Sasaki, K., & Watanabe, T. (2022). Sex-specific regulatory systems for dopamine production in the honey bee. *Insects*, *13*(2), 128.

Sasaki, K., Akasaka, S., Mezawa, R., Shimada, K., & Maekawa, K. (2012). Regulation of the brain dopaminergic system by juvenile hormone in honey bee males (*Apis mellifera* L.). *Insect molecular biology*, *21*(5), 502-509.

Sasaki, K., Okada, Y., Shimoji, H., Aonuma, H., Miura, T., & Tsuji, K. (2021). Social evolution with decoupling of multiple roles of biogenic amines into different phenotypes in Hymenoptera. *Frontiers in Ecology and Evolution*, *9*, 659160.

Scholtz, C. H., Davis, A. L. V., & Kryger, U. (2009). *Evolutionary biology and conservation of dung beetles* (pp. 1-567). Sofia-Moscow: Pensoft.

Schoofs, L., Danger, J. M., Jegou, S., Pelletier, G., Huybrechts, R., Vaudry, H., & De Loof, A. (1988). NPY-like peptides occur in the nervous system and midgut of the migratory locust, *Locusta migratoria* and in the brain of the grey fleshfly, Sarcophaga bullata. *Peptides*, *9*(5), 1027-1036.

Schoofs, L., De Loof, A., & Van Hiel, M. B. (2017). Neuropeptides as regulators of behavior in insects. *Annual Review of Entomology*, *62*, 35-52.

Schoofs, L., Holman, G. M., Hayes, T. K., Nachman, R. J., & De Loof, A. (1991). Isolation, identification and synthesis of locustamyoinhibiting peptide (LOM-MIP), a novel biologically active neuropeptide from Locusta migratoria. *Regulatory peptides*, *36*(1), 111-119.

Schoonhoven, L. M. (2018). Insects in a chemical world. *Handbook of natural pesticides*, *6*, 1-21.

Schreinemachers, P., & Tipraqsa, P. (2012). Agricultural pesticides and land use intensification in high-, middle- and low-income countries. *Food policy*, *37*(6), 616-626.

Schulze, J., Neupert, S., Schmidt, L., Predel, R., Lamkemeyer, T., Homberg, U., & Stengl, M. (2012). Myoinhibitory peptides in the brain of the cockroach *Leucophaea maderae* and colocalization with pigment-dispersing factor in circadian pacemaker cells. *Journal of Comparative Neurology*, *520*(5), 1078-1097.

Scudeler, E. L., & dos Santos, D. C. (2013). Effects of neem oil (Azadirachta indica A. Juss) on midgut cells of predatory larvae *Ceraeochrysa claveri* (Navás, 1911) (Neuroptera: Chrysopidae). *Micron*, *44*, 125-132.

Seelig, J. D., & Jayaraman, V. (2015). Neural dynamics for landmark orientation and angular path integration. *Nature*, *521*(7551), 186-191.

Seidel, C., & Bicker, G. (2000). Nitric oxide and cGMP influence axonogenesis of antennal pioneer neurons. *Development*, *127*(21), 4541-4549.

Seki, Y., Aonuma, H., & Kanzaki, R. (2005). Pheromone processing center in the protocerebrum of Bombyx mori revealed by nitric oxide-induced anti-cGMP immunocytochemistry. *Journal of Comparative Neurology*, *481*(4), 340-351.

Serrão, J. E., Plata-Rueda, A., Martínez, L. C., & Zanuncio, J. C. (2022). Side-effects of pesticides on non-target insects in agriculture: A mini-review. *The Science of Nature*, *109*(2), 17.

Shakeet, P., & Saroj, B. (2009). Histopathology of gonads of *Chrotogonus trachypterus* (Blanchard) treated with sublethal doses of monocrotophos. *Karnataka Journal of Agricultural Sciences*, *22*(3), 507-510.

Sharaby, A., & El-Bendary, M. (2017). Assessment of mode of action and histopathological changes induces by Bacillus thurengiensis. in various tissues and organs of *Spodoptera littoralis* larvae. *World Journal of Innovative Research*, *3*(3), 262512.

Sharma, A., Kumar, V., Shahzad, B., Tanveer, M., Sidhu, G. P. S., Handa, N., ... & Thukral, A. K. (2019). Worldwide pesticide usage and its impacts on ecosystem. *SN Applied Sciences*, *1*, 1-16.

Shaw, B., Brain, P., Wijnen, H., & Fountain, M. T. (2019). Implications of sub-lethal rates of insecticides and daily time of application on Drosophila suzukii lifecycle. *Crop Protection*, *121*, 182-194.

Shoop, W., & Soll, M. (2002). Chemistry, pharmacology and safety of the macrocyclic lactones: ivermectin, abamectin and eprinomectin. In *Macrocyclic lactones in antiparasitic therapy* (pp. 1-29). Wallingford UK: CAB International.

Simmons, L. W., & Ridsdill-Smith, T. J. (Eds.). (2011). *Ecology and evolution of dung beetles*. John Wiley & Sons.

Šimo, L., Koči, J., & Park, Y. (2013). Receptors for the neuropeptides, myoinhibitory peptide and SIFamide, in control of the salivary glands of the blacklegged tick Ixodes scapularis. *Insect biochemistry and molecular biology*, *43*(4), 376-387.

Singh, A. P., De, K., Mahajan, S., Mondal, R., & Uniyal, V. P. (2019). Observations on nesting activity, life cycle, and brood ball morphometry of the Bordered Dung Beetle *Oniticellus cinctus* (Fabricius, 1775) (Coleoptera: Scarabaeidae) under laboratory conditions. *Journal of Threatened Taxa*, *11*(9), 14137-14143.

Singh, R. K., Mittal, P. K., & Dhiman, R. C. (2012). Insecticide susceptibility status of Phlebotomus argentipes, a vector of visceral leishmaniasis in different foci in three states of India. *Journal of vector borne diseases*, *49*(4), 254.

Singhal, M., Turturice, B. A., Manzella, C. R., Ranjan, R., Metwally, A. A., Theorell, J., ... & Gill, R. K. (2019). Serotonin transporter deficiency is associated with dysbiosis and changes in metabolic function of the mouse intestinal microbiome. *Scientific reports*, *9*(1), 2138.

Singhal, S., Thakkar, B., Pandya, P., & Parikh, P. (2018). Unraveling the diversity, phylogeny, and ecological role of cryptic Coleopteran species of Vadodara district: a first comparative approach from India. *The Journal of Basic and Applied Zoology*, *79*(1), 1-14.

Sinha, A. K. (1972). Colorimetric assay of catalase. *Analytical biochemistry*, *47*(2), 389-394.

Sinha, S. (2014). Morphological characteristics and distribution of the burrows of freshwater crab *Barytelphusa cunicularis* (Westwood, 1836). *Indian Journal of Scientific Research*, *4*, 158-164.

Sitaraman, D., LaFerriere, H., Birman, S., & Zars, T. (2012). Serotonin is critical for rewarded olfactory short-term memory in Drosophila. *Journal of neurogenetics*, *26*(2), 238-244.

Sitaraman, D., Zars, M., LaFerriere, H., Chen, Y. C., Sable-Smith, A., Kitamoto, T., ... & Zars, T. (2008). Serotonin is necessary for place memory in Drosophila. *Proceedings of the National Academy of Sciences*, *105*(14), 5579-5584.

Slade, E. M., & Roslin, T. (2016). Dung beetle species interactions and multifunctionality are affected by an experimentally warmed climate. *Oikos*, *125*(11), 1607-1616.

Slade, E. M., Mann, D. J., & Lewis, O. T. (2011). Biodiversity and ecosystem function of tropical forest dung beetles under contrasting logging regimes. *Biological Conservation*, *144*(1), 166-174.

Slikker Jr, W., Xu, Z. A., Levin, E. D., & Slotkin, T. A. (2005). Mode of action: disruption of brain cell replication, second messenger, and neurotransmitter systems during development leading to cognitive dysfunction—developmental neurotoxicity of nicotine. *Critical reviews in toxicology*, *35*(8-9), 703-711.

Smiseth, P. T., Kölliker, M., & Royle, N. J. (2014). Parental care. *The evolution of insect mating systems*, 221-241.

Smith, P., Cotrufo, M. F., Rumpel, C., Paustian, K., Kuikman, P. J., Elliott, J. A., ... & Scholes, M. C. (2015). Biogeochemical cycles and biodiversity as key drivers of ecosystem services provided by soils. *Soil*, *1*(2), 665-685.

Soderlund, D. M. (2012). Molecular mechanisms of pyrethroid insecticide neurotoxicity: recent advances. *Archives of toxicology*, *86*, 165-181.

Solvi, C., Baciadonna, L., & Chittka, L. (2016). Unexpected rewards induce dopamine-dependent positive emotion–like state changes in bumblebees. *Science*, *353*(6307), 1529-1531.

Song, H., Amédégnato, C., Cigliano, M. M., Desutter-Grandcolas, L., Heads, S. W., Huang, Y., ... & Whiting, M. F. (2015). 300 million years of diversification: elucidating the patterns of orthopteran evolution based on comprehensive taxon and gene sampling. *Cladistics*, *31*(6), 621-651.

Song, Y., Chen, M., & Zhou, J. (2017). Effects of three pesticides on superoxide dismutase and glutathione-S-transferase activities and reproduction of Daphnia magna. *Archives of Environmental Protection*, *43*(1), 80-86.

Speight, M. C. (2017). The Syrph the Net database of European Syrphidae (Diptera), past, present and future. *Syrph the Net, the database of European Syrphidae (Diptera)*, *96*, 19.

Stafflinger, E., Hansen, K. K., Hauser, F., Schneider, M., Cazzamali, G., Williamson, M., & Grimmelikhuijzen, C. J. (2008). Cloning and identification of an oxytocin/vasopressin-like receptor and its ligand from insects. *Proceedings of the National Academy of Sciences*, *105*(9), 3262-3267.

Stanbrook, R. A., Harris, W. E., Wheater, C. P., & Jones, M. (2021). Evidence of phenotypic plasticity along an altitudinal gradient in the dung beetle *Onthophagus proteus*. *PeerJ*, *9*, e10798.

Stanton, R. L., Morrissey, C. A., & Clark, R. G. (2018). Analysis of trends and agricultural drivers of farmland bird declines in North America: A review. *Agriculture, Ecosystems & Environment*, *254*, 244-254.

Steiger, S. (2013). Bigger mothers are better mothers: disentangling size-related prenatal and postnatal maternal effects. *Proceedings of the Royal Society B: Biological Sciences*, *280*(1766), 20131225.

Stevenson, P. A., & Schildberger, K. (2013). Mechanisms of experience dependent control of aggression in crickets. *Current opinion in neurobiology*, *23*(3), 318-323.

Stone, R. L., Engasser, E. L., & Jameson, M. L. (2021). Heads or Tails? Dung Beetle (Coleoptera: Scarabaeidae: Scarabaeinae and Aphodiinae) Attraction to Carrion. *Environmental Entomology*, *50*(3), 615-621.

Stork, N. E. (2018). How many species of insects and other terrestrial arthropods are there on Earth? *Annual review of entomology*, *63*, 31-45.

Stork, N. E., McBroom, J., Gely, C., & Hamilton, A. J. (2015). New approaches narrow global species estimates for beetles, insects, and terrestrial arthropods. *Proceedings of the National Academy of Sciences*, *112*(24), 7519-7523.

Suchail, S., Debrauwer, L., & Belzunces, L. P. (2004). Metabolism of imidacloprid in *Apis mellifera*. *Pest Management Science: formerly Pesticide Science*, *60*(3), 291-296.

Suiter, D. R., & Scharf, M. E. (2009). Insecticide basics for the pest management professional. Bulletin, 1352, University of Georgia

Świętek, M., Lu, Y. C., Konefał, R., Ferreira, L. P., Cruz, M. M., Ma, Y. H., & Horák, D. (2019). Scavenging of reactive oxygen species by phenolic compound-modified maghemite nanoparticles. *Beilstein journal of nanotechnology*, *10*(1), 1073-1088.

Taghert, P. H., & Nitabach, M. N. (2012). Peptide neuromodulation in invertebrate model systems. *Neuron*, *76*(1), 82-97.

Tallamy, D. W., & Wood, T. K. (1986). Convergence patterns in subsocial insects. *Annual review of entomology*, *31*(1), 369-390.

Tan, J., Liu, Z., Wang, R., Huang, Z. Y., Chen, A. C., Gurevitz, M., & Dong, K. (2005). Identification of amino acid residues in the insect sodium channel critical for pyrethroid binding. *Molecular pharmacology*, *67*(2), 513-522.

Tarasov, S., & Dimitrov, D. (2016). Multigene phylogenetic analysis redefines dung beetles relationships and classification (Coleoptera: Scarabaeidae: Scarabaeinae). *BMC evolutionary biology*, *16*, 1-19.

Teder, T., & Knapp, M. (2019). Sublethal effects enhance detrimental impact of insecticides on non-target organisms: A quantitative synthesis in parasitoids. *Chemosphere*, *214*, 371-378.

Terra, W. R., Barroso, I. G., Dias, R. O., & Ferreira, C. (2019). Molecular physiology of insect midgut. In *Advances in insect physiology* (Vol. 56, pp. 117-163). Academic Press.

Thakkar, B., & Parikh, P. H. (2016). A Study on diversity and abundance of coleopterans in Gujarat, India. *Journal of Entomology and Zoology Studies*, *4*(5), 1082-1089.

Thamm, M., Balfanz, S., Scheiner, R., Baumann, A., & Blenau, W. (2010). Characterization of the 5-HT 1A receptor of the honeybee (Apis mellifera) and involvement of serotonin in phototactic behavior. *Cellular and molecular life sciences*, *67*, 2467-2479.

Tixier, T., Blanckenhorn, W. U., Lahr, J., Floate, K., Scheffczyk, A., Düring, R. A., ... & Lumaret, J. P. (2016). A four-country ring test of nontarget effects of ivermectin residues on the function of coprophilous communities of arthropods in breaking down livestock dung. *Environmental Toxicology and Chemistry*, *35*(8), 1953-1958.

Tomioka, K., Ikeda, M., Nagao, T., & Tamotsu, S. (1993). Involvement of serotonin in the circadian rhythm of an insect visual system. *Naturwissenschaften*, *80*, 137-139.

Tonelli, M., Giménez Gómez, V. C., Verdú, J. R., Casanoves, F., Zunino, M. (2021). Dung beetle assemblages attracted to cow and horse dung: the importance of mouthpart traits, body size, and nesting behavior in the community assembly process. Life, 11(9), 873.

Tonelli, M., Verdú, J. R., & Zunino, M. (2018). Effects of the progressive abandonment of grazing on dung beetle biodiversity: body size matters. *Biodiversity and conservation*, *27*, 189-204.

Tooming, E., Merivee, E., Must, A., Sibul, I., & Williams, I. (2014). Sub-lethal effects of the neurotoxic pyrethroid insecticide Fastac® 50EC on the general motor and locomotor activities of the non-targeted beneficial carabid beetle *Platynus assimilis* (Coleoptera: Carabidae). *Pest management science*, *70*(6), 959-966.

Toprak, U., Doğan, C., & Hegedus, D. (2021). A comparative perspective on functionally-related, intracellular calcium channels: the insect ryanodine and inositol 1, 4, 5-trisphosphate receptors. *Biomolecules*, *11*(7), 1031.

Torr, S. J., Maudlin, I., & Vale, G. A. (2007). Less is more: Restricted application of insecticide to cattle to improve the cost and efficacy of tsetse control. *Medical and Veterinary Entomology*, 21, 53– 64.

Trang, A., & Khandhar, P. B. (2020). Physiology, Acetylcholinesterase. [Updated 2020 Jul 10]. *StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing*.

Traugott, M., Benefer, C. M., Blackshaw, R. P., van Herk, W. G., & Vernon, R. S. (2015). Biology, ecology, and control of elaterid beetles in agricultural land. *Annual review of entomology*, *60*, 313-334.

Tride, G. D., & Burger, B. B. V. (2011). Olfactory ecology. In L. W. Sim-mons & T. J. Ridshill-Smith (Eds.), Ecology and evolution of dung beetles (pp. 87–106). Hoboken, New Jersey USA, John Wiley & Sons.

Trimmer, B. A., Aprille, J. R., Dudzinski, D. M., Lagace, C. J., Lewis, S. M., Michel, T., ... & Zayas, R. M. (2001). Nitric oxide and the control of firefly flashing. *Science*, *292*(5526), 2486-2488.

Trimmer, B. A., Aprille, J., & Modica-Napolitano, J. (2004). Nitric oxide signalling: insect brains and photocytes. In *Biochemical Society Symposia* (Vol. 71, pp. 65-83). Portland Press Limited.

Troppmann, B., Balfanz, S., Baumann, A., & Blenau, W. (2010). Inverse agonist and neutral antagonist actions of synthetic compounds at an insect 5-HT1 receptor. *British journal of pharmacology*, *159*(7), 1450-1462.

Trumbo, S. T. (2002). Hormonal regulation of parental care in insects. In *Hormones, brain and behavior* (pp. 115-139). Academic Press.

Trumbo, S. T. (2012). Patterns of parental care in invertebrates. *The evolution of parental care*, 81-100.

Trumbo, S. T. (2019). The physiology of insect families: A door to the study of social evolution. In *Advances in Insect Physiology* (Vol. 56, pp. 203-250). Academic Press.

Upadhyay, A. A. (2019). *Toxicological Studies of Herbicides Pyrazosulfuron-Ethyl on Fresh Water Fish: A Sub-Acute Study* (Doctoral dissertation, Maharaja Sayajirao University of Baroda (India)).

Urbanski, A., & Rosinski, G. (2018). Role of neuropeptides in the regulation of the insect immune system–current knowledge and perspectives. *Current Protein and Peptide Science*, *19*(12), 1201-1213.

Vale, G. A., Grant, I. F., Dewhurst, C. F., & Aigreau, D. (2004). Biological and chemical assays of pyrethroids in cattle dung. *Bulletin of Entomological Research*, *94*(3), 273-282.

Vale, G. A., Hargrove, J. W., Chamisa, A., Grant, I. F., & Torr, S. J. (2015). Pyrethroid treatment of cattle for tsetse control: reducing its impact on dung fauna. *PLoS neglected tropical diseases*, *9*(3), e0003560.

Van Den Pol, A. N. (2012). Neuropeptide transmission in brain circuits. *Neuron*, *76*(1), 98-115.

Vander Pan, A., Schmolz, E., Krücken, J., & Kuhn, C. (2019). A novel simulated-use test for determining the efficacy of insecticides against bed bugs (Hemiptera: Cimicidae). *Journal of Economic Entomology*, *112*(5), 2345-2353.

Varga, A. G., & Ritzmann, R. E. (2016). Cellular basis of head direction and contextual cues in the insect brain. *Current Biology*, *26*(14), 1816-1828.

Vavricka, C. J., Han, Q., Mehere, P., Ding, H., Christensen, B. M., & Li, J. (2014). Tyrosine metabolic enzymes from insects and mammals: a comparative perspective. *Insect science*, *21*(1), 13-19.

Venugopal, K. S., Thomas, S. K., & Flemming, A. T. (2012). Diversity and community structure of dung beetles (Coleoptera: Scarabaeinae) associated with semi-urban fragmented agricultural land in the Malabar coast in southern India. *Journal of Threatened Taxa*, 2685-2692.

Verdú, J. R., Cortez, V., Ortiz, A. J., González-Rodríguez, E., Martinez-Pinna, J., Lumaret, J. P., ... & Sánchez-Piñero, F. (2015). Low doses of ivermectin cause sensory and locomotor disorders in dung beetles. *Scientific reports*, *5*(1), 13912.

Verlinden, H. (2018). Dopamine signalling in locusts and other insects. *Insect biochemistry and molecular biology*, *97*, 40-52.

Verlinden, H., Vleugels, R., Marchal, E., Badisco, L., Pflüger, H. J., Blenau, W., & Broeck, J. V. (2010). The role of octopamine in locusts and other arthropods. *Journal of insect physiology*, *56*(8), 854-867.

Vinha, G. L., Plata-Rueda, A., Soares, M. A., Zanuncio, J. C., Serrão, J. E., & Martínez, L. C. (2021). Deltamethrin-mediated effects on locomotion, respiration, feeding, and histological changes in the midgut of Spodoptera frugiperda caterpillars. *Insects*, *12*(6), 483.

Vinod, K. V., & Sabu, T. K. (2007). Species composition and community structure of dung beetles attracted to dung of gaur and elephant in the moist forests of South Western Ghats. *Journal of Insect Science*, *7*(1), 56.

Virlouvet, G., Bichon, E., André, F., & Bizec, B. L. (2006). Faecal elimination of cypermethrin by cows after pour-on administration: Determining concentrations and measuring the impact on dung beetles. *Toxicological and Environ Chemistry*, *88*(3), 489-499.

Vleugels, R., Lenaerts, C., Baumann, A., Vanden Broeck, J., & Verlinden, H. (2013). Pharmacological characterization of a 5-HT1-type serotonin receptor in the red flour beetle, *Tribolium castaneum*. *PLoS One*, *8*(5), e65052.

Vleugels, R., Lenaerts, C., Vanden Broeck, J., & Verlinden, H. (2014). Signalling properties and pharmacology of a 5-HT 7-type serotonin receptor from *Tribolium castaneum*. *Insect molecular biology*, *23*(2), 230-243.

Vleugels, R., Verlinden, H., & Vanden Broeck, J. (2015). Serotonin, serotonin receptors and their actions in insects. *Neurotransmitter*, *2*.

Walorczyk, S. (2008). Development of a multi-residue method for the determination of pesticides in cereals and dry animal feed using gas chromatography–tandem quadrupole mass spectrometry: II. Improvement and extension to new analytes. *Journal of Chromatography A*, *1208*(1-2), 202-214.

Walorczyk, S., & Drożdżyński, D. (2012). Improvement and extension to new analytes of a multi-residue method for the determination of pesticides in cereals and dry animal feed using gas chromatography–tandem quadrupole mass spectrometry revisited. *Journal of Chromatography A*, *1251*, 219-231.

Wang, L., Ding, L., Yu, Z., Zhang, T., Ma, S., & Liu, J. (2016). Intracellular ROS scavenging and antioxidant enzyme regulating capacities of corn gluten meal-derived antioxidant peptides in HepG2 cells. *Food Research International*, *90*, 33-41.

Wardhaugh, K. G., Longstaff, B. C., & Lacey, M. J. (1998). Effects of residues of deltamethrin in cattle faeces on the development and survival of three species of dung breeding insect. *Australian Veterinary Journal*, *76*(4), 273-280.

Watanabe, T., & Sasaki, K. (2022). Behavioral roles of biogenic amines in bumble bee males. *Scientific Reports*, *12*(1), 20946.

Watanabe, T., Sadamoto, H., & Aonuma, H. (2011). Identification and expression analysis of the genes involved in serotonin biosynthesis and transduction in the field cricket *Gryllus bimaculatus*. *Insect molecular biology*, *20*(5), 619-635.

Waye, A., & Trudeau, V. L. (2011). Neuroendocrine disruption: more than hormones are upset. *Journal of Toxicology and Environmental Health, Part B*, *14*(5-7), 270-291.

Weaving, H. (2018). *The effect of veterinary endectocides on the reproductive physiology and output of temperate dung beetle species* (Doctoral dissertation, University of Bristol).

Webb, B., & Wystrach, A. (2016). Neural mechanisms of insect navigation. *Current Opinion in Insect Science*, *15*, 27-39.

Wei, H. Y., & Du, J. W. (2004). Sublethal effects of larval treatment with deltamethrin on moth sex pheromone communication system of the Asian corn borer, *Ostrinia furnacalis*. *Pesticide Biochemistry and Physiology*, *80*(1), 12-20.

Wenzel, B., Kunst, M., Günther, C., Ganter, G. K., Lakes-Harlan, R., Elsner, N., & Heinrich, R. (2005). Nitric oxide/cyclic guanosine monophosphate signaling in the central complex of the grasshopper brain inhibits singing behavior. *Journal of Comparative Neurology*, *488*(2), 129-139.

Wessnitzer, J., & Webb, B. (2006). Multimodal sensory integration in insects—towards insect brain control architectures. *Bioinspiration & biomimetics*, *1*(3), 63.

Wheelock, C. E., Miller, J. L., Miller, M. J., Phillips, B. M., Gee, S. J., Tjeerdema, R. S., & Hammock, B. D. (2005). Influence of container adsorption upon observed pyrethroid toxicity to *Ceriodaphnia dubia* and *Hyalella azteca*. *Aquatic toxicology*, *74*(1), 47-52.

Whipple, S. D., & Hoback, W. W. (2012). A comparison of dung beetle (Coleoptera: Scarabaeidae) attraction to native and exotic mammal dung. *Environmental entomology*, *41*(2), 238-244.

Wicker-Thomas, C., & Hamann, M. (2008). Interaction of dopamine, female pheromones, locomotion and sex behavior in *Drosophila melanogaster*. *Journal of insect physiology*, *54*(10-11), 1423-1431.

Wigby, S., Brown, N. C., Allen, S. E., Misra, S., Sitnik, J. L., Sepil, I., ... & Wolfner, M. F. (2020). The Drosophila seminal proteome and its role in postcopulatory sexual selection. *Philosophical Transactions of the Royal Society B*, *375*(1813), 20200072.

Williams, E. A. (2020). Function and distribution of the Wamide neuropeptide superfamily in metazoans. *Frontiers in endocrinology*, *11*, 344.

Williams, T., Valle, J., & Viñuela, E. (2003). Is the naturally derived insecticide Spinosad® compatible with insect natural enemies? *Biocontrol science and technology*, *13*(5), 459-475.

Williamson, S. M., Moffat, C., Gomersall, M. A., Saranzewa, N., Connolly, C. N., & Wright, G. A. (2013). Exposure to acetylcholinesterase inhibitors alters the physiology and motor function of honeybees. *Frontiers in physiology*, *4*, 13.

Winfree, R., W. Fox, J., Williams, N. M., Reilly, J. R., & Cariveau, D. P. (2015). Abundance of common species, not species richness, drives delivery of a real-world ecosystem service. *Ecology letters*, *18*(7), 626-635.

Wohde, M., Berkner, S., Junker, T., Konradi, S., Schwarz, L., & Düring, R. A. (2016). Occurrence and transformation of veterinary pharmaceuticals and biocides in manure: a literature review. *Environmental Sciences Europe*, *28*, 1-25.

Worthing, C. R., & Walker, S. B. (1987). *The pesticidie manual: a world compendium*. British crop protection council.

Wu, F., Guo, X., Zhang, J., Zhang, M., Ou, Z., & Peng, Y. (2017). *Phascolarctobacterium faecium* abundant colonization in human gastrointestinal tract. *Experimental and therapeutic medicine*, *14*(4), 3122-3126.

Wu, S. F., Xu, G., Stanley, D., Huang, J., & Ye, G. Y. (2015). Dopamine modulates hemocyte phagocytosis via a D1-like receptor in the rice stem borer, *Chilo suppressalis*. *Scientific reports*, *5*(1), 12247.

Wurm, Y., Wang, J., Riba-Grognuz, O., Corona, M., Nygaard, S., Hunt, B. G., ... & Keller, L. (2011). The genome of the fire ant *Solenopsis invicta*. *Proceedings of the National Academy of Sciences*, *108*(14), 5679-5684.

Xiang, Y., Wu, Q., Liang, L., Wang, X., Wang, J., Zhang, X., & Zhang, Q. (2012). Chlorotoxin-modified stealth liposomes encapsulating levodopa for the targeting delivery against the Parkinson's disease in the MPTP-induced mice model. *Journal of drug targeting*, *20*(1), 67-75.

Xing, H., Lin, J., Li, X., Huang, J., Liang, X., Li, Y., ... & Wu, H. (2023). Changes in dopamine and octopamine levels caused disordered behaviour in red imported fire ants exposed to cinnamon essential oils. *Industrial Crops and Products*, *199*, 116801.

Xu, Z. B., Zou, X. P., Zhang, N., Feng, Q. L., & Zheng, S. C. (2015). Detoxification of insecticides, allechemicals and heavy metals by glutathione S-transferase SlGSTE1 in the gut of *Spodoptera litura*. *Insect Science*, *22*(4), 503-511.

Yamanaka, N., Hua, Y. J., Roller, L., Spalovská-Valachová, I., Mizoguchi, A., Kataoka, H., & Tanaka, Y. (2010). *Bombyx prothoracicostatic* peptides activate the sex peptide receptor to regulate ecdysteroid biosynthesis. *Proceedings of the National Academy of Sciences*, *107*(5), 2060-2065.

Yan, S., Yin, M. Z., & Shen, J. (2022). Nanoparticle-based nontransformative RNA insecticides for sustainable pest control: Mechanisms, current status and challenges. *Entomol. Gen*, *43*, 21-30.

Yang, M., Wang, B., Gao, J., Zhang, Y., Xu, W., & Tao, L. (2017). Spinosad induces programmed cell death involves mitochondrial dysfunction and cytochrome C release in *Spodoptera frugiperda* Sf9 cells. *Chemosphere*, *169*, 155-161.

Yang, Y., Ma, S., Liu, F., Wang, Q., Wang, X., Hou, C., & Dai, P. (2020). Acute and chronic toxicity of acetamiprid, carbaryl, cypermethrin and deltamethrin to *Apis mellifera* larvae reared in vitro. *Pest management science*, *76*(3), 978-985.

Yapici, N., Zimmer, M., & Domingos, A. I. (2014). Cellular and molecular basis of decision-making. *EMBO reports*, *15*(10), 1023-1035.

Yeoh, J. G., Pandit, A. A., Zandawala, M., Nässel, D. R., Davies, S. A., & Dow, J. A. (2017). DINeR: database for insect neuropeptide research. *Insect Biochemistry and Molecular Biology*, *86*, 9-19.

Yeoh, J. G., Pandit, A. A., Zandawala, M., Nässel, D. R., Davies, S. A., & Dow, J. A. (2017). DINeR: database for insect neuropeptide research. *Insect Biochemistry and Molecular Biology*, *86*, 9-19.

Yıldıztekin, M., Kaya, C., Tuna, A. L., & Ashraf, M. (2015). Oxidative stress and antioxidative mechanisms in tomato (*Solanum lycopersicum* L.) plants sprayed with different pesticides.

Young, O. P. (2007). Laboratory studies on the feeding behavior of the putative dung beetle, Ateuchus histeroides (Coleoptera: Scarabaeidae). *Journal of the New York Entomological Society*, *114*(3), 157-169.

Yu, Z., Bin, Y., Jie, Y. U., Bao-ping, P., & Gui-rong, W. (2022). Expression profiles and functional prediction of ionotropic receptors in Asian corn borer, *Ostrinia furnacalis* (Lepidoptera: Crambidae). *Journal of Integrative Agriculture*, *21*(2), 474-485.

Yue, Z., Li, X., Zhang, E., Liu, X., & Zhao, Z. (2017). A potential and novel type transgenic corn plant for control of the Corn Borer. *Scientific Reports*, *7*(1), 44105.

Yue, Z., Liu, X., Zhou, Z., Hou, G., Hua, J., & Zhao, Z. (2016). Development of a novel-type transgenic cotton plant for control of cotton bollworm. *Plant Biotechnology Journal*, *14*(8), 1747-1755.

Yurchenko, V., & Morozov, A. (2022). Responses of hepatic biotransformation and antioxidant enzymes in Japanese medaka (Oryzias latipes) exposed to humic acid. *Fish Physiology and Biochemistry*, *48*(1), 1-13.

Zhang, T., Yu, F., Guo, L., Chen, M., Yuan, X., & Wu, B. (2018). Small heterodimer partner regulates circadian cytochromes p450 and drug-induced hepatotoxicity. *Theranostics*, *8*(19), 5246.

Zhang, X., & Gaudry, Q. (2016). Functional integration of a serotonergic neuron in the Drosophila antennal lobe. *Elife*, *5*, e16836.

Zhao, C., & Li, M. (2009). The receptor mechanisms underlying the disruptive effects of haloperidol and clozapine on rat maternal behavior: A double dissociation between dopamine D2 and 5-HT2A/2C receptors. *Pharmacology Biochemistry and Behavior*, *93*(4), 433-442.

Zhu, F., Parthasarathy, R., Bai, H., Woithe, K., Kaussmann, M., Nauen, R., ... & Palli, S. R. (2010). A brain-specific cytochrome P450 responsible for the majority of deltamethrin resistance in the QTC279 strain of Tribolium castaneum. *Proceedings of the National Academy of Sciences*, *107*(19), 8557-8562.

Zhu, M., Zhang, W., Liu, F., Chen, X., Li, H., & Xu, B. (2016). Characterization of an Apis cerana cerana cytochrome P450 gene (AccCYP336A1) and its roles in oxidative stresses responses. *Gene*, *584*(2), 120-128.

Zhu, M., Zhang, W., Liu, F., Chen, X., Li, H., & Xu, B. (2016). Characterization of an Apis cerana cerana cytochrome P450 gene (AccCYP336A1) and its roles in oxidative stresses responses. *Gene*, *584*(2), 120-128.

Zhu, Y. C., & Snodgrass, G. L. (2003). Cytochrome P450 CYP6X1 cDNAs and mRNA expression levels in three strains of the tarnished plant bug *Lygus lineolaris* (Heteroptera: Miridae) having different susceptibilities to pyrethroid insecticide. *Insect molecular biology*, *12*(1), 39-49.

Zhukovskaya, M. I., & Polyanovsky, A. D. (2017). Biogenic amines in insect antennae. *Frontiers in systems neuroscience*, *11*, 45.

Zorov, D. B., Juhaszova, M., & Sollott, S. J. (2014). Mitochondrial reactive oxygen species (ROS) and ROS-induced ROS release. *Physiological reviews*, *94*(3), 909-950.

Zug, R., & Hammerstein, P. (2015). Bad guys turned nice? A critical assessment of Wolbachia mutualisms in arthropod hosts. *Biological Reviews*, *90*(1), 89-111.

Zwarts, L., Versteven, M., & Callaerts, P. (2012). Genetics and neurobiology of aggression in Drosophila. *Fly*, *6*(1), 35-48.