

**Insect Welfare: Why It Matters and How the Animal Movement Can Contribute to It**  
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*Besides not thinking about insects when we hear the word “animals,” we also exclude them from our scope of moral consideration. We tend to just assume that insects are not sentient beings – or at least that they are not as sentient as vertebrates.*



[Grasshopper... Pixabay.com](#)

## **1. Insect abuse and exploitation**

Over 99.9% of animals in the world are invertebrates.[1] Yet, when most humans hear the word “animal” instead of thinking about a dog or a cow, we should think about an octopus, a bee or any other invertebrate, as they account for the vast majority of animals.[2] There is an estimation that, at any time, there are some 10 quintillion (10,000,000,000,000,000,000) individual insects alive. [3]

If the number of insects in the world is impressive, so is the extent of human use of those animals. Exploitation of bees for their honey is an example of such. A lot has been said about the necessity of protecting bees for their function as pollinators to support life on Earth.[4] However, it is not as often said that depriving bees of their honey means denying them access to their vital nourishment.

Some products involve insect exploitation without consumers even realizing it. Silk and carmine are great examples of that. Many are not aware that silk is produced by worms and moths. Even fewer know what a horrendous practice is behind that production. In order to remove silkworms from their cocoons, where silk is, insects are boiled to death. It is estimated that, for just one meter of fabric, 3,000 to 15,000 silkworms are submitted to that extremely cruel process.[6] As to carmine, a red pigment used in the preparation of many foods, it is made from crushed bodies of cochineal insects. According to PETA, in order to produce one pound of the pigment, 70,000 beetles must be killed.[7]

Among the many examples of insect exploitation, insect farming might be the most relevant one. Entomophagy, the practice of eating insects, has been increasing world widely, making insect farming a

rapid growing industry.[8] Especially because edible insects are being considered the “food of the future,” breeding insects as livestock is raising animal welfare concerns.[10]

It could be, however, that the rising tendency of breeding insects is not mainly motivated by profit, but by environmental reasons. Entomophagy has been recommended by FAO as a way to fight climate change. Instead, insect protein is being promoted as an alternative to meat, and, thus, to livestock production. Lower greenhouse emissions and less area needed[12] are just some of the arguments used by those who deem breeding insects a sustainable solution to environmental degradation.

## **2. What about sentience?**

Besides not thinking about insects when we hear the word “animals,” we also exclude them from our scope of moral consideration. We tend to just assume that insects are not sentient beings – or at least that they are not as [13] as vertebrates. Sentience, however, is usually measured by specific behaviors and neurological patterns that are verified through scientific studies. And research developed so far indicate that there is a chance we might be wrong in our assumptions.

Eusocial insects – a category of animals that live in organized families where each member has a specific role[15] – are deemed extremely successful and intelligent by science. An experiment made with honey bees revealed that they had the tendency to choose larger delayed rewards over small immediate ones, which indicates a higher ability of self-control than rats and pigeons. Ants, for their turn, have the capacity to lead the youngest from the nest to food sources, a technique called “tandem running.” [17] Also, studies have shown that fruit flies have the ability to develop complex forms of learning. An experiment proved that these animals were able to understand the difference between a color that predicted punishment, and another that predicted reward.[18] Cockroaches’ learning skills are also very impressive amongst insects, which is probably explained by the fact that they have more brain neurons than fruit flies, ants and honey bees.[19]

Researchers argue that, when it comes to assessing invertebrates’ sentience, it is not so much about results, but rather about the existence of experiments in the first place.[20] Not much can be said about the capacities of those animals without the development of scientific studies. Thus, the first step towards increasing insect welfare is supporting additional research on their cognitive abilities and behaviors. Insect research seems to be neglected compared with studies of other invertebrates. After a recent report on the likelihood of sentience in cephalopods and decapod crustaceans, UK has declared that lobsters, crabs, octopuses and related species will be included under the Animal Welfare (Sentience) Bill.[22] have been demonstrated to have as a notably complex brain as cephalopods;[23] yet, due to lack of studies on their sentience, arachnids are not afforded a similar opportunity to pave their way for legal protection. It is possible that the fact that evidence supporting octopuses’ sentience exists does not mean that said animals are “more conscious” than many insects. It only means that the latter were not yet subjected to as much research as the former.

## **3. The silence of animal protection movement and animal law**

In a world where animals are generally seen as commodities, it is not surprising that insects’ welfare is widely disregarded. But what about the animal advocacy movement? How to explain the silence of most animal protection organizations on the matter of insect suffering?

Even though sentience is currently one of the main resources to which animal advocates turn to as an attempt to increase insect protection, and, for that reason, was a valuable resource for the present blog, . Some researchers appeal to the precautionary principle to argue that, in the absence of evidence to the

contrary, it should be assumed that sentience is present.[25] As insects are considered animals, their welfare should be supported by animal protection NGOs. Yet the number of nonprofits that include insect welfare in their agenda is very small, and there is no single organization that deals with it as a single issue.

In view of population statistics, it is surprising that the number of effective altruism organizations that encompass insects is not bigger. Effective Altruism is a philosophical and social movement that intends to help as many, the best way possible. Most animals in the world are invertebrates (a category that includes insects). Yet it is estimated that only less than 1% of total spending made by effective animal activism community is allocated to invertebrate welfare.[27]

Even though advocacy on insect welfare still has a long way to go and a lot of room to grow, some NGOs already started the work. Wild Animal Initiative, Rethink Priorities, Effective Altruism Foundation, Faunalytics and PETA are just some of the effective altruism nonprofits that devoted a part of their agenda to insect protection. Among conservation groups, The Xerces Society, Buglife, Pollinator Partnership and the Center for Biological Diversity are a few worth mentioning.

Lack of reference to insects' welfare is also perceptible in the legal field. Despite the existence of some research on bugs protection in environmental law, the perspective is mainly conservationist. Insect protection is not amongst the most favorite topics of animal law academics and scholars as well. The issue is not frequently covered by animal law curricula, which might be due to a skepticism surrounding the worthiness of fighting for legal protection of insects. The challenge just seems too big, especially because insects are usually not "likable."

International treaties offer a level of protection to some insects, at least for conservation purposes. Several insects are listed on the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).[28] And only one insect, the Monarch Butterfly, is listed under the protection of the Convention on Migratory Species (CMS).[29] It seems clear, therefore, that animal defenders, both advocates and attorneys, also have a lot of work to do on their own end in terms of advancing insects protection.

#### **4. Alternatives for reducing insect suffering**

In spite of the unfavorable scenario described above, improving insect welfare is not only necessary, but possible. Yes, people are not usually very sympathetic to insects, especially for esthetical reasons. However, that is not an uncrossable obstacle for advancing insect protection. It can actually even help stop cruelties that insects have been systematically suffering. Thus, access to information could be a helpful tool to reducing use of insects in products that people have no awareness contain them. Alternatives exist for all the abusive practices listed in the first part of this blog. Not surprisingly, the most effective solutions involve just quitting consuming products that, while not essential for human survival, involve death, harm and potential suffering for individuals whose subjective experiences we know so little about. For instance, not only can humans live without honey and carmine but we also have the mental capacity to come up with effective replacements for those products – like maple syrup and beetroot-based food coloring.

Besides, the fact that insect farming has become a prospective future, discovering more about those animals' consciousness is fundamental. There is much room for both environmental and animal advocates to discuss the proposal of a shift to insect livestock as a way to reduce climate change process. From an environmental point of view, breeding insects may not be as sustainable as some argue – it may, in fact, even lead to another environmental imbalance. Animal advocacy, for its turn, has an important role in

raising awareness on insects' welfare and on the viability of a plant-based diet for humans, highlighting the possibility of excluding of all kinds of animal farming.

It is only an acknowledgement that the difference between the two groups may not that big. Since lack of studies still does not allow us to have a better grasp on the broadness of insects' sentience, and since alternatives that reduce their suffering are available and feasible, there is no reason why cruel activities towards insects should keep going unabatedly. The animal protection movement, including animal law, should act as a positive model and increase inclusion of insects' welfare in their agendas.

## Footnotes

[1] Jason Schukraft, *Invertebrate Welfare Cause Profile*, Effective Altruism Forum (Jul. 9, 2019), <https://forum.effectivealtruism.org/posts/EDCwbDEhwRGZjqY6S/invertebrate-welfare-cause-profile>.

[2] For the purposes of this blog, the term “insects” will be used as it is in a general context, as a reference to animals that are considered part of that category according to popular sense. It will, therefore, include animals that, despite not being properly part of “Insects Class”, integrate the Phylum Arthropods, like spiders (Class Arachnids).

[3] Smithsonian, *Numbers of Insects (Species and Individuals)*, <https://www.si.edu/spotlight/buginfo/bugnos#:~:text=At%20any%20time%2C%20it%20is,d%20described%20species%20is%20approximately%2091%2C000> (last visited Mar. 18, 2022).

[4] Thomas H. Nicholls Nature Education Center, *Pollinators are essential to life on Earth and they need our help*, Price County Review (Jul. 1, 2021), [https://www.apg-wi.com/price\\_county\\_review/free/pollinators-are-essential-to-life-on-earth-and-they-need-our-help/article\\_919ff738-27e3-5d27-be2d-1aaa7b173554.html](https://www.apg-wi.com/price_county_review/free/pollinators-are-essential-to-life-on-earth-and-they-need-our-help/article_919ff738-27e3-5d27-be2d-1aaa7b173554.html).

[5] Peta, *The Honey Industry*, <https://www.peta.org/issues/animals-used-for-food/animals-used-food-factsheets/honey-factory-farmed-bees/> (last visited Mar. 18, 2022).

[6] Shubhobroto Ghosh, *All that glitters is not kind*, World Animal Protection (Nov. 19, 2019), <https://www.worldanimalprotection.org.in/blogs/all-glitters-not-kind>.

[7] Peta, *Animal-Derived Ingredients List*, <https://www.peta.org/living/food/animal-ingredients-list/> (last visited Mar. 18, 2022).

[8] MacKenzie Wade and Jeffrey Hoelle, A review of edible insect industrialization: scales of production and implications for sustainability, *Environ. Res. Lett.*, 15 (2020).

[9] Emily Anthes, *Could insects be the wonder food of the future?*, BBC (Oct. 13, 2014), <https://www.bbc.com/future/article/20141014-time-to-put-bugs-on-the-menu>.

[10] MacKenzie Wade and Jeffrey Hoelle, A review of edible insect industrialization: scales of production and implications for sustainability, *Environ. Res. Lett.*, 15 (2020).

[11] FAO (FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS), *Edible Insects: Future prospects for food and feed security*, FAO forestry paper 171 (2013).

[12] Garrett M. Broad, *Effective animal advocacy: effective altruism, the social economy, and the animal protection movement*, *Agriculture and Human Values* 35, 777–789 (2018).

[13] The word “sentience” here is used according to the definition provided by Jason Schukraft in his article “Invertebrate Sentience: A Useful Empirical Resource”, published by Rethink Priorities. Jason Schukraft, *Invertebrate Sentience: A Useful Empirical Resource*, Rethink Priorities (Jun. 11, 2019), <https://forum.effectivealtruism.org/posts/AMFuSWrsutBFraZtE/invertebrate-sentience-a-useful-empirical-resource>. In such piece, sentience is equivalent to ‘phenomenal consciousness,’ and ‘subjective experience’ interchangeably.

[14] Daniela R. Waldhorn, *Invertebrate sentience: summary of findings, part 1*, *Invertebrate sentience: summary of findings*, Rethink Priorities (Jun. 14, 2019), <https://rethinkpriorities.org/publications/invertebrate-sentience-summary-of-findings-part-1>.

[15] Comzit Opachaloemphan et al., *Recent Advances in Behavioral (Epi)Genetics in Eusocial Insects*, *Annu Rev Genet.* November 23; 52 (2018).

[16] Jason Schukraft, *Invertebrate Welfare Cause Profile*, Effective Altruism Forum (Jul. 9, 2019), <https://forum.effectivealtruism.org/posts/EDCwbDEhwRGZjqY6S/invertebrate-welfare-cause-profile>.

[17] Daniela R. Waldhorn, *Next steps in invertebrate welfare, part 2: possible interventions*, Rethink Priorities (Nov. 13, 2019), <https://rethinkpriorities.org/publications/next-steps-in-invertebrate-welfare-part-2-possible-interventions>.

[18] Daniela R. Waldhorn, *Next steps in invertebrate welfare, part 2: possible interventions*, Rethink Priorities (Nov. 13, 2019), <https://rethinkpriorities.org/publications/next-steps-in-invertebrate-welfare-part-2-possible-interventions>.

[19] Comzit Opachaloemphan et al., *Recent Advances in Behavioral (Epi)Genetics in Eusocial Insects*, *Annu Rev Genet.* November 23; 52 (2018).

[20] Daniela R. Waldhorn, *Next steps in invertebrate welfare, part 1: fundamental research*, Rethink Priorities (Nov. 11, 2021), <https://rethinkpriorities.org/publications/next-steps-in-invertebrate-welfare-part-1-fundamental-research>.

[21] Daniela R. Waldhorn, *Invertebrate Sentience: Summary of findings, Part 2*, Effective Altruism Forum (Jun. 14, 2019), <https://forum.effectivealtruism.org/posts/JtmiKxwCL7CQ4iL4p/invertebrate-sentience-summary-of-findings-part-2-1>.

[22] Royal Veterinary College of the University of London, *Lobsters, octopuses and crabs recognised as sentient beings in UK Law*, <https://www.rvc.ac.uk/research/research-centres-and-facilities/rvc-animal-welfare-science-and-ethics/news/lobsters-octopus-and-crabs-recognised-as-sentient-beings-in-uk-law> (last updated Mar. 2, 2022, 16:26 PM).

[23] Daniela R. Waldhorn, *Invertebrate Sentience: Summary of findings, Part 2*, Effective Altruism Forum (Jun. 14, 2019), <https://forum.effectivealtruism.org/posts/JtmiKxwCL7CQ4iL4p/invertebrate-sentience-summary-of-findings-part-2-1>.

[24] *Id.*

[25] Jonathan Birch, *Animal sentience and the precautionary principle*, *Animal Sentience* 16(1) (2017).

[26] Aaron Gertler, *The Effective Altruism Handbook*, Effective Altruism Forum (Jul. 16, 2021), <https://forum.effectivealtruism.org/posts/cN9Zu7dowefAfmNnH/the-effective-altruism-handbook>.

[27] Jason Schukraft, *Invertebrate Welfare Cause Profile*, Effective Altruism Forum (Jul. 9, 2019), <https://forum.effectivealtruism.org/posts/EDCwbDEhwRGZjqY6S/invertebrate-welfare-cause-profile>.

[28] Convention on International Trade in Endangered Species of Wild Fauna and Flora, <https://cites.org/eng/disc/what.php> (last visited Mar. 18, 2022).

[29] Convention on Migratory Species of Wild Animals, [https://www.cms.int/en/species?field\\_species\\_class\\_tid=1311](https://www.cms.int/en/species?field_species_class_tid=1311) (last visited Mar. 18, 2022).

[30] Ryan Jaslow, *Starbucks to phase out bug-based dyes from 6 food, drink items*, CBS News (Apr. 20, 2012, 8:45 AM), <https://www.cbsnews.com/news/starbucks-to-phase-out-bug-based-dyes-from-6-food-drink-items/>.

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Academic research has always been one of Vanessa's main interests, which is why she has been a member of the Research Group on International Law coordinated by Professor Claudia Lima Marques since 2007. In the scope of her activities for the Research Group, she was awarded DAAD (German Academic Exchange Service) scholarships to study International Law at Justus-Liebig-Universität Gießen (2008-2009) and Refugee Law at Humboldt-Universität zu Berlin (2018), both in Germany.

Realizing that nonhuman animals are the most underrepresented group in society made Vanessa direct her efforts and her knowledge in international law toward the protection of animals. In addition to pursuing her LLM, she has been dedicated to volunteering for animal rights NGOs, such as the Brazilian Vegetarian Society, where she has become a local coordinator.

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