Letters to the Editor

The Term "Killer Bee" Is Not Helpful When Talking to Patients or Colleagues

To the Editor: As a family physician and hobbyist beekeeper, I encourage Dr. Herness and colleagues to refrain from using the outdated term "killer bee."[1] The docile European honeybee was brought to the Americas by colonists in the 17th century. Africanized honeybees are also honeybees known as the African subspecies *Apis mellifera scutellata*. This species was brought to a research laboratory in Brazil in the 1950s; some colonies escaped the laboratory and bred with colonies in the area. As a result, bees carrying the genetic traits of *A. mellifera scutellata* have gradually moved northward.

All bees are defensive.[2] Compared with the European honeybee, Africanized honeybees have more guard bees on watch, are quicker to attack, and chase their invaders farther.[3] This aggressiveness gave Africanized honeybees the unwarranted "killer bee" moniker used in popular culture. These genetic traits are found in male drones and the laying queen bee. Many honeybee colonies have mixed species genetics.

In addition to the states listed in the article, Alabama, Colorado, Louisiana, Oklahoma, Tennessee, and Utah also have Africanized honeybees. The author suggested avoiding loud noises around "killer bee" hives to avoid stings. Africanized honeybees and European honeybee hives look the same. Africanized honeybees' genetics do not grossly change the bees' appearance, only behaviors. European honeybees do not like loud noises or vibrations around their colonies either. Mowing and weed trimming should be performed in the cool of the day when bees are calmer. Protective clothing is suggested.

In Table 4, the authors state that human sweat and carbon dioxide from breathing agitate bees and can provoke an attack. However, that is incorrect; it is the mammalian fight or flight behavior that the bees sense.[4]

I disagree with the author's suggestion to avoid walking in flowers to prevent bee stings. Do not avoid nature; experiencing it is a mental health imperative.[5] Instead, wear long slacks, allow bee colonies 100 feet of clearance, and stay calm if you encounter a hive or are stung. Beekeepers should carry emergency bee sting kits with antihistamines and epinephrine.[6]

Cynthia G. Olsen, MD, FAAFP
Dayton, Ohio
Email: cynthia.olsen@wright.edu

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References

1. Herness J, Snyder MJ, Newman RS. Arthropod bites and stings. *Am Fam Physician*. 2022;106(2):137-147.
2. Rinderer TE, Buco SM, Rubink HV, et al. Morphometric identification of Africanized and European honey bees using large reference populations. *Apidologie*. 1993;24(6):569-585.
3. Collins AM, Rinderer TE, Harbo JR, et al. Colony defense by Africanized and European honey bees. *Science*. 1982;218(4567):72-74.
4. Hunt GJ. Flight and fight: a comparative view of the neurophysiology and genetics of honey bee defensive behavior. *J Insect Physiol*. 2007;53(5):399-410.
5. Bratman GN, Anderson CB, Berman MG, et al. Nature and mental health: an ecosystem service perspective. *Sci Adv*. 2019;5(7):eaax0903.
6. Arcangeli G, Traversini V, Tomasini E, et al. Allergic anaphylactic risk in farming activities: a systematic review. *Int J Environ Res Public Health*. 2020;17(14):4921.

In Reply: We thank Dr. Olsen for the thoughtful commentary on our article. We greatly appreciate them contributing their expertise from working closely with bees and clarifying some key points we could not cover in depth. We agree that honeybees are generally docile and only sting when threatened or provoked. Our use of the term "killer bees" in Table 4 was for clarity purposes because Africanized honeybees are commonly known by this term in the lay press and scientific literature.

In our review of the cited Hunt article, we found no scientific basis for the statement that bees respond to the mammalian fight or flight response. Instead, the article discusses what triggers the bee fight or flight response and uses parallel studies in mammals to offer hypothesized biochemical explanations for aggressive behavior in arthropods.[1] It is generally accepted that visual, olfactory, and auditory stimuli from mammals

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(including humans) can provoke honeybee colony defensive behavior, including stinging.[2]

Our recommendations in Table 4 were intended for patients looking to avoid Hymenoptera stings, particularly those with life-threatening allergies to their venom. Although we generally agree that spending time in nature is positive for mental health, our patients' health and lifestyle priorities are not homogenous. Family physicians are ideally positioned to best understand their patient's needs and individualize recommendations through shared decision-making.

The opinions and assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the U.S. Air Force, the U.S. Department of Defense, or the U.S. government.

Joel Herness, MD
Nellis Air Force Base, Nev.
Email: joelhernessmd@gmail.com

Matthew J. Snyder, DO
Nellis Air Force Base, Nev.

Raquelle Suzanne Newman, MD
Nellis Air Force Base, Nev.

Author disclosure: No relevant financial relationships.

References

1. Hunt GJ. Flight and fight: a comparative view of the neurophysiology and genetics of honey bee defensive behavior. *J Insect Physiol*. 2007;53(5):399-410.
2. Nouvian M, Reinhard J, Giurfa M. The defensive response of the honeybee *Apis mellifera*. *J Exp Biol*. 2016;219(pt 22):3505-3517. ■