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Entomological Society of America Proposal Form for New Common Name or Change of ESA-Approved Common Name

Complete this form and e-mail to pubs@entsoc.org.

Submissions will not be considered unless this form is filled out completely.

The proposer is expected to be familiar with the rules, recommendations, and procedures outlined in the "Use and Submission of Common Names" on the ESA website at <https://www.entsoc.org/pubs/use-and-submission-common-names>.

1. Proposed new common name:

- A) northern giant hornet (*Vespa mandarinia*)*
- B) southern giant hornet (*Vespa soror*)*
- C) yellow-legged hornet (*Vespa velutina*)

*Other potential adjectives that might be appended to these two species to help distinguish between them are addressed at the end of this proposal.

Note: The original proposal offered a choice between "giant hornet" and "northern giant hornet" for *Vespa mandarinia*. After some discussion, the committee felt that northern giant hornet offered the most clarity, and thus that is the common name the committee has elected to move forward. Feedback on this choice is welcome.

2. Previously approved common name (if any): none

3. Scientific name (genus, species, author):

- A) *Vespa mandarinia* Smith, 1852
- B) *Vespa soror* du Buysson, 1905
- C) *Vespa velutina* Lepeletier, 1836

(Hymenoptera: Vespidae)

Supporting Information

4. Please provide a clear and convincing explanation for why a common name is needed, possibly including but not limited to the taxon's economic, ecological, or medical importance, striking appearance, abundance, or conservation status:

Vespa mandarinia is a large predaceous hornet native to parts of Asia. Specimens of *Vespa mandarinia* were first detected in Canada and the United States in 2019, with several more sightings since. A nest was located and destroyed in Canada in 2019, and more nests were located and removed in the United States in 2020 and 2021. The large size of the hornet and the potential ecological and agricultural impacts have made its introduction, and the concomitant survey and eradication programs of each country, very prominent in the public mind. The survey

and eradication programs also incorporate community science and outreach as a significant component. To date, over \$2 million dollars has been spent in detection and eradication of *V. mandarinia*, and this effort will likely continue for the next several years.

While there is no approved common name, the name “Asian giant hornet” appears in the media, agency outreach materials, and scientific literature with regularity. The media also frequently uses the name “murder hornet”, although this name is not used by federal or state agencies. Both names are problematic and may be barriers to accurate and effective communication, and both names specifically fail several points in rule 6 of the ESA’s guidelines for selecting common names (<https://www.entsoc.org/publications/common-names/use-submission>).

An accessible, accurate name will be beneficial by facilitating simple and inclusive communication with the public about *Vespa mandarinia*.

This proposal also includes common name suggestions for two additional species. A specimen of *V. soror*, which is biologically analogous to *V. mandarinia*, was collected in Vancouver, BC, in 2019 – not long before *V. mandarinia* was found in Nanaimo, BC. Both species share some aspects of their de-facto common names in the literature. *Vespa velutina* was accidentally introduced to Europe where it is now widely distributed from northern Italy to the U.K. It has also become established in Korea and Japan outside of its native range. In Europe, it is often referred to as the “Asian hornet”. To date, at least 10 species in the genus *Vespa* have been detected outside of their natural ranges, which attests to the potential of hornets to be introduced and established.

5. Stage or characteristic to which the proposed common name refers.

(If the description involves a physical feature, it is strongly encouraged that an image of the organism be provided with this submission.)

Vespa mandarinia and the related *V. soror* are the largest known hornets, or wasps in the genus *Vespa* (Perrard et al. 2013, Smith-Pardo et al. 2020). They are, relative to other species in the genus, giants. As such, the proposed common names inherently refer to all life stages, although most people are likely to only encounter adult worker hornets. *Vespa mandarinia* has been well studied in Japan, Korea, and temperate regions of China where it is the only giant hornet species to occur. *Vespa soror*, in contrast, is poorly known, with most research on the species published since 2020. *Vespa soror* is more common than *V. mandarinia* in the subtropical lowlands of Asia (e.g., Hong Kong) and seems to completely replace *V. mandarinia* further south. The adjectives “northern” and “southern” refer to these differences in ranges. Yellow-legged hornet, proposed here for *V. velutina*, refers to the adult forms of the animal – specifically their conspicuous yellow legs.

6. Distribution (include references):

The native range of *V. mandarinia* is broad with specimens confirmed from India, Bhutan, Nepal, Myanmar, Thailand, Laos, Vietnam, China, Hong Kong, Taiwan, eastern Russia, Korea, and Japan (Smith-Pardo et al. 2020). Previously reported records from Sri Lanka and the Malay peninsula are questionable (Martin 1995, Kumar and Srinivasan 2010). *Vespa soror* is native to northeastern India, southern China, Hong Kong, Thailand, Laos, and Vietnam (Nguyen and Carpenter 2002, Smith-Pardo et al. 2020). Their ranges overlap in some places, but *V. mandarinia* ranges farther to the north, and is apparently less abundant in locales where the two species co-occur (Nguyen et al. 2006, Lee 2010).

Nests of *V. mandarinia* were detected in British Columbia in 2019, and in Washington State in 2020 and 2021. While eradication seems achievable and is still the primary goal of provincial, state, and US federal agencies, eventual establishment of the insect in North America cannot be ruled out. If this were to occur, habitat suitability models indicate that the species could occupy much of the Pacific Coast north of California, and, if introduced east of the Great Plains, would encounter even more contiguous suitable habitat (Zhu et al. 2020). While potential habitat has not

been formally modelled, *V. soror* could likely become established in much of the southeastern USA.

Vespa velutina is native to central Asia, but has been introduced into Europe and parts of Asia outside of its native range, e.g. Korea and Japan. It has not been recorded in North America, but could be readily introduced from Europe or Asia.

7. Principal hosts (include references):

All three species, like other hornets, are polyphagous and carnivorous. *Vespa mandarinia* and its sister species *V. soror* are semi-specialists on other social wasps and honey bees, and exhibit a unique behavior of group attacks on nests and hives. They are both noted pests of domesticated honey bees (Matsuura and Sakagami 1973, Lee 2010, Mattila et al. 2020). *Vespa velutina* is also a formidable predator of foraging *A. mellifera* (although they do not attack hives *en masse*), other social Hymenoptera, and many other insects (Rome et al. 2021).

8. Please provide multiple references indicating clearly that the proposed name is already established and ideally widespread in use. If the name has been newly coined for purposes of this application, please state so:

Neither of the two above conditions perfectly apply to this situation, since several related, yet slightly similar, English common names have been used for these species in the past. This proposal addresses all three species.

Vespa mandarinia:

“Murder hornet”, widely derided by entomologists, seems to have first appeared in English language communication in May of 2020 in a New York Times article, and has been primarily used by news organizations or in social media posts. “Asian giant hornet” has been the name predominately used in government and university outreach and media in the US and Canada. The name “giant hornet” is less frequently used in popular media than “Asian giant hornet”, but has a long history in the scientific literature (Fig. 1). While accurate and somewhat descriptive, “Asian giant hornet” is problematic for three reasons:

1. The COVID-19 pandemic and geopolitical tensions have contributed to a rise in hate crimes and other odious behavior directed at people of Asian descent in countries across the globe. Although the descriptor “Asian” in this context is not at all pejorative, and is geographically accurate, its association with a large insect that inspires fear and is under eradication may bolster anti-Asian sentiment among some people. Indeed, in my personal experience I have heard statements like “another damn thing from China” multiple times (irrespective of the fact that the hornets detected in North America likely originated in Japan or Korea). Even if people do not explicitly ascribe negative feelings towards the insect, or their neighbors and colleagues of Asian descent, the prominence of the descriptor “Asian” in the common name will, for some people, implicitly take precedence over other, more important, biological characteristics. It is at best a neutral and uninformative adjective, potentially a distraction from more salient characters of the organism, and at worst a racist trope. A geographically broad detection and eradication program is likely to be more effective if focus stays on biological characteristics of the species of concern, and not its geographic origin. Finally, insisting on incorporating “Asian” into the common name risks alienating some community members and deterring participation in an otherwise vibrant community science program.

2. While *V. mandarinia* originates in Asia, all 22 species of *Vespa* are endemic to the continent; i.e. all hornets are Asian hornets. As such, “Asian” does not communicate anything unique or helpful about the insect’s biology, appearance, or behavior. This is in contrast to common names such as “spotted lanternfly”, a lanternfly with a plethora of spots, or “spongy moth”, which has spongy-textured egg masses.

3. The hornet *V. velutina*, called the yellow-legged hornet or Asian hornet in English (and several other European languages, e.g. frelon asiatique, Asiatische Hornisse), is introduced to and

rapidly spreading across Europe and parts of Asia outside of its original range. That species is also a noted pest of *Apis mellifera*. Although the *V. mandarinia* and *V. velutina* may have congruent agricultural impacts, the insects have significantly different nesting and foraging habitats. Sharing similar common names (Asian hornet, Asian giant hornet) makes searching for accurate information confusing, especially for non-entomologists. For example, I have had to correct misconceptions about where nests are located (exposed in trees for *V. velutina*, protected in cavities for *V. mandarinia*) since *V. mandarinia* was first detected in North America precisely because people had learned about the “Asian hornet” online. Residents of Switzerland, the United Kingdom, and Spain have contacted me with sightings of “Asian hornets” several times. We know that at least one report of *V. mandarinia* in Washington State was submitted to a UK agency instead of WSDA, the submitter becoming misdirected precisely because the names “Asian hornet” and “Asian giant hornet” are so similar. This likely caused a two-month delay in locating and eradicating the colony removed in 2020.

By removing “Asian” but retaining “giant”, the entomological community can start to move away from the confusing and potentially harmful current de-facto common name, while retaining a bridge to the information already produced under that name. Giant hornet has been used in English-language scientific literature for this species for over 50 years, including seminal works of natural history (e.g. Matsuura and Sakagami 1973) (Fig. 1). If the entomological community feels it is warranted, adding “northern” or a similar adjective to the name can also avert future confusion with *V. soror*.

In terms of other *Vespa* species, “giant” is only consistently applied in scientific literature to *V. soror*, and mostly very recently. “Giant” has been used sporadically to refer to *V. velutina*, *V. orientalis*, and others, but rarely, and usually in Cyrillic literature. Giant hornet was indeed the approved common name for *V. crabro* until 1977 (Greene and Caron 1980), but literature using this common name seems to be sparse (Fig. 1). “Asian hornet” has seldom been used specifically to refer to *V. mandarinia*, with the majority of these instances appearing only in the past two years in a few Chinese journals. “Giant Asian hornet” has been used infrequently over the years, and while searches for “Asian hornet” may not return this literature, less-specific search efforts that include “giant” as a search term will include these articles in the results. Similarly, searches for “Asian giant hornet” will still identify literature produced using the name “giant hornet”, but, at least for savvy searchers, will begin to exclude “Asian hornet”-specific information. More importantly, as research continues on *V. mandarinia* and *V. soror*, making a common name decision now will streamline the literature from this point forward.

Vespa soror:

Vespa soror does not seem to have a de-facto common name in the same sense as *V. mandarinia* or *V. velutina*. The few publications that refer to it outside of its scientific name simply use “giant hornet”, and until recently there was very little non-taxonomic literature on *V. soror*. There does not seem to be much literature in English language popular press or social media addressing this species, aside from a few news stories about recent research. With the publication of several novel papers about the behavior and biology of *V. soror*, and detection of a queen in British Columbia in 2019, it seems prudent to assign it a common name at this time that differentiates it from *V. mandarinia*.

Vespa velutina:

This species, in Europe, is commonly called the “Asian hornet” and the “yellow-legged hornet”. In our brief analysis of these two names (Fig. 1), “Asian hornet” was applied about 36% of the time, and “yellow-legged hornet” 64% of the time. The proposed common name “yellow-legged hornet” seems to have been gaining more traction in the European literature in the past two years, although public outreach still regularly refers to the “Asian hornet”.

9. Please identify any common names in use, including those used by indigenous peoples in the insect’s area of origin, that have been applied to this taxon, other than the one herein proposed, with references. Please justify why each alternate name is inadequate:

There seem to be common names for *V. mandarinia* in every country where the species exists. None of them are English, and none have been commonly used in English literature to identify the species. Some scientists have proposed simply translating and using some of those names, e.g. “sparrow wasp” (スズメバチ). While elegant, this approach seems problematic for two reasons. First, there are often several kinds of hornets in each country that share aspects of their common name (e.g. transliterated from Japanese - oo-suzumebachi, kiro-suzumebachi), so more specific names would still be needed to address the other hornet species in this proposal (giant sparrow wasp, yellow sparrow wasp).

More importantly though, there are several decades worth of public and scientific literature about *V. mandarinia* in English, almost all of which use common names that include giant and hornet, but none of which incorporate direct translations or transliterations of common names from other languages. A newly coined name will break that continuity of information. While there are definitely more picturesque and distinctive common names available (sparrow hornet, tiger hornet, golden-ringed hornet), none have the benefit of linking decades of English-language scientific work and public outreach to this species in an immediate and simple way. By introducing a name that creates a sudden and significant break in how we talk about *V. mandarinia*, outreach will become more complicated and the continuity of information created by state and federal agencies will be compromised. This poses challenges for communicating legacy information, as exemplified by the challenges of smoothly adopting the name “spongy moth” after over 100 years of government and scientific literature about “gypsy moth”.

There are no common names as such in English-language scientific literature for *V. soror*. Selecting a distinct common name for this species is slightly problematic, in that the features that distinguish it from *V. mandarinia* are superficial and non-exclusive (e.g. other hornets also have dark terminal segments) or not readily observed (e.g., the relative length of the first gastral tergite, or the shape of the pronotum or clypeus). Several recent papers (Mattila et al. 2020, 2021), which reveal previously unexplored aspects of its biology (and which likely illuminate aspects of the biology of *V. mandarinia*) do refer to the species as “a giant hornet”, but make it clear that it is distinct from its sister species, *V. mandarinia*. The proposed name “southern giant hornet” reflects the similarity of the two species, provides a lexicographic mechanism for distinguishing them, and doesn’t separate them from the existing research. It is imperfect in that the ranges of the two species do overlap at coarse scales, and in some areas are narrowly sympatric.

10. Please identify any other organisms to which your proposed common name *could* apply, giving careful consideration to closely related taxa. Please justify why the proposed common name is (i) unsuitable for each of those taxa and/or (ii) better suited for the proposed taxon:

Vespa soror is a sister species to *V. mandarinia*, differing primarily in range (*V. soror* is more subtropical) and some inconspicuous aspects of their morphology. Both have been called “giant hornets” in the literature, although for *V. soror* less frequently - very likely only because there is less literature regarding this species in general. There is some potential for confusion there; ecologically they are very similar and comprise notably large individuals. Both species can justifiably be called “giant hornets”. Our analysis did not find other examples of *Vespa* called “yellow-legged hornets” (Fig. 1).

11. Please document your efforts to consult with entomologists (including taxonomic specialists), colleagues, or other professionals who work with the taxon as to the suitability and need for the proposed common name. Please note that this is an important element of your proposal; proposals that do not document these steps are less likely to be successful.

This suggestion has been reviewed by 13 entomologists, four agency personnel involved in the *V. mandarinia* eradication project, and one person involved in selecting the spongy moth common name. All feedback and suggestions were addressed or directly incorporated while developing

this proposal. Most reviewers thought the common name “giant hornet” was not problematic. Briefly, some specific points (paraphrased) and my responses are highlighted below:

- **“giant hornet” may still invoke unnecessary fear, which is not fair to the insect. Sparrow hornet may avoid that result.** *response:* giant may indeed freak some people out, although giant is part of common names across biology, including entomology. Sparrow hornet is great, but I think adopting a completely different name will be confusing, expensive, and could even result in derision from the public.
- **Why not just use the specific epithets of the different species?** *response:* The specific epithets themselves either fail to meet current ESA common name standards, are geographically inaccurate, or would be too strange to be a useful common name. Those suggestions also result in generating completely new common names, which this proposal seeks to avoid.
- **If only you could scrub "murder hornet" from our collective memory. Anyway, yes, use giant hornet, which is a pretty obvious name... Southern hornet is a pretty silly name for soror. Southern to what? It occurs from India to Southeast Asia, a pretty broad distribution. When he described it, du Buysson wrote "Cette variété a beaucoup de ressemblance avec la V. cincta F. var. affinis F." I'd say that makes it a better candidate for "similar" hornet.** *response:* The southern/northern range is not perfect, but it is reflected in the literature, especially as more records emerge. The scale of range overlap may also be overstated, since the most southern records for *V. mandarinia* are not well-substantiated. In any case, it would be “southern to” the overall range of *V. mandarinia*.
- **Giant may be too simple, not enough of a descriptor.** *response:* Added southern and northern as adjectives to also be considered, in addition to some mentioned below. Those probably won't help anyone immediately recognize the animals on the wing, but will sufficiently distinguish between species in written and oral communication.
- **Since there are several hornets that might warrant common names you should consider adding them.** *response:* This proposal was initially only about *V. mandarinia* because it was the only species immediately relevant to North America. Since several people have brought up this issue, the proposal also includes potential names for *V. soror* and *V. velutina*.
- **I think it is preferable to add an adjective to the name "giant hornet" to differentiate it from the "southern" or "subtropical giant hornet". I have been unable to find any example of two closely related species that have common names treated as you have suggested ("giant hornet" and "southern giant hornet").** *response:* The proposal was revised to ask the committee to consider multiple common names, including two for *V. mandarinia*, to address this concern. This reviewer also offered other contrasting options which the committee may wish to consider: "northern giant hornet"/"southern giant hornet"; "temperate giant hornet"/"subtropical giant hornet"; "northern giant hornet"/"subtropical giant hornet"; and "common giant hornet"/"subtropical giant hornet".

These are all good options for distinguishing between the two hornets, although subtropical and temperate are problematic because of the discrete geography associated with those terms. *Vespa mandarinia* is definitely recorded from subtropical regions (Kyushu, southern Korea, Taiwan, etc.), so that may be too misleading. Northern and southern are at least descriptive in a relative sense.

- **You may want to mention somewhere that reference to colour patterns in the common names should be avoided because there are 3 very different subspecies of *V. mandarinia* and mimicry in colour patterns is common in hornets, with individual species having multiple colour morphs. IDs based on colour patterns should be avoided for this reason.** *response:* I avoided common names that invoke color partially because of this reason, and partially to maintain as much naming continuity as possible.

Proposed by: Chris Looney

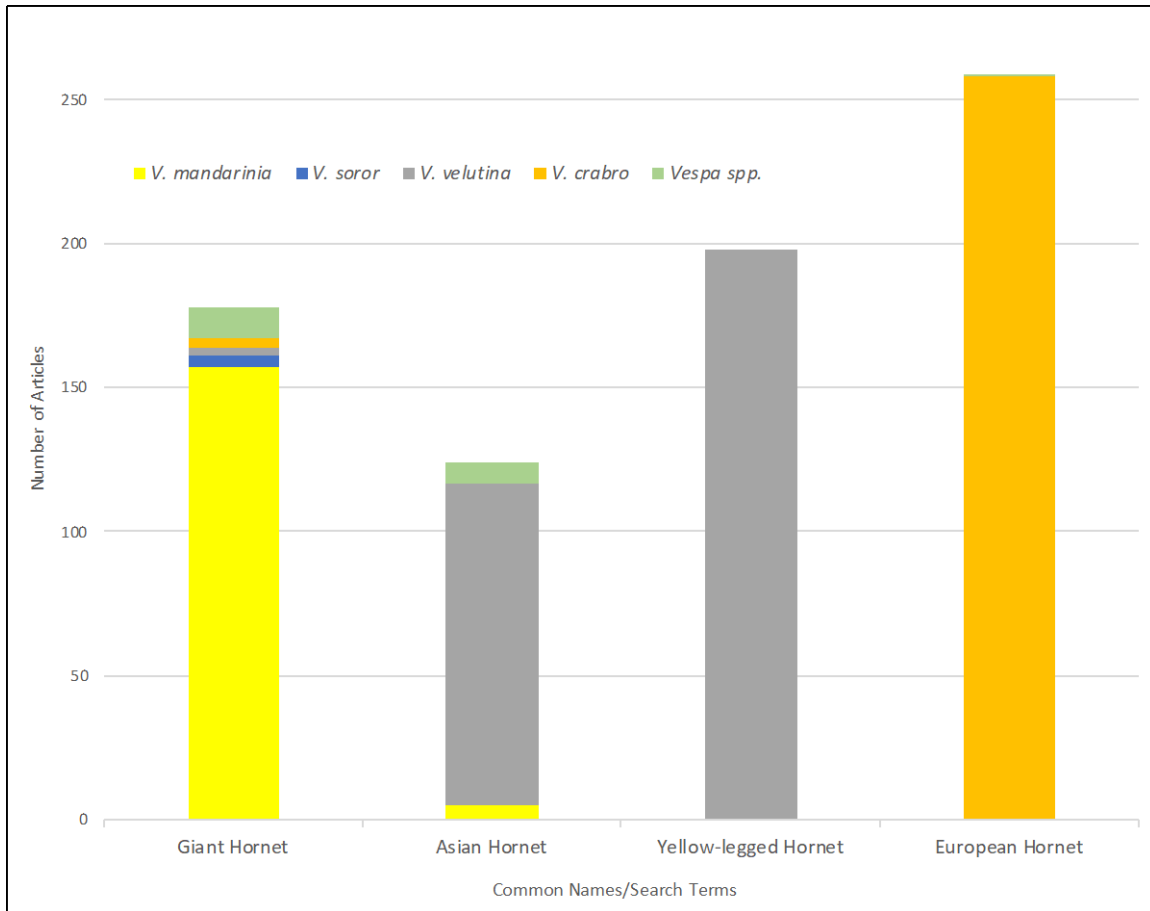
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Figure 1. Summary of names used to describe several hornet species in English. This search was performed by using Google Scholar to identify peer-reviewed and gray literature articles published between 1910-2022. Papers were screened to ensure names were specifically applied (e.g. “the Asian hornet”) versus generally applied (e.g. “an Asian hornet”). In our approach, search results for “Japanese giant hornet” and “Asian giant hornet” are included in the Giant Hornet column. Similarly, “giant Asian hornet” is included in the Asian Hornet column. The goal of this analysis was not to provide a complete census of names, but to reflect overall trends in name usage.



References

Greene A, Caron DM (1980) Entomological etymology: the common names of social wasps. *Bulletin of the Entomological Society of America* 26: 126-130.

Kumar PG, Srinivasan G (2010) Taxonomic studies of hornet wasps (Hymenoptera: Vespidae) *Vespa* Linnaeus of India. *Records of the Zoological Survey of India* 110: 57-80.

Lee JXQ (2010) Notes on *Vespa analis* and *Vespa mandarinia* (Hymenoptera, Vespidae) in Hong Kong, and a key to all *Vespa* species known from the SAR. *Hong Kong Entomological Bulletin* 2: 31-36.

Martin SJ (1995) Hornets (Hymenoptera: Vespinae) of Malaysia. *Malayan Nature Journal* 49: 71-82.

Matsuura M, Sakagami SF (1973) A bionomic sketch of the giant hornet, *Vespa mandarinia*, a serious pest for Japanese apiculture. *Journal of the Faculty of Science, Hokkaido University, Series VI, Zoology* 19: 125-162.

Mattila HR, Otis GW, Nguyen LTP, Pham HD, Knight OK, Phan NT (2020) Honey bees (*Apis cerana*) use animal feces as a tool to defend colonies against group attack by giant hornets (*Vespa soror*). PLoS ONE 15(12): e0242668. <https://doi.org/10.1371/journal.pone.0242668>

Mattila HR, Kernén HG, Otis GW, Nguyen LTP, Pham HD, Knight OM, Phan NT (2021) Giant hornet (*Vespa soror*) attacks trigger frenetic antipredator signalling in honey bee (*Apis cerana*) colonies. Royal Society Open Science 8: 211215. <https://doi.org/10.1098/rsos.211215>

Nguyen LTP, Carpenter JM (2002) Vespidae of Vietnam (Insecta: Hymenoptera) 1. Vespinae. Journal of the New York Entomological Society 110: 199-211.

Nguyen LTP, Saito F, Kojima J-I, Carpenter JM (2006) Vespidae of Viet Nam (Insecta: Hymenoptera) 2. Taxonomic notes on Vespinae. Zoological Science 23: 95–104.

Perrard A, Pickett K, Villemant C, Kojima J-I, Carpenter J (2013) Phylogeny of hornets: a total evidence approach (Hymenoptera, Vespidae, Vespinae, *Vespa*). Journal of Hymenoptera Research 32: 1-15. doi: 10.3897/JHR.32.4685

Rome Q, Perrard A, Muller F, Fontaine C, Quilès A, Zuccon D, Villemant C (2021) Not just honeybees: predatory habits of *Vespa velutina* (Hymenoptera: Vespidae) in France, Annales de la Société entomologique de France (N.S.) 57: 1-11. doi: 10.1080/00379271.2020.1867005

Smith-Pardo AH, Carpenter JM, Kimsey L (2020) The diversity of hornets in the genus *Vespa* (Hymenoptera: Vespidae; Vespinae), their importance and interceptions in the United States. Insect Systematics and Diversity 4: 2. <https://academic.oup.com/isd/article/4/3/2/5834678>

Zhu GP, Gutierrez Illan J, Looney C, Crowder DW (2020) Assessing the ecological niche and invasion potential of the Asian giant hornet. Proceedings of the National Academy of Sciences 117: 24646-24648.