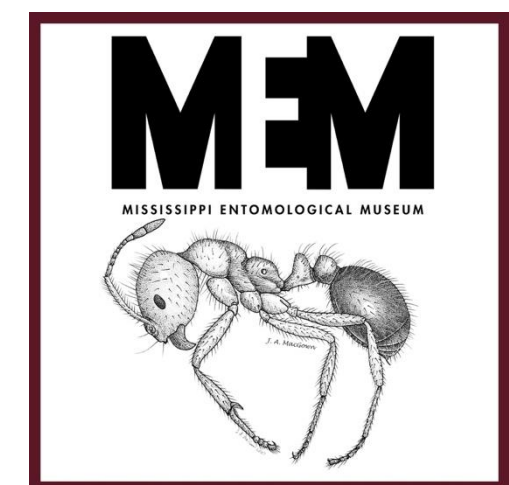


A Pictorial Key to the Exotic Ants of Mississippi

Rasoamanana, N., J. MacGown, J. Hill, and S. Portugal
Department of Agricultural Science and Plant Protection, Mississippi State University, Starkville, MS

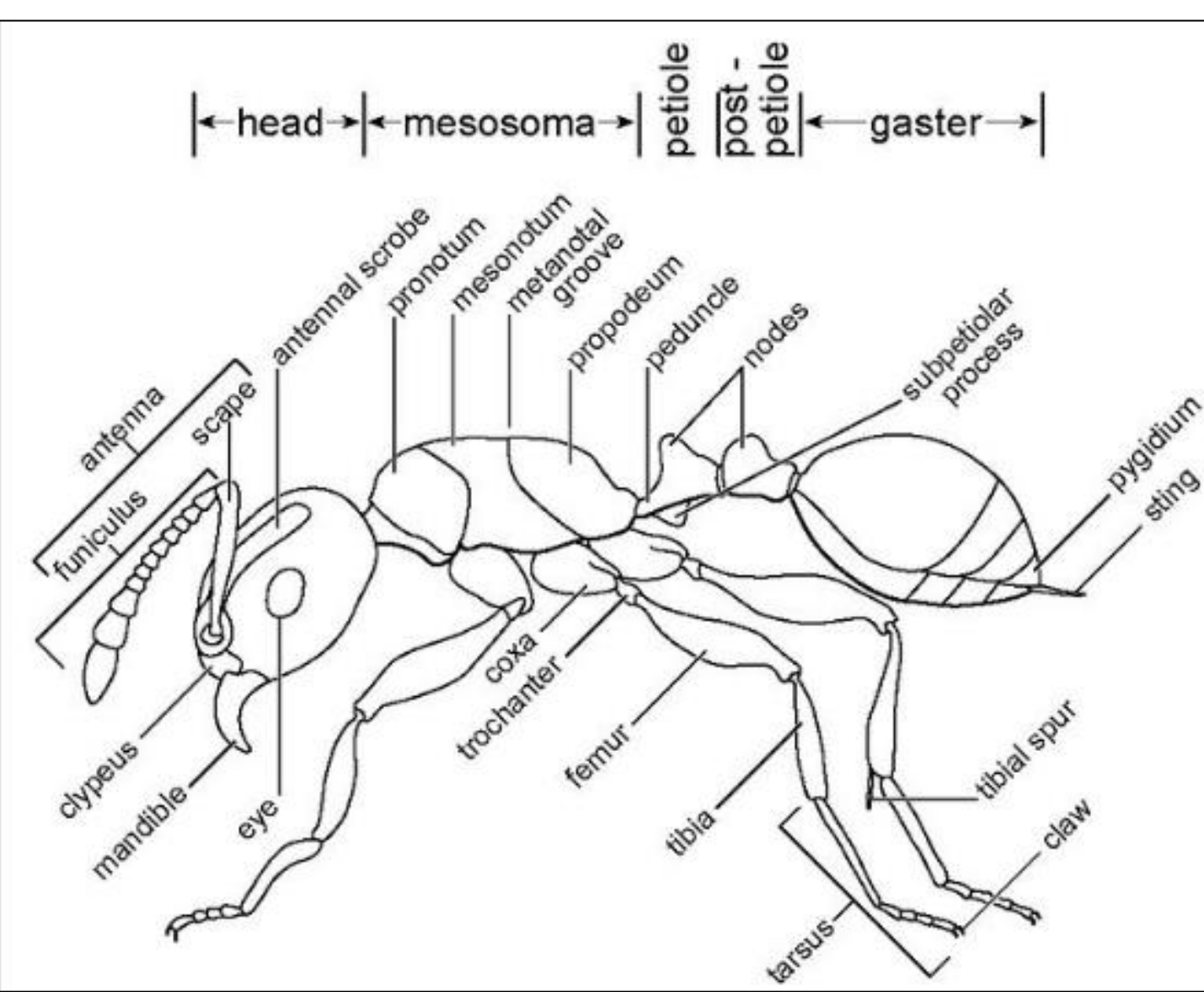


HOW TO USE THIS KEY
Count the waist segments, pick that side, and follow the arrows.
Numbers (2a, 2b ...) match the full 29-couplet key; species are separated in the strip below.

1 Introduction

Thirty exotic ant species, plus the hybrid imported fire ant, are known from Mississippi (MacGown et al. 2021). Several are serious pests, and many look alike. This poster follows the full 29-couplet key: genera in the tree, species in the strip below.

2 Know your ant



Representative worker of the subfamily Myrmicinae.

3 Collecting specimens

- Collect 10–20 workers from one nest or trail.
- Preserve in 90–95% ethanol, which also allows DNA work.
- Record date, county, GPS, habitat, and collector.
- Collect males when present; some species need them for ID.
- Photograph live ants if you can.

References

MacGown, J. A., R. L. Brown, J. G. Hill, R. Whitehouse, and J. G. Lewis. 2021. Exotic ants (Hymenoptera: Formicidae) of Mississippi. Mississippi Agricultural and Forestry Experiment Station Bulletin 1229.
Deyrup, M. 2017. *Ants of Florida: Identification and Natural History*. CRC Press, Boca Raton, Florida.
AntWiki. Key to US *Strumigenys* species.
antwiki.org/wiki/Key_to_US_Strumigenys_species

Acknowledgments

Thanks to the various individuals who collected ants and helped prepare specimens for this project ranging from researchers, students, pest control operators, and homeowners. MEM research was supported in part by the USDA-ARS Area-wide Management of Area-wide Management of Invasive Ants Project (J.G.Hill Principal Investigator). Photographs used provided by Antweb.org and the Mississippi Entomological Museum

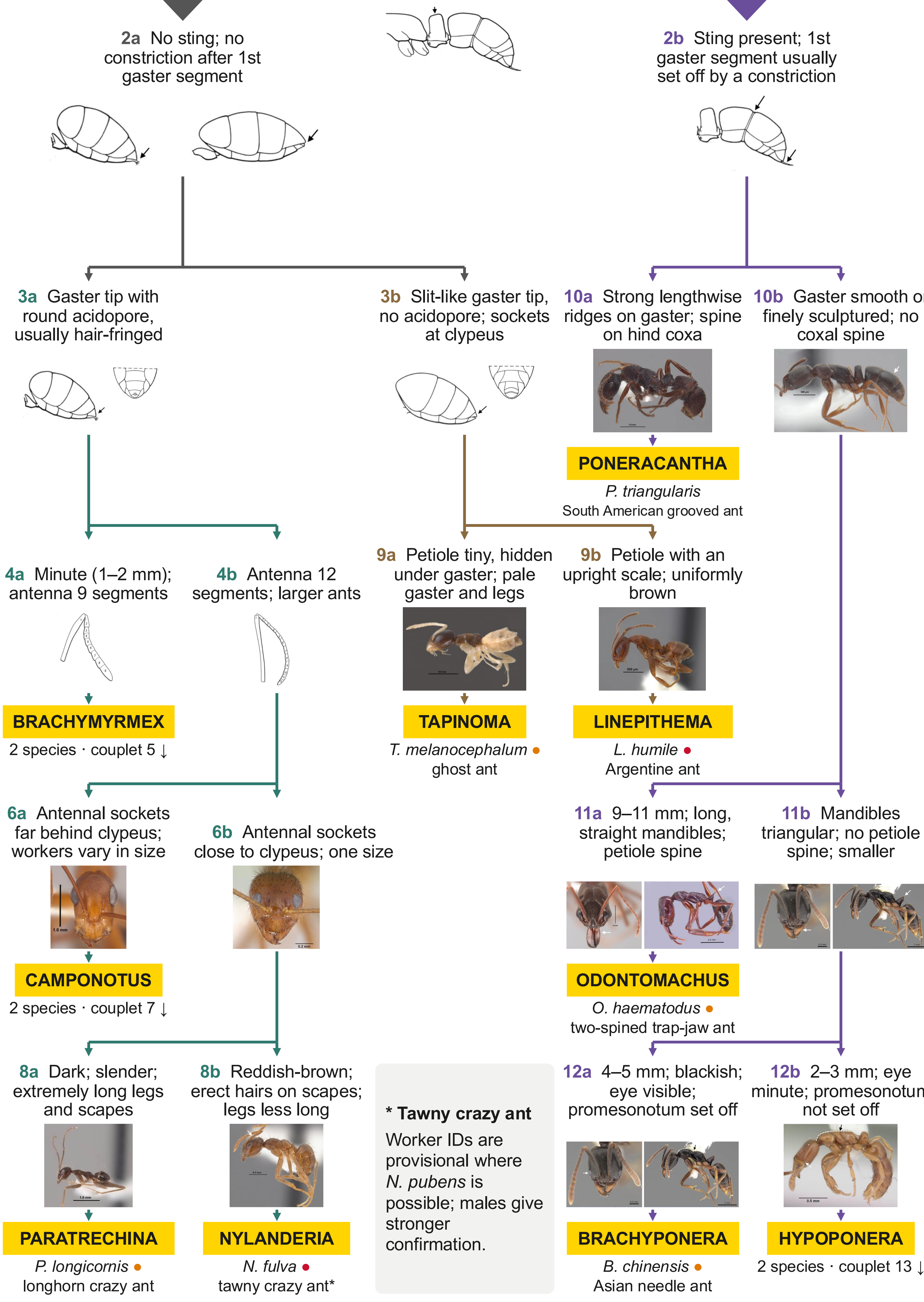
ACCESS THE ONLINE IDENTIFICATION KEY

Scan the QR code or visit:
https://mississippientomologicalmuseum.org.msstate.edu/Researchtaxapages/Formicidaepages/ExoticAntKeys/ExoticAnt_key_MS.html

Mississippi Entomological Museum (MEM)



WAIST WITH ONE SEGMENT (1a)

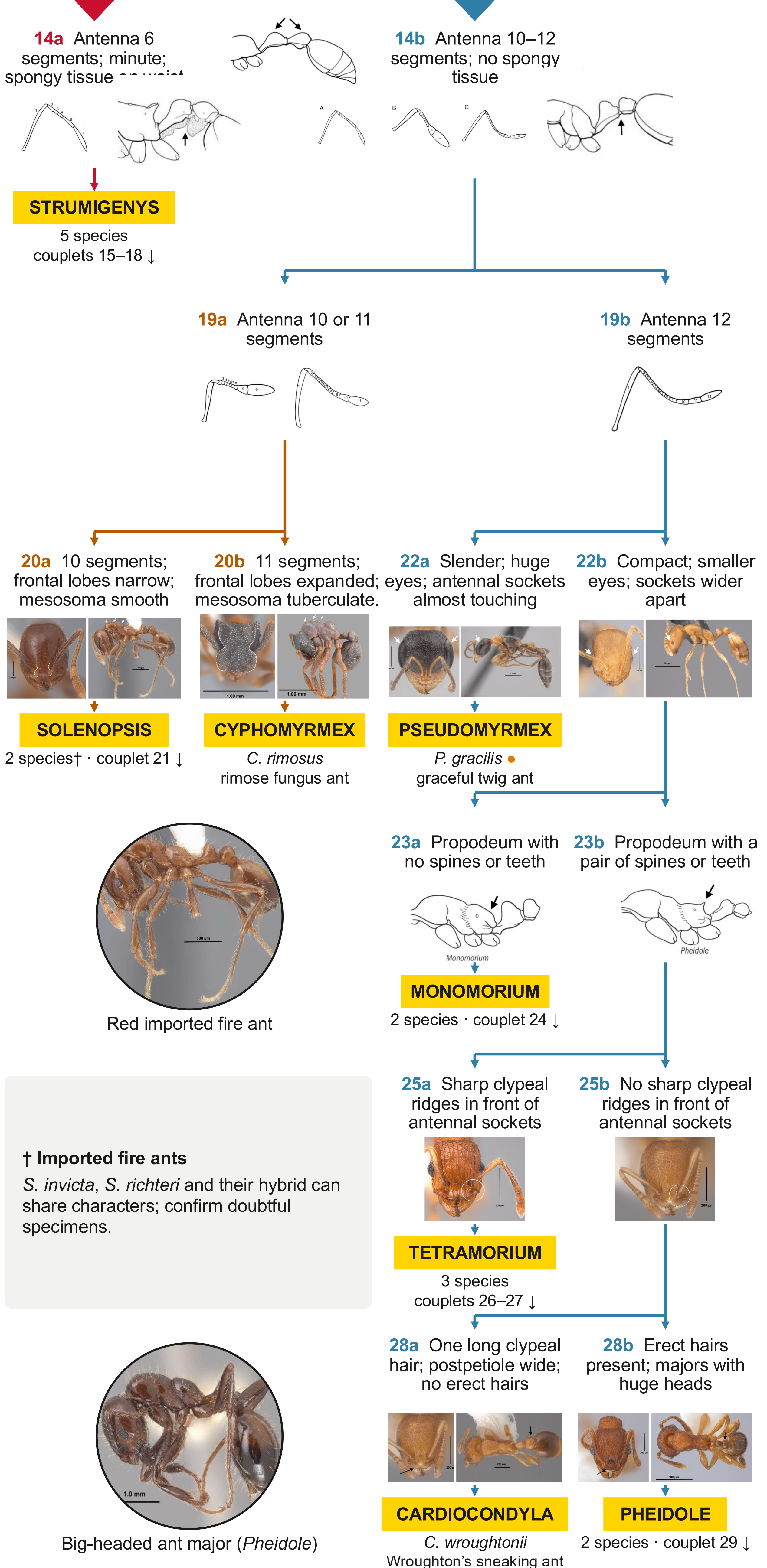


• **Serious pest**
• **Potentially invasive or spreading**
Numbers (2a, 2b ...) match the couplets of the full key. Minute ants such as *Strumigenys*: use a stereomicroscope. *Poneracantha* (10a) was formerly *Gnamptogenys*. **Native ants will not key out correctly.**



Asian needle ant

WAIST WITH TWO SEGMENTS (1b)



4 Native look-alikes

Argentine ant vs. odorous house ant
Smell: musty vs. rotten coconut when crushed.
Petiole: upright scale vs. flat node hidden under the gaster.

Imported fire ants vs. tropical fire ant
Field: workers look alike.
Clypeus: small middle tooth vs. none.
Tropical fire ant majors have huge, square heads.

Asian needle ant vs. native ponerines
Size: 4–5 mm vs. 2–4 mm.
Eyes: easy to see vs. tiny.
Natives include *Ponera* and *Hypoponera*.

Pharaoh ant vs. thief ant
Both tiny, yellowish, often indoors.
Antenna: 12 segments, club of 3 vs. 10 segments, club of 2.

5 Which ones are pests?

- **Serious pests:** red and black imported fire ants and their hybrid, Argentine ant, pharaoh ant, tawny crazy ant.
- **Potentially invasive or spreading:** Asian needle ant, trap-jaw ant, longhorn crazy ant, two big-headed ants, graceful twig ant, ghost ant, immigrant pavement ant, dark rover ant.

The other exotic species pose minimal known threats (MacGown et al. 2021).

6 Found a suspect ant?

Send specimens preserved in ethanol, along with collection data, to the Mississippi Entomological Museum, or contact:
Joe MacGown: jmacgown@aspp.msstate.edu
Nicole Rasoamanana: nr733@msstate.edu

7 Conclusions

- All 30 exotic species known from Mississippi can be separated with a 29-couplet pictorial key.
- Some species need a specialist; early, voucher-based reports help stop new invaders.

SEPARATING SPECIES WITHIN A GENUS

Brachymyrmex • couplet 5		Camponotus • couplet 7		Hypoponera • couplet 13		Strumigenys • couplets 15–18 (microscope)					Solenopsis • couplet 21		Monomorium • couplet 24		Tetramorium • couplets 26–27			Pheidole • couplet 29	
5a	5b	7a	7b	13a	13b	16a	16b	17a	18a	18b	21a	21b	24a	24b	26a	27a	27b	29a	29b
B. patagonicus	B. obscurior	C. planatus	C. cf. tortuganus	H. opaciceps	H. punctatissima	S. hexamera	S. silvestrii	S. margaritae	S. epinotalis	S. membranifera	S. invicta†	S. richteri†	M. pharaonis	M. floricola	T. lanuginosum	T. bicarinatum	T. immigrans	P. obscurithorax	P. navigans
Scapes well past head; 2 erect hairs on mesonotum	Scapes just past head; no erect hairs on mesonotum	3.5–6 mm; head as broad as long; long white hairs	6.5–10 mm; head longer than broad; shiny	Dull, granulate; petiole sides parallel	Smoother, shiny; petiole high and short	Long crossing teeth; round, flat hairs	Teeth not crossing; clavate hairs	No spongy tissue under petiole	Spoon-shaped hair row on pronotum	No hair row; rim at mandible base	Reddish-brown; brown scapes; weak shoulders	Blackish; black scapes; strong shoulders	Yellow; petiole node high and narrow	Bicolored; petiole node low and broad	Dense woolly hairs, many branched	Orange-brown, dark gaster; striate mandibles	Uniformly brown; smooth mandibles	Majors 5–6 mm; heavily sculptured head	Majors 2–3 mm; ridged head; slim scapes