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*This expanded key includes additional features which make identification more certain. It also includes several extra species which are local or rare in the three counties. It is based on **worker** ants, as these are the ones most often found. It omits a few introduced species which live only indoors, and a small number of rare and difficult-to-find native species. Many queen and male ants may key correctly through it, but are more safely identified with published keys. When fresh, most queens and males have wings. Even if these have been lost, the small jointed plates on the thorax where they were articulated can still be seen. **Check this first!***

Lengths are given for guidance, but individual workers vary considerably, and occasionally individuals smaller or larger than the range may be found. Live ants look bigger than dead ones, as the latter are usually somewhat curled up.

- 1a** Waist with a single segment; never with spines at back of thorax 2
1b Waist with 2 segments, thorax often with a pair of spines at rear of thorax 11
- 2a** Large (4-9mm long) , long-legged, alert, ‘stop and look’ dark brown or red-brown species. Propodeal spiracle slit-like to oval, its ring-like margins thicker at sides than at ends of oval, and situated on side of propodeum. Hind tibia with 2 rows of bristles all along underside, as well as at apex of tibia. Bases of hind legs (coxae) almost touching. *Formica spp.* 3
2b Small (2-5mm; if more than 4mm, then ant shiny jet-black with a heart-shaped head, concave at back), shorter-legged and ‘head-to-the ground’, dark brown or yellowish species. Propodeal spiracle circular to oval, its ring-like margins equally thick all round, and on curved rear edge of propodeum. Hind tibia without bristles on underside, or with bristles and hairs only near apex. A gap between bases of hind legs about the width of one leg base. *Lasius spp.* 5
- 3a** Reddish brown patches on thorax, abdomen and sometimes on lower part of head; clearly 2-tone 4
3b Body entirely dark brown or blackish, uniformly coloured. 4.5-7.5mm. *Formica fusca*
- 4a** Frontal triangle dull, with fine pits or roughening. Smaller, 4-6mm; nest no more than 20cm high, with a few dozen or hundred workers; in grassland. *Formica cunicularia*
4b Frontal triangle smooth and shiny; larger, 4.5-9mm; massive mound nests in woodland, usually with many hundreds of workers. *Formica rufa*
- 5a** Whole animal glossy jet-black. Head large, about same size as abdomen, and more than twice the width of the thorax. Head concave at back, so whole head appears heart-shaped. When alive, smells of lemons. Nests in trees. 3.5-5mm. *Lasius fuliginosus*
5b If entirely black or black-brown, not very glossy. Head less than twice the width of thorax, not strongly heart-shaped. Often nests in ground. 6
- 6a** Yellow. Eyes small (diameter less than length of last antenna segment). Large mound nests in grassland, or small nests in wood or under stones. 7
6b Brown or black. Eyes larger. Nest often inconspicuous, under stones. 9
- 7a** First (long) antenna segment, and tibiae of all legs, with a scatter of long, upstanding hairs (at 45-90° to surface, and about as long as width of base of antenna, or half the width of the tibia), as well as shorter, appressed hairs. 3.5-5mm. Apparently rare species nesting in dead wood or occasionally under stones. *Lasius umbratus*
7b Antenna and legs with no upstanding hairs, covered with short, appressed, hairs. 8

- 8a** Abdomen with long erect hairs, longer than 0.08mm, and about 0.6x the maximum width of the hind tibia. Upright scale on waist usually rounded at top. 2-4mm. Forms large mound-nests in grassland. Extremely common. *Lasius flavus*
- 8b** Erect hairs on abdomen shorter, less than 0.05mm, and about 0.3x the maximum width of the hind tibia. Upright scale on waist usually indented at top. 4-4.5mm. Small nests under stones. Apparently rare. *Lasius mixtus*
- 9a** First (long) antenna segment, and tibiae of all legs, with a scatter of long, upstanding hairs (at 45-90° to surface, and about as long as width of base of antenna, or half the width of the tibia), as well as shorter, appressed hairs. Fairly uniform dark brown. 3-4mm. Extremely common. *Lasius niger/platythorax*
- 9b** Antenna and legs without upstanding hairs, but covered with short, often appressed, hairs. Uniform dark or mid brown, or with thorax paler than abdomen. **10**
- 10a** Thorax, waist and abdomen uniform dark brown. Curved corners of head with outstanding bristles when seen in full-face view. Upright scale on waist usually rounded at top. 2.5-3.5mm. Forms large colonies in the ground in sandy grassland and heathland. Uncommon? *Lasius alienus/psammophilus*
- 10b** Thorax and waist much paler than the dark brown abdomen. Curved corners of head without outstanding bristles. Upright scale on waist distinctly indented at top. 2.5-4mm. Forms small colonies in dead and damaged trees, and forages on tree trunks. Uncommon? *Lasius brunneus*
- 11a** Tiny (usually less than 3.5mm). The club at tip of antenna formed by the last 3 segments is in total longer than previous 7 segments. Spines at rear of thorax usually very short and rather blunt. *Leptothorax spp.* **12**
- 11a** Often larger. Club formed by last 3 segments of antenna in total shorter than previous 8 segments. Spines at rear of thorax longer and sharper. *Myrmica spp.* **13**
- 12a** Antennae with 11 segments (including the long first segment). Tip of antenna club darker brown than rest of antenna. Long hairs on antenna first segment and on tibiae erect. Usually larger, 3-4mm. Common, but easily overlooked. *Leptothorax acervorum*
- 12b** Antennae with 12 segments (including the long first segment). Club of antenna usually the same pale red-brown as rest of antenna. Long hairs on antenna first segment and on tibiae appressed or slanting. Usually smaller, 2-3.5mm. Apparently rare. *Leptothorax nylanderi*
- 13a** First antennal segment rather stout, and sharply bent through about a right-angle at base, sometimes with a point, a flange or a lump on the outer side of the angle **14**
- 13b** First antennal segment more slender, and more gently curved at base, never with lumps, flanges or points on the outer side. **17**
- 14a** First antennal segment angled but without spines, lumps or wide ridges projecting on the outside of the angle (often with a narrow longitudinal ridge or flange, rather like a bent girder). 3.5-5mm. Common in a wide range of open habitats. *Myrmica scabrinodis*
- 14b** First antennal segment with a wide longitudinal or transverse ridge or a point or a lump jutting out on the outside of the bend. **15**
- 15a** First antennal segment thickened or flared at its base, with a variable lump or wide longitudinal ridge on or just above the angle. 4-5mm. Frequent in warm dry open habitats, especially calcareous grasslands. *Myrmica sabuleti*
- 15b** First antennal segment becoming gradually narrower toward the base, then with a point or transverse ridge across the outside at the angle. **16**

- 16a** A conical point or a small, thin shelf-like ridge jutting out at the angle at the base of first antennal segment. Distance between bases of antennae about equal to the distance of each from the outer edge of the head. Spines on rear of thorax usually short and stout. Metanotal groove (across thorax a little way in front of spines) fairly deep (less so than in *scabrinodis*). Generally a small, dark species. 3.5-5mm. Uncommon, usually in fairly warm, dry situations. *Myrmica lobicornis*
- 16b** A substantial flat shelf-like ridge or flange on the angle of the first antennal segment. Bases of antennae closer together than each is from the outside of the head. Spines on rear of thorax usually long and slender. Metanotal groove very shallow or hardly discernible. Larger and paler species. 4-5.5mm. Rare, in warm sunny situations on heaths and calcareous grasslands. *Myrmica schencki*
- 17a** Upper surface of petiole (front segment of waist) curved smoothly into hind face. The two spines at rear of thorax shorter, usually shorter than the distance between them. Area between spines usually smooth. 3.5-5mm long. Fairly common in a range of open habitats. *Myrmica rubra*
- 17b** Petiole flat-topped, with a distinct step at rear end. Spines at rear of thorax longer and more slender, usually longer than the distance between them. Area between spines usually with a few transverse ridges. 4-4.5mm. The commonest and most shade-tolerant red ant. *Myrmica ruginodis*

RARE SPECIES RECORDED FROM BEDS, CAMBS OR NORTHANTS OMITTED FROM THE KEY ABOVE

Hypoponera punctatissima Mostly found indoors. Abdomen narrowed between first and second segment. A slow-moving, very elongate little ant, 2-3mm long. Introduced species.

Myrmica sulcinodis A rare heathland species, commoner on upland moorland. Antenna first segment less slender at base and more sharply bent than in *rubra/ruginodis*, but less thick and less angled than *scabrinodis*. Frontal triangle with strong upright raised ridges (unlike any other local *Myrmica*). 4-5.5mm

Formicoxenus nitidulus A small red ant found in nests of wood ants *Formica rufa*.

Monomorium pharaonis Pharaoh ant, a tiny yellowish ant found in centrally heated buildings. 2-2.5mm. Introduced species.

Stenammina debile/westwoodii A small, timid, unobtrusive reddish-yellow ant forming small nests, found under stones and among tree roots in shady woodland and hedgerows. First segment of waist unusually elongate, and spines at rear of thorax small (as in *Leptothorax*). 3-3.5mm.

Formica lemani The northern and western counterpart of *Formica fusca*, distinguished by having a scatter of 2-3 long bristles on the underside of the middle and hind femur. 4.5-7mm.

Formica sanguinea A large bright red ant with a slate grey abdomen. A scarce species with a disjunct distribution, mainly southern heathlands and in central Scotland. Recorded recently from Rammamere Heath.

Myrmecina graminicola A dark, heavily sculptured species. Apparently fairly frequent in the most southerly counties but fewer records further north; has turned up in pitfall traps at Totternhoe Quarry, Beds. recently. Also in Cambridgeshire.

Ponera coarctata A small, brown, timid ant forming small nests under stones. Distinct constriction between the first and second segments of the abdomen. A scarce species largely confined to southernmost counties; recorded from southern Beds and from Cambridgeshire.

IDENTIFICATION OF MYRMICA SPECIES

