

Table 1. List of taxa examined.

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| Vespoidea   |
| Formicidae  |
| Formicinae: <i>Anoplolepis longipes</i> (JERDON), <i>Camponotus japonicus</i> MAYR, <i>Formica japonica</i> MOTSCHULSKY, <i>Lasius niger</i> (LINNAEUS), <i>Paratrechina longicornis</i> (LATREILLE), <i>Polyergus samurai</i> YANO, <i>Polyrhachis dives</i> F. SMITH  |
| Dolichoderinae: <i>Dolichoderus bituberculatus</i> MAYR, <i>Ochetellus itoi</i> (FOREL), <i>Technomyrmex gibbosus</i> (WHEELER)   |
| Myrmeciinae: <i>Myrmecia gulosa</i> (FABRICIUS)   |
| Pseudomyrmecinae: <i>Pseudomyrmex triplarinus</i> (FOREL), <i>Tetraponera allaborans</i> WALKER   |
| Cerapachyinae: <i>Cerapachys sauteri</i> FOREL, <i>Cerapachys biroi</i> FOREL   |
| Myrmicinae: <i>Aphaenogaster famelica</i> famelica (F. SMITH), <i>Myrmecina graminicola nipponica</i> WHEELER, <i>Pheidole pieli</i> MAYR, <i>Pristomyrmex pungens</i> MAYR, <i>Tetramorium caespitum</i> (LINNAEUS)  |
| Ponerinae: Amblyoponini: <i>Amblyopone australis</i> ERICHSON, <i>Myopone castanea</i> (F. SMITH), <i>Onychomyrmex</i> sp., <i>Prionopelta</i> sp., Proceratiini: <i>Proceratium watasei</i> (WHEELER), Ectatommini: <i>Rhytidoponera purpurea</i> (EMERY), Ponerini: <i>Brachyponera chinensis</i> (EMERY), <i>Diacamma</i> sp., Ectomomyrmex <i>javanus</i> MAYR, <i>Leptogenys kitteli</i> MAYR, <i>Odontomachus monticola</i> EMERY |
| Tiphidae: <i>Methoca japonica</i> YASUMATSU, <i>Tiphia latistriata</i> ALLEN & JAYNES   |
| Mutillidae: <i>Mutilla europaea mikado</i> CAMERON, <i>Myrmosa nigrofasciata</i> YASUMATSU  |
| Pompilidae: <i>Auplopus</i> sp., <i>Cyphononyx dorsalis</i> (LEPELETIER)  |
| Scoliidae: <i>Carinoscolia melanosoma fasciata</i> (SMITH), <i>Megacampsomeris grossa matsumurai</i> (BETEREM)  |
| Masaridae: <i>Pseudomasaris coquillettii</i> ROHWER   |
| Eumenidae: <i>Discocelius japonicus</i> PEREZ, <i>Eumenes</i> sp.   |
| Vespidae: <i>Polistes chinensis antenalis</i> PEREZ, <i>Vespa simillima xanthoptera</i> CAMERON   |
| Apoidea   |
| Sphecidae: <i>Ampulex dissector</i> (THUNBERG), <i>Ammophila infesta</i> F. SMITH   |
| Megachilidae: <i>Anthidium septemspinosum</i> LEPELETIER  |
| Anthophoridae: <i>Ceratina japonica</i> COCKERELL   |
| Apidae: <i>Trigona</i> sp.  |
| Chrysidioidea   |
| Bethylidae: <i>Cephalonomia gallicola</i> (ASHMEAD)   |

Aculeata are not the precostal part, but the postcostal part of each segment.

The numbering of the muscles is restricted only for the second and third abdominal segments (Table 2). The numbers are just for the sake of convenience, and do not correspond to ones employed by previous authors.

To discuss the relationships among Formicidae, Vespidae and Scoliidae, hypotheses of the ground plan for the skeletomusculature of the anterior abdominal segments were based on the most widely distributed one in Aculeata where no formation of an additional petiole occurred.