

### Insect Orders, Key Features, and Preservation Notes

Order	Pin Location	Most Important Features	Other Notes
Protura	None		Preserved in ethanol
Diplura	None		Preserved in ethanol
Archaeognatha = Microcoryphia	None		Preserved in ethanol
Zygentoma = Thysanura	None		Preserved in ethanol
Ephemeroptera	None		Preserved in ethanol
Odonata	Between bases of forewings, slightly right of centre line	Wing venation, features of thorax and claspers	Wings can be flattened using spreading board; abdomen often needs support as it dries
Plecoptera	Mid-thorax between wings, slightly right of centre line	Wing venation, mouthparts	Can be spread, but not essential
Dermaptera	Front of right elytron (as for beetles)		
Orthoptera	Middle of metathorax, slightly to right of centre line	Legs, sternites, wings	Wings are sometimes spread (both sides or only one), but not essential
Phasmatodea	Middle of metathorax, slightly to right of centre line	Legs, sternites	Abdomen often needs support as it dries
Blattodea (cockroaches)	Front of right elytron (as for beetles)		Abdomen often needs support as it dries
Blattodea (termites)	Between bases of forewings, slightly right of centre line		Only winged reproductive stages are normally pinned; all others are preserved in ethanol
Mantodea	Middle of metathorax, slightly to right of centre line		Abdomen often needs support as it dries
Psocodea	None		Preserved in ethanol

Thysanoptera	None		Preserved in ethanol
Hemiptera	Right corner of scutellum (triangular sclerite between wing bases)	Mouthparts, forewings, legs	Many plant-parasitic Hemiptera (Homoptera) are too soft-bodied to be pinned, and must be preserved in ethanol
Coleoptera	Front of right elytron	Ventral midline; legs, antennae	Can be helpful to spread legs if they are curled up together: being able to count tarsal segments is essential!
Megaloptera	Mid-thorax between wings, slightly right of centre line		
Raphidioptera	Mid-thorax between wings, slightly right of centre line		
Neuroptera	Mid-thorax between wings, slightly right of centre line	Wing venation	Often shrivel as they dry, but pinning is acceptable
Lepidoptera	Mid-thorax between wings, slightly right of centre line	Wing venation	Wings <u>must</u> be spread (enough to allow viewing of all wing veins) to be an acceptable specimen
Trichoptera	Mid-thorax between wings, slightly right of centre line	Mouthparts, antennae	Spreading is possible, but not essential
Siphonaptera	None		Preserved in ethanol
Diptera	Mid-thorax between wings, slightly right of centre line	Wing venation, thoracic bristles, head structures	
Hymenoptera	Mid-thorax between wings, slightly right of centre line	Wing venation	Spreading is not required, but can make identification much easier (tradeoff!) if the wings are folded together

\*\*Note that **ALL** immature insects, and soft-bodied adults, must be preserved in ethanol in order to keep them from shriveling. Do not attempt to pin immature stages.