

# A fly or not?

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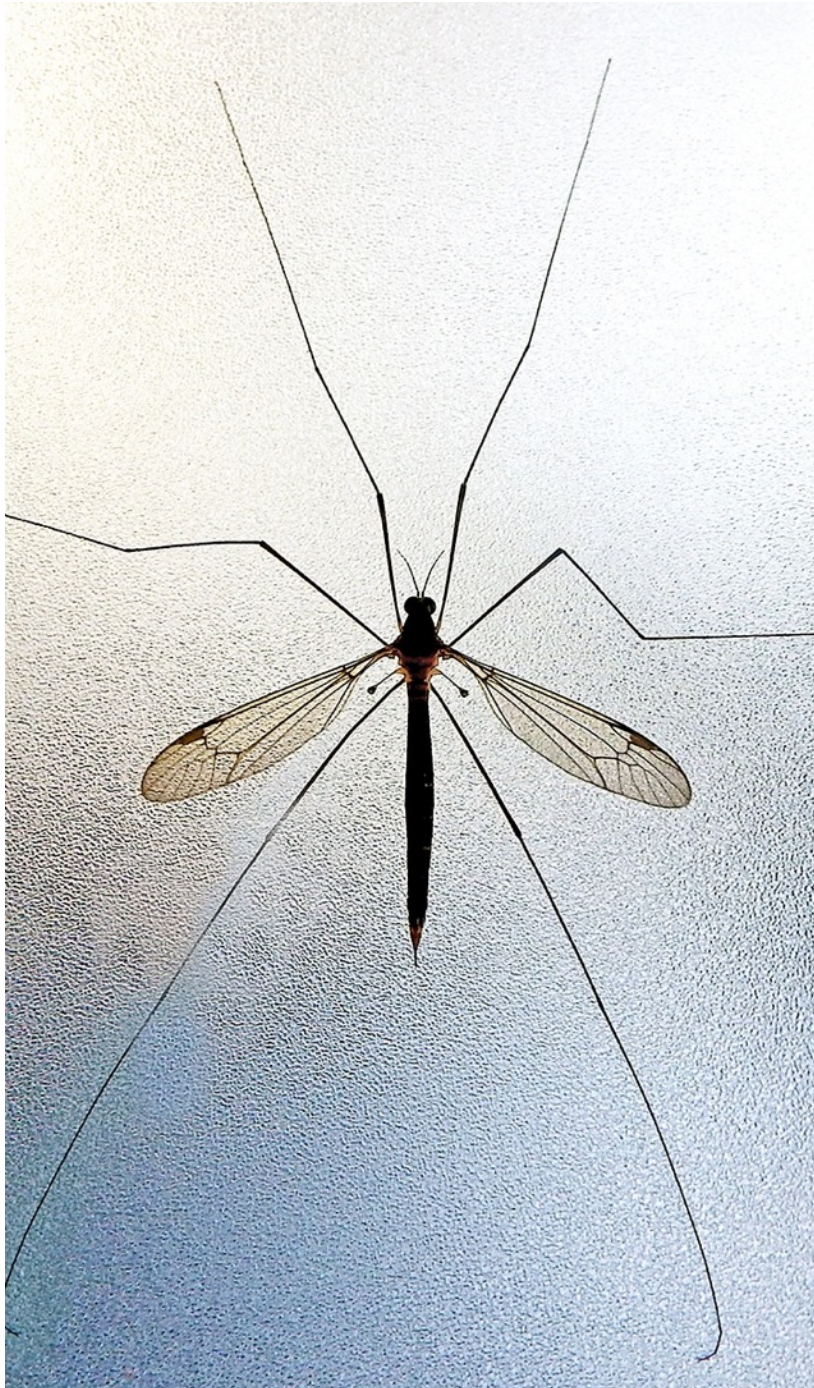
We know what a fly is, don't we? A big-headed, shiny, hairy, filthy, buzzy thing with sticky feet. Right!

I used to think like that, but Dad's been walking around with a macro camera for years and I've had to change my mind a bit on that.



That is a blow fly. The larvae are part of the composting process that turns organic waste into soil. That's not a bad thing. So what makes this a *fly*?

Let's start with a Crane fly on a window that's big and easy to see.



Most insects have six legs and four wings. Flies have two wings. Their ancestors did once have four wings but over time the hind wings became small club-shaped organs called halteres that beat in the opposite direction to the two remaining wings and send information about body rotation to the flight control centre in the fly-brain in real time. All flies have halteres. Without halteres their two-wing flight becomes impossible.

Moths, bees, wasps, dragonflies, lace-bugs, termites and male web spinners each have four wings.



A winged termite with four wings (and their shadows). If you find an insect of any kind with four wings it's not Diptera. *Diptera* is the proper name for the order of flies and includes house-flies, mosquitoes, midges and gnats. It doesn't matter what it's called. If it's got four wings its not a true fly. A dragonfly (with four wings) is not a fly, but a moth-fly (with two wings) is. Confused? Read on ...

There are more than 400 Diptera species around our house. We have photographs of that many and there are more tiny ones. They don't come in the house (except for mosquitos). They're in balance in the ecosystem, no species dominates. If we didn't look we wouldn't know they were there.



A melon fruit fly *Dacini dacus* and a hover fly below. Note the halteres.



Two more hover flies.



A 7 mm *Paragus crenulatus* (above) and a wasp mimic, *Allobaccha* species (below). Note the halteres. Flies: not a bee and not a wasp.



All flies have halteres but they're often tiny and tucked under the wings out of sight.



A fungus gnat, *Keroplatydae: Playtyura sp.* (above) and a non-biting midge related to the mosquitoes (below).



Now we come to the fun part: a fly or not?



Dragonfly (above). Four wings, no halteres: and a moth fly (below).  
Two wings, two halteres out of sight (trust me): *a fly not a moth.*



Two that are not flies in spite of their common names.



A tiny Mayfly (above) with no halteres and four wings and a Stonefly (below) with four wings: not Diptera.





Two that *are* flies.



A *Celyphidae* sp. Two wings and halters: known as a beetle-fly.



A bee fly. *Bombyliidae* sp. A fly that behaves like a bee.