Random helpful facts and tips for writing posts / replies / comments on insects

(several of these are relevant for other taxa too)

EARLY STAGES

nymph	a young insect of a hemimetabolic species, which is an insect that already looks a bit like the adult when it hatches / gets out of the egg (plural: nymphs) [there are some exceptions to this, including: certain stages of termites (which are hemimetabolic) are called larvae, and the nymphs of dragonflies and damselflies are sometimes also called larvae]
naiad	the aquatic nymph of a dragonfly, mayfly or stonefly. This word is not used very often (plural: naiads)
larva	a young insect of a holometabolic species, which is an insect that looks very different from the adult when it gets out of the egg, and which becomes a pupa before becoming an adult (plural: larvae)
pupa	the stage between larva and adult in holometabolic species. A pupa does not CONTAIN the metamorphosing (appearance-changing) insect, it IS the insect (plural: pupae)
chrysalis	the word used to denote the often more elaborate pupa of a butterfly species (plural: chrysalises)
cocoon	the protective casing the caterpillars and larvae of some moth and wasp species spin or build (with their body hairs) around them before turning into a pupa. The cocoon is not part of the insect (plural: cocoons)
exuviae	the remains of an exoskeleton after an insect/spider/other arthropod has moulted (this word only exists as plural). It is also often referred to as “moult” or “shed skin”

NAMES

The scientific name of a species consists of two parts: the genus and the species. The genus name is unique, and if two groups of different animals accidentally have the same genus name, one of them has to be changed according to the rules of the International Code of Zoological Nomenclature (ICZN - http://www.iczn.org/iczn/index.jsp). Within a genus, each species name must be unique too. A genus name is ALWAYS written with a capital letter (e.g. *Danaus* for the genus of monarch butterflies) while the specific part of a name is NEVER written with a capital letter (e.g. *Danaus plexippus* for the most famous monarch species of the Americas). Sometimes a subspecies is described, and this one is always without a capital letter too (e.g. *Danaus plexippus plexippus* for the migrating North American subspecies of that famous monarch species). Large genera are sometimes split up into a number of subgenera, and if the name of a species is written in full, the subgenus is written within brackets after the genus but before the species. To prevent confusion between scientific names, the name of the author (describer) of a species as well as the year in which it was

described are often added after the name. If the species is now placed in a different genus than the one it was described in, the name of the author as well as the year of description are placed within brackets. For example, the dung beetle *Deltochilum* (*Hybomidium*) *orbignyi orbignyi* (Blanchard, 1846) was described by Blanchard in 1846. He placed it in the genus *Hyboma* ("*Hyboma* Lepeletier and Serville, 1828" when written in full), but it was later transferred to the subgenus *Hybomidium* of the genus *Deltochilum*. It is now the nominal (bearer of the original name) subspecies of the species *Deltochilum orbignyi*.
In the past the rules on how to name a species were not very well defined, which is why many old books still contain species names with capitals.

The specific epithet of a name should never be used alone, but always in combination with the genus name. A genus name may be abbreviated, but this should never be done the first time it is used in a conversation. For example, the specific epithet *rufa* (meaning "red") does not say much. The name *F. rufa* could still point to numerous species. Only when the full name *Formica rufa* is mentioned, it becomes clear that a certain species of large European ant is meant.

Genus, subgenus, species and subspecies should always be written in cursive (italic), but that is impossible on Facebook and several other social media websites. Only when for some reason all the other text is cursive (e.g. in the caption of a photo), these names should NOT be in cursive.

The plural of genus is genera, and the plural of species is species.

If the exact identity of a specimen is unknown, the letters "sp." can be put behind the genus name, as that means "some species within this genus." If there are several species present among a number of specimens of a genus, the letters "spp." can be added after the genus name. For subspecies, the singular abbreviation is "ssp." while the plural abbreviation for subspecies is "sspp."

The letters "cf." indicate that the ID is not completely certain, while the letters "nr." mean that a specimen is close to a certain species, but not quite it.

Above the level of genus is the level of family (e.g. Nymphalidae for the family that contains the genus *Danaus*). Above the level of family is the level of order (e.g. Lepidoptera for the order containing all moths and butterflies) and above the level of order is the level of class (e.g. Insecta for the class containing all insects. Above the level of class is the level of phylum (e.g. Arthropoda for the phylum containing all arthropods). The levels above phylum are irrelevant when only talking about arthropods. Between the main levels of order and genus, the levels superfamily, subfamily, tribe and subtribe are sometimes added. These levels always end in certain letter combinations for all animal groups (they are different for plants, fungi, bacteria etc.):

superfamily	-oidea
family	-idae
subfamily	-inae
tribe	-ini
subtribe	-ina

Most species of insect, arachnid, centipede etc. have no precise common names. If you want to identify an animal, you have to search for the scientific name. When you have the scientific name, you can try to find a common name, but you may find that a certain species has no or multiple common names in a single language, and that a single common name may be used for multiple species. Scientific names are sometimes altered by scientists, but this goes according to strict rules. Both old and new scientific names will usually lead you to the correct species when searching on the internet.

When searching online for a scientific name, make sure you make no typos. Because scientific names are not used a lot, search engines may not be able to give you relevant suggestions when you make a typo. They may even assume you made a typo when you did not, if there is a common key word very similar to your little used scientific name.

The word “taxon” (plural “taxa”) is used to denote a (sub)species or group of species which can be named with a single scientific name. This can thus be a species as well as a family or class or anything between or above those levels.

VENOM/POISON/TOXUNGEN

Venoms are mixes of toxins which need to enter the body through the damaged skin to take effect. Animals use venom to kill their prey or to actively defend themselves and/or their offspring. Examples of venomous animals are paper wasps, most spiders, scorpions, caterpillars with stinging hairs or spines and (outside of entomology) vipers.

Poisons are mixes of toxins which enter the body through the undamaged skin or the linings of the digestive tract. Animals use poison to passively defend themselves. Poisonous animals are often brightly coloured to warn would-be predators about their toxicity. Examples of poisonous animals are many brightly coloured caterpillars, butterflies, blister beetles and (outside of entomology) poison dart frogs.

Toxungens are mixes of toxins which enter the body through the undamaged skin. They are actively used by animals to defend themselves, and in some cases to attack their prey. Examples include some scorpion species spraying venom and bombardier beetles spraying hot gasses which result from explosive chemical reactions in their bodies. Non-entomological examples include spitting cobras.

Many other species have chemical defences which are not poisonous, venomous or toxungenous but merely make them taste bad (like stink bugs).

IDENTIFICATIONS AND INFORMATION

Asking for identifications

If you want to have a specimen identified (IDed), it is best to provide some clear photos from different angles. Crop the photo if the subject has a lot of “empty” space around it, so that the subject itself will appear larger on all screens. Also, it is very important to always make sure to mention the location, including the country, where the specimen was found. Making an ID begins

with knowing where a specimen was found. Also mention what you think it is. If you post a picture of a beetle but already know it is a dung beetle, please say so. That will prevent other people wasting their time by saying it is some kind of scarab beetle / member of the family Scarabaeidae, as that is a less precise ID of what you already knew. When an answer has been provided, try to check that answer to see if it is actually correct. Then, thank the identifier for his/her help or say that you doubt the provided ID (and why). Do not ask for a common name, especially if a scientific name has already been provided. Simply putting the scientific name in a search engine will usually give you a common name (if there is one), while a common name may be used for multiple unrelated species (as explained above) and thus possibly point you in the wrong direction. Adding the correct ID to the original post will keep people from adding further unnecessary IDs.

Helping with identifications

When you think you can help with the ID of a species, first check if the ID has not already been given in any earlier comment. If you agree with an ID, simply "like" that ID. If the ID has not yet been given, check if the species which you think it is, does actually occur (near to) where the specimen was found. If not, your ID is most likely wrong. If the species does occur in the area, feel free to give the ID. The correctly spelled scientific name is the most helpful, but adding the common name is often appreciated. Make sure you do not give an ID which is more precise than what you are actually confident about. So, if you recognize a mole cricket, just give the scientific name Gryllotalpidae and the common name mole cricket. Do not give the genus name *Gryllotalpa* or even the specific name *Gryllotalpa gryllotalpa* if you do not know how to distinguish between the different genera or species of mole cricket. If you are reasonably sure of an ID, but not absolutely certain, add words like "could be", "looks like" or "similar to", so that it becomes clear your answer is not a definite ID.
If you identify a species to the level of genus or species, it helps to also include the scientific family name, as that will help people to understand the higher placement of the species.

Not asking for an identification

Even if you do not want an identification, please provide the location. Many people (especially the ones really interested) like to know where something came from, so that they know where they have to go to see it in the wild themselves. If you are asking for advice on interesting books, husbandry etc. also include the location, as the availability of items, the relevant laws etc. differ considerably between countries and even between states or cities. So, as a rule, whenever you post something regarding natural history somewhere on the internet, mention the location!
Also, make sure to read and follow the rules a social media group has. Not following the rules (which are usually quite sensible) may get your post/comment deleted or at least distract from the reason you posted/commented in the first place.

Experts

Most groups on Facebook which deal with some aspect of natural history have a number of members who are experts in the subject at hand. If they mention something that you do not agree with, politely tell why you do not agree (present your arguments!). If they maintain their position, do not keep arguing with them. Take the opportunity to learn from them; they are not experts for nothing, and there is a major chance you are actually wrong.

If you wonder if members are actual experts, check their profiles: from experience, I can tell that active experts on some aspect of natural history usually:

- post very few (if any) motivational or religious texts and share very few (if any) random beautiful pictures without any added information;
- use their pages to give information and informative links on their expertise;
- do not use profanity or excessive amounts of emoticons.

People who do the above things are not necessarily experts though.

Viral posts

Take note that nearly all viral posts claiming some natural history "facts" are deliberately or unwittingly wrong regarding at least one important part of what they claim. If you want the opinion of experts on some viral post, DO NOT share that post, but make a screenshot of it and post that instead. You may otherwise be responsible for the further distribution of (possibly harmful) disinformation.

OTHER

Entomology

Definitions of Entomology vary, but the more commonly used one says that entomology covers the study of insects, arachnids, centipedes and some related groups. Velvet worms and land-dwelling isopods are also often included.

Bugs

The word "**bug**" has no well-defined meaning and can be used for all kinds of small animals, just like the words "critter" and "creepy crawly."
The words "**true bug**" are only used to denote members of the insect order Hemiptera or even just its suborder Heteroptera, which contains insects like stink bugs, assassin bugs and leaf-footed bugs.

Predator / parasite / parasitoid

A predator is a species that kills another species to eat it (it may begin eating before the prey is dead). Examples are dragonflies, robber flies and ground beetles.

A parasite is a species that lives off another species without killing it. Examples are female mosquitos, bot flies and ticks. Parasites are known as vectors (transmitters) of many diseases, such as, e.g., malaria, Lyme, Chagas, bubonic plague etc. The diseases they may transmit vary per species.

A parasitoid is a species that completes its developing stages (from egg to adult) in or on a single specimen of another species and almost invariably kills that specimen while doing so. Examples include flies of the family Tachinidae and many species of small solitary wasps.

Nest/hive

A nest is a construction made by an animal or by multiple animals for the purpose of breeding and/or resting.
A hive is a man-made semi-mobile construction specifically created to let honey bees make their nest in.

Following

If you want to follow an interesting post on Facebook, there is no need to type “Following” or something similar. You can just move your cursor to the top right of the original post, where you will see either three dots or the symbol ˅. Left-click on that sign, and then choose the option “Turn on notifications for post.”

Making a correction

If you made a typo in a comment on Facebook and want to correct it, you don’t need to place a new comment with the correction. Instead, you can move your cursor to the right of your comment, where you will see three dots. Left-click on that sign, and then choose the option “edit” or “delete.”

Please let me know if anything of the above is not clear or if you have other suggestions.

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