17.1 The Linnaean System of Classification

KEY CONCEPT

Organisms can be classified based on physical similarities.

17.1 The Linnaean System of Classification

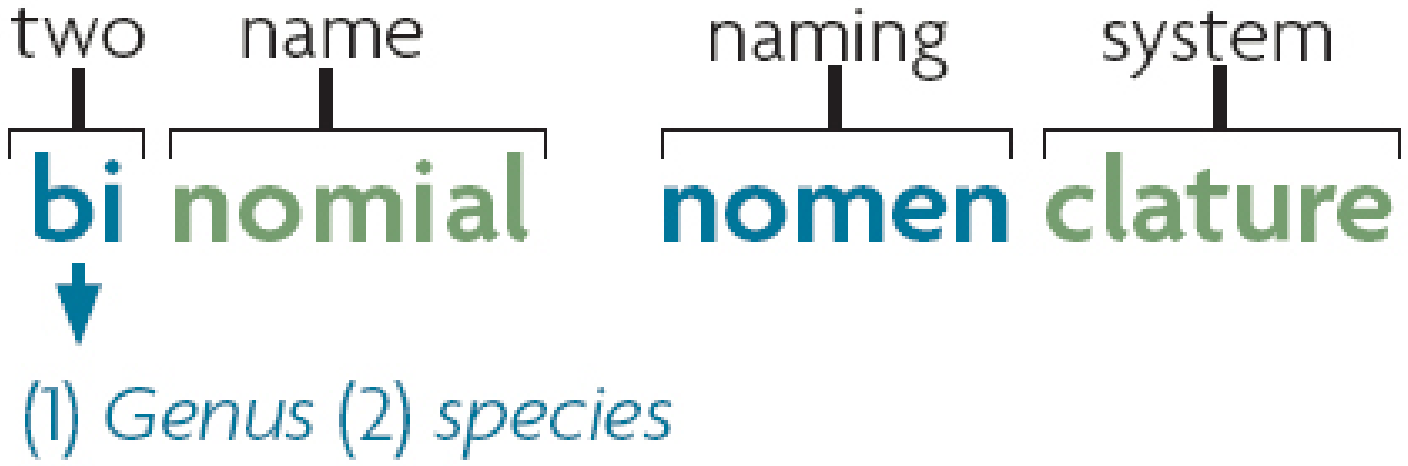
- **Linnaeus developed the scientific naming system still used today.**
  - Taxonomy is the science of naming and classifying organisms.

White oak:
Quercus alba

  - A taxon is a group of organisms in a classification system.

17.1 The Linnaean System of Classification

- Binomial nomenclature is a two-part scientific naming system.
  - uses Latin words
  - scientific names always written in italics
  - two parts are the genus name and species descriptor



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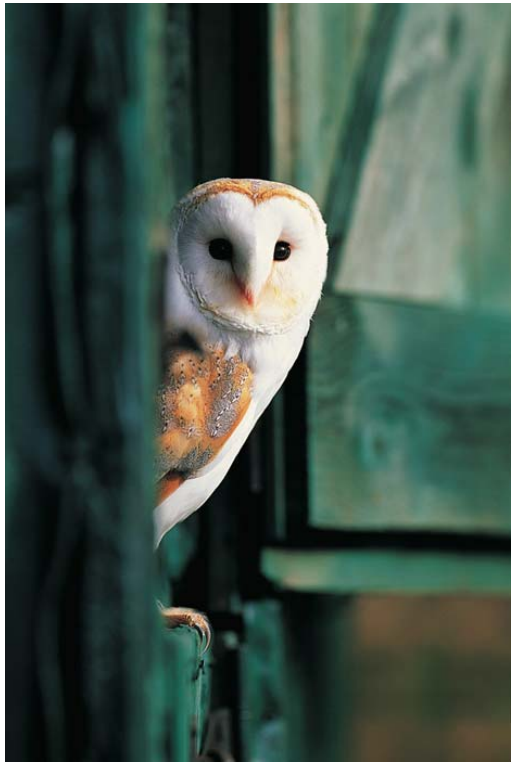
- A genus includes one or more physically similar species.
  - Species in the same genus are thought to be closely related.
  - Genus name is always capitalized.
- A species descriptor is the second part of a scientific name.
  - always lowercase
  - always follows genus name; never written alone



Tyto alba

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- Scientific names help scientists to communicate.
  - Some species have very similar common names.
  - Some species have many common names.

COMMON NAMES	SCIENTIFIC NAME	
	Genus	**species**
Roly-poly, pill bug, sow bug, potato bug	*Armadillidium*	*vulgare*
Dandelion, Irish daisy, lion's tooth	*Taraxacum*	*officinale*
House sparrow, English sparrow	*Passer*	*domesticus*
Mountain lion, cougar, puma	*Puma*	*concolor*
Red maple, scarlet maple, swamp maple	*Acer*	*rubrum*

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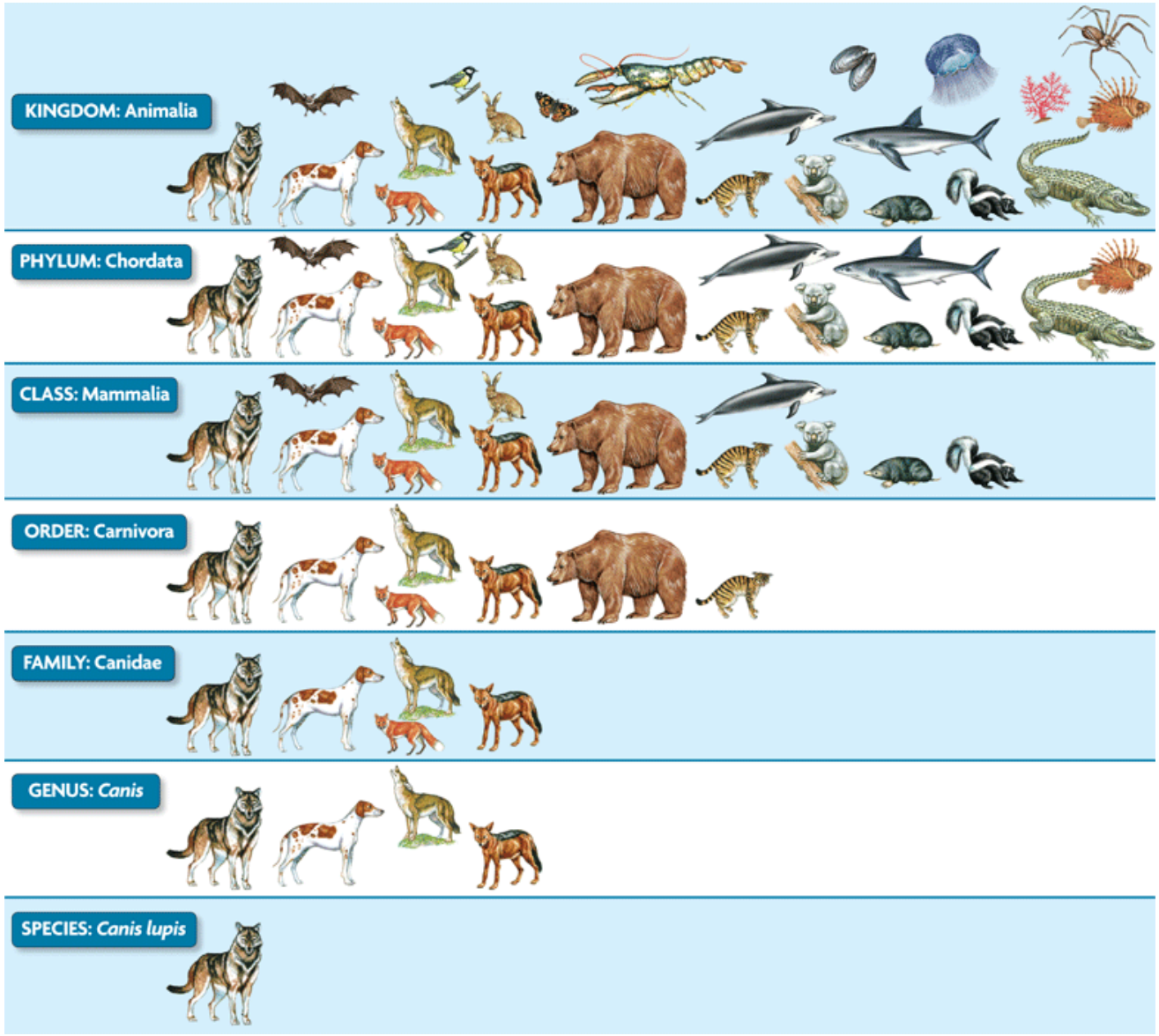
Linnaeus' classification system has seven levels.

- Each level is included in the level above it.
- Levels get increasingly specific from kingdom to species.



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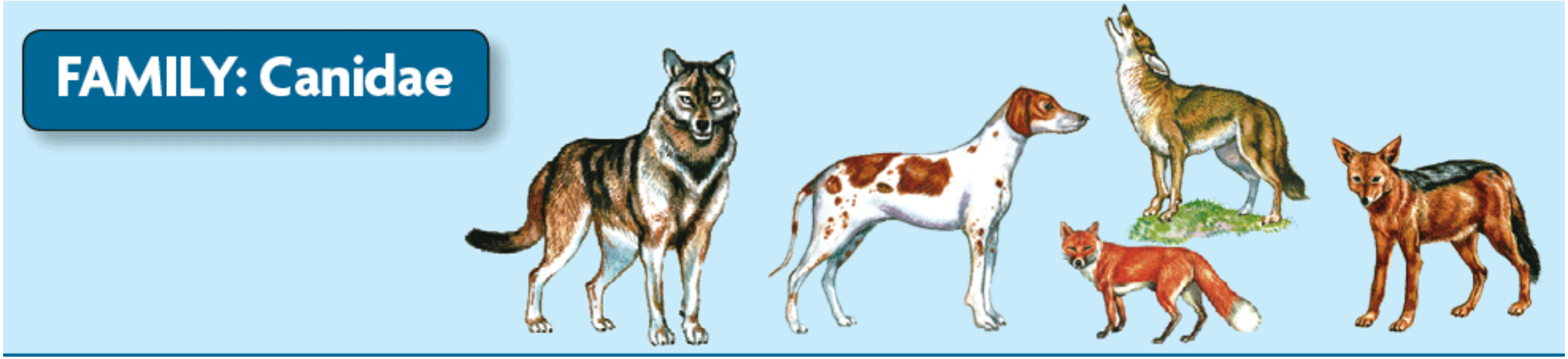
- **The Linnaean classification system has limitations.**
  - Linnaeus taxonomy doesn't account for molecular evidence.
    - The technology didn't exist during Linneaus' time.
    - Linnaean system based only on physical similarities.



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- Physical similarities are not always the result of close relationships.
- Genetic similarities more accurately show evolutionary relationships.