

Classify this Mystery Bird

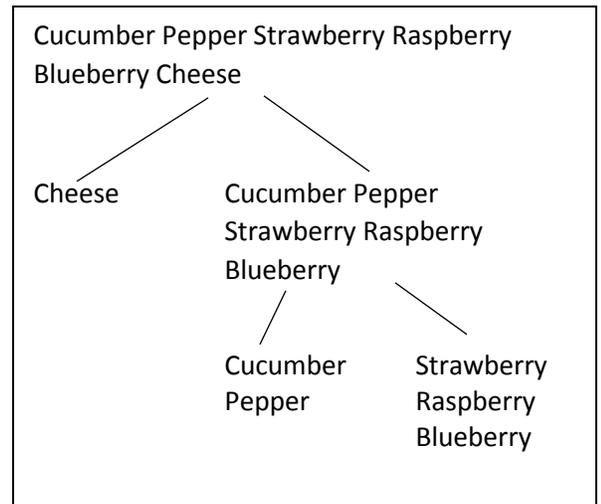
What is Classification?

All living things are organized into groups starting with really broad like groups and becoming increasingly specific. By organizing or 'classifying' organisms (living things) we're able to figure out what makes them different and the same.

How do we sort?

A taxonomist (someone who organizes living things into groups) has to choose what characteristics of groups of organisms are the most important for sorting and then sorts the organisms. To illustrate how a taxonomist does this let's look at some common food items that are a little easier to sort than living things.

If I had a cucumber, a pepper, a strawberry, a raspberry, a blueberry, and a piece of cheese (I'm just choosing food items that I know you're all familiar with to illustrate a point) I would put the cheese in a different group than the rest of the items because cheese doesn't come from a plant. Next I would separate cucumber and pepper from the rest of the items because those items are a vegetable and the rest of the items are fruit. See how I organized all of these food items by different characteristics? This is how a taxonomist organizes living things.



How is a human classified?

A human is in the Kingdom Animalia because we are multicellular organisms that cannot produce our own food. A human is in the Phylum Chordata because we have a spinal cord and a central nervous system. A human is in the Subphylum Vertebrata because we have a vertebrae (back bone) and a skull. A human is in the Class Mammalia (mammal) because we don't lay eggs, have hair and can produce milk. A human is in the Order Primates because we have collar bones and fingers that can grasp. A human is in the Family Hominidae because we have flat (relatively flat) faces and three dimensional vision. A human is in the Genus Homo because we have large brains and stand upright. A human is the species sapien because we have a high forehead and thin skull bones. So the scientific name of a human is *Homo sapien* (Note how the genus and species is italicized, the other way of writing this would be Homo sapien where the genus and species is underlined).

Let's classify a Chimney Swift!

Use the pictures on the side (and the intro to Chimney Swifts slideshow to help you figure out what groups the Chimney Swift belongs in! See if you can figure out what its scientific name is.

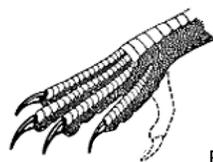
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|-----------|----------------------|
| Kingdom | <input type="text"/> |
| Phylum | <input type="text"/> |
| Subphylum | <input type="text"/> |
| Class | <input type="text"/> |
| Order | <input type="text"/> |
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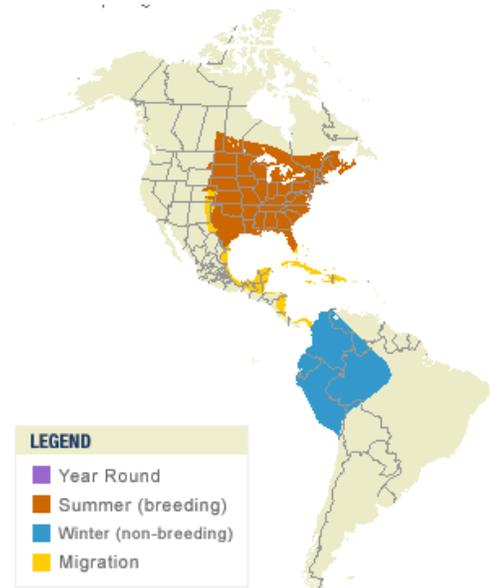
Photo by: George Peck



Photo by: George Armistead



Fleshy
(not scaly)
foot



Map by Cornell Lab of Ornithology
Range data by NatureServe

Word Bank

Kingdom

Monera: Unicellular (organisms made up of one cell) organism that often lacks cell parts (ex. A nucleus)

Protista: Unicellular organisms that contains a nucleus and can have moving parts

Fungi: Multicellular organisms that have a cell wall and cannot make their own food (fungi)

Plantae: Multicellular organisms that have a cell wall and are able to make their own food (plants)

Animalia: Multicellular organisms that do not have a cell wall (this means animal cells are not rigid and they can move) and cannot make their own food (animals)

Phylum

Porifera: Organisms that don't have true organs or nerve or muscle cells

Annelida: Segmented worms

Mollusca: snails, clams, slugs, squid

Arthropods: Jointed external skeletons

Echinoderms: sea stars and sea urchins

Chordata: central nervous system, tail, stiff dorsal rod (like a backbone or spinal cord but it doesn't have to include bones)

Subphylum

Urochordata: larvae have notochords (essentially a backbone with no bones), adults are essentially tubes

Cephalochordata: have a notochord and long segmented bodies

Vertebrata: have a backbone, and a brain is encased in a protective skull

Class

Myxini: jawless, cartilaginous endoskeleton (do not have a true backbone)

Hyperoartia: jawless, cartilaginous endoskeleton

Chondrichthyes: true backbone, jaws, cartilaginous skeleton

Actinopterygii: Bony endoskeleton, ray-finned

Sarcopterygii: Bony endoskeleton, lobe-finned

Amphibians: Lungs as adults, tetrapods (4 limbs), ectotherms (cold blooded)

Sauropsida (reptilians): lungs, amniotic egg, ectotherms (cold blooded)

Aves: endotherms (warm blooded), feathers, wings

Mammals: most don't lay eggs, hairy bodies, mammary glands, endotherms (warm blooded)

Order

Struthioniformes: flightless, primarily herbivorous, ground nesters, incubation done entirely by male

Tinamiformes: have either 3 or 4 toes, have a breastbone, can fly, small and partridge like

Craciformes: mound builders and incubator birds, fowl-like, neither adult sits on the eggs

Galliformes: birds with stocky bodies, small heads, and short wings, generally omnivorous, rapid and low to the ground flight

Anseriformes: large in size, typically very aquatic

Trogoniformes: brightly coloured, live in tropics

Coliiformes: can direct all four toes forward, have crests on their head

Cuculiformes: generally carnivores, relatively dull coloured, medium sized (16cm to 70cm)

Apodiformes: means 'footless' although they do actually have feet their feet don't have scales, all toes are pointed forwards rather than one backwards

Strigiformes: nocturnal birds of prey

Columbiformes: stout-bodied birds with short necks, and short slender bills, herbivores

Gruiformes: live and nest on the ground, both parents incubate, chicks are precocial (meaning feathered and mobile as soon as they hatch)

Ciconiiformes: live near or on the water, most have long necks, long bills, long legs

Passeriformes: true perching birds with three toes pointed forward and one backwards

Family

Apodidae: the most aerial of birds, short stiff tails, long straight wings, predominantly black, grey or brown, insectivores

Trochilidae: tiny, nectar and insect eating birds, unique manner of flight allows them to fly forwards, backwards, or hover in one spot

Hemiprocnidae: spend most of their time in flight, insectivores, have crests on their heads

Genus

Aerodramus: small, dark, cave nesting birds (tropical and subtropical regions in southern Asia, Oceania and northeastern Australia)

Chaetura: needle-tail swifts found in the Americas

Collocalia: cave-dwelling birds belonging to the swift family found in southeastern Asia and the Malay Peninsula through the Philippines, also called swiftlets between 9 and 15cm long

Cypseloides: young develop a coat of down-like fluffy feathers before they grow typical juvenile contour feathers, lives in Central and South America

Cypsiurus: pale brown, slender bodies

Hirundapus: needle-tailed swifts not found in the Americas

Hydrochous: includes the giant swift 35-39 g

Panyptila: includes the swallow-tailed swifts

Schoutedenapus: also known as the scarce swift, found in Burundi, Cameroon, Democratic Republic of Congo, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe

Tachymarptis: large swifts with relatively broad wings, a large head, a medium forked tail and white in the underparts

Species

brachyura (short-tailed swift): small and dark, broad wings that bulge along the trailing edge, short square tail, found in northern South America

chapmani (Chapman's swift): relatively large and comparatively dark to other species in this genus, their range includes central Panama to Venezuela, the Guianas, and northern Brazil mainly north of the Amazon River

cinereiventris (grey-rumped swift): largely blackish plumage with a grey rump, their range includes areas surrounding Amazonia

egregia (pale-rumped swift): pale rump, shorter wings and bronzy gloss to its plumage, range is Amazonia

fumosa (Costa Rican swift): dark rump band, pale throat patch, their range is from northern Columbia north to Costa Rica

martinica (lesser Antillean swift): blackish brown, paler rump, range is confined to the Lesser Antilles (Guadeloupe, Dominica, Martinique, St. Lucia, and St. Vincent

pelagica (chimney swift): dark greyish to brownish-grey, sooty colour, the tail has stiff bristle-like or spiny feather tips, their breeding range extends from central Alberta to Newfoundland, and south to Florida, the Gulf states and Eastern Texas

vauxi (Vaux's swift): plain greyish brown appearance sometimes highlighted by green iridescence, their breeding range includes western North America