

Avian Taxonomy

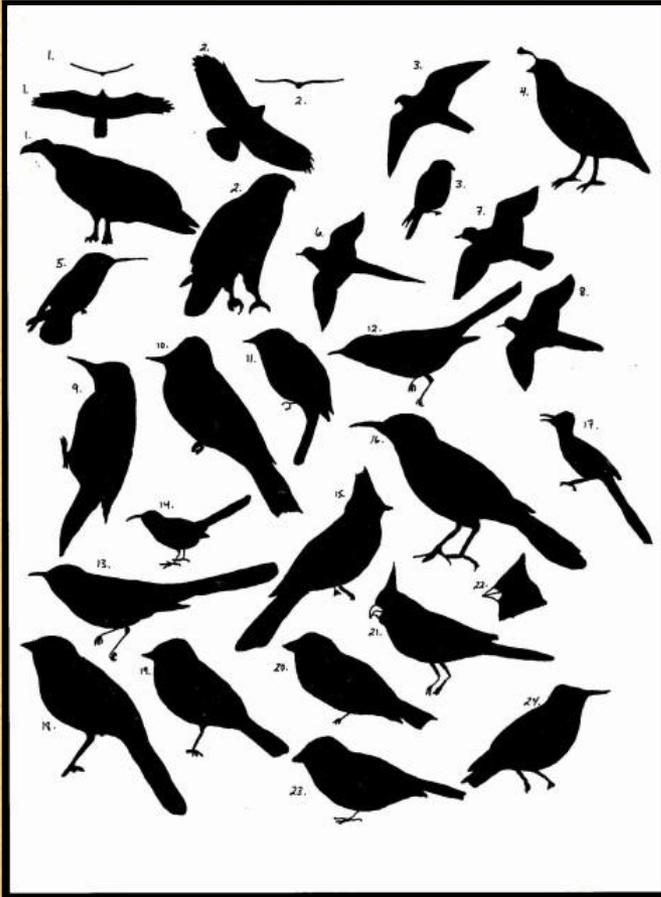
What is Taxonomy?

- Webster's Dictionary defines taxonomy as the classification of plants and animals into established groups or categories on the basis of their natural relationships

Why Do Naturalists Need to Know about Taxonomy?

- Understanding taxonomy will help you organize living things into groups
 - When you know what group a bird belongs to, you will be able to find that bird more quickly in your field guide because field guides are arranged in taxonomic order
- Scientific checklists are also arranged in taxonomic order
- If you record a list that you intend to submit, it is best to arrange it in the scientifically accepted order

Why Classify Birds?



- Approximately 10,000 species of birds worldwide
- A method of classification is required so birds can be identified and studied

Common Names May Be Confusing

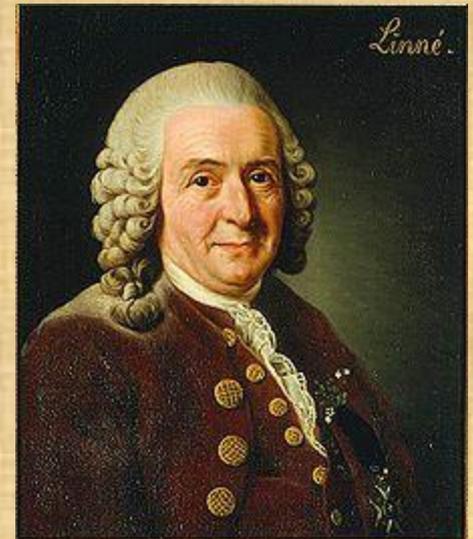


I say!
Did you see
that robin?



Origins of Taxonomy

- Carl Linneaus (1707-1778) was a Swedish botanist, physician, and zoologist
- He is known as the father of modern taxonomy
- He laid the foundations for binomial nomenclature
 - Two-part scientific name
 - Genus
 - Species



Taxonomic Levels

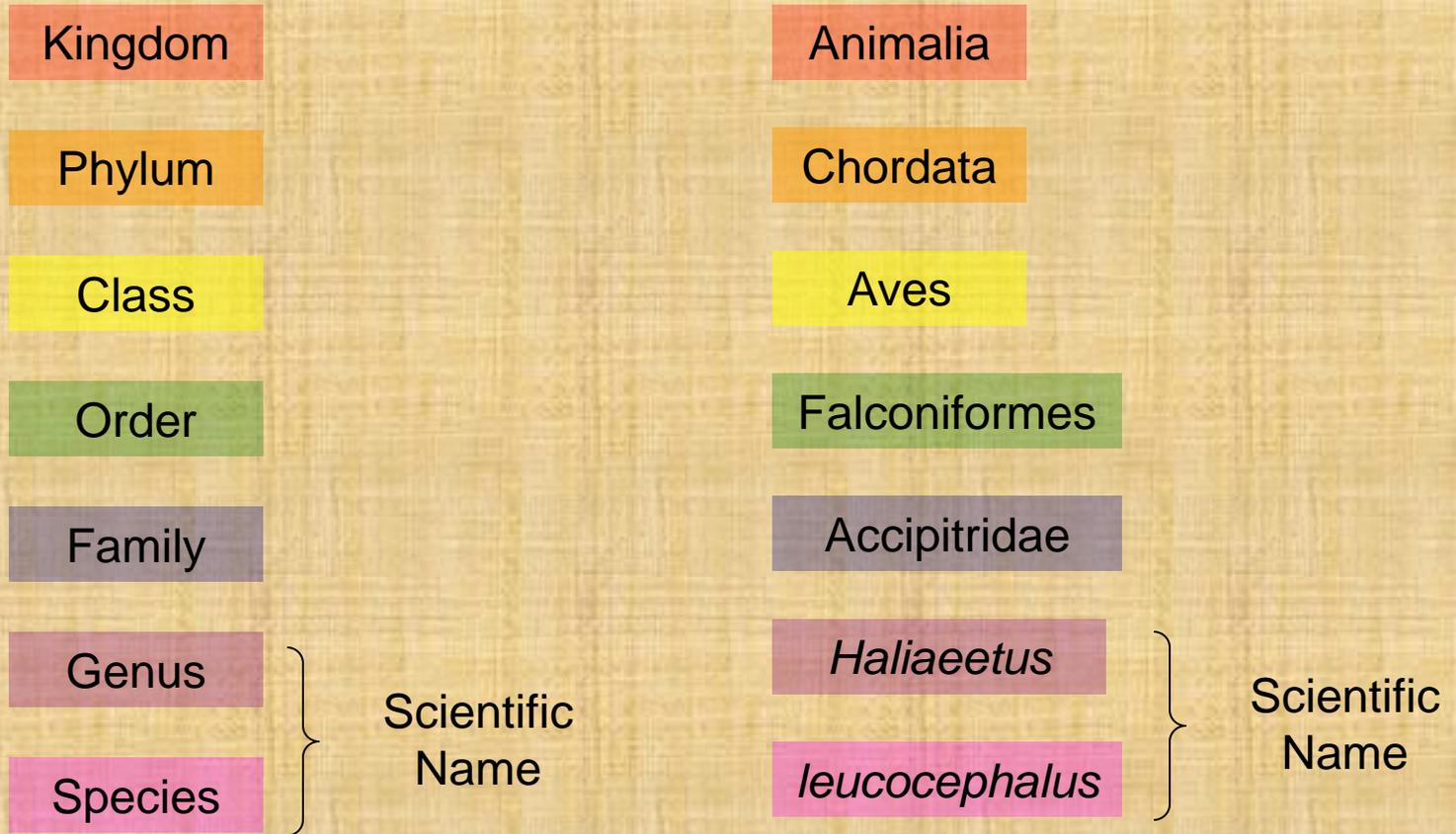
- In traditional taxonomy, there are 7 levels of classification
 - How do you remember the levels?

King penguins congregate on frozen ground sometimes

Kings play Chess on Fridays generally speaking

Kings play Chess on fat green stools

Taxonomic Levels



Bald Eagle

Animalia

Chordata

Aves

Falconiformes

Accipitridae

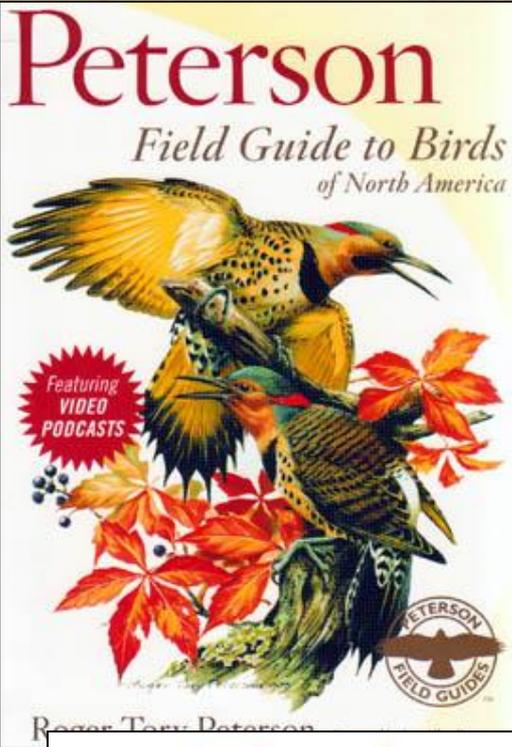
Haliaeetus

leucocephalus

} Scientific
Name

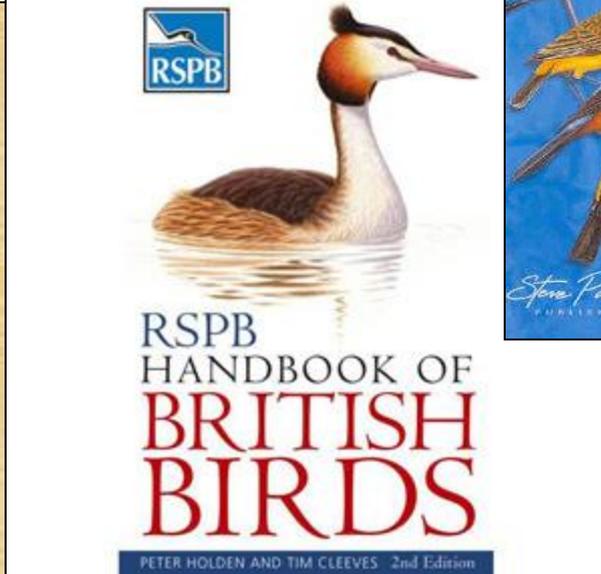
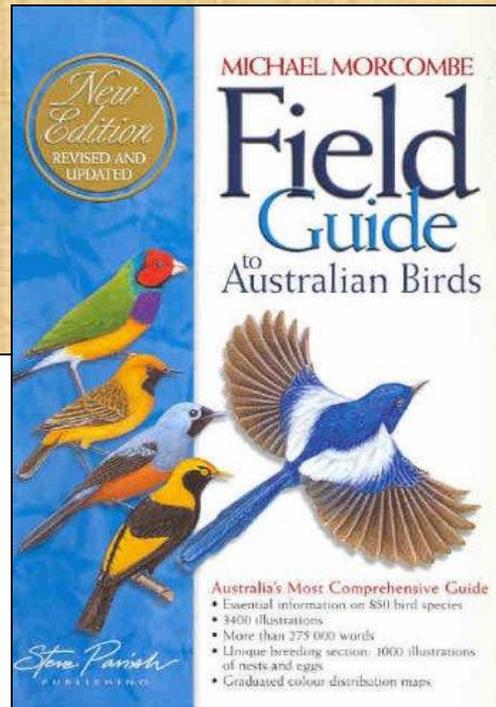


Photo © Bob Fairey



Class: Aves

- Worldwide, there are 27 orders of birds
- Within those orders, there are hundreds of bird families



How are Birds Classified into Orders?

- Darwin thought that birds should be ordered based on descent
 - Birds with more recent common ancestors should be grouped together
- Now DNA analysis is being used to classify birds
 - As a result, Avian classification changes to reflect new discoveries

Are Falcons & Parrots Cousins?

- Study published in June 2008 issue of Science examined DNA sequences
- Found evidence of new relationships and invalidated other established relationships
 - Falcons are more closely related to parrots than to hawks and eagles
 - Grebes and loons have less in common than originally thought
 - The study linked the grebes to flamingos

Test Your Knowledge



Photo © Mike Morrison

Order: Podicipediformes Family: Podicipedidae

Eared Grebe

Podiceps nigricollis



Photo © Mike Morrison

Order: Pelecaniformes Family: Pelecanidae

American White Pelican

Pelecanus erythrorhynchos



Photo © Mike Morrison

Order: Ciconiiformes Family: Ardeidae

Great Egret

Ardea alba



Photo © Mike Morrison

Order: Anseriformes Family: Anatidae

Trumpeter Swan

Cygnus buccinator



Photo © Mike Morrison

Order: Falconiformes Family: Accipitridae

Red-tailed Hawk

Buteo jamaicensis



Photo © Mike Morrison

Order: Gruiformes Family: Gruidae

Sandhill Crane

Grus canadensis



Photo © Mike Morrison

Order: Apodiformes Family: Trochilidae

Calliope Hummingbird

Stellula calliope



Photo © Mike Morrison

Order: Piciformes Family: Picidae

White-headed Woodpecker

Picoides albolarvatus



Photo © Mike Morrison

Order: Passeriformes Family: Alaudidae

Horned Lark

Eremophila alpestris



Photo © Mike Morrison

Order: Passeriformes Family: Hirundinidae

Barn Swallow

Hirundo rustica



Photo © Mike Morrison

Order: Passeriformes Family: Sittidae

Red-breasted Nuthatch

Sitta canadensis



Photo © Mike Morrison

Order: Passeriformes Family: Parulidae

Yellow Warbler

Dendroica petechia



Photo © Mike Morrison

Order: Passeriformes Family: Emberizidae

White-crowned Sparrow

Zonotrichia leucophrys



Photo © Mike Morrison

Order: Passeriformes Family: Icteridae

Red-winged Blackbird

Agelaius phoeniceus



Photo © Mike Morrison

Order: Passeriformes Family: Fringillidae

House Finch

Carpodacus mexicanus