Anolis spp

- Many fossil forms (Dominican amber 15-20 MYA)
- Many spp. (>300 spp – 7% of lizard fauna globally)
- 100 spp on Caribbean islands
- Evolved to fill many niches
• Diurnal
• Transverse lamellae on toes to allow vertical movement (arboreal)
• Change colour (stress, temperature)
• “Sit and wait” predators
• Occupy ground-feeding insectivore niches
• Pre-empted ground-feeding insectivorous birds in Lesser Antilles
• Birds competitively inferior (high metabolic demands, warm-blooded etc)
• 100x as many lizards as birds supported on same amount of food (1 anole/m² not unusual).
Lesser Antilles

- # species on an island (corrected for island area) is a decreasing function of distance from source (S - Venezuela, N - Puerto Rico)
- Anguilla to Dominica (*bimaculatus* group)
- Martinique to Bonaire (*roquet* group)
- some exceptions may suggest some colonisation via plate tectonics?
Size in Lesser Antilles

- One species islands: anoles are mid-sized
- On 2-species islands, the two species differ in size in opposite directions from the size of anoles in 1-species islands within bimaculatus group and within roquet group
- Body size difference – niche partition
Anoles in Greater Antilles

- Extremes in size greater
- Twig anoles (40 mm SVL)
- Giant anoles (190 mm SVL)
- Much higher diversity
- Finer niche partitioning from canopy anoles to grass anoles
In Greater Antilles *Anolis* lizards have radiated into forms with similar ecological and morphological characteristics (ecomorphs).
Ecomorphs

- Crown-Giant
- Trunk-Crown
- Trunk
- Twig
- Trunk-Ground
- Grass-Bush

zoology.okstate.edu/zoo_lrc/zool5112/RouseAnolis.ppt
Ecomorphs

Losos (1990)

• Morphology
  – SVL, mass, foreleg, hindleg, tail, lamella#

• Performance
  – Sprint, jump, clinging

• Ecology
  – Height, diameter, nearest perch

• Behavior
  – Display rate, %walk, %run, %jumps, moves/min, distance jumped in nature
• longer tails on smaller perches; tails used as a counter balance when jumping from perch to perch
• shorter jaws better for strong biting
• longer jaws for snatching prey

Photos:
zoology.okstate.edu/zoo_lrc/zool5112/RouseAnolis.ppt