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# Surprising Distinguishing Features

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*Characterizing the Ruminantia Apobaramin*

Baraminology:  
Present and Possible Future

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# Baraminology Quick Review

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- ❖ **Baramin** - a “Genesis Kind”
- ❖ **Holobaramin** - an attempt at capturing a baramin using creationist systematic methods (i.e., *Canidae*)
- ❖ **Monobaramin** - a set of groups that all belong to the same holobaramin (i.e., *Canis*)
- ❖ **Apobaramin** - a set of groups that are not monobaraminic with any other group (i.e., *Carnivora*)

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# Current Practice

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- ❖ Analyze sets of **character data** for holistic similarity and difference
- ❖ Analyzes **hybridization data** for reproductive compatibility
- ❖ Analyzes human cognitive understanding for biological pre-understandings of groups (**cognitum**)
- ❖ Analyzes **fossil evidence** for continuity of a group back to the flood
- ❖ **Final Result:** Holobaramin X includes taxonomic groups A, B, C

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# New Questions for Baraminologists

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1. God created everything according to its kind.
  - ❖ Why did God create these kinds?
  - ❖ How do specific anatomical features contribute to this purpose?
  - ❖ How does the evolutionary direction of a group contribute to this purpose?
2. Humans are supposed to be able to identify created kinds.
  - ❖ What markers are given to identify these kinds?
  - ❖ How does the evolutionary direction of a group contribute to taxonomic sub-identification?

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# New Tasks for Baraminology

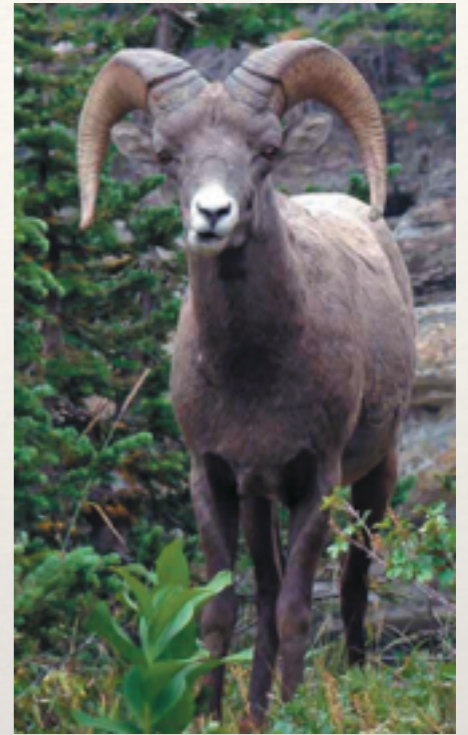
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- ❖ Current baraminology:
  - ❖ Establishes continuity
  - ❖ Establishes discontinuity
  - ❖ Establishes created kinds
- ❖ Extended baraminology:
  - ❖ Identifies the *purpose* of a created kind
  - ❖ Relates a created kind's purpose to its anatomy
  - ❖ Relates a created kind's purpose to its evolutionary potentialities
  - ❖ Identifies external identifying characteristics of a kind
  - ❖ Identifies external identifying characteristics of sub-baraminic groupings

# The Ruminantia Apobaramin

# Ruminantia Apobaramin Systematics

- ❖ Kingdom: Animalia
- ❖ Phylum: Chordata
- ❖ Class: Mammalia
- ❖ Order: Artiodactyla
- ❖ Suborder: Ruminantia



Images from Lightner, *Mammalian Ark Kinds*



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# Overview of Ruminantia

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- ❖ Four-chambered Stomach
- ❖ Distinctive teeth (lacks upper incisors, crescent-shaped ridges on cheek teeth)
- ❖ Foot bones fused to form a cannon bone
- ❖ Navicular and cuboidal bones are fused
- ❖ Only third and fourth digit well-developed
- ❖ Cranial appendages

# The Ruminant Stomach

- ❖ **Rumen** - primary site of microbial fermentation of food
- ❖ **Reticulum** - settling location for dense feed
- ❖ **Omasum** - absorbs water and inorganic material
- ❖ **Abomasum** - the “true” stomach

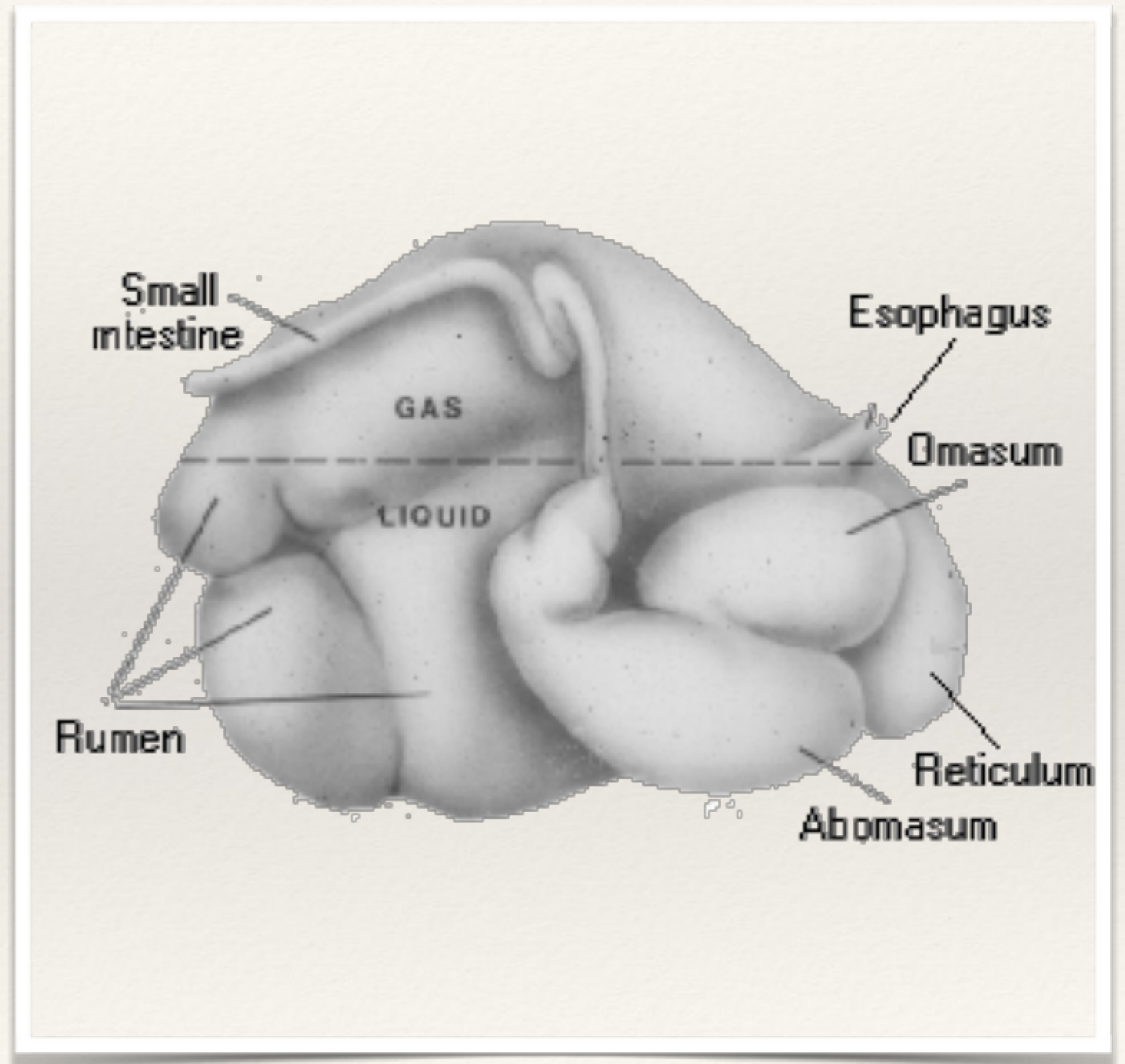


Image from Bowen, *Pathophysiology of the Digestive System*

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## Potential Created Kinds in Ruminantia according to Lightner, *Mammalian Ark Kinds*

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- ❖ Alcelaphinae (Hartebeest)
- ❖ Antilocapridae (Pronghorn)
- ❖ Antilopinae (Antelope)
- ❖ Bovidae Aepycerotinae (Impala)
- ❖ Bovinae (Cattle)
- ❖ Caprinae (Tsoan)
- ❖ Cephalophinae (Duiker)
- ❖ Cervidae (Deer)
- ❖ Giraffidae (Giraffe)
- ❖ Hippotraginae (Hippotragus Antelope)
- ❖ Moschidae (Musk Deer)
- ❖ Reducinae (Reedbuck)
- ❖ Tragulidae (Mouse deer)

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## Ruminantia as a Possible Holobaramin: Biological Evidence from Lightner, *Mammalian Ark Kinds*

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- ❖ Apobaraminic Evidences for Ruminantia:
  - ❖ Significant morphological discontinuities from other groups
  - ❖ No hybrids between ruminants and non-ruminants
- ❖ Monobaraminic Evidences for Ruminantia
  - ❖ Strong cognitum at Ruminantia, including observed mating
  - ❖ Unconfirmed hybrids between several families
  - ❖ Anatomical Similarities - many of the differences between monobaramins bridged by stretching existing anatomy
  - ❖ Four-chambered Stomach
- ❖ Sub-Identification anatomy - cranial appendages

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**Ruminantia as a Possible Holobaramin:  
Fossil Evidence from Wise, “Mammalian Kinds”**

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- ❖ **Post-Flood Continuity Criteria** - the lowest taxonomic level going back to the flood for an apobaramin identifies the ark kind and its taxonomic level
- ❖ **Amphimerycidae** - only family of Ruminantia extending back to the flood, though its placement in Ruminantia is uncertain.
- ❖ Superfamilies Cervoidea, Giraffoidea, and Bovoidea all begin after the flood

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# Biblical Testimony about Ruminantia

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❖ Leviticus 11:2bff:

“These are the beasts which ye shall eat among all the beasts that are on the earth. Whatsoever parteth the hoof, and is clovenfooted, and cheweth the cud, among the beasts, that shall ye eat.”

❖ Genesis 7:2:

“Of every clean beast thou shalt take to thee seven and seven, each with his mate; and of the beasts that are not clean two and two, each with his mate.”

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# Surprising Features of This Verse

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- ❖ The small number details - cloven hoof and chews the cud - exactly circumscribe the Ruminants
- ❖ This verse combines three interesting properties:
  - ❖ A specific, well-defined, well-documented branch of the taxonomic tree
  - ❖ A *purpose* (clean animals)
  - ❖ A small set of exterior indicators definitively defining the group
- ❖ Extra-biblically, we can also say
  - ❖ The members of this taxonomic branch have a specific piece of unique anatomy (the 4-chambered stomach) which directly contribute to its purpose.
  - ❖ One of the exterior indicators (cloven hoof) does not contribute to this purpose, but does contribute to the identification of animals that serve this purpose.
  - ❖ These features appear to be unevolvable in either direction (gain/lose), as every member of the apobaramin has these features, and no member of an outgroup has them.

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# Possible Terminology and Application to Ruminantia

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- ❖ **Bara-morphy** - A morphological attribute or combined set of attributes that are *unique* and *exactly coextensive* to an apobaramin
  - ❖ Four-chambered stomach
  - ❖ Cloven hooves and chewing the cud
- ❖ **Bara-telos** - A unifying purpose of an apobaramin
  - ❖ Ritually clean animal
- ❖ **Bara-techne** - An organ system accomplishing a bara-telos
  - ❖ Four-chambered stomach



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## Other Examples: Linnean Taxonomy and Baramorphies

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- ❖ Many clear apobaramins are distinguished in Linnean taxonomy by small sets of anatomical features:
  - ❖ Monocots vs Dicots (cotyledon structure)
  - ❖ Asters (Composite flowers)
  - ❖ Chordates (presence of a spinal chord)
  - ❖ Arachnids (8 legs)
  - ❖ Hexapods (3-segmented body and six legs)

# Enhancing Baraminology with Purpose

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# Potential Larger Extrapolations

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- ❖ God has divided taxonomy according to **purpose**, and it should be the goal of baraminology to discover not only the true nature of taxonomy, but **why** it exists in this way.
- ❖ God has given fixed, **external** characteristics which can be used to identify the inner purpose of taxonomic groupings.
- ❖ The **inner anatomy** and the **divine purpose** for which each grouping serves are aligned together.

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# New Tasks for Baraminology

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- ❖ For apobaramins and holobaramins:
  - ❖ Discover their unified purposes.
  - ❖ Identify how the unique anatomy of the group contributes to its purpose.
  - ❖ Identify the unique, external distinguishing features that can be used to identify the group.
- ❖ For holobaramins:
  - ❖ Identify how the evolutionary direction of the group contributes to its purpose.
  - ❖ Identify how the evolutionary direction of the group contributes to sub-identification.

# Other Issues

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# Baramorphies Can Shrink but not Disappear

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- ❖ Tragulidae is sometimes considered to have a three-chambered stomach
- ❖ Actually, the omasum is only poorly developed, not absent

“We find organs without functions, as, for instance, the teeth of the whale, which never cut through the gum, the breast in all males of the class of mammalia; these and similar organs are preserved in obedience to a certain uniformity of fundamental structure, true to the original formula of that division of animal life, even when not essential to its mode of existence. The organ remains, not for the performance of a function, but with reference to a plan, and might almost remind us of what we often see in human structures, when, for instance, in architecture, the same external combinations are retained for the sake of symmetry and harmony of proportion, even when they have no practical object.” (Agassiz, *Essay on Classification*)

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# Differences Between Baramorphies and Synapomorphies

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- ❖ The concept of baramorphy is easily confused with the evolutionary concept of synapomorphy
- ❖ Synapomorphy = common ancestor of two groups shared the trait(s)
- ❖ Baramorphy = **all members** of apobaramin share the trait
- ❖ Synapomorphy can be lost, baramorphy can only be diminished

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# Evolutionary Direction as a Baramorphy

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- ❖ JBS Haldane said that “From the fact that there are 400,000 species of beetles on this planet, but only 8,000 species of mammals, [it could be] concluded that the Creator, if he exists, has a special preference for beetles.”  
(SJ Gould, “A Special Fondness for Beetles”)
- ❖ “perhaps it was God’s purpose to create mankind to be like Himself and to retain that likeness consistently throughout human history. In contrast, it is clear that God’s purpose for [grass] was to cover the land, and for [beetles] to feed upon vegetation. Lots of grass and beetle species would thus be needed to fill the innumerable ecological niches that the Earth provided...[therefore] we would expect human inheritance to be dominated by structural and conservative components, and grass and beetle inheritance to have more emphasis on variable components.”  
(Alex Williams, “Inheritance of Biological Information, Part III”)



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# Relationship of Cognitum to Baramorphy

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- ❖ Cognitum and Baramorphy concepts are based on human's relationship to taxonomy, but with differences
- ❖ Cognitum concept focuses on human perception
- ❖ Cognitum deals with intuitive ascertainment
- ❖ Baramorphy focuses on objective features
- ❖ Baramorphy focuses on teachable patterns

Questions?