-Drouillard had killed a deer.

"The seen when I arrived was such that had I not have had a pretty keen appetite myself I am confident I should not have taisted any part of the venison…. Each [Indian] had a piece of some discription and all eating most ravenously. Some were eating the kidnies the melt [the spleen] and liver and the blood running from the corners of their mouths, others were in a similar situation with the paunch and guts…. One of the last [to arrive] had provided himself with about nine feet of the small guts one end of which he was chewing on while with his hands he was squeezing the contents out at the other. I really did not untill now think that human nature ever presented itself in a shape so nearly allied to the brute creation. I viewed these poor starved divils with pity and compassion."

Merriwether Lewis, 1805

People facing starvation (2003)
1. Ethiopia (up to 14 million)
2. Zimbabwe (6.7 million)
3. Malawi (3.3 million)
4. Sudan (2.9 million)
5. Zambia (2.0 million)
6. Angola (2 million)
7. Democratic Rep. of Congo (1.4 million)
8. Uganda (1 million)
9. Eritrea (up to 1 million)
10. Lesotho (650,000)
11. Mozambique (590,000)
12. Mauritania (420,000)
13. Sierra Leone (385,000)
14. Congo (342,000)
15. Swaziland (270,000)
16. Liberia (182,000)
17. Guinea (148,000)
18. Ivory Coast (76,000)
19. Cape Verde (28,000)

Source: UN World Food Programme
Feeding and Digestion
Chapter 15, pages 631 - 647

Absorption of nutrients through the body surface
Filter feeding mechanisms

Parazoa
Phylum Porifera
(Sponges)

"a certain matter wrought togethier of the foam and froth of the sea, which we call spunges.....whereof to write at large woulde greatly increase our volume, and little profite the Reader."

British herbalist, 1600
General organization of digestive system

<table>
<thead>
<tr>
<th>Structure</th>
<th>Function</th>
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</thead>
<tbody>
<tr>
<td>Headgut</td>
<td>Ingestion</td>
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<tr>
<td>Foregut</td>
<td>Receiving</td>
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<td>Conducting</td>
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<td>Storage</td>
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<td>Digestion (Acidic secretions)</td>
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<td>Midgut</td>
<td>Absorption→Assimilation (Basic secretions)</td>
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<tr>
<td>Hindgut</td>
<td>Storage of waste</td>
</tr>
<tr>
<td></td>
<td>Defecation</td>
</tr>
</tbody>
</table>
Feeding adaptations

Filter feeding mammal - Baleen whales use ram feeding

Tongue
Suction feeding

Snapping turtles use a combination of ram feeding and suction.
Sucking insects

Terrestrial feeding - evolution of the vertebrate tongue

Prey capture, prey transport, mastication, swallowing
Ballistic tongues

Fish teeth
- Homeodont dentition

Mammal teeth
- Heterodont dentition

Teeth

A. Chameleon

B. Shark

C. Porgy

D. Ray
Teeth adapted for processing three principal kinds of foods.

Teeth adapted for grinding.

Teeth and kinetic jaws of rattlesnakes.