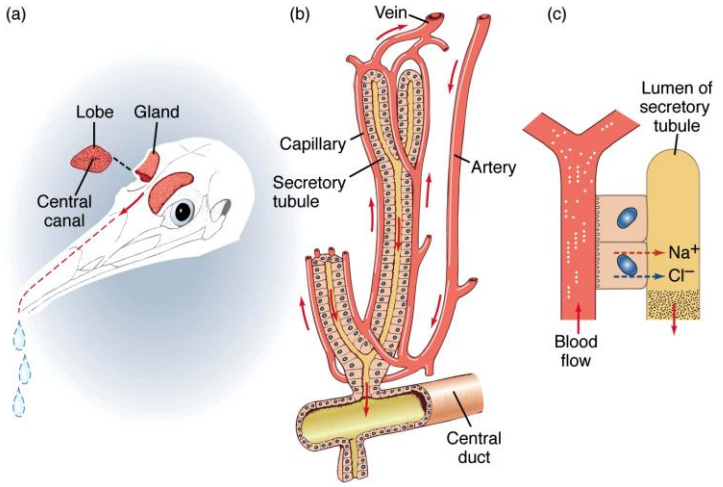
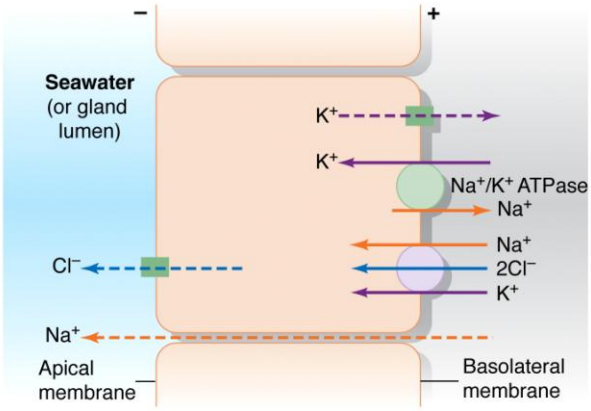
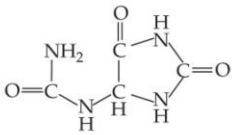
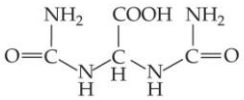
Lecture 16 handouts - insects, birds, desert life, cryptobiosis

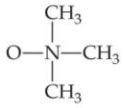


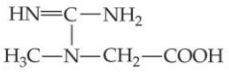


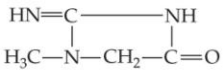
	Adult phase	Breeding	examples
Anadromous	Marine	Freshwater	Lampreys, salmon
catadromous	Freshwater	Marine	Eels

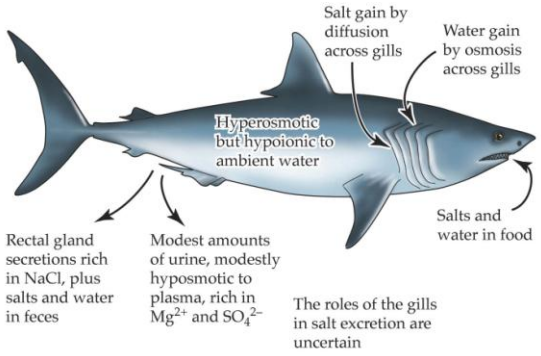

Allantoin


Allantoic acid

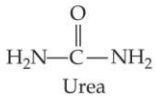

Trimethylamine oxide

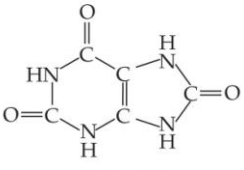

Creatine

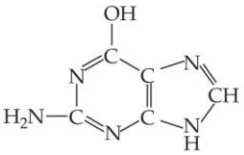

Creatinine

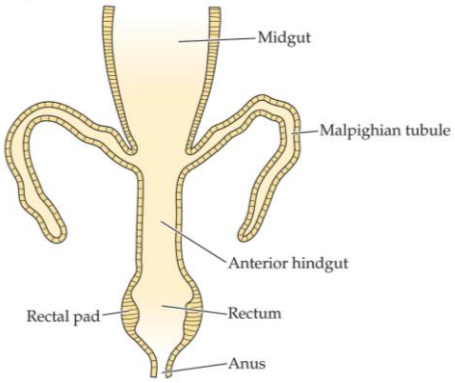



Ammonia


Urea


Uric acid


Guanine



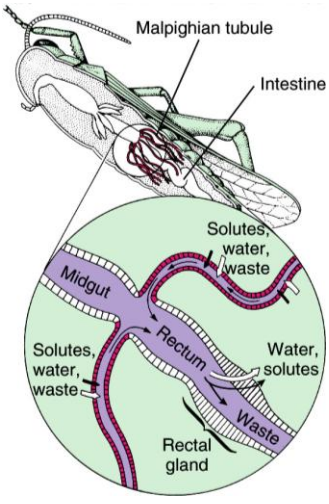


TABLE 27.1 Average composition of the rectal fluid and other body fluids in locusts provided with tap water or a saline solution to drink The animals (*Schistocerca gregaria*) were deprived of food.

Experimental treatment	Fluid	Osmotic pressure (*Osm*)	Ion Concentration (m*M*) Cl^-	Na^+	K^+
Water-fed	Rectal fluid	0.82[a]	5	1	22
	Anterior-hindgut fluid	0.42	93	20	139
	Blood	0.40	115	108	11
Saline-fed	Rectal fluid	1.87	569	405	241
	Anterior-hindgut fluid	—	192	67	186
	Blood	0.52	163	158	19

Source: After Phillips 1964.
[a] The high osmotic pressure in the scanty rectal fluid of water-fed animals is presumed to be caused by organic solutes.

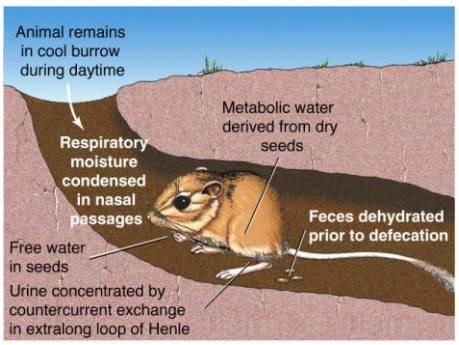
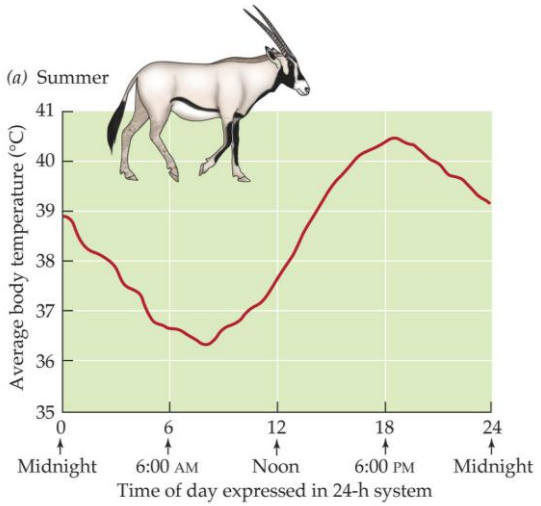
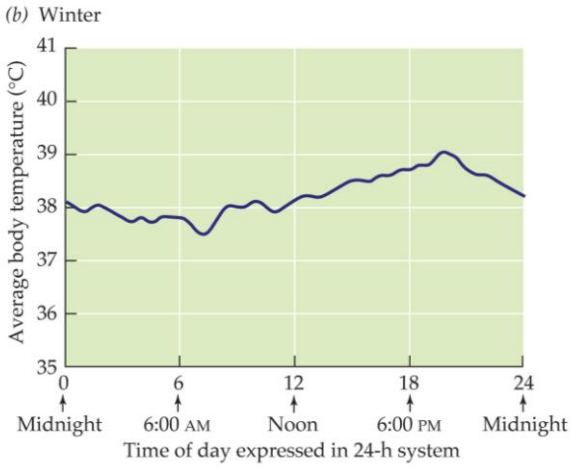


TABLE 25.3 Average gross amount of metabolic water formed in the oxidation of pure foodstuffs The values in this table apply to the oxidation of materials that have been absorbed from a meal and to the oxidation of materials stored in the body. To emphasize this, the materials are called foodstuffs rather than foods. The gross amount of metabolic water formed is, by definition, simply the amount made by the oxidation reactions.

Foodstuff	Grams of H_2O formed per gram of foodstuff
Carbohydrate[a]	0.56
Lipid	1.07
Protein with urea production[b]	0.40
Protein with uric acid production[b]	0.50

Source: After Schmidt-Nielsen 1964.
[a] Starch is assumed for the specific value listed.
[b] Water yield in protein catabolism depends on the nitrogenous end product.





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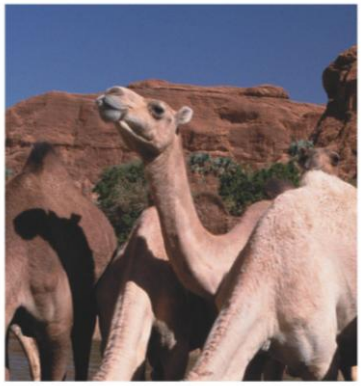
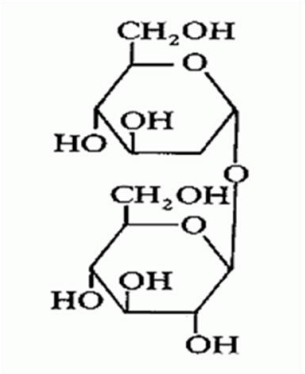


Trehalose



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