



## *Malpighian Tubules*

In terrestrial arthropods, a unique excretory system evolved to help control water loss. Waste products are emptied directly into the body cavity. From there, water and waste (mostly ammonia  $\text{NH}_3$ ) diffuse through the walls of the malpighian tubules and into the gut. Excess water is absorbed in the gut and all waste products are released as a dry pellet. Between the hard exoskeleton and their malipihian tubules, terrestrial insects lose very little water. Therefore, insects never drink; all the water they require comes from the food they eat. Scorpions can go for up to 2 years without food (and the water it contains).