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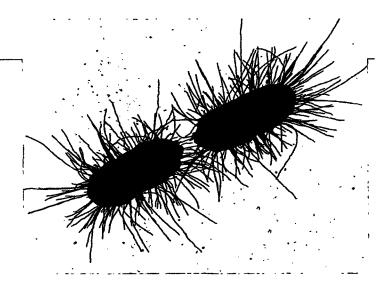
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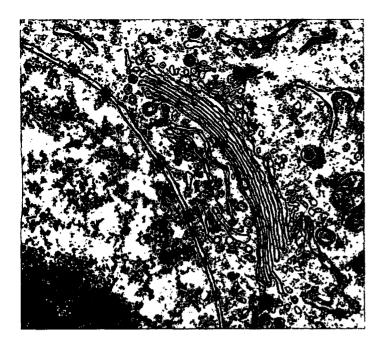
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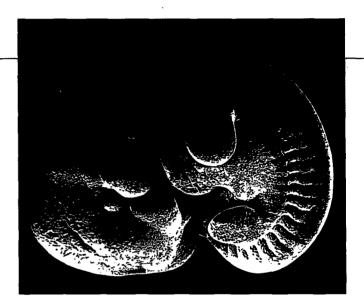
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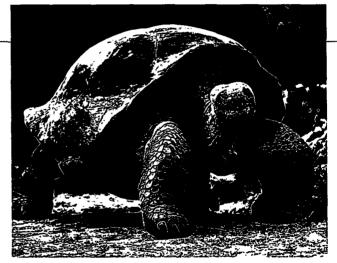
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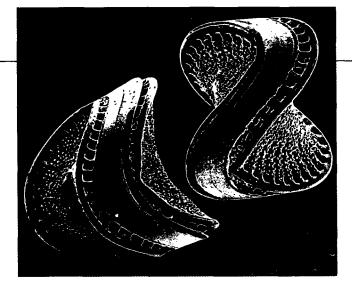
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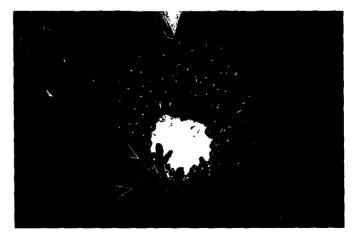
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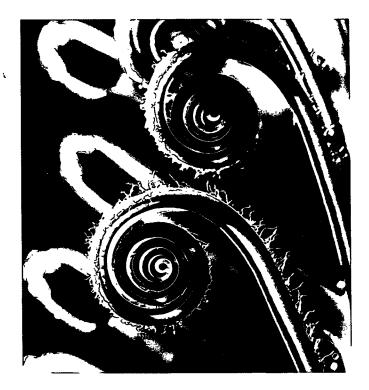
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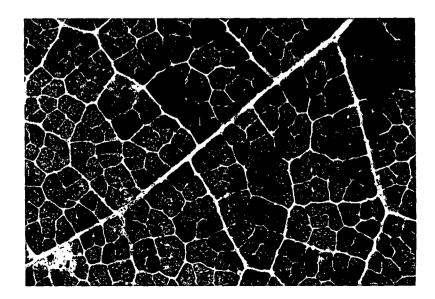
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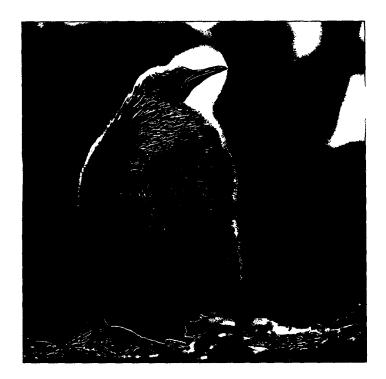
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Both marine and terrestrial vertebrates must conserve water 990 The nephron is the functional unit of the kidney 992 Blood is filtered in the glomerulus 992

The renal tubules convert glomerular filtrate to urine 993

## The Mammalian Excretory System 993

Kidneys produce urine, which the bladder stores 993

Nephrons have a regular arrangement in the kidney 994

Blood vessels also have a regular arrangement in the kidney 995

- The volume of glomerular filtration is greater than the volume of urine 995
- Most filtrate is resorbed by the proximal convoluted tubule 995 The loop of Henle creates a concentration gradient in the surrounding tissue 995

Water resorption begins in the distal convoluted tubule 997

Urine is concentrated in the collecting duct 997 The kidneys help regulate acid-base balance 997

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The kidneys act to maintain the glomerular filtration rate 998 Blood pressure and osmolarity are regulated by ADH 999 The heart produces a hormone that influences kidney function 999

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Experiments can determine whether a behavior is inherited 1004

- Simple stimuli can trigger behavior 1004
- Learning also shapes behavior 1005
- Imprinting is the learning of a complex releaser 1006
- Inheritance and learning interact to produce bird song 1006
- Genetically determined behavior is adaptive under certain conditions 1007

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Sex steroids determine the development and expression of sexual behavior in rats 1008

Testosterone affects the development of the brain regions responsible for song in birds 1009

## The Genetics of Behavior 1009

- Hybridization experiments demonstrate the influence of genes on behavior 1009
- Artificial selection and crossbreeding experiments reveal the genetic complexity of behavior 1010
- Molecular genetic techniques reveal specific genes that influence behavior 1011

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- Visual signals are rapid and versatile but are limited by directionality 1012
- Auditory signals communicate well over a distance 1013 Tactile signals can communicate complex messages 1013 Electric signals can also communicate messages 1014
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