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L I F E S C I E N C E

生命科学

Amazing Animals 神奇的动物

KATE BOEHM JEROME (美) 著

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KATE BOEHM JEROME (美) 著

邵红香 注

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如果你希望读到地道的英语，在享受英语阅读乐趣的同时又能增长知识、开拓视野，这套由外语教学与研究出版社与美国国家地理学会合作出版的“国家地理科学探索丛书”正是你的选择。

“国家地理科学探索丛书”分为9个系列，内容涉及自然科学和社会研究，秉承《国家地理》杂志图文并茂的特色，书中配有大量精彩的图片，文字通俗易懂、深入浅出，将科学性和趣味性完美结合，称得上是一套精致的小百科。

这套丛书以英文注释形式出版，注释由国内重点中学教学经验丰富的英语教师完成。特别值得推荐的是本套丛书在提高青少年读者英语阅读能力的同时，还注重培养他们的科学探索精神、动手能力、逻辑思维能力和沟通能力。

本丛书既适合学生自学，又可用于课堂教学。丛书各个系列均配有一本教师用书，内容包括背景知识介绍、技能训练提示、评估测试、多项选择题及答案等详尽的教学指导，是对课堂教学的极好补充。

本套丛书是适合中学生及英语爱好者的知识读物。

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L I F E S C I E N C E

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Contents 目 录

Introduction 4

引言

Student of the Week

猩猩上学

Chapter 1 6

第一章

The Animal World:

Wonderful and Weird

动物王国：精彩怪诞

Chapter 2 14

第二章

Survival in the Wild:

Hide and Seek

适者生存：捉迷藏

Picture This 20

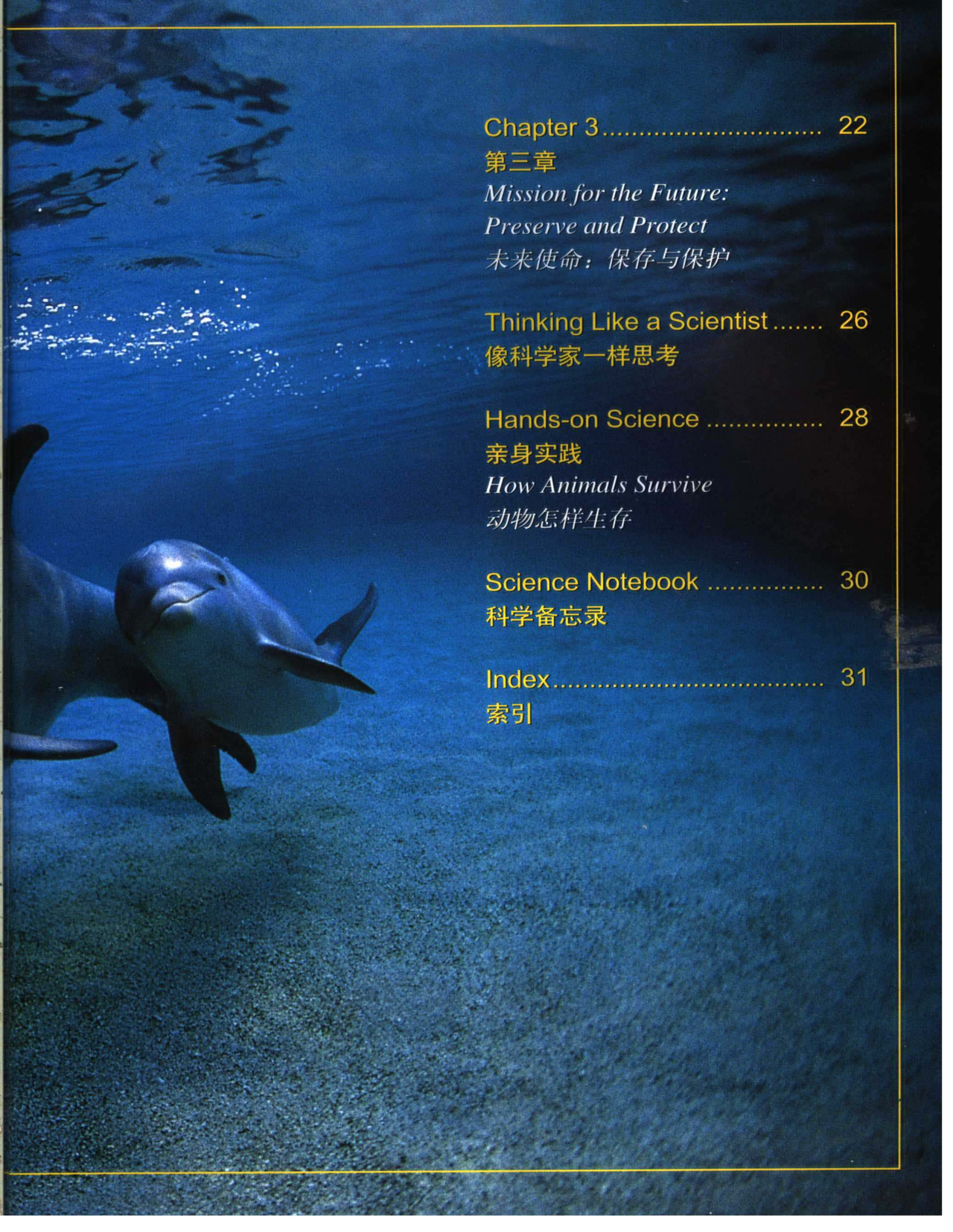
读图地带

Shortgrass Prairie

草原生态



Bottlenose dolphins



Chapter 3..... 22

第三章

Mission for the Future:

Preserve and Protect

未来使命：保存与保护

Thinking Like a Scientist 26

像科学家一样思考

Hands-on Science 28

亲身实践

How Animals Survive

动物怎样生存

Science Notebook 30

科学备忘录

Index..... 31

索引

Student of the Week

猩猩上

A Think Tank researcher works
with orangutans Indah and Iris.

There's an amazing¹ 21-year-old female² who lives in Washington, D.C. She likes to hang out³ with her friends and, like you, she goes to school every day. What's so special⁴ about this student? Well, she happens to be an orangutan⁵ named Indah, and she's part of a research project⁶ at the National Zoo.

Indah takes part in⁷ a special project called the Think Tank⁸. This project teaches animals to communicate⁹ using symbols¹⁰ on a computer screen¹¹. Biologists¹², or scientists who study living things, hope Think Tank will help them learn more about how animals think and act.



Indah

So what does Indah have to do? She looks at two computer screens. The top screen shows a picture. Indah must then touch the lower screen to select a symbol that represents¹³ the picture. By observing¹⁴ Indah, scientists learn more about how she thinks and communicates.

Indah is part of an amazing animal world that we are learning more about every day. It's a wild and interesting place. As you read this book, you will learn about different groups of animals and how they survive¹⁵. You also will see that the more we know about animals, the better we can protect¹⁶ them. So get ready to explore¹⁷—the whole world is your zoo and you are the keeper¹⁸!

1. amazing	adj.	令人惊异的	10. symbol	n.	符号
2. female	n.	雌性动物	11. screen	n.	屏幕
3. hang out		厮混	12. biologist	n.	生物学家
4. special	adj.	特别的	13. represent	v.	代表; 象征
5. orangutan	n.	猩猩	14. observe	v.	观察
6. project	n.	项目	15. survive	v.	幸存
7. take part in		参与	16. protect	v.	保护
8. Think Tank		智囊团	17. explore	v.	探索; 探究
9. communicate	v.	沟通; 交流	18. keeper	n.	管理员



The Animal World:

Wonderful and Weird

动物王国：精彩怪诞

The platypus¹ is a funny-looking animal that lives in Australia. Its feet are webbed² and its broad, flat snout³ looks like a duck's bill⁴. But the features⁵ that make the platypus look different also make it special. Do you know what this odd-looking⁶ creature⁷ can do?

1. platypus	n.	鸭嘴兽
2. webbed	adj.	有蹼的
3. snout	n.	口吻
4. bill	n.	喙
5. feature	n.	特征
6. odd-looking	adj.	看上去奇怪的
7. creature	n.	动物

The platypus can find food underwater even with its eyes, ears, and nose shut tight¹! How does it do this?

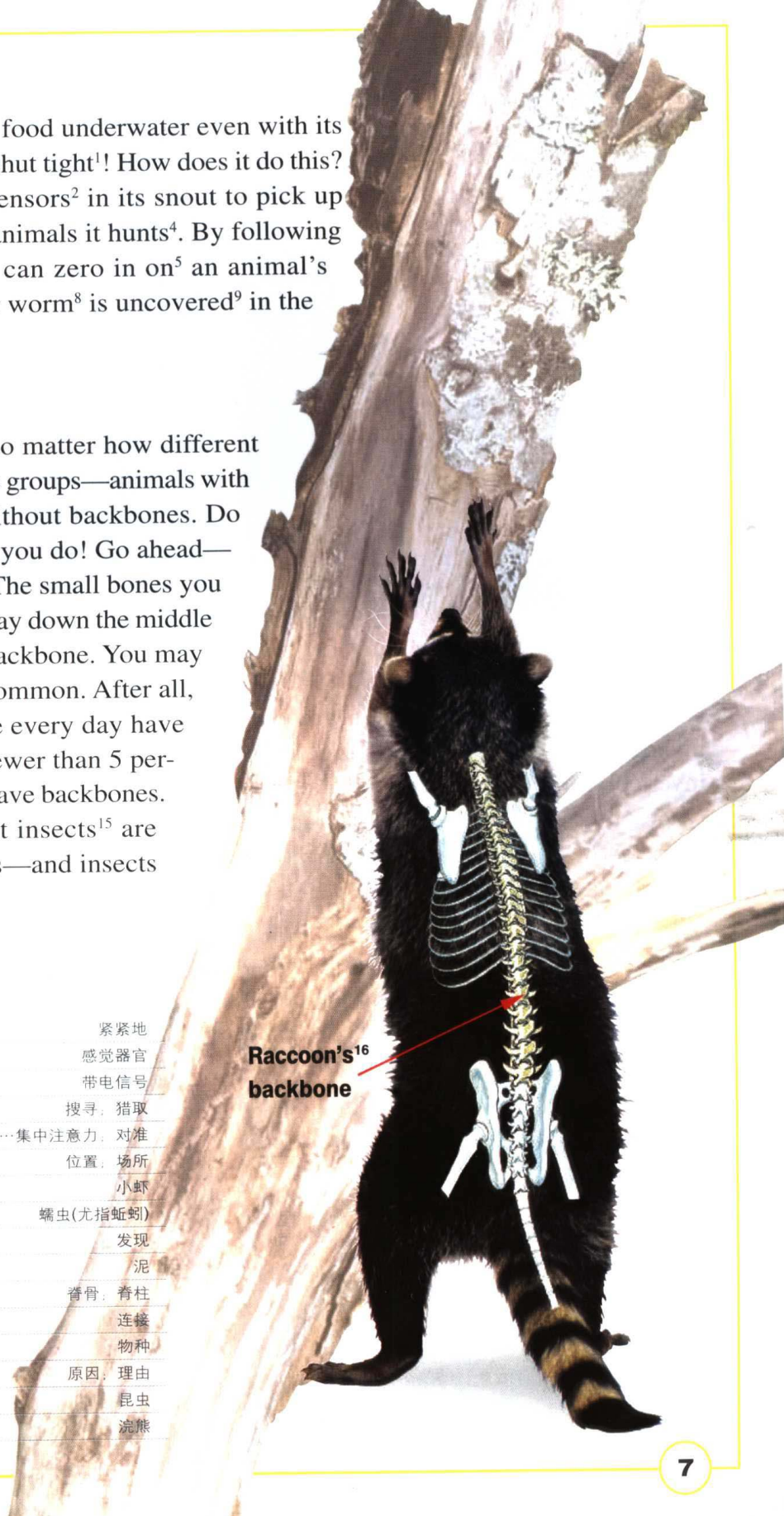
The platypus uses sensors² in its snout to pick up electrical signals³ from the animals it hunts⁴. By following these signals, the platypus can zero in on⁵ an animal's location⁶. Once a shrimp⁷ or worm⁸ is uncovered⁹ in the mud¹⁰, dinner is served!

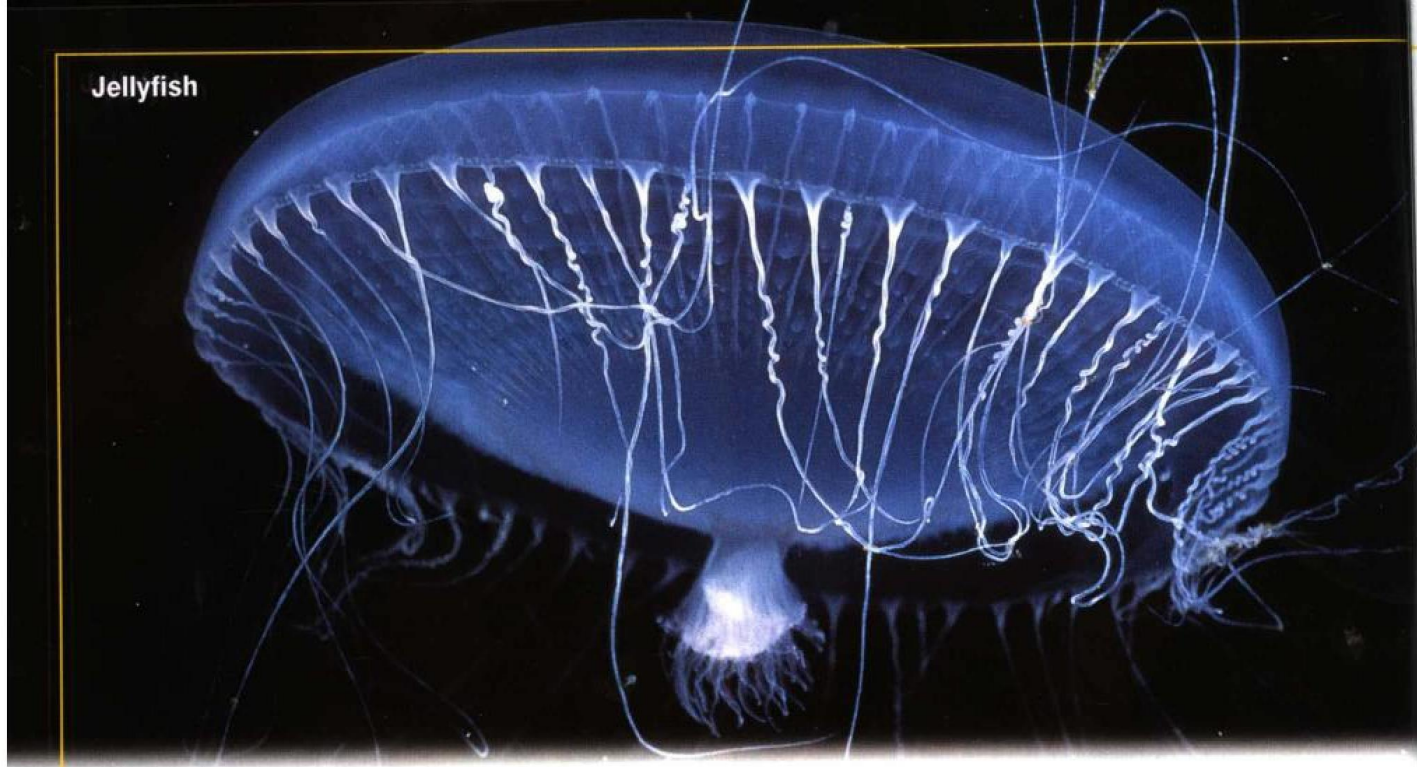
Animal Groups

Scientists put all animals, no matter how different they may look, into two large groups—animals with backbones¹¹ and animals without backbones. Do you have a backbone? Sure you do! Go ahead—feel the back of your neck. The small bones you feel are connected¹² all the way down the middle of your back to form your backbone. You may think a backbone is pretty common. After all, most of the animals you see every day have one. But believe it or not, fewer than 5 percent of all known species¹³ have backbones. One reason¹⁴ for this is that insects¹⁵ are the largest group of animals—and insects don't have backbones.

1. tight	<i>adv.</i>	紧紧地
2. sensor	<i>n.</i>	感觉器官
3. electrical signal		带电信号
4. hunt	<i>v.</i>	搜寻; 猎取
5. zero in on		向……集中注意力; 对准
6. location	<i>n.</i>	位置; 场所
7. shrimp	<i>n.</i>	小虾
8. worm	<i>n.</i>	蠕虫(尤指蚯蚓)
9. uncover	<i>v.</i>	发现
10. mud	<i>n.</i>	泥
11. backbone	<i>n.</i>	脊骨; 脊柱
12. connect	<i>v.</i>	连接
13. species	<i>n.</i>	物种
14. reason	<i>n.</i>	原因; 理由
15. insect	<i>n.</i>	昆虫
16. raccoon	<i>n.</i>	浣熊

Raccoon's¹⁶
backbone





Animals Without Backbones

Animals without backbones are called invertebrates¹. There are millions of kinds of invertebrates. They can be found almost anyplace on Earth. The pictures on these two pages show members of some of the main invertebrate groups.

Jellyfish² The soft and gooey³ jellyfish, pictured above, is an invertebrate that lives in the ocean⁴. A jellyfish has no head. It has a soft body with a mouth on its underside. Long, wavy⁵ tentacles⁶ swing⁷ gently from its body. But watch out⁸! Many jellyfish have tentacles with stinging cells⁹. The tentacles help the jellyfish catch food, but they also can sting you if you get too close.

Insects The largest group of invertebrates is insects. All insects have three main body parts—a head, a thorax¹⁰, and an abdomen¹¹.

A hard outer covering called an exoskeleton¹² protects insects. Since exoskeletons cannot grow with the animal, insects shed¹³ these outer coverings. The beetle¹⁴, pictured below, sheds its exoskeleton and grows a new, larger one to take its place.

1. invertebrate	<i>n.</i>	无脊椎动物
2. jellyfish	<i>n.</i>	水母
3. gooey	<i>adj.</i>	黏性的
4. ocean	<i>n.</i>	大海, 海洋
5. wavy	<i>adj.</i>	波状的, 波动的
6. tentacle	<i>n.</i>	触须, 触角
7. swing	<i>v.</i>	摆动, 摇摆
8. watch out		当心
9. stinging cell		刺细胞
10. thorax	<i>n.</i>	胸
11. abdomen	<i>n.</i>	腹
12. exoskeleton	<i>n.</i>	外骨骼
13. shed	<i>v.</i>	蜕(壳等)
14. beetle	<i>n.</i>	甲虫



Beetle

Arachnids¹ Spiders may look like insects, but they're actually² in a different group called arachnids. Spiders have two body parts and eight jointed³ legs. Most spiders make silk webs⁴ to catch food. But the water spider⁵, pictured at right, has a special skill. It spins⁶ its silk into a tiny⁷ air tank⁸. Then it dives⁹ underwater with its own supply¹⁰ of air to look for food.



Water spider

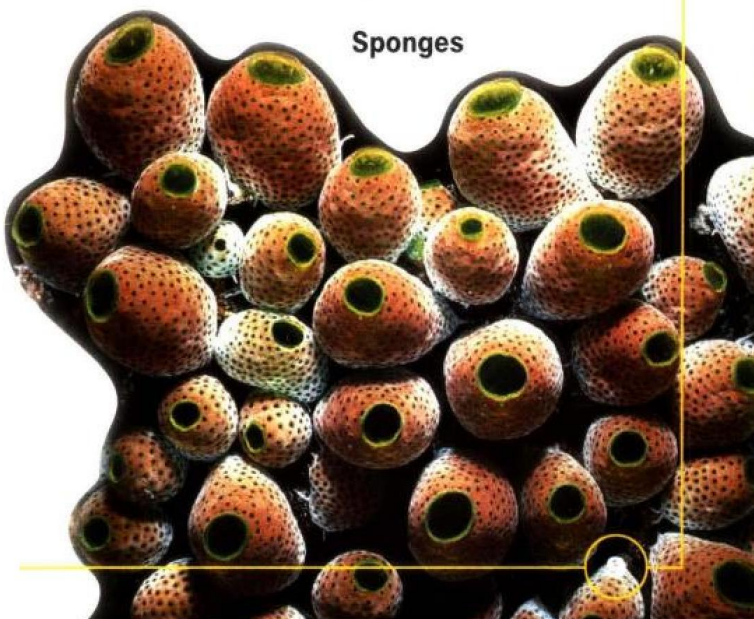
Centipedes¹¹ The body of a centipede is long and flat, perfect for hiding under logs¹² or stones. Centipedes look a bit like worms with legs. Each segment¹³ of a centipede's body has one pair of legs. All these legs help the centipede run quickly to catch insects for food.

Centipede



Sponges¹⁴ People used to think sponges were plants. After all, a sponge has no head or legs. We now know that sponges are simple invertebrates. These animals don't move about like we do. Young sponges attach to¹⁵ rocks or other underwater objects and stay there for the rest of their lives.

Sponges



- | | |
|-----------------|-------------|
| 1. arachnid | <i>n.</i> |
| 2. actually | <i>adv.</i> |
| 3. jointed | <i>adj.</i> |
| 4. web | <i>n.</i> |
| 5. water spider | |
| 6. spin | <i>v.</i> |
| 7. tiny | <i>adj.</i> |
| 8. air tank | |
| 9. dive | <i>v.</i> |
| 10. supply | <i>n.</i> |
| 11. centipede | <i>n.</i> |
| 12. log | <i>n.</i> |
| 13. segment | <i>n.</i> |
| 14. sponge | <i>n.</i> |
| 15. attach to | |

- 蛛形纲动物
实际上
有关节的
网
水蜘蛛
结(网)
极小的
氧气舱
潜水
供给
蜈蚣
原木
体节 节
海绵
附着于

Animals with Backbones

What do a sea otter¹ and an elephant have in common? Well, for one thing, both have backbones. They are called vertebrates² because each of the bones that make up the backbone is called a vertebra³. The backbone of a vertebrate grows with the animal. This means vertebrates can grow larger than animals without backbones. Vertebrates usually have bigger brains⁴ than invertebrates and can learn to behave⁵ in more complex⁶ ways.

Amphibians⁷ Frogs⁸ are part of a group of vertebrates called amphibians. Many amphibians spend part of their lives in water and part on land. Have you ever seen a tadpole⁹? It's a frog, or toad¹⁰, in the early stages of¹¹ its life. Look at how the tree frog¹², pictured below, blows up its vocal sac¹³. When the frog does this, it can croak¹⁴ loudly.



Tree frog

Reptiles¹⁵ Some people get nervous¹⁶ around these crawling¹⁷ or slithering¹⁸ vertebrates. It's true some reptiles, including certain snakes, are poisonous¹⁹ and dangerous. But most snakes are harmless to humans. In fact, snakes help farmers and gardeners by eating pests²⁰ such as insects and mice. Snakes have highly moveable jaws²¹. This means a snake can swallow²² another animal that is larger than the snake's own head!

1. sea otter	n.	海獭
2. vertebrate	n.	脊椎动物
3. vertebra	n.	脊椎; 脊柱
4. brain	n.	脑
5. behave	v.	举动; 举止
6. complex	adj.	复杂的
7. amphibian	n.	两栖动物
8. frog	n.	青蛙
9. tadpole	n.	蝌蚪
10. toad	n.	蟾蜍
11. early stage of		早期
12. tree frog		雨蛙
13. vocal sac		声囊
14. croak	v.	呱呱地叫(蛙鸣声)
15. reptile	n.	爬行动物
16. nervous	adj.	神经紧张的
17. crawl	v.	爬行; 蠕动
18. slither	v.	(像蛇似地)滑动
19. poisonous	adj.	有毒的
20. pest	n.	害虫
21. jaw	n.	腮; 颌
22. swallow	v.	吞下; 咽下

Parrot snake

Birds Have you ever been told that you “eat like a bird”? The expression usually means that you aren’t eating much. But if people really ate like birds, they’d be huge. Many birds eat twice their own weight in food every day. These winged¹ vertebrates need lots of energy² to fly.

Fish Did you know there are about 25,000 known species of fish? And all of them are vertebrates. A manta ray³ spends most of its time feeding at or near the ocean’s surface⁴. But a manta ray sometimes uses its winglike fins⁵ to actually leap out of⁶ the water.

Mammals⁷ The vertebrates that are probably most familiar⁸ to you are called mammals. Most mammals, like the basset hound⁹ at right, have hair to keep them warm. Mammals also feed milk to their young. From whales¹⁰ in the water to bats in the air, mammals can be found just about everywhere on Earth.



Kingfisher¹¹ with a fish in its bill



Manta ray



Basset hound

- | | | |
|-----------------|-------------|------------------|
| 1. winged | <i>adj.</i> | 有翼的 |
| 2. energy | <i>n.</i> | 能量 |
| 3. manta ray | | 蝠鲼 |
| 4. surface | <i>n.</i> | 表面 |
| 5. fin | <i>n.</i> | 鳍 |
| 6. leap out of | | 跃出 |
| 7. mammal | <i>n.</i> | 哺乳动物 |
| 8. familiar | <i>adj.</i> | 熟悉的 |
| 9. basset hound | | 短腿猎犬 |
| 10. whale | <i>n.</i> | 鲸(俗称鲸鱼) |
| 11. kingfisher | <i>n.</i> | 翠鸟. 鱼狗(一种食鱼或食虫鸟) |





Assortment¹ of Animals

Do you think you can list all the animals in the world? No way! There are just too many. And scientists are still discovering new species. So how do we make sense of² all the kinds of animals in the world?

- | | |
|-------------------|---------|
| 1. assortment | 分类 |
| 2. make sense of | 弄懂……的意思 |
| 3. classify | 分类 |
| 4. relationship | 关系、关联 |
| 5. base on | 基于 |
| 6. detail | 细节 |
| 7. compare | 比较 |
| 8. characteristic | 特性 特征 |
| 9. system | 系统 |



Thinking Like a Scientist: Classifying³

Scientists classify animals to help us see relationships⁴ among them. When we classify animals, we group them based on⁵ ways they are alike. This helps us understand important things about many animals without having to remember details⁶ about each one.

Study the pictures of the animals on the next page. Compare⁷ how they look. Make a table like the one shown. Then match the animals to the characteristics⁸ in the table.

Animal Characteristics

Number of Legs	Other Features	Animals in This Group
8	Jointed legs, no wings	
6	Jointed legs, has wings	
4	Spends part of its life in the water	

Why do you think classification systems⁹ for animals can change?

Housefly¹



American toad



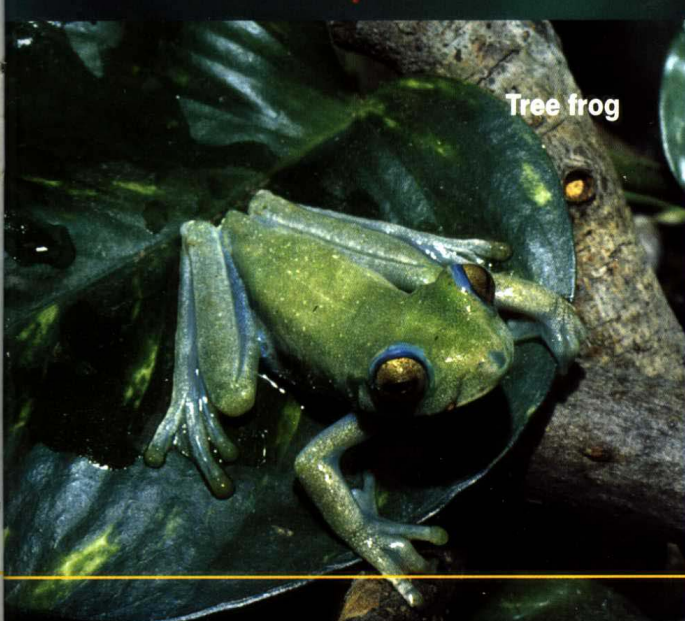
June beetle²



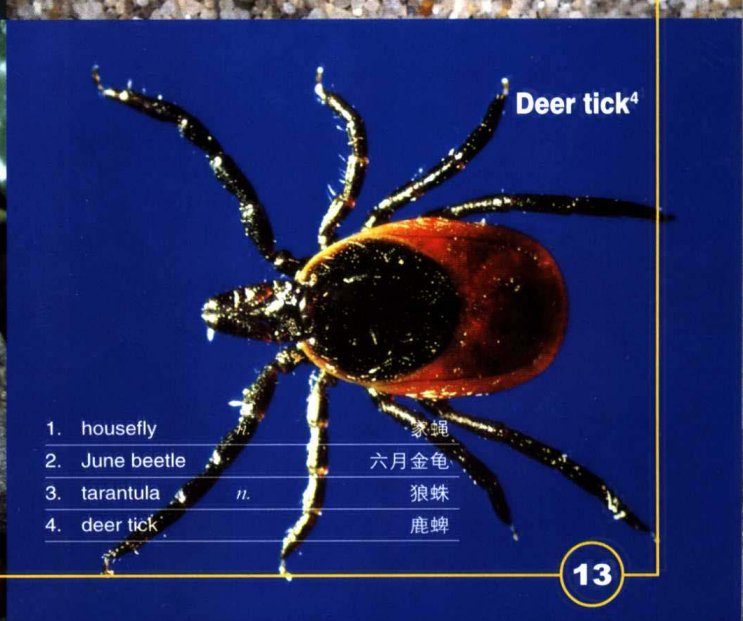
Tarantula³



Tree frog



Deer tick⁴



- | | |
|----------------|------|
| 1. housefly | 家蝇 |
| 2. June beetle | 六月金龟 |
| 3. tarantula | 狼蛛 |
| 4. deer tick | 鹿蜱 |

Survival in the Wild:

Hide and Seek

适者生存：捉迷藏

The chameleon¹ waits. It gets its secret weapon² ready. Soon an insect comes within range³. The chameleon takes aim⁴. Zap! In less than a second, the chameleon has a meal.

- | | | |
|------------------|-----------|-------|
| 1. chameleon | <i>n.</i> | 变色龙 |
| 2. secret weapon | | 秘密武器 |
| 3. range | <i>n.</i> | 范围；射程 |
| 4. take aim | <i>v.</i> | 瞄准 |

