READING LABORATORY

李海远 刘雨初 译注
窦锐德 陈 宏
吴中东 审校

英语阶梯读本

下

（英汉对照）

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前　言

目前，我国有数以千万计的人在学习英语，他们渴望迅速提高自己的阅读能力。根据某些专家的意见，阅读基本过关需要读五千页的书，这个意见大体上是对的。但是，读什么样的书，才有助于迅速提高阅读水平，却仍然是一个值得探讨的问题。如果一开始就读很难的书，会影响读者的兴趣；如果只读某一方面的书，接触另一方面的书时，又困难重重；如果总停留在比较容易的书上，遇到较难的书，仍然一筹莫展。这都会使我们学习的信心低落下去，挫伤我们学习的积极性。比较理想的系统读物，应该有一定的梯度，从比较容易的文章开始，一步一步加深；内容应尽可能广泛，应包括大量科普文章。我们学习英语的读者，有许多是为了直接接触外国先进的科学技术，能够阅读用英语出版的各种科学技术文献。可是，这样的出版物目前还比较少。

我们奉献给读者的这本书，原是美国科学研究学会所编的，恰好能够满足我们上面提到的要求。该书的特点是：

一、选材的梯度。全书共分十个等级，每个等级十五篇，由易到难，由浅入深。如果我们拿最初一个等级的文章跟最末一个等级的文章进行比较，会觉得难度相差悬殊，但是邻近两级的文章相比，则无明显的差别。本书采取一种渐进的方式，犹如引导读者登上一座高山，但是选择路线的坡度不是很陡，而且每登上一步，让读者稍事停留，积累知识，积累力量，然后再登上一步，直至最后一个台阶。在读完十个等级的全部文章后，阅读能力可达到相当水平，阅读英语文献时，不再会产生很大的语言障碍，这就是我们所说的阅读基本过关。

二、内容广泛　全书一百五十篇文章，几乎接触到了我们现代生活的各个方面：文学、艺术、音乐、体育、商工、农、林、医、史地、政、生，无所不有。写这些文章的人都是各方面的行家，文字深入浅出，说得娓娓动听，即使是普通的读者，也能听懂他讲的那个方面的专业知识。我们在读这些文章时，觉得增长了知识，扩大了视野，激发了求索的科学精神。我们先撇开学习语言不谈，仅从知识的角度来说，也觉得很有阅读的价值。其中有些文章在我们面前展示了一个我们尚不清楚的但非常有趣的世界。从学习英语的角度来说，语言蕴含的知识越丰富，读者在学习英语时越会忘记他是在单纯学英语，而是在求知过程中同时学习了语言，他就不会把学习语言单纯看成是一种负担。

三、词汇量大　由于内容广泛，所以全书包含的词十分丰富。若从高中毕业程度英语水平的标准衡量，读完本书之后，至少可以增加四千个词，对广大读者来说，努力扩大自己的词汇量不是一件小事。而学习词汇最有效的方法是在阅读中吸取。掌握大量的必要词汇是顺利进行阅读不可缺少的条件。

四、配合练习　为了帮助理解和提高运用英语的实际能力，每篇文章后都有一套练习，读者可以根据自己的情况，全做或选做其中的学习。

为了帮助读者学习，我们对全书进行了译注，对全部练习做了参考答案，可供读者参考。但由于时间仓促，译注者水平有限，错误在所难免，敬祈读者指正。

译注者

1986 年 10 月

目　录

THE NOISY WORLD OF THE SKINDIVER

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Not until after the first third of the twentieth century, when the human population of the continents had surpassed 2,000 million, did many people give much thought to the depths of the sea. It is almost as though they were pushed from land into water. Yet four-fifths of the world is covered by oceans. They form the largest as well as the earliest realm inhabited by living things. In ancient seas, countless eons ago, animals began making meaningful noises and detecting them.

The existence of this animal communication by sound in the "silent world" of the oceans has been realized widely by scientists only since the 1940s. Underwater sounds went undetected for so long chiefly because of the barrier posed by the surface film. Vibrations in air are about 99.9 percent reflected or absorbed as they strike a water surface. Vibrations within the water are imprisoned in the same way. Rarely can a skindiver hear underwater sounds past the air remaining in his ears.

Though scientific study of underwater noises did not begin before our century, their existence has long been known. Leonardo da Vinci, the famous artist-inventor of the fifteenth century, is credited with recommending that a person listen to the handle of an oar dipped vertically into the water. Primitive fishermen in the South Seas and West Africa actually use this method, having invented it for themselves. Vibrations begun as underwater sounds are transmitted by the wood with enough energy for a human ear to notice if it is pressed against the handle. Fishermen who use the method rely upon the fact that fish are, as is now clear from scientific research, "incredibly garrulous."

More than two thousand years ago, the first great writer on natural science, the Greek Aristotle, suggested possible origins for some underwater sounds. One of his observations was that some fish shifted their internal organs in ways that seemed to produce vibrations in the swim bladder — a gas-filled bag lying in the body cavity just below the backbone and the kidneys. Modern research has shown that many fish have muscles that contract to throw the swim bladder into vibration, producing sounds transmitted to the surrounding water. By this means, the croaker and its kin can produce a roll of rapid grunts or croaks. Older and larger fishes pitch the note more than an octave below younger and smaller ones of the same kinds, showing that their voices change as they grow. On the Yellow Sea and the China Sea, fishermen trying to sleep in their thin-hulled wooden ships have long complained that the chorus of croakers kept them

awake.

Today we know that the sea is full of sounds, for all manner of living things from shrimps to whales call back and forth. Men eavesdropping on the underwater world with the help of hydrophones have come up with every possible comparison: buzzing, cackling, chirping, clucking, crackling, croaking, drumming, grinding, groaning, grunting, moaning, snapping, squawking, squeaking, whining, and whistling. In addition, they have listed noises suggesting coal rattling down a chute, the dragging of heavy chains, a loose bearing on a reciprocating engine, the irregular put-put of an outboard motor about to stall, steaks sizzling, the dull roll of a soft-shoe dancer on the top of an empty barrel, and a band saw cutting through sheet metal.

Some underwater sounds have been identified, but many await identification. Fishes in a public aquarium grow loquacious, oblivious of their lack of privacy. Records of sounds from captive fishes often match mystery calls heard from the open sea, revealing reliably which fish spoke out. But it is often difficult to identify the sounds recorded from a boat. In open water, some fish seem intent on remaining incognito, and become silent whenever they swim past a boat or through a light beam.

Of all underwater noises, the most widespread and persistent by far come from some small animals living in sea crannies-not fish but a variety of shrimp that rarely grows much beyond two inches in length. These noisiest neighbors in the world of the skindiver are called snapping shrimps or pistol shrimps. One claw is greatly enlarged and modified to form an effective water pistol.

[illegible] shrimps [illegible]

[illegible] underwater sounds [illegible] to those with which we are familiar on land. Some sounds probably are [illegible] to other activities. Others are communication of a simple sort, alerting one member of a species to the presence and the direction of another. A few may convey extra meaning, such as alarm or discovery of food or readiness to mate.

The earliest scientific report on fish sounds referred to one of these special meanings. The report appeared in the 1905 *Proceedings* of the U. S. National Museum and has stood the test of time, although for almost fifty years few scientists would accept it as a true story. Theodore Gill had been studying the life history of sea horses. In one aquarium he had a male fish, in another a female. They could see each other through the glass, and their antics suggested recognition. One afternoon Gill noticed that the male was making a series of sharp clicking sounds, each click loud enough to be heard through the room. Before long the female fish was responding, clicking in reply whenever the male called.

As far as we know, underwater messages have simple

meanings. But dolphins, which have warm blood, large brains, and many special abilities, may prove capable of making more meaningful sounds. Dolphins, which actually are toothed whales of small size, have been known to imitate human speech distinctly without encouragement. One at Marine Studios in Florida imitated a man's voice so well that his wife laughed heartily. Promptly the dolphin initiated her laughter.

Scientists' efforts may lead in time to interspecies communication between man and dolphin. If messages get across, dolphins might even be induced to cooperate with fishermen, assisting workers by finding, tracking, herding, or even catching fish—in all of which activities dolphins are expert. These animals could help in many ways in man's exploration of the sea. But even more important than such assistance may be the fact that in man's own evolution he has now reached the point of attempting to communicate with nonhuman species.

Learning to identify and make use of underwater sounds is a new scientific game. It relies upon the same ability man has shown in recognizing birds and other land creatures by their calls. The challenge, however, is far greater. The denizens of the seas are infinitely varied and mysterious, most of them cannot be followed by any method yet devised. Their voices, coming from the shallows and deeps, fairly cry for attention. Yet we still have too little knowledge to identify many of the callers.

HOW WELL DID YOU READ?

1. [*Grasp the idea.*] In paragrapn 2. the authors explain why a skindiver may think the underwater world is

   A. noisy

   B. silent

   C. vibrating

2. [*Note the details.*] The oar method of listening to underwater sounds

   A. is used by some primitive fishermen

   B. was dnown to Leonardo da Vinci

   C. Both A and B

3. [*Interpret the evidence.*] The comparisond given in paragraph 5 prove that

   A. underwater sounds vary greatly

   B. all sea crdatures call back and forth

   C. Both A and B

4. [*Note the method.*] One way of identifying the speakers is by

   A. recording all sounds picked up by hydrophones

   B. matching sounds picked up by hydrophones with thoses heard in an aquarium

   C. recording sounds as fish swim by a boat

5. [*Give the fact.*] The authors statethat the most widespread and persistent noises are made by

A. croakers

B. sea horses

C. pistol shrimps

6. [*Select the detail.*] One sound from a single creature of this kind is enough to

A. frighten pedestrians on a beach

B. fracture a glass jar

C. keep fishermen awake

7. [*Make an inference.*] Scientists assume that underwater sounds have three types of meanings because

A. meanings of sounds made by land animals are of these types

B. special studies of captive fishes have given proofs

C. enough undersea information has been collected for classifying the sounds

8. [*Follow the evidence.*] The earliest scientific report on fish sounds dealt with sounds of the

A. incidental type

B. simple-message type

C. special-meaning type

9. [*Judge from the evidence.*] To the authors, the most important

point about present-day efforts is

A possible ... dolphin ... in the fishing industry

B man's ... with nonhuman species

C possible ... dolphin ... in undersea exploration

10. [Drawn ... the "new scientific game" can be described ...

A late ... and hard to win

B late ... easy to win

C challenging but not important

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Notes:

1. eon = aeon ... 极长的时期 ... croaker 蛙鸣声的动物；青蛙

2. barrier 屏障，障碍物 ... 相信

3. vibration [vai'breiʃən] 振动 ... assume [ə'sju:m] 假定，设想

4. garrulous ['gærulәs] 喋喋不休的 ... dolphin 海豚

106 喧哗的水下世界

直到二十世纪...当陆地人口超过...十亿时，人们才认真地思索海洋的深处，几乎好象他们是从陆地被推到海

洋。世界上有五分之四的面积为海洋覆盖，它是最大的也是最早的生物栖息地。早在远古时期，就探测海洋动物发出的各种有意义的声音。

在这个宁静的海洋世界里，动物用声音来传达信息的事实直到二十世纪四十年代才被科学家们广泛地认识到。水下声音之所以如此之久未被发现，主要是因为水的表膜所造成的屏障阻隔的缘故。当空气中的振动触及水表面时，其中约百分之九十九点九被折射回去或被吸收掉。水中振动的情况也同样是如此。潜水员由于耳朵里留有空气所以也很难听到水下的声音。

尽管研究水下声音的科学工作到本世纪才开始，但是人们早已知道水下存在着各种声音。有人认为，十五世纪著名的艺术家和发明家达·芬奇曾介绍有人听垂直插在水里桨柄把传来的声音。实际上南海和非洲西部地区的渔民现在使用的就是这种他们自己发明的方法，把耳朵紧紧贴在桨把上，水下的声音通过这根木桨传递上来。发生的振动有足够的能量使人的耳朵能听得见。用这种方法捕鱼的渔民根据的是这样的事实，鱼是一种馋舌得令人吃惊的动物，这点科学研究现在已弄清楚了。

两千多年前，第一个伟大的自然科学家希腊的亚里斯多德提出水下声音的可能起因。他观察有些鱼的内脏活动时发现鱼鳔振动而发出声音。黄花鱼和它的同类就是用这种方式发出一连串短促的哼哼声和咯咯叫声。老一点儿和大一点儿的鱼发出的声音比幼小的鱼发出的声音要低八度音之多，这说明鱼在生长的过程中声音也在变化。在黄海和中国海中，想在小木船里睡上一觉的渔民，长期以来一直抱怨水下的黄花鱼大唱大闹使他们不得入睡。