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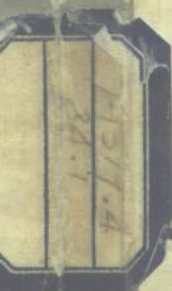
●理工科英语分级读物

MAN AGAINST  
NATURE

# 征服自然

林剑震·卢雪煜·江仁骏 选注

理工科英语分级读物 1



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理工科英语分级读物 第一级

Man Against Nature

# 征服自然

林剑震 卢雪煜 江仁骏 选注

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Man Against Nature

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林剑震 卢雪煜 江仁波 选注

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## 主编者例言

- 一、这套读物主要供高等院校理工科各专业学生英语课外阅读之用, 也可供自学英语的工程技术人員选用, 以提高英语阅读与理解能力。
- 二、全套读物按词汇量和语言难度共分四级。词汇量以 Thorndike 和 Lorge 所编 *The Teacher's Wordbook of 30,000* 为依据, 并按我国的具体教学情况作了一些适当的调整。每级读物分若干册。第一级到第三级为一般科普文章, 包括科普知识、科学家传记和轶事、科技新闻、科学幻想等。第四级读物中, 一部分为一般科普文章, 亦即一、二、三级的继续; 另一部分为大类读物, 如: 机械动力、电子电工、化工、土建水利、采矿、航天、船舶等。
- 三、全套读物均选自英美原文。在编选过程中力求选文思想健康, 题材新颖, 内容有趣, 语言生动。
- 四、每册内容包括选文, 注释和理解练习三个部分。书后附有该册词汇总表和练习答案, 可供查阅。

西安交通大学外语系

理工科英语分级读物主编组

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一九八四年八月

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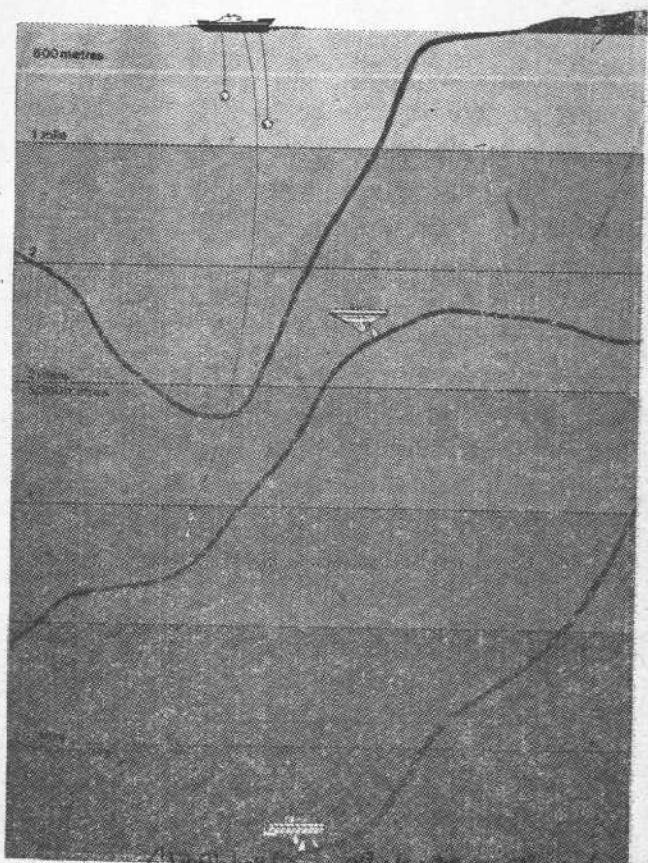
### APPENDIX 1

### KEY TO EXERCISES

### APPENDIX 2

### VOCABULARY

# 1. LIVING UNDER THE SEA



In 1960 a bathyscaphe went below 11,000 metres. This is a lot deeper than a submarine or an observation chamber can go.

↑  
潜水艇

观察室  
@同家.室

• 1 •

explore

√ 探索 研究

Exploring space is exciting, and it helps us in many ways. But some people say that these experiments waste too much money. They say that we should spend the money on more important things.

In some ways they may be right. Soon the earth will have so many people that feeding everyone will be difficult. We ought to be looking now for new ways of making food.

We still know very little about our own world, especially about the seas and oceans. A lot of food (not only fish) could come from them, if we could find it. Under the sea, too, there are many metals and other necessary things.

So exploring the oceans may be very important for us all; but it is difficult and dangerous work. This may seem strange. The deepest part of the ocean is only 11,000 metres, and men can already travel to the moon!

The problem is water pressure: at ten metres deep, the water pressure is already twice the pressure of the atmosphere. Not even a deep-sea diver can

- 
1. ought to be looking for: 由情态动词加动词不定式的进行时构成, 意为“必须不停地寻找”。
  2. A lot of food ... we could find it: 我们能从海洋中获得许多食物(不仅是鱼), 如果我们能找到这些食物的话。句中谓语动词是虚拟语气, 表示对将来的意愿和设想。

reach very far<sup>3</sup>. The deepest working 'dive' was at only eighty-five metres (in order to work on a submarine). Also, a diver usually stays under the sea for only thirty minutes.

This is not enough for exploring. Machines can go much deeper, and they can stay under water for a long time. But it is better if the explorer can move around by himself.

Breathing is the problem. A diver breathes ordinary air, which is pumped down to him from a ship. This air must have the same pressure as the water around him. At ten metres, the water has twice the pressure of the atmosphere; at thirty metres it has four times atmospheric pressure, and at seventy metres, eight times. So the air must also be at these pressures. But if a diver breathes air that has great pressure, his mind begins to cause trouble<sup>5</sup>. The diver cannot think clearly. He does not know which way he is swimming: forwards, sideways, or up and down<sup>6</sup>. He behaves like a man who has drunk too much. He feels that he can do anything—and this is most dangerous, because in fact he can do very little.

---

3. Not even a deep-sea diver can reach very far: 甚至深海潜水员也不能潜得很深。

4. the deepest working 'dive': 潜水员工作时的最大潜深。

5. his mind begins to cause trouble: 他的大脑就开始出问题了。

6. He does not know ... or up and down: 他不知道是在朝哪里游动: 向前, 向旁, 往上还是往下。这里 which way (= which direction) 是名词作状语。



Carbon monoxide.

一氧化碳

含 = 氧化碳

Ordinary air contains three important gases, which are oxygen, carbon dioxide and nitrogen. In deep water the diver must breathe too much nitrogen<sup>7</sup>, and this causes the trouble. It is called intoxication<sup>8</sup>. It begins at about fifty metres, when the diver's air must be six times atmospheric pressure<sup>9</sup>. At ninety metres, with ten times ordinary pressure<sup>10</sup>, intoxication is so strong that work is impossible.

The nitrogen in the air causes another problem when the diver comes up. Every three metres, he must stop for a certain time. The air pressure is then a little less than before. This lets some of the extra nitrogen leave his blood. If he does not do this, he may be very ill. He may not be able to breathe enough air. His head seems to be turning round and round<sup>11</sup>, and his arms and legs feel very heavy. This is called the bends<sup>12</sup>, and it is very dangerous. It has killed many underwater workers.

- 
7. In deep water ... nitrogen: 在深水里, 潜水员必然会吸进过量的氮气。
  8. intoxication: 中毒(潜水时因高压而神智不清)。
  9. when the diver's ... pressure: 那时供给潜水员的空气的压力准有大气压的六倍。
  10. with ten times ordinary pressure: 压力为正常大气压的十倍。相当于 where the diver's air must be ten times ordinary pressure.
  11. His head seems to be turning round and round: 他似乎感到天旋地转。
  12. the bends: 潜函病。

If ordinary air is not used, there are other problems. For example, the diver could breathe only oxygen; but then intoxication begins at eight metres. Again, the United States has made tests with oxygen and helium (a very light gas). Using this, divers have reached 165 metres without intoxication. But the 'bends' are much worse than they are with air<sup>13</sup>. Divers need more time to come up.

So ordinary air is still best for deep-sea diving. But men are now asking whether deep-sea diving is the best way. They are looking for other ways of exploring the oceans.

If scientists want to go very deep, they must use machines. A man's body is too weak for the water pressure at great depths. There are three possible kinds of machine for this work:

1. Submarines may sometimes be used, but they are needed for other work. Also, they cannot reach very great depths.
2. Metal diving suits are made of steel tubes. They are stronger than ordinary diving suits, but a man cannot move easily. Again they cannot go very deep.
3. Observation chambers are often used today instead of metal suits. They can reach 500 metres, and they have lights and windows for

---

13. But the 'bends' ... with air: 但是潜函病却比使用普通空气时严重得多。

observing the sea.

But scientists want to go below 500 metres! In 1948 Auguste Piccard<sup>14</sup> finished his first bathyscaphe. This is like an observation chamber, but it is very strong. It is built like a space-ship, and results are good. In 1960 a bathyscaphe went below 11,600 metres in the Pacific Ocean<sup>15</sup>.

The bathyscaphe is the only possible machine for these great depths, and observation is easy. But the machine cannot move through the water. Very small and strong submarines have been built to do this. In 1968 one<sup>16</sup> reached 2,557 metres. There the water pressure is 230 times the pressure of the atmosphere. This submarine can move around, and it can pick things up from the sea floor.

So machines can be used, and at great depths they are necessary. The scientists now wanted a method of moving around at smaller depths. An ordinary diver can do this, but he cannot stay down for enough time.

American scientists may have found the answer. They have invented saturation diving<sup>17</sup>. 'Saturate' means to fill with moisture. With this method, the

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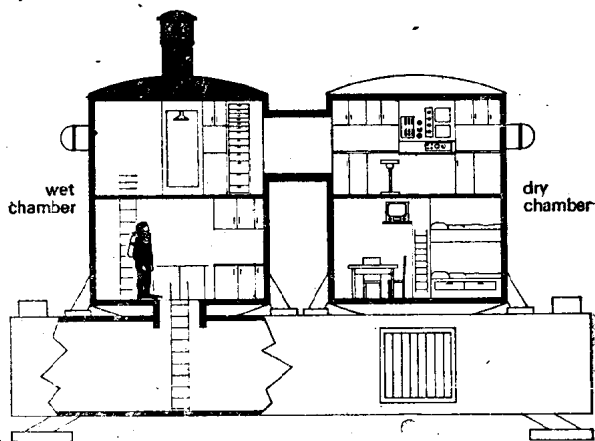
14. Auguste Piccard: 人名

15. the Pacific Ocean: 太平洋。

16. one: = one small and strong submarine.

17. saturation diving: 饱和潜水法 (潜水员停留在一指定深度, 待身体“充满”供呼吸用的合成混合气体, 以缩短减压的时间)。

man lives in the sea. He has a small house called a habitat, and he can stay as long as necessary. The habitat is given a mixture of breathing gases. This mixture is made the same pressure as the sea pressure outside. After twenty-four hours, the diver's body is 'saturated' by gas at the sea pressure. He can now do any necessary work. When he comes up, he needs time to come back to the ordinary atmospheric pressure. This time depends on the depth. For example, let us say that he was working at 100 metres. He will need about sixty hours to return to the ordinary pressure. He may have been in the sea for a day, or a month; he still needs the same time<sup>18</sup>.



*The habitat has a dry chamber and a wet chamber.*

18. He may have been ... the same time: 他可能在海里呆了一天或一个月,但(回到普通大气压力)所需的时间仍然是相同的。

This method is very useful. Now a diver can stay in the sea until his work is finished. The habitat has two rooms: a 'dry chamber' and a 'wet chamber'. The man lives in the dry chamber, and enters and leaves the habitat through the wet one. He can do hours of useful work in the sea. Then he returns to the comfort of the habitat<sup>19</sup>. There he can take off his breathing equipment, and perhaps cook a meal or have a sleep.

The scientists who invented the saturation method made tests and experiments for several years. First they made some tests with animals. Two groups of animals were used, in two separate rooms<sup>20</sup>. Each group lived in an atmosphere of high pressure. The atmosphere in one room was ordinary air at high pressure. In the other rooms, the atmosphere contained special breathing gases. The animals in the first room lived for only a few days. But the animals in the second room, with the special gases, did not die. The high pressure made no difference to them<sup>21</sup>. The tests were repeated with different kinds of animals, and the results were always the same.

---

19. Then he returns to the comfort of the habitat: 然后他返回舒适的水下实验室。

20. Two groups ... rooms: 用了两组动物, 并把它们分置于两个房间里。

21. The high pressure made no difference to them: 高压对它们并无影响。make no difference 没有影响; 没有差别。

Next, two men were given the gases at high pressure. The results were amusing: the men could not speak clearly! At first they made strange noises that no one could understand. Everyone laughed at<sup>22</sup> them. But soon the men learned to control their voices. Most important, the gases did not harm them<sup>23</sup>.

After that, tests were made in water. A pressurised chamber was set up in the laboratory. Like a habitat, it had two rooms—a wet part and a dry one. First the pressure was made the same as the pressure at thirty metres of water. Three men spent six days in the pressurised chamber. They lived in the dry part, where they talked, played games or read books. Sometimes they would go through the wet part and swim under water. They did this several times a day. In a later test, the pressure was the same as sixty-five metres of water. Three men lived in this pressure for twelve days.

During the tests, doctors watched the men carefully. The men's condition was shown by instruments. None of the tests did any harm.

After seven years the laboratory tests were finished. Now the scientists could test saturation diving in the sea. The first experiment under the sea was

---

22. laughed at: 因……有趣而发笑。

23. Most important, the gases did not harm them: 最重要的是, 这些气体没有使他们受到伤害。most important 是插入语。

made in July 1964. A large ship carried thirty scientists and engineers. A habitat for four men was pulled behind. They stopped about forty kilometres from Bermuda<sup>24</sup>, in the Atlantic Ocean<sup>25</sup>. The habitat slowly sank to sixty-five metres.

Four men were used in the tests. Their names were Barth, Manning, Anderson and Thompson<sup>26</sup>. A new word was invented for them: they were called aquanauts.

The scientists wished them good luck. 'Thanks — we'll need it!' the aquanauts replied, laughing<sup>27</sup>.

A pressurised diving chamber carried them to their habitat. They were soon quite comfortable in their underwater home. They did not feel lonely. They could talk to the ship by telephone. Every day, newspapers were sent in the diving chamber.

Several times a day the aquanauts left their habitat. They swam around and looked at the strange fish. Sometimes they gathered small pieces of rock from the sea-bed. Meanwhile, the scientists watched them by television.

The four men were never in the water at the same time. One man always watched while his com-

---

24. Bermuda: 百慕大群岛。

25. the Atlantic Ocean: 大西洋。

26. Barth, Manning, Anderson and Thompson: 均系人名。

27. the aquanauts replied, laughing: 海底观察(作业)员笑着回答说。现在分词 laughing 作状语,表示伴随情况。

panions were swimming. This was necessary for safety. It was fortunate, because Manning nearly died after an accident. He was taking photographs when his breathing equipment suddenly stopped<sup>28</sup>. He began to feel ill. With difficulty, he swam to the habitat. Then he hit his head on the side<sup>29</sup>. He dropped like a dead man. His body began to float away. Anderson, in the habitat, was watching. He went quickly through the wet chamber and swam to Manning. He pulled him into the habitat and saved his life.

This was the only accident that the aquanauts had. They were in the sea for eleven days and nights. No one had ever lived for so long in the sea before. On the twelfth day they left the habitat. The diving chamber took them to the ship. Very slowly, their breathing gases returned to atmospheric pressure. Then the doctors examined them and found that they were all in good health.

After this first great adventure, other aquanauts made more tests. They went into deeper water. Some stayed for fifteen or thirty days. The tests showed that the new saturation diving method was safe.

In 1970 it was used for real work for the first time. Four aquanauts explored the bottom of the

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28. He was taking ... stopped: 他正在拍照时, 他的供气设备突然失灵了。句中 When 等于 and then.

29. Then he hit his head on the side: 接着他的头撞到了(水下实验室的)边上。



Caribbean Sea<sup>30</sup> for sixty-two days. The same places were later explored [by other groups of men. And then the first group of women went down.

Peggy<sup>31</sup>, one of the five woman aquanauts, was an engineer. The others, called Sylvia, Ann, Alina and Renate<sup>32</sup>, were scientists. They wanted to prove that women could do the same work. 'We're as good as men!' they said.

While they were getting ready, the men scientists laughed. 'There'll be trouble!' they said. 'Whenever women live together, they quarrel. Now five women want to share a habitat! After a few days you'll be fighting like cats and dogs<sup>33</sup>!'

'Nonsense!' said the women. 'We won't quarrel. We can work together.'

'Well, we'll see,' the men said. 'We'll be watching on television. If you fight, we'll come down and rescue you!'

But the women did not fight. They worked happily together for fourteen days. They took a toy dog with them<sup>34</sup>. 'He'll watch and protect us!' they said.

---

30. the Caribbean Sea: 加勒比海。

31. Peggy: 人名。

32. Sylvia, Ann, Alina and Renate: 均系人名。

33. you'll be fighting like cats and dogs: 你们就会吵得一塌糊涂。

34. They took a toy dog with them: 他们身边带着一条小狗。  
toy dog (供玩耍的)小狗。