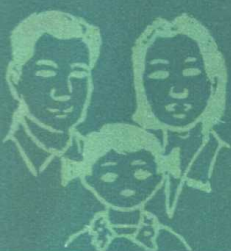


简易英汉对照科技丛书



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LIVING THINGS—MAN



动物

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ANIMALS AND THEIR YOUNG

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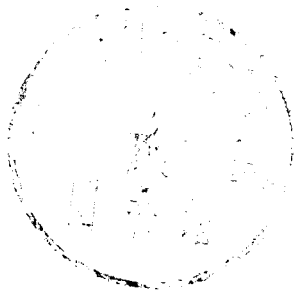
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LIVING  
THINGS-MAN

人

何志范 译



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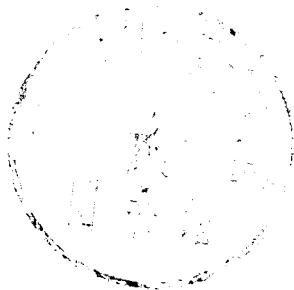
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## INTRODUCTION

Our bodies are wonderful machines. They have more parts and can do more types of work than any machine in the world. No machine has parts as wonderful as the eye or ear or heart or brain. The most advanced machine cannot grow, mend parts that are injured or reproduce like our bodies can. Above all, we are able to think and love unlike any machine or any other living thing. That is why we say that Man is the supreme living thing in this world. In this book we shall learn as much as possible about our wonderful bodies.

## THE BONES

Our bodies are similar in many ways. We may not look exactly alike, but our body shapes are more or less the same. Our bodies are made up of several parts — the head, neck, trunk, arms and legs. These parts are held together by a framework called the skeleton. The skeleton is made up of bones. We cannot see our bones because they are covered by our muscles and skin. However, we can feel them.

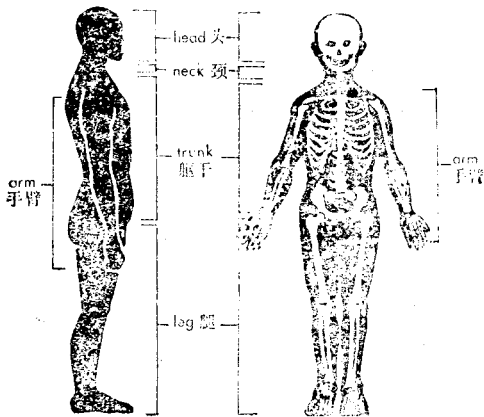
The bones of our body are hard, white and strong. They are not easily broken. If a bone is broken you will see a soft brownish-red part in the centre. This part is called the bone marrow.

## 引 言

人体是奇妙的机器。人体比任何一架机器都具有更多的组成部分，而且能做更多的不同种类的工作。没有一架机器具有象人的眼、耳、心、脑那样奇妙的部件。最先进的机器也不能象人体那样发育、恢复创伤或繁殖后代。更重要的是，我们能够思维，能够爱，这与机器或其它生物截然不同。所以我们说，人是世界上的高级动物。在本书中我们将尽可能学习有关人体的一切。

## 骨

我们的身体在许多方面都是相似的。我们看起来并非完全相象，但体形或多或少是相似的。人体由头、颈、躯干、臂和腿几个部分组成。这些部分被一种称为骨骼的结构连结在一起。骨骼由许多骨头构成。因为骨头为肌肉和皮肤所包裹，所以我们看不见骨头，但是可以摸到它们。



It makes the red and white cells of the blood.

When a bone breaks, new cells begin to grow at the broken ends. More and more new cells are formed until finally the broken ends meet and join together.

To find out if a bone is broken, the doctor uses an X-ray machine. This machine can photograph the inside of the body. The photographs it takes are called X-ray photographs. Have you ever been X-rayed before?

The main support of the body is the **backbone** or spine. It is made up of a long row of small bones joined to one another. It is found only in the neck and trunk. Animals like fishes, frogs, lizards, birds and dogs have backbones too.

Bones not only support our bodies but also help to protect important organs. The skull protects the brain. The ribs protect the lungs and heart. The hips protect part of the food canal. The spine protects the spinal cord.

There are different types of bones in our bodies. Some are flat, some are short, some are long and some are irregular in shape. Can you name such types of bones?

## THE JOINTS

We have just learned about the bones. Now let us find out how they move. Our bodies can

骨很硬，呈白色，而且很坚固，不易折断。如果发生了骨折，你会在骨头的中间看到红棕色的柔软组织，这种柔软组织称为骨髓。它能制造红细胞和白细胞。

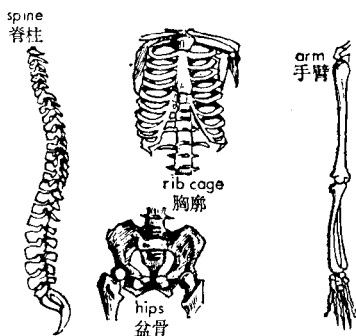
如果骨折了，新细胞便会在骨折的两端开始生长。新细胞越长越多，最后使骨折的两端相遇而连接在一起。

为了查明是否骨折，医生要用 X 光机来进行检查。这种机器能照出体内的情况，它照下来的相片称为 X 光照片。你曾作过 X 光检查吗？

人体的主要支柱是脊柱，或叫脊骨。脊柱由长长的一排小骨相互连接而成，它只分布于颈部与躯干部。鱼、蛙、蜥蜴、鸟和狗等动物也有脊柱。

骨不仅支持着我们的身体，而且还保护着体内的重要器官。颅骨保护脑。肋骨保护肺和心。盆骨保护部分消化道。脊柱保护脊髓。

人体有各种不同类型的骨头，有扁的、短的、长的和形状不规则的。你能说出它们的名称吗？



## 关 节

我们刚才学了有关骨头的知识。现在让我们来看看骨头是如何运动的。人体可以作很多很多的



make thousands of movements. This is because the bones are not joined firmly to one another. Where a bone joins another bone, a joint is formed.

There are two types of joints in the body. They are the **immovable joints** and the **movable joints**. Immovable joints are found in the skull. The bones of the skull fit so closely together at the joints that they are not able to move.

Movable joints allow the free movement of the different parts of the body. The **elbow**, the **knee**, the **shoulder** and the **hip joints** are the main movable joints of the body. There are different types of movable joints. The main types are **hinge joints**, **pivot joints** and **ball-and-socket joints**.

The knee joint is a good example of a hinge joint. It works like the hinge of a door and can only bend backwards. The elbow joint is partly a hinge joint and partly a pivot joint. It is a hinge joint because, like the knee, it can bend in one direction only. It is a pivot joint because, unlike the knee, it can cause a rotating movement. It allows the lower arm to rotate on the elbow. You can notice this if you turn the knob of a door.

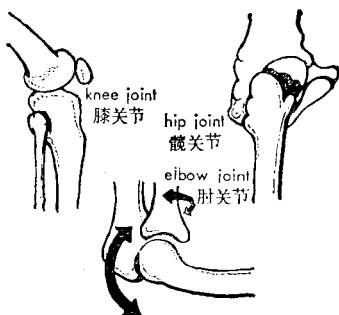
The hip and shoulder joints are ball-and-socket joints. In the shoulder joint, the rounded

运动，这是因为骨与骨并不是固定地连接在一起的缘故。在骨与骨相连接的地方都有关节。

关节分为两类：不可动关节和可动关节。颅骨中的关节是不可动关节。颅骨中的骨头在关节处都连接得很紧，因此不能活动。

可动关节使身体的各部分可以任意活动，肘、膝、肩和髋关节是主要的可动关节。可动关节有各种不同的类型，其主要类型是：屈戌关节、车轴关节和球窝关节。

膝关节是典型的屈戌关节。它象门的铰链那样，只能向后弯。肘关节既是屈戌关节又是车轴关节。说它是屈戌关节，因为象膝关节一样，它只可以向一个方向弯屈。说它是车轴关节，又因为与膝关节不同，它可以作旋转运动。肘关节能使前臂围绕肘部旋转。当你转动门的球形握手的时候，就可以观察到这种现象。



髋关节和肩关节是球窝关节。在肩关节内，上臂骨的圆形头即“球”，是装在肩胛骨的杯状空隙即

end or 'ball' of the upper arm bone fits into a cup-like space or 'socket' of the shoulder blade. This allows you to swing your arm freely in a circle.

Besides the different joints mentioned above, do you know of any other joints in your body?

## THE MUSCLES

There are more than 600 muscles in your body. They make up the **flesh** that lies between the skin and the skeleton.

Muscles can contract and relax. Their contraction and relaxation causes body movements.

Many of the muscles of the body are attached to bones and cause their movements. The bones of the upper arm and lower arm, the upper arm and shoulder, the thigh and shin and the thigh and hip are attached to each other by powerful muscles. However, not all muscles are attached to bones. The muscles of your stomach and heart are examples of such muscles.

### Things to Do

Can you feel the movement of your muscles? You certainly can. Do the following things to find out how your muscles move.

- (a) Hold your upper arm tightly and move your lower arm up and down. Can you

“窝”中的，这就使你的手臂能自由地作环转运动。

除了上述的几种不同的关节外，你还知道人体的其它关节吗？

## 肌 肉

人体的肌肉共有 600 余块。它们就是位于皮肤与骨骼之间的肉。

肌肉能够收缩和舒张。这种收缩与舒张使人体得以运动。

人体的许多肌肉附着于骨上，它们使骨头能够运动。上臂与前臂，上臂与肩部，大腿与胫部以及大腿与臀部的骨头都是由结实的肌肉连系起来的。然而，并非所有的肌肉都附着于骨上，如胃肌和心肌就是这样的一类肌肉。

## 做实验

你能感觉到自己肌肉的运动吗？当然能够。做下列实验来观察你的肌肉是怎样运动的。

- (1) 紧紧抓住上臂，让前臂上下运动，你能感觉到肌肉在牵动吗？帮助你的前臂运动的肌肉

feel the muscles pulling? The muscles which help your lower arm to move are the **triceps** and **biceps** muscles. Which muscle contracts when the lower arm moves downwards and which contracts when it moves upwards?

- (b) Lift up a chair. Which of the body muscles move?

## THE EYE

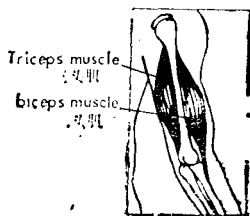
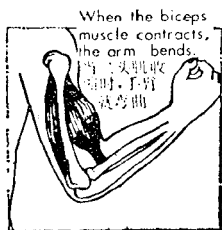
You use your eyes to see things around you. A blind man cannot do so. If you want to know what it is like to be blind, just blindfold yourself. You will find that the world is a dark and gloomy place.

The part of the eye which you can see is only a small portion of the whole eye. The eye is actually about the size of a table-tennis ball. Much of it lies within the skull. The front portion of the eye is made up of three parts — the **cornea**, the **iris** and the **pupil**. It is protected by the **eyelid** and **eyelashes**.

The **cornea** is a transparent white part which surrounds and covers the **iris**. The **iris** is the coloured part of the eye. It may be black, blue, brown or green in colour. It is actually a ring of muscles which can contract and relax. The **pupil** is a round opening in the middle of the

叫三头肌和二头肌。前臂往下运动时，哪一块肌肉收缩？前臂往上运动时，又是哪一块肌肉收缩？

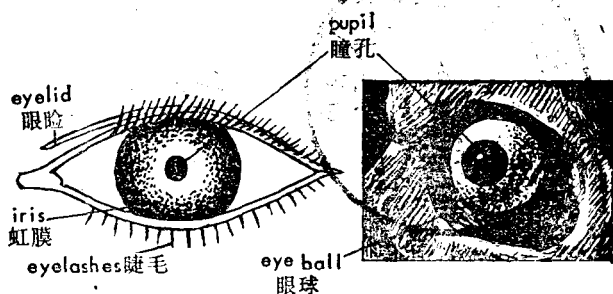
(2) 举起一把椅子，身体的哪一块肌肉在运动？



## 眼 睛

你用眼睛来看周围的东西，而盲人却不是这样的。如果你想知道失明的滋味是什么，那就蒙住你自己的眼睛，你会发现世界是一个黑暗和阴郁的所在。

你所能看到的那一部分眼睛仅是眼球的一小部分。眼球实际上约有一个乒乓球那样大。眼球的大部分位于颅骨内。它的前部由角膜、虹膜和瞳孔这三个部分构成。眼睑和睫毛对眼睛起着保护作用。



角膜是一个透明的白色部分，它围绕和覆盖着虹膜。虹膜是眼睛的有色部分，可能是黑色的、蓝

iris. It is always black in colour.

If there is too much light the iris relaxes, thus making the pupil smaller. In this way, only a certain amount of light can enter the eye through the pupil. If there is too little light, the iris contracts. This makes the pupil bigger. Thus more light is allowed to enter the eye.

Look at the diagram of a section of the eye. Behind the iris is the lens which is transparent. There is a space between the lens and the cornea. This space is filled with a watery liquid. There is another space behind the lens and this is filled with a thick liquid. The layer shown in black is called the retina. It lines the space behind the lens and acts like a screen. There is a nerve which connects the eye to the brain.

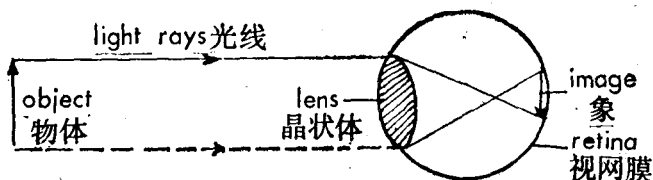
We see an object only when light from that object enters the eye through the pupil. The light then passes through the lens and falls on the retina. An image is formed here. A message about the image is then sent to the brain through the nerve.

Since your eyes are so important to you, you should take great care of them. If your eye-sight is good, you will be able to see things clearly. If it is bad, you should see a doctor. Your bad eye-sight can be corrected by wearing a proper pair of spectacles.

色的、棕色的或绿色的。它实际上是能收缩和舒张的一圈肌肉。瞳孔是虹膜中央的一个圆孔，常呈黑色。

如果光线太强，虹膜就舒张，从而使瞳孔变小。这样一来，只有一部分光能够通过瞳孔，进入眼球。如果光线太暗，虹膜就收缩，使瞳孔放大，从而让更多的光进入眼球。

请看眼球的剖面简图。虹膜后面是透明的晶状体。在晶状体与角膜之间有一个空间，里面充满着水样的液体。在晶状体的后面还有一个空间，里面充满着很稠的液体。用黑色表示的那一层称为视网膜，它包在晶状体后面的空间的外缘，起着屏幕的作用。那里有一根连结眼和脑的神经。



只有在来自物体的光通过瞳孔进入眼睛之后，我们才看得见物体。光线通过晶状体投射在视网膜上，形成了一个像。于是这个像的信号便通过神经传到了脑。



## THE EAR

Your ears allow you to enjoy music and listen to what your friends say. You are able to hear danger signals like a fire alarm or the horn of a motor car. If you are deaf, the world around you will be a silent one.

The ear can be divided into three parts — the **outer ear**, the **middle ear** and the **inner ear**. The part of the ear which we can see is known as the **outer ear** or **pinna**. It is shaped like a funnel. This shape helps it to collect sounds, which are then passed to the inner ear.

The outer ear is connected to the middle ear by a canal called the **ear canal**. At the end of the canal is a tightly stretched piece of skin called the **ear-drum**.

The middle ear lies on the inner side of the ear-drum. It contains three small bones — the **hammer**, the **anvil** and the **stirrup**. These are joined to each other in a chain.

The inner ear contains the **cochlea** which looks like a coiled shell. The cochlea is filled with a liquid. There are nerves in the inner ear which carry sound messages to the brain.

Do you know how you hear the sounds around you? Your outer ear collects the sounds and passes them into the middle ear. The