

1000 Questions and Answers

一千个为什么

(英汉对照百科知识问答)



外语教学与研究出版社

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吕志士 崔冠之等译

外语教学与研究出版社

(京)新登字155号

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外语教学与研究出版社出版发行

(北京西三环北路19号)

上海印刷三厂 排版

北京怀柔燕东印刷厂印刷

新华书店总店北京发行所经销

开本 787×1092 1/32 35印张 640千字

1992年5月第1版 1992年5月第1次印刷

印数: 1—10000册

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ISBN 7-5600-0595-1/H·290

定价: 12.90元

前 言

本书是一本英汉对照的小百科全书，或称之为微型百科。它对各科知识择其精华加以介绍。

它是一本知识性和趣味性兼备的书。人们不仅可以从中学习到准确、优美、流畅和通俗的现代英语，而且还可以学习到天文、地理、古今人物轶事和科学技术等知识。此外，也可以从中了解到不同民族和不同国度的有趣的生活习俗以及自然界神奇而美妙的现象。

阅读这本书不仅可以开拓视野，增长知识，还可以陶冶精神，感受到生活的乐趣。本书是一本雅俗共赏，老少咸宜的书籍。

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Natural History

WHERE DOES A SWALLOW BUILD ITS NEST ?

A swallow builds its nest inside farm buildings and on ledges in old chimneys. The nest is made of mud, straw and saliva, with feathers and wool to line the inside. It takes a pair of swallows up to several weeks to make the saucer-shaped nest in the rafters of a barn.

Swallows start arriving in Europe at the end of March, a little earlier than their close relatives, the house martins. They spend the winter in South Africa and usually return to the same district—and even the same nest—where they settled before. The female lays four or five eggs, white with reddish-brown speckles. She sits on them for about 15 days before they hatch out. Both parents then feed the nestlings with insects which they catch while flying. Swallows usually lay two sets of eggs.

They leave for their winter quarters in September, gathering in large flocks and often perching on telephone wires, before setting off. The young birds of the first brood leave before their parents and, by an inborn knowledge, know which way to go.

WHAT ARE TEASEL PLANTS USED FOR ?

Teasels are used in the making of woollen cloth. The

自然史

燕子在哪儿做窝？

燕子在农舍里或在旧烟囱的突出部位上做窝，燕窝由泥土、稻草混合着燕子的唾液筑成，窝里面铺着羽毛和绒毛。一对燕子要花好几个星期才能在粮仓椽子上筑成碟状的燕窝。

3月底燕子开始飞往欧洲，这要比它们的近亲——欧洲家燕略早一点。燕子在南非过冬，通常飞回原来的地方，甚至飞回以前栖息的旧窝。雌燕每窝可产四到五只卵，卵为白色，上面带有红褐色斑点。雌燕需要大约15天时间才能孵出雏燕。然后雄燕与雌燕共同用飞捕来的昆虫喂养雏燕。燕子一般产两窝卵。

9月份燕子成群结队地飞往它们冬季的栖身之地。它们在出发前常常停歇在电话线上。第一窝幼燕先其父母飞走，它们凭着天性知道该飞向何处。

川续断植物有什么用途？

川续断可用于纺织呢绒。普通川续断野生于英格兰、威尔

Common teasel grows wild in England and Wales and southern parts of Scotland. It is also found in Europe, Asia and North Africa.

The teasel has large prickly flower heads which remain on the dead stems throughout the winter. The actual flowers are tiny deep lilac florets and round the base of the flower-head there is a ring of spines. The stem and leaves are prickly and the leaves are joined at the stem to collect rainwater.

The teasel belongs to the scabious family and many people collect them in autumn for decoration throughout the winter.

There is also a garden teasel called fuller's teasel, which has little hooks at the end of the spines, or bracts, surrounding the base of the flowerhead. This is the teasel that is used in the making of woollen cloth. The cloth is brushed up with the teasels so that the fibres of wool become separated from each other. This is known as "teasing".

WHY DO DOGS HAVE A GOOD SENSE OF SMELL?

Dogs have a better sense of smell than we do because the physical structure of a dog is better adapted for scenting odours. In dogs this sense has remained keen, while in man it has become comparatively dull. Dogs use scent in feeding, detecting enemies, recognizing mates and offspring and in rivalry.

The chemical sense of smell is called chemoreception and the sense organs chemoreceptors. But there is little in the structure of the nose to provide clues about its mechanism, and relatively little is known about how smell works. There are no accessory structures in the nose, and the receptors and nerve fibres leading to the brain are so fine that they are dif-

士和苏格兰南部。欧洲、亚洲和北非也有川续断。

川续断长有很大的带刺花冠，这种花冠整个冬季都留在枯死的茎上。真正的花朵是深处的淡紫色小花，花冠基部有一圈刺。川续断的茎叶都带刺，叶子在茎上对生，可积雨水。

川续断属山萝卜属，许多人在秋季采集川续断，作整个冬季的装饰物。

还有一种生长在园中的川续断叫起绒草。它的围绕着花冠茎部的一圈刺，即苞片的顶端长着小小的钩子。这就是用于纺织呢绒的那种川续断。呢绒经起绒草一梳理，毛的纤维就疏松开来。这就是所谓的“起绒”。

狗的嗅觉为什么灵敏？

狗的嗅觉比我们人的灵敏，因为狗的身体构造更适于闻辨气味。狗的嗅觉一直很敏锐，而人的则已经比较迟钝了。狗要靠嗅觉来觅食、发现敌人，辨认配偶和幼仔，还要靠嗅觉来竞争。

在化学上嗅觉称作化学感受，嗅觉器官叫做化学感受体。但是鼻子的构造对其生理机能并未提供什么线索，因而相对来说人们对嗅觉如何发生作用就不甚了解了。鼻子里没有附属结构，而且通向大脑的嗅觉感受体和神经纤维极其细微很难加以

ficult to study. The chemoreceptors of human beings, dogs and other mammals lie in a cleft in each nostril.

During quiet breathing the main flow of air by-passes the cleft. But when a mammal sniffs, air is drawn into the clefts and over about half a square inch of yellowish tissue in which are embedded several million chemoreceptors. They are long thin cells with hairlike crowns making a web lying on the surface of the tissue which is bathed in mucus. These are connected to a part of the brain called the olfactory bulb, the size of which is a fair indication of the keenness of the sense of smell.

The olfactory bulb of a dog is much larger than that of a man. The moist nose of a dog also aids his sense of smell.

Smells are immensely important to dogs as we see from the way they refuse to by-pass a scent without investigating it and, very often, adding to it. They mark their home range and investigate passers-by. Their keen sense has been used by man as a help in hunting and tracking for many thousands of years.

WHEN DO BIRDS MIGRATE?

Millions of birds of many different varieties migrate at the end of summer. With unflinching regularity they leave the regions where they were born to fly to warmer climates for the winter. The following spring they return to their breeding grounds.

Each year these migratory birds travel as much as 20,000 miles, finding their way back on time with extraordinary precision. Some travel as individuals.

Migration is triggered off by the length of daylight, which apparently affects the birds' nervous systems. When the days

研究。人、狗和其他哺乳动物的化学感受体位于每个鼻孔内壁的裂腭中。

平静地呼吸时，空气主流绕过裂腭。但是哺乳动物闻味的时候，空气便吸进裂腭，并通过大约 0.5 平方英寸的黄色组织，这种组织内布满好几百万化学感受体。这些感受体是又长又细的顶部呈茸毛状的细胞，它们形成一个网，铺展在浸于粘液里的黄色组织的表面。这些感受体与大脑的叫做嗅觉球的那一部分相连接。这个嗅觉球的大小能很好地说明嗅觉的敏锐程度。

狗的嗅觉球比人的大得多，狗的湿乎乎的鼻子也有助于它的嗅觉。

嗅觉对狗来说至关重要，这一点我们是看得出来的：狗闻到一种气味，若不去用鼻子嗅个究竟，并常常一再回头去闻，是不肯放过的。它们看守自己的家园、审查来往的行人。数千年来，狗那敏锐的嗅觉一直被人们用作打猎和追踪的助手。

鸟什么时候迁徙？

夏天一过，数百万只许多不同种类的鸟便开始迁徙。它们总是定时离开出生地，飞往气候较暖和的地方过冬。来年春天它们又返回养育它们的地方。

每年，这些候鸟飞行的路程长达两万英里，它们会非常准时地返回原地。有些候鸟则单独飞行。

白昼的长短是引起候鸟迁徙的原因，它明显地影响到鸟的

get shorter the birds receive the signal to leave for their warmer winter grounds, and, when the daylight increases to a certain level, they receive another signal to return home.

WHERE WAS THE FIRST ZOO ?

The first zoo was formed in China in the 12th Century B. C. But it was not called a zoo. Wen, the ancient Chinese king who started it, wanted to collect different types of animals from all over his empire. He kept them in what he called a "garden of intelligence", near his palace.

Some of the largest zoos are in North America. There are big ones in the Bronx, New York City, and in Washington and San Diego.

WHAT IS REINDEER MOSS ?

Reindeer moss is a species of lichen so called because it is the staple winter food of reindeer (and caribou) in Arctic and sub-Arctic regions. The animals reach the plant by scraping away the snow with their feet. But plant growth in those cold northern lands is so slow that the lichen can take more than 30 years to recover after the reindeer have grazed. These domesticated herds therefore have to travel long distances in search of food, and the Laplanders of northern Scandinavia, who depend on the animals for their livelihood, must travel with them.

Fortunately, reindeer moss is especially abundant in Lapland, although it also grows extensively in much of northern Europe, the tundra (or treeless plains) of Siberia and the barren expanses of Arctic America.

神经系统。白天一变短，候鸟便得到飞往较暖和的越冬之地的信号；日照时间一旦增长到一定程度，它们便又得到另一种飞回家园去的信号。

第一个动物园在哪儿？

第一个动物园于公元前12世纪建于中国。不过当时不叫动物园。当时，创建这个动物园的中国古代国王周文王想把全国各种各样的动物汇聚一处。他把这些动物豢养在王宫附近的一个他称之为“万灵园”的地方。

北美有一些最大的动物园。布朗克斯、纽约市、华盛顿和圣地亚哥都有很大的动物园。

何为驯鹿藓？

驯鹿藓是一种地衣，它所以被称为驯鹿藓是因为它是北极和近北极地区驯鹿（以及北美驯鹿）的主要冬季食物。驯鹿要用蹄子把雪扒开才能吃到这种地衣。由于北极地区天寒地冻，植物生长十分缓慢，所以这种地衣被驯鹿啃食以后要经过三十多年方能重新长出来。因此这些驯鹿只得长途跋涉去觅食，而靠这些驯鹿维持生活的斯堪的纳维亚北部的拉普兰人也只好随它们一道迁徙。

很幸运，在拉普兰驯鹿藓繁殖得特别多，尽管在北欧许多地方，在西伯利亚的冻土带（或称无树平原）以及在北美北极地区的荒原上，驯鹿藓也到处生长着。

During the short summer the reindeer are able to feed on herbage and shoots then accessible in the valleys. These versatile animals provide the Laplanders with meat, milk, cheese and the raw materials for clothing, shoes and tents. They are also a means of transport.

Reindeer moss is sometimes eaten by human beings, after being powdered and mixed with other food. But it leaves a slightly burning sensation on the human palate. This bluish-grey plant grows erect in tufts, and is remarkable for its many branches, which, strangely, resemble a deer's antlers.

WHY DO MANY FLOWERS HAVE A SWEET SCENT ?

The sweet scent of flowers is designed to attract insects who seek food in the shape of pollen and the fragrant-smelling nectar. This nectar is a solution of sugars produced in little sacs called nectaries at the base of the flower petal.

The insects have a part in the process of fertilization. Almost all plants perpetuate themselves by means of sexual reproduction, during which a male reproductive cell or sperm fuses with the female reproductive cell or egg.

When bees or other insects visit flowers in search of the sweet-smelling nectar, parts of their hairy bodies become dusted with pollen which contains the male reproductive cells. This rubs off on the flower's carpels which contain the egg or ovule.

Insects seem to be strongly attracted by sweet scents. In fact, some flowers, such as the Meadow Sweet, are so highly scented that insects are attracted to them although they have no nectar to offer. Most insect-pollinated flowers have evolved wonderful devices for guiding the movements of the insect. In this way they ensure that pollen is dusted over the insect's body.

在短暂的夏季，驯鹿以山谷内不难找到的青草和嫩枝为食。这些用途广泛的驯鹿为拉普兰人提供了肉、奶、乳酪以及缝制衣服、鞋和帐篷的原料。驯鹿还可用作交通工具。

人们有时把驯鹿藓磨成粉后，和其他食物掺和在一起食用。但是吃过之后，嘴里会感到稍微有点辣。这种蓝灰色植物是丛生的，长得很直，其特点是分枝很多，而且令人感到奇怪的是这些分枝很象鹿角。

为什么很多花都有香味？

花的香味是为吸引觅食花粉和芳香花蜜的昆虫而产生的。花蜜是一种糖液，是由花瓣底部叫做蜜腺的小液囊分泌的。

昆虫在植物授精过程中起着一定的作用。几乎所有植物都通过有性生殖来自我繁殖。在有性生殖的过程中，雄性生殖细胞即精子与雌性生殖细胞即卵子结合在一起。

当蜜蜂或其他昆虫飞到花上来觅食芳香的花蜜时，它们毛茸茸的身体的一些部位就会沾附上具有雄性生殖细胞的花粉。接着这些花粉又被擦落到包含卵子即胚珠的花心皮上。

香味似乎特别能吸引昆虫。其实，有些花如绣线菊并无花蜜可供昆虫采集，但是因其香味极浓，竟也能吸引昆虫。大多数靠昆虫授粉的花都逐渐具备了一些引导昆虫行动的奇妙手段。它们以此来确保花粉沾附到昆虫身上。