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Vanilla, Chocolate, & Strawberry: The Story of Your Favorite Flavors

香草、巧克力和草莓： 关于口味的故事

[美] Bonnie Busenberg 著

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科学普及出版社



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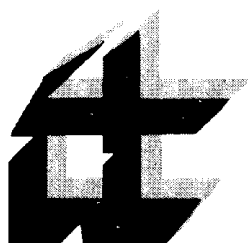
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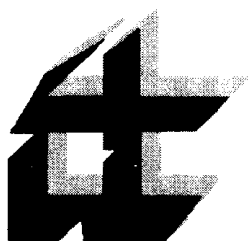
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Introduction



On a summer evening, when you and your family walk into an ice-cream shop, you're faced with dozens of luscious flavors: everything from bubble gum to passion fruit, from mocha fudge to blueberry cheesecake. The choices seem limitless. There are three flavors, though, that are sure to be on the menu. They are old standbys, the all-time favorites that people come back to again and again, no matter what the current food fads are.

Vanilla, chocolate, and strawberry-everyone recognizes these flavors. They are very different from one another, yet they have a lot in common. They have been enjoyed by some societies for more than 500 years, but they exploded in popularity during the 18th and 19th

介绍



在某个夏日的夜晚，当你和你的家人漫步走入一家冰激凌店，你立刻就被数十种芬芳的气息所包围：从泡泡糖到情果，从咖啡牛奶软糖到蓝莓奶酪蛋糕的每一种东西。可选择的食品几乎是无穷无尽的。虽然如此，但是有那么三种口味肯定在菜单上占有一席之地。它们很久以前就受人喜爱，而且无论时尚的食品风刮向何方，都将是人们一次又一次回来再度品味的永远的宠儿。

香草，巧克力，还有草莓——没有人不清楚这些美味。它们虽然彼此各不相同，但却有着许多异曲同工之处。它们都有着被某种文明社会享用了 500 多年的历史，可却都是在 18 世纪和 19 世纪突然声名大噪的。而且，

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centuries. At one time, each of these flavors was mistakenly thought to be an important medicine.

Vanilla, chocolate, and strawberry are such common tastes that few people give them much thought. Do you know where these flavors come from? Do you know how they got their names, how they're prepared, and how they were originally used? What makes them taste the way they do, and how have they changed and been imitated over the years? Most people don't know the answers to these questions. Flavor is something we tend to take for granted. We're glad it's in the food we eat, but we don't worry about what causes it or how we recognize it.

Chemical Compounds

Chemical compounds are made up of basic elements combined in particular proportions. Salt, for example, is a compound made up of one atom of sodium (written as *Na* by chemists) and one atom of chlorine (*Cl*). Chemists write salt as

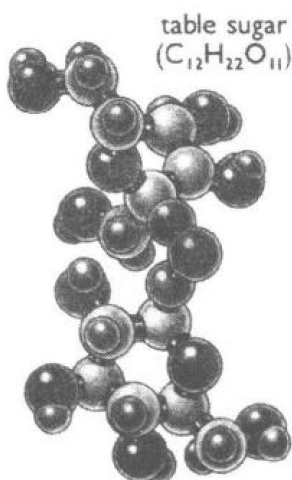
它们每一个又都在某些时期被错误地当成了一种重要的药材。

香草、巧克力和草莓的味道是如此的寻常以至于没有什么人会去多想一想。那么你知道这些滋味是从哪儿来的呢？你知道它们是怎样得到它们的名字的，怎样被加工处理的，它们最初又是用来做什么的呢？又是什么使它们产生了这种味道呢，并且随着时代的发展，它们还发生了什么样的变化，以及一次次被模仿呢？大多数人不清楚这些问题的答案。口味是我们一向理所当然地接受的东西。我们很高兴它出现在我们吃的食物中，但却从来不关心它是怎样产生的或者我们又是怎样感觉到它的。

***** 化 合 物 *****

化合物是由基本元素按特定的比例组合而成的。例如盐就是由一个钠原子（化学家写成 Na）和一个氯原子（Cl）组成。因此化学家把盐写做 NaCl。我们食用的白糖，

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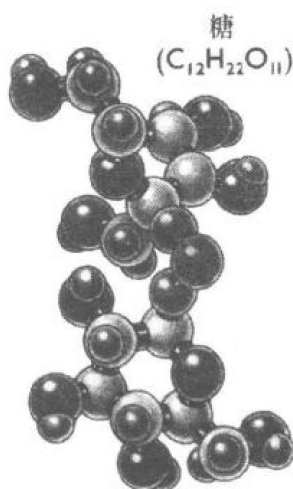
NaCl. The white sugar we eat, called sucrose by chemists and written $C_{12}H_{22}O_{11}$, is a compound made up of 12 atoms of carbon (C), 22 atoms of hydrogen (H), and 11 atoms of oxygen (O). Chemical compounds may have properties that are very different

from the elements they are made of. For example, water (H_2O) is a liquid, although it is made from hydrogen (H) and oxygen (O), which are both gases.

What Is Flavor?

Many people would say that flavor is the way something tastes. That definition is only partly correct. When you have a head cold, have you noticed how “flat” food tastes? Have you ever held your nose in order to swallow a nasty-tasting medicine? If so, then you realize

也就是化学家们称做蔗糖并且写成 $C_{12}H_{22}O_{11}$ 的东西,其实是由12个碳原子(C),22个氢原子(H)和11个氧原子(O)组成的化合物。化合物的特性有可能和其组成元素



特征相差甚远。比如说水(H_2O)是液体,而它却是由氢(H)和氧(O)这两种气体构成的。

什么是口味?

许多人会解释说口味就是品尝某样东西的感觉。这种解释不完全正确。当你感冒的时候,你有没有发现所有的食物都变得“淡而无味”了?你是否有过捏着鼻子努力咽下一种令人作呕的药似的经历呢?如果是的话,那

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that the sense of smell has a lot to do with what we usually think of as taste. In fact, flavor is the combined sensation of a food's taste and odor, as they are perceived by the eater.

Humans are much more sensitive to smell than they are to taste. While we can perceive only four basic categories of taste-sweet, salty, sour, and bitter-we recognize and remember thousands of different odors. What's more, we can detect aromas even when they are present in very small amounts. Most experts agree that smell contributes more than taste does to our perception of flavor. The texture and temperature of a food also significantly affect its flavor.

Humans perceive flavor by means of special nerve cells called receptors, which transmit nerve impulses, or messages, to the brain. The receptor cells that are responsible for taste are known as taste buds or papillae. They are located mostly on the tongue. The receptor cells responsible for smell, called olfactory receptors,

么你就明白嗅觉和我们平时感受到的口味有很大的关系。事实上，口味是食用者所感受到的一种食物的味道和气味的结合物。

人类对于气味远比对于味道要敏感得多。我们只能分辨出最基本的四种味道——甜、咸、酸和苦——而我们却能辨认并且记住上千种不同的气味。除此之外，即使气味极淡，我们也能辨别出来。大部分专家都同意在我们对于口味的辨别中，对气味的感觉要比味道大得多。一种食物的质量和温度极大地影响着它的口味。

人类通过一种叫做受体的特殊神经细胞，向大脑传递神经冲动，或叫信息，来辨别口味。与味道有关的受体细胞叫做味蕾或者乳头。它们主要分布在舌头上。与气味有关的受体细胞叫做嗅觉受体，长在鼻子的内

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are located in the lining of the nose and the back of the nasal cavity. When you eat, the taste buds on your tongue are stimulated by chemical compounds in the food.

As food is chewed, it gives off vapors and molecules of gases in the mouth. These gases pass through the pharynx, a flattened tube leading from the back of the mouth into the nasal cavity. There the gases stimulate the olfactory receptors.

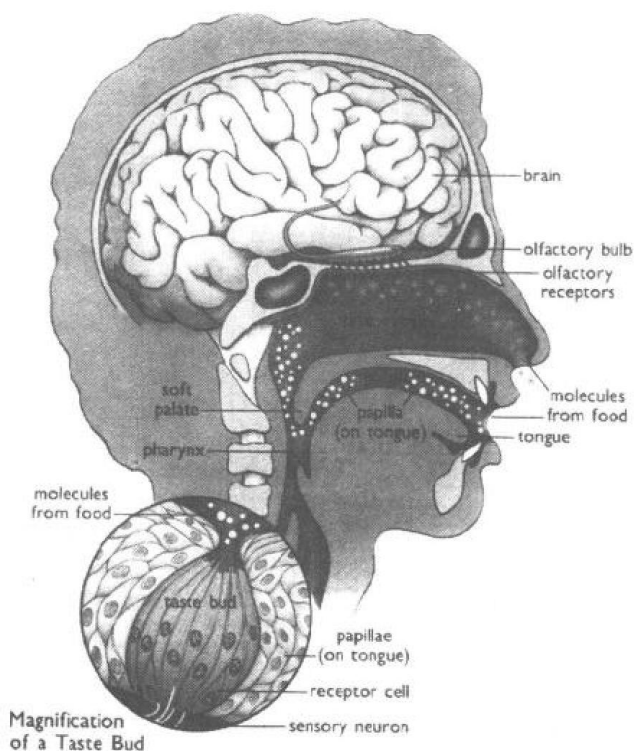
Humans have thousands of taste buds and olfactory receptors in their noses and mouths. These specialized cells are stimulated when we smell and eat food, and they respond by sending a complex pattern of nerve impulses to the brain. The receptor cells are not all alike. When food is placed in the mouth, some cells might increase the frequency of nerve impulses they send to the brain, while others decrease them. The brain translates this coded pattern of impulses received from all the different receptor cells into a perception of flavor.

部和鼻腔的后部。当你吃东西的时候，你舌头上的味蕾就会受到食物中化合物的刺激。

随着食物被反复咀嚼，它就在口腔中释放出水气和气体微粒。这些气体通过咽，也就是口腔后部的一条扁平的管道进入鼻腔。在那里，这些气体刺激了嗅觉受体。

在人类的鼻子和嘴里有数以千计的味蕾和嗅觉受体。每当我们闻或吃食物时，这些特殊的细胞就受到了刺激，而其作出的反应就是向大脑发送一种复杂的神经冲动。受体细胞并不是全都一样的。当食物被放到嘴里时，有些细胞可能会加快向大脑发送神经冲动的频率，还有些细胞则是降低该频率。大脑通过解开来自所有不同的受体细胞的冲动的密码信息生成了对口味的辨别。

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When we put food in our mouths, chemical molecules responsible for smell and taste stimulate the taste buds and travel up the pharynx to stimulate the olfactory receptors. We perceive these sensations together as flavor.

No one is sure how receptor cells interact with chemicals in foods. While many theories are being investigated, common phenomena