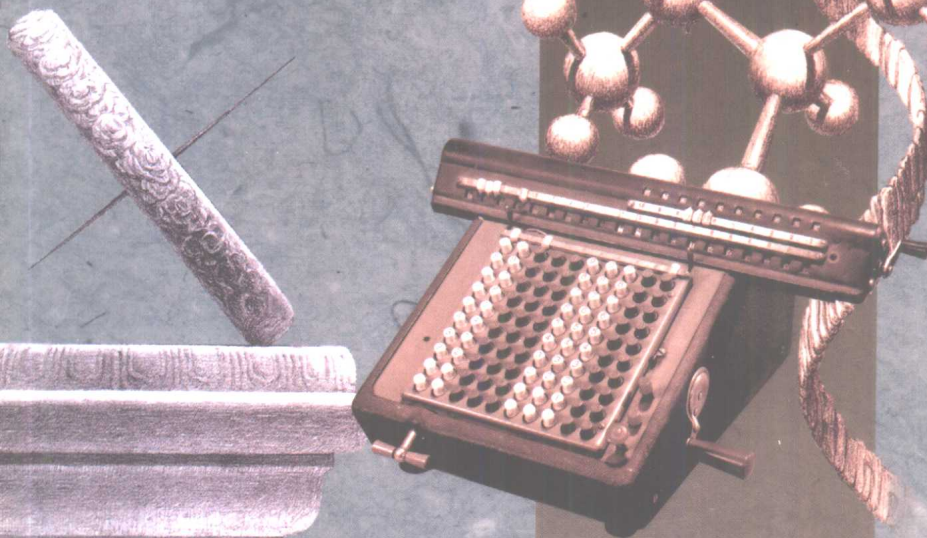


英汉对照
外国名小传



[英] 莫里斯 等著
周晓霞 等选译

发明家与工程师



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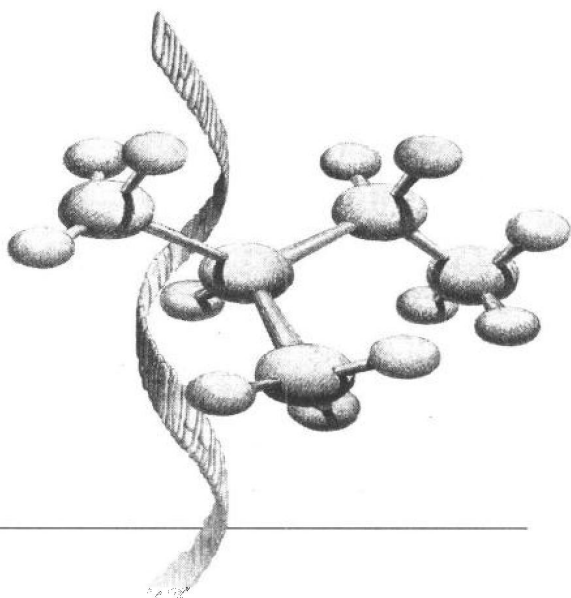
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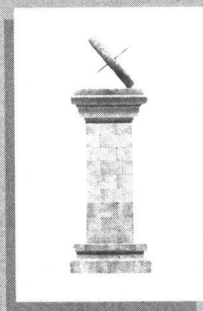
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INVENTORS & ENGINEERS

HEROIC BUILDERS *of* OCEAN BEACONS

*A Graphic Record of the Brave and Skilful
Men Whose Efforts to Light the Way of Mariners
in the English Channel Met with Varying Success*

Mariners who sailed the southwest seas in the sixteenth century dreaded the approach to Plymouth Sound. Between them and a safe entry there was a rocky reef, partially submerged at high tide, and situated about fourteen miles from the coast.

No light guided the way past that barrier, and when the night was "dark as a pocket," and the tempestuous south-west gales blew ships out of their course, their captains knew that it was not skill in navigation alone that could save them from disaster. The result of that adventure lay in the lap of the gods.

Other ships, creeping round the English coast on their way to London, often fell foul of the Eddystone rocks. Today a long line

英勇的灯塔建筑师

本文生动地记述了一群勇敢无畏而又心灵手巧的建筑师，为了照亮水手们穿越英吉利海峡的航程，他们作了不懈的努力，并取得了不同的成功

十六世纪的时候，在西南海域航行的水手最害怕的就是靠近普利茅斯海峡。因为峡中距海岸约十四海里处有一块石礁，潮水来时会部分没入水中，而只有绕过它，船只才能安全入港。

穿过这条满布礁石的航道，以前没有灯光照明。在漆黑一片的夜晚，强烈的西南飓风会把船只刮离航线。这时，船长们都明白，只有航海技术已不足以把他们从灾难中解救出来，他们的命运在上帝手中。

还有一些船只小心翼翼地沿英格兰海岸驶向伦敦，途中则常会撞上埃迪斯通礁石。这里现在已有



埃迪斯通灯塔

of friendly lights guides the mariner from point to point. But when Drake and Hawkins sailed the south-west seas, when the English Fleet set out from Plymouth Sound in pursuit of the Spanish Armada, all was blackness and uncertainty.

Modern lighthouses represent the final triumph of man over enormous difficulties, but the earlier ones, built with little knowledge and at great hazard of life, are none the less monuments to the noblest instincts of mankind. Four times since the end of the sixteenth century brave men have laboured over periods of three years or more to erect upon the Eddystone rocks a tower strong enough to resist the mighty waves, sometimes rising to 200 feet, that roll in from the Atlantic.

The first of these heroes was a man of so eccentric a nature that it is impossible to resist an initial feeling of surprise that the task should have been entrusted to him. Henry Winstanley, who was born in 1644, had no solid scientific achievement to his credit when the Trinity House authorities commissioned him to build their lighthouse.

Formerly a mechanic employed on the building of Audley End, the residence of James Howard, third Earl of Suffolk, he rose to the post of a clerk of works when Charles II acquired the Suffolk estates. He was a skilled designer and engraver, and published several volumes of plates illustrating the building of Audley End.

The kink in his mind that lifted him out of the rut of ordinary accomplishments took the form of an astonishing ingenuity in the making of elaborate devices for the perpetration of practical jokes,

了一长排航标灯，指引水手们从一处驶往另一处。但从前，当德雷克和霍金斯航行在西南海域的时候，当英国舰队从普利茅斯海峡出发去追击西班牙无敌舰队的时候，周围却全是漆黑一片，前景难卜。

现代灯塔的出现标志着人类最终战胜了困难。而早期灯塔则更记录了人类伟大的创造天赋，虽然它们的建造缺乏科学知识，有时甚至要以生命作代价。从十六世纪末起，先后有四次，每次耗时三年以上，勇敢的人们在埃迪斯通礁石上造起了牢固得能抵挡强劲海浪冲击的灯塔。从大西洋上滚滚涌来的海浪，有时会高达二百英尺。

第一位造塔英雄是个怪人，起初人们都觉得不可思议，建塔任务怎么会交给他。此人名叫亨利·温斯坦利，生于1644年。当领港协会授命他造塔时，他还未取得过什么说得上的科学成果。

温斯坦利原先只是一名工匠，参加过萨福克家族第三代伯爵詹姆斯·霍华德的府邸——奥德丽角的建筑工程。查理二世接管萨福克家族产业时，他晋升为工程管理员。他还是一名技艺颇高的设计师和雕刻家，曾出版过好几本图册，介绍奥德丽角的建筑。

温斯坦利脑中总充满奇思怪想，这使得他摆脱了传统的设计常规。他别出心裁地发明了许多复杂的装置，把脑中的怪念头一个个变成现实。他对制作

and he was also an adept in the art of constructing working models and movable figures.

His house at Littlebury, in Essex, was a veritable museum of tricks and puzzles, all of which revealed extraordinary inventive skill, but which were quite useless except for the purpose of creating surprises for his friends.

“Being taken into one particular room of his house,” writes Smeaton, “and there observing an old slipper carelessly lying on the floor; if, as was natural, you gave it a kick with your foot, up started a ghost before you; if you sat down at a chair a couple of arms would clasp you in.”

Apart from these jack-in-the-box contrivances, Winstanley invented a “water theatre,” consisting of a variety of entertaining mechanisms, kept in movement by water-power. This institution, which was situated in the lower end of Piccadilly, remained a popular resort for many years.

It is scarcely credible that Winstanley, with only these whimsicalities to recommend him, should have been selected from among a large number of applicants for the task of building a lighthouse. More probably there was no great rush to fill a post which involved so much hardship and risk. As soon as his plans were accepted, Winstanley set to work with enormous zest, and but small knowledge of the perils and difficulties before him.

His idea of producing stability consisted in making his lighthouse as elaborate and ornamental as possible in order to offer many points of resistance to the waves. A start was made in 1696, but

实用模型和活动人像也十分在行。

温斯坦利住在埃塞克斯郡的利德柏里，他的家简直就像一座机关迷宫的博物馆。这些玩意儿显示了他非凡的发明才能，但除了让朋友们目瞪口呆之外一无用处。

斯米顿的书里说到他：“假使有人领你到他家某间屋子，你瞧见地板上扔着一只旧拖鞋，那样地不起眼，也许会自然地踢上一脚，那好，一个幽灵便会突然蹦出来了；你往一把椅子上坐，便会突然伸出两只胳膊把你抱住。”

除了这些类似玩偶的发明外，温斯坦利还发明了一座“水动戏院”，里面有许多靠水力来带动的娱乐装置。这个戏院在伦敦皮卡迪利大街的尽头，有好些年一直是个热闹的去处。

人们难以置信，就凭其这些怪诞的发明创造，温斯坦利竟然会从众多的申请者中脱颖而出，被选中来完成这项建造灯塔的任务。说不定面对这一充满艰险的任务，领港协会也并不急着找人完成。但方案一经通过，温斯坦利就满腔热情地投入了工作。当时他还想不到以后会遇到这么多的危险和困难。

温斯坦利认为灯塔应尽可能精巧、讲究，有多方面抵御海浪的能力，这样灯塔才能牢固稳定。建造工作于1696年开始，但其后的两年中几乎没有什么

little progress could be reported during the next two years. Nothing could be left on the rock, and there were endless journeys to and fro in an open rowing boat. The first summer was spent in making "twelve holes in the rock and fastening in a corresponding number of iron stanchions. Sometimes for ten or fourteen days at a stretch the heavy running of the seas made work impossible. In spite of their terrible hardships, Winstanley and his men stuck to their post, and within a year they had succeeded in erecting a solid body or pillar made of timber and polygonal in shape, some twelve feet high and fourteen feet in diameter.

At this point an unexpected interruption occurred. The seas were then still infested with pirates, and Winstanley's little party in their open boat offered an easy prey. One day the captain of a French privateer, taking advantage of a lull in the weather, swooped down on the rock and captured Winstanley.

After some delay, the Admiralty intervened and secured his release. Unfortunately, the sea had done great damage to the unfinished building, and almost a new start had to be made. By the third summer the pillar had risen to a height of 80 feet, and on the night of the 14th November, 1698, a light was shown for the first time. Upon this occasion the party were marooned for three days by a raging storm. The sea buried the lantern at times, although it rose more than 60 feet high.

Winstanley made the astonishing observation that it was "possible for a six-oared boat to be lifted up upon a wave and driven through the open gallery of the lighthouse." Next year he

进展。岩石上没法放任何东西，只能用手摇船无数次地来回输送。第一年夏天，他们在礁石上打了十二个洞并加固了十二根铁制柱子。有时海浪汹涌，一连十天或十四天他们都做不了什么事。但尽管如此，温斯坦利他们还是坚持不懈，不到一年就造起了一个坚固的多边形木架。这木架高约十二英尺，直径为十四英尺。

这时，出了件意外的事，影响了进程。那时，海面上常有海盗出没，温斯坦利等几个人经常乘船来来往往，很容易成为海盗们的猎物。一天，一艘法国海盗船的船长趁海面暂时的平静，突然袭击了礁岛，抓走了温斯坦利。

隔了一段时间，由于英国海军部的干预，温斯坦利才安全获救。但不幸的是，尚未完工的支架已大半被海浪冲毁，建造工作几乎又得从头开始。到第三年夏天，一座高八十英尺的支架又重新竖立了起来。1698年11月14日的晚上，灯塔终于第一次亮起了灯光。也就在这次，一场大风暴把温斯坦利小组困在小岛上整整三天。灯塔里的航标灯尽管高出海平面六十英尺，但仍不时地被海水打灭。

温斯坦利观察到，“海浪可以把一艘六浆船高高抛起，从灯塔的平台上穿过。”这使他惊讶不已。于是，第二年，他把灯塔又加高了四十英尺。但即使

added another forty feet to the structure. In spite of this he found that the sea, in time of storms, “flies in appearance 100 feet above the vane; and at times doth cover half the side of the house and lantern, as if it were under water.” By 1700 the lighthouse was completed and in operation.

Considering its many structural weaknesses and the fundamental fallacy underlying its conception, it is amazing that Winstanley’s lighthouse should have withstood the fierce storms of three years. But it was only a question of time. Tragically enough, Winstanley’s natural pride in his magnificent achievement brought about his own end. He boasted that he was so sure of the strength of his building that “he would only wish to be there in the greatest storm that ever blew under the face of the heavens” in order to judge its effect upon the structure.

◆ A Tragedy of the Night ◆

On the night of the 26th November, 1703, such a storm—or a near approach to it—occurred. During its early stages Winstanley put off in a boat and arrived safely at his lighthouse. He announced his intention of staying there throughout the night. When day dawned, bringing calm with it, fishermen in Plymouth Sound were horrified to notice that the lighthouse had vanished as if by magic. The conquering waves washed over a mere shambles of stone, and the brave, kindly man whose lighted tower had saved many a ship from destruction was no more.

这样，他仍发现，一旦风暴来临，“海水看起来就像从一百英尺的高空涌过，有时甚至遮住半边塔楼和航标灯，就像它们是在水下似的。”灯塔直到 1700 年才正式竣工并投入使用。

温斯坦利的灯塔结构上毛病不少，设想上也有根本错误，而竟然矗立了三年，承受住剧烈的风暴袭击，这不能不说是一个奇迹。然而出事只是个时间早晚问题。可悲的是温斯坦利过高地估计了自己的成就，沾沾自喜，最终把命也赔了进去。他夸口他的灯塔如何坚固，并说他最希望的就是，“在刮着天底下最大的风暴时，能呆在塔楼里”，来看看风暴对灯塔到底会有什么影响。

◆ 半夜发生的惨剧 ◆

1703 年 11 月 26 日夜晩，接近于他所说的这样一场风暴来临了。风暴来后不久，温斯坦利驾着一艘小船，平安地上了灯塔，并宣布要整夜呆在那儿。第二天破晓时分，汹涌的海面恢复了平静，但普利茅斯海峡的渔民却惊恐地发现，灯塔就像变戏法似地消失得无影无踪。滚滚涌来的波涛拍打着乱石，但那个勇敢而又和蔼的人，那个建造灯塔拯救过无数船只的人，也已不在了。

For three years the sea claimed its toll of ships and lives around the Eddystone rocks before the Trinity House authorities succeeded in finding another man to undertake the colossal task of rebuilding the lighthouse. Winstanley's successor was John Rudyerd, a silk mercer in the City of London, who had very little scientific training but a great deal of natural sense. He was the son of a Cornish labourer. Contemporary reports speak of John Rudyerd as "the one sound chick among a crowd of worthless brothers and sisters," and he appears to have been the only member of the family who succeeded in rising in the world.

◆ The Maxim of Rudyerd ◆

Although virtually an amateur, Rudyerd came much nearer to the right method of construction. "Use and simplicity" was his maxim. He worked upon the sound principle that a smooth surface was more likely to withstand the terrific onslaught of the waves than Winstanley's elaborate ornamentation, and he made his pillar circular instead of polygonal. He introduced Cornish moor stone into the construction, alternating layers of solid oak with layers of stone. The original idea in this respect miscarried, for, as it afterwards turned out, the stone did not really strengthen the pillar but merely acted as ballast to keep it steady.

Rudyerd started to work in 1706, and two years later a light was shown. The lighthouse was completed in three years, one year less than the time taken by Winstanley. On the other hand,

此后的三年里，埃迪斯通礁石附近海面上，船毁人亡的事件又屡见不鲜，直到领港协会找到了另一个人去完成重建灯塔的重大任务。这位温斯坦利的后继者名叫约翰·鲁迪亚德，是伦敦的一个绸布商人，几乎没有受过什么科学技术方面的教育，但却很有天份。他出生于康沃尔郡一个工人家庭。当时有的书上提到他时说：“在一大群碌碌无为的兄弟姐妹们中，他好像鹤立鸡群。”看来他确实是家族中惟一一名有出息的成员。

◆ 鲁迪亚德的准则 ◆

虽然鲁迪亚德实际上只有业余水平，但他的构想却与正确的造塔方法更接近。“实用、简洁”是他的准则。他按自己的原则行事，认为与温斯坦利的精巧的装饰相比，光滑的表面更能承受住海浪的肆虐。因此，他把灯塔的支架造成圆锥体，而不是多面体，他还采用了康沃尔峡地所产的花岗石，在塔底铺上层层花岗石，而不是硬栎木。但这样一来却改变了最初的设想，因为后来事实证明，花岗石并不能真正加固支架，只不过犹如压舱物一般使支架更加平稳而已。

鲁迪亚德从 1706 年开始着手建造灯塔，两年后航标灯就亮起来了。又过了一年，灯塔完全竣工，前后共耗时三年，比温斯坦利所用的时间少了一年。