

— 大 师 系 列 —

# Gustave Alexandre Eiffel

居斯塔夫·亚历山大·埃菲尔

王 晶 译

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居斯塔夫·亚历山大·埃菲尔是著名的工程师、事业家和建筑师。埃菲尔最著名的成就为巴黎埃菲尔铁塔。本书介绍的埃菲尔的作品有埃菲尔铁塔、圣让桥、托尼尔大街的犹太教堂、Neuvial 高架桥、Rouzat 高架桥、比特·绍蒙公园的步行桥、尼斯的天文台等 10 余个案例。内容包括每个设计案例的设计建造地点、施工时间及设计说明,以图文结合的形式讲述了大师的成就。

Gustave Alexandre Eiffel

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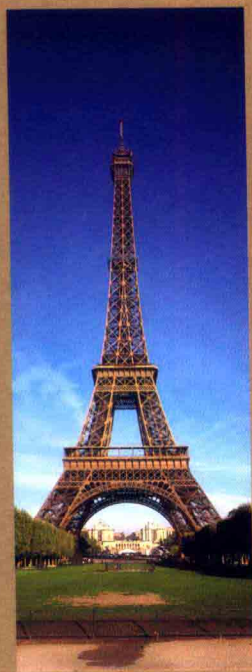
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加拉比高架桥  
Garabit Viaduct



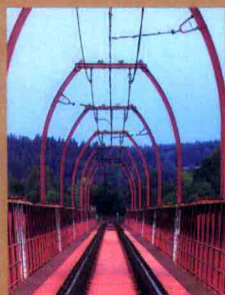
吉罗纳市的步行桥  
Pedestrian bridge in Girona



圣让桥  
Saint Jean Bridge

居斯塔夫·埃菲尔（1832年生于第戎市，1923年逝世于巴黎）的作品可视为诞生实证论的源头之一，他们的观点蕴含着持续无穷的进步。事实上，这一时代最大的象征便是铁路，这是因为铁路呈现出的下部构造，有利于交通成本的降低，创造更大的灵活性和动力以及无穷无极的诸多优势。这些优势花费了比预期更长的时间才成为日常生活的一部分。朱尔斯·凡尔纳（Jules Verne, 1828~1905）塑造的杰出形象中，英雄人物为工程师，而英明人士为科学家。

The work of Gustave Eiffel (Dijon, 1832–Paris, 1923) may be seen as forming part of the positivist generation, among whose ideas we find that of sustained and unlimited progress. The great symbol of this generation is in fact the railroad because it presents an infrastructure that was bound to allow a lowering of transportation costs, a greater mobility and dynamic, and an endless number of other advantages. These advantages, it must be said, took somewhat longer than expected to become a part of quotidian reality. Jules Verne (1828–1905) incarnates the figure par excellence of the chronicler of this modern age whose heroes are engineers and whose scientists are its wise men.



加拉比高架桥  
Garabit Viaduct



Cubzac 桥  
Cubzac Bridge



吉罗纳市的步行桥  
Pedestrian bridge in Girona

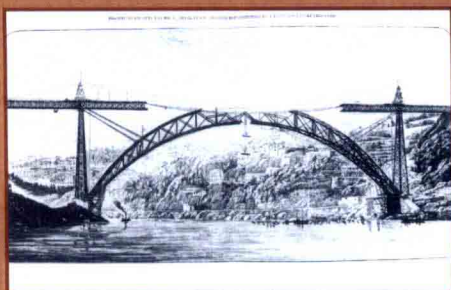
居斯塔夫·埃菲尔正是出生在这样的社会经济环境之下。他的曾祖父祖籍德国瑞纳尼亚(Renania), 于1710年在法国定居, 并且将不易发音的德语姓氏Boenickhausen改为埃菲尔(Eiffel)。他的祖父及居斯塔夫·埃菲尔的父亲应征进入拿破仑的军队, 并被派到第戎市, 在这里他迎娶了凯瑟琳·蒙纽斯(Catherine Moneuse)为妻。她独断的性格使她接过了家庭图书保管的职责。

多亏了母亲的安排, 埃菲尔在艺术和制造中央学校取得工程毕业证后不久, 就与查尔斯·内芙(Charles Nepveu)相见。内芙在社会上威望很高, 而且拥有自己的公司。他将年轻的埃菲尔引荐至桥梁建筑的世界中, 而且多亏了内芙, 埃菲尔获得了在波尔多(Bordeaux)建造的桥梁监管权。在这个工程中, 他显示出杰出的组织能力和社交天赋。埃菲尔正是凭借这两点, 出色地经营着他后来建立的公司。

This is the socioeconomic environment into which Gustave Eiffel was born. His great-great-grandfather, installed in France since 1710 and originally from Renania (Germany), had changed his unpronounceable surname, Boenickhausen, to Eiffel. His great-grandson, Gustave Eiffel's father, enlisted in the army of Napoleon and was sent to Dijon, where he would marry Catherine Moneuse. Gustave Eiffel was highly influenced by the figure of his mother, whose authoritarian character led her to take over the family bookkeeping.

Thanks to a contact arranged by his mother, Gustave met Charles Nepveu shortly after taking his engineering diploma at the École Centrale des Arts et Manufactures. Nepveu ranked high in society and had his own company. He introduced the young Eiffel into the world of bridge building, and it was thanks to Nepveu as well that Eiffel obtained the supervision of the bridge in Bordeaux, where he demonstrated his great organizational capacity and his gift of socializing with people. These were qualities that would eventually serve him well in the future company he would establish.

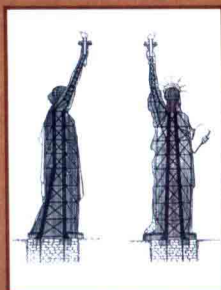




Maria Pia Bridge (Oporto, Portugal)



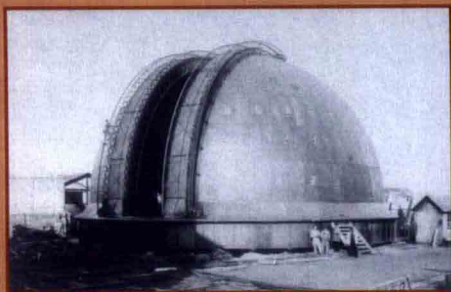
埃菲尔铁塔  
Eiffel Tower



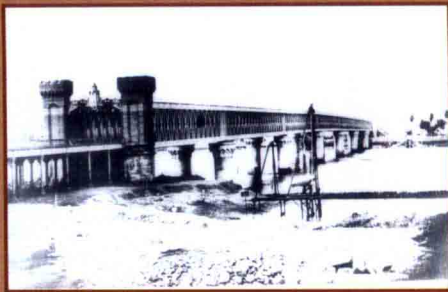
自由女神像结构图  
Statue of Liberty structure

居斯塔夫·埃菲尔还是一个天才商人。他进行重要的社交活动，而且总能发挥出他超凡的商业才能的优势。他在事业上取得了巨大的成功，从一个外省的年轻人成为全国十大杰出承包入。毫无疑问，他在当时声名远扬。他的人气 and 名声是他被选为修建以他的名字命名的铁塔人选的决定因素。五大洲都有他的作品，其中最壮观的作品为高大的建筑，例如波尔图桥（Oporto Bridge）、加拉比高架桥（Garabit Bridge）和纽约的自由女神像（雕塑本身是雕刻师奥古斯特·巴托尔迪创作的）。然而，有更多不太有名的作品为埃菲尔带来了巨额利润，例如19世纪80年代公司设计和开发的可移动的桥梁为埃菲尔带来高额的财政回报。这些桥梁横跨亚洲和南美洲的众多河流。

Gustave Eiffel was far from untalented as a businessman. He made important contacts and used to advantage his great business abilities. His career may be summed up as a spectacular progression of successes: a young man from the provinces came to be one of his country's ten most important contractors—without the least doubt the most renowned. His popularity and his good reputation were key elements in his being chosen to raise the tower that bears his name. His projects are found on all five continents, and the most spectacular ones of all are the large pieces, such as the Oporto Bridge, the Garabit Bridge, or the Statue of Liberty structure in New York (the statue itself being the work of sculptor Auguste Bartholdi). But there is also no mean number of lesser-known designs that brought the French engineer enormous benefits, such as the portable bridges which the company designed and exploited in the 1880s and which brought such high financial returns. These still span a large number of rivers in Asia and in South America.



尼斯的天文台  
Observatory at Nice



圣让桥  
Saint Jean Bridge

埃菲尔在生命的最后20年远离生意的烦扰，乘坐航班奔波于保护他修建的铁塔不被拆除。为此，他需要各方面支持有时看似矛盾的论点，即埃菲尔铁塔是民族的骄傲，但巴黎市需要有一个通信塔（显而易见，此时铁塔的塔基可以保留）或一个气象室——一个已发挥作用的空气动力学架（他的热情在于研究风力）。

埃菲尔出版的空气动力学研究著作被翻译为多种语言。他为这门以空气为主导的新生科学树立了一个重要先例（这门科学可追溯至19世纪末20世纪初）。他甚至还建立了一个空气动力学实验室，该实验室内有一个风力管道，在管道内所有法国飞机的原型（不论民用机还是军用飞机）都会经过多年的检测。

The last 20 years of Eiffel's life were spent away from business concerns and in a fight to keep his tower from being dismantled. For this, he needed to have recourse to such sometimes conflicting arguments as national pride and the need of the city of Paris to have a communications tower (the base of which, obviously, would already exist), or a meteorological studio, an already functioning aerodynamic hangar. (His passion was studying the wind.)

The aerodynamic studies which Eiffel published were translated into other languages. They set an important precedent for the development of this nascent science to dominate the air (dating from the end of the nineteenth and the beginning of the twentieth century). He even built an aerodynamic laboratory complete with a wind tunnel where all the prototypes of French airplanes, both civil and military, would for many years be tested.







# 圣让桥

## Saint Jean Bridge

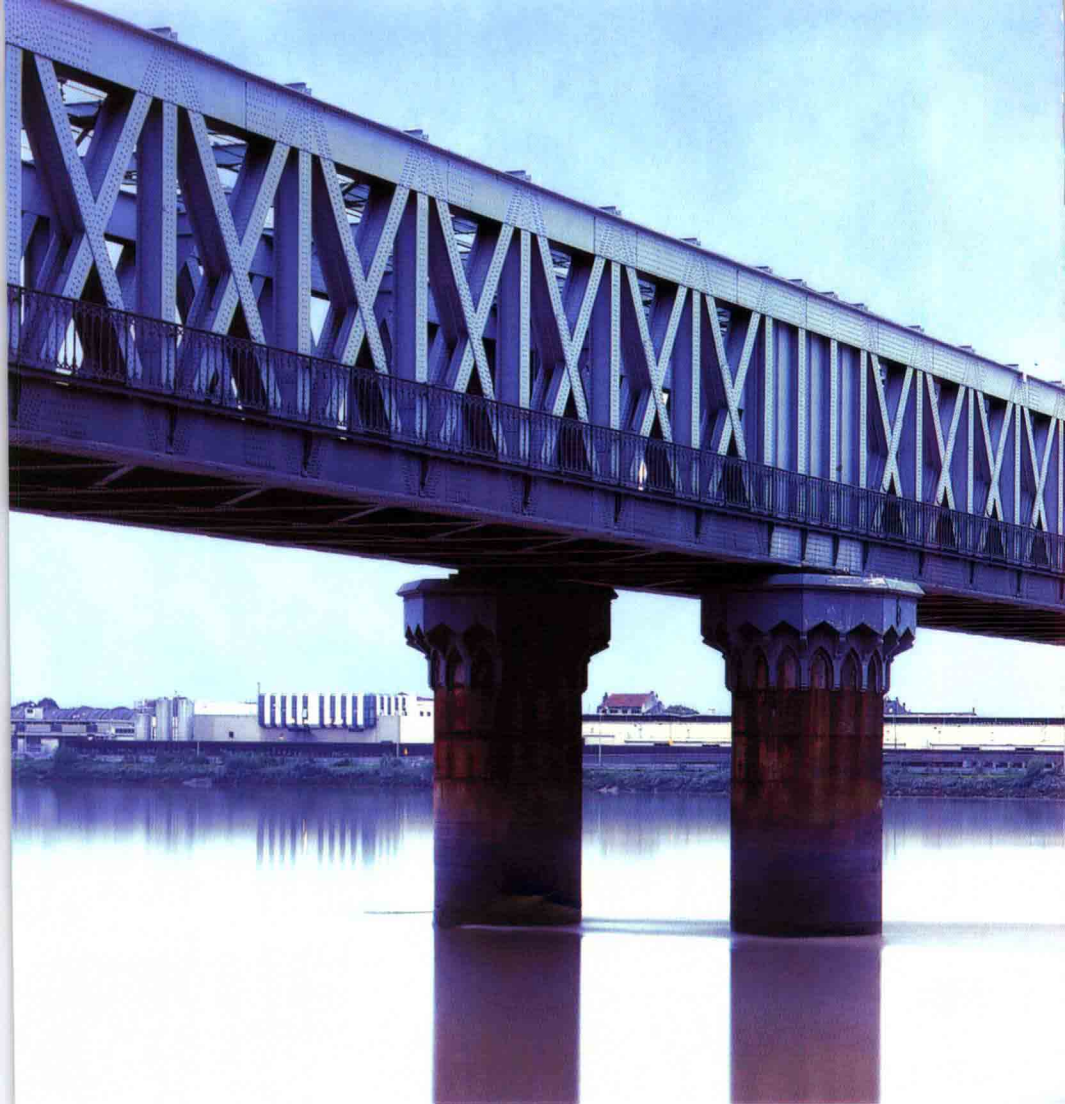
位 置：法国 波尔多市  
建造时间：1857~1860年



Location: Bordeaux, France  
Date of construction: 1857~1860

1856年，查尔斯·内芙（Charles Nepveu）将其门生埃菲尔引荐至当时法国最为重要的铁路公司——南方公司（Company of the South）——工作。在埃菲尔刚刚步入26岁不久，就被公司委以波尔多市一座桥梁的修建工程。在泥泞的河流中建造支柱是一个复杂的工程。然而，和以往一样，埃菲尔得到了导师的有力支持，找出了相应的解决办法，并利用了由内芙引入法国的一项技术。这项技术的重要之处在于利用直径为3.60米的钢管支撑恒定的压力和消除水的渗透，从而为建筑工人提供了一个干燥的工作区域。此外，另一个技术问题也得到了顺利解决，而解决该问题的新思路源自承载铁轨的平台建造。该铁轨的长度达500米以上。埃菲尔没有采用实心的构造，而是决定使用格子形的框架。埃菲尔本人不时会用到这种框架结构，即使不再有内芙的支持，他也照用不误。桥梁以新哥特式的风格加以装饰，然而到现在为止，仅有支柱留存下来，入口处的门廊在20世纪已经被拆除。

In 1856, Charles Nepveu introduced his protégé, Eiffel, into the period's most important French railroad company. It was called the Company of the South, and at the relatively early age of 26 Eiffel was given the construction of a bridge in Bordeaux by the firm. Backed, as always, by his mentor, Eiffel would find a solution to the complicated foundation for the columns in the muddy river and use a technique introduced into France by Nepveu. What the technique consisted in was tubes of steel 3.60 meters in diameter to maintain constant pressure and expel the water infiltrations and allow the building workers a dry work area. Another technical problem was solved by the novel idea derived from the manufacture of the deck that would carry the rails, which was more than 500 meters in length. Instead of using a framework of solid pieces, Eiffel decided to use a lattice frame, a system which he himself would employ with some frequency even when he was not anymore under the auspices of Nepveu. The bridge was decorated in the neo-Gothic style, although at present only the columns remain, the entrance portico having been removed in the twentieth century.



剖面图

Section

