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章）英汉翻译实践报告

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A Report on the E-C Translation Practice
of Volcanoes in Human History (Chapter 8)

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A Report on the E-C Translation Practice of
***Volcanoes in Human History* (Chapter 8)**

Sun Qiongqiong

A thesis submitted in conformity with the requirements

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Translation and Interpreting

In English Translation

Supervised by Prof. Zhang Fengmei

School of Foreign Studies

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Acknowledgments

As my practice report enters its final phase, I have come to the end of my MTI study career. One year ago, I started to translate the book *Volcanoes in Human History* with my group members and decided to write a report based on the translation practice. At the beginning, I did a lot of pre-translation work, including text type analysis, searching and reading parallel texts and preparing translation tools. After that, I tried my best to translate the source text into target language faithfully and smoothly. Then, I wrote this report based on the translation process, my understanding on translation and the knowledge acquired at class. Journey to translation practice and report writing is difficult and long. The fact that I can successfully complete the translation practice and write the report is inseparable from the help and support of many people. Therefore, I would like to express my gratitude to them on this occasion.

First of all, I would like to extend the most sincere gratitude and thanks to my beloved supervisor, Professor Zhang Fengmei, who has consistently accompanied and advised me during the three years of postgraduate life. Her wisdom and knowledge have inspired me to devote more energy to exploring the world of translation. I could not have finished this report without her patient guidance. Her kindness to people, patience to students and diligence to work have exerted great influence on me. What I have gained from her will certainly benefit my whole life.

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摘要

本次翻译实践选材于杰勒·泽林加·德布尔(Jelle Zeilinga de Boer)和唐纳德·西奥多·桑德斯(Donald Theodore Sanders)所著的《人类历史上的火山》(*Volcanoes in Human History*)。该著作于2002年首次由普林斯顿大学出版社出版。本书作者以维苏威火山、坦博拉火山等九大火山为例,介绍火山地质作用的过程,揭示火山爆发对人类社会的深远影响。笔者选取其中的第八章作为翻译实践源文本,并基于翻译过程中的重难点撰写实践报告。源文本中涉及大量地质学专业知识和词汇,但以叙述性描写为主,根据刘宓庆教授对文本类型的分类方式,属于叙述文体。翻译时,以忠实、准确和通达的文风为主。

译准专业词汇、处理复杂句式和连贯篇章逻辑是此次翻译实践中的难点,也是本翻译实践报告分析的重点。面对较难的专业词汇,译者主要基于语境、复现和查证判定词义。对于复杂句式的处理,主要采用拆分、调序和重组的方法,使译文符合译入语的表达习惯。为了使译文篇章连贯,增加译文的可读性,采取了显化语义逻辑、明确指代内容和增加连接词等方法,以此明确逻辑。总的来说,根据翻译时的具体情况,译者采用不同的翻译方法和技巧,如增译、减译、改译、转换等,使译文忠实、通达、流畅,提升译文读者的阅读体验。

通过此次翻译实践,笔者的翻译能力从词汇的查证,到长难句的处理,到篇章逻辑连贯的达成,都得到了进一步提升,同时认识到翻译不能生搬硬套某一种翻译策略或方法,而应该具体问题具体分析,

并充分利用现代翻译技术和手段，提高翻译效率和准确度。另外，笔者也深刻认识到作为一名译者，知识储备和双语能力的重要性。最后，笔者希望本次实践经验总结能够为同类型文本的翻译实践提供借鉴及参考。

关键词：《人类历史上的火山》；拆分；调序；明确指代；显化逻辑

Abstract

The source text of this translation practice is excerpted from *Volcanoes in Human History* by Jelle Zeilinga de Boer and Donald Theodore Sanders. The book was published by Princeton University Press in 2002. The authors of the book introduce the volcanic geological processes and reveal the profound impact of volcanic eruptions on human beings with nine examples. Chapter 8 is chosen as the source text of the translation and the practice report is written based on the important and difficult points in the translation practice. Though involving a lot of geological vocabulary and expertise, the source text mainly narrates volcanic eruption events. According to Professor Liu Miqing's classification of text types, it belongs to the narrative style, and the translation should be faithful, accurate and accessible.

Translating technical words accurately, processing complex sentence patterns, and achieving intra-textual coherence constitute the biggest challenges in the translating practice and also the important points of this report. As for difficult technical words, the meaning is mainly inferred from the context or repetition, or judged by verification. To process complex sentence patterns, the methods of splitting-off, adjusting orders and reorganizing sentences are mainly adopted to make the translated text conform to the expressing habits of the target language. In order to

achieve intra-textual coherence, the translator used such methods as manifesting logic, specifying reference, adding and substituting to clarify the text logic. In general, different translation techniques such as addition, omission, adaption and shift, are applied in the translation process according to the specific situation so as to make the translation faithful, accessible and smooth, as well as improve the readability of the target text.

Through this translation practice, the translator's translation ability like vocabulary verification, processing complex sentences and achieving text coherence, has been further improved. It is realized that translation cannot be carried out by applying a certain translation strategy or method rigidly but to analyze situations specifically and find out proper solutions to different problems. Moreover, modern translation technology should be used to improve translation efficiency and accuracy, and it is important for a translator to possess a high standard bilingual ability and knowledge reserve. Finally, it is hoped that the experience summarized in this practice can provide reference for the translation of similar type of text.

Key Words: *Volcanoes in Human History*; splitting-off; adjusting orders; specifying reference; manifesting logic

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Chapter 1 Task Description

1.1 Background of the Task

This translation practice comes from a real translation project, the translation of series of books *One Planet*, undertaken by my supervisor Prof. Zhang, which is to be published by Jiangsu People's Publishing House. Among which is the book *Volcanoes in Human History*, written by geographers Jelle Zeilinga de Boer and Donald Theodore Sanders. The book was published by Princeton University Press in 2002. The authors of the book introduce the volcanic geological processes and reveal the profound impact of volcanic eruptions on human beings with nine examples of Mount Vesuvius, Mount Tambora, and so on. These chilling examples allow readers to gain a better understanding of the subject.

There are ten chapters in the book. The author of the thesis is responsible for the initial translation of chapter eight. And it is the first time that the source text be translated into Chinese in this translation practice. There are 6298 English words in Chapter Eight selected from the source text, and the target text contains 10805 Chinese characters, which meets the requirements of the number of words in the graduation thesis of the MTI.

1.2 Introduction of Source Text

The source text of the translation practice is chapter eight, *the 1902 Eruption of Mount Pelée: A Geological Catastrophe with Political Overtones*, excerpted from the book *Volcanoes in Human History*. It describes the eruption course of the Mount Pelée in 1902, the degree of its destruction, the human and political factors of the disaster, and the far-reaching effects.

There are 63 paragraphs, four figures and a sidebar in this paper. As for the topic of the source text is on geology, the translator is required to know a certain background information and basic knowledge on this field, like geologic process and volcanic activity. There are a lot of technical and semi-technical words in the source

text, so it is essential for the translator to look for and read various materials or parallel texts to get familiar with the technical words for better understanding of the source text. And it is necessary to set up a glossary bank with other group members before translation.

1.3 Significance of the Practice

Volcanic activity is the surface manifestation of life on Earth. Volcanic eruptions can have global effects that last for years, decades, centuries or even thousands of years. However, there are few books devoted to the major volcanoes on a global scale, and no domestic scholars have written similar books. Therefore, it is hoped that through the translation of this book, people can better understand the origin of volcanoes, the hazards of their eruptions, the disasters brought by them to mankind and their long-term effects. The translation of the book is expected to popularize the knowledge of volcanoes and arouse people's interest in volcanoes and their interdisciplinary consequences.

Moreover, the translation of the source text and the proofreading of the target text can improve the translator's translation skills, accumulate valuable experience for the future translation activities, and provide reference for the translation practice of similar texts.

Chapter 2 Pre-translation Preparations

Translation is a complicated and time-consuming process, and the preparation work before translation is the first step. As the old saying goes, a good preparation is half the success. So preparation is an important and necessary part before translation. Pre-translation preparation involves with analyzing the source text type, referring to parallel texts and materials, selecting translation tools and making a glossary of technical words and proper nouns.

2.1 Text Type Analysis

The book *Volcanoes in Human History* takes nine volcanoes as examples and describes these volcanic eruptions to show the disasters and consequences they brought to human beings. When narrating the volcanic events, the book conveys a lot of geological knowledge with strong professional content and large amount of information. Its language is mainly of plain style, and many technical words and proper nouns are used. The potential readers of it are popular, not limited to professionals in the geology field.

In the book *Style and Translation*, professor Liu Miqing divides text into different types like official document, narration, description, exposition, journal, practical writing and scientific writing, and puts forward their respective language features and corresponding translation strategies. Mr. Liu believes that characters and events in any field, such as philosophy, history, literature and science, may enter the work and become the objects of description and narration. (刘宓庆,2019:170-171) Though the source text, *Volcanoes in Human History*, presents a great deal of professional knowledge on volcanoes and their eruptions, most importantly, the book tells the events of these volcanoes' eruption, belonging to historical record. So this source text type mostly belongs to narration and partly description. Authors of the book narrate the events of volcanoes eruption and some recollections of the parties, which can be identified as narrative texts. There is some geoscience knowledge in

Volcanoes in Human History, which belongs to descriptive text. Therefore, in the process of translation, it is necessary to use different translation strategies based on the characteristics of different text types.

According to Mr. Liu Miqing, narrative and descriptive text often use rich words, multiple language phenomenon, different emotional colors, and diverse writing style to narrate stories effectively. (刘宓庆,2019:170-172) Therefore, when translating this type of text, it is essential to understand the source text thoroughly. And it is also important to translate technical words and proper nouns accurately and use appropriate sentence patterns in target language to achieve cohesion and coherence and to improve its readability. Attention should also be paid to the language aesthetics during the translation practice. For example, when translating the city and port scenes during and after the eruption of the volcano, some Chinese four-character characters can be used to make the description more vivid. For a narrative text type, rendering the author's emotion and atmosphere of a certain situation in the right way is essential when translating, so that the translation can conform to the writing style of the source text.

2.2 Parallel Text Arrangement

Parallel texts originally refer to the source text and its translation, placed side by side, which can be read sentence by sentence to make comparisons. A parallel corpus is formed by collecting and combining a large number of parallel texts. To be simple, a parallel text is a reference of any kind that is close to the content of the source text. (李长栓,2009:91) Before translating, the translator should read a lot of parallel texts and understand the common language styles and expression habits of such articles. The reading of parallel texts is of great significance to grasp the phrasing style, expressing habit and style of the relevant professional field.

The wording and sentence of the translation should conform to the expression habit of the target language, as well as the text type style of the subject and specialty. For non-literary texts, different text types use different writing styles to make the text

professional. The style of a literary text is mainly determined by the author, while the style of a non-literary text is determined by the subject matter of the text. Therefore, when translating, it is necessary to collect and read a large number of parallel texts that are the same or related to the theme of the original text, and get familiar with the writing style and expressing habits of such texts.

Parallel texts can not only make up for the translator's lack of specialized knowledge in a certain field, but can also make the translator better understand the source text through the master of certain professional terms. In addition, parallel texts can help the translator to obtain the appropriate expression of the target language in the professional field, imitate the relevant writing style and conform to the expression habits of the target language, so as to better convey the information of the source language.(Joan Pinkham, 2000:237) So the application of parallel text in translation plays an important role in improving the translator's translation ability and the translation quality, and conveying the information of the source language to the reader more accurately.

Therefore, in order to fully understand the original text and make the target language expression a professional one, both English and Chinese parallel texts are necessary to read and be taken as references, including some books and essays concerning geology and volcanoes eruption. In the translation preparation stage, the translator collected and consulted a large number of various books and documents related to volcanoes by means of library, Internet and CNKI, from which the volcano related knowledge and its geological process was understood comprehensively. The following table lists some of the parallel texts the translator read before translation.

Books or Articles	Authors	Publishing Press
<i>Active Volcanoes in China</i>	Liu Ruoxin	Seismological press, 2000
<i>Foundations of Earth Science</i>	Frederick K. Lutgens, Edward J. Tarbuck	Foundations of Earth Science, 2007
<i>Physical Geology</i>	Shu Liangshu	Geological Publishing House, 2010

<i>A Giant Felsic Pyroclastic Flow Eruption in the Tarim Flood Basalt Province</i>	Tian Wei, Wang Lei	Acta Petrologica Sinica, 2018, 34(01)
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2.3 Translation Tools Preparation

Inevitably, when translating, translators may encounter problems that are difficult to solve on their own, thus they need to derive support from certain tools and reliable sources to complete translation tasks. The tools utilized in this translation practice are as follows:

First, various dictionaries and online resources. When there are words whose meaning cannot be determined, or terms that have never been used before, it is necessary to consult dictionaries. The authoritative dictionaries used in this translation practice include: *English Chinese Geology Dictionary*, *Oxford Advanced Learner's English Chinese Dictionary*, and some online dictionaries like *NetEase Youdao Dictionary*. There are also some updating websites which can help the translator look up some difficult or complex words quickly and efficiently, such as: <https://www.linguee.com/>, <https://www.deepl.com/>, <https://www.google.com.hk/>, and so on. During the translation practice, the translator always use these resources both online and offline and consult the unfamiliar words in different methods to find the proper translation.

Second, computer-aided tools improve the efficiency of the translation practice. In the translation practice the translator chose MemoQ as the assistant tool. The procedure is as follows. Firstly, the translator created a new project and a term base, imported the preliminary processed original text into the tool, and utilized its "Pre-translation" function to translate and add terms simultaneously, then directly exported the translation and terminology table after translation. After that, the post-translation editing is always necessary to check the accuracy and fluency of the translation.

In addition, it is helpful to read and take references from some bilingual parallel

texts. The translator searched the internet and found some online resources and websites, from which the translator can get to know more information about volcanoes and the eruption process. And these bilingual parallel texts can serve as a tool providing some references for the translation of some difficult technical and words. Here list some of the websites: <https://www.hjenglish.com/fanyi/p638920/>, <https://www.gaozhaiedu.com/html/publication/yingyuwaikanjingdu/2022/0126/4930.html>, https://www.sohu.com/a/12223840_106413.

2.4 Glossary and Proper Nouns Building

Glossary work refers to activities associated with identifying and describing concept-term units in a specialized field.(Bowker, 2019: 580) Before translation begins, the translator should arrange the terminology of the professional field that the source text belongs to, update the meaning of the essential glossary, and most importantly, establish a unified terminology words bank with other group members to ensure the accuracy and consistency of the terms in target text.

As for this translation practice, the source text is of geology field, so there are many difficult technical words concerning with volcanoes. And there are a lot of names of people or places, most of which are uncommon French words. Both of the technical words and proper names should be payed special attention to ensure the accuracy and professional degree of the target text.

So the first step is to find out all the terms and proper nouns in the source text and look for their exact meaning through consulting some parallel texts and online or offline resources including CNKI, electronic dictionaries, and geology dictionaries and so on. The second step is group members working together to check whether there some differences or mistakes for the translation of certain terms. Then after revision, before they come to use, the group supervisor would do some proofreading of the glossary before it comes to use. Then by using the translation tool, MemoQ, all the technical words and proper names are defined as terms in the process of translation. Finally, the term base is exported from the software.

With the help of the determinate glossary and proper nouns bank, the translator can complete the assignment more efficiently and precisely and avoid inconsistent translation of terms in one certain group.

Chapter 3 Case Study

Based on all the above preparations, the translation practice was accomplished rigorously, and some translating difficulties were encountered during the translation process, including translating technical words accurately, processing complex sentence patterns and achieving intra-textual coherence. The translator made use of the knowledge learned at class and some accumulated translating experience to overcome these difficulties. Here list some cases of problems and ways of solution while making translation.

3.1 Translating Technical Words Accurately

Technical vocabulary is divided into pure technical vocabulary and sub-technical vocabulary. Pure technical words are highly professional and narrow in meaning. Sub-technical words refer to words that occur frequently in all disciplines regardless of context. Most of these words are common words in ordinary English, but they have become professional technical terms in different professional and technical fields and have strict scientific meaning(胡莹,1998:120). It has been introduced in the previous chapter that the source text is a compound text, so besides common words, there are a lot of technical words and sub-technical words. How to determine their exact meaning in translation is a major difficulty in the translation practice.

3.1.1 Determining the Meaning from Context

Translating a word out of context makes it difficult to express exactly what the word really means. Only on the basis of context can we decide which translation principles are appropriate. Professor Cai Lijian pointed out that when analyzing the source text, we should pay attention to the specific meaning of an expression in a specific context, rather than just concentrate on its literal meaning. Regardless of what words, collocations, and sentence patterns are used in the source text, attention should be paid to whether the translation can accurately present the meaning of the source

text(蔡力坚, 2021:188).

Example 1

ST: One of those craters, toward the southwest and known in 1902 as L'Etang Sec (the dry pond), had at one time contained water; the other, toward the northeast, was called the Lac des Palmistes and did contain water in 1902.

TT1: 其中一个朝着西南方向, 1902 年时人们称它为亿唐二段 (L'Etang Sec) (干塘), 之前曾经有水; 另一个朝着东北方向, 叫做棕榈湖(Lac des Palmistes), 当时仍旧有水。

TT2: 一个朝向西南, 1902 年时人们叫它 “枯塘” (L'Etang Sec), 里面曾经有过水; 另一个朝向东北, 人们叫它 “棕榈湖” (Lac des Palmistes), 1902 年时里面确实有水。

Analysis: The difficulty in the translation of this sentence lies in determining the meaning of “L'Etang Sec”. At the beginning of the translation, considering that the word was the name of the crater, the transliteration method was used, so the word was translated as “亿唐二段”, which was plain and lack of characteristics, and may even cause readers to question whether there was “亿唐一段”. Meantime, for the sake of being professional, when translating certain names, the source text of the name should be annotated with parentheses. There is already one parenthesis in the source text, and adding another one is cumbersome, making it more difficult for readers to understand the translation. Therefore, the original translation is not appropriate. By analyzing the context of the sentence and acquiring clues from “had at one time contained water”, the word “L'Etang Sec” was then translated as “枯塘” during adaption. The Chinese word “枯” means “dried up”, which could not only be coherent to the meaning of the sentence “had at one time contained water”, but also cover the meaning of “the dry pond” in brackets, which can be said to kill two birds with one stone. Therefore, determining the words' meaning according to the context makes translation appropriate and concise.

3.1.2 Inferring the Meaning by Repetition

In translation, if a word's meaning can not be determined when encountered for

the first time, the translator should be patient and not waste too much time thinking it over but continue to translate the rest text. There may be repetition or recurrence of the word in the following part. As long as there is one certain condition that it is easy to judge the meaning of the word, the previous translating difficulty would be overcome, and the translation in this way would be more accurate and efficient. This method of translation is also effective when meeting with some sub-technical words which are easy to be translated into a non-technical word in the target language.

Example 2

ST: During the next phase of the eruption, a **dome** of viscous lava quietly grew within L'Etang Sec as small batches of magma bypassed the volcanic plug and rose to the surface. Meanwhile the great mass of magma that was entering the volcano's conduit from below slowly, relentlessly, forced the plug upward. Roughly cylindrical and some 200 meters in diameter, the solid plug rose through the lava **dome** and formed what came to be known as the spine of Pelee.

TT1: 在火山爆发的下一个阶段，小批岩浆绕过火山塞上升到地表时，一个粘稠的熔岩**圆顶**在“枯塘”内悄然生长。与此同时，大量的岩浆从下面不停地慢慢进入火山通道，把火山塞推上去。火山塞是固态，大致呈圆柱形，直径约 200 米，穿过熔岩**圆顶**，上升形成后来人们所称的培雷火山脊。

TT2: 在喷发的下一阶段，随着小批量岩浆绕过火山塞上升到地表，“枯塘”内悄悄生长出粘稠的“熔岩**穹丘**”（dome）。与此同时，大量的岩浆从下面不停地慢慢进入火山通道，把火山塞往上推。火山塞是固态，大致呈圆柱形，直径约 200 米，穿过熔岩**穹丘**，上升形成后来人们所称的“培雷脊”。

Analysis: The word “**dome**” is interpreted as“穹顶，圆顶”in Oxford Dictionary, so initially “a **dome** of viscous lava” was translated into “一个粘稠的熔岩**圆顶**”. The word “**dome**” appears again in the following part of the paragraph in the noun structure “the lava **dome**”, referring to “a dome of viscous lava” in the above. At first, “the lava **dome**” is translated into “熔岩**圆顶**” as in the previous sentence. After thinking over the context of the second “**dome**”, that “the solid plug rose through the lava **dome**”, the translator considers “**圆顶**” as not equivalent to the source meaning, because the solid plug must rise through a stereoscopic space and the Chinese

character “穹” could be better in revealing this indication than the character “圆”. Then the translation of “dome” is revised and changed from “圆顶” into “穹顶”. However, this translation maybe not quite accurate, so a search of the dictionary of technical terms is needed to make the translation professional and specific. The dictionary reveals that “the lava dome” means “火山穹丘：火山喷发时，由黏稠的酸性熔岩缓慢喷发而成的大约圆形的隆起物。” Hence, the word “dome” is translated into “穹丘” in the end, and the expression “a dome of viscous lava” is translated into “粘稠的熔岩穹丘”.

3.1.3 Judging the Meaning by Verification

The rapid development of modern information technology and the Internet has made the combination of terminology and computer technology popular(孙毅,孟林林,2018:30). Terminology verification and translation has changed from paper-based data to web-based information, but its essence is still a translation process of retrieval and verification. First, a term definition or context is searched, and then alternative translations are searched, compared, and validated using search engines and various online resources. The web search of term translation is essentially an extension of the search of dictionary and literature, but its fast, batch and multi-source characteristics improve the technical process of term translation.(卢植,胡健,2019:76) Therefore, in this translation practice, the translator mainly adopts the search and verification method of online dictionaries and network resources to improve the translation efficiency and accuracy.

Example 3

ST: The magma that finds its way upward into Mount Pelee is believed to have originated in a wedge of the earth’s upper mantle that lies between the subducted slab and Martinique’s crust.

TT1: 人们认为，上窜进入培雷火山的岩浆就来自于俯冲板块和马提尼克岛地壳之间的地球上地幔的楔形物。

TT2: 上窜进入培雷火山的岩浆，就来自俯冲板块和马提尼克岛地壳形成的

地球上地幔的地幔楔。

Analysis: According to the dictionary, the meaning of the word “wedge” is “楔子，三角木；楔形物，三角形物（尤指食物）”。Therefore, originally the word was translated into “楔形物”. After reverse verification by consulting parallel texts, it is found that this expression is almost not found in geological articles, but there is a concept of “地幔楔”. Then the translator started to verify the meaning of “地幔楔” in encyclopedia. The following information is found: Mantle wedge refers to a huge rock in the center of the mantle, which is subducted by ocean plates such as the Pacific plate and squeezed into the deep mantle to form a wedge-like structure. It is apparent that the term “地幔楔” is consistent with the meaning of the word “wedge” in the source text. So the the translator made the adaption of the translation.

Example 4

ST: The steam and gas emissions, though no one knew it then, indicated that magma was slowly rising into the volcano's conduit, fracturing the surrounding rock.

TT1: 蒸汽和含硫气体的喷出，表明岩浆正缓缓上升到火山管道中，使周围的岩石破裂，但当时没有人知道这一点。

TT2: 蒸汽和含硫气体的喷出，表明岩浆正缓缓上升到火山通道中，使周围的岩石破裂，但当时没有人知道这一点。

Analysis: According to the Oxford Dictionary, the word “conduit” means “液体、气体或电线的）管道，导管”，so “volcano's conduit” was originally translated into “火山管道”. Later, after searching in the *Earth Science Dictionary* it is found that the expression “volcano's conduit” has its corresponding technical term in geonomy as “火山喉管，火山通道”，referring to “the passage of magma going through the underground rock layer and running out of the crater or the outlet from the magma chamber to the surface”. Finally, according to the reverse verification of the network, there is no parlance of “火山管道” in the network resources. By continuing searching information in online resources, it is proved that there are some people making an explanation for “火山喉管” saying “Volcanic pipes are the channels through which magma erupts from the surface during volcanism, also known as volcanic channels

（火山管道）”。It is also found that the frequency of using the term “火山管道” is higher than that of “火山喉管”, and there is a specific professional explanation in China Science Communication section in Baidu encyclopedia for the term “火山通道”. Therefore, the translator adapted the translation by using “火山通道” to replace “火山管道”.

To sum up, when encountering lexical problems in the translation process, first of all, paper dictionaries or desktop dictionaries can be used to search for new words. If the translation is still inappropriate, the following three methods can be used to determine the lexical meaning. Firstly, the word meaning can be determined according to the context, which is the most time-saving and efficient method. The best words corresponding to the meaning of the original text could be selected combining the word meaning detected by the dictionary with the context. If the problem is still not solved through the context, the repetition or recurrence of the word in the context can be used. As long as the sentence where the word appears again is easy to understand, then the meaning of the word will be understood and a proper translation would be found. If the above methods don't work, the verification can be used to deal with the difficult words. The verification process mainly concerns about consulting network resources, such as Being website, Baidu Encyclopedia, official website of institutions or academic websites. After finding the corresponding target language, if you still have doubts on its accuracy, you may do the reverse check for the frequency of the use of the word in the target language, or consult parallel texts to find out whether the corresponding target word is a common word in the context of the target language. Then you may determine whether the translation is appropriate or not. After these three steps, most difficult words problems can be overcome.

3.2 Processing Complex Sentence Patterns

Category Shifts, a translation shift away from formal correspondence, is one of the theories of Translation Shifts proposed by English linguist and translation theorist Catford, which can be divided into four categories: structural shift, word class shift,

unit shift, and internal system shift.(Catford, 1965: 95) Structural shift, which mainly involves the transformation of grammatical structures, is one of the most common forms of transformation. In this translation practice, the author adopted the method of splitting-off sentence, rearranging elements, and reorganizing sentence to translate long and difficult sentences under the principle of accurate understanding and smooth expression. Sentence splitting is to break a sentence structure of the source language into several clauses or sentences of the target language, which mainly solves the sentences containing long attributive, adverbial and parenthesis in the original language. Rearranging elements mostly refers to the readjustment of attributive and adverbial positions in sentences according to the expression habits of the target language. Reorganizing sentence is more complex than the first two and can be simply understood as a combination of splitting-off and rearranging sentence.

3.2.1 Splitting-off Sentences

Splitting-off sentence is the process by which certain elements of a long sentence (sentence, phrase, or word) are separated from the main trunk of the sentence and processed separately to facilitate the overall arrangement of the sentence. It is often the case that there are some elements in long English sentences that are difficult to be translated by cutting or embedding. The practical way is to disassemble them and put them at the head or the end of the main sentence, so as not to cause logical mistakes.(刘宓庆,2019:154)

Example 5

ST: Martinique forms part of the gently eastward-curving volcanic island arc of the Lesser Antilles, an island chain that extends from Grenada northward to the tiny island of Saba, a distance of about 850 kilometers

TT1: 马提尼克岛构成“小安的列斯群岛”(Lesser Antilles)的一部分——向东平缓弯曲形成弧形火山列岛,始于格林纳达(Grenada)北部,绵延至小小的萨巴岛(Saba),长度大约850千米。

TT2: 马提尼克岛是“小安的列斯群岛”(Lesser Antilles)的一部分。“小

安德列斯群岛”向东平缓弯曲形成弧形火山岛链，从格林纳达（Grenada）向北延伸至萨巴（Saba）小岛，相距约 850 千米。

Analysis: The difficulty in translating this sentence lies in the processing of the underlined sentences. The first step is to analyze the structure of this sentence. The trunk of the sentence is “Martinique forms part” as its “subject-verb-object”. Following the object is a prepositional phrase, “of the gently eastward-curving volcanic island arc”, introduced by the preposition “of” and used as postpositive attributive, which is followed by another prepositional phrase “of the Lesser Antilles”. And there is a prepositive attributive “gently eastward-curving” modifying “island”, increasing the difficulty of the translation. In English, attributive can be put after the noun, but in Chinese, attributive must be put in front of nouns. Therefore, as for the example sentence with both prepositive and postpositive attributives, splitting method can be used to ensure logical clarity by separating one sentence into two or three sentences.

Example 6

ST: And in St. Pierre, ash-clogged sewers and polluted drinking water contributed to an out-break of a fatal, highly contagious pox called la verette.

TT1: 在圣皮埃尔，被灰烬堵塞的下水道和被污染的饮用水导致一种致命、高传染性的天花（la verette）爆发。

TT2: 在圣皮埃尔，下水道被灰烬堵塞，饮用水也被污染，这导致一种致命、高传染性的天花（la verette）爆发。

Analysis: The sentence structure in the source text seems simple, but its subject “ash-clogged sewers and polluted drinking water” is complicated, in which there are two past participle “ash-clogged”, “polluted” serving as attributives. It is directly translated as “被灰烬堵塞的下水道和被污染的饮用水”, with many meaning groups and no pauses, which makes the translation prolix and difficult for readers to understand when reading. According to the difference of “static and dynamic” between English and Chinese, the noun phrases “ash-clogged sewers” and “polluted drinking water” were separately translated into verb phrases “下水道被灰烬堵塞，饮用水也被污染”. By using parallel mechanism, the translation is catchy

to read. It also uses the word “这” to refer to the preceding text, so that the logic of the preceding and following sentences is clear and easy for readers to understand.

To sum up, if a sentence cannot be translated into a semantically equivalent one in the target language according to the structure of the source sentence, it should be split.

3.2.2 Adjusting Orders

The word order of the main elements in English and Chinese sentences like subject, predicate verb, and object is similar. However, the position of attributives and the order of adverbial clauses are different in English and Chinese, so the comparison of the order of English and Chinese is mainly the comparison of the similarities and differences of the position of specified words and adverbial clauses. In addition, there are many variations in English. For example, there are sentences with object subjects in source text, while the word order of Chinese sentences is relatively fixed, so it is necessary to adjust the word order according to needs when translating English into Chinese.

Example 7

ST: ① Comprising dense, brownish-black clouds of superheated gases, incandescent droplets of fresh magma, and fragments of rock from earlier volcanic events, ②**the blast originated** ③either from the rapid collapse of the rising eruption column ④or from failures in the flank of the volcano—or perhaps from both—and ⑤it headed straight for St. Pierre.

TT1: 带着浓密的棕黑色炙热气体云团，炽热的岩浆飞沫和早期火山活动的岩石碎片，这次喷发或是源于上升喷发柱的迅速坍塌，或是来自火山侧翼的崩塌，或者二者兼有，径直冲向圣皮埃尔。

TT2: 这次喷发或是源于上升喷发柱的迅速坍塌，或是来自火山侧翼的崩塌，或者二者兼有，裹挟着浓密、棕黑、炙热的气体云团，滚烫的岩浆飞沫和早期火山活动的岩石碎片，径直向圣皮埃尔冲去。

Analysis: This is a long sentence, so the first difficulty is to find out its main structure. By analyzing the use of commas, parallel conjunctions and noun phrase

blocks in the sentence, the final finding is that this source text contains two parallel simple sentences: ① is the adverbial of the first simple sentence, using the present participle phrase to compose a verb-object structure, describing the scene when the volcano erupted. ② is the subject and predicate of the simple sentence, ③ and ④ are the prepositional objects of the sentence, indicating the cause of the volcanic eruption. ⑤ is the second simple sentence in parallel. In English, adverbials of manner are often placed at the beginning of the sentence to be the bedding of a sentence. If it is translated in a synth-driven way, the translation may appear to be top-heavy. On the contrary, it is better to adjust the sentence order and translate the main point of the sentence first, indicating the cause of the eruption and then describing the state of the eruption, which makes the translation more logical in meaning.

Example 8

ST: Estimates of its temperature vary widely, but most suggest about 900 degrees Celsius when the cloud left the crater and 200 to 400 degrees when it reached the coast.

TT1: 对火山云温度的估计差异很大，但多数专家认为，其温度约为 900 摄氏度当云团离开火山口时；温度约在 200 至 400 摄氏度之间在到达海岸时。

TT2: 对火山云温度的估计差异很大，但多数专家认为，当云团离开火山口时，温度约为 900 摄氏度；到达海岸时，温度约在 200 至 400 摄氏度之间。

Analysis: The original sentence consists of two simple sentences, connected by the disjunctive conjunction “but”. The difficulty in the translation of this sentence lies in the translation of the object following the verb “suggest”. After analysis, it can be found that according to the meaning of the sentence, the verb “suggest” here should be connected with the object clause “its temperature was about 900 degrees Celsius”. However, the author omits the subject and predicate of the object clause here to avoid repetition because “its temperature” appears in the preceding sentence. The original object clause is a compound sentence containing two parallel objects and two adverbials of time guided by “when”. According to the Chinese expressing habits, the

adverbial of time “随着……” is usually placed at the beginning of the sentence to form the foundation of the sentence, and the trunk is placed after it. Therefore, the translation should first switch the position of the subject-subordinate sentence here.

3.2.3 Reorganizing Sentences

Chomsky's transformation generative grammar proposes that every sentence has a surface structure and a deep structure. According to Dr. Steven Pinker, Director of the National Centre for Language Research in Canada, “Deep structure is the interface between the dictionary of ideas and the structure of phrases” (Steven Pinker, 1994:63). Translation is not to transform the surface structure of the sentence, but to transform the deep meaning of the sentence, to accurately express the deep meaning of one language in another language, so it is necessary to study the deep structure of the sentence (张梅岗, 1999:26). In translation practice, when encountering a long and difficult sentence, the author first analyzes the surface structure of the sentence on the basis of grammar, then understands the deep semantic structure of the sentence, and converts the deep semantic meaning into Chinese in the end. In this process, sometimes a combination of splitting, rearranging and reorganizing is used to achieve the best translation.

Example 9

ST: Slavery was instituted early in the eighteenth century because of a growing need for cheap labor to operate the plantations economically.

TT1: 18 世纪早期奴隶制确立, 因为需要越来越多的廉价劳动力来节约种植园的经营成本。

TT2: 为节约种植园的经营成本, 对廉价劳动力的需求越来越大, 18 世纪早期奴隶制确立。

Analysis: Some complex sentences in English can not be converted into smooth Chinese only by splitting or rearranging, so the sentence needs to be reorganized, that is, the combination of splitting and rearranging of sentences. Although the original sentence is a simple sentence, it is not easy to translate. The first step is to split it. The composition of the original sentence is complicated, and the main trunk of the

sentence is “Slavery was instituted”, followed by an adverbial of time “early in the eighteenth century” and an adverbial of reason “because of a growing need for cheap labor to operate the plantations economically”. In the adverbial of reason, there is a post-positive attributive “to operate the plantations economically” modifying the word “labor”. If all the information is put in the same sentence and driven by the syntactic order, the Chinese sentence would seem cumbersome, and it would be difficult to distinguish which part is the primary or secondary. Therefore, the adverbial of reason should be split out and made it into a separate sentence.

The second step is to adjust and rearrange the sequence of the sentence elements. In the original sentence, the attributive “to operate the plantations economically” is located after the modified word “cheap labor”, while in Chinese, the attributive modifier is usually put before the noun. In addition, the position of English adverbs and prepositional phrases as adverbial in a sentence is very flexible, which can be placed at the beginning, in the middle, or at the end of the sentence. The characteristics of semantic advancement of Chinese sentences limit the position of adverbial clauses, which can not be changed flexibly, but can only be put in the place as needed. The third step is to reorganizing the sentence elements to get the appropriate translation based on splitting and rearrangement. It can be found that the revised translation presents the effect of advancing the sentence meaning layer by layer, which accords with the expression habit of Chinese.

Example 10

ST: The world knew nothing of what was happening on Martinique because by May 6 seismic activity spawned by the volcano had severed all cable connections with other islands.

TT1: 外界对岛上发生的一切一无所知，因为到 5 月 6 日，火山引发的地震活动切断了马提尼克岛与其他岛屿的所有电缆连接。

TT2: 5 月 6 日，火山引发的地震切断了马提尼克与其他岛屿的所有电缆连接，使得外界对岛上发生的一切一无所知。

Analysis: This sentence is a long and difficult sentence, and the sentence structure is very complicated. As for the initial translation, the meaning of the

sentence is not clear, and the result is presented first before the cause, which is not in line with the Chinese expression habit. When translating, the sentence should be split first, and then rearrange its elements, and reorganizing its structure in the end. When translating, the first step is to split the sentence based on groups of ideas: “The world knew nothing of what was happening on Martinique, because by May 6 seismic activity spawned by the volcano, had severed all cable connections with other islands.” Then the second step is to adjust the order, putting the time expression “5月6日” at the beginning of the sentence, and then introducing the reason “火山引发的地震切断了马提尼克与其他岛屿的所有电缆连接”, and presenting the effect “使得外界对岛上发生的一切一无所知” in the end. By reorganization, the translation is clear and logical in meaning, and much easier for readers to understand.

Example 11

ST: ①The real tragedy of Mount Pelee is ②that the vast majority of those people surely would have survived ③if government policy and the lack of knowledge about the nature of volcanoes had not discouraged their evacuation.

TT1: 如果当地政府的政策和对火山性质有关知识的匮乏, 没有阻碍他们撤离, 那么绝大多数人肯定会活下来, 这才是培雷火山真正的悲剧。

TT2: 如果当地政府没有阻止民众撤离, 如果人们再多些对火山的了解, 那么绝大多数人肯定能够幸免于难, 这才是这场悲剧之所在。

Analysis: The original sentence is an English compound sentence with subordinate clauses. Clause ② contains another clause ③, using the typical hierarchical nested structure in English sentence patterns. However, Chinese multi-running sentences often use parallel juxtaposition structures. Therefore, in this example the translator deconstructs a long and difficult sentence in the original text into a Chinese sentence containing 6 small sentences.

When translating the sentence, the first difficulty is to find out its main structure. At this time, it is necessary to carry out one-segmentation through the conjunctions “that, if”, and the noun phrase chunks in the sentence. By analyzing all the components, the

translator finds that it is a compound sentence. ① is the main sentence, using the “Subject-Link verb-Predicative Structure”. ② is a predicate clause, which uses the subjunctive mood and contains a subjunctive conditional ③ guided by “if”.

The second difficulty lies in framing the translation of the sentence. That is, to think: Is this sentence translated synthetically or does it need to be reordered? Obviously, this depends on the predicate clause after the “be verb”. Through observation, it is found that the predicate clause contains 29 words, the main sentence only 7 words, and the predicate clause contains a subjunctive subject-slave compound sentence. This is a typical English “End-weight” sentence. Since Chinese is the opposite of English, which is “Top-heavy”, this sentence must not be driven by the translation of the sentence. The translation must be in a reverse order, to translate predicate clause first, and then translate the main sentence. It is consistent with the Chinese “front center of gravity” rule.

The third difficulty is the translation of conditional sentences guided by “if”. It contains two subjects, each corresponding to the same predicate verb “had not discouraged”. Different subjects in English can correspond to the same predicate verb, but when translated into Chinese, it is necessary to match different verbs according to the meaning of the subject, and to split it from the original sentence and translate it into two Chinese clauses: “如果当地政府没有阻止民众撤离，如果人们再多些对火山的了解”。This method not only makes the meaning of the sentence clear, but also achieve the effect of layer by layer in tone with the use of parallel structure. And the use the conjunction “如果.....那么.....” reproduces the virtual structure in the original text. Thus, the sentence logic is smooth; the sentence meaning is complete and the content is coherent.

3.3 Achieving Intra-textual Coherence

Baker M. pointed out that coherence, similar to cohesion, is the network of relationships that organize and create a discourse. Cohesion is a network of surface relations that connects words and various means of expression in a text, while

coherence is a network of conceptual relations hidden beneath the surface of a text (Baker M, 2000: 218).

Discourse coherence can be represented by structural cohesion at the text level or semantic coherence in the deep structure (Halliday&Hasan,1976:303). According to Halliday's classification, English textual cohesion devices can be divided into five categories: reference, substitution, ellipse, conjunction and lexical cohesion. In this translation practice, the cohesive means of English original text mainly include three types: reference, conjunctive and lexical cohesion. Chinese cohesion is mainly through word order, repetition and logic. If the translation is literal according to the original English text, there will often be problems such as unclear expression and logic. In this translation practice, the author mainly uses three means to achieve textual coherence, namely, manifesting logic, specifying reference and connecting sentences.

3.3.1 Manifesting Logic

Ernst-August Gutt proposed Relevance Translation theory in his book *Translation and Relevance: Cognition and Context*. According to Gutt, translation also conforms to the general mode of communication, that is, translation is also a signification-reasoning communicative process(Gutt, 2004: 67). According to the relevance theory, in order to succeed in translation communication, the translator should enable the target reader to obtain the best contextual effect and find the best relevance without making unnecessary inferential efforts, so as to correctly understand the explicit and implied meaning of the original text to achieve information intention and communicative intention. Therefore, when necessary, the domestication translation strategy should be used to make the translation more coherent through the manifestation logic, so as to improve the effectiveness of translation and the readability of the translation.

Example 12

ST : ① The pre-election tension was exploited by the local newspaper *Les Colonies*, which supported white supremacy. ② First-page articles on April 21, 22, and 23, **headlined** “M. Knight et la Guerre des Races,” **depicted** Knight as inciting a

racial war.

TT1: 《殖民地报》(Les Colonies)是当地一家奉行白人至上主义的报纸，他们利用了选举前的紧张局势。4月21日、22日和23日，题为“奈特与种族战争”的头版文章，描述奈特煽动种族战争。

TT2: 《殖民地报》(Les Colonies)是当地一家奉行白人至上的报纸，他们利用选举前的紧张局势，分别在4月21日、22日和23日的头版刊登题为“奈特与种族战争”的文章，指责奈特正在煽动种族战争。

Analysis: The difficulty in the translation of this sentence lies in the translation of the words “headlined” and “depicted”. “headlined” can be viewed here as an adjectivized past participle meaning “entitled...”, indicating that the front-page article was titled “M. Knight et la Guerre des Races”. This translation is appropriate when the sentence appears alone, but when placed in these two sentences, it is somewhat abrupt and the information expression seems incomplete. In the context, it will be found that the sentence ① introduces the magazine “Colonial Newspaper”, and the sentence ② has a large amount of information. The combination of the two sentences here is more in line with Chinese expression habits. Therefore, “headlined” is translated as “刊登题为” and the information “刊登” is added so as to make the translation more smooth and logically link sentence ① and sentence ②. The word “depicted” is the predicate verb of the sentence ②, originally meaning “描述、描绘”, but if translated as “描述”, it does not match the object “as inciting a racial war (煽动种族战争)”. According to the context, Knight is the leader of the Socialist Party in Atinique, representing the interests of the black and mixed-race people at the bottom of society, and is bound to be marginalized and framed by this white supremacist newspaper, which is reflected in the sentence. Therefore, it is found from the context that the word “depicted” here carries a certain emotional color. In order to express the meaning of the original text, it is translated as “指责”, which not only makes sense in semantic logic, but also reflects the attitude of the Colonial newspaper toward Knight, realizing the semantic coherence of the article.

Example 13

ST: The governor's **thinking** was perhaps influenced by the fact that the volcano had been slumbering for half a century.

TT1: 总督的**想法**可能受到火山已经沉睡半个世纪这一事实的影响。

TT2: 总督**之所以不想让人们撤离**，可能**是因为**受到培雷火山已经沉睡半个世纪这一事实的影响。

Analysis: When translating, the translator should not only pay attention to the intention of the original author, but also be clear of the cognitive ability of the target reader. Only the perfect combination of the two can be regarded as a successful translation. Ignoring any one of them may make the target text fail to convey the original author's intention, or lead to the target readers' misreading of the original author's intention(姜海清,2009:95). This example sentence is at the beginning of the paragraph, if the word "thinking" is translated directly as "**想法**", it is unclear in meaning, and the reader is not sure whether "**想法**" refers to the above "opposition to the evacuation of the population of St. Pierre" or some other ideas. According to the context, the Governor opposed the evacuation for two reasons, one being political and the other being "the fact that Pelée Volcano has been asleep for half a century" in the sentence. Therefore, in order to clarify the specific content of "thinking" in this sentence and avoid ambiguity, it is translated into "**不想让人们撤离**" instead of "**想法**", and the adding of the Chinese conjunction "**之所以.....是因为**" makes the translation more logical in meaning and further manifests the textual logic.

Example 14

ST: Many of the people are obliged to **wear wet handkerchiefs over their faces** to protect them from the fumes of sulphur.

TT1: 许多人不得不用湿手帕**遮住脸**，以保护自己免受硫磺气体的伤害。

TT2: 许多人被迫用湿手帕**捂住口鼻**，以免受到硫磺烟雾的侵害。

Analysis: The difficulty in translating this sentence lies in the part "**wear wet handkerchiefs over their faces**", whether using handkerchiefs to cover face or nose and mouth. Relevance theory holds that translation is not a correspondence between words, but to achieve the purpose of communication, and the translator should accurately reproduce the meaning expressed by the original author in the original text

within the scope of the structure and semantic permission of the target language. According to the context, it is known that there is a lot of volcanic ash and sulfur smoke in the air when the volcano erupts, which is harmful to human body when breathed in. Covering the mouth and nose(捂住口鼻) with a wet handkerchief can prevent breathing in harmful gases. While “遮住脸” in Chinese usually means covering the entire face so as not to be exposed, but it does not prevent the inhalation of harmful substances. Therefore, the translation is adapted into “捂住口鼻”, which is more in line with the context and achieve textual coherence, as well as improve the readability of the target text.

3.3.2 Specifying Reference

Generally speaking, unless it is intended for emphasis or for rhetorical needs, English tends to avoid repetition as much as possible, and uses different words to express the same meaning or pronouns to refer to the previous nouns, so as to form lexical cohesion in the text. On the contrary, in order to avoid ambiguity and vagueness in expression, Chinese tends to use lexical repetition to connect the discourse(黄莹, 曹盛, 2009:14). Therefore, in the process of English-Chinese translation, sometimes the reference meaning in the English source text should be clarified or specified, and the means of repetition in the target text can avoid ambiguity and achieve text coherence.

Example 15

ST: Estimates of its temperature vary widely, but most suggest about 900 degrees Celsius when the cloud left the crater and 200 to 400 degrees when it reached the coast.

TT1: 对它的温度的估测有很大差异, 但大多数人认为, 火山云在离开火山口时约为 900 摄氏度, 在到达海岸时约为 200 至 400 摄氏度。

TT2: 对火山云温度的估计差异很大, 但多数专家认为, 当云团离开火山口时, 约为 900 摄氏度; 到达海岸时, 约在 200 至 400 摄氏度之间。

Analysis: The pronoun “its” appears at the beginning of the sentence, and if it is

directly translated as “它的”, the reference will be unclear. In the adapted translation, the meaning of “its” is revealed as “火山云温度”, which makes the reference of “it” clear and also can avoid ambiguity or the target reader’s misunderstanding. On the other hand, “火山云温度” in the adapted translation can also echo with “云团” in the latter part of the sentence, which increases the discourse coherence.

Example 16

ST: There was a tremendous explosion about 7:45 o’clock...The mountain was blown to pieces... The side of the volcano was ripped out, and there was hurled straight toward us a solid wall of flame. It sounded like thousands of cannon.

TT1: 约在 7 点 45 分, 发生了巨大的爆炸, ……山被炸成碎片, 火山的一侧被撕裂, 一道坚实的火焰墙直冲我们而来, 听起来就像数千门大炮。

TT2: 大约 7 点 45 分, 发生了一场巨大的爆炸。……山被炸成碎片……火山的一侧被撕裂, 一道坚实的火焰墙直冲我们而来。爆炸的声音听起来就像成千上万的大炮。

Analysis: The pronoun “it” in the example refers to “a tremendous explosion”, but it is far away from its signified words. And there are two ellipses in the original text, indicating that there is a lot of other information between them. If the pronoun “It” is translated directly as “声音” or not translated, there may appear ambiguity of the signified meaning. The target readers may be confused as to what exactly sounds like thousands of cannons. According to the context, the pronoun “It” here refers to the explosive sound in the previous text, so the translation of this pronoun is adapted as “爆炸的声音”, making the signified meaning explicit and the target text coherent.

Example 17

ST: Several low-magnitude earthquakes preceded and accompanied that activity. Their intensity gradually increased, and by the end of April they were occurring frequently.

TT1: 喷气活动之前及过程中发生过几次低震级地震, 后来它们的强度逐渐增加, 到 4 月底则频繁发生。

TT2: 喷气活动之前及过程中都发生过几次小型地震, 后来地震强度逐渐增

加，到 4 月底则频繁发生。

Analysis: The external forms of nouns in English can reflect their singular and plural forms, but Chinese cannot. In this example, it can be clearly seen that the pronoun “**Their**” refers to “earthquakes”, but if the pronoun “**Their**” is directly translated into “它们的”, its reference meaning will be unclear, because readers cannot judge whether the Chinese word “它们” refers to earthquakes or activities. Therefore, in the TT2, the translator adapted the translation of the word “**Their**” and used “地震” to replace “它们的”, which makes the referring content of “**Their**” clear, and the contextual meaning coherent and smooth.

Example 18

ST: ① Partial melting of mantle material in the wedge has formed batches of magma that have ascended and accumulated at the mantle-crust interface at a depth of about 30 kilometers. ② From there the magma has moved upward into the crust, which contains older volcanic rocks and layers of sedimentary rock.

TT1: 楔体中的地幔物质部分熔融形成大量的岩浆，这些岩浆上升并积聚在大约 30 千米深的地幔、地壳交界处。岩浆由此向上移动进入地壳，其中含有较古老的火山岩和沉积岩层。

TT2: 楔体中的地幔物质部分熔融形成大量岩浆，岩浆上升并积聚在约 30 千米深的地幔与地壳交界处，并由此向上进入地壳。地壳中含有较古老的火山岩和沉积岩层。

Analysis: The difficulty in translating this sentence lies in sentence ②. The sentence consists of a main sentence and a non-restrictive attributive clause guided by “which”, and the relative pronoun “which” refers to “crust”. The English sentence uses attributive clause to achieve coherence, and the meaning is easier to understand. There is no attributive clause in Chinese, and discourse cohesion is more realized by semantics and logic. In the initial translation, the method of literal translation was adopted, so the word “which” is translated into “其”, leading to vagueness in meaning: Whether magma or the crust contains older volcanic and sedimentary layers? In the adapted translation, the sentence ② is split, and the Chinese conjunction “并” is

added to the former part to achieve consistency with the previous sentence “岩浆上升并积聚在约 30 千米深的地幔与地壳交界处”. Then, by means of repetition, the relative pronoun “**which**” is translated as “**地壳**” referring to its meaning clearly to avoid ambiguity on understanding.

3.3.3 Adding and Substituting

Cohesion is one of the important components of a text, and it is an important means to achieve coherence in a discourse. In the book *Discourse and the Translator*, B.Hatim and I.Mason described the discourse features in this way: The discourse should be coherent, cohesive, and have a clear thematic structure(Hatim, Mason, 1990:76). So discourse is actually a unity of structure and meaning composed of various speech units, and cohesion is an indispensable means in the process of sentences constructing discourse. In the process of translation, it is necessary to make the necessary changes and adaptations to the cohesive ways of the original text by consciously applying the means which conform to the cohesion norms of the target language, so as to produce better textual results. There should be no apparent clues of manual creation to be discovered of the conversion from the source to the target language, which can be called “seamless” translation.(李长栓, 2009: 31)

Example 19

ST: ① The blast of fire from the volcano lasted only a few minutes. ② It shriveled and set fire to everything it touched.... ③ Before the volcano burst the landings of St. Pierre were crowded with people. ④ After the explosion not one living being was seen on land.

TT1: 火山喷发的火焰只持续了几分钟。它触及的一切都被烧焦或点燃。..... 火山爆发前, 圣皮埃尔的码头上人头攒动。爆发之后, 岛上再不见一丝生机。

TT2: 火山喷发的火焰只持续了几分钟, 却把触及的一切都点燃或烧焦..... 火山爆发前, 圣皮埃尔的码头上人头攒动, 而爆发之后, 岛上再不见一丝生机。

Analysis: In translation, if there are implied logical relations in the original text, Chinese conjunctions can be used to express the logical relations of the original text to

achieve the effect of textual coherence. A semantic understanding reveals an implicit transition between sentence① and sentence ②: the flame lasts only a few minutes, but scorches or ignites everything it touches. Sentences ③ and ④ show the contrast of the situation between “before the eruption” and “after the eruption”. In order to reflect the logical relationship between the sentences, the Chinese related words “却” and “而” are added respectively in the adapted translation so as to make the connection between the sentences closer and more coherent.

Example 20

ST: He was badly burned, however, and spent four days without food or water, in an agony of ignorance about what had happened to the world outside. Finally his cries were heard, and he was rescued.

TT1: 然而，他被严重烧伤，四天没吃没喝，对外面发生的事情一无所知，极度痛苦。后来，人们听到他的叫喊声，把他救了出来。

TT2: 然而，他还是被严重烧伤，四天没吃没喝，极度痛苦，对外面发生的一切一无所知。后来，人们听到他的喊声，才把他救了出来。

Analysis: In the initial translation, Chinese conjunctions were not added to represent logical relations, and literal translation could not render and accentuate the atmosphere at that time and express the tragic situation of the man. In the adapted translation, the Chinese adverb “还是” is added, which can carry on the meaning of the previous text, “although he avoided a bullet by chance, he was still affected and burned seriously”. It serves as a connecting link between the preceding and the following, realizing semantic coherence with the previous text. And the Amplification of the Chinese word “才” plays the same role, which accentuates the man’s suffering in side ways and makes the context more coherent.

Example 21

ST: Large eruptions, like those that occurred from 1902 to 1905, probably occur only once in about 500 years. Even the 1902-1905 events, though disastrous in their consequences for the human population, were relatively minor in terms of geological significance—except for the historical fact that they produced the first eruption identified as a nuee ardente, or pyroclastic flow.

TT1: 像 1902-1905 年的火山喷发事件, 大约 500 年才会发生一次。1902-1905 年的火山喷发事件, 虽然给人类带来灾难性的后果, 但除了被认定为历史上炽热火山云或火山碎屑流的首次喷发外, 其地质意义相对较小。

TT2: 像 1902-1905 年那种大型喷发, 大约 500 年才会发生一次。但即便是 这种大型喷发事件, 给人类带来灭顶之灾, 但除了历史上被首次认定的“发光云”之外, 其地质意义并不大。

Analysis: The time “1902-1905” appears twice in the original text, referring to the time of large eruptions. In the initial translation, the two are translated literally the same way as “1902-1905 年的火山喷发事件”, which seems cumbersome, neither being concise nor reflecting the logical relationship between the two sentences.

The process of translation is to build a text with the help of linguistic means in another language, and at the same time to reconstruct a meaningful network of conceptual relations at the text level in a new cultural atmosphere, thus translators should ensure the realization of coherence hidden under the surface of the text (钟书能, 李英垣, 2004:16). Chinese text tends to use semantics and logic to achieve coherence. Therefore, using the method of omission and the pronoun “这种” as substitution, “the 1902-1905 events” in the second source sentence is translated as “这种大型喷发事件”, which can not only reflect the logical relationship between two sentences, but also realize the cohesion and coherence between sentences.

From the above case study, it is enlightened that the translator should dare to set aside the source text and find the most appropriate counterpart in the target language.

Chapter 4 Conclusion

A translation practice should not stop at the completion of the translation, but it should also include the revision of the translation, the summary and reflection on the translation practice process. A translator needs generalize the findings and gains in the translation practice and reflect on the his shortcomings to improve the translation ability and level and do better assignment in the next translation practice.

4.1 Proofreading

Post-translation proofreading is crucial to the accuracy and fluency of the final translation. Translation proofreading is an essential step in the smooth implementation of translation projects and the control of translation quality(陈朗,李婧,孙毅,2022:46). “Proofreading is the examination of a translation to determine whether the quality of the translation is satisfactory and to make necessary changes.” (Mossop, 2011:1) As for this translation practice, the source text is long, which contains some professional content of geology, so it is inevitable that there may be some subjective errors in the translation. Post-translation revision has become an effective way to polish the translation.

In this translation practice, three rounds of proofreading were carried out after the translation was completed: self-proofreading, inter-group proofreading and tutor proofreading. In the process of self-proofreading, the translator checks and polishes the translation in detail by herself, mainly checking whether there are some apparent errors or omissions of translation, and whether there are some format problems or inaccurate verification. Inter-group proofreading refers to cross-revision among members of the translation team, which mainly focuses on the readability of the translation. Being influenced and limited by the source text, the translator is often unable to find the expressing errors in the translation. However, in the absence of the source text, team members can read through the translation directly, which is easier to find out the part that is not smooth or comprehensible in the translation. At this time,

they can make marks, and then consider or modify the original text. At last, the teacher will review and revise the translation problems in some complex sentence patterns, and give guidance to the inappropriate expressions of the translated words. On this basis, the author then refines and improves the translation, and the final draft is finalized through repeated revisions.

4.2 Reflections

First of all, through this translation practice, the author realizes the necessity of preparation before translation. After the translation materials were determined, the author actively consulted relevant materials according to the original content and read many parallel texts to understand and get familiar with relevant professional vocabulary. With a deep understanding of the translation practice material, the translator may accelerate the speed of translation, and improve the professionalism and accuracy of the translation. In addition, before translation, it is necessary to prepare translation tools, such as professional terminology dictionaries, online dictionaries, network terminology databases, online translation software, etc., and learn the use of relevant computer-aided translation software. Building a terminology database with fellow translators is also important to improve the accuracy and professionalism of translation.

Secondly, translation can not be accomplished marvelously with rigid thinking or using one set of certain translation strategies or methods. Translator should treat and deal with different translation problems flexibly. Today, there are many methods and principles for the processing of English-Chinese sentences. However, these translation principles and methods are not always applicable, and if some translation strategies and methods are rigidly used in translation, the result may be the same as machine translation, full of mistakes or awkward sentences.

On one hand, in this translation practice, as for the translation of professional words, the author pays special attention to judging the meaning according to the context and determining the meaning through multiple verification. For the translation

of long and difficult sentences, the translator uses different methods flexibly as splitting-off, adjusting and reorganizing the sentences, so that the translation can not only present the information of the original text and the authors' expressing intention, but also conform to the expression habits of the target language. At the same time, different ways such as manifesting logic, specifying reference and adding connecting words are adopted to achieve complete information transmission, smooth sentence cohesion and coherence of text content.

On the other hand, the language style and writing characteristics of the source text should be reproduced in target language. For highly professional informational text content, such as the introduction of local geography and geology, the formation and eruption process of volcanoes, etc., professional, objective and logical translation should be emphasized. However, when translating the impact of volcanic eruptions on local animals, plants and residents' lives, appropriate descriptive expression should be used to highlight the disaster and set off the atmosphere. Thus, the language style and characteristics of the original text can be reproduced. Therefore, in the process of translation, whether to use a certain translation strategy or method and which strategy or method to use depends on the text type, text content and specific context.

Thirdly, the present is an era of rapid development and iteration of science and technology, so modern translation technology and means can be fully utilized in translation, such as using computer-aided translation technology to make electronic dictionaries, term databases and corpora, etc., so as to make translation more handy and improve the efficiency and accuracy of translation. At the same time, the translation level and utilization rate of machine is getting higher and higher, and it even has become a necessary means for translators, so improving the ability and level of post-translation editing is becoming more and more important for translators.

4.3 Limitations

Less knowledge reserve. Due to differences in language, cultural background, knowledge reserve and humanistic quality, there may be deviations in the author's

understanding of the original work, which may result in the translation failing to perfectly restore part of the source information, and there may even be mistakes or omissions in translation. In addition, due to the lack of professional talents in earth science and geological science, the knowledge reserve of this professional field is still insufficient, so there may be some situations in the translation that the professional words are not authentic, the sentence expression is not professional, and the information is not in place. Therefore, in the future work and study, the translator should accumulate more encyclopedic knowledge and know more information of different fields.

Low level of writing. For translators, the understanding of the original text is the basis of translation, and the proper expression and output of information in the target language is the ultimate goal of translation. Due to the influence of English-Chinese bilingual conversion ability and writing level, some parts of the translation are redundant, or failed to fully express the source information. For English-Chinese translation, especially when translating non-literary texts, we should pay attention to the conciseness of Chinese expressions. In addition, due to the influence of English learning over the years, the use of English and Chinese sentence structures has been partially confused and mixed, and some Europeanized Chinese expressions may appear in the translation. Therefore, in the future study, the bilingual ability of both English and Chinese and writing level should continue to be improved.

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Appendices

Appendix 1 Glossary and Proper Nouns

序号	英文	中文
1	Ajoupa-Bouillon	阿茹帕布永村
2	Amédee Knight	阿米迪·奈特
3	Auguste Ciparis	奥古斯特·奇帕里斯
4	Barnum and Bailey Circus	巴纳姆和贝利马戏团
5	békés	贝柯人
6	bêtes-a-mille-pattes	大黑蜈蚣
7	Blanche River	布兰奇河
8	Blanche River refinery	布兰奇河炼糖厂
9	Caribbean plate	加勒比板块
10	Castries	卡斯特里港
11	chamber	岩浆室
12	Charles Thompson	查尔斯·汤普森
13	cinder cone	火山渣锥
14	Compagnie des Isles d'Amerique	法国美洲群岛公司
15	conduit	火山通道
16	crater	火山口
17	davit	吊艇架
18	dome	熔岩穹丘
19	Edward Freeman	爱德华·弗里曼
20	Ellery Scott	埃勒里·斯科特
21	Eugene Guerin	尤金·盖林
22	fault	断层
23	fer-de-lances	致命毒蛇
24	Fort-de-France	法兰西堡
25	fourmis-fous	黄色蚂蚁
26	fumarole	火山喷口
27	Gaston Landes	加斯顿·兰德斯
28	Georges Lhuerre	乔治·卢尔雷
29	Gordon Thomas	戈登·托马斯
30	Grappler	捕获者号
31	Grenada	格林纳达
32	L'Etang Sec	枯塘
33	La Sou-friere	苏弗里耶尔火山
34	la verette	天花
35	Lac des Palmistes	棕榈湖

36	Le Morne Rouge	勒莫讷鲁日镇
37	Le Prêcheur	勒普雷舍村
38	Les Colonies	殖民地报
39	Lesser Antilles	小安的列斯群岛
40	Louis Mouttet	路易·穆泰
41	magma	岩浆
42	Martinique	马提尼克岛
43	Max Morgan Witts	马克斯·摩根·威茨
44	Mid-Atlantic Ridge	中大西洋海岭
45	molten rock	熔岩
46	Morne Jacob	莫恩雅各布火山
47	Mount Conil	康尼尔火山
48	Mount Pelée	培雷火山
49	Muggah	穆加
50	North American plate	北美板块
51	Pitons du Carbet	卡贝尔火山
52	pyroclastic flow	火山碎屑流
53	Roddam	罗达姆号
54	Roger Fouche	罗杰·福凯
55	Roraima	罗赖马号蒸汽船
56	Roxelane	罗赛兰河
57	runoff	径流
58	sedimentary rock	沉积岩
59	Solange Contour	索朗·孔图尔
60	spine	熔岩柱
61	St. Lucia	圣卢西亚岛
62	St. Philomène	圣菲洛梅村
63	St. Vincent	圣文森特岛
64	strain release	应变释放
65	Thomas Prentis	托马斯·普伦蒂斯
66	volcanic explosivity index (VEI)	火山爆发指数
67	volcanic plug	火山塞
68	wedge	地幔楔

Appendix 2 Source Text and Target Text

Source Text	Target Text
Chapter 8. The 1902 Eruption of Mount Pelée: A Geological Catastrophe with Political Overtones	第八章 1902 年培雷火山 (Mount Pelée) 爆发: 带有政治色彩的地质灾害
There is nothing in the activity of Pelée that warrants a departure from St. Pierre. The Governor's Commission of Inquiry, May 5, 1902	培雷火山的活动表明我们没有任何理由必须离开圣皮埃尔。 总督调查委员会 1902 年 5 月 5 日
ON MAY 8, 1902, Mount Pelée, a volcano at the northern end of the Caribbean island of Martinique, erupted and destroyed the city of St. Pierre, only about 6 kilometers away. The city's entire population—30,000 people—died almost instantly. The volcano had provided many warnings of an impending eruption, if only the science of volcanology had been far enough advanced for the warnings to have been understood. And tragically, for political reasons, government authorities on Martinique discouraged, and in at least one town prohibited, the evacuation of people despite obvious indications of volcanic activity. The catastrophe also ended a political movement that could have led to a more representative form of government on that island colony of France.	1902 年 5 月 8 日, 加勒比海 (Caribbean) 马提尼克岛 (Martinique) 北部的培雷火山爆发, 摧毁了大约 6 千米外的圣皮埃尔市 (St. Pierre)。这座城市有人口 3 万, 几乎全部瞬间丧命。在这之前, 这座火山曾多次显现出即将爆发的警示, 可惜当时的火山学发展比较落后, 人们还无法理解那些警示。另外, 尽管已经出现火山活动的明显迹象, 由于一些政治原因, 马提尼克岛的政府官员仍阻止当地居民疏散, 甚至明令禁止某些城镇进行人员撤离, 最终酿成悲剧。这场灾难也终结了一场政治运动, 该运动本可能在这个隶属于法国的殖民地岛屿上建立一个政府, 代表更多人的利益。
The 1902 eruption of Pelée was the first	1902 年培雷火山爆发, 首次公认出

recognized example of what French geologists named a <i>nuée ardente</i> (glowing cloud). More widely known today as a pyroclastic flow—a gravity-controlled cloud of superheated gases and fragmental (pyroclastic) material moving rapidly over the surface of the ground rather than upward into the atmosphere. Geologists concluded that the phenomenon was caused by a plug of molten rock, or magma, that had solidified and sealed the volcano's conduit, so the enormous pressures building up within the mountain burst out horizontally for the most part instead of vertically. Such eruptions, not identified before 1902, are now called Peléan eruptions. Interest in the origin of the 1902 event changed the study of volcanoes from a minor branch of geology to an important science in its own right.	现了由法国地质学家命名的“发光云”，今天更多称为“火山碎屑流”。这是一种由超高热气体和碎屑物质组成的重力控制云，在地表上快速移动，而不是向上进入大气层。地质学家认为，这种现象是由熔岩或岩浆堵塞引起的，岩浆凝固并封住了火山的管道，导致山体内积聚的巨大压力以水平而不是垂直方式爆发。这种喷发形式在 1902 年之前从未被发现过，现在人们称之为“培雷式喷发”。这次火山事件引起人们极大的兴趣，使火山研究从地质学的一个小分支变成一门重要的独立学科。
After the initial devastating blast, new eruptions occurred throughout the month of May and continued intermittently for three years, until 1905. The volcano was again intermittently active from September 1929 to December 1932 but has been dormant since then. The cumulative thickness of deposits from the 1902-1905 and 1929-1932 events varies from a few meters on the steep slopes near the top of Pelée to several tens of meters in valleys farther down the mountainside.	在第一次毁灭性的爆发之后，新的喷发在整个 5 月不断发生，并断断续续持续了三年，直至 1905 年。1929 年 9 月至 1932 年 12 月，这座火山再次间歇性活跃，但此后一直处于休眠状态。1902-1905 年和 1929-1932 年间因火山活动堆积的沉积物，在山顶附近的陡坡处有几米厚，而在山坡较远处的山谷中则厚达几十米。

<u>Martinique forms part of the gently eastward-curving volcanic island arc of the Lesser Antilles, an island chain that extends from Grenada northward to the tiny island of Saba, a distance of about 850 kilometers (Figure 8-1).</u> Volcanism in the islands is related to the collision of the Caribbean tectonic plate with a segment of the Atlantic sea floor that is part of the North American plate. The convergence began when new crust started forming along the Mid-Atlantic Ridge, spreading the sea floor and opening the Atlantic Ocean. In the early stages, the Caribbean plate moved northeast, then east, as the floor of the Atlantic spread westward.	马提尼克岛是“小安的列斯群岛”(Lesser Antilles)的一部分。“小安德列斯群岛”向东平缓弯曲形成弧形火山岛链，从格林纳达(Grenada)向北延伸至萨巴(Saba)小岛，相距约850千米(图8-1)。加勒比构造板块与北美板块的大西洋海底地段发生碰撞，导致这些岛屿的火山活动不断。当新的地壳沿中大西洋海岭开始形成时，板块开始汇聚碰撞，海底扩张，大西洋打开。在早期阶段，随着大西洋海底向西扩张，加勒比板块先向东北移动，再向东移动。
At a rate of about 2 centimeters a year, the North American plate is being subducted beneath the Caribbean plate at an angle of 50 to 60 degrees. The subducted slab is now about 140 kilometers beneath Martinique. <u>The magma that finds its way upward into Mount Pelee is believed to have originated in a wedge of the earth's upper mantle that lies between the subducted slab and Martinique's crust. (Figure8-1)</u>	北美板块正以每年约2厘米的速度，50到60度的角度俯冲到加勒比板块下面。这个俯冲板块现在位于马提尼克岛下方约140千米处。<u>上窜进入培雷火山的岩浆，就来自俯冲板块和马提尼克岛地壳形成的地球上地幔的地幔楔。(图8-1)</u>
<u>Partial melting of mantle material in the wedge has formed batches of magma that have ascended and accumulated at the mantle-crust interface at a depth of about 30</u>	楔体中的地幔物质部分熔融形成大量岩浆，岩浆上升并积聚在约30千米深的地幔与地壳交界处，并由此向上进入地壳。地壳中含有较古老的火山岩和沉

<u>kilometers. From there the magma has moved upward into the crust, which contains older volcanic rocks and layers of sedimentary rock.</u> The magma has risen intermittently and is thought to have accumulated first in a large chamber about 15 to 20 kilometers deep in the crust. There it would have become differentiated chemically. Magma rich in heavy elements would have settled to the bottom of the chamber while silica-rich, hence lighter, magma would have accumulated at the top. Increasing pressures in the upper part of the chamber would make the volcano erupt explosively—most likely when fresh batches of magma were being injected into the chamber from below.	积岩层。岩浆间歇性上升，先是在地壳深处约 15 至 20 千米处的一个大岩浆室内积聚，并产生化学上的分化。富含重元素的岩浆会沉淀到岩浆室的底部，而富含硅元素、质量较轻的岩浆，则会积聚在顶部。随着新一批岩浆从下部涌入岩浆室，上部的压力不断增加，就会导致火山喷发。
During the period from about 16 million to 5 million years ago, volcanic eruptions in the region changed from submarine to subaerial and thus began to form islands. On the island of Martinique, the oldest volcanoes—Morne Jacob, the Pitons du Carbet, and Mount Conil—first erupted 3 to 4 million years ago (Figure 8-2, bottom).	约 1600 万~500 万年前，该地区火山喷发由海底向陆上转变，开始形成岛屿。在马提尼克岛上，最古老的火山——莫恩雅各布（Morne Jacob）、卡贝尔（Pitons du Carbet）和康尼尔（Mount Conil）——于 300 万至 400 万年前首次喷发(图 8-2，底部)。
Mount Pelée is believed to have first erupted about 200,000 years ago. Now rising to a height of 1,397 meters and occupying about 120 square kilometers of northern Martinique, it dominates the topography of the	培雷火山约在 20 万年前首次喷发，如今海拔达 1397 米，占地面积 120 平方千米，位于马提尼克岛北部，是岛上最具特色的地貌。降雨、径流以及滑坡引发的侵蚀，摧毁了原本呈锥状的山体，

island. Erosion from rainfall and runoff, as well as from landslides, has destroyed the once-conical symmetry of the mountain and has left deep valleys in its flanks. Volcanic rocks exposed in the valleys and sampled in drill cores indicate that there were major eruptions around 65B.C.E., 280C.E., and 1300C.E., with many minor eruptions in between. Mount Pelée is among the most active of the Lesser Antilles volcanoes. There were at least forty-six eruptions in the period from 50,000 to 3,000 years ago, and there have been twenty-six since then.	在侧翼形成深谷。山谷中露出的火山岩和岩心钻探采集的样本表明，在大约公元前 65 年、公元 280 年和 1300 年，此处都发生过大规模喷发，期间伴随多次小型喷发。培雷火山是小安的列斯群岛最活跃的火山之一。在 5 万年前到 3000 年前的这段时间里，它至少喷发过 46 次，之后又喷发过 26 次。
A record of worldwide eruptions compiled by geologists Tom Simkin and Lee Siebert of the Smithsonian Institution in Washington suggests that Pelee generally has erupted at intervals of 50 to 150 years.¹ In historical times Pelee was active in(Figure 8-2)1792, 1851, 1902-1905, and 1929-1932. The activity in 1792 and 1851 was minor compared with the eruption of 1902, but it destroyed all vegetation at the top of the mountain—hence the name Pelee, French for bald or peeled. <u>Large eruptions, like those that occurred from 1902 to 1905, probably occur only once in about 500 years. Even the 1902-1905 events, though disastrous in their consequences for the human population, were</u>	“华盛顿史密森学会”地质学家汤姆·西姆金 (Tom Simkin) 和李·西伯特 (Lee Siebert) 编纂的世界火山喷发记录表明，培雷火山通常每隔 50 至 150 年就会喷发一次。历史上，培雷火山分别在 1792、1851、1902-1905 和 1929-1932 年表现活跃。与 1902 年的大喷发相比，1792 年和 1851 年的活动相对较小，但它摧毁了山顶的所有植被，因而得名“培雷”(Pelee)，法语意为“秃顶”或“剥皮”。<u>像 1902-1905 年那种大型喷发，大约 500 年才会发生一次。即便是这种大型喷发事件，给人类带来灭顶之灾，但除了历史上被首次认定的“发光云”之外，其地质意义并不大。</u>

<u>relatively minor in terms of geological significance—except for the historical fact that they produced the first eruption identified as a nuee ardente, or pyroclastic flow.</u>	
The remains of three craters are visible at the higher elevations of Pelee. The largest and oldest was the eruption center up until about 40,000 years ago. Two smaller craters were formed along a northeast-southwest-trending fault inside the older crater. <u>One of those craters, toward the southwest and known in 1902 as L’Etang Sec (the dry pond), had at one time contained water; the other, toward the northeast, was called the Lac des Palmistes and did contain water in 1902.</u> The topography of all three has been changed considerably by twentieth-century volcanism, and only the two smaller craters are easily distinguishable now.	在培雷火山海拔较高的区域，可以看到三个火山口的遗迹。最大、最古老的那个是约 4 万年前火山喷发的中心。在老火山口里面，沿着东北-西南走向的断层又形成两个较小的火山口：一个朝向西南，1902 年时人们叫它“枯塘”（L’Etang Sec），里面曾经有过水；另一个朝向东北，人们叫它“棕榈湖”（Lac des Palmistes），1902 年时里面确实有水。不过由于 20 世纪的火山活动，这三个火山口的地形都发生了很大变化，如今只有两个较小的火山口还能辨别出来。
The first sign of the volcanic activity that destroyed St.Pierre came as early as 1898, when sulfurous gases were emitted from fumaroles, or vents, in L’Etang Sec. Fumaroles also appeared in the upper reaches of the Blanche River, which flowed down the southwest flank of Pelee in a deep gorge marking the trace of the northeast-southwest-trending fault. That activity waned but had resumed by 1901,	早在 1898 年，摧毁圣皮埃尔的火山活动就第一次发出信号，含硫气体从“枯塘”冒了出来。布兰奇河（Blanche River）上游也出现了火山喷口，这条河沿着培雷火山西南侧幽深的峡谷流淌，标志着东北-西南走向断层的痕迹。之后喷气现象逐渐减弱，但在 1901 年又再次恢复，当时过热的地下水产生了少量蒸汽。到 1902 年 2 月，马提尼克岛西海岸的勒普雷舍（Le Prêcheur）渔村附近探测到含

when there were minor eruptions of steam from superheated groundwater. By February 1902 the gases, carried downwind, were detected near Le Precheur, a fishing village on the west coast of Martinique about 6 kilometers from L'Etang Sec (Figure 8-2, top).	硫气体，它们随风而至，距离“枯塘”约 6 千米(图 8-2，上部)。
<u>The steam and gas emissions, though no one knew it then, indicated that magma was slowly rising into the volcano's conduit, fracturing the surrounding rock. Several low-magnitude earthquakes preceded and accompanied that activity. Their intensity gradually increased, and by the end of April they were occurring frequently.</u>	<u>蒸汽和含硫气体的喷出，表明岩浆正缓缓上升到火山通道中，使周围的岩石破裂，但当时没有人知道这一点。喷气活动之前及过程中都发生过几次小型地震，后来地震强度逐渐增加，到 4 月底则频繁发生。</u>
<u>During the next phase of the eruption, a dome of viscous lava quietly grew within L'Etang Sec as small batches of magma bypassed the volcanic plug and rose to the surface. Meanwhile the great mass of magma that was entering the volcano's conduit from below slowly, relentlessly, forced the plug upward. Roughly cylindrical and some 200 meters in diameter, the solid plug rose through the lava dome and formed what came to be known as the spine of Pelee (Figure 8-3). The spine continued to rise 3 to 6 meters a day, crumbling along its edges but supported by magma extrusions around its periphery. At the time of the catastrophic eruption on May 8, it</u>	<u>在喷发的下一阶段，随着小批量岩浆绕过火山塞上升到地表，“枯塘”内悄悄生长出粘稠的“熔岩穹丘”(dome)。与此同时，大量的岩浆从下面不停地慢慢进入火山通道，把火山塞往上推。火山塞是固态，大致呈圆柱形，直径约 200 米，穿过熔岩穹丘，上升形成后来人们所称的“培雷脊”(图 8-3)。“培雷脊”每天持续上升 3 到 6 米，边缘处有塌陷，但周围的岩浆喷出物又支撑着它。在 5 月 8 日剧烈喷发时，它已高于原火山口底部 115 米。</u>

had reached a height of 115 meters above the former floor of the crater.	
Magma forced its way upward in increasingly larger volumes, branching into fissures that radiated from the central conduit, causing inflation, or swelling, of the mountain. On May 4 one such fissure opened beneath the village of Ajoupa-Bouillon on the northeast flank of Pelee, emitting scalding steam and boiling mud and killing a number of people.	岩浆强行上升，总量越来越大，从中央管道辐射出许多裂缝，引发山体膨胀或隆起。5月4日，培雷火山东北侧的阿茹帕布永村（Ajoupa-Bouillon）的地面出现一条裂缝，喷出滚烫的蒸汽和沸腾的泥浆，造成多人死亡。
Loud detonations continued from the mountain at irregular but short intervals, accompanied by dense smoke and lurid flashes of fire and lightning, reflected in the clouds shrouding the volcano's peak. Especially at night the spectacle was frightening.	山上不断传来巨大的爆炸声，断断续续，但间隔时间很短，同时伴有浓烟和可怕的火焰和闪电，掩映在山顶的云层中。尤其是在夜晚，这种景象更是吓人。
Earthquakes, ashfalls, and warming of the earth caused by rising magma drove most ground-dwelling animals down from Pelee's higher elevations. Columns of ants and large numbers of centipedes and snakes (many of them poisonous) invaded outlying plantations and parts of St. Pierre. Birds were overcome by volcanic gases in the atmosphere and died, dropping out of the air like stones.	地震、火山灰坠落和岩浆上升导致地面温度升高，使许多居住在培雷火山高处的动物四处逃窜。成群的蚂蚁、大量的蜈蚣和蛇（许多是毒蛇）侵入郊外的种植园和圣皮埃尔部分地区。鸟儿被火山气体呛死，像石头一样从空中掉落。
On May 7 St. Pierre was shaken by detonations like artillery fire that were heard	5月7日，圣皮埃尔被炮火般的爆炸声惊醒，整个安的列斯群岛都能听到。

throughout the Antilles. The plug in Pelee's throat had apparently risen high enough for the magma to begin bypassing it explosively.	显然，培雷火山通道内的火山塞已经上升得足够高，使岩浆得以绕过它开始爆发。
At 8:02 A.M. on May 8, there were four deafening explosions in rapid succession. The mountain's climactic eruption began with a vertical column of smoke and ash, which rose from L'Etang Sec and spread across the sky. The eruption was followed almost immediately by a powerful lateral blast from a notch in the southwestern rim of the crater. The blast was, of course, a pyroclastic flow. <u>Comprising dense, brownish-black clouds of superheated gases, incandescent droplets of fresh magma, and fragments of rock from earlier volcanic events, the blast originated either from the rapid collapse of the rising eruption column or from failures in the flank of the volcano—or perhaps from both—and it headed straight for St. Pierre(Figure 8-2, top).</u>	5月8日上午8时2分，接连发生四次震耳欲聋的爆炸。一股浓密的灰烟柱从“枯塘”垂直升起，席卷整片天空，培雷火山开始剧烈喷发。随即，火山口西南边缘出现猛烈的侧向喷发。当然，这次喷出的就是火山碎屑流。<u>这次喷发或是源于上升喷发柱的迅速坍塌，或是来自火山侧翼的崩塌，或者二者兼有，裹挟着浓密、棕黑、炙热的气体云团，滚烫的岩浆飞沫和早期火山活动的岩石碎片，径直向圣皮埃尔冲去（图8-2，上部）。</u>
The pyroclastic flow expanded both vertically and horizontally as it sped down the mountainside toward the coast. It set fire to forest trees and cane fields over a wide area. In seconds it engulfed the village of St. Philomene, a northern suburb of St. Pierre, and almost simultaneously it destroyed the city itself. The hot, turbulent cloud is estimated to have been moving as fast as 500	火山碎屑流同时在垂直和水平方向扩散，飞速冲下山坡，涌向海岸。它一路烧毁大片森林和甘蔗田。几秒钟之间，就吞没了圣皮埃尔北郊的圣菲洛梅村（St. Philomène），又几乎同时摧毁了这座城市。据估计，这片汹涌的炙热云团入海时的速度已达到每小时500千米。

kilometers an hour when it reached the sea.	
Pelee erupted again in 1904, and a pyroclastic flow like that of 1902 was photographed by Alfred Lacroix, a French geologist. His photograph, reproduced in Figure 8-4, dramatically shows the height, density, and massive turbulence of the cloud produced by such a catastrophic event.	1904 年，培雷火山再次爆发，法国地质学家阿尔弗雷德·拉克鲁瓦(Alfred Lacroix)拍摄到了类似 1902 年那样的火山碎屑流。图 8-4 中再现了他的照片，生动展示了由这种灾难产生的火山云团的高度、密度和剧烈湍流。
Magma continued to push upward after the 1902 eruption, and by the end of May the lava dome had risen above the crater's rim. Pelee's spine continued to rise as well, reaching a height of 150 meters above the former crater floor by the end of May. Compared with destructive eruptions of other volcanoes, the eruption of Pelee produced a small volume of magma, probably less than half a cubic kilometer. Nevertheless, because of the height of the eruption cloud, the volcanic explosivity index (VEI) has been estimated at 4, which volcanologists consider "large".	1902 年火山爆发后，岩浆继续上涌。到 5 月底，熔岩穹丘已经上升到火山口边缘之上。培雷火山的熔岩柱也在继续上升，此时已超出旧火山口 150 米。相较于其他破坏性的喷发，培雷火山喷出的岩浆体量较小，可能不到半立方千米。然而，由于喷发云的高度，火山爆发指数 (VEI) 估值为 4，也属于“大型”喷发。
The first pyroclastic flow, on May 8, left a denuded, wind-blown wasteland, crumbled ruins, burned-out shipwrecks, and approximately 30,000 human corpses. There was little left to be destroyed by the subsequent eruptions, which mercifully blanketed the cruel scene with additional	第一次火山碎屑流发生在 5 月 8 日，留下一片光秃秃的荒地、崩塌的废墟、烧毁的船只残骸和大约 3 万具尸体。随后的喷发已没有什么可再摧毁，只能貌似仁慈地给这一切惨象蒙上层层灰烬。从 1902 年末到 1905 年 7 月，又发生多次较小的火山碎屑流，大部分局限在布

layers of ash. The volcano produced many smaller pyroclastic flows from late 1902 until July 1905, mostly confined to the original valley of the Blanche River.	兰奇河原来的山谷中。
Although the eruption of May 8 destroyed the city of St. Pierre and its environs and took a terrible toll in human lives, the devastation was restricted to the northern end of Martinique. Of the island's 970 square kilometers, only about 30 square kilometers were seriously affected.	尽管 5 月 8 日的喷发摧毁了圣皮埃尔及其周边地区,造成严重的人员伤亡,但破坏仅限于马提尼克岛北端。岛上 970 平方千米的土地,只有约 30 平方千米受到严重影响。
Martinique was discovered by Christopher Columbus in 1502, but the island was not settled by Europeans until 1635. In that year the French Compagnie des Isles d'Amerique took possession of Martinique for the cultivation of cotton and tobacco. Sugar cane was introduced in 1650, and coffee in 1723. <u>Slavery was instituted early in the eighteenth century because of a growing need for cheap labor to operate the plantations economically.</u> During the course of colonization, the native Caribs were either killed or assimilated, primarily into the black slave population.	马提尼克岛于 1502 年被克里斯托弗·哥伦布发现,但直到 1635 年才有欧洲人在此定居。这一年,法国美洲群岛公司控制了该岛,开始在此种植棉花和烟草。1650 年引进甘蔗,1723 年引进咖啡。 <u>为节约种植园的经营成本,对廉价劳动力的需求越来越大,18 世纪早期奴隶制确立。</u> 在殖民化过程中,土著加勒比人要么被杀害,要么被同化,主要归入黑奴一类。
The island was occupied by the British for brief periods in the eighteenth and early nineteenth centuries but finally was restored to France in 1814. Slavery was abolished in	18 世纪和 19 世纪早期,英国曾短暂占领这个岛屿,但 1814 年又终归还法国。1848 年奴隶制被废除,岛上所有居民成为法国公民。事实上,一个叫阿米迪·奈

1848, whereupon all the island's inhabitants became French citizens. Indeed, a black man named Amedee Knight, who had been educated in Paris, was elected senator in 1899 and for several years represented Martinique in the French national assembly. The island became an overseas departement of France in 1946.	特 (Amédee Knight) 的黑人在巴黎受过教育, 1899 年当选为参议员, 后在法国国民议会中代表马提尼克岛好几年。1946 年, 该岛成为法国的海外省。
The capital of Martinique, Fort-de-France, has a population today of about 100,000. In 1902, however, its population was less than 18,000, and St. Pierre, then a thriving seaport with about 26,000 inhabitants, was the most important city on the island. It was from there that the island's exports, mainly sugar and rum, were shipped to Europe and the United States. Often called the "Paris of the West Indies," St. Pierre was the commercial, educational, and cultural center of Martinique. An attractive city, it boasted a renowned school, a cathedral, a theater, and a military hospital, as well as banks, warehouses, factories, and many rum distilleries. St. Pierre had no natural harbor. The city was situated on an open bay, or roadstead, along 3 kilometers of gracefully curving beach. Tiers of sturdy, off-white, red-roofed masonry buildings climbed toward the verdant foothills of Mount Pelee, which	马提尼克岛的首府是法兰西堡 (Fort-de-France), 现在人口约为 10 万。然而在 1902 年, 其人口还不足 1.8 万。当时, 圣皮埃尔是一座繁荣的海港, 约有 2.6 万居民, 是全岛最重要的城市。岛上主要出口的糖和朗姆酒都是从这里运往欧洲和美国。圣皮埃尔常被称为“西印度群岛的巴黎”, 是马提尼克岛的商业、教育和文化中心。这座迷人的城市拥有一所著名学校、一座大教堂、一个剧院和一家军事医院, 以及多家银行、仓库、工厂和许多朗姆酒厂。圣皮埃尔没有天然港口, 城市位于一个开放的海湾地带, 拥有绵延 3 千米长的美丽沙滩。一栋栋坚固的米色红顶建筑沿着青翠的培雷山不断攀升, 要是从海上靠近圣皮埃尔, 风景真是美不胜收。

provided a picturesque backdrop when St. Pierre was approached from the sea.	
At the time of Pelee's eruption in 1902, Martinique had a rigid, well-defined social structure. There was an "upper class" comprising white settlers of French ancestry known as békés. Most were plantation owners, who largely controlled the financial and political affairs of the island. A "middle class" consisted of white and mixed-race merchants and their employees, who lived in the towns, and owners of small farms in the countryside. At the low end of the social scale were black and mixed-race plantation workers, laborers, household servants, washerwomen, and porteuses, remarkably strong women who worked on the waterfronts of St. Pierre and Fort-de-France.	1902 年培雷火山爆发时，马提尼克岛社会结构严明。具有法国血统的白人定居者构成“上层阶级”，他们被称为贝柯人（békés），大多是种植园主，控制着岛上的金融和政治事务。居住在城镇的白人、混血商人及雇员，以及住在乡下的小农场主构成“中产阶级”。处于社会最底层的是黑人、混血种植工人、劳工、家仆、洗衣女工和码头搬运工。这些搬运工通常是些体格健壮的妇女，多在圣皮埃尔和法兰西堡的海滨一带工作。
For centuries the politics of Martinique had been dominated by the conservative békés, who advocated white supremacy and had traditionally elected the senator and two deputies who represented the island in government councils in Paris. But in the election of 1899, a new socialist party gave voice to the island's black and mixed-race majority. It was then that Amedee Knight was elected senator, for the first time giving the blacks and those of mixed race their own	几个世纪以来，马提尼克岛的政治一直被保守的贝柯人把持，他们主张白人至上，并选举一名参议员和两名代表，在巴黎的政府议会上代表马提尼克岛。但在 1899 年的选举中，一个新生的社会党出现，开始为岛上占人口多数的黑人和混血儿发声。就在那时，阿米迪·奈特被选为参议员，首次让黑人和混血儿在巴黎有了自己的代表。奈特一直是就业、教育和住房改革的积极倡导者，他做了大量工作，使社会主义者成为马提

representative in Paris. Knight had been a successful advocate of reforms in employment, education, and housing and had done much to make the socialists a viable force in the affairs of Martinique.	尼克事务中一支重要力量。
In 1902 the socialists were on the threshold of wresting political control of the island from the conservative bekes. Elections had been scheduled for that year—a primary election on April 27 and final balloting on May 11. There can be no doubt that a socialist victory not only would have drastically changed the political spectrum of St. Pierre and therefore of Martinique but also would have challenged the status quo in other French possessions as well. <u>The pre-election tension was exploited by the local newspaper Les Colonies, which supported white supremacy. First-page articles on April 21, 22, and 23, headlined "M. Knight et la Guerre des Races," depicted Knight as inciting a racial war.</u>	1902 年，社会主义者正处在从保守的贝柯人手中夺取该岛政治控制权的紧要关头，这一年的选举日程已安排就绪，初选定于 4 月 27 日，最终投票定在 5 月 11 日。毫无疑问，社会主义者的胜利不仅会彻底改变圣皮埃尔乃至整个马提尼克岛的政治格局，也会对其他法国殖民地构成挑战。<u>《殖民地报》(Les Colonies) 是当地一家奉行白人至上的报纸，他们利用选举前的紧张局势，分别在 4 月 21 日、22 日和 23 日的头版刊登题为“奈特与种族战争”的文章，指责奈特正在煽动种族战争。</u>
The socialists were divided between two candidates, but they trusted that no matter which candidate won the primary election, their voters would unite behind him in the final balloting on May 11 and ensure a socialist victory. Sure enough, in the April primary the two socialist candidates together out-pollled the conservative candidate. The	社会主义者在两名候选人上存在分歧，但他们相信，无论哪一位赢得初选，选民都会在 5 月 11 日的最终投票中团结一致，确保社会主义的胜利。果然，在 4 月份的初选中，两位社会主义候选人共同击败了保守派候选人。贝柯人获得 4496 张选票，而两位社会主义者获得 4920 张选票。

bekes candidate received 4,496 votes while between them the two socialists received 4,920 votes.	
The pending final election led Martinique's governor, Louis Mouttet, to discourage the evacuation of St. Pierre in spite of increasingly threatening activity of Mount Pelee during the months preceding the disastrous eruption of May 8. A large majority of the conservative voters lived in St. Pierre, and Mouttet surely would not have wanted to see any of them leave the city.	由于选举结果悬而未决，马提尼克总督路易·穆泰(Louis Mouttet)反对圣皮埃尔疏散人口，尽管培雷火山在5月8日剧烈喷发前的几个月里活动越来越频繁。大多数保守派选民都住在圣皮埃尔，穆泰肯定不想看到他们中的任何一个离开这座城市。
<u>The governor's thinking was perhaps influenced by the fact that the volcano had been slumbering for half a century.</u> Pelee had last erupted in 1851, producing a column of ash that fell on St. Pierre but was soon washed away by a rainstorm. Little was thought of it. Indeed the islanders, over the years, had come to think of Pelee as more of a benign presence than a threat. They were proud of their mountain. It was a favorite destination for social outings. People would hike to the top to view the placid waters of the Lac des Palmistes. Some of the black population of Martinique had even come to regard Pelee as something of a protector.	<u>总督之所以不想让人们撤离，可能是受到火山已经沉睡半个世纪这一事实的影响。</u>培雷火山上一次喷发是在1851年，当时产生的火山灰落在圣皮埃尔，但很快就被暴雨冲走了，因而这次喷发很快就被遗忘。事实上，多年来，岛上居民更多是把培雷火山看作一种美好的存在，而不是威胁。他们为拥有这座山而感到骄傲。它是人们户外社交的首选，人们会爬到山顶观赏棕榈湖平静的湖水，岛上的一些黑人甚至把培雷火山视为守护神。
Then on April 23, 1902, there was an earthquake that was strong enough to make	然后，1902年4月23日，圣皮埃尔发生强震，使得盘子从架子上掉落。24

dishes fall from shelves in St. Pierre. There was a minor eruption and a slight ashfall on the twenty-fourth, and people remarked on the sulfurous odor. The mayor, Roger Fouche, in an effort to forestall any apprehension on the part of the citizens, declared sulfur beneficial to health. Nevertheless, many people were becoming concerned about Pelee's activity. The wife of Thomas Prentis, the United States consul in St. Pierre, wrote to her sister in Massachusetts about events during that last week of April: The city is covered with ashes and clouds of smoke have been over our heads for the last five days. The smell of sulphur is so strong that horses on the street stop and snort, and some of them are obliged to give up, drop in their harness and die from suffocation. <u>Many of the people are obliged to wear wet handkerchiefs over their faces to protect them from the fumes of sulphur.</u>	日发生一次小型喷发，有少量火山灰落下，人们对硫磺的气味议论纷纷。为防止市民忧虑，市长罗杰·福凯（Roger Fouche）宣称硫磺对健康有益。然而，还是有许多人关注培雷火山的动向。托马斯·普伦蒂斯(Thomas Prentis)是美国驻圣皮埃尔的领事，他妻子曾写信给她在马萨诸塞州的姐姐，讲述了那年四月最后一周发生的事情：过去五天里，这座城市被灰烬覆盖，浓烟一直笼罩在我们头顶。硫磺味儿太浓了，街上的马都停下来，喷着鼻子，有些马干脆放弃挣扎，戴着马具倒在地上，窒息而死。<u>许多人被迫用湿手帕捂住口鼻，以免受到硫磺烟雾的侵害。</u>
On April 30, people in St. Pierre felt three strong earthquakes, probably caused by strain release along the fault beneath the volcano. With the coming of May, the tempo of activity increased. Ashfalls became heavier. Early on May 2, during the night, volcanic ash blanketed the countryside like a snowstorm. Some roads were blocked by fallen tree branches, broken off by the weight of the ash	4月30日，圣皮埃尔的人们感觉到三次强烈地震，可能是由火山下方断层的应变释放引起的。随着五月的到来，活动的频率加快。火山灰落得更厚了。5月2日凌晨，火山灰像暴风雪一样，一夜之间覆盖整个乡村。一些树枝不堪重负，被火山灰压断，掉在路上阻挡交通。那天早上，马车行驶在布满火山灰的鹅卵石街道上，没有一点声响。含硫烟雾

that coated them. In St.Pierre, carriages made no noise that morning as they rolled through the powdery stuff on the city's cobblestone streets. Sulfurous fumes made breathing difficult and led to throats and smarting eyes.	使人们呼吸困难，喉咙和眼睛刺痛。
Within L'Etang Sec a high cinder cone had appeared. It gushed hot water and had formed a lake in which full-grown trees were submerged. Streams radiating from the summit of Pelee increased in volume, both from rainfall caused by volcanic particles seeding the clouds that normally clung to the mountaintop, and from groundwater forced to the surface by rising temperatures within the mountain. Mudflows swept down the riverbed on May 3, filling the valley with mud and rocks, some of enormous size. The flows originated as landslides in the upper valley of the Blanche River, probably triggered by seismic activity. Their force and volume were augmented when the water in L'Etang Sec broke through the notch in the crater rim. Mudflows also descended into Le Precheur, about 10 kilometers northwest of St. Pierre. The mudflows indicated a general weakening of Pelee's south-western flank.	“枯塘”内出现一个高高的火山渣锥。那里涌出热水，形成湖泊，淹没了许多大树。从山顶四散流出的水量大增，这一方面是由于火山灰粒促使笼罩在山顶的云层凝结，导致降雨增多；另一方面是由于山体温度上升，迫使地下水上升到地表。5月3日，泥石流沿河床滚滚而下，山谷中满是泥浆和岩石，其中一些体积巨大。这些泥石流是由布兰奇河上游山谷的滑坡导致，可能是由地震活动引发。当“枯塘”的水冲破火山口边缘缺口，泥石流的威力和体量更是猛增。圣皮埃尔西北约10千米处的勒普雷舍也遭到泥石流的侵害。泥石流的出现表明培雷火山的西南侧整体变弱。
Les Colonies had organized a public outing to the top of Mount Pelee, scheduled for May 3, for a picnic and a look at the crater	《殖民地报》组织了一次公共郊游，计划于5月3日登上培雷山顶，在那里野餐并参观火山口。活动目的是为了证

there. Its purpose was to demonstrate that all was well, but the trip had to be canceled because of continuing ashfalls and offensive fumes in the air. Indeed, several people choked to death in St. Pierre that day, and domestic animals were dying on the city streets and in the surrounding countryside from inhaling the sulfurous ash. It was on May 3, too, that the mudflows destroyed Le Precheur, killing a number of people. That same day the spinelike protrusion was first seen rising from L'Etang Sec.	明一切正常，但由于持续的火山灰降落和空中难闻的气味，这次旅行被迫取消。事实上，当天在圣皮埃尔有几个人被呛死；在城市街道和周围的乡村，也有家畜因吸入硫磺灰而死亡。也是在5月3日这一天，泥石流摧毁了勒普雷舍，造成多人死亡。同日，人们首次在“枯塘”发现了脊状隆起。
Meanwhile a number of rivers on the flanks of Pelee were overflowing their banks. Normally, except during the rainy season, they were small streams that made their way unobtrusively down the mountainside through lush farmland. But now, fed by heavy rains and by groundwater gushing from fissures that had opened in the sides of the mountain, they carried uprooted vegetation, whole trees, and dead farm animals. One such river, the Roxelane, flowed through St. Pierre and flooded low-lying parts of the city before washing its grisly cargo out to sea.	与此同时，培雷火山侧翼有几条河漫过堤岸。除雨季外，它们通常都是小溪流，悄无声息地从山腰流下来，穿过郁郁葱葱的农田。但现在，由于大雨和从山腰裂缝中涌出的地下水，导致水量大增，把连根拔起的植被、整棵树木和死去的农场动物都冲了起来。其中的一条罗赛兰河（Roxelane）流经圣皮埃尔，淹没了城市低洼地区，然后将可怕的“货物”冲入大海。
Pelee was sending its warnings, but they went unheeded by the great majority of people in St. Pierre. They had been lulled into complacency, both by imperfect scientific	培雷发出了警告，但圣皮埃尔的大多数人都没有理会。由于对火山活动缺乏科学认知，且受到担心选举的政府官员的影响，人们自以为是。确实有数百

knowledge of how volcanoes can behave and by government officials concerned about an election. A few hundred people did leave the city for Fort-de-France, about 20 kilometers south, either by boat or along the one overland route, La Trace. Their numbers were necessarily limited, however: the available boats were small and could carry but few passengers, and La Trace was just that—a "trace," or primitive track. Moreover, only the wealthy had money for boat passage or carriages to carry them to Fort-de-France. The number who fled was more than offset by refugees from the devastated countryside: the refugees poured into the city, swelling its population to an estimated 30,000. Food was becoming scarce, and there were cases of looting in St. Pierre. Ships approaching the port had to pick their way through masses of debris that had been washed down by the rivers and were floating in the roadstead.	人乘船或沿着名为“拉特雷斯”（La Trace）的陆路离开城市，前往南部约 20 千米处的法兰西堡。然而，这批人必定数量有限：可用的船只很小，只能搭载很少的乘客，拉特雷斯也只是一条原始小径。只有富人才能乘船或坐马车逃往法兰西堡。但逃离的人数被从受灾乡村涌入的难民抵消了，人口膨胀到约 3 万人。食物短缺，圣皮埃尔发生抢劫事件。驶近港口的船只必须小心翼翼，避开被河流冲下来漂在水面的大量残骸。
Governor Mouttet finally was stirred to action. On May 4 he sent a cablegram to the minister of colonies in Paris announcing, for the first time, that Mount Pelee had erupted—but that "the eruption appears to be on the wane." And he appointed a commission of inquiry. Of its five members, only one was a scientist—Gaston Landes, a	穆泰总督终于被迫采取了行动。5 月 4 日，他向巴黎殖民部长发出一封电报，首次宣布培雷火山爆发，但“爆发似乎正在减弱”。他任命了一个调查委员会，在五名成员中，只有一名科学家——圣皮埃尔中学的自然科学教师加斯顿·兰德斯（Gaston Landes）。他们的任务不是调查火山活动本身，而是确定

teacher of natural sciences at St. Pierre's lycee (high school). Their mission was not to investigate the behavior of Pelee itself but to determine how long the city could "stand the strain of the ash and sulfur " and "whether the terrain around St. Pierre would shield the city from the danger of a lava flow."5 The governor made it clear that the commission's role was merely to confirm the safety of St. Pierre.	这座城市能“承受火山灰和硫磺的张力多久”，以及“圣皮埃尔周围的地形是否会保护城市免受熔岩流的危险”。总督明确表示，委员会的作用仅仅是确认圣皮埃尔是否安全。
Although May 4 was a Sunday, the portoues on the waterfront of St. Pierre were made to load sugar into a ship waiting to leave for France. The ship was departing unexpectedly early, as her captain was concerned about the behavior of Mount Pelee. The sugar had come from the Blanche River refinery, which was owned by an influential beke, Eugene Guerin. But on Monday the fifth, in reprisal for having been forced to work on Sunday, the portoues went on strike. Their refusal to work underscored the burgeoning political power of the socialists on Martinique.	尽管5月4号是星期日，圣皮埃尔海滨的搬运工还是被要求装货——往一艘即将驶往法国的船上装载糖。这艘船之所以提前启程，是因为船长担心培雷火山的表现。糖来自布兰奇河炼糖厂（Blanche River refinery），老板是位颇有影响力的贝柯人——尤金·盖林（Eugene Guerin）。但到星期一（5日），为报复周日被迫上班，搬运工举行了罢工。他们拒绝工作，凸显了社会主义者在马提尼克岛的政治影响越来越大。
That same day, more mudflows poured down the stream valleys on Pelee's southwestern flank. Some were so wide and voluminous that they swept away plantations, factories, cattle, and people. When they	同一天，更多的泥石流冲向培雷火山西南侧的溪谷。其中一些规模和流量巨大，冲毁了种植园和工厂，淤埋了牲口和人。泥石流到达海岸并流入大海时，产生巨大的波浪，席卷了海岸，淹没了

reached the coast and entered the sea, the displaced water created sizable waves that swept down the coast and flooded the St. Pierre waterfront. That evening submarine landslides, probably triggered by the mudflows, ruptured the telegraph cable from Fort-de-France. One end of the cable was later picked up 15 kilometers west of St. Pierre at a depth of 700 meters.	圣皮埃尔的海滨地带。那天晚上，可能是泥石流引发的海底滑坡，导致连接法兰西堡的电报电缆断裂。后来电缆的一端在圣皮埃尔以西 15 千米处 700 米深的地方被找到。
Also on May 5, swarms of small yellow ants known as fourmis-fous and large black centipedes called betes-a-mille-pattes descended the slopes of Mount Pelee like a biblical plague. At the Guerin refinery, the venomous arthropods created havoc as they attacked workers in the cane fields and even invaded the owner's household. St. Pierre itself was invaded by hundreds of snakes, many of them the deadly pit vipers known as fer-de-lances.	同样是在 5 月 5 日，成群结对的黄色蚂蚁（fourmis-fous）和大黑蜈蚣（bêtes-a-mille-pattes）从山坡上爬下来，就像圣经中描写的瘟疫一样。在盖林炼糖厂，这些有毒节肢动物引发混乱，它们袭击甘蔗田里的工人，甚至侵入了庄园主的家。数百条蛇入侵圣皮埃尔，许多是致命毒蛇（fer-de-lances）。
Meanwhile back at the Guerin refinery, a greater tragedy was taking place. Among the mudflows of May 5 was one that coursed down the valley of the Blanche River, burying the refinery and the estate under a thick layer of boiling mud. The owner miraculously escaped, but his entire family and many employees were killed. <u>And in St. Pierre, ash-clogged sewers and polluted drinking</u>	与此同时，在盖林炼糖厂，一场更大的悲剧正在发生。在 5 月 5 日的泥石流中，其中一股冲下布兰奇河谷，将炼糖厂和庄园淤埋在厚厚的沸腾泥浆中。庄园主奇迹般地逃脱，但他的家人和许多员工都丧命了。<u>在圣皮埃尔，下水道被灰烬堵塞，饮用水也被污染，这导致一种致命、高传染性的天花（la verette）爆发。</u>

<u>water contributed to an out-break of a fatal, highly contagious pox called la verette.</u>	
By now Pelee had claimed more than 600 lives, and the city was in a state approaching chaos; yet on May 5 the commission of inquiry, fulfilling the governor's wishes, blandly reported that “there is nothing in the activity of Pelee that warrants a departure from St. Pierre.”	至此，培雷火山已夺走 600 多人的生命，整座城市几乎陷入混乱。然而 5 月 5 日，调查委员会却顺应总督的意愿，在报告中平静地写道：“培雷火山的活动正常，没有理由必须离开圣皮埃尔。”
While all that was happening on Martinique, a similar disaster was in the making 130 kilometers to the south, on the British-owned island of St. Vincent. A volcano called La Sou-friere erupted early on May 6 with Pelee-like pyroclastic flows that killed almost 1,600 people and devastated much of the island's farmland. When the inhabitants of St. Pierre awoke that morning, they found their city covered with a thin layer of volcanic ash—ironically not from Mount Pelee but, unknown to them, from a volcanic cloud that had drifted over Martinique from St. Vincent.	在马提尼克岛发生这一切的时候，在它南部 130 千米处的英属圣文森特岛（St. Vincent），一场类似的灾难正在酝酿。5 月 6 日早晨，苏弗里耶尔（La Sou-friere）火山爆发，产生与培雷火山类似的火山碎屑流，近 1600 人丧生，岛上大片农田被毁。圣皮埃尔的居民早上醒来时，发现自己的城市覆盖着一层薄薄的火山灰。具有讽刺意味的是，他们以为火山灰是来自培雷火山，实际上是从圣文森特岛飘过来的。
Tragically, the catastrophe on St. Vincent compounded the disaster on Martinique. <u>The world knew nothing of what was happening on Martinique because by May 6 seismic activity spawned by the volcano had severed all cable connections with other islands.</u> Thus, in those pre-radio days, Martinique was cut	不幸的是，圣文森特岛的灾难使马提尼克岛更加雪上加霜。<u>5 月 6 日，火山引发的地震切断了马提尼克与其他岛屿的所有电缆连接，使得外界对岛上发生的一切一无所知。</u>在那个没有无线电的年代，马提尼克岛简直与世隔绝。

off from the rest of the world.	
St. Vincent's communications were intact, however, and authorities on that island sent word of La Soufriere's eruption to England, which promptly dispatched ships to aid the stricken colony. Those ships, and others, passed through ash clouds drifting over the sea from Mount Pelee, but the ash was assumed to have come from La Soufriere. The world remained ignorant of the tragedy of St. Pierre until many hours after the city had been destroyed two days later.	然而圣文森特岛的通讯并未中断，该岛当局迅速将苏弗里耶尔火山爆发的消息发往英国，英国立即派船前往遇灾的殖民地提供援助。救灾船，还有其他船只穿过从培雷火山漂到海上的火山灰云，但他们误以为是从苏弗里耶尔飘过来的。直到两天后圣皮埃尔被摧毁，又过了数小时，人们才获悉这座城市的悲剧。
Meanwhile Pelee was roaring continuously, and red-hot rocks (volcanic bombs) were being ejected from L'Etang Sec. Some of them landed in the part of St. Pierre that was nearest the volcano, and houses were set afire. And the volcano was still sending forth great clouds of ash and cinders. The ash coated everything in St. Pierre, and authorities encouraged the citizens to wash down the roofs and walls of buildings. As a result, the ash in the hilly streets turned into a slippery sludge, and people could get about only with great difficulty. Many did not even go into the streets. A strange lethargy had come over the populace, as if they were in a state of shock from all they had endured.	与此同时，培雷火山还在不停地咆哮，灼热的岩石（“火山弹”）从“枯塘”喷出。其中一些落在圣皮埃尔离火山最近的地方，房屋被点燃。火山还喷出大量的火山灰和碎屑。火山灰覆盖了城里的一切，当局鼓励市民冲洗屋顶和墙壁。结果，沿着山坡的街道上，火山灰变成滑腻的泥浆，人们走路都费劲。许多人甚至无法上街。一种奇怪的昏昏沉沉的气氛笼罩着这群人，仿佛这一切使他们受到了惊吓。
The next day, May 7, Les Colonies, still	第二天，5月7日，《殖民地报》仍

supporting the governor's contention that the volcano was no threat to St. Pierre or its inhabitants, published a story written by the editor but presented as an interview with Gaston Landes, the science teacher. The gist of the story was that St. Pierre was in no danger from Mount Pelee. Governor Mouttet, with his wife, journeyed from Fort-de-France to St. Pierre that day, feeling that their presence would give the people confidence. They died there the next morning, along with thousands of others. Their bodies were never found.	旧支持总督的说法，即火山对圣皮埃尔及其居民不构成威胁，并发表了一篇由编辑撰写、但以采访科学教师加斯顿·兰德斯的形式呈现的文章。文章的主旨在于强调圣皮埃尔没有受到培雷火山的威胁。这一天，总督穆泰还带着妻子从法兰西堡来到圣皮埃尔，他认为自己的到来会给人民带来信心。第二天早上，他们和其他成千上万的人一起遇难，尸体一直没有找到。
There has been disagreement about Governor Mouttet's role in the tragedy of St. Pierre. Some writers in recent years have argued that Mouttet's visiting the stricken city demonstrates an honest conviction that Mount Pelee presented no serious threat. And others have questioned whether the conservative element in St. Pierre really was so concerned about the election that, despite the threat of volcanic activity, they wanted to keep people in the city until after the election on May 11. But in 1989 the French scholar Solange Contour wrote that the minister of colonies in Paris had ordered Mouttet to keep St. Pierre's voters in town until the election was over.	关于穆泰总督在圣皮埃尔悲剧中所起的作用，一直存有分歧。近年来，一些作家认为，穆泰前往这座受灾城市，表明他坚信培雷火山不会构成严重威胁。也有人质疑，圣皮埃尔的保守分子是否真的那么在乎选举，以至于他们不顾火山活动的威胁，让人们留在这座城市，直至5月11日选举结束。但在1989年，法国学者索朗·孔图尔（Solange Contour）写道：是巴黎的殖民地部长命令穆泰让圣皮埃尔的选民待在城里，直到选举结束。
May 8 was Ascension Day in 1902, and	1902年5月8日是耶稣升天日。一

early that morning many of St. Pierre's citizens, most of whom were Roman Catholic, made their way through ash-laden streets to services in the cathedral. Indeed, many had taken refuge there in the preceding days, both out of fear and to escape the ash and cinders raining down upon the city. They were there at 8:02 A.M., when their world abruptly came to an end. At that instant the first pyroclastic flow hurtled down the valley of the Blanche River, then spread out, and, in seconds, engulfed St. Pierre. With the force of a hurricane, the superheated cloud destroyed buildings, twisted iron girders, filled the streets with rubble, and set the city ablaze. <u>Estimates of its temperature vary widely, but most suggest about 900 degrees Celsius when the cloud left the crater and 200 to 400 degrees when it reached the coast.</u> Pieces of melted bottle glass and fused metal in St. Pierre indicate temperatures as high as 1,000 degrees, but such temperatures resulted not from the pyroclastic flow but from extremely hot fires fed by exploding casks of rum.	大早，圣皮埃尔的许多市民，其中大多数是天主教徒，穿过满是灰烬的街道，前往大教堂做礼拜。事实上，许多人在前几天就躲到了那里，既是出于恐惧，也是为了躲避城市上空不断倾泻的火山灰和碎屑。上午 8 点 2 分，他们的世界戛然而止。就在那一瞬间，第一股火山碎屑流冲下布兰奇河谷，然后蔓延开来，几秒钟后就吞没了圣皮埃尔。过热的云团以飓风的力量摧毁了建筑物，扭曲了铁梁，街道上满是瓦砾，城市燃起熊熊大火。<u>对火山云温度的估计差异很大，但多数专家认为，当云团离开火山口时，温度约为 900 摄氏度；到达海岸时，温度约在 200 至 400 摄氏度之间。</u>圣皮埃尔熔化的玻璃瓶和金属碎片表明温度高达 1000 度，但这种温度不是由火山碎屑流引起的，而是由朗姆酒桶爆炸引起的大火造成的。
Not everyone in St. Pierre was killed immediately, though mercifully many were. It became apparent later that many people had died with agonizing slowness from injuries or suffocation or from inhaling the hot gases.	圣皮埃尔并非所有人都立即丧命，但幸运的是，很多人如此。后来发现，许多人因受伤、窒息、或吸入高温气体，在惨痛中缓慢死去。根据大多数报道，除了附近地区和海湾中的船只，该市唯

According to most reports, the only survivor within the city itself, excluding nearby areas and ships in the bay, was a black man named Auguste Ciparis, who had been jailed after getting into a fight. He had been sentenced to a short term in a dungeon like cell in the local prison. There, ironically, he was protected from the worst of the hot blast by volcanic ash that had piled up and blocked the cell's one tiny window. <u>He was badly burned, however, and spent four days without food or water, in an agony of ignorance about what had happened to the world outside. Finally his cries were heard, and he was rescued.</u> Ciparis's sentence ultimately was suspended, and he spent the rest of his life touring the United States with the Barnum and Bailey Circus, where he made a living as an exhibit in a sideshow replica of his prison cell.	一的幸存者是一位名叫奥古斯特·奇帕里斯（Auguste Ciparis）的黑人，他因打架被判入狱，在地牢里短期服刑。讽刺的是，就在那里，堆积起来的火山灰挡住了牢房的小窗户，使他免受极端热浪的侵袭。<u>然而，他还是被严重烧伤，四天没吃没喝，对外面发生的一切一无所知。后来，人们听到他的喊声，才把他救了出来。最终，他的刑罚终止。余生，他跟随“巴纳姆和贝利马戏团”（Barnum and Bailey Circus）在美国巡回演出，通过穿插表演模拟自己在监狱牢房里的情景来谋生。</u>
In the roadstead the hot cloud sped across the water on a cushion of steam, its force overturning and sinking several ships lying at anchor. Ships that did not founder caught fire. Most people aboard the ships met horrible deaths from suffocation or burning. There were some survivors, however. Eventually they were rescued by ships sent from Fort-de-France to find out why telegraph communication between the two cities had	在海湾里，炙热的云团以蒸气为垫，疾驰过水面，其冲击力掀翻了一些停泊的船只，使之沉没。没有沉没的船只也燃起熊熊大火。船上的大多数人都死于窒息或葬身火海，极其惨烈。然而，也有一些人幸存下来。他们最后是被法兰西堡派去的一些船只救起，这些船是为查明两个城市之间的电报通讯为何在当天上午 8 点 2 分突然中断。

suddenly ceased at 8:02 that morning.	
The horror of the event was later described by Charles Thompson, assistant purser of the steamship Roraima: There was a constant muffled roar. It was like the biggest oil refinery in the world burning up on the mountain top. <u>There was a tremendous explosion about 7:45 o'clock...The mountain was blown to pieces... The side of the volcano was ripped out, and there was hurled straight toward us a solid wall of flame. It sounded like thousands of cannon.</u> The wave of fire was on us and over us like a lightning flash.... I saw it strike the cable steamship Grappler broadside on and capsize her. From end to end she burst into flames and then sank. The fire rolled...down upon St. Pierre....The town vanished before our eyes...	后来，罗赖马号（Roraima）蒸汽船的助理乘务长查尔斯·汤普森（Charles Thompson）对这一恐怖事件做了如下描述：持续的低吼声不绝于耳。就像世界上最大的炼油厂在山顶上燃烧一样。大约 7 点 45 分，发生了一场巨大的爆炸。……山被炸成碎片……火山的一侧被撕裂，一道坚实的火焰墙直冲我们而来。爆炸的声音听起来就像成千上万的大炮。火焰如闪电般朝我们扑来，吞噬了我们……我看到它击中蒸汽缆艇“捕获者号”（Grappler），艇身侧翻，从头到尾剧烈燃烧，然后沉入海底。火焰滚滚……朝圣皮埃尔袭来，整座城镇就在我们眼前消失了……
<u>The blast of fire from the volcano lasted only a few minutes.</u> It shriveled and set fire to everything it touched. Thousands of casks of rum were stored in St. Pierre, and these were exploded by the terrific heat. The burning rum ran in streams down every street and out to the sea. This blazing rum set fire to the Roraima several times. <u>Before the volcano burst the landings of St. Pierre were crowded with people. After the explosion not one living being was seen on land. Only twenty-five of</u>	火山喷发的火焰只持续了几分钟，却把触及的一切都点燃或烧焦。圣皮埃尔存放了数千桶朗姆酒，可怕的高温导致这些酒桶爆炸。朗姆酒燃烧着汇成小溪，沿着街道流向大海。“罗赖马号”多次被点燃。<u>火山爆发前，圣皮埃尔的码头上人头攒动，而爆发之后，岛上再不见一丝生机。</u>培雷火山第一次喷发之后，“罗赖马号”上的 68 人中只有 25 人幸存下来。

those on the Roraima out of sixty-eight were left after the first flash.	
The Roraima's first officer, Ellery Scott, gave the following graphic account: About 8 o'clock loud rumbling noises were heard from the mountain overlooking the town, eruption taking place immediately, raining fire and ashes... Soon there came a terrible downpour of fire, like hot lead, falling over the ship and followed immediately by a terrific wave which struck the ship on the port side, keeling her to starboard, flooding [the] ship, fore and aft, sweeping away both masts, funnel backs and everything at once... Shortly after, a downfall of red hot stones and mud, accompanied by total darkness, covered the ship... I tried to assist those lying about the deck injured, some fearfully burnt. Captain Muggah came to me, scorched beyond recognition. He had ordered the only boat left to be lowered; but, being badly damaged, it could not be lowered from the davits.	罗赖马号的大副埃勒里·斯科特(Ellery Scott)做了以下详细的描述:大约8点左右,俯瞰城镇的山上传来隆隆巨响,火山开始喷发,火焰和灰烬从天而降……很快,可怕的大火像滚烫的铅块一样倾泻在船上,紧接着一个巨浪从左舷撞击轮船,船向右舷倾覆,船头和船尾都被淹没,桅杆、烟囱后部等所有东西都被水冲走……随后,炽热的石块和泥浆铺天盖地袭来,顿时一片黑暗笼罩着整条船……我试图帮助躺在甲板上的受伤者,有些人烧伤非常严重。船长穆加(Muggah)被烧得面目全非,难以辨认。他来找我,下令放下仅剩的一艘救生艇,但由于损坏严重,已无法从吊艇架上放下。
Only one ship escaped from St. Pierre—the Roddam, a steam-powered cargo vessel from England that had anchored in the roadstead only minutes before the fatal eruption. American authors Gordon Thomas and Max Morgan Witts in their book <i>The Day the World Ended</i>, a vivid account of the 1902	只有一艘船从圣皮埃尔逃脱——罗达姆号(Roddam)。这是一艘来自英国的蒸汽动力货船,它在这场致命的喷发前几分钟刚刚停泊靠岸。美国作家戈登·托马斯(Gordon Thomas)和马克斯·摩根·威茨(Max Morgan Witts)在《世界末日》(<i>The Day The World Ended</i>)一书中生

catastrophe, wrote that the Roddam was badly damaged, her deck a shambles, and most of her crew were dead or dying. But those who remained alive, though grievously injured, managed to get the ship under control. Captain Edward Freeman, badly burned himself and barely able to see because of injuries to his eyes, somehow guided the Roddam out of the roadstead and some 80 kilometers south to the neighboring island of St. Lucia, where at dusk he nosed her into the port of Castries.	动描述了 1902 年的这场大灾难。书中写道，罗达姆号受损严重，甲板一片狼藉，大部分船员都已死亡或奄奄一息。虽然受了重伤，但那些活着的人设法控制住了船。船长爱德华·弗里曼（Edward Freeman）烧伤严重，眼睛也受了伤，几乎什么都看不见，但还是设法将罗达姆号驶出锚地，向南行驶了约 80 千米，抵达邻近的圣卢西亚岛（St. Lucia）。傍晚时分，罗达姆号缓缓驶入卡斯特里港（Castries）。
A customs boat came out to meet the ravaged ship, and an officer called out “Where have you come from?” Cried Captain Freeman, “From the gates of Hell!”	一艘海关船出来迎接这艘遇难的船，一个官员喊道：“你们从哪里来？”弗里曼船长答道：“从地狱之门！”
Mount Pelee continued to extrude its lava spine. A year after the eruption, it towered 300 meters above L’Etang Sec, piercing the air like a gigantic, malevolent finger offering a last gesture of Pelee’s defiance, before slowly crumbling of its own weight.	培雷火山的熔岩脊不断挤出。火山爆发一年后，它已高出“枯塘”300 米，就像一个巨大、恶毒的手指，刺向天空，以这种姿态表达它的最后一丝蔑视，然后因自身重量而缓慢坍塌。
St. Pierre was a dead city, in ruins after the pyroclastic flows of May 8. Some of the more substantial stone buildings, though heavily damaged, still stood—but on May 20 another devastating pyroclastic flow erupted from Mount Pelee. Following in the same path as the first, it burned or reduced to rubble	5 月 8 日的喷发之后，圣皮埃尔已经一片废墟，成为一座死城。但还有一些较为坚固的石头建筑虽遭破坏，但屹立不倒。然而 5 月 20 日，又一股极具破坏力的火山碎屑流喷薄而出。它沿着与第一次相同的路径，所到之处不是被烧毁，就是化为瓦砾，5 月 8 日幸存的建筑也

whatever had managed to withstand the May 8 cataclysm. Looters soon appeared in the ravaged city, seeking money, jewels, and other valuables in the ruins. French marines eventually put a stop to the thievery, often shooting looters on sight, but bands of robbers terrorized the surrounding countryside for months.	无一幸免。不久之后，抢掠者出现在这座满目疮痍的城市，在废墟中翻找金钱、珠宝和其他贵重物品。法国海军陆战队最终制止了盗窃行为，抢劫者往往被当场射杀，但成群的强盗还是在周边乡村恐吓与掠夺达数月之久。
Pelee erupted yet again in late August, this time destroying the village of Le Morne Rouge, a few kilometers northeast of St. Pierre. A short time before that eruption, the new governor of Martinique, Georges Lhuerre, had refused aid to refugees from Le Morne Rouge who had fled to Fort-de-France. Most, having no place else to go, returned home—and all were killed. Both Le Morne Rouge and St. Pierre have since been rebuilt, though St. Pierre today is a small town of minor importance. Ruins from the 1902 catastrophe remain plainly visible there.	8月下旬，培雷火山再次爆发，这次摧毁了圣皮埃尔东北几千米处的勒莫讷鲁日镇（Le Morne Rouge）。就在火山喷发前不久，马提尼克岛的新任总督乔治·卢尔雷（Georges Lhuerre）拒绝向逃往法兰西堡的勒莫讷鲁日镇难民提供援助。这些人大多无处可去，只能返回家乡，最后全部遇难。勒莫讷鲁日和圣皮埃尔后来都已重建，但如今的圣皮埃尔只是一个微不足道的小城。在这里，1902年灾难留下的废墟仍然清晰可见。
The economy of Martinique was devastated by the May eruptions. Although much of the island escaped serious physical damage, virtually its entire commercial and cultural life was shattered with the destruction of St. Pierre. Moreover, ashfalls killed crops in the southern part of the island, and many farms and plantations were destroyed. And	5月的这场火山喷发摧毁了马提尼克岛的经济。虽然岛上大部分地区没有受到严重的物质破坏，但实际上它的整个商业活动和文化生活都因圣皮埃尔的毁灭而被削弱。此外，火山灰导致岛上南部的农作物死亡，许多农场和种植园被毁。圣皮埃尔共有3万人死亡。如果当地政府没有阻止民众撤离，如果人们

30,000 people died in St. Pierre. <u>The real tragedy of Mount Pelee is that the vast majority of those people surely would have survived if government policy and the lack of knowledge about the nature of volcanoes had not discouraged their evacuation.</u>	再多些对火山的了解，那么绝大多数人肯定能够幸免于难，这才是这场悲剧之所在。
The catastrophe had far-reaching political repercussions as well. The election scheduled for May 11 was never held, and the political ascendancy of the black and mixed-race citizens of Martinique was set back for decades.	这场灾难还产生了深远的政治影响。原定于 5 月 11 日举行的选举再也没能举行，马提尼克岛上黑人和混血公民政治地位的上升也被推迟了几十年。
Sidebar: Mount Pelee and the Panama Canal	补充阅读：培雷火山与巴拿马运河
In 1902, when Mount Pelee erupted, the U.S. Senate was preparing to vote on the location of a canal to connect the Atlantic and Pacific oceans. The world's maritime powers had long seen a need for a canal across Central America to avoid the long and dangerous voyage around Cape Horn, at the tip of South America. French engineers had failed in their attempt to dig a canal through the Isthmus of Panama, and the Americans were considering an alternative route through Nicaragua. The 1902 eruptions of La Soufriere on St. Vincent and Pelee on Martinique focused attention on the fact that Nicaragua, too, was subject to volcanic	1902 年，当培雷火山爆发时，美国参议院正准备投票，为建造一条连接大西洋和太平洋的运河选址。长期以来，世界海上强国都认为需要开凿一条贯穿中美洲的运河，以避免绕到南美洲尖端的合恩角，进行漫长而危险的航行。法国工程师试图在巴拿马地峡开凿一条运河，但未能成功，而美国人则在考虑通过尼加拉瓜选择一条替代路线。1902 年，圣文森特的苏弗里耶尔火山和马提尼克岛的培雷火山先后喷发，使人们注意到尼加拉瓜也存在火山活动。

activity.	
Politicians who favored the Panamanian route were quick to seize upon the Caribbean eruptions as evidence that building a canal in Nicaragua would be a risky venture. Indeed, that country had proudly featured a smoking volcano on its one-centavo postage stamp. A lobbyist for Panama obtained enough of the Nicaraguan stamps to send one to every member of the U.S. Senate, which subsequently, by eight votes, approved construction of the Panama Canal.	支持巴拿马航线的政客们立即抓住机会，以加勒比海火山喷发为证据，表明在尼加拉瓜修建运河是一项冒险行为。事实上，这个国家曾自豪地在 1 分邮票上印上一座冒烟的火山。一名支持巴拿马航线的说客，收集到足够的尼加拉瓜邮票，给每位参议员都送了一张。随后，参议院以 8 票的优势批准了巴拿马运河的建造。

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