

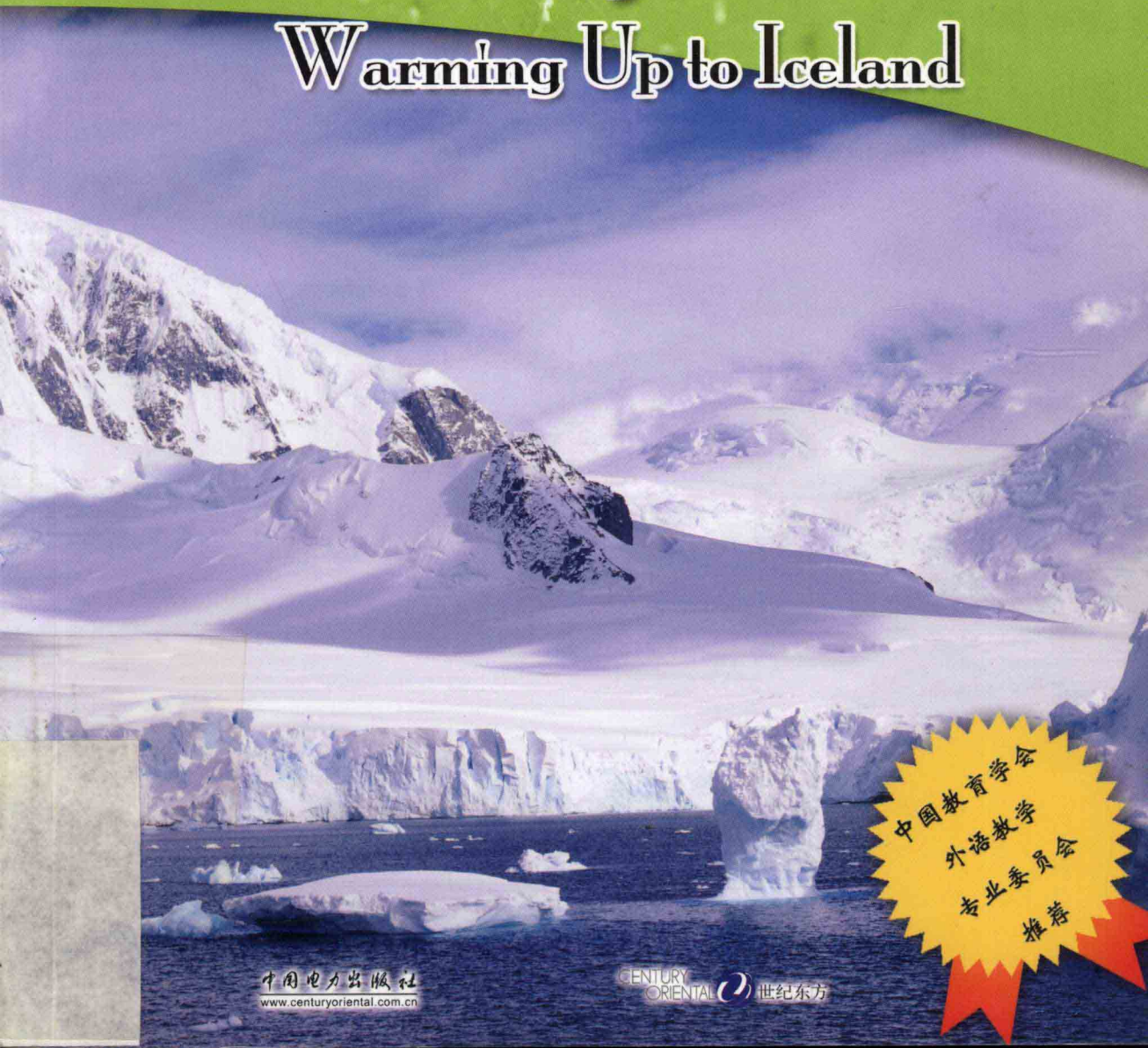


阅读空间 · 英汉双语主题阅读

高中和大学低年级适用

神奇的冰岛

Warming Up to Iceland



中国教育学会
外语教学
专业委员会
推荐

中国电力出版社
www.centuryoriental.com.cn

CENTURY ORIENTAL 世纪东方

阅读空间 · 英汉双语主题阅读



神奇的冰岛

Warming Up to Iceland

——高中和大学低年级适用

王新译

京权图字 01-2004-4387

图书在版编目 (CIP) 数据

神奇的冰岛 / 美国蔻博斯通出版公司编著; 王新译.

北京: 中国电力出版社, 2004

(阅读空间·英汉双语主题阅读)

书名原文: Warming Up To Iceland

ISBN 7-5083-2695-4

I. 神… II. ①美… ②王… III. 英语—阅读教学

—高中—课外读物 IV. G634.413

中国版本图书馆 CIP 数据核字 (2004) 第 074806 号

Warming Up To Iceland

Copyright © 2000 by Cobblestone Publishing Company.

Chinese Translation Copyright © China Electric Power Press 2004

All rights reserved.

《阅读空间·英汉双语主题阅读》由美国北极星传媒有限公司授权出版,
北京行走出版咨询有限公司策划

神奇的冰岛

原著: **Stephen James O'Meara** 等

丛书策划: 北京行走出版咨询有限公司

翻 译: 王 新

责任编辑: 黄 毅 李宝琳

出版发行: 中国电力出版社

社 址: 北京市西城区三里河路 6 号 (100044)

网 址: <http://www.centuryoriental.com.cn>

印 刷: 北京世艺印刷有限公司印刷

开本尺寸: 178 × 226

印 张: 3.5

字 数: 67 千字

版 次: 2005 年 1 月第 1 版, 2005 年 1 月第 1 次印刷

书 号: ISBN 7-5083-2695-4

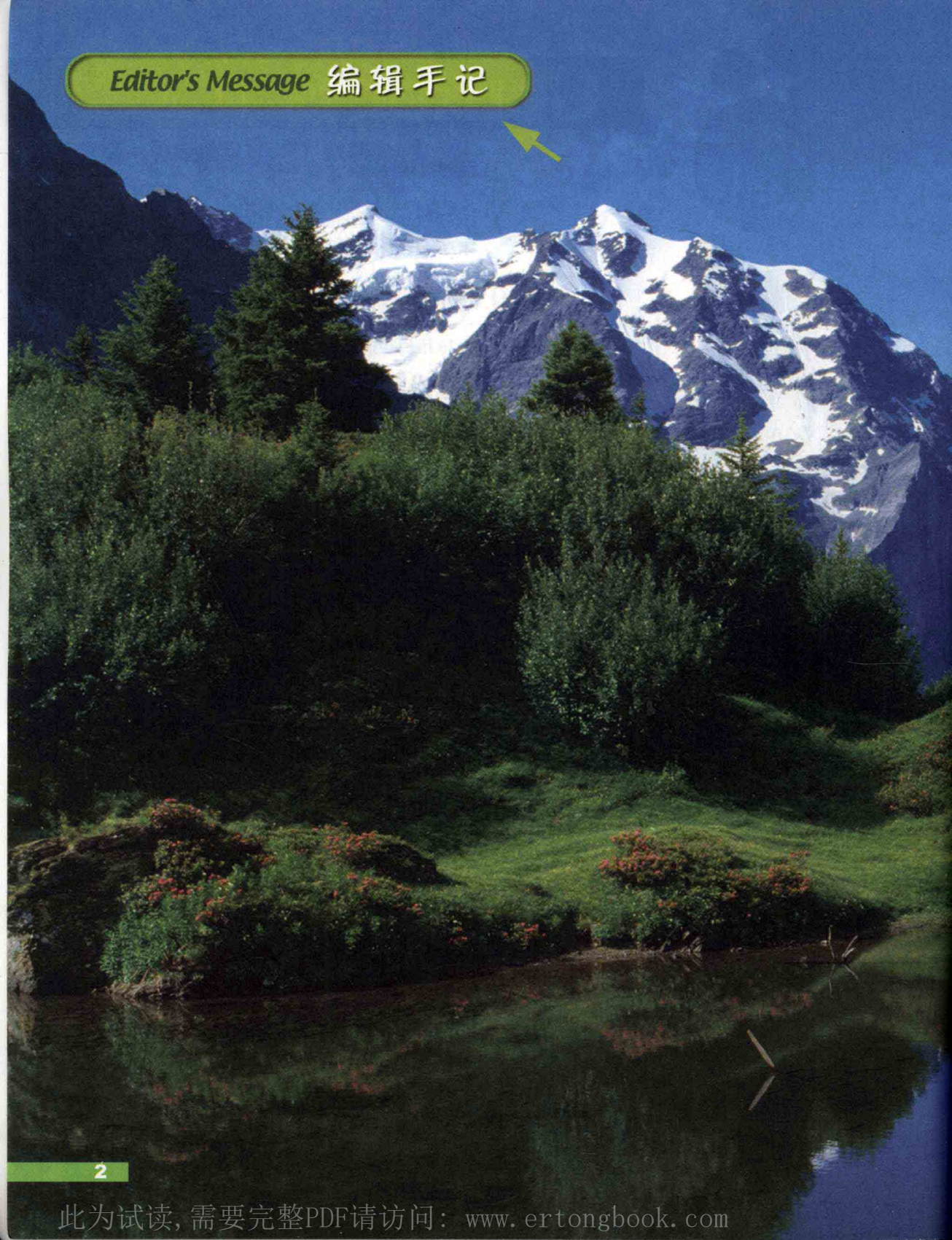
定 价: 9.90 元

版权所有 翻印必究

如有印装质量问题, 出版社负责调换。联系电话: 010-62183493

Contents 目录

- 
- 2 **Editor's Message** 编辑手记
- 4 **Iceland: One "Hekla" of an Island**
冰岛：一个火山之岛
- 10 **Surtsey: Fire in the Sea** 海中的火
- 10 **Go to Hekla!** 滚到赫克拉去吧！（见鬼去吧！）
- 12 **Jules Verne's Tale of Iceland**
儒勒·凡尔纳的冰岛故事
- 16 **Iceland's in Hot Water...So Why is Everyone Smiling?**
冰岛浸在热水中……为什么人人却在微笑？
- 22 **Geothermal's Future** 地热的将来
- 23 **Hot Water Springs Eternal** 永恒的温泉
- 24 **Why Geysers Blow** 间歇泉为什么会喷发
- 25 **Decoding Iceland's DNA** 解码冰岛
- 32 **Who Are These Guys?** 这些人是谁？
- 33 **Horsing Around in Iceland** 在冰岛骑马
- 36 **The Jökulhlaup** 冰融洪水
- 38 **Surging Glaciers** 涌动的冰川
- 41 **Glaciers and Global Warming?**
冰川和全球变暖的关系？
- 42 **Vikings: Bloodthirsty Thugs or Thrifty Traders?**
北欧海盗：残忍的暴徒还是节俭的商人？
- 48 **Ancient ABCs** 古代常识
- 50 **Teacher's Guide & Activity** 教师指导与活动



说起冰岛你是否就有一种冷飕飕的感觉？“冰岛”这一名字就很冷，加之其地理位置又位于北极圈附近的北大西洋，你一定认为那里一年四季的气候都很冷。

可是，如果你读了本书，你会对冰岛的气候感到吃惊。除了覆盖冰岛面积11.5%的冰河地区，冰岛的年平均气温在摄氏4~6度之间。来自南方的

墨西哥暖流使冰岛气候温暖，而来自北方的东格陵兰极地寒流又使得冰岛气候寒冷。坐落于中太平洋山脉顶部的这个小国还会有许多令你吃惊的科学现象。

还等什么？快带上你的泳衣和热巧克力，到冰岛的地热泳池去游个泳吧。

发现之旅即将开始。



ICELAND:

冰岛： 一个火山之岛

Out of the bottomless abyss atop Mount Hekla, or rather out of Hell itself, rise miserable cries and wailings so loud they can be heard for many miles around. Coal-black ravens and vultures hover around this mountain and have their nests there. There is to be found the Gate of Hell. . .

赫克拉火山顶上，有无底的深渊，这里传出痛苦的叫声和怒吼声，这种声音简直就是来自地狱，声音大得几英里之外都可以听到。乌鸦和秃鹫在山顶上盘旋，在山上做窝。这种景象只有在地狱的门口才能见到……

ONE "HEKLA" OF AN ISLAND

by Stephen James O'Meara



That's how Caspar Peucer, a 16th-century physician from Europe's mainland, described Mount Hekla, one of Iceland's most active volcanoes. Ever since Hekla's first recorded eruption — a violent one in A.D. 1104 — the volcano has been associated with the devil's abode. And, like some dreadful reminder to sinners that the devil intends to collect his due (unless they change their evil ways), the volcano has roared back to life at least once every century.

SEPARATING SCIENCE FROM FICTION

Of course, this talk of Hell is a lot of hot air. It's really just an embellished record of normal volcanic activity. Hekla is one of more than 100 volcanoes packed into tiny Iceland, an island with

这就是16世纪来自欧洲大陆的医生凯斯普·普测笔下的赫克拉火山——冰岛最为活跃的火山之一。公元1104年，人类第一次记录下了赫克拉火山的猛烈爆发，此后，赫克拉火山一直和“魔鬼的住宅”联系在一起。而且，就像提醒罪人魔鬼到时 would 来收租一样（除非它们选择诉诸于其他手段），赫克拉火山几乎每个世纪都至少要怒吼着爆发一次。

区分科学和虚构

当然，这种关于地狱的说法在很大程度上都是夸张，仅仅是对正常的火山活动添油加醋的描述而已。小小的冰岛占地仅为10万平方公里，其境内，竟然有100多座火山，赫克拉火山仅是其中之一。冰岛跨越大西洋中部隆脊（有时也称为裂缝），即地壳冻结物体系的一部分，熔岩从这里喷出。地球表面可以分为12大块，人

an area of about 100,000 square kilometers. Iceland sits astride the Mid-Atlantic Ridge (sometimes also called Rift) — part of a worldwide system of scars in Earth's crust through which molten rock can erupt. Earth's surface is broken into about 12 large pieces, called *tectonic plates*, and the scars mark the location of plate boundaries. Each plate creeps about the Earth's surface like a raft of frozen ice. These crustal rafts are moving away from, colliding with, or overriding one another. The Mid-Atlantic Ridge marks the spot where the North American plate is separating from the Eurasian plate at a rate of 2 centimeters per year.

Along the Mid-Atlantic Ridge, molten rock rises up from Earth's interior, squeezes into the crack separating the two plates, and pushes them apart as it moves onto the surface. It's a process that is usually unnoticed, because most of the volcanoes along the Mid-Atlantic Ridge are under water. (The bottom of the Atlantic Ocean is filled with some of the "youngest" crust on Earth.) But Iceland is different. It is the only part of the Mid-Atlantic Ridge above water. Iceland offers us a dry-land view of sea-floor spreading, or, as one tourist leaflet proudly announces, "continental drift in action." But why does Iceland rise above the rest?

The answer is that Iceland's volcanoes erupt with about twice the frequency of other volcanoes along the Mid-Atlantic Ridge. And that's because Iceland's volcanoes have two origins. Half of the eruptions are associated with sea-floor spreading (the process of two plates slowly separating because of the intrusion of rising molten rock), while the other half, the half that helped to push the island out of the sea, belongs to a *hot spot* — a separate and persistent plume of hot mantle welling up from Earth's interior as though it were in a big stovepipe. Iceland's hot spot is believed to have formed some 55 to

们称之为地壳构造板块，冻结物是板块边缘的标志。每一个板块就像一个冰冻的木筏一样在地球表面蠕动。这些“地壳筏”相互远离、碰撞、重叠。大西洋中部隆脊是北美板块漂离亚欧板块的标记，其漂移速度为每年两厘米。

沿着大西洋中部隆脊，溶岩从地球内部升起，挤入两个板块之间的缝隙，在向上运动的过程中，将两个板块推开。这一过程一般没有引起人们的注意，因为大西洋中部隆脊上的火山大部分位于海底（大西洋底满是一些“年轻的”地壳）。但是，冰岛情况则大不相同，它是大西洋中部隆脊惟一露出水面的部分。冰岛为我们提供了海床扩散的陆上景观，或者，正如一个旅游宣传册自豪地宣称的：“漂移着的大陆”。但是，为什么冰岛高于其他火山呢？

答案在于，冰岛火山喷发的频率是大西洋中部隆脊上其他火山的两倍，因为冰岛火山有两个来源。一半的喷发和海床扩散（在上升熔岩的侵入下，两个板块分离的过程）有关，而另外一半喷发帮助把海岛推出海面，它们源于一个热点——从地球内部涌出的一股独立不断的金属热流柱，仿佛它是在一个巨大的烟囱内部。人们认为，冰岛的热点形成于5500万~6000万年以前。地球上高于海平面的火山中，只有5%的火山的

60 million years ago. Only five percent of Earth's volcanoes above sea level receive lava in this way. The islands of Hawaii are among these, although they could not be more different from Iceland: Hawaii is a lush tropical paradise, while Iceland is a nearly treeless land with a harsh climate and stark beauty. Both places, however, share a common ancestry: They are lands born of fire.

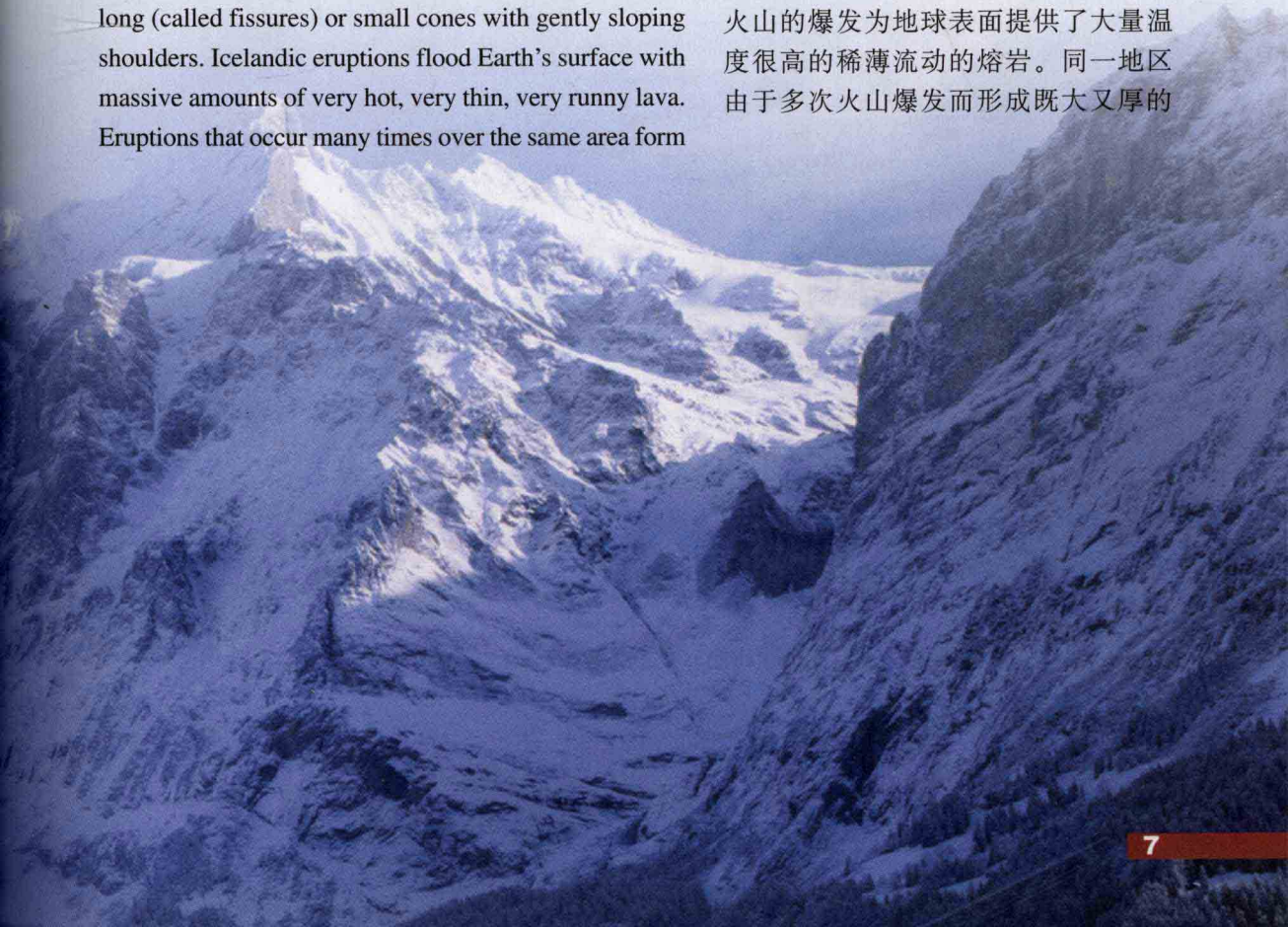
THE LAND OF FIRE AND ICE

Like Hawaii, Iceland is one of the most active volcanic regions on Earth. Aside from all the unseen activity on the ocean floor, one-third of the world's lava erupted since A.D. 1500 has originated in Iceland. On average, a volcano erupts there every five years. Most of the eruptions originate from cracks up to 40 kilometers long (called fissures) or small cones with gently sloping shoulders. Icelandic eruptions flood Earth's surface with massive amounts of very hot, very thin, very runny lava. Eruptions that occur many times over the same area form

熔岩是以该种方式形成的，其中包括夏威夷的火山。尽管夏威夷的火山与冰岛火山截然不同：夏威夷是草木茂盛的热带天堂；而冰岛气候恶劣，几乎不见树木，呈一种荒凉的美。但是，两个地方的形成是相同的：它们都诞生于大火之中。

火与冰之地

像夏威夷一样，冰岛是世界上火山最活跃的地区之一。从公元1500年起，除了海床上看不到的活动之外，地球上喷发的1/3的熔岩来自冰岛。冰岛的火山平均每5年喷发一次。大部分的火山喷发爆发于长达40公里的裂缝（称为龟裂）或者浪肩平缓的锥形山。冰岛火山的爆发为地球表面提供了大量温度很高的稀薄流动的熔岩。同一地区由于多次火山爆发而形成既大又厚的



huge and thick lava plateaus.

In 1783, Iceland produced the biggest lava flow eruption in the last 1,000 years. The eruption began on June 8, 1783, after a series of earthquakes rattled a glacier region called Skáptarjökull (pronounced SKAHP-tahr-yer-kull). By June 11, the volcano started to erupt with immense torrents of lava from different openings along a 24-kilometer-long fissure. Lava poured out initially at a minimum rate of about 8,600 cubic meters per second — nearly as fast as water is emptied from the Amazon River — and traveled 35 kilometers in only four days. The resulting crater row, called Lakagígar or the Laki Craters, for the region in which it was located, soon covered more than 500 square kilometers, completely filling two deep river valleys in the process. After eight months of activity, the volcano had erupted enough lava to fill Yosemite Valley to a depth of 300 meters.

熔岩高原。

1783年，冰岛爆发了1000年以来最大的熔岩流。该次爆发始于1783年6月8日，在此之前，Skáptarjökull的冰山地区一直地震不断。6月11日，在24公里长的裂缝上，巨大的熔岩流从不同的开口处涌出。一开始，熔岩喷出的最低速度是每秒8600立方米，这相当于亚马逊河入海的流速，仅仅4天之内，熔岩便蜿蜒流了35公里。根据其所处地区的名字，形成的火山群被称为拉卡火山口。熔岩很快蔓延了500平方公里，喷发的熔岩填满了两个河谷。经历了八个月的活动之后，喷发出的熔岩足够把约塞米蒂峡谷填高300米（美国西部的名胜，以龟山深谷著称——译者注）。

The eruption, called Skáptareldar (which means the fires of the river Skápta as the initial lava flow filled the Skápta River channel), also carried gases 15 kilometers into the atmosphere. The gas combined with small particles of dust to form aerosols that caused cooling in the Northern Hemisphere, possibly by as much as 1 degree C. This cooling is the largest such volcanic-induced event in recorded history. In Iceland, the haze led to the loss of most of the island's livestock due to consumption of fluorine-contaminated grass. It also was responsible for crop failure because of acid rain, and the death of 9,350 people — one-quarter of the population — from famine.

Even the glaciers of the last Ice Age couldn't stop the Earth under Iceland from erupting under the ice. Today, we can see remnants of the icecap that once completely covered the island. About 13 percent of Iceland is covered by glaciers, and the island continues to have numerous subglacial eruptions. One of the most recent eruptions, at Grimsvötn (pronounced GRIMS-voh-tin), is an example. Superheated by scalding molten rock, the icecap melted, and the water turned to steam to form a hissing cauldron of fire and ice. For more than two weeks in September-October 1996, the opposing elements battled in their ancient war.

Suddenly, on Nov. 5, great volumes of meltwater generated by the eruption burst out from beneath the glacier, producing an enormous flood called a jökulhlaup (pronounced JER-kull-hloip; see "The Jökulhlaup"). It was the largest such flood in 60 years. For a few hours, the volume of the floodwaters rivaled the flow of the world's second largest river, the Congo! No lives were lost, but damages were estimated to be about \$1.5 billion (Icelandic) or \$22 million (U.S.). The Grimsvötn volcano roared to life again in December 1998, although this time the region was spared a repeat of the great flood. But, as every Icelander has grown to understand, such is life on this world of extremes — of perpetual fire and ice.

这次火山爆发被称为 Skapta 之火 (因为一开始的熔岩流填满了该河道), 火山爆发的浓烟在空中形成 15 公里高的烟柱。气体中的灰尘形成气溶胶, 使北半球的气温大约降低了一度, 那次降温是有史以来最大的一次火山诱导的事件。在冰岛, 由于雾中含有的氟污染了草, 以草为生的牲畜受到威胁, 而且酸雨对庄稼也造成了影响, 进而导致 9350 人死于饥荒, 这占了冰岛人口的 1/4。

即使上个冰川时期形成的冰山也无法阻挡火山从冰层下喷发。现在, 我们可以看到一些残余的冰冠, 而冰岛曾一度被这些常年不化的冰雪覆盖。现在, 冰岛 13% 的面积为冰山, 而且不断有冰山下的火山爆发。最近在 Grimsvötn 的爆发就是一个例子。在滚烫的熔岩的高温加热下, 冰冠融化了, 形成了一个火和冰的大锅, 水变成了蒸汽, 发出滋滋的声响。1996 年 9 月到 10 月间, 火与冰两种元素以自古的方式交战了两个多星期。

突然间, 在 11 月 5 日, 融化形成的水柱从冰山下喷射出来, 形成了一场洪水, 名为 jökulhlaup, 这是 60 年来最大的一次火山爆发形成的洪水。几个小时之内, 水量就可以和世界第二大河流刚果河相比。所幸没有人员伤亡, 但是损失估计为 15 亿冰岛元或者 2200 万美元。1998 年 12 月, Grimsvötn 火山再度复苏, 虽然这次该地区幸免于大水, 但是, 正如每一个冰岛人逐渐意识到的一样, 在这个极端的世界里, 生活就是这样——永远的火与冰的战斗。

SURTSEY:

Iceland is the largest part of the Mid-Atlantic Ridge visible above water. The eruptions that occur on the land are certainly dramatic. But every now and again, a volcanic event reminds us that there is more to Iceland than meets the eye. Just offshore, in the relative shallows of the ocean, new land can emerge from the sea. Against pounding waves, the Earth struggles to establish itself. Sometimes the ocean wins. Sometimes the volcano wins.

THE HEAD OF A GIANT

The story of Surtsey began 130 meters underneath the lapping waves of the North Atlantic. In a matter of days or weeks — we really can't be certain — a series of quiet eruptions, fighting the great pressure of the ocean, gradually built up a ridge of ash until it was just below the water's surface. Then, all "Hekla" broke loose.

At 7:15 a.m. on the morning of Nov. 14, 1963, Olafur

冰岛是大西洋中部隆起在海面上最大的部分。地上的喷发当然非常壮观，但是，时不时，火山喷发事件会提醒我们，冰岛除了眼睛能够看到的之外，还有很多精彩之处。在近海处，可以形成新的陆地。面对汹涌的波涛，地球努力要隆起更多的地面。有时，大海胜利了，也有的时候，火山胜利了。

巨人的头

在北大西洋层层叠叠的波涛下的130米处，Surtsey的故事开始了。我们无法确定，是在几天内还是几周内，战胜了海底的巨大压力，一系列安静的火山喷发了，慢慢地形成了一个火山灰隆脊，直至冒出海

GO TO HEKLA!

Throughout medieval Europe, terrible tales of Iceland's fire mountains spread like lava, igniting the imaginations of those under the influence of Christianity. The church held a negative view of the natural world at that time — it was something to fear. Sermons often included eyewitness accounts of volcanic eruptions to prove the existence of Hell. Even local Icelanders believed that the ravens and vultures flying around Mount Hekla were the souls of sinners. In 1675, a Frenchman

by Stephen James O'Meara named De la Martiniere added the belief that the devil tossed these souls out of Hell so that their burning bodies would cool on the ice. The word "Hekla" gradually entered the common European vocabulary. When angry, some would curse, "Go to Hekla!"

FIRE IN THE SEA

海中的火

Vestmann, the cook on an Icelandic fishing trawler, spotted black smoke rising out of the ocean off the south coast of Iceland. No land was charted there, so he thought a ship was on fire. Soon, he and his comrades saw ash and realized a volcano was trying to break out of the sea. By 11:30 a.m., fantastic explosions of steam and ash were erupting every few seconds. Debris skyrocketed 150 meters into the air. Hours later, an island emerged from the sea, but it struggled against the pounding waves, which shattered and pulverized it. But the eruption continued, and by nightfall a new island had formed. After four days, it was a narrow ridge some 550 meters long and 45 meters high. The Icelanders called it Surtsey, named for Surtur, the mythological giant of fire.

by Stephen James O'Meara

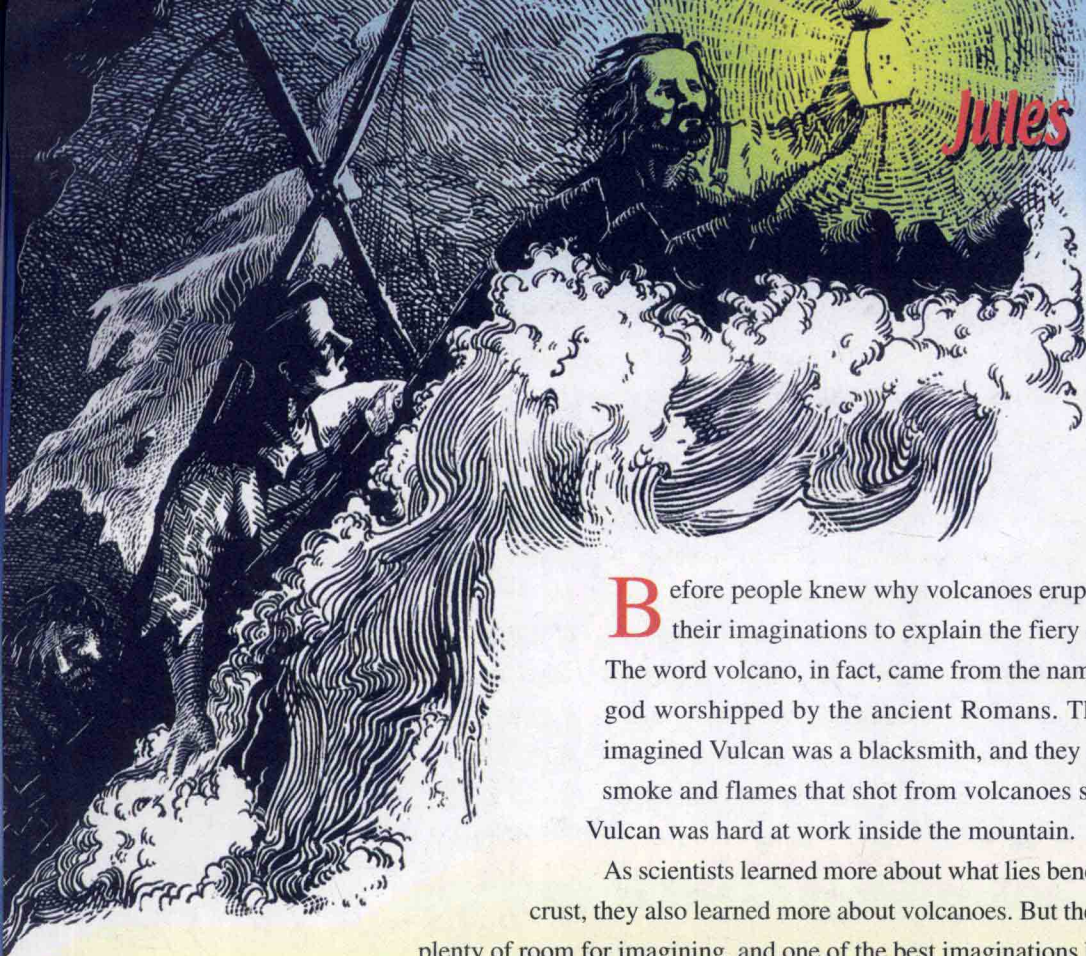
面。这时，所有的“赫克拉”（魔鬼）都脱缰了。

1963年11月4日早上7:15，冰岛一条拖网渔轮的厨子奥拉法·威斯特曼发现一股黑烟从冰岛南海岸的海面上升起。那里没有地面，因此他以为是一条渔船着火了。很快，他和船友看到了灰，意识到是火山从海底爆发了。中午11:30，每隔几秒钟，水和烟就迸发出来。岩石碎片向空中喷出150米。几个小时后，海面上出现了一个小岛，它在汹涌的波涛中顽强地搏斗着，而海水又想将它击碎。但是，喷发还在继续，夜幕降临时，一个新的岛屿形成了。4天后形成了一条550米长45米高的隆脊。冰岛人按照传说中的火的巨人的名字，将这个隆脊命名为Surtsey。

滚到赫克拉去吧！（见鬼去吧！）

在中世纪的欧洲，冰岛火山的故事就像熔岩一样流传开来，激发了生活在基督教影响下的人们的想象。当时，教会对自然世界持否定态度——自然是令人望而生畏的。布道中经常包括一些火山喷发的目击者的叙述以证明地狱的存在。甚至冰岛人也认为赫克拉火山顶上盘旋的乌鸦和秃鹫都是罪人

的灵魂。1675年，法国人德·拉·马提诺又说，魔鬼把这些灵魂扔出地狱，以便他们滚烫的身体在冰面上冷却下来。“赫克拉”这个词慢慢进入欧洲语言。人在生气的时候，会诅咒：“滚到赫克拉去吧！”



Before people knew why volcanoes erupt, they used their imaginations to explain the fiery explosions. The word volcano, in fact, came from the name Vulcan, a god worshipped by the ancient Romans. The Romans imagined Vulcan was a blacksmith, and they thought the smoke and flames that shot from volcanoes showed that Vulcan was hard at work inside the mountain.

As scientists learned more about what lies beneath Earth's crust, they also learned more about volcanoes. But there was still plenty of room for imagining, and one of the best imaginations belonged to a French writer named Jules Verne. Many people called Verne the father of science fiction, because his stories combine scientific theories with fantastic adventures.

Verne was born in the French town of Nantes in 1828. He studied to be a lawyer like his father, but what he really liked to do was write — and to read everything he could find. He took notes on all kinds of subjects, and by the time he died at age 77, he had collected 25,000 note cards.

人们在知道火山为什么爆发之前，使用自己的想象力来解释这一切。Volcano（火山）这个词实际上来源于古代罗马人信奉的一个火神弗尔肯“Vulcan”。罗马人把弗尔肯想象为一个铁匠，他们认为火山冒出的烟和火表明弗尔肯在山里忙着干活。

随着科学家对地壳下的结构有了更多了解，他们也更加了解火山了。但是，依然存在很大的想象空间，想象力最为丰富的要数法国作家儒勒·凡尔纳。很多人把凡尔纳称为科幻小说之父，因为他的小说融科学道理和幻想冒险为一体。

凡尔纳1828年生于法国的南特。为了和父亲一样成为一名律师，他学习法律，但是他真正喜爱的是写作，并且读了自己所能找到的所有书籍。他记下关于各门学科的笔记，到77岁去世的时候，他记的卡片有25 000张。

Tale of Iceland

by Jane Harrigan

One of Verne's friends was a geographer who had explored volcanoes. His friend thought that all volcanoes might be connected by underground tunnels. From that idea and from his own knowledge of geology, Verne wrote a book in 1864 called *Journey to the Center of the Earth*.

The book describes the adventures of Professor Otto Lindenbrock and his nephew Axel, who live in Germany. The professor is an expert on rocks, and one day in an old book he finds a coded message from a man who claims he reached the center of the Earth by climbing down into a volcano called Sneffels in Iceland.

Axel thinks the idea is crazy. But because the professor is much too strict to argue with, they set off for Iceland. Helped by a guide named Hans, they find the volcano and begin climbing down inside.

Soon, they discover a dark tunnel, and the professor exclaims, "We are truly about to take our first step into the interior of the Earth, never before visited by man since the first creation of the world. You may consider, therefore, that at this precise moment our travels really commence."

As Axel tells the story, here's what happens next:

"Forward!" cried my uncle. Each took up his burden. Hans went first, my uncle followed, and I going third, we entered the sombre gallery! Just as we were about to engulf ourselves in this dismal passage, I lifted up my head, and through the tubelike shaft saw that Iceland sky I was never to see again!

During the next two months, the professor, Axel,

凡尔纳有个朋友是研究火山的地理学家。他的朋友认为，所有的火山可能通过地下隧道相连。按照这个想法，再加上自己的地理学知识，凡尔纳在1864年写了一本名叫《地心游记》的小说。

小说描写了德国教授奥特·林顿布洛克和侄子埃克瑟的冒险经历。教授是一个岩石专家，一天，他从一本旧书中读到一条编有密码的信息，编码者宣称自己从冰岛的Sneffels火山爬进去，到达了地心。

埃克瑟认为这个想法荒诞不经，但是教授固执己见，他们便出发去了冰岛。在向导汉斯的帮助下，他们找到了火山，并开始向下爬。

很快，他们发现一条漆黑的隧道，教授说：“我们就要开始迈进入地球内部的第一步了，自从地球被创造以来，没有人来过这里。因此，我认为，我们的旅途可能就在此刻开始了。”

故事是以埃克瑟的口气讲述的，下面是书中的原话：

“向前！”我叔叔大喊。每个人都背着自己的行囊。汉斯在最前面，接着是我叔叔，最后是我，我们进了这个昏暗的巷道！就在即将被这个阴沉沉的通道吞没之前，我抬起头，穿过像管道一样的竖井，最后看了一眼冰岛的天空，以后我再也看不到了！

在接下来的两个月中，教授、埃克瑟、汉斯三个人在地球里遇到各种无法想象的冒险活动。埃克瑟和同伴走散了3天，以为自己永远也无法出去了，但是在一个巨大

儒勒·凡尔纳的冰岛故事

and Hans have incredible adventures inside the Earth. Axel loses his companions for three days and is afraid he'll be trapped forever, but he finds them again on the shore of a huge underground ocean.

The travelers discover sea monsters, a prehistoric man, and a forest of mushrooms twelve meters high. After crossing the underground sea in a raft and encountering a fierce storm, they find another tunnel, but this one is blocked by a rock.

Axel, the professor, and Hans try to blast the rock away with gunpowder. They end up blasting a huge hole into which the sea rushes; it flings their raft down into what seem to be endless depths. For days, they struggle to figure out where they are and how to get out. And then, as the three of them sit aboard the raft, they slowly realize they are moving upward. As time passes, they continue to move upward with increasing speed. The professor then announces that he believes that they are inside the shaft of an erupting volcano!

As the temperature grows hotter and the raft's upward speed increases, Axel thinks:

I seriously believed my last hour was approaching. In such circumstances, you do not choose your own thoughts. They choose you.

For several more hours they continued to rise, riding a mass of boiling water under which was a heaving mass of lava. Axel continues his tale:

Instant death appeared the only fate we could expect or contemplate.

Soon a dim, sepulchral light penetrated the vertical gallery, which became wider and wider. I could make out to the right and left long dark corridors like immense tunnels, from which awful and horrid vapors poured out. Tongues of fire, sparkling and cracking, appeared about to lick us up. The hour had come!

"Look, Uncle, look!" I cried.

"Well, what you see are the great sulphurous flames.

的地下海洋的岸边，又找到了另外两个人。

旅行者们发现了海怪、史前人，还有12米高的蘑菇林。他们坐着一个木筏渡过地下海，又经历了一场暴风雨之后，发现了另一个隧道，但是这个隧道口被一块巨石挡着。

埃克瑟、教授和汉斯想要用炸药把洞口炸开，结果炸开了一个大口，海水涌了进去，他们的木筏也随之冲了进去，里面仿佛没有尽头。接下来几天里，他们努力确定自己的位置，设想该如何出去。后来，他们三个人坐在木筏甲板上的时候，才意识到自己在慢慢向上移动。随着时间的推移，他们向上移动的速度越来越快。后来，教授说他认为大家正在一个喷发的火山的纵轴内。

随着温度越来越高，木筏向上的速度也越来越快，埃克瑟想：

我确实认为自己的末日来临了……这种时候，不是你在选择该想什么，而是想法在选择你。

他们又向上运动了几个小时，船外是沸腾的水，水面下是岩浆。埃克瑟继续讲着他的故事：

现在看起来我们所能期待的命运就是死亡。

很快，一点微弱的、坟墓萤火般的灯光穿过竖井，越来越强。我可以分辨出，左边和右边长廊就像无边无际的隧道，其中喷出刺鼻难闻的蒸汽。火舌闪着光，发出噼啪啪的响声，仿佛要吞噬我们。死期到了！

“看，叔叔，看！”我叫道。

“噢，你看到的是亚硫火，这是火山爆发时很常见的现象。”

“但要是烧着我们怎么办？”我生气