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# Science on the Ice: An Antarctic Journal 冰上科学：南极行

[美] Rebecca L. Johnson 著  
傅 涛 杜丽娟 译



科学普及出版社



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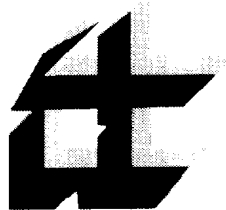
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## 1. Journey to the Bottom of the World



Snuggling deeper inside my parka, I tried to stretch my legs without waking the bearded man sitting across from me. Our knees—well padded in thick, insulated pants—were nearly touching. So were the knees of all the other passengers. We were crammed together like sardines near the front end of this military transport plane, a U.S. Air Force C-141 Starlifter. Beyond the people, the shadowy cargo area was packed full too. There were wooden crates of food and supplies, tarp-covered boxes of scientific equipment, machine parts, a few snowmobiles, and what looked like part of a helicopter.

Most of my fellow passengers were sleeping or reading—anything to pass the time on this

## 1. 世界之底的旅行



我蜷缩在大衣里，试图在不弄醒横坐在我前面的男士的情况下，伸开我的双腿。我们那穿着厚而隔热裤子的膝盖几乎碰到了一起。所有其他乘客的膝盖也都一样。我们像沙丁鱼一样，挤在一架美国空军运输机运输星C-141 军用机舱前端。除了乘客以外，货舱区的昏暗处也堆得满满的。在那里堆放着装食物和供给的木箱子、装科学设备的油布箱子、机器部件、几辆雪地摩托和看上去像是直升机部件的东西。

与我同行的大多数乘客或是在睡觉或是在看书——干着一切能够打发



## 1. Journey to the Bottom of the World

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five-to six-hour flight. We couldn't talk over the roar of the engines. It would be two more hours before we landed at McMurdo Station, Antarctica. At least that was the plan. But if a blizzard blew up around McMurdo, the pilot would be forced to turn the plane around and fly back to Christchurch, New Zealand. Boomeranging, it was called. We had already done that once. This was our second try for "the Ice."

I looked down the line of people, wondering who they were and what they would all be doing once we reached the continent. In the past, Antarctica was a destination for adventurers, explorers, and seal and whale hunters. These days, most of the people who spend time on the world's southernmost land are involved, one way or another, with science.

Biologists come to learn how Antarctica's wildlife survives extreme cold and is affected by changing environmental conditions. Astrophysicists and astronomers come to study the ozone hole, cosmic rays, stars, and meteorites.

## 1. 世界之底的旅行

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这五六个小时飞行时间的情况。隆隆的引擎声使我们不能谈话。离南极洲麦克默多站还有两个小时的路程。至少按计划是这样。如果麦克默多周围刮起暴风雪的话，飞行员就不得不掉转方向返航，飞回新西兰基督城，这叫做“回飞棒飞行”。我们已经历过一次了。这是我们前往“冰雪世界”的第二次尝试。

我看着坐成一行的人们，想着他们是谁，到达南极后他们都会做些什么。过去，南极洲是冒险家、探索者和猎捕鲸与海豹的猎手的去处。今天在世界最南端大陆上花费时间的大多数人，都以某种方式从事着科学研究。

生物学家们到这里来研究南极洲的野生动物是如何在严寒中生存的，以及变化的环境对它们的影响。天体物理学家和天文学家来这里研究臭氧空洞、宇宙射线、恒星和陨星。古生物

## 1. Journey to the Bottom of the World

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Paleontologists arrive in search of the fossils of dinosaurs and other ancient animals that once lived on the continent, while geologists study rocks to discover more about the formation of Antarctica and its relationship to the other continents. For glaciologists, Antarctica is one of the best places on earth to study ice, in all its many shapes and forms. Glaciers and ice sheets hold clues to changes in the earth's atmosphere and climate over long periods of time.

Along with scientists come support staff—teams of people who help scientists carry out their work and who maintain Antarctic research stations. Some are engineers, plumbers, and electricians, while others work as computer technicians, survival-school instructors, and heavy-equipment operators. The military lends a hand to scientists in Antarctica by transporting people, equipment, and supplies, and by helping with communications, weather forecasting, and medical care.

The plane lurched suddenly, jarring the sleepers awake. But the constant droning of the

## 1. 世界之底的旅行

学家到这里来寻找在这块大陆上生存过的恐龙和其他古代动物化石。地理学家则是通过对岩石的研究，来发现关于南极洲构成的更多知识，以及它与其他大陆的关系。对于冰河学家来说，南极洲是地球上研究冰的众多形状和形态最理想的地方之一。冰河和冰层中蕴藏着地球环境和气候在漫长的时间里变化的线索。

与科学家们一道来的是保障人员分队的队员们，他们帮助科学家们开展工作，维护南极研究站。还有工程师、水管工和电工。其他人员如计算机技师、生存学校教练和重型设备操作员。军方帮助南极洲的科学家们运送人员、设备和供给，并在通讯、天气预报和医疗救护上提供帮助。

飞机突然倾斜，震醒了熟睡的乘客。但是引擎持续不断的轰鸣声很快

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engines soon had them dozing again. I closed my eyes and thought about Christchurch, where it was warm and green, and where this long journey south had begun.

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“Be sure your boots are big enough.” said a woman sitting on the floor, surrounded by heaps of clothing. She had been watching me struggle into a pair of white, lace-up rubber boots. “If they’re too tight, it doesn’t matter how many pairs of wool socks you wear, your feet’ll still be cold.” We were in the changing room of the CDC, or Clothing Distribution Center, in Christchurch. Everyone traveling to Antarctica with the United States Antarctic Program gets outfitted here with a complete set of cold-weather survival gear.

My pile of gear was considerable. And I had to try on everything, all together, to make sure it all fit: thermal long johns, windproof pants with a heavy insulating liner, a thick wool shirt, a down vest, a massive bright-red down

又使他们昏睡过去。我闭上双眼想着基督城，那里温暖而且生机盎然，从那里我们开始了向南的长途旅行。

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“你的鞋子一定要足够大。”一位坐在地板上的女士说道，在她四周放着几堆服装。她注视着我费力地把脚挤进一双白色的系带橡皮靴里。“如果鞋子太紧的话，无论你穿多少双羊毛袜都不管用，你的脚还会感到冷的。”我们这会儿是在 CDC 更衣室里（基督城服装分发中心）。每一个参加美国南极洲计划而前往南极的人都配备了一整套耐严寒气候的生存装备。

我的装备数量极多。我不得不挨个试穿，以确保它们都合适：保温长罩衫、带有重隔热衬垫的防风裤、一件厚羊毛衬衫、一件羽绒马夹、一件硕大的亮红色羽绒大衣，以及装有两

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parka, and two pairs of wool socks inside the funny-looking, but really warm, white rubber boots. Everyone calls them bunny boots. They have air bladders in the sides, with little valves to seal them off. The trapped air acts as extra insulation.

There were also several types of gloves and mittens, including a pair of gigantic bear paws mitts, along with a neck gaiter, face mask, cap, and goggles. With all those clothes on, I could hardly move.

Several days later, I was wearing most of my polar survival gear as we waited to board the C-141 for the second time. We had boomeranged the day before. Now we were ready to try it again.

It was a beautiful morning in Christchurch, warm and sunny, with flowers blooming along the runway. Everyone was sweating under many layers of wool and down. Mittens, caps, extra cold-weather gear, water, and some high-calorie snacks were stashed in each person's only piece of carry-on baggage: a bright orange

## 1. 世界之底的旅行

双羊毛袜看上去很滑稽但的确保暖的一双白色橡皮靴。靴子两边有气囊，有个小阀门把它密封起来。里面的空气起到了额外的隔热作用。

还有几种款式的五指手套和两指手套，包括一副巨大的熊掌式的露指手套，一个脖套及面罩、帽子和护目镜。穿戴上这些，我几乎都不能动了。

几天以后，当第二次等候登上C-141飞机时，我穿上了我的大多数极地生存装备。前一天我们又“回飞棒飞行”了一次。现在，我们准备再试一次。

这天早上，基督城的天气极佳，温暖而且阳光明媚，跑道两侧野花绽放。由于穿着一层层羊毛和羽绒衣服，每个人都在出汗。手套、帽子、额外的防寒装备、水和一些高热卡快餐都被塞进了每人惟一随身携带的旅行包里：一个亮橘色生存包。我们



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survival bag. One by one, we each picked up a sack lunch and a pair of foam earplugs and then stepped into the dimly lit interior of the plane.

Inside, people took their places quickly, settling down into the canvas bench-type seats, stowing their survival bags beneath them, and strapping in with heavy-duty seat belts. The loadmaster, a member of the flight crew, shouted out directions. "Pack in!" "Stow your gear *all the way* under your seat!" "Women up front!" He was wearing a headset to communicate with the pilot up on the flight deck. I pressed the foam earplugs into tiny rolls and pushed them into my ears. As the foam expanded, the deafening roar of the engines dimmed to a low growl. "Check your boots!" someone shouted. I made sure that the valves on my bunny boots were open. If the valves are closed, a rapid, change in air pressure inside the plane can cause the boots to explode.

We sat on the runway for half an hour. Finally the plane began to move. The noise of the engines changed to a high-pitched whine as