

Exploring The Antarctic

作 者	金慶民
Author	Jin Qingmin
英文翻譯	沙愛 王大來
English Translators	Sha Ai Wang Dalai
主 審	張崇高
Editorial Director	Zhang Chonggao
責任編輯	周鴻鑄
Responsible Editor	Zhou Hongzhu
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EXPLORING THE ANTARCTIC

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南極探秘

自序

漫長的嚴冬悄然離去，夏日的陽光倏然降臨，大地復蘇，冰原生輝。苔蘚在巉岩生機盎然，海鷗在空中鼓翅歡鳴，企鵝在雪地款步輕移，萬古長眠的大陸睜開朦朧的睡眠，突然發現來自中華大地的科學家已經投進了自己的懷抱。

1986年12月27日，我闖入這個令人心往神馳的未知世界，禁不住捧起純淨的冰雪久久地親吻。南極——地球的明珠！我來了，帶着我的神秘的夢和對冰雪王國的一片深情。

77天的南極考察留下了不可磨滅的回憶。我曾在冰湖邊駐足，我曾在雪山上小憩，然而更多的是夜以繼日地跋涉、攀登和尋覓。背包裏裝滿了採集的岩石標本，照相機鏡頭攝下一幅幅綺麗的圖景，迎着夏日的暴風雪，我親手繪製了菲爾德斯半島地質圖，記錄了南極古陸地殼演化的佐証。和平、寧靜、溫馨的南極風光令我留連忘返，當我含淚和她惜別時，深深的戀情留在了那片潔白的大地。

我雖然回到了故里，却時時夢想重返南極。1988年11月25日，我第二次涉足南極，作為中美聯合登山科學考察隊的唯一女性，加入了南極之巔文森峰的探險者行列。

雪茫茫，路漫漫，冰原上留下開拓者的足跡。呼嘯的狂風，橫掃的飛雪，冰坡上布滿裂縫，征途上險象叢生。理想和希望使我們鼓足勇氣，生與死的搏鬥每時每刻都在進行。我孤身一人在冰原上考察了4個晝夜，証實了人有戰勝自然、戰勝自我的智慧和力量。寂寞的暴風雪之夜，冰原上的踽踽獨行，舉步維艱的攀登，獲取成功的喜悅，使我領悟到人生價值的真正含義。

人生沒有休止符，事業從來無盡頭。當我將這本畫冊奉獻給朋友們的時候，我又準備第三次踏足南極。在我的南極探秘變成現實之際，我要衷心地感謝許許多多支持我、關心我的朋友。其中，我得到了中國南極考察委員會主任武衡先生，中國南極考察隊郭琨先生和全體隊友，“極地”號科學考察船船長顧翔先生與全體船員，中國登山協會主席史占春先生、秘書長王鳳桐先生，中國地質礦產部，中國地質科學院，南京地質礦產研究所，以及江蘇科學技術出版社等有關部門和朋友們的大力支持。我還要感謝我的美國朋友——世界著名的南、北極探險家麥克·登先生，中國登山隊傑出的登山運動員李致新、王勇峰先生，香港著名藝術家李樂詩女士，江蘇省對外文化交流協會副會長王霞林先生，以及江蘇攝影家劉棲梅女士，他們在我的南極科學考察登山活動以及本畫冊出版過程中給予很多幫助，我將永遠銘記在心。

金慶民



Author's Preface

As the long, long severe winter departs quietly and the sunlight of summer makes its sudden appearance, the vast expanse of land comes back to life, and the plain of ice shines with immense splendour. The mosses turn exuberantly green on steep cliffs, seagulls sing merrily, fluttering their wings in the sky, and penguins pace leisurely in the snow. Here, when once the sleeping continent opened its drowsy eyes, all of a sudden, she found that scientists from the remote land of China had appeared.

On December 27, 1986, when I first set foot on this fascinating land of the unknown, I couldn't help scooping up a handful of lustrous snow and burying my lips into it for a long time. Oh, Antarctica, the earth's jewel! Here I came, carrying along with me my secret dream and my profound feelings towards you, the great kingdom of ice and snow.

Seventy-seven days' investigations in the Antarctic have left on me an indelible memory. I stayed by the side of frozen lakes, I took brief rests on slopes of snowy mountains, but far more often there were exhausting long journeys: mountain climbs and searches for possible mineral deposits. Gradually my backpack was filled with rock samples I had collected; with my camera I took pictures of many enchanting scenes. Braving the blizzards of the Antarctic summer,

I drew a geologic map of Fildes Peninsula, recording the crustal movement of this palaeocontinent of the Antarctic. The peaceful, serene and pleasing environment of the Antarctic made me linger on, and when eventually I bade farewell to it with tears in my eyes, I left behind my profound love for this land of white.

After I had come back to my native land, I always dreamed of the day I would revisit the Antarctic. On November 25, 1988, I fortunately set foot for the second time on the Antarctic and as the only female member of the Sino-American Joint Scaling and Science Expedition to Vinson Massif, I participated in the exploration of the summit of the Antarctic.

Amid the boundless expanse of snow and on the endless routes of expeditions, explorers' footprints were left on the open country of ice. The howling wind, the sweeping snow and the fractured ice slope filled every inch of the journey with danger. Ideals and hope fortified our steadfast courage even if the fight between life and death was carried on during every minute of the journey. I made investigations all alone for four days and nights on end on the ice plateau, which proved to me that human beings are wise and powerful enough to conquer nature and egos. The lonely night of snowstorm, the long walk in solitude in the ice country, the laborious steps in scaling mountains and the genuine joy over success all showed me the real significance of human life.

There is no end in man's undertakings, nor should there be any cease in one's effort of pursuit. At the time when I am dedicating this photograph album to my friends, I am about to set forth to the Antarctic for the third time. As my dream to explore the Antarctic is coming true once again, I want to express my heartfelt thanks to those friends of mine who have given me their valuable support and kindly concern, especially those from Mr. Wu Heng, Chairman of the National Committee for Antarctic Exploration of the People's Republic of China Mr. Gou Kun of the Chinese Antarctic Expedition and all the team members, Mr. Gu Xiang, Captain of the SS "Polar Land", the scientific investigation ship and all her crew, Mr. Shi Zhanchun and Mr. Wang Fengtong, Chairman and Secretary-General of the Chinese Mountaineering Association, and from the Chinese Ministry of Geology and Mineral Resources, the Chinese Academy of Geological Sciences, the Nanjing Institute of Geology and Mineral Resources and the Jiangsu Science and Technology Publishing House. My hearty thanks also go to my friend from the U. S., Mr. Michael C. Dune, famous explorer of both Poles, and to Messrs. Li Zhixin and Wang Yongfeng, outstanding mountaineers of the Chinese Mountaineering Team, Ms. Rebecca Lee, famous artist of Hongkong, Mr. Wang Xialing, Deputy Director of Jiangsu Society for Cultural Exchange with Foreign Countries, and Ms. Liu Qimei, photographer in Jiangsu. Without their help, my scientific investigation and mountaineering in the Antarctic and the publication of this present album would not have been possible.

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南極概述

南極地處南緯60度以南，包括南極洲和南大洋，總面積約為5200萬平方公里；而南極洲則只包括南極大陸和周圍島嶼，面積約1400萬平方公里，佔世界陸地面積的1/10。

南極洲是最後被人類發現的第七大陸，是世界上最最高的大陸，平均海拔2350米，內陸高原達3700米，最高點為埃爾斯沃斯山脈的文森峰(VinSon Massif)，海拔5140米。

南極洲是世界上最寒冷、暴風雪最頻繁、風力最強、最乾燥的地區。南極大陸平均氣溫為零下25℃，極端最低氣溫達零下88.3℃；大陸沿海平均風速17~18米/秒，最大風速可達100米/秒以上；整個南極大陸的年平均降水量為30~50毫米。所以，這裏被人們稱為世界的“寒極”、“風極”和“白色沙漠”。

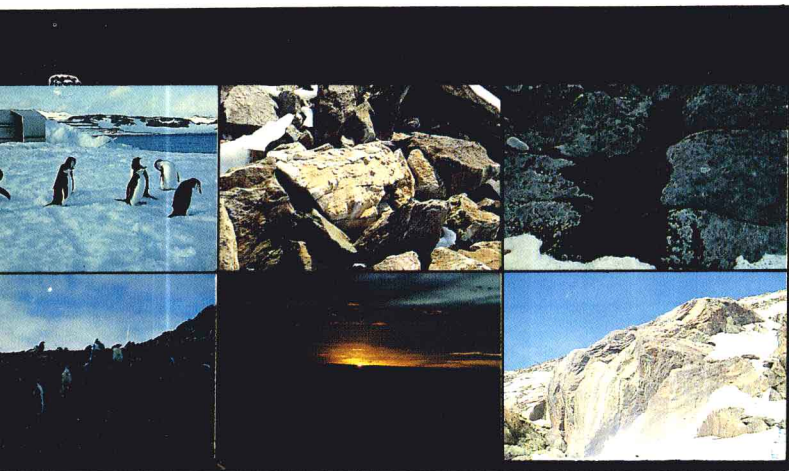
冰雪是南極的象徵。南極大陸95%以上的面積常年被冰雪覆蓋，平均厚度2000米，最厚達4800米，總體積2450萬立方公里，儲存了地球上90%以上的冰雪，是人類取之不竭的最大天然冰庫。如果南極冰蓋一旦全部消融，那麼全球海平面將平均升高60米，地球的陸地面積將有2000萬平方公里被滄海淹沒。

南極洲沒有明顯的四季變換，只有寒暖兩季的分別，11月至次年3月為暖季，4月至10月為寒季，並有絢麗的極光出現。

南極洲是地球上唯一沒有土著居民和未被開發的萬寶之地。現已初步查明，南極大陸蘊藏有豐富的鐵、煤、銅、鉛、鋅、錳、金、銀、鈾、石油和天然氣等220多種礦產資源和能源。南大洋擁有魚、鯨、海豹、烏賊等多種水產資源，其中南極磷蝦蘊藏量可達10~50億噸，被譽為人類未來動物蛋白質的倉庫。

南極只有不到5%的地方生長一些低級的地衣、苔蘚、海藻。目前已發現大約有400種地衣、75種苔蘚、4種開花植物和130多種藻類。此外，南極還有40多種昆蟲，其中最大的是無翼蚊。

人類對南極大陸的認識是近160年以來的事，迄今已有17個國家在南極建立了近40個常年考察站和100多個夏季考察站。1983年5月，中國正式加入《南極條約》。1984年11月20日，中國首次派出南極考察隊，在喬治王島南端的非爾德斯半島建成了中國第一個南極科學站——長城站。1988年11月20日，中國派出另一支南極考察隊，在東南極建立了中山站。



A Brief Account of the Antarctic

Located south of 60° south latitude, the Antarctic consists of the Antarctic continent (Antarctica) and the Antarctic Ocean, covering an area of about 52,000,000 square kilometers. The Antarctica, however, comprising the continent and the nearby islands, has a total area of about 14,000,000 square kilometers, making up 10 per cent of the world's total land area.

The Antarctica is the seventh continent last discovered by mankind. It is the highest continent in the world, with an average altitude of 2,350 meters above the sea level, while the elevation of the inland plateau averages 3,700 meters. Vinson Massif of the Ellsworth Mountains, the summit of the continent, is 5,140 meters above sea level.

The Antarctica is the coldest and driest continent in the world, with the most frequent blizzards and the most powerful wind force. The average air temperature on the Antarctica is -25°C , but at the Pole it can drop to as low as -88.3°C . The wind speed along the coastal regions averages 17 to 18 meters per second, while the highest can reach well over 100 meters. The average annual rainfall of the whole continent is 30-50 millimeters. Hence it is often referred to as the world's "land of extreme cold", "land extremely windy" and "White Desert".

Ice and snow is the symbol of the Antarctic. Over 95 per cent of the Antarctic continent is covered by ice and snow, all the year round with an average thickness of about 2,000 meters, while in some areas with a thickness of as much as 4,800 meters. The total volume of this ice reaches 24.5 million cubic kilometers, about 90 per cent of all the ice on earth, which forms the largest natural ice storage for an inexhaustible supply.

It is calculated that if the ice in the Antarctic were melted, the world's sea level would be raised by an average of 60 meters and about 20 million square kilometers of the world's land would be submerged.

In the Antarctic, there is no distinct change of the conventional seasons, and it can only be divided into cold and warm seasons. The warm season comes from November to March of the next year, while the cold season lasts from April to October when the southern light (aurora australis) can be spotted.

The Antarctica is the only continent upon which no aborigines of its own live and the hidden treasures of which have not yet been opened up. It has been made clear that the Antarctica holds in store in great abundance more than 220 kinds of mineral and energy resources, such as iron, coal, copper, lead, zinc, manganese, gold, silver, uranium, petroleum and natural gas. In the Antarctic Ocean there are rich aquatic resources such as fish, whales, seals, cuttlefish, etc. The reserves of the Antarctic krill range from one billion to five billion tons and are hailed as the store of animal protein for mankind in the future.

As the environment is not favourable to plant life, only 5 per cent of the land in the Antarctic yields elementary plant forms like lichens, mosses and algae. Up to now, 400 kinds of lichens, 75 kinds of mosses, 130 kinds of algae and 4 kinds of flowering plants have been discovered. Other forms of life on the Antarctica include insects, 40 types in number, of which the wingless mosquito is the largest.

It is only in the recent 160 years that mankind has begun to understand the Antarctic. Today seventeen countries have set up nearly 40 permanent observation stations and more than 100 temporary warm season stations there. In May, 1983, China formally acceded to the Antarctic Treaty. On November 20, 1984, China sent to the Antarctic her first Antarctic Expedition, which set up China's first Antarctic scientific research station, the Great Wall Station, on Fildes Peninsula to the south of King George Island. On November 20, 1988, China sent another Antarctic expedition which set up Zhongshan Station on the Eastern Antarctica.

風帆萬里

A Long Sailing Braving the Wind

Facing the oncoming sea breeze and sailing amid the blue waves, the SS "Polar Land", the Chinese scientific investigation ship, is on her way to a mysterious land which I have long yearned for – the Antarctic and I am lucky to be on board.

The Chinese Antarctic Expedition aboard the SS "Polar Land" embarks at the port of Qingdao, sails across the Pacific and Antarctic Ocean, goes through the Drake Passage, and finally arrives at the Chinese Great Wall Station on King George Island of the South Shetland Islands. After having completed the scientific investigations of both the Antarctica and the Antarctic Ocean, the team comes back by way of the Drake Passage again, sailing across the Atlantic, passing the Cape of Good Hope and Mozambique Channel, sailing across the Indian Ocean and the South China Sea and returning to the Port of Qingdao. From October 31, 1986 to May 17, 1987, the voyage takes 199 days and covers 30,921 nautical miles to complete the scientific investigations in marine physics, marine chemistry, marine geophysics and marine biology.

風 帆 萬 里

我站在中國“極地”號科學考察船上，迎着撲面海風，劈開萬重碧浪，駛向那個令我夢寐縈懷的神秘大陸——南極。

中國南極考察隊從青島港啟航，橫渡太平洋，穿越德雷克海峽，抵達南設得蘭群島喬治王島上的中國長城站，完成南極洲與南大洋科學考察後，再度取道德雷克海峽，穿越大西洋，經過好望角與莫桑比克海峽，橫渡印度洋，跨過南中國海，返回青島港。從1986年10月31日至1987年5月17日，歷時199天，總航程為30921海里，完成了海洋物理、海洋化學、海洋地球物理和海洋生物科學考察任務。



“極地”號載着中國南極考察隊遠征
Loaded with the Chinese Antarctic Expedition
the SS “Polar Land” is ready to set off.



我站在駁船上，遙望喬治王島，思緒萬千
Looking forward towards King George
Island aboard a barge, I am full of
feelings.