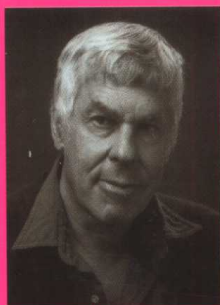


哲人石
丛书

当代科技名家传记系列



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丛书

突破维数障碍

『遨游于高维数学空间的菲尔兹奖得主』

斯梅尔 传

上海科技教育出版社

史蒂夫·巴特森 著

邝仲平 译

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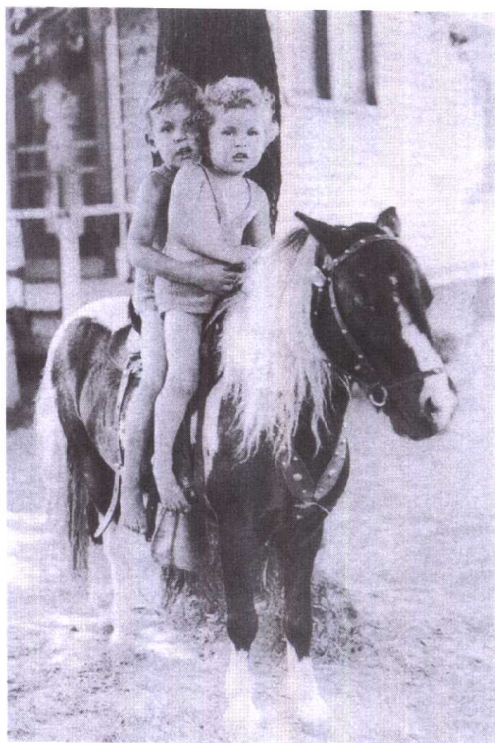
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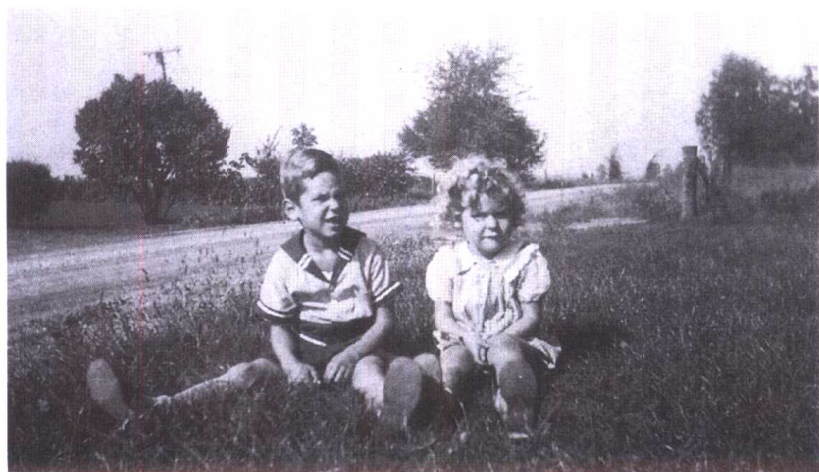
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史蒂夫和妹妹朱迪在 1934 年。



史蒂夫和妹妹朱迪在 1936 年。



读三年级的史蒂夫（第二排左首）与小学的其他人在一起。朱迪在前排左起第三位。在后排卡彭特在左首，而利奇在右起第三位。



史蒂夫与朋友在 1954 年夏到坎佩切湾游历的火车上。



史蒂夫（右起第三位）在 1964 年孟买塔塔研究所举行的会议晚宴上。托姆在左首，博特在中间，而戈尔丁和阿蒂亚在右边（塔塔基础研究所提供，已获授权重印）。



Associated Press Cablephoto

CALIFORNIAN GETS ESCORTED TOUR: Dr. Stephen Smale, center, being led to car in Moscow after his news conference was halted when he criticized the Soviet Union.

American Critical in Soviet—Briefly

By **RAYMOND H. ANDERSON**

Special to The New York Times

MOSCOW, Aug. 26—A University of California mathematics professor was taken for a fast and unscheduled automobile ride through the streets of Moscow, questioned and then released today after he had criticized both the Soviet Union and the United States at an informal news conference.

Speaking on the steps of the University of Moscow, the

professor, Dr. Stephen Smale, voiced sharp dissent from United States military policies in Vietnam.

Then, in what he later explained was an attempt at balance and objectivity, he charged that Soviet intellectuals lacked freedom to express dissent as he was doing.

The mathematician followed this with a denunciation of United States bombing raids against North Vietnam. However, he quickly added,

people must remember that 10 years ago the Soviet Army "brutally intervened" in the Hungarian rebellion.

"I never see justification for such interventions," he declared.

Dr. Smale, who was active last year as a leader in demonstrations in California against the Vietnam war, summoned Americans to be present this morning when he

Continued on Page 13, Column 2

《纽约时报》1966年8月27日的封面文章 (Copyright© 1966 by the New York Times Co. 已获授权重印)。

American Professor Voices Criticism in Soviet Union—But Not for Long

Continued From Page 1, Col 5

replied to questions submitted to him by a North Vietnamese correspondent about the war.

The House of Representatives Committee on Un-American Activities had issued a subpoena for Dr. Smale to testify at its hearings on his opposition to the war. The subpoena issued after he left California to travel in Europe and was never served.

Dr. Smale opened his news conference by reading a statement written in ink on two sheets of lined paper. Mathematically, it said, countries should be united in an international conference under the auspices of the United Nations.

After criticizing United States actions in Vietnam, Dr. Smale said he had discussed during his talks with Soviet leaders the fact that they were

discontented over the trial and imprisonment last winter of Vladimir D. Smirnovsky and Yuri M. Daniel, Moscow writers convicted of having smuggled out Soviet works abroad.

The lack of means to express this discontent is a sad state of affairs, said the professor, who has been attending the 11-day International Conference of Mathematicians at the University of Moscow.

Written Questions Answered

The 36-year-old mathematician then answered questions sent to him in writing by Hoang Thinh, Moscow correspondent of the North Vietnamese Press Agency. Mr. Thinh did not attend the news conference.

The questions dealt with the bombing attacks on Hanoi about the war and possibilities of a settlement. In his replies, Dr. Smale

reiterated his criticism of the Johnson Administration's policy and called for a complete and immediate withdrawal of United States troops from Vietnam.

At this point a middle-aged Russian woman hastened up to the professor, touched him on the right arm and told him that Vladimir G. Karginov, the secretary general of the mathematics conference, wanted to see him immediately for an informal discussion.

Dr. Smale finished on the questions and then entered the 35-story building and went to Room 305. Mr. Karginov's office was on the second floor.

After about 15 minutes he had closed doors the mathematician appeared accompanied by Mr. Karginov, a rosy-cheeked woman translator and two bodyguards. They guided him swiftly through the ornate

corridors of the building to an automobile waiting at the entrance.

The dark-haired professor was carrying a thin suitcase with him during the talks and illustrated book about the Kremlin. Attempts to question him during the first walk to the waiting car were challenged by the escort.

Mathematics Comes First

This is a mathematics conference, the translator said with a disarming smile. Mathematics must come first. You can talk with the poets or later if you wish.

Outside the university, Dr. Smale was asked into a gray Volga automobile which took off at high speed for the center of the city. It finally pulled up abruptly outside the building of Novosibirsk Soviet press agency.

Inside the building, the professor related he was intended to turn over a copy of the statement he had read at the morning news conference, and to read answers he had given to the North Vietnamese correspondent's questions.

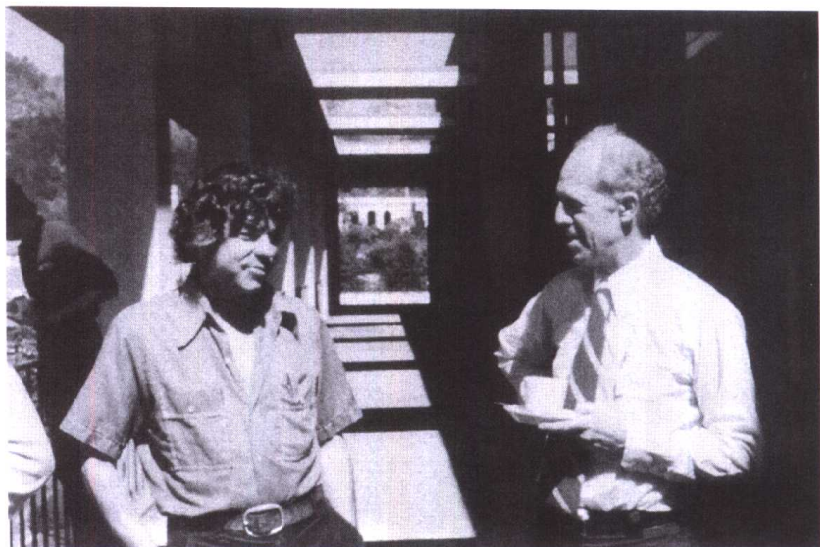
After about an hour of questions, Dr. Smale reported he assessed that the Russians take him back to the university for the closing session of the mathematics congress. There were more questions about visits to museums he added but finally

he was returned to the university.

It was all rather confusing, the mathematician said. This seemed to be a rather rude attempt to keep me from talking with Western correspondents.

Dr. Smale had been active at the International Congress of Mathematicians, which ended today, scheduling support from 25,000 participants from 58 countries for a petition criticizing United States policy in Vietnam and denouncing the recent hearings by the House Committee on Un-American Activities.

Last year Dr. Smale, chairman of the Vietnam Division of the University of California at Berkeley, was the leader of attempts to halt troop-carrying troops to California ports for embarkation to Vietnam.



史蒂夫与诺贝尔奖得主德布鲁在一起。



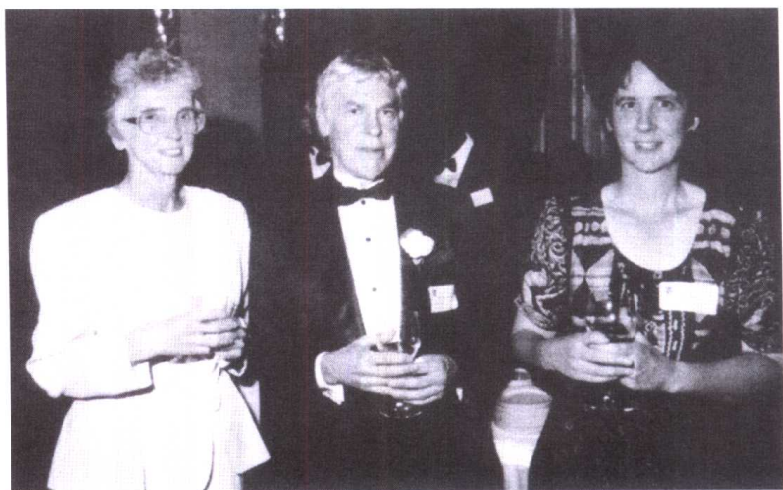
史蒂夫与皮尤在史蒂夫的船上。



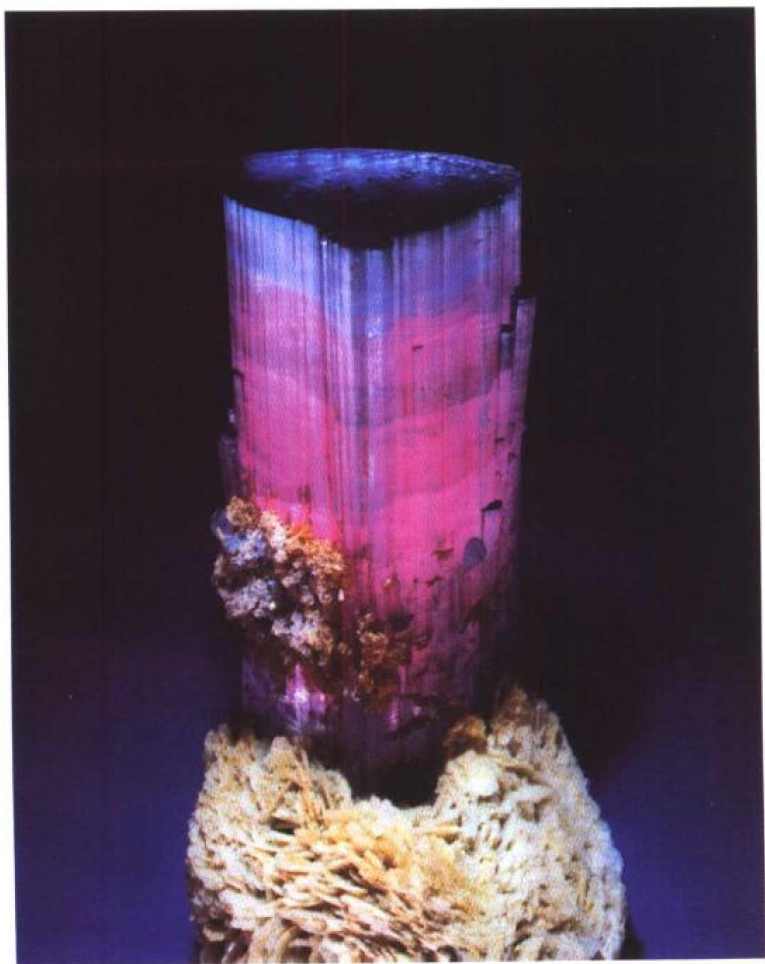
史蒂夫和克拉拉在一个矿石展上，背后是史蒂夫的矿石照片。



克拉拉在看克林顿总统向史蒂夫授予 1996 年国家科学奖。



克拉拉、史蒂夫和女儿劳拉在为国家科学奖得主举办的宴会上。



斯梅尔为圣迭戈县电气石皇后矿场出产的蓝顶电气石所摄的照片。样本约 5 英寸半高。史蒂夫在 1980 年从莫里斯处购得，在 1997 年与汤普森交换。



斯梅尔为华沙矿场出产的内华达硫磺所摄的照片。样本约 4 英寸宽，于1977年由比尔·利奇（Bill Leach）和琳达·利奇（Linda Leach）处获得。

中文版序

斯蒂芬·斯梅尔的数学发现,使他跻身世界上最伟大的数学家之列。他对越南战争的激进反对态度,是那场最终使美国退出东南亚的反战运动中一个至关重要的因素。在其他领域,斯梅尔也发挥了重要影响。原创思维和显赫成就的这种罕见的结合,使斯梅尔成了 20 世纪上半叶知识分子中最非凡的形象之一。

本书的目的是使斯梅尔能被广大读者所感受。在巡视数学时,注意力局限于他最为震撼人心的发现中的少数几个。这些问题是与斯梅尔的突破一起被描述的。与他在非数学事务上的方法相比较,可以使获得一些对其个人品质的了解,这些品质使他能够在这么多分散芜杂的领域中获得如此巨大的成功。

斯梅尔的年轻时代没有显示出任何不同寻常的天才的迹象。他最大的抱负是远离家门到美国中西部旅行。在大学时,斯梅尔领着朋友到欧洲和南美洲旅游。在他的事业进展时,斯梅尔利用了访问其他遥远处所的机会。他最著名的数学结果是在里约热内卢六个月的勾留中获得的。1995 年,斯梅尔接受了香港城市大学杰出数学教授的职位。他最近已经回到了美国。

我向所有为这本斯梅尔传的翻译付出了辛勤劳动的人表示衷心的感谢。本书能与中国读者见面，我感到十分高兴。

史蒂夫·巴特森
2002年9月29日

序 言

斯蒂芬·斯梅尔(Stephen Smale)在 1957 年震惊了数学界,因为他证明了,在理论上,将一个球体从内向外翻转是有可能的。在斯梅尔的工作之前,有一种很流行的直觉:这种行动要求球体被撕破或者蜷曲。而更为惊人的,是他几年后的一个定理,它说服数学家相信,一个六维的世界比一个三维世界更为简单。由于这项工作,斯梅尔获得了国际性的赞誉,并获得了为数学家来说最为珍贵的奖项。不过,数学是一门处在知识分子的谈话主流之外的学科。它的天才们的发现,只有被那些在这个领域内的人广泛了解和欣

不管存在着什么阻止进入更高深数学的障碍,都没有妨碍斯梅尔不时的退出。他的远见和影响超出了数学,进入了两个极其不同的领域。1965 年和杰里·鲁宾(Jerry Rubin)一起,他发动了一场反战运动,旨在终结越南战争。作为一个矿石收藏家,斯梅尔汇集了博物馆水平的收藏品,它们都属于世界上最佳者之列。虽然斯梅尔有着一份具有多方面成就的独特简历,这位当代天才的名字,在数学家和矿石收藏家的狭小世界外实质上并不为人所知。本书的目的之一,就是使他的生活和工作引起更大的社会关注。

我第一次知道斯梅尔,是我在 20 世纪 70 年代初作数学研究生之时。在我开始学习动力系统理论时,斯梅尔的名字随处可见。他已经确立了发展的大纲,做出了最重要的猜想,并证明了最重大的定理。斯梅尔以前的一名学生弗兰克斯 (John Franks),是我的论文导师,这使斯梅尔成了我学术上的祖师。在阅读动力系统的文章和做我的论文题目时,我不断地为斯梅尔在这个科目上的洞察所震惊。他不但确定了我正在努力吸收的结构,他还看到了它们可能能够如何整合成一个理论。在那个时候,斯梅尔自己已经转向数理经济学,给他的后辈们留下了丰富的问题。

斯梅尔的数学以其广度和深度而与众不同。在 80 年代中期,正是他在计算理论上的工作启发了我,使我把自己的研究也转向了那个方向。应斯梅尔的邀请,我在 1990 年访问伯克利一个学期。在那段时间我们变得更为熟悉了。我知道了他在麦卡锡时代曾是一名共产党员。更令人吃惊的是,除了他雄心勃勃的研究计划之外,这位 60 岁的数学家刚刚开始把相当大的精力花在给他的矿石制作高质量的相片上。一天晚上在吃饭时,他向我倾诉说,他在那个时候生活的最大驱动力是希望有一天作为一个伟