

# **Frozen in Time**

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Murder at the Bottom of the World

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To my beloved Susan





*“Great God! This is an awful place!”*

Captain Robert F. Scott  
British Royal Navy Officer and Explorer

Upon reaching the South Pole in 1912





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# Preface

*This is a work of fiction based on real events that took place between 1958 and 1965. It depicts many actual events and people in my life, though some situations and all of the dialogue are pure invention.*

Real names are used in cases of people who have passed away. The names of living persons (with the exception of my family member's first names) have been changed. For my family, the name "Stone" has been substituted for "Cohen" to acknowledge the fact that considerable license has been taken in telling the tale. Some characters are totally fictitious, as are the names of some agencies and organizations, both military and academic.

*Theodore Jerome Cohen  
Langhorne, PA*

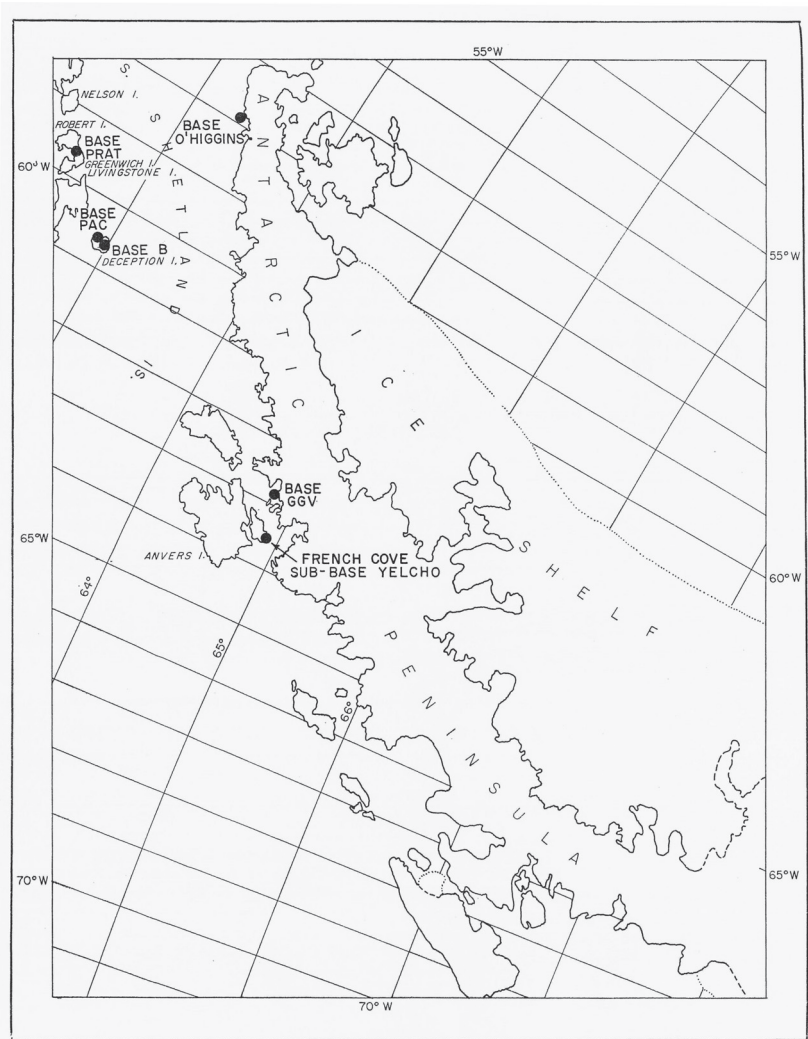


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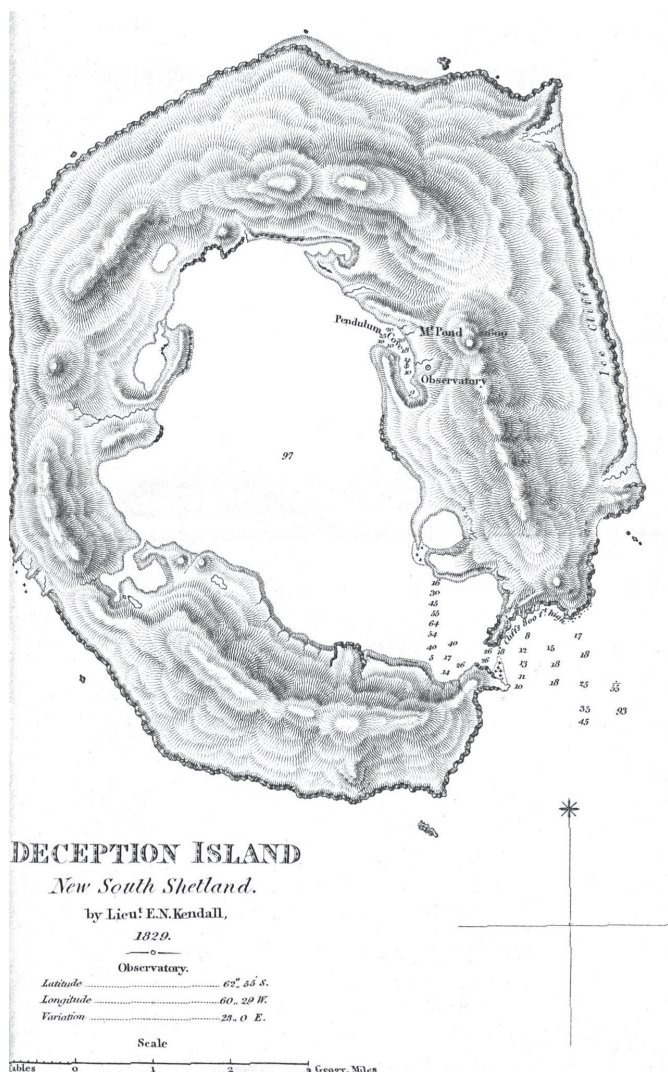
# Chilean Antarctic Bases – 1961-2

## North Antarctic Peninsula



**Reference: Theodore J. Cohen, "Gravity Survey of Chilean Antarctic Bases," *Journal of Geophysical Research*, The American Geophysical Union, Volume 68, Number 1, January 1, Washington, D.C., 1963 (From the author's original manuscript, 1962)**

# Deception Island, South Shetland Islands – 1829



**Map Created by Lieut. E.N. Kendall on the First Scientific Expedition  
to Deception Island, His Majesty's Sloop *Chanticleer*,  
under the Command of Captain Henry Foster,  
January 9 through March 8, 1829**

(<http://commons.wikimedia.org/wiki/File:Deception-Island-Map.jpg>)

(See, also, [http://www.antarctica.ac.uk/documents/bas\\_bulletins/bulletin32\\_04.pdf](http://www.antarctica.ac.uk/documents/bas_bulletins/bulletin32_04.pdf))



# I

## Return to the Highlands

Susan instinctively stomped her foot into the car's floorboard, put her hands up in front of her face, and yelled at her husband, "Watch out! You're going to hit him!"

Ted Stone, off in his own world, steered hard-left, narrowly missing the man pedaling his racing cycle toward them on the right side of the roadway. "Dammit! Why wasn't he going with traffic . . . on the other side of the road?" Ted pounded the steering wheel with his right hand and cursed again under his breath, berating himself for almost causing what could have been a fatal accident.

As they continued up the road, Ted reflexibly reached down and rubbed the ugly six-inch scar on his left leg. Even the passage of more than four decades had not erased the outward signs of the tragedy that befell him that fateful day in February, 1962 while he was working on the North Antarctic Peninsula.

The trees on either side of the road had grown significantly during the intervening years. Certainly the brush and hedges had been through countless cycles of death and replanting. But by squinting in the late afternoon sun, Ted was able to project back to a time when, as a graduate student, he made the trip

daily from his apartment on Madison's Lake Manona to The Highlands west of the city.

The trip was easier this afternoon than it had been in those days. Then, his 1959 Saab 93F, with its 3-cylinder, 2-cycle engine, the type that required a quart of oil to be added to the gas tank at every fill-up, labored up South Highlands Avenue, its exhaust pipe spewing smoke and emitting the distinct putt-putt sound of a lawn mower. Today, their large rental car slid effortlessly past the back entrance of Brittingham House, former headquarters for the University's Geophysical and Polar Research Center and now home to the president of the University.<sup>1</sup>

In his college days, the dilapidated carriage house at the bottom of the hill behind the mansion was occupied by one of Professor Robert Meyer's graduate students and his family. On weekends, the student's old black Volvo, always in need of a valve job, could be found parked in front of the garage with its hood up, the student's legs projecting from the engine compartment while his ever-present black Labrador lay watching from the dirt under a century-old oak.

Not this Saturday. The carriage house was in pristine condition while the grounds were impeccably groomed, the lush, blue-green grass close-cut by the University's maintenance staff. The trees were trimmed as well. Ted was not sure when the Center vacated the mansion and moved to the main campus in Madison. No matter. The estate, an elegant Georgian-style house built in 1916, had been restored to its former glory and currently was used for official and charitable community events hosted by the president.

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<sup>1</sup> <http://helpdesk.wisc.edu/vip/page.php?id=10310>

The scene was one of total order and serenity, a place where life for him had once moved forward in increments of time measured by weeks that merged into months, and finally, into semesters that cumulated in the award of degrees. It was a place where he had taken life for granted, with the knowledge that tomorrow would be much like today, which, in turn, would be a lot like yesterday. Worries that there might be no ‘tomorrow’ never entered his mind, until that trip to the bottom of the world. *At the least*, he thought, *no one here is dependent on someone else for survival.*

“It’s hard to believe that more than forty years have passed since we last were up here, isn’t it?” Susan asked rhetorically, brushing stray hairs from her forehead and taking a sip from a small bottle of water.

Yes, thought Ted, only half-hearing what she had said. His mind still was thousands of miles away, in Antarctica, where he almost had lost his life decades earlier and where troubling questions surrounding events of the distant past still haunted him on many a sleepless night. “Huh? What did you say?”

“I said, *it’s hard to believe that more than forty years have passed!*”

“I’m sorry. I was just thinking about the people we knew then . . . the people I worked with at the Center . . . the people I traveled with to Antarctica. Where are they now? What happened to them? And what *really* happened that Austral<sup>2</sup> summer on the Ice?”

Some of his colleagues, unfortunately, had died, including the man who was his first major professor, Professor George Woollard, *the* Professor George Woollard—world-renowned

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<sup>2</sup> Southern, or Southern Hemisphere

expert in gravimetry and determinations of the geoid.<sup>3</sup> When Professor Woollard heard that Ted was heading to Antarctica to help a graduate student in the Department of Geology collect rock and fossil samples for that student's doctoral thesis, he insisted—the professor maintained that he used 'gentle persuasion'—Ted take a gravimeter with him. Because there were few gravity measurements at the end of the North Antarctic Peninsula,<sup>4</sup> <sup>5</sup> a new gravity network needed to be established there. The data were needed to assist the University in developing an accurate representation of the Earth's gravity field.

The trip to The Highlands this afternoon was simply for purposes of seeing how the area had changed and of rekindling old memories, a mere side trip following a visit with some of Susan's former classmates in Middletown. Now, having seen Brittingham House and with their curiosity satisfied, Ted and Susan drove back to Madison's Edgewater Hotel, saying little. His mind still was almost totally focused on the autumn of 1961 and the months leading up to his departure for the Frozen Continent.

The Brittingham Estate brought back a torrent of memories of the four University of Wisconsin scientists who traveled to one of the most desolate regions on Earth. Memories of the two graduate students in geology, Grant Morris, a Canadian, and David Green, who was born and raised in Iowa; their major

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<sup>3</sup> The geoid is that equipotential surface that would coincide exactly with the mean ocean surface of the Earth, if the oceans were in equilibrium, at rest, and extended through the continents (such as with very narrow canals). See, for example, <http://en.wikipedia.org/wiki/Geoid>

<sup>4</sup> [http://en.wikipedia.org/wiki/Antarctic\\_Peninsula](http://en.wikipedia.org/wiki/Antarctic_Peninsula)

<sup>5</sup> [http://en.wikipedia.org/wiki/File:Ant-pen\\_map.png](http://en.wikipedia.org/wiki/File:Ant-pen_map.png)

professor, Ethan O'Mhaille, PhD, a recognized expert in clastic sedimentology<sup>6</sup> and earth history; and Ted, himself, and of the tightrope they walked between life and death decades earlier.

Morris had been Ted's laboratory instructor in Geology 1b in the spring semester of 1960. This was a year after Ted transferred from the School of Engineering to the School of Letters and Science in his junior year. Ted's need to take additional science courses for purposes of satisfying the School of Letters and Science's requirements for graduation, which led him first to freshman meteorology, then to freshman geology.

Ted, at six feet, was taller than the other students in the geology class; he was also twenty-one years old, three years older than most of his classmates. An extravert who was endlessly interested in others and what they did, he sought out and made friends easily. Before long, he and Morris, who was only a year older than Ted, struck up a close friendship.<sup>7</sup>

Morris, of medium build, was quite handsome, and his female students flirted with him constantly. Always well dressed in slacks, a shirt with a button-down collar, tie, and cardigan sweater, he had a ready smile and answered questions in a straightforward and professional manner. He was the very model of a teaching assistant at a Big Ten University.

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<sup>6</sup> Clastic sedimentology is the branch of geology that studies sediment and sedimentary rocks that are made up of particles that are the solid products of weathering at or near the Earth's surface. See: <http://spartan.ac.brocku.ca/~rcheel/teaching/sedimentology/SedNotes/Chap1.pdf>

<sup>7</sup> While Morris was only one year older than Stone, he was two years ahead of him in school. The reason for was that when Morris entered the Canadian school system, no kindergarten was available. Hence, he entered the first grade when he was five years old.

There was no question as to his scientific prowess. Morris already had made one trip to Antarctica, mapping an area near the tip of the North Antarctic Peninsula and gathering rock samples for his thesis. Single, he spent considerable time in his laboratory working on the development of his thesis or at his apartment studying. However, he also was known to enjoy a good night on the town with his girlfriend, Vivian, a UW senior.

Geology 1b proved to be no challenge for Ted. He easily mastered the material, leaving time during class for him and Morris to discuss Morris's PhD dissertation, or more to the point, Morris's field work in Antarctica. One day, early in May, 1960, Grant approached Ted.

"Hey, Ted, I'm returning to Antarctica in December, 1961," Morris began, "and I'll need an assistant. Are you interested?"

*Was he interested?* "Hell, yes!"

"The timing is perfect, Grant. I'll be completing my Bachelor's degree this summer and starting my Master's degree in September. I should finish by August and be ready to join you!"

"Sounds good to me," said Professor O'Mhaille, when apprised of their plan. And so, Morris, together with Green and Professor O'Mhaille, continued to make preparations through the National Science Foundation (NSF) and the Government of Chile for the University of Wisconsin–Madison team to join the 16<sup>th</sup> Chilean Expedition to the Antarctic. Meanwhile, Ted worked on completing his Bachelor's degree, and then, continued on with his Master's. Once that was completed, he formally declared his major in Geophysics and joined the University's Geophysical and Polar Research Center to begin preparations for the trip south.

## II

# The Great Chilean Earthquake of 1960

*I*t was early afternoon, Sunday, May 22, 1960, a sunny, warm day in Madison, with a high in the mid-70s Fahrenheit and light westerly winds. Six thousand miles to the south, all hell was about to break loose.

At precisely 2:11 PM Chilean time, an earthquake measuring 9.5 on the Richter scale, the largest earthquake recorded since seismographic monitoring began, struck Valdivia, Chile. A swarm of foreshocks the previous day, some as large as magnitude 8.0, gave warning of impending disaster, but there was no way of predicting when or where the mainshock would strike or how much energy it would release. The Great Chilean Earthquake, or Valdivia Earthquake, as it is called, was related to fault ruptures from Talcahuano to Peninsula de Taitao, Chile.

Talcahuano, in Chile's Central Zone, is home to the country's main naval base. Thus, when President Cristian Alessandri declared a National Emergency, the full capabilities of the Chilean Navy stationed there were ordered to assist the civilian population of the city. One ship that charged toward Talcahuano

was the auxiliary fleet tug *Lientur*<sup>8</sup> under the command of Captain Roberto Muñoz.



**One ship that charged toward Talcahuano  
was the auxiliary fleet tug *Lientur*.<sup>9</sup>**

Muñoz, a tall, athletic-looking man with steel-gray eyes and a serious demeanor, was in his mid-30s. A bachelor, he was an honor graduate of the Chilean Naval Academy and an experienced ship's captain. Though born into poverty—his father's employer, owner of one of the country's largest copper mines, sponsored him for admission to the Naval Academy—he was considered by many to be destined for flag command. Muñoz had been passed over once for lieutenant-commander. Some say a ranking member of the Promotion Board, an elitist, liked neither his background nor the manner in which he gained entrance to the Academy. However, the unexplained early retirement of that Board member, a vice admiral, several

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<sup>8</sup> <http://www.navsource.org/archives/09/38/38177.htm>

<sup>9</sup> Photograph reproduced with the permission of Patricio Villalobos, Captain (Ret.), Chilean Navy, and Gary P. Priolo, NavSource Naval History