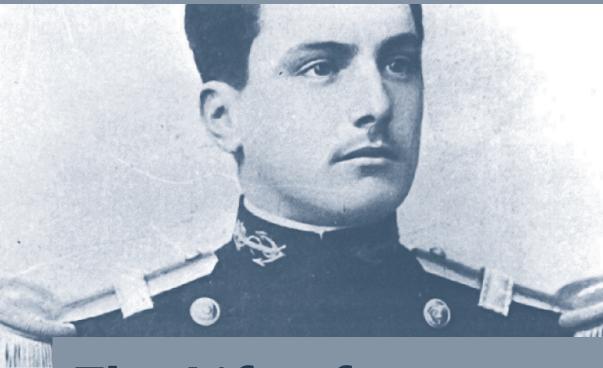
**Springer Biographies** 



# The Life of José María Sobral

Scientist, Diarist, and Pioneer in Antarctica

MARY R. TAHAN



## **Springer Biographies**

More information about this series at http://www.springer.com/series/13617

## The Life of José María Sobral

Scientist, Diarist, and Pioneer in Antarctica



Mary R. Tahan Vancouver, BC Canada

ISSN 2365-0613 ISSN 2365-0621 (electronic) Springer Biographies ISBN 978-3-319-67267-0 ISBN 978-3-319-67268-7 (eBook) https://doi.org/10.1007/978-3-319-67268-7

Library of Congress Control Number: 2017952005

#### © Springer International Publishing AG 2018

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

## Ladies:

Sirs:

If I have tired you, if I have abused your benevolence, excuse me that there are no flowers at the Pole, no heat but that which springs from the bosom of the soldier, who on more than one occasion had to seek the colors of his country in the immaculate white of the ice and in the blue of its twilights, in order to cheer his spirit that had become disheartened by fatigue and by the frightening isolation of those regions.

José María Sobral

For K.A. and Rosette.
And for Oxford and Othello.

### **Foreword**

# A Legacy: Fifty-Seven Years of His Life Working for Science and Humanity

Mary R. Tahan, one of the international artists selected by the Dirección Nacional del Antártico to perform her work on-site in Antarctica, photographed and videographed environmental, historical, and natural images in several areas of the Antarctic continent, and conducted interviews and research with scientists, historians, and explorers for her films and books.

A Canadian-American writer and researcher, with Egyptian-Lebanese roots, Mary R. Tahan has emphasized the employment and care of dogs in Antarctica in many of her writings. She chose José María Sobral as a subject for this great work, taking as an essential basis what she read from Sobral himself about this topic, which was his affection for these animals in the South Pole region, not only as the dogs that pulled the sledges during the exhausting excursions, but also for being his companions during those two years in the Antarctic.

To write a book about Dr. José María Sobral today, 56 years after his death, and 116 years after his arrival in Antarctica on that scientific expedition that was commanded by the ever-so-important Swedish Doctor of Geology, Otto Gustaf Nordenskjöld, who carried out one of the most important expeditions to the South Pole of the last century, and that marked a milestone in the expeditions to the white continent, is quite an event. By one of life's coincidences, the person who was appointed as the representative of the Argentine nation, being at that time 21 years of age and enlisted in the Argentine Navy with the rank of Alférez de Fragata (Ensign), was our grandfather. He was promoted to Alférez de Navío (Under-Lieutenant) after returning from Antarctica and forever remained in everyone's memory with that same rank, given that the Argentine Navy did not grant him the scholarship that he had requested to study his vocation, which was geology, in Sweden, at Uppsala University. Therefore, he requested a discharge, which the Argentine Navy granted him. In August of 1905, the ship *Drottning* 

x Foreword

*Sophia* took him to Sweden to realize his dream: studying geology, as that doctorate did not yet exist in Argentine universities at that time.

Before that, and after giving several talks about Antarctica, he wrote his book *Dos Años Entre los Hielos, 1901–1903 (Two Years Amidst the Ice)*, the first book about Antarctica written by an Argentine, in the year 1904. Prior to his being discharged, and while still on active duty with the Navy, he enrolled in the natural sciences degree course with specialization in geology at the Facultad de Ciencias Exactas, Fisicas y Naturales (School of Exact, Physical, and Natural Sciences at the University of Buenos Aires) in Argentina. He sat for three exams, which he passed, but the Navy did not allow this double activity, and so he had no choice but to request a discharge, which he obtained on December 30, 1904. Once in Sweden, he passed the admissions exam at Uppsala University in the three subjects that he had passed in Buenos Aires, and, in 1913, he received his graduate degree. Then, in June of that same year, he earned a doctorate. While he was studying in Sweden, in 1906, he married a Swedish woman named Elna Wilhelmina Klingström, with whom he had nine children—four in Sweden and five more in Argentina: two girls and seven boys.

Very little is known about his scientific activity in Argentina, where he was barely recognized. Admiral Guillermo Brown once said about these themes: "It's a pity that he belonged to a country that does not know how to value its heroes" (such a paradox). He was awarded the "Naval Cross for Distinguished Services" medal, just as Guillermo Brown had been awarded this medal in 1827.

He spent his life traveling throughout the country, often times with his family, and other times alone, carrying out studies in both geology and petrology. He held important positions in various state departments, but he would always enter those positions in a "third category" level, and would then be promoted as a result of his great capacity for study and work. He always continued to maintain his friendship with Otto Nordenskjöld, Gösta Bodman, Carl Skottsberg, and other companions from the *Antarctic*, the ship that had marked his relationship with geology and natural sciences. He always liked field and campaign work, and many times rejected laboratory and office work. He was super-active, as can be seen.

From our place, as grandchildren of José María Sobral, we thank Mary R. Tahan immensely for her work and unwavering efforts to position our grandfather in the historical place that he deserves.

Guillermo J. Sobral Jorge A. Sobral Grandsons of Dr. José María Sobral

## **Preface**

## A Stranger in His Own Land

José María Sobral was a person of science, a patriotic Naval officer, and a pioneer of the great frozen white continent. He explored where others did not dare go, fostering an insatiable curiosity that led him to attempt to understand the nature and the humanity that surrounded him. He was a brave young lieutenant and Antarctic pioneer; a scholar and doctor of geology; a philosopher and student of human behavior; a friend and a foreigner. He desperately wanted to contribute to knowledge and to society. And yet his isolation haunted him throughout his life—in the Navy, in Antarctica, in his adopted home of Sweden, and in his homeland of Argentina. He devoted his life to his work and study at home and abroad, but could not convince his own government to support him. He brought the Argentine homeland to the great white continent, but could not remain with his beloved Argentine Navy. Even after the end of his life, for many years, Sobral was not given the recognition he deserved. It is the author's hope that, through these writings, Sobral's story will be better known, and his personality and achievements will be more closely embraced.

This book is the first publishing of Under-Lieutenant José María Sobral's expedition diary and daily journal, kept during his participation in the Swedish-Argentine Antarctic Expedition of 1901–1903, under the leadership of Otto Nordenskjöld. It portrays the role and achievements of this young pioneer within this historic expedition and provides the raw, real-time account he wrote about his experiences, including personal thoughts he did not later include in his official published book about the expedition. It also retells the remarkable accomplishments of this military officer turned explorer turned scientist, both before and after the expedition—prior to his being selected to participate in the Antarctic expedition, and after he returned from Antarctica and began to pursue geological studies in Sweden.

Sobral was the first Argentine to explore Antarctica, and his expedition was the first scientific expedition to endure two consecutive winters on the Antarctic

xii Preface

continent. The young Under-Lieutenant Sobral was the lone "Argentine" in the "Swedish-Argentine" expedition. The other members of the expedition were Swedish scientists and Norwegian sailors. Thus, Sobral was doubly isolated—in his new environment and among his foreign colleagues. Yet, he worked closely with them, learning their language and learning the science. Despite extreme danger and almost unendurable hardships, the expedition made geographical, geological, paleontological, and meteorological discoveries of historic importance along the Antarctic Peninsula.

The Swedish-Argentine Antarctic Expedition was the first scientific expedition to intentionally overwinter in Antarctica and unwittingly became the first to spend two winters in the Antarctic, when their expedition ship, the Antarctic, captained by the Norwegian whale and seal hunter Carl Anton Larsen, became trapped in the ice and sank near Paulet Island. Three parties from the 29-member expedition spent the second winter separated by ice and distance, and stripped of any hope for rescue. They fought isolation, deprivation, and near starvation, yet they never ceased their scientific work. The parties were stranded in three separate locations—at Snow Hill Island (Cerro Nevado), Hope Bay (Bahía Esperanza), and Paulet Island. Sobral and his team at Snow Hill continued their scientific studies and specimen collection throughout their second winter, traveling across Seymour Island (Marambio) and the nearby islands, with Sobral writing of these excursions in his personal diary. By this time, the men did not know if a ship would ever appear to pick them up, and still, they pursued their scientific passion, adding to the knowledge of humankind. The expedition was one of the most successful in terms of scientific data and fossil collections of land vertebrates and plants discovered on the Antarctic Peninsula, and provided evidence and further credence to the Gondwana theory of continental drift. It also proved that the Antarctic Peninsula was not an archipelago but was part of the Antarctic continent, and that Antarctica had experienced a climatic transformation from a warmer, wetter climate to a frozen region of ice. The expedition members were also the first to sight the Larsen Ice Shelf, which since that time has been greatly reduced, changed, and affected by a now progressively warming climate.

After the expedition parties' miraculous reunion at Snow Hill, and heroic rescue by the Argentine corvette *Uruguay*, Lieutenant Sobral took his newfound love of science and, finding no place for it in his role with the Navy, uprooted to Uppsala, Sweden, where he studied geology with his mentor Dr. Nordenskjöld. Later, he returned to his homeland as the first Argentine scientist to doctor in geology and petrography. In Argentina, Dr. Sobral devoted his life to contributing to the scientific fields of geology, petrology, and hydrology. But, whether for political reasons, commercial profit, or simple short-sightedness, he was basically ignored at home. Only at the very end of his life did his country muster some appreciation for its accomplished son.

The diary featured in this book provides a compelling, first-hand, personal account of the Antarctic expedition activities, findings, and discoveries, including Sobral's private thoughts, intimate observations, and real-time recounting of events. It reflects the courage and dedication of the scientists. It represents the first-ever

Preface xiii

continuous recording of weather data in Antarctica. And it sheds further light on the importance of this expedition to world knowledge and to Antarctic history, as well as on the significance of Sobral's role in the expedition.

After the Antarctic expedition, in Sweden and in Argentina, Sobral continued his extensive writings, preparing copious tomes that provide insight to the science and the man. He was at home with his research, his explorations, and his family. But he was still a stranger in his own land.

Sobral was not always an easy man to live with, often quite demanding and exacting in what he felt needed to be accomplished. The under-lieutenant was conscientious almost to a fault. At times in Antarctica, he drove his colleagues crazy, unfairly earning their ridicule and teasingly humorous jokes, and enduring their ostracism of him. At other times, he was their voice of reason, speaking to them in their own language that he had painstakingly learned during the voyage and during the seclusion at Snow Hill. But at all times, he strove to do what he thought was right—following his government's orders, representing his country, minimizing the harm done to the Antarctic environment and its wildlife by the actions of the expedition, and supporting his colleagues in seeking and collecting the science, data, and sampling material to better understand the earth, the ocean, and the meteorological phenomena of our world. He was a meticulous record keeper and a student of human behavior. He was a poet in describing the icy beauty of the frozen continent. And he was a friend to the friendless, attempting to stay the hand of those who would kill more penguins than necessary and advocating for ethical treatment of the sledge dogs. He was isolated, but not an isolationist, seeking companionship with those around him. And he loved his country, torn between serving on the Antarctic expedition and serving in the war that he thought was being waged back home (it was not, but the question of possible war was an agony to him until the very end of the expedition). Later, he was torn between the Navy and science. He chose science and that decision changed his life and took him away from his country. But with his new science degree, he returned to Argentina and made history there. And yet history has not fully acknowledged him, any more than his contemporaries had at the time of his great work. This book is intended to place Sobral in his rightful position in history—as a dedicated Navy man, a devoted scientist, an Antarctic pioneer, and a heroic son of Argentina.

Vancouver, BC, Canada

Mary R. Tahan

## Acknowledgements

The author wishes to thank Dr. Jorge Rabassa, Senior Researcher and former Director of CADIC-CONICET (Centro Austral de Investigaciones Científicas— Consejo Nacional de Investigaciones Científicas y Técnicas), and Professor of Geology at the National University of Tierra del Fuego at Ushuaia; Dr. Eugenio Luis Facchin, Capitán de Navío VGM (RE), Argentine Navy Captain, historian, safety advisor, and professor in Buenos Aires; Guillermo José Sobral, grandson of José María Sobral; Jorge A. Sobral, grandson of José María Sobral; Capitán de Fragata Guillermo Sergio Spinelli, director of the Departamento de Estudios Históricos Navales (DEHN) de Casa Amarilla; the staff at the Archivo Histórico of the Departamento de Estudios Históricos Navales (Archivo DEHN); the Dirección Nacional del Antártico (DNA); María Edelia Giró and Edelia "Puchi" Gamarino Giró in Tierra Mayor and Ushuaia, Argentina; SIHN CN (RE) Della Rodolfa Daniel Rubén and the Naval Hydrography Service of Argentina for use of the nautical chart; and the author's translators: Caren Calderòn, Efrain Diaz-Horna, Mario Santiago Diaz, Luz Moreno Campos, Guadalupe "Tuty" Moreno Campos, Emilia Ramunda, and Blanca Paniagua.

The author also thanks international artist K.A. Colorado for the inspiration.

## **Contents**

1	Нарр	ened	exground: A Truly Undellevable Story that Actually	1
2			with a Spirit for Science	7 15
3	Expe		ary: The Voyage to Antarctica	17
	3.1	There Is	s No Anesthesia for the Heart	18
		3.1.1	December 21, 1901, Saturday	18
		3.1.2	December 22, 1901	20
		3.1.3	December 23, 1901, Monday	21
		3.1.4	December 24, 1901	22
		3.1.5	December 25, 1901	22
		3.1.6	December 26, 1901	23
		3.1.7	December 27, 1901	24
		3.1.8	December 28, 1901, Saturday	25
		3.1.9	December 29, 1901, Sunday	25
		3.1.10	December 30, 1901, Monday	25
	3.2	To Thir	k that I Am a Foreigner in My Land!	26
		3.2.1	December 31, 1901, Tuesday	26
		3.2.2	January 1, 1902, Wednesday	28
		3.2.3	January 2, 1902, Thursday	29
		3.2.4	January 3, 1902, Friday	29
		3.2.5	January 4, 1902, Saturday	30
		3.2.6	January 5, 1902, Sunday	30
	3.3	The Bes	st Meteorological Observatory in the Southern	
		Hemisp	here	31
		3.3.1	January 6, 1902, Monday	31
		332	January 7 1902 Tuesday	33

xviii Contents

	3.3.3	January 8, 1902, Wednesday	33
	3.3.4	January 9, 1902, Thursday	34
3.4	Icebergs	Each One of Them More Whimsical	
	Than the	e Other	35
	3.4.1	January 10, 1902, Friday	35
	3.4.2	January 11, 1902, Saturday	36
	3.4.3	January 12, 1902, Sunday	36
	3.4.4	January 13, 1902, Monday	38
	3.4.5	January 14, 1902, Tuesday	39
	3.4.6	January 15, 1902, Wednesday	41
3.5	Cape Se	ymour and the Pack Ice	42
	3.5.1	January 16, 1902, Thursday	42
	3.5.2	January 17, 1902, Friday	43
	3.5.3	January 18, 1902, Saturday	45
3.6	The Furt	thest South We Have Reached Is 66° 5′	46
	3.6.1	January 19, 1902, Sunday	46
	3.6.2	January 20, 1902, Monday	47
3.7	The Idea	of Suicide Comes to My Mind	48
	3.7.1	January 21, 1900 [sic], Tuesday	48
	3.7.2	January 22, 1902, Wednesday	49
	3.7.3	January 23, 1902, Thursday	50
	3.7.4	January 24, 1902, Friday	50
	3.7.5	January 25, 1902, Saturday	51
	3.7.6	January 26, 1902, Sunday	52
	3.7.7	January 27, 1902, Monday	52
3.8	I Think	We're not Even Going to Reach 70°	53
	3.8.1	January [sic] 28, 1902	53
	3.8.2	January 29, 1902, Wednesday	53
	3.8.3	January 30, 1902, Thursday	54
	3.8.4	January 31, 1902 [originally wrote 1901], Friday	55
3.9	We Have	e Barely Made It to the Polar Circle	55
	3.9.1	February 1, 1902, Saturday	55
	3.9.2	February 2, 1902, Sunday	
		[corrected from "January"]	56
	3.9.3	February 3, 1902 Monday	
		[corrected from "January"]	57
	3.9.4	February 4, 1902, Tuesday	
		[corrected from "January"]	57
	3.9.5	February 5, 1902, Wednesday	
		[corrected from "January"]	57
	3.9.6	February 6, 1902, Thursday	
		[corrected from "January"]	58
3.10	Cape Se	ymour	58

Contents xix

		3.10.1	February 7, Friday [1902]	58
		3.10.2	February 8, Saturday [1902]	59
		3.10.3	January 9 [sic—should be February 9],	
			1902 Sunday	59
		3.10.4	February 10 Monday [1902] [corrected from	
			"January"]	59
		3.10.5	January [sic] 11, 1902, Tuesday [this should be	<b>60</b>
		2 10 6	February]	60
	Refer	3.10.6 ences	February 12, 1902 [Wednesday]	61 66
1				69
4	4.1		ter in Antarctica	
	4.1		los and Goodbyes of February	69
	4.2	4.1.1	Thoughts on Colonization	71
	4.2		Work at Snow Hill	72
	4.3		iful Day in the Neighborhood	73
	4.4		t Sea Excursion	73
	4.5		Excursions	75
	4.6		r Sledge Journey	77
	4.7		ing and Giving of Life	78
	4.8		Cape Depósito	78
	4.9		ing Trip South	79
	4.10		and Philosophers	82
	4.11 Pafar		ginnings	85 94
5	_		ary: The Second Winter in Antarctica	97
	5.1		certainty about Whether or Not One Will Have	0.7
		-	Here for One More Year is Unpleasant	97
		5.1.1	January 25, 1903	97
	<i>5</i> 0	5.1.2	January 26, 1903	99
	5.2		te a Lot of Penguin Meat	99
		5.2.1	January 27, 1903	99
		5.2.2	January 28, 1903	100
		5.2.3	January 29, 1903	100
		5.2.4	January 30, [1903]	102
		5.2.5	January 31, [1903]	102
		5.2.6	February 1, [1903]	104
		5.2.7	February 2, [1903]	104
		5.2.8	February 3, [1903]	105
		5.2.9	February 4, [1903]	105
		5.2.10	February 5, [1903]	106
		5.2.11	February 6, [1903]	106
		5.2.12	February 7, [1903]	107

xx Contents

	5.2.13	February 8, [1903]	107
	5.2.14	February 9, [1903]	108
	5.2.15	February 10, [1903]	108
	5.2.16	February 11, [1903]	109
	5.2.17	February 12, [1903]	109
	5.2.18	February 13, [1903]	110
5.3	I Think	That We Are Not Going to Escape Another Winter	110
	5.3.1	February 14, [1903]	110
5.4	If They	Would Have Taken All the Meat that the Penguins	
	Have, T	They Would Have Avoided Killing So Many	111
	5.4.1	February 15, [1903]	111
	5.4.2	February 16, [1903]	111
	5.4.3	February 17, [1903]	112
	5.4.4	February 18, [1903]	112
5.5	What a	Splendid Night	113
	5.5.1	February 19, [1903]	113
	5.5.2	February 20, [1903]	113
	5.5.3	February 21, [1903]	114
	5.5.4	February 22, [1903]	114
	5.5.5	February 23, [1903]	115
	5.5.6	February 24, [1903]	116
	5.5.7	February 25, [1903]	116
	5.5.8	February 26, [1903]	116
	5.5.9	February 27, [1903]	116
	5.5.10	February 28, [1903]	117
	5.5.11	March 1, [1903]	117
	5.5.12	March 2, [1903]	117
	5.5.13	March 3, [1903]	118
	5.5.14	March 4, [1903]	118
	5.5.15	March 5, [1903]	118
	5.5.16	March 6, [1903]	118
	5.5.17	March 7, [1903]	118
	5.5.18	March 8, [1903]	119
	5.5.19	March 9, [1903]	119
	5.5.20	March 10, [1903]	119
5.6	The Sto	rms Come Earlier by Several Days	119
	5.6.1	March 11, [1903]	119
	5.6.2	March 12, [1903]	120
	5.6.3	March 13, [1903]	120
	5.6.4	March 14, [1903]	121
	5.6.5	March 15, [1903]	121
	5.6.6	March 16, [1903]	121
	5.6.7	March 17, [1903]	121

Contents xxi

5.6.8	March 18, [1903]	121
5.6.9	March 19, [1903]	122
5.6.10	March 20, [1903]	122
5.6.11	March 21, [1903]	122
5.6.12	March 22, [1903]	123
5.6.13	March 23, [1903]	123
5.6.14	March 24, [1903]	123
5.6.15	March 25, [1903]	123
5.6.16	March 26, [1903]	123
5.6.17	March 27, [1903]	124
5.6.18	March 28, [1903]	124
5.6.19	March 29, [1903]	124
5.6.20	March 30, [1903]	124
5.6.21	March 31, [1903]	125
5.6.22	April 1, [1903]	125
5.6.23	April 2, [1903]	125
5.6.24	April 3, [1903]	126
5.6.25	April 4, [1903]	126
5.6.26	April 5, [1903]	127
5.6.27	April 6, [1903]	127
5.6.28	April 7, [1903]	128
5.6.29	April 8, [1903]	128
5.6.30	April 9, [1903]	129
5.6.31	April 10, [1903]	129
5.6.32	April 11, [1903]	130
5.6.33	April 12, [1903]	130
5.6.34	April 13, [1903]	131
5.6.35	April 14, [1903]	131
5.6.36	April 15, [1903]	132
5.6.37	April 16, [1903]	132
5.6.38	April 17, [1903]	133
5.6.39	April 18, [1903]	133
5.6.40	April 19, [1903]	134
5.6.41	April 20, [1903]	135
5.6.42	April 21, [1903]	135
5.6.43	April 22, [1903]	135
5.6.44	April 23, [1903]	136
5.6.45	April 24, [1903]	136
5.6.46	April 25, [1903]	137
5.6.47	April 26, [1903]	137
5.6.48	April 27, [1903]	138
5.6.49	April 28, [1903]	138
5.6.50	April 29, [1903]	138

xxii Contents

	5.6.51	April 30, [1903]	139
	5.6.52	May 1, [1903]	139
	5.6.53	May 2, [1903]	140
	5.6.54	May 3, [1903]	140
	5.6.55	May 4, [1903]	141
	5.6.56	May 5, [1903]	141
	5.6.57	May 6, [1903]	141
	5.6.58	May 7, [1903]	142
	5.6.59	May 8, [1903]	142
	5.6.60	May 9, [1903]	142
	5.6.61	May 10, [1903]	143
	5.6.62	May 11, [1903]	143
	5.6.63	May 12, [1903]	143
	5.6.64	May 13, [1903]	144
	5.6.65	May 14, [1903]	144
	5.6.66	May 15, [1903]	144
	5.6.67	May 16, [1903]	145
	5.6.68	May 17, [1903]	145
	5.6.69	May 18, [1903]	146
	5.6.70	May 19, [1903]	147
	5.6.71	May 20, [1903]	148
	5.6.72	May 21, [1903]	148
	5.6.73	May 22, [1903]	149
	5.6.74	May 23, [1903]	150
	5.6.75	May 24, [1903]	150
	5.6.76	May 25, [1903]	150
	5.6.77	May 26, [1903]	151
	5.6.78	May 27, [1903]	151
	5.6.79	May 28, [1903]	152
	5.6.80	May 29, [1903]	152
	5.6.81	May 30, [1903]	152
	5.6.82	May 31, [1903]	153
	5.6.83	June 1, [1903]	155
	5.6.84	June 2, [1903]	155
5.7		s As If I Were Alone	156
	5.7.1	June 3, [1903]	156
	5.7.2	June 4, [1903]	157
	5.7.3	June 5, [1903]	157
	5.7.4	June 6, [1903]	158
5.8		These Gatherings Will Make Our Relationships	150
2.0	•	More Friendly	158
	5.8.1	June 7, [1903]	158
	5.8.2	June 8, [1903]	159

Contents xxiii

	5.8.3	June 9, [1903]	160
	5.8.4	June 10, [1903]	160
	5.8.5	June 11, [1903]	161
	5.8.6	June 12, [1903]	161
	5.8.7	June 13, 1903]	162
	5.8.8	June 14, [1903]	162
	5.8.9	June 15, [1903]	163
	5.8.10	June 16, [1903]	163
	5.8.11	June 17, [1903]	164
	5.8.12	June 18, [1903]	164
	5.8.13	June 19, [1903]	165
	5.8.14	June 20, [1903]	165
	5.8.15	June 21, [1903]	166
	5.8.16	June 22, [1903]	166
	5.8.17	June 23, [1903]	167
	5.8.18	June 24, [1903]	168
	5.8.19	June 25, [1903]	168
	5.8.20	June 26, [1903]	169
	5.8.21	June 27, [1903]	169
	5.8.22	June 28, [1903]	170
	5.8.23	June 29, [1903]	170
	5.8.24	June 30, [1903]	171
	5.8.25	July 1, [1903]	171
	5.8.26	July 2, [1903]	172
	5.8.27	July 3, [1903]	172
	5.8.28	July 4, [1903]	173
	5.8.29	July 5, [1903]	173
	5.8.30	July 6, [1903]	174
	5.8.31	July 7, [1903]	174
	5.8.32	July 8, [1903]	176
	5.8.33	July 9, [1903]	176
	5.8.34	July 10, [1903]	177
	5.8.35	July 11, [1903]	177
	5.8.36	July 12, [1903]	178
5.9		osing Weight	178
	5.9.1	July 13, [1903]	178
	5.9.2	July 14, [1903]	179
	5.9.3	July 15, [1903]	179
	5.9.4	July 16, [1903]	180
	5.9.5	July 17, [1903]	180
	5.9.6	July 18, [1903]	181
	5.9.7	July 19, [1903]	181
	5.9.8	July 20, [1903]	182
	2.7.0	, [1/00]	102

xxiv Contents

	5.9.9	July 21, [1903]	182
	5.9.10	July 22, [1903]	183
	5.9.11	July 23, [1903]	183
	5.9.12	July 24, [1903]	184
	5.9.13	July 25, [1903]	184
	5.9.14	July 26, [1903]	185
	5.9.15	July 27, [1903]	186
5.10	То Ехре	crience the Feeling of Such Beauty,	
	-	ve to See It	186
	5.10.1	July 28, [1903]	186
	5.10.2	July 29, [1903]	187
	5.10.3	July 30, [1903]	188
5.11	I Find M	Ayself Isolated, With No Friends	188
	5.11.1	July 31, [1903]	188
	5.11.2	August 1, [1903]	189
	5.11.3	August 2, [1903]	190
	5.11.4	August 3, [1903]	191
	5.11.5	August 4, [1903]	192
	5.11.6	August 5, [1903]	193
	5.11.7	August 6, [1903]	194
	5.11.8	August 7, [1903]	195
	5.11.9	August 8, [1903]	195
	5.11.10	August 9, [1903]	196
5.12	I am Get	tting Thinner, in an Alarming Way	196
	5.12.1	August 10, [1903]	196
	5.12.2	August 11, [1903]	197
	5.12.3	August 12, [1903]	198
	5.12.4	August 13, [1903]	198
	5.12.5	August 14, [1903]	199
	5.12.6	August 15, [1903]	199
5.13	I Don't	Understand How This Man Can Be So Shameless	200
	5.13.1	August 16, [1903]	200
	5.13.2	August 17, [1903]	201
	5.13.3	August 18, [1903]	202
	5.13.4	August 19, [1903]	202
	5.13.5	August 20, [1903]	203
	5.13.6	August 21, [1903]	203
	5.13.7	August 22, [1903]	204
	5.13.8	August 23, [1903]	204
	5.13.9	August 24, [1903]	205
	5.13.10	August 25, [1903]	205
	5.13.11	August 26, [1903]	206
	5.13.12	August 27, [1903]	206

Contents xxv

	5.13.13	August 28, [1903]	207
	5.13.14	August 29, [1903]	207
	5.13.15	August 30, [1903]	207
	5.13.16	August 31, [1903]	208
	5.13.17	September 1, [1903]	208
	5.13.18	September 2, [1903]	209
	5.13.19	September 3, [1903]	210
	5.13.20	September 4, [1903]	210
	5.13.21	September 5, [1903]	211
5.14	I Listen t	to the Sound of the Water, which is the Only Thing that	
	Gives Li	fe to this Nature of Ours, and that Makes Us Happy and	
		Js Up, Because It's the Sign of the Beginning of a New	
	Season,	of Happier Days, Warmer Days that Melt the Ice,	
	Giving U	Js Freedom, and Perhaps Saving Our Lives	211
	5.14.1	September 6, [1903]	211
	5.14.2	September 7, [1903]	212
	5.14.3	September 8, [1903]	213
	5.14.4	September 9, [1903]	213
	5.14.5	September 10, [1903]	214
	5.14.6	September 11, [1903]	214
	5.14.7	September 12, [1903]	215
	5.14.8	September 13, [1903]	216
	5.14.9	September 14, [1903]	216
	5.14.10	September 15, [1903]	217
	5.14.11	September 16, [1903]	217
	5.14.12	September 17, [1903]	218
	5.14.13	September 18, [1903]	218
	5.14.14	September 19, [1903]	219
	5.14.15	September 20, [1903]	219
	5.14.16	September 21, [1903]	220
	5.14.17	September 22, [1903]	220
	5.14.18	September 23, [1903]	221
	5.14.19	September 24, [1903]	221
	5.14.20	September 25, [1903]	222
	5.14.21	September 26, [1903]	222
	5.14.22	September 27, [1903]	223
	5.14.23	September 28, [1903]	223
	5.14.24	September 29, [1903]	224
	5.14.25	September 30, [1903]	225
	5.14.26	October 1, [1903]	225
	5.14.27	October 2, [1903]	226
	5.14.28	October 3, [1903]	227
	5.14.29	October 4, [1903]	227

xxvi Contents

		5.14.30	October 5, [1903]	228
		5.14.31	October 6, [1903]	229
		5.14.32	October 7, [1903]	229
	5.15	What a l	Monotonous Life!	230
		5.15.1	October 8, [1903]	230
		5.15.2	October 9, [1903]	230
		5.15.3	October 10, [1903]	231
		5.15.4	October 11, [1903]	232
		5.15.5	October 12, [1903]	232
		5.15.6	October 13, [1903]	234
		5.15.7	October 14, [1903]	234
		5.15.8	October 15, 1903	235
	5.16	But Whe	ere Did These Three Come From?	235
		5.16.1	October 16, [1903]	235
		5.16.2	October 17, [1903]	239
		5.16.3	October 18, [1903]	240
		5.16.4	October 19, [1903]	240
		5.16.5	October 20, [1903]	241
		5.16.6	October 21, [1903]	241
		5.16.7	October 22, [1903]	242
		5.16.8	October 23, [1903]	242
		5.16.9	October 24, [1903]	243
	Refer	ences		259
6	The A	Amazing 1	Rescue	261
	6.1	On Paule	et Island	263
	6.2	Meanwh	ile, Back in Buenos Aires	264
	6.3	A Happy	Confluence of Arrivals	264
	6.4	The Retr	ieval	268
	6.5	The Retu	ırn North	270
	6.6	The Jubi	lant Entrance into the Buenos Aires Harbor	271
	Refer	ences		278
7	Recor	mmendati	ions from a Seasoned Antarctic Explorer	279
	7.1		rips and the Superiority of the Sledge Pulled	
		_		280
		7.1.1	Pages 48, 49, and 50	280
		7.1.2	Page 51–Supplement I	282
		7.1.3	Page 52	282
		7.1.4	Page 53	282
	7.2	To Final	ly Penetrate into the Heart of the Frozen Zone	282
		7.2.1	Page 54–October 8, 1903	282
	Refer	ence		283

Contents xxvii

8	The	Speech fo	or the Naval Center in Buenos Aires: A Call to				
	Antarctic Action						
	8.1	Confere	nce [Lecture] by Under-Lieutenant José M. Sobral	287			
		8.1.1	Sponsored by the Centro Naval [Naval Center] and				
			Read in the Politeama Argentino [Theater] on				
			December 19, 1903	287			
		8.1.2	Scientific Interest	287			
		8.1.3	Commercial Interest	288			
		8.1.4	In Snow Hill	288			
		8.1.5	First Trips	289			
		8.1.6	Distribution of Time	292			
		8.1.7	Domestic Life	293			
		8.1.8	To the South	294			
		8.1.9	Tides	304			
		8.1.10	The Two Ices	306			
	Refe	rences		309			
9	Afte	r the Exp	edition: A Life of Science	311			
	Refe	rences		331			
Co	onclus	ion: The	Strangeness Within, the Wildness Without	333			
۸,	ldition	al Readi	ησ	335			

## Overview

# The Contribution of José María Sobral to Argentine Antarctic Exploration

## Sobral: The Dawn of Antarctic Science in Argentina

The presence of the Navy Under-Lieutenant José María Sobral in the Antarctic expedition was not due to chance, an outburst of authority, or the taking advantage of an opportunity; rather, it was part of a plan and part of special international scientific circumstances that led Argentina to take part in an ambitious international program for the sake of Antarctic knowledge.

In 1899, in Berlin, the VIIth International Geographical Congress was held, whose focus was the last unknown continent, that is, the Antarctic continent. It was recommended that studies be conducted and data collected in the following disciplines: oceanography, geomagnetism, meteorology, geophysics, geology, and biology. As a result of this opportunity, an International Antarctic Commission was created to manage and organize such studies.

With the participation of England, Germany, France, and Sweden, the so-called International Antarctic Expedition was planned, to which the Argentine Republic was invited, a country that was committed to installing a meteorological and terrestrial magnetism station on what is today known as Isla Observatorio

<sup>&</sup>lt;sup>1</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. Page 48.

<sup>&</sup>lt;sup>2</sup>Quevedo Paiva Adolfo, "hace 90 años en la Antártida", Asociación Polar Pingüinera Argentina, Buenos Aires 1994. Page 18.

<sup>&</sup>lt;sup>3</sup>Destéfani Laurio, "100 años de un rescate épico en la Antártida. Nordenskjöld – Sobral – Irizar" Instituto de Publicaciones Navales. Buenos Aires, 2003 page 20 and subsequent pages.

xxx Overview

(Observatory Island), in the province of Tierra del Fuego, Antarctica, and South Atlantic Islands. Simultaneously, Frigate Lieutenant Horacio Ballvé<sup>4</sup> was sent to Europe to acquire instruments, to coordinate with the organizers the needs for geomagnetic and meteorological observations required for this great worldwide effort, and, above all, to be trained in these sciences, which were of great strategic value for the country. It is worth remembering that, in those times, situational instruments on board were the magnetic compass and the sextant, which, with the resolution of complex mathematical calculations of astronomic navigation, enabled the crew to determine a position. This, combined with the meteorological aspect, formed part of the most important determinants for accurate offshore navigation.

Lieutenant Ballvé<sup>5</sup> was the most enthusiastic proponent of Sobral's presence in the Swedish expedition,<sup>6</sup> as he considered that the participation of an Argentine in an expedition of such magnitude would trigger the awakening of Argentine interest in Antarctica and in Antarctic science in general. Ballvé knew Sobral's personality, and he was convinced that Sobral was the one who was best suited to adapt to the most extreme environmental harshness and to the demands of scientific work with respect to collecting and recording data. In addition, he believed in Sobral's adventurous spirit, his resilience, and his tremendous ability to endure great efforts for the sake of fulfilling the expedition objectives.

The construction of the meteorological and magnetism laboratory, which Lieutenant Ballvé would direct, was carried out promptly and speedily, and in February of 1902, data began to be recorded in a statistical series that lasted over 16 years.

The expeditions that were spurred by the VIIth International Geographical Congress were <sup>7,8</sup> as follows: the British expedition, aboard the *Discovery* (1901–1904), which would study the Ross Sea, 9 under the charge of Robert Falcon Scott; the German expedition, with the *Gauss* (1901–1903), whose members overwintered because they became trapped in the ice on the coast that they named Wilhelm II, and which was led by Erich Dagobert von Drygalski; the Scottish, with the *Scotia* (1903–1904), in the Weddell Sea, commanded by William Speirs Bruce; the Swedish, with the *Antarctic* (1901–1903), to the east of the Antarctic Peninsula,

<sup>&</sup>lt;sup>4</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. Page 49.

<sup>&</sup>lt;sup>5</sup>Pierrou Enrique Jorge "90 años de labor de la Armada Argentina en la Antártida" Volume 1 Servicio de Hidrografía Naval Publication H 919. Buenos Aires 1975. Page 122 and subsequent pages.

<sup>&</sup>lt;sup>6</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. Page 62.

<sup>&</sup>lt;sup>7</sup>Secretaría General Naval – Armada Argentina. "Corbeta Uruguay 1903 Centenario del rescate de la expedición Nordenskjöld 2003" Buenos Aires 2003. Page 24 and subsequent pages.

<sup>&</sup>lt;sup>8</sup>Quevedo Paiva Adolfo E. "Historia de la Antártida" Ediciones Argentinidad Buenos Aires 2012. Page 50.

<sup>&</sup>lt;sup>9</sup>Quevedo Paiva Adolfo, "hace 90 años en la Antártida", Asociación Polar Pingüinera Argentina, Buenos Aires 1994. pp. 20 and 21.

Overview xxxi

under the charge of Nils Otto Gustaf Nordenskjöld; and the French, with the *Français* (1902–1905), to the west of the Antarctic Peninsula, in the Gerlache Strait, <sup>10</sup> led by Jean-Baptiste Auguste Charcot. <sup>11,12</sup>

# A Navy Committed to Science and to Concrete Scientific Investigation Goals

The senior management of the Navy, at the end of the nineteenth century, was sensitive to the need for generating knowledge, so that the land of Argentina, and its promise of development and well-being, could achieve sustainable progress. This spirit reigned in the institutions of the national state, and although some organizations did not have great technological development, they were eager for growth and improvement.

The only valid path was that of research—research in geology and other disciplines. Knowledge was the way, and the Navy moved to acquire equipment, train its human resources, and avoid squandering any of the very scarce material resources available.

One of the plans was to pursue geographical knowledge, an area of responsibility for the Naval institution, since that knowledge is directly related to nautical safety, not only for Navy ships, but also for all ships that navigate national waters.

Antarctica was one of the important projects for the obtaining of such knowledge, and for that purpose, Argentina participated in international geographical congresses. Naval officers were sent to attend these congresses, many of which invited the Navy and the country to officially participate.

In the case of the Antarctic expedition, after a very rigorous search, the selection of Sobral, a person with courage, determination, diligence and, above all, with a huge sense of duty, was undoubtedly a wise decision.

#### Sobral: Conviction, Work, and Determination

At the age of 21, Sobral was appointed to be part of the Swedish expedition, commanded with so much aptitude and determination by Otto Nordenskjöld. He

<sup>&</sup>lt;sup>10</sup>Quevedo Paiva Adolfo, "hace 90 años en la Antártida", Asociación Polar Pingüinera Argentina, Buenos Aires 1994. pp. 21–26.

<sup>&</sup>lt;sup>11</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. Page 50 and subsequent pages.

<sup>&</sup>lt;sup>12</sup>Sobral José María "Dos años entre los hielos 1901–1903" Editorial Universitaria de Buenos Aires, Colección Reservada del Museo del Fin del Mundo. Buenos Aires, 2003. Page 71 and subsequent pages.

xxxii Overview

had only 48 h to prepare and to acquire the equipment required for overwintering. Very few of the items that he found in the storerooms of the Argentine Navy, and that he bought in the shops of Buenos Aires, during the middle of the summer, were of any use. <sup>13</sup> At that time, the Navy completely lacked experience in Polar preparation, and although it was taking part in several scientific commissions in Europe, its structure did not possess a capacity for Polar exploration at the level of leading countries, as it does today.

Sobral's young age and relative inexperience have been discussed in some writings, and it is worth mentioning that his experienced colleagues were not much older than he: The chief of the expedition was 32, Axel Ohlin was 34, Samuel A. Duse was 27, and the rest were much younger, including Carl Skottsberg, who was 21. <sup>14,15</sup> This argument is insubstantial, and the truth, considering the historical and evolutionary context, is that a young naval officer could join the expedition with the same eagerness and uncertainty as any other officer, the difference always being his conviction, his spirit, his natural penchant for work, his determination, and his unbending personality.

In the writings of his companions, these fellow adventurers<sup>16</sup> highlight Sobral's responsibility in measurements and scientific works, which were performed with complete vigor, even in the worst climatic conditions. This was so even during the second year of overwintering, when, in addition to the harsh conditions, there was also great uncertainty as to whether the expedition members would be looked for, whether, despite being sought, they would be found, and other uncertainties in a long series of unanswered questions.<sup>17</sup>

## **Sobral: A Scientist Among Scientists**

Although the first human group to overwinter in Antarctica was that of the ship  $B\acute{e}lgica$ , commanded by the Lieutenant of the Belgian Royal Navy, Baron Adrien de Gerlache de Gomery, to the south of Peter I Island, for over a year, it was in an involuntary manner, because their ship had become trapped in the ice.

In the case of the Swedish expedition, this overwintering was planned and prepared for.

<sup>&</sup>lt;sup>13</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. Page 67.

<sup>&</sup>lt;sup>14</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. Page 51.

<sup>&</sup>lt;sup>15</sup>Destéfani Laurio, "100 años de un rescate épico en la Antártida. Nordenskjöld – Sobral – Irizar" Instituto de Publicaciones Navales. Buenos Aires, 2003. Page 24.

<sup>&</sup>lt;sup>16</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. Page 214.

<sup>&</sup>lt;sup>17</sup>Sobral José María "Dos años entre los hielos 1901–1903" Editorial Universitaria de Buenos Aires, Colección Reservada del Museo del Fin del Mundo. Buenos Aires, 2003. Page 134.

Overview xxxiii

Scientific activities were covered in the following way 18:

Nordenskjöld covered the area of geology, and the collection and classification of fossils;

Erik Ekelöf, whose main role was to be the expedition physician, was in charge of bacteriology, zoology, and botany; and

Gösta Bodman and Sobral made magnetic, meteorological, and astronomical observations and records.

In the area of basic logistics: Ole Jonassen served as the blacksmith, carpenter, and shoemaker, in addition to caring for and feeding the team of dogs, and Gustaf Åkerlundh served as the cook and the assistant for the expedition. <sup>19,20</sup>

### **Sobral: The Completion of a Mission**

It was the combination of the right person and the right plan that brought success to the mission. Sobral was able to adjust to the circumstances, even the most extreme ones in which he found himself. And the country's plan offered unrestricted support, even though both Argentina and the Naval institution did not have any previous experience with Polar exploration.

Sobral's departure to, and triumphant return from, the Antarctic continent was preceded by many years of work and followed by many more years of analysis and study. Further planning and research campaigns ensured that the efforts and sacrifice of Sobral and his expedition would not fall into oblivion.

For the Navy, Sobral's work and his success were an enormous incentive to continue on the path of knowledge. Sobral had set an important precedent which reaffirmed that research was the only way to acquire that knowledge, and this precedent would not be forgotten.

## Sobral: A Scientific Vocation and a Successful Career

On naval ships, there has always been a scientific presence and a permanent surveying of all kinds of data that can feed statistical series, as well as a collecting of oceanographic and hydrographic data for the sake of knowledge, and for the reason that, with the advancement of military technology, these data are necessary for control systems.

<sup>&</sup>lt;sup>18</sup>Destéfani Laurio, "100 años de un rescate épico en la Antártida. Nordenskjöld – Sobral – Irizar" Instituto de Publicaciones Navales. Buenos Aires, 2003. Page 95.

<sup>&</sup>lt;sup>19</sup>Destéfani Laurio Ibid. Page 95.

<sup>&</sup>lt;sup>20</sup>Sobral José María "Dos años entre los hielos 1901–1903" Editorial Universitaria de Buenos Aires, Colección Reservada del Museo del Fin del Mundo. Buenos Aires, 2003. Page 133.

xxxiv Overview

The international context in which the country of Argentina existed, after the Swedish expedition, did not make it possible for the Navy to allow one of its scarce human resources to devote himself to the study of geology, as Sobral aspired to do, <sup>21</sup> enthusiastic as he was about what he had learned in Antarctica, and about what his overwintering companions suggested to him, noting his natural inclination toward science and his endeavor to prevail in each challenge that he would undertake. This is why he had to choose between his two great vocations: the sea and science.

Once again, his spirit led him to put aside the security and predictability of the military career and to embark on a new venture. He traveled to Sweden, <sup>22</sup> where his Antarctic colleagues awaited him, and by 1913, he had earned a Ph.D. in geology and petrography. <sup>23,24</sup> Thus, he became the first Argentine to obtain a formal university degree, in addition to also being the first to earn a doctorate in this specific science.

He preferred a humble position in the national public administration<sup>25</sup> rather than others that were better paid in Canada,<sup>26</sup> and it was in this manner that, with professionalism and determination, he became the director of the Dirección Nacional de Minas e Hidrología (National Directorate of Mines and Hydrology).<sup>27</sup> This was the highest position for a professional of that specialty, and it was a position from where he had to struggle against the interests of foreign companies, which, back then, were the only ones that exploited mines in the Argentine country.<sup>28</sup> In addition, his work also made him stand out as a petrologist.<sup>29</sup>

Under Sobral's direction, and in spite of inconveniences, the geological map of the Republic of Argentina was completed in 1923.

In 1926, he was appointed a member of the Royal Scientific Society of Gothenburg, and in 1930, he was honored by the American Geographical Society, who awarded him with "The David Livingstone Centenary Medal." <sup>30</sup>

<sup>&</sup>lt;sup>21</sup>Quevedo Paiva Adolfo, "hace 90 años en la Antártida", Asociación Polar Pingüinera Argentina, Buenos Aires 1994. Page 86.

<sup>&</sup>lt;sup>22</sup>Capdevila Ricardo, Comerci Santiago "Los tiempos de la Antártida – historia antártica argentina" Editora Cultural Tierra del Fuego. Ushuaia 2013. Page 95 and subsequent pages.

<sup>&</sup>lt;sup>23</sup>José María Sobral, "Dos años entre los hielos 1901–1903" Eudeba, Colección Reservada del Museo del Fin del Mundo, Buenos Aires, December 2003. Preface by Jorge Rabassa. Page 22.

<sup>&</sup>lt;sup>24</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. pp. 244 and 245.

<sup>&</sup>lt;sup>25</sup>Quevedo Paiva Adolfo E. "Historia de la Antártida" Ediciones Argentinidad Buenos Aires 2012. Page 297.

<sup>&</sup>lt;sup>26</sup>Destéfani Laurio Ibid. Page 245.

<sup>&</sup>lt;sup>27</sup>Destéfani Laurio, El Alférez Sobral y la soberanía Argentina en la Antártida, Editorial Universitaria de Buenos Aires, Buenos Aires 1979. Page 260.

<sup>&</sup>lt;sup>28</sup>Destéfani Laurio Ibid. Page 260.

<sup>&</sup>lt;sup>29</sup>José María Sobral Ibid. Preface by Jorge Rabassa. Page 45.

<sup>&</sup>lt;sup>30</sup>Destéfani Laurio Ibidem. Page 266.