

**PROCEEDINGS OF THE SEVENTH SYMPOSIUM
ON POLAR BIOLOGY**

Editorial Board

Editor-in-Chief: Tatsuro MATSUDA

Editors: Takeo HIRASAWA	Takao HOSHIAI	Katsutada KAMINUMA
Sadao KAWAGUCHI	Kou KUSUNOKI	Shinhachi NISHIKAWA
Takasi OGUTI	Natsuo SATO	Kanenori SUWA
Masayuki TANAKA	Tetsuya TORII	Keizo YANAI
Yoshio YOSHIDA	Torao YOSHIKAWA	

Executive Editor: Mitsuo FUKUCHI

MEMOIRS OF NATIONAL INSTITUTE OF POLAR RESEARCH
SPECIAL ISSUE No. 40

PROCEEDINGS OF
THE SEVENTH SYMPOSIUM ON
POLAR BIOLOGY

Edited by

*Takao HOSHIAI, Takahisa NEMOTO
and Yasuhiko NAITO*

PUBLISHED BY NATIONAL INSTITUTE OF POLAR RESEARCH

TOKYO

FEBRUARY 1986

Memoirs of National Institute of Polar Research
Special Issue, No. 40

PROCEEDINGS OF THE SEVENTH SYMPOSIUM
ON POLAR BIOLOGY

Takao HOSHIAI, Takahisa NEMOTO and
Yasuhiko NAITO, *Editors*

Copyright 1986 by National Institute of Polar Research
9-10, Kaga 1-chome, Itabashi-ku, Tokyo 173

Printed by Tokyo Press Co., Ltd.