

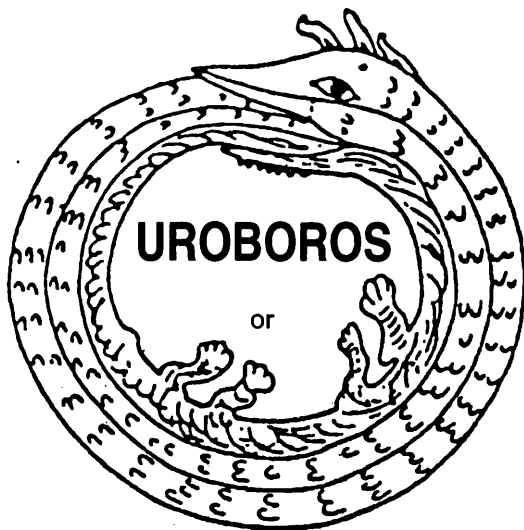
Φωτῶν τῶν κλύεριν ὠνίης
ἐκ τῶν τῶν ἡ ἐκ τῶν τῶν
πρῶτον αὐτῶν ἐστὶν ἰωσὶς,
πῆγ ἡ σὴ φρε αὐτοῦ:-
ἐκ τῶν αὐτοῦ ἰωσὶς ἐστὶν
συνία τῆς τῆς κλύε

UROBOROS

**BIOLOGY BETWEEN
MYTHOLOGY AND PHILOSOPHY**

Edited by

WŁODZIMIERZ ŁUGOWSKI • KOICHIRO MATSUNO



BIOLOGY BETWEEN MYTHOLOGY AND PHILOSOPHY

Edited by
Włodzimierz Ługowski and Koichiro Matsuno

Wrocław 1998
ARBORETUM

Oficina Wydawnicza Arboretum - Arboretum Publishing House
Świętokrzyska 34/16, 50-327 Wrocław
Chief editor: Bożena Płonka-Syroka
Director: Andrzej Syroka
Editorial offices: phone (+48-71) 327 83 32
Sales department: phone (+48-601) 79 51 34

**Hoc verè est magnum miraculum & cita fraus,
In venenoso Dracone summam medicinam inesse.**



Computer lay-out: Włodzimierz Tymowski, phone (+48-22) 648 73 19
Cover design: Andrzej Syroka

Printing: Drukarnia *Adla*, 54-058 Wrocław,
POLAND ul. Samotna 8a, tel./fax: 48-71-354-30-54

ISBN 83-86308-27-3

© Copyright by Arboretum & Włodzimierz Ługowski

Contents

BIOLOGY BETWEEN MYTHOLOGY AND PHILOSOPHY

Włodzimierz Ługowski (Warsaw), <i>In venenoso Dracone summam medicinam inesse, or on the mythology and philosophy of biology</i>	5
Stanley N. Salthe (New York), Science as the basis of a new mythological understanding	27
Gerhard Vollmer (Braunschweig), The limits of biology	43
Teoman Durali (Istanbul), Philosophy-Science from the biotic standpoint	59
Dail W. Mullins (Birmingham), The mythology of Western scientific materialism and the rise of the evolutionary epic	77

THE PHILOSOPHY OF LIFE'S ORIGIN

Harmke Kamminga (Cambridge), Theory construction in biology. The case of the origin of life	91
Koichiro Matsuno (Nagaoka), The uncertainty principle and the origins of life: an odd couple	107
Gail R. Fleischaker (Boston), The myth of the putative 'first organism'	121
Anthonie W. J. Muller (Edinburgh), Thermosynthesis: where biology meets thermodynamics	139
Stanley N. Salthe (New York), Formal considerations on the origin of life	169

EVOLUTIONARY THEORY AND METATHEORY

- Franz R. Krueger** (Darmstadt), *Between metaphysics and metabiology. The concept of information in evolutionary metatheory* 187
- Paweł Grieb** (Warsaw), *Evolution as a means of existence of living matter* 197
- Jorge González-González** (Mexico), *Transformed and altered processes. Foundations for a processual theory of biological knowledge* 211
- Juan Manuel Torres** (Bahía Blanca), *On prediction in biology and evolutionary theory* 229
- Krzysztof Łastowski** (Poznań), *On the origins of sociobiology* 239

UNDERSTANDING COMPLEXITY

- Yukio Gunji, Masao Migita, Shin'ichi Toyoda** (Kobe), *From state- to measurement-oriented theory. Degeneracy of a proper noun* 245
- Sahotra Sarkar** (Montréal), *Reductionism and functional explanation in molecular biology* 271
- Gertrudis Van de Vijver** (Gent), *Internalism versus externalism: a matter of choice?* 295
- Jose C. B. Tiago de Oliveira** (Lisbon), *The geometries of three ancient kingdoms* 307
- Włodzimierz Klonowski** (Warsaw/Halifax), *Omnis felicitas ex felicitate: physicalistic concept of happiness* 315