



The Magazine of the Polish Academy of Sciences
No. 4 (20) 2008
Quarterly
ISSN 1731-7401

Edited by:
Polish Academy of Sciences
© Polska Akademia Nauk 2008

Editor Address:
Polish Academy of Sciences
Office for Popularizing and Promoting Science
PKiN, pl. Defilad 1, 00-901 Warsaw, Poland
e-mail: academia@pan.pl
www.english.pan.pl

Subscription:
academia.prenumerata@pan.pl

Editorial Staff:

Jan Strelau
Editor-in-Chief

Patrycja Dołowy
Deputy Editor
Biomedical Sciences

Iwona Pijanowska
Managing Editor

Anna Zawadzka
Humanities

Weronika Śliwa
Mathematics, Physics,
Chemistry, Technology

Andrzej Pieńkowski
Earth Sciences

Daniel Sax
English Language Editor & Translator

Paweł Adamów
Art Director

Scientific Council:

Chairman:
Michał Kleiber
President of the Polish Academy of Sciences

Andrzej Wiatrak
Wiesław Bogdanowicz
Jerzy Zabczyk
Andrzej Styczek
Zygmunt Reklewski
Jacek Zaremba
Jan Andrzej Ciołkosz

Publication costs partly covered by
the Ministry of Science and Higher Education

DTP by Edit Sp. z o.o.
DTP Operator: Magdalena Giera

From Academia

The Pulse of Life

In both the natural world and human civilization, things quite often come full circle. This issue of Academia covers a diverse range of such recurring, back-to-the-beginning phenomena: on Earth and in space, in test tubes and on artist's canvasses.

*Our article **Heat from the Sun** (p. 16), for instance, considers how harnessing some of the never-ending influx of solar energy might help resolve many global problems. Rivers, too, have their perennial aspect – on p. 38 we take a look at how they ceaselessly **alter their riverbeds** and we weigh the relative human impact.*

*Another factor now becoming crucial for our planet's future is the reuse and reprocessing of our wastes. But as we investigate on p. 4, not just plastics and metals but biowastes, too, are suitable for **recycling**. Our article by Prof. Lech Szajdak (p. 24), in turn, talks about useful **chemical cycles in the soil** and their contribution to agriculture. The female biological cycle and its effect on the immune system are covered in **Regulated Resistance** (p. 34), while the article **Cycles of Life and Death** (p. 12) addresses whether single-cell microbes actually age at all, and whether research here might help discover genes of longevity in humans.*

*On a more intellectual plane, we ponder the role of **cycles in art** on p. 32, looking at how the Spanish artist Francisco Goya's sequences can convey more than single compositions. The philosopher Prof. Barbara Skarga, in turn, is fascinated by how the **human intellect creates theories** and subsequently abandons them (p. 40). As all cycles are associated with waning and rebirth, with what passes and what stays behind, on p. 48 we **commemorate** the late Prof. Witold Karczewski, an outstanding erudite and advancer of science.*

ACADEMIA staff



Leon Tarasewicz "Untitled" 1987

Leon Tarasewicz – a Polish artist of Belarusian origin, born in Wally in the Podlasie region in 1957, and a graduate of the Warsaw Academy of Fine Arts, where he runs a workshop. He believes that imagery should be valued in terms of painting alone, not for any added sense; he does not give his paintings titles. His work combines conceptualism and artistic installations, painting directly over the walls of galleries. He won the 2006 Grand Prize of the Foundation for Culture for consistently challenging both the traditional understanding of painting and all conventions in interpreting art. In 2008 he was ambassador of the European Year of Intercultural Dialog