

GOOD LUCK TO “IMAGE ANALYSIS & STEREOLOGY” (ex Acta Stereologica)!

For eighteen years Acta Stereologica has played an important role in the International Society for Stereology (ISS). All activities of the ISS have been mirrored in the journal, starting with the 3rd European stereological symposium held in 1981 in Ljubljana, Slovenia. At that time, the editor of the Newsletter in Stereology (Gerhard Ondracek) and the editorial board of Stereologia Jugoslavica decided that both journals should fuse to form Acta Stereologica. The idea was supported by the president of ISS, Hans Eckart Exner who has authorized the Stereological Section of the Yugoslav Association of Anatomists to publish the journal on behalf of the ISS. Miroslav Kališnik became the editor-in-chief. On this office he put all his efforts to the careful editing of Acta Stereologica. The first issue of the journal, a post-symposium number of the third European symposium for stereology, appeared in 1982.

Acta Stereologica has received precious support from all presidents of the ISS (Hans Eckart Exner, Roger Miles, Jean Louis Chermant, Vyvyan C. Howard and Bente Pakkenberg). Outstanding stereologists all over the world served in the international advisory board (IAB); chairmen of IAB, Ervin E. Underwood, Gerhard Ondracek and Yrjö Collan played an important role. All of the papers have been carefully reviewed to assure a consistent scientific quality, thanks to numerous referees who kindly invested their time and knowledge.

Tribute should be paid to the efforts of the organizers of European and international stereological congresses or organizers of symposia pertaining to specific topics; it is to their credit that the majority of participants submitted papers to the journal. Thanks to the editors of special issues devoted to mathematical morphology (Jean Louis Chermant and Dominique Jeulin), numerical density (Jakub Bodziony and Kurt Wiencek), quantitative pathology (Yrjö Collan) and neurostereology (Bente Pakkenberg) the contents of Acta Stereologica has been substantially enriched.

In 1991, after the independence of Slovenia and its separation from the former Yugoslavia, Slovenian Society for Stereology and Quantitative Image Analysis, the successor of the Stereological Section of the Yugoslav Association of Anatomists became the owner of the journal. In the year 1996, Acta Stereologica became the official journal of the ISS, supported also financially by the Society.

The rapid development of computer-aided methods, image analyzing systems, new trends in image analysis and pattern recognition, dictate that the scope of the journal should be broadened to attract also scientists from related disciplines and non members of ISS. Acta Stereologica has gained recognition not only among members of ISS. For better dissemination of information it also became indispensable to change the name of the journal. Some of you will probably regret the decision that the name has been changed to Image Analysis and Stereology. Please, do try to understand it! It will certainly bring along many advantages!

As the new editor-in chief I feel obliged to Miroslav Kališnik and to well recognized members of ISS who helped Acta Stereologica to appear twice and lately three times per year. My goal will be to increase the number of high quality papers, to attract readers who are not familiar with stereology but are experts in image analysis, pattern recognition and related fields, and to give the journal a higher impact.

I would like to thank all of the colleagues who agreed to serve on the editorial board and especially those who helped me with ideas and suggestions for remodelling the journal. I sincerely hope that the editorial board will play an important role in the future of “Image Analysis & Stereology”. The refreshed and extended editorial board will certainly succeed in encouraging authors who haven't publish in Acta Stereologica yet, to submit high quality papers! I am especially looking for reviews of recent developments, novel applications, current state of the-art in stereology and image analysis.

Last but not least, let me thank the ISS general assembly meeting in Melbourne, where my ideas were kindly supported! I believe the new appearance of the journal will be received in good order!

Dr. Ida Eržen
Editor-in-Chief

Institute of Anatomy
Medical Faculty
1000 Ljubljana
Korytkova 2
Slovenia

Phone: (+386) 61-1403-042 ext. 322
(+386) 61-446-051
Fax: (+386) 61-1403-326
e-mail: ida.erzen@mf.uni-lj.si

THE XTH INTERNATIONAL CONGRESS FOR STEREOLOGY,

was held at the University of Melbourne in Melbourne, Australia from November 1-4, 1999. I consider the International Society for Stereology was quite forward thinking when it awarded the Congress to Melbourne, as all nine previous Congresses of the Society had been held either in Europe or North America. It was therefore clearly somewhat of a risk to move the Congress to the other side of the world! However, for stereology to flourish and for the applications of stereology to improve in quality and increase in number, it is important that Congresses be held in new as well as traditional locations.

The decision to hold this Congress in Melbourne was very well received by the stereological community. The Congress was attended by more than 100 delegates from approximately 20 countries. In addition, the Congress featured Keynote Addresses (Dominique Jeulin, Jens Nyengaard, Ruth Napper, Nigel Wreford, Steve Davies, Richard Wilson) and four outstanding Overview Lectures on “*Probes, populations, samples, measurements and relations in stereology*” by Bob DeHoff.

An important feature of our congresses is the Young Stereologists Competition. The quality of oral and poster presentations by our young stereologists was excellent. The winners were Joanne Chia of the University of Western Australia for her paper on “*Accuracy of estimates of volume fraction*” and Sheena Brown of the University of Otago for her presentation entitled “*Analysis of structural plasticity in the honey bee brain using the Cavalieri estimator of volume and the disector method*”.

An excellent trade display was featured and I want to take this opportunity to gratefully acknowledge the support of the major sponsor Olympus Pty Ltd, and associate sponsors MicroBrightfield Pty Ltd, Autoscan Systems Pty Ltd, BioRad Pacific Ltd, and Scitech Pty Ltd. In addition, generous support for the Congress was provided by the Foundation for High Blood Pressure Research (Australia).

A busy week of stereology was held prior to the Congress. Hans Jorgen Gundersen and six other faculty members conducted the 3rd Australian ISS Stereology Course at Lorne. This 5 day course, held in idyllic conditions was attended by 21 participants. These courses continue to be an important avenue of communication between seasoned stereologists and beginners. Dominique Jeulin conducted a one-day workshop on *Mathematical Morphology* that was attended by 10 people, and Adrian Baddeley conducted a one-day workshop on *Statistics for Stereologists* attended by 20 people. Following XICS, a satellite meeting coordinated by Babu Rao was held in India.

Of course, like all Congresses, XICS will be remembered as much for the science as for the acquaintances we meet up with, people we meet for the first time, and for the social events. I think it is fair to say that this Congress had a very memorable social programme. The Official Reception was held at the Melbourne Town Hall, and 40 registrants enjoyed a tour to the Healesville Sanctuary and the Yarra Valley. The Congress Dinner was held at the Emu Bottom Homestead, where delegates were entertained by aboriginal dancers and a bush band. Watching stereologists trying to dance late at night after some Aussie beer and wine is something we will never forget! All of this was held against the backdrop of the Melbourne Cup, on which a few made small fortunes but most of us lost a few dollars.

I wish to take this opportunity to thank the Organizing Committee for all of their hard work in making the Congress such a success. The Committee consisted of Daine Alcorn, Adrian Baddeley, Mark Berman, Bill Kaegi, Nigel Wreford, Barbara O'Reilly and Frances Spain. I also extend thanks to Bente Pakkenberg for her full support and advice. To all of them, many, many thanks.

So was the Congress a success? I think the answer to this has to be a resounding yes, although of course I am hardly unbiased (an important word in stereology today!). I believe the Congress can be said to be a success for the following reasons: (1) 100 registrants attended from more than 20 countries; (2) this Congress had more registrants from Australia, New Zealand, China and India than any previous ICS; (3) the standard of presentations was generally very high. This view was conveyed to me by many senior stereologists at the meeting; (4) the quality of the presentations in the Young Stereologist Competition was outstanding, an excellent sign for our discipline and Society; (5) all sessions were well attended and 80 people were still in attendance at the final session; and (6) the spirit of harmony at the meeting was excellent.

I am delighted that papers from the Congress are to be published in *Image Analysis & Stereology*. The journal continues to play an important role in stereology, and under its new management, and with a new name and style, I am confident it will continue to grow and flourish.

John F. Bertram, Guest Editor
Chair XICS Local Organizing Committee

CONTENTS

- I** GOOD LUCK TO “IMAGE ANALYSIS & STEREOLOGY”, *Ida Eržen (Editor-in-Chief)*
- III** THE XTH INTERNATIONAL CONGRESS FOR STEREOLOGY, *John F Bertram (Guest Editor)*
- 1** PROBES, POPULATIONS, SAMPLES, MEASUREMENTS AND RELATIONS IN STEREOLOGY
Robert T DeHoff
- 9** CAVEAT ON THE ERROR ANALYSIS FOR STEREOLOGICAL ESTIMATES
Zhengwei Yang, Rendong Zhang, Xiaohong Wen, Anpei Huang
- 15** ON THE VARIANCE OF LOCAL STEREOLOGICAL VOLUME ESTIMATORS
Eva B Vedel Jensen
- 19** RELATIVE DISTANCE: THE KEY TO THE SHAPE OF HEPATIC BUILDING BLOCKS
Jan M Ruijter, Marry M Markman, Jaco Hagoort, Antoon FM Moorman, Wouter H Lamers
- 25** TOTAL NUMBER: A BRIEF REVIEW OF ITS IMPORTANCE AND ITS USE IN ASSESSING CEREBELLAR DAMAGE IN THE RAT FOLLOWING EARLY POSTNATAL ALCOHOL EXPOSURE
Ruth MA Napper
- 35** TOTAL CELL NUMBER IN FETAL BRAIN
Grethe Badsberg Samuelsen, Nenad Bogdanovic, Henning Laursen, Niels Graem, Jørgen Falck Larsen and Bente Pakkenberg
- 39** MIB-1, AGNOR AND DNA DISTRIBUTION PARAMETERS AND THEIR PROGNOSTIC VALUE IN NEUROENDOCRINE TUMOURS OF THE LUNG
Uta Jütting, Peter Gais, Karsten Rodenacker, Joachim Böhm, Heinz Höfler
- 45** FRACTAL ANALYSIS OF TRABECULAR BONE: A STANDARDISED METHODOLOGY
Ian Parkinson and Nick Fazzalari
- 51** THREE-DIMENSIONAL OBSERVATIONS ON THICK BIOLOGICAL SPECIMENS BY HIGH VOLTAGE ELECTRON MICROSCOPY
Tetsuji Nagata
- 57** HOW MANY LOBSTERS ARE IN THE SEA?
Ernest Enns and Bruce Smith
- 61** IMAGE ANALYSIS FOR MODELLING SHEAR BEHAVIOUR
Philippe Lopez, Joëlle Riss, Sylvie Gentier, Rock Flamand, Guy Archambault, Soizic Bouvet
- 67** STEREOLOGICAL ESTIMATES FOR ROUGHNESS AND TORTUOSITY IN CEMENTITIOUS COMPOSITES
Piet Stroeven
- VII** NEWS FROM ISS, (*Bente Pakkenberg*)
- VIII** FORTHCOMING MEETINGS