The 13th International Symposium on Spermatology

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Introduction to the Symposium

It was with great pride and joy we welcomed a wide range of scientists (Table 1) to the 13th International Symposium in Spermatology at the conference venue Skogshem and Wijk on the suburban island of Lidingö, just outside central Stockholm. The symposium took place on 9–13 May 2018, and focussed on any aspect involving the Spermatozoon (Fig. 1). Of special interest was the variability in solutions for basically the same task: to transfer half the genetic material of a new individual and to deliver this genetic material to a gamete of another individual. Looking at both animals and plants, there is a huge variability in challenges to accomplish the mission. Therefore, there was also a wide range of species represented (Table 2).

A Long Series of International Symposia on Spermatology

The series of Spermatology Symposia has a long history (Table 3) but always with the purpose to bring scientists from different fields together—to encourage discussions, interaction, networking and time to enjoy and contemplate. The proceedings attempts to summarise key points and also form a basis for young scientists for further exploration of the field of spermatology. One main point we know from the symposia is how much can be learnt from understanding differences and similarities between spermatozoa from different species where dissimilar challenges for reproduction have led to divergent solutions. The first 50 years of Spermatology Symposia is described by Professor Hideo Mohri in the next chapter of these Proceedings.

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Table 1 Origins (work address) of registered participants

Country	Number of participants	Country	Number of participants	Country	Number of participants
Japan	17	Poland	4	Catalan	1
United Kingdom	9	Switzerland	4	China	1
Spain	8	Australia	3	Colombia	1
Sweden	8	France	3	Finland	1
Norway	7	Ukraine	3	India	1
Russia	6	USA	3	Iraq	1
South Africa	6	Czech Republic	2	Israel	1
Canada	5	Italy	2	The Netherlands	1
Slovakia	5	Austria	1		
Germany	4	Belgium	1		

Fig. 1 The rural venue of the 13th International Symposium on Spermatology on the suburban island of Lidingö outside central Stockholm, Sweden. (Photo L. Björndahl)

A Personal Dedication of the 13th Symposium

For me personally, three Swedish dedicated scientists have been immensely important for my way into sperm science. Therefore, this symposium was dedicated to them.

Björn Afzelius (1925–2008; Fig. 2) generously took time to introduce me to the fascinating world of cilia and sperm tails when I did an advanced course in physiology on cilia in the human body (Björndahl 1980). His enthusiasm was contagious, and I still have a keen interest in the propeller of the sperm (Holmberg et al. 2018). Björn also facilitated my interest in sperm nuclear chromatin stability and zinc content by introducing me to Godfried M. Roomans and allowing me to work with X-ray microanalysis in his laboratory (Roomans et al. 1982).

Leif Plöen (1941–2003; Fig. 3) was not only an interested and thorough opponent at my public doctoral dissertation, but he also introduced me to a wider range

Table 2 Examples of species represented at the symposium

Human	Rooster	Sturgeon	Trout
Mouse	Turtle	Drosophila	*C. elegans*
Bull	Frog	Koala	Asian elephant
Boar	Crocodile	*Ciona intestinalis*	Malaria parasite
Sea Bass	Salmon	Tortoise	
Dog	Duck	Red Deer	

Table 3 Venues and hosts of past and next coming International Symposia on Spermatology

No	Year	Venue	Host
I.	1969	Siena, Italy	Baccio Baccetti
II.	1973	Stockholm, Sweden	Björn Afzelius
III.	1978	Boston, Woods Hole, USA	Michael Bedford
IV.	1982	Seillac, France	Jean André
V.	1986	Fujioshida, Japan	Hideo Mohri
VI.	1990	Siena, Italy	Baccio Baccetti
VII.	1994	Cairns, Australia	Jim Cummins
VIII.	1998	Montréal, Canada	Claude Gagnon
IX.	2002	Cape Town, South Africa	Gerhard van der Horst
X.	2006	Madrid, Spain	Eduardo Roldan
XI.	2010	Okinawa, Japan	Maki Morisawa
XII.	2014	Newcastle, Australia	John Aitken
XIII.	2018	Lidingö, Sweden	Lars Björndahl
XIV.	2022	Vancouver, Canada	David and Sharon Mortimer

of mammalian spermatology, electron microscopy with further X-ray microanalysis investigations (Björndahl et al. 1986, 1991; Björndahl and Kvist 1990), general science philosophy, and last but not the least, the philosophy of Piet Hein.

Last, but not the least, *Ulrik Kvist* (1947–; Fig. 4), my Ph.D. supervisor (Björndahl 1986), mentor and friend—for inviting me to the world of physiology, enticing me into the field of sperm biology and male reproductive medicine, introducing me to Björn and Leif and an ever-encouraging visionary inspiration to critical thinking and development. It is a great pleasure to have Ulrik as co-organiser and presenter at this Spermatology Symposium.

Structure of the Symposium

This symposium had 7 main themes with invited speakers, 17 free oral presentations and 44 poster presentations. Morning sessions were separated from afternoon sessions by a 2-hour lunch break to inspire spontaneous interaction among participants. The long, bright evenings of early May with generous weather also contributed to the intended atmosphere of scientific and social interchange.

Fig. 2 Professor Björn Afzelius (1925–2008). (Photo provided by the family)

Fig. 3 Professor Leif Plöen (1941–2003). (Photo provided by the family)

Themes

- Are Sperm at the Verge of Extinction?
- Sperm DNA—protection and delivery of a complete and undamaged genome
- Sperm Competition, Evolution and Sperm–Egg Interaction
- Genetic aspects of sperm production and performance and its effects on the offspring
- CASA—Advances and Challenges
- Challenges for Sperm Function In Vitro
- Heterogeneity of Sperm Morphology and Laboratory Techniques to Overcome Assessment Challenges
- Sperm Motility (Free Poster Theme)
- Fertility and Infertility (Free Poster Theme)

Fig. 4 Emeritus Associate Professor Ulrik Kvist. (Private photo)

Table 4 Commercial sponsors of the 13th International Symposium on Spermatology

Nidacon International AB www.nidacon.com	A Swedish company headquartered in Gothenburg, manufactures and markets medical devices, mainly for Assisted Reproduction Technologies (ART), with IVF, ICSI, artificial insemination (IUI) and vitrification solutions. *NidaCon* continually strives to improve the outcome of ART, with more pregnancies, by developing superior media systems for clinics, patients and the animal breeding industry.
MICROPTIC S.L. www.micropticsl.com	A company based in Barcelona, it is a world-leading company in the field of semen analysis. The main goal of its business is to produce high-quality products that are continuously improved, integrating the last innovative technology available.
Hamilton Thorne www.HamiltonThorne.com	A leading worldwide provider of precision instruments, consumables, software and services that reduce cost, increase productivity, improve results and enable breakthroughs in the ART field. Hamilton Thorne's CASA II software features modules for sperm motility and concentration, strict morphology, DNA fragmentation, viability and user-defined morphology. The IVOS II hardware platform utilises an automated and heated stage with a built-in optical system for fast and precise sperm analysis.
Nordic Cell www.nordiccell.com	Supplies Nordic gynaecologists and fertility clinics with disposables. We also help in upgrading IVF laboratories with equipment, plus we offer both consulting and complete turnkey laboratory solutions when new IVF clinics are being established. www.nordiccell.com.

Much Appreciated Support for the Meeting

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and Nordic Cell (Table 4). Also, the full support from our ANOVA and its originator and director, Associate Professor Stefan Arver, is thankfully acknowledged.

ANOVA is a multi-disciplinary centre dedicated to Andrology, Sexual Medicine and Transgender Medicine. It is a part of the Stockholm Public Health within the Karolinska University Hospital and research wise part of the Department of Medicine Huddinge, Karolinska Institutet.

ANOVA performs investigations of men in infertile couples, men with hypogonadism or other endocrine disorders affecting male sexual and fertility functions. Among other responsibilities are investigations and medical treatments of erectile dysfunction and follow-up of vasectomy operations. ANOVA is also a certified Swedish Tissue Establishment with the commission to cryo store spermatozoa as a means of male fertility preservation.

ANOVA started to develop from a basic clinical semen laboratory in 1987, a few years later evolved into an Andrology Centre with a clinical andrology practice. The unit for Sexual Medicine was added to serve an increasing need for psychological and psychotherapeutic care for men with sexual problems. This unit now also investigates and treats women with sexual problems as well as individuals with risk behaviour of sexual violence and abuse of children. The name of the unit was changed to Centre for Andrology and Sexual Medicine (CASM). The Transgender Medicine unit was included in 2016 and handles psychiatric, psychological, social welfare matters, as well as endocrine and legal issues related to transgender problems—supporting individuals suffering from Gender Dysphoria. To celebrate the inclusion of Transgender Medicine, the name of the combined unit became ANOVA.

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