Early History of the American Society of Andrology

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History of the American Society of Andrology is found written in four different documents, beginning with a thorough presentation by Eugenia Rosemberg, who was a Charter Member of the ASA and Program Chair of the First Annual Meeting in 1976. Dr. Rosemberg was also instrumental in the formation of the Journal of Andrology and a recipient of the Distinguished Andrologist Award. The past Co-Editor-in-Chiefs, David Hamilton and Jon Pryor, published the second document in 2000. It consisted of letters to the Editors from past ASA Presidents, beginning with Dr. Emil Steinberger, the first President who served two consecutive terms. The next document is that of the first Editor of the journal, Andrzej Bartke, who also became the 8th President of the Society. Dr. Bartke provided a brief history of the Journal of Andrology. The final document is a review of our history presented by the Archives Committee in 2005, in celebration of our 30th Annual Meeting in Seattle. We are unclear of where the 2005 version was published, but Chris DeJonge’s name is attached to the digital file.

It should be pointed out that many of the original documents and files associated with the early years of the ASA were donated to the Iowa State University Library Special Collections. The Archives and History Committee requested that much of this collection be digitized and today these documents are available online at:
http://cdm16001.contentdm.oclc.org/cdm/search/collection/p16001coll1/order/title/ad/desc

The original list of Charter Members of the newly formed ASA, which was signed by the founding Secretary, Rudi Ansbacher in 1980, is also included, as well as numerous original correspondences. This treasure of original letters provides a unique insight into the relationships that were built during the early days of our Society’s founding.

Finally, under the title of “Evolution of the ASA Logo”, we show the changes in our Logo from 1976 to the most current illustration adopted in 2012. The archives found four letters dated 1976, which contained illustrations for consideration as the Logo for the newly formed society. The letters were mailed to the Founding Secretary, Dr. E.S.E. Hafez. Signatures included those of Duane Garner, Terry Turner and Jerald Bain. The artist behind the forth letter is unknown, but the drawings were rather complex.

Minutes of the first ASA Council Meeting, held in Worcester, Massachusetts, show the following motion regarding the ASA Logo: “A motion duly made and seconded was passed that the Secretary organize a contest among members to select a design for a logo for the Society. The winning "designer" is to receive a one year free subscription to Andrologia.” A quick examination of the first issues of J. of Andrology will reveal that Dr. Duane Garner was the Logo winner.
The term ANDROLOGY was introduced in 1951 by Harold Siebke, a Professor of Gynecology in Bonn, Germany. However, many years passed before the term gained acceptance. It was not until 1969 when, due to the efforts of Dr. Carl Schirren of Hamburg, that the first scientific journal dedicated to the subject titled ANDROLOGIE initiated its publication in West Germany (Schirren, 1985). Now, ANDROLOGY is recognized as an area of science and medicine, which fosters a multidisciplinary and multifaceted approach to the study of male reproduction. ANDROLOGY encompasses both basic and clinical sciences. It includes research in biochemistry, genetics, histology, immunology, molecular biology, pathology, pharmacology, physiology and endocrinology. It also includes urology, microsurgery, gynecology, internal medicine, pediatrics, psychology and animal husbandry.

The American Society of Andrology came into being, not as an isolated development but as a consequence of events promoted by individuals deeply committed to the study of male reproduction. The first of these events, took place in the U.S.A., when Drs. W. O. Nelson and C. H. LeBlond, suggested that a Club of scientists interested in the study of male reproduction be organized. At that time, Dr. E. Steinberger became actively involved in the organization of the Club, which held its first meeting in 1968. The Club became known as the Warren O. Nelson Club and held meetings for the following four years. Although it was proposed that the Club become a society, the idea did not materialize.

The second event, which occurred abroad in 1970, was the establishment of the Comite Internacional de Andrologia, better known as CIDA, whose tireless founders were Drs. A. Puigvert, of Barcelona, Spain, and Dr. R. E. Mancini, of Buenos Aires, Argentina. Due to the continuous efforts of various individuals among them, Drs. R. E. Mancini, J. M. Pomerol of Barcelona, and E. Eliasson of Stockholm, Sweden, CIDA was reorganized in 1972, and its governing regulations approved in 1973. It is worth noting that the work carried out by CIDA, fundamentally, to encourage and promote the study of male reproduction, was possible due to the generous support of the Fundacion Puigvert, and of the Population Council, with a view to promoting the study of male reproduction. The first of these events, took place in the U.S.A., Washington, D.C., at the International Congress on Endocrinology held in 1972 in Washington, D.C., at the International Congress on Hormonal Steroids held in 1974 in Mexico City, and also in 1974, at the VIII World Congress of Fertility and Sterility, which was held in Buenos Aires, Argentina. It was then that the idea was seriously considered.

On November 7, 1974, a meeting concerning the formation of the ASA took place in Buenos Aires, attended by Drs. E.S.E. Hafez, E. Rosenberg, E. Steinberger, and D. de Kretser and R. Eliasson, as representatives of CIDA. The conclusions arrived at this meeting were that Dr. E. Steinberger continue to explore the interest of the American scientific community in the establishment of the ASA, receiving the necessary support from Drs. E. Rosenberg and E.S.E. Hafez, as well as from members of CIDA. If it was found that sufficient interest was present, the American Society of Andrology could be organized during a Symposium, which was to take place in Detroit, Michigan, in April 1975.

Dr. Steinberger received many enthusiastic replies from investigators and clinicians. Therefore, the stage was set to schedule the organizational meeting of the American Society of Andrology, which was hosted by Drs. T. Evans and E.S.E. Hafez, April 25, 1975, during the Symposium on "The Human Semen and Fertility Regulation", organized by the C.S. Mott Center for Human Growth and Development, in Detroit, Michigan.

The initiation of any endeavor requires the gathering of individuals who are willing to provide expertise and devote the necessary time to complete a task. The ASA was fortunate to find such a group, who worked continuously from early February till April 1975 to study and suggest a possible organizational chart for the Society to be established at the Meeting of the Incorporators, to take place April 25, 1975. The individuals most actively involved during this preliminary phase were: N. Alexander, S.J. Behrman, E.S.E. Hafez, E. Rosenberg, and E. Steinberger.
On April 24, 1975, as part of the activities of the Detroit Meeting, the participants elected a Committee composed of four individuals, charged with the election of a fifth member, of the election among themselves of the Officers of the future American Society of Andrology, and the election of the members of the Executive Council. The elected members of this Committee were: N. Alexander, S.J. Behrman, E.S.E. Hafez, and E. Steinberger. The Committee met and elected as the fifth member E. Rosenberg.

The Meeting of the INCORPORATORS of the AMERICAN SOCIETY OF ANDROLOGY was held April 25, 1975, with all the Incorporators, N. Alexander, E.S.E. Hafez, S.J. Behrman, E. Rosenberg, and E. Steinberger in attendance. E. Steinberger was elected to preside over the meeting, and E.S.E. Hafez was named temporary secretary. The Incorporators elected the following individuals as Officers of the Society: PRESIDENT: E. Steinberger, VICE PRESIDENT: S.J. Behrman, SECRETARY: E.S.E. Hafez, TREASURER: N. Alexander, PROGRAM CHAIRMAN: E. Rosenberg. The Officers elected the following individuals as Members of the EXECUTIVE COUNCIL: A. Bartke, J. Corriere, F.C. Derrick, Jr., T. Evans, D. Fawcett, C.A. Paulsen, R. Sherins, A. Steinberger, and L. Zaneveld.

The following COMMITTEES were established: BY LAWS-Chairman: S. J. Behrman, Members: N. Alexander, E.S.E. Hafez, E. Steinberger, and J. Corriere; NOMINATING-Chairman: D. Fawcett, Member: C.A. Paulsen; PROGRAM-Chairman: E. Rosenberg, Members: R. Sherins and A. Steinberger; MEMBERSHIP-Chairman: L. Zaneveld, Member: L.C. Derrick, Jr.; FISCAL-Chairman: S.J. Behrman, Members: N. Alexander and T. Evans; LIAISON-Chairman: S.J. Behrman; PUBLICATION-E. Rosemberg. Each Committee Chairman was urged to select the appropriate number of committee members and to send their nominations to all Officers of the Society.

Under the leadership of the President, E. Steinberger, a frenzy of activity took place during the months following the Meeting of the Incorporators. Each Committee Chairman appointed their respective members, and each committee worked at a rapid pace.

By June 1975, due to the efforts of S.J. Behrman, the Articles of Incorporation were signed in the State of Michigan; therefore, the ASA was a legal entity and could function in compliance with Section 501(c)(3) of the Internal Revenue Code. Consequently, the Society began its activities, soliciting individuals to join the ASA by means of Membership Application Forms, and the Treasurer, N. Alexander, opened a Bank account in order to initiate deposit of membership dues. By July 1975, the Secretary, E.S.E. Hafez, recorded 196 members from the U.S.A., and 47 from Europe. Other aspects of the organizational work proceeded very rapidly. S.J. Behrman and E. Rosenberg dedicated time to prepare a draft of the ASA Constitution and By Laws, and E. Rosenberg initiated the preparation of the First Annual Scientific Meeting of the ASA, scheduled for March 1976 in Worcester, Massachusetts.

It was recognized that full discussion of important issues needed to be carried out. Therefore, the President, E. Steinberger, scheduled the FIRST MEETING of the Officers, Members of the Council and Committee Chairman. The Meeting was held at the University Motor Inn, Fort Collins, Colorado, July 24, 1975.

At this FIRST MEETING of the Officers and Members of the ASA Council, the following was discussed: a draft of the By Laws presented by S.J. Behrman, ASA affiliation with CIDA and utilization of ANDROLOGIA as the publication arm of the ASA, format of the Membership Application Forms and of the Society's stationary and logo, authorization to sign checks in behalf of the Society, format of the forthcoming First Annual Scientific Meeting, and tenure of office of the President, Vice President and Program Chairman.

The highlights of the important decisions made at this Meeting are as follows: that three (3) Officers be authorized to sign checks, with only one (1) signature, that of the required to withdraw funds; that the ASA affiliate with CIDA and use ANDROLOGIA as its publication arm; that the President serve through 1976-1977; that the Vice President serve through 1976-1977, and become President for 1977-1978; that the Nominating Committee present a slate for nomination and election at the Second Annual Meeting of the ASA for Vice President for 1977-1978, and Program Chairman for 1976-1977; that the Official Business Meeting of the Society be held at the time of the First Scientific Meeting in March, 1976; that A. Bartke assume the post vacated by L. Zaneveld.

The Program Chairman, E. Rosenberg, presented the outline of the program of the First Scientific Meeting to take place at the University of Massachusetts, Medical School, in Worcester, Massachusetts, March 31- April 2, 1976. E. Rosenberg indicated that she had initiated negotiations to obtain financial support for the Meeting, as well as negotiations with CIDA in order to publish as a Supplement to ANDROLOGIA the Proceedings of the First Scientific Meeting. The report of the Program Chairman was approved.

The real launching of the Society occurred March 31-April 2, 1976, when the First Scientific Meeting of the ASA took place at the University of Massachusetts, Medical School, in Worcester, Massachusetts. All Committee Members had worked assiduously, and the Society was well under way, with 235-recorded members.

The Scientific meeting enjoyed the attendance of 97 members of the ASA, of representatives of other Scientific Societies, of the Center for Population Research, NICHD, NIH, of Members of the Faculty of the University of Massachusetts, Medical School, and of local Worcester physicians (Steinberger, 1976). The SECOND MEETING of the Officers, Members of Council, and Committee Chairman, was held March '30, 1976, at the Sheraton-Lincoln Inn, Worcester, Massachusetts. At this time, all the initial problems had been resolved, the Constitution and By Laws of the Society were adopted, and dates for future Scientific Meetings and respective Program Chairpersons were established through 1979. It was decided that future Scientific Meetings should include Postgraduate Courses as part of the official Program. The duties of the Secretary and Treasurer's offices were defined, C.A. Paulsen was appointed to chair the By Laws Committee, R. Ansbaecher agreed to serve as Temporary Chairman of the Nominating Committee, due to the resignation of S.J. Behrman, D. Fawcett was elected President for 1977-1978, and C.A. Paulsen was elected Vice President for 1977-1978.

The Council congratulated and thanked E. Rosenberg for having accomplished the task of conducting the First Scientific Meeting in its entirety, for having obtained the financial support for as the Society could not provide financial, organizational and administrative backing, and for having secured the publication of the Proceedings of the Meeting, which subsequently appeared as Supplement 1, Volume 8, 1976, of Andrologia (Ed.) E. Rosenberg.

As discussions were held at the March 1976 and 1977 Meetings of the Officers and Members of the Council concerning the possibility of initiating the publication of an Official Journal for the Society, the President, D. Fawcett, together with the Chairman of the Publication Committee, E. Rosenberg, and with the approval of the Members of the ASA Council and of the membership at large, made the decision to abandon ANDROLOGIA as the publication arm of the ASA, and proceeded to explore the possibility of obtaining an American publisher for a future ASA Journal.
It was in 1979, under the Presidency of N. Alexander, that the contract was signed with J.B. Lipincott to publish the official ASA journal, which was named the Journal of Andrology (JA). The Council elected A. Bartke to be its first Chief Editor, and the first issue of the JA appeared in January-February, 1980, as Volume 1, No 1 (Alexander, 1980). The JA has grown ever since, due to the relentless efforts and great ability of A. Bartke, its first Chief Editor, and of M-C. Orgebin-Crist, who followed A. Bartke on this post.

Thanks to the competence of the individuals who initiated the Society, and that of others that followed in its governance, the ASA has reached a membership of 642 members, has bestowed since 1976, the Distinguished Andrologist Award to eleven (11) scientists, the Young Andrologist Award to five (5) young investigators since 1982 and, since 1983, has presented the Student Award to three (3) deserving individuals. Moreover, the ASA has contributed to the teaching of ANDROLOGY through the Postgraduate Courses held since 1977 in conjunction with the Scientific Meetings.

With its rapid growth and increased prestige, it was only fitting that, on its 10th Anniversary, our Society would host the III International Congress of Andrology. The Congress took place in Boston, Massachusetts, April 27 - May 2, 1985, with our Society, in collaboration with Tufts University School of Medicine, serving as host of the International Society of Andrology (ISA) (Ansbacher, 1985). It was attended by 366 members of the ASA or ISA, 182 non-members of either Society, and 120 students. The combined scientific meetings of the two Societies proved to be a great forum for interaction and for renewal of friendships among scientists, who, although distant, share a common interest, and the desire to advance the understanding of our discipline.

We should feel proud of the collective endeavor 'called the American Society of Andrology. Personally, I feel privileged to have had the opportunity to work with such a group of dedicated persons whom I call my friends.

Eugenia Rosemberg, M.D.
Medical Research Institute of Worcester, Inc.
August 1985.

REFERENCES
Ansbacher R. President's Message. J. Andrology 1985; Supple 6(2); P-4.
Evolution of the ASA Logo

1980

1991

2013

American Society of Andrology
September 23, 1976

Dr. E.S.E. Hafez, Secretary  
American Society of Andrology  
C.S. Mott Center for Human Growth & Development  
275 E. Hancock Avenue  
Detroit, Michigan 48201

Dear Saud:

I hereby submit the attached logol for consideration in the A.S.A. logol contest.

The research in my laboratory on the spermatozoal PZ-pentapeptidase is progressing rapidly. Best regards.

Sincerely,

Duane L. Garner, Ph.D.  
Associate Professor

DLG:tl1  
Enclosure
2 August 1976

E.S.E. Hafez, Ph.D.
Reproductive Physiology
C.S. Mott Center for Human Growth and Development
275 E. Hancock Ave.
Detroit, Michigan 48201

Dear Dr. Hafez;

The enclosed page has sketched and colored on it a suggested logo for the American Society of Andrology. Lest my poor artistic ability confuse you, I will tell you that the symbol involves a 'mammalian' sperm cell entwined with the symbol of the male sex. Thank you for your consideration.

Sincerely,

[Signature]

Terry T. Turner, Ph.D.
August 23, 1976

Dr. E. S. E. Hafez,
Secretary,
American Society of Andrology,
C. S. Mott Center for Human Growth and Development,
275 Hancock Avenue,
Detroit, Michigan. 48201.

Dear Saad:

While reading through the recent ASA Newsletter I noted that a logo was being sought. I immediately began to doodle and present the following for your consideration.

I am not known for my artistic creativity but I have taken this opportunity to make my first public presentation. I trust the logo is self-explanatory.

Best personal regards,

Sincerely,

Jerald Bain, M.D.
Presiding: Emil Steinberger, President
Secretary: E. S. E. Hafez
Present: E. Steinberger, President; S. J. Behrman, Vice-President; E. S. E. Hafez, Secretary; E. Rosemberg, Program Chairman; A. Bartke, Council; A. Paulsen, Council; R. Sherins, Council; A. Steinberger, Council

President’s Report

Negotiations were conducted with CIDA concerning affiliation and utilization of Andrologia as the publishing arm of ASA. Affiliation will require one fee of $50. Ten percent of the CIDA earnings from ASA membership subscriptions will be returned to ASA. Affiliation is a voluntary one. (There is controversy on the affiliation fee to CIDA. This will be resolved in our next business meeting.) Dr. Behrman was complimented for completing the formalities associated with incorporation of ASA. As of now, ASA has been incorporated in the State of Michigan. Dr. Eugenia Rosemberg was complimented for her superb work on organizing the first annual meeting. Because of the time limits Dr. Steinberger made up, with the help of Drs. Alexander and Hafez, a membership application form for immediate use, with the understanding it would be modified as necessary during the coming year. Dr. Hafez was to arrange for the Society stationery. Dr. T. N. Evans declined chairmanship of the Finance Committee. Dr. Zaneveld resigned as chairman of the Membership Committee because of pressure of new duties and lack of adequate administrative support in his new position at the University of Illinois at the Medical Center.

Discussion of the Report: It was moved and seconded that ASA affiliate with CIDA and use Andrologia as its publishing arm. Also, one affiliation fee of $50 was approved. Dr. Behrman felt the by-laws would require further work and promised that the committee would work on the final copy of the by-laws to have it ready for reading by the officers and Council within the next couple of months. It was moved and accepted to use temporarily the current membership application forms. The officers noted with regret that Dr. Evans cannot serve as chairperson of the Finance Committee and voted Dr. Behrman to this position. The officers accepted with regret the resignation of Dr. Zaneveld. The administrative support necessary for the Membership Chairperson, particularly during the Society’s first year, is a major one and an individual with such assistance would have to be nominated for the chairpersonship. Following a
discussion, Dr. A. Bartke was nominated and he accepted chairpersonship of the Membership Committee.

**Report of the Program Chairperson (Dr. Rosemberg)**

Dr. E. Rosemberg outlined the program of the first ASA scientific meeting to be held in Worcester, MA, on March 31-April 2, 1976. A copy of the tentative program has been circulated among officers of the Society. She stated that the annual meeting will attract new membership. She suggested that the official business meeting of ASA shall be held at the time of the annual meeting. She discussed registration fee, advance registration, and possible invited speakers.

Discussion of the Report: It has been noted that the meeting dates will not interfere with the meeting of the American Fertility Society and it was moved and accepted that the registration fees be: members--no fee; nonmembers--$20; fellows, residents, and students--$10, and guests--$5. Dr. Rosemberg also mentioned to the officers that during the annual meeting of the Endocrine Society concern was voiced concerning the fragmentation of individuals interested in endocrinology and reproduction. The Endocrine Society has set up a committee composed of various societies related to endocrine and reproduction to look into this need. The first meeting was held in New York at the time of the Endocrine Society meeting. Drs. Eugenia Rosemberg and Anna Steinberger attended this meeting.

**Report of the Publication Committee (Dr. Rosemberg)**

Dr. Rosemberg reported of negotiations with Andrologia concerning publication of the abstracts and major papers of the first annual meeting. She announced the components of her committee:

**Accepted:**
- Griff T. Ross, NIH
- Alexander Albert, Mayo Clinic
- R. Emslander, Mayo Clinic
- Larry Ewing, John Hopkins School of Public Health
- W. Odell, Harbor General Hospital, University of California
- Albert Parlow, Harbor General Hospital, University of California
- Philip Troen, University of Pennsylvania
- William L. Williams, University of Georgia

**Not Yet Accepted:**
- M.-C. Orgebini-Crist, Vanderbilt University
- C. Wayne Bardin, Penn State
- S. Howards, University of Virginia
- L. Persky, Case Western Reserve
- R. Bunge, University of Iowa
- Charles Rife, Mayo Clinic
Discussion of the Report: The role of the Publication Committee vis-a-vis Andrologia was discussed. It is hoped that ASA officers and Council would define the role of the Publication Committee.

**Report of the By-Laws Committee (Dr. Behrman)**

Dr. Behrman read the draft of the by-laws. However, due to the time limit, reading could not be completed and he promised to rework the by-laws and present them to the officers in the near future.

**Report of the Treasurer**

The Treasurer, Dr. Nancy Alexander, was unable to attend the meeting, but she communicated via telephone with the President, Dr. Steinberger. Dr. Alexander was primarily concerned with setting up an account with a bank.

Discussion of the Report: This issue was discussed, and it was moved and accepted that the following officers will have the authorization to sign checks: President, Vice President, and Treasurer. The Treasurer’s signature will be sufficient for all ASA checks. The Treasurer was requested to inquire about laws pertaining to this issue in the State of Oregon. She was also urged to inquire about a special savings account which would permit withdrawal of funds without penalty.

**Report of the Finance Committee**

No report.

**Report of the Liaison Committee**

Lack of activity of the Liaison Committee was noted. However, it was noted that Dr. Behrman, Chairman of the Liaison Committee, had his hands full with the By-Laws Committee and incorporation of the Society. It was suggested that the President of the Society temporarily take over this function.

**Financial Issue**

It as moved that as soon as sufficient funds from membership dues are accumulated that the legal fees and other expenses incurred by Dr. Behrman in the process of incorporating ASA are refunded to him, as well as expenses incurred by Dr. Hafez in providing conference facilities at Fort Collins, stationery, and other expenses are reimbursed.

**Other Societies**
Dr. A. Paulsen expressed concern of certain societies and hazard of unnecessary fragmentation of societies. President Steinberger promised to communicate with AFS and SSR to augment their activities with that of ASA.

**Tenure of Office**

President Steinberger suggested to extend the tenure of the officers by one year. This suggestion was not settled and will be resolved during our next business meeting.

The meeting convened at 9:20 a.m. and adjourned at 1:30 p.m.

E. S. E. Hafez, Secretary
The first business meeting was held at University Motor Inn, East Collins, CO, on July 24, 1975.

Attending the meeting were: A. Bartke, S. J. Behrman, E. S. E. Hafez, E. Rosenberg, R. Sherins, A. Poulsen, A. Steinberger, and E. Steinberger.

Presiding was E. Steinberger, President.

Welcome by the President.

**Presidential Report**

The President contacted CIDA, and it was agreed that *Andrologia* will be the official journal of ASA. Affiliation will require a fee of $50. Ten percent of the CIDA earnings from ASA membership subscriptions will be returned to ASA. Affiliation is a voluntary one.

The Membership Committee will revise the bylaws of membership and send comments to the President. President Steinberger read a letter for Dr. Zaneveld asking to be relieved from membership chairmanship. Drs. Bartke and R. Sherin accepted to serve on the Membership Committee.

ASA Stationary: Objections were raised by Dr. Nancy Alexander (by letter) and by Dr. Eugene Rosenberg on the ASA stationary. The addresses of officers and name of Council could be included in a new stationary with a new emblem. The old stationary could be used by the Secretary.

Finance Committee--S. J. Behrman (chairman), T. N. Evans, and E. Brueschke. The Finance Committee will deal with audit. The Council will take care of fund raising under the chairmanship of President E. Steinberger.

Treasurer. Authorized signatures of checks are of the President, Vice President, and Treasurer. Dr. Alexander will be the primary officer to sign ASA checks under normal circumstances. She is requested to find out about laws of the state of Oregon for details on nonprofit organization accounts for possible special savings accounts.

**Report of the Program Chairman**

Dr. Eugenia Rosemberg outlined her program of the first ASA scientific meeting to be held March 29-April 2, 1976, in Worcester, MA.
She aimed to attract new membership and to hold a business meeting during that occasion. She discussed registration fees, advance registration, and possible new invited speakers.

**Liaison Committee**

The Federated Society meeting was held in New York in June 1975. President Steinberger requested to reformulate additional members for the Liaison Committee to represent the following societies: American Urologic Society, American Fertility Society, Society of the Study of Reproduction, Endocrine Society, American Society of Anatomists, and the Neuroendocrinology Society.

**Publication Committee** (Eugenia Rosemberg, MD, Chairman)

Members: Griff T. Ross, NIH; Alexander Alberl, Mayo Clinic; R. Emslander, Mayo Clinic; Albert Parlow, Harbor General Hospital, CA; Philip Troen, University of Pennsylvania; William L. Williams, University of Georgia.

Not Yet Accepted: M.-C. Orgebin-Crist, Vanderbilt University; Larry Ewing (accepted), John Hopkins School of Public Health; C. Wayne Bardin, Penn State; W. Odell (accepted), Haarbor General Hospital, CA; S. Howards, University of Virginia; L. Persky, Case Western Reserve; R. Bunge, University of Iowa; Charles Rife, Mayo Clinic.

It is hoped that the ASA officers and Council would define the role of the Publication Committee.

**Financial Matters**

As soon as membership dues are accumulated, Vice President Behrman will be refunded legal fees of incorporating ASA and Secretary Hafez will be refunded the price of the stationary and rent of a conference room in Ft. Collins.

**Other Societies**

Dr. Paulsen expressed concern of certain societies of the hazard of unnecessary fragmentation of societies. President Steinberger promised to communicate with AFS and SSR to augment their activities with that of ASA.

**Bylaws**

Vice President Behman read a draft of the bylaws. Dr. Behrman was requested to rewrite the bylaws for circulation among officers for any possible revisions.

**Tenure of Office**

President Steinberger suggested to extend the tenure of officers by one year as follows:
President  April 1976-77
Vice President  April 1976-77
President-Elect  April 1977-78
Program Chairman will be selected in April 1976
Nomination Committee for the new President-Elect to take place in April 1976.

The meeting convened at 9:20 a.m. and adjourned at 1:30 p.m.

E. S. E. Hafez
Secretary of ASA
The New Millennium
ASA Past President’s Letters to the Editor
2000

Co-Editors: David W. Hamilton and Jon L. Pryor
Journal of Andrology 21 (1); Jan/Feb
As part of our transition into the new millennium, we thought that David Handelsman’s suggestion of having the past presidents write a short Letter to the Editor on what they predicted, hoped, or imagined would happen to the American Society of Andrology during the millennium was not only appropriate, but also might also spark some debate and other letters from the members of the Society.

We sent invitations to each of the living past presidents, and the responses we have received up to now are reproduced below. As others come in, they will be printed.

We hope that you enjoy them.

David W. Hamilton
Jon L. Pryor
Co-Editors-in-Chief

To the Editors:

In 1967, at the annual meeting of the American Association of Anatomists, Warren O. Nelson, then the medical director of the Population Council at the Rockefeller Institute in New York, and Charles LeBlond, the chairman of the Department of Anatomy at McGill University, established the Male Reproductive Biology Club. It met annually, and after Warren O. Nelson’s death, it was renamed the Warren O. Nelson Club. At about the same time the Comité Internacional de Andrología (CIDA) was established under the leadership of Drs Puigvert and Pomerol of Barcelona and Mancini of Buenos Aires. It was in response to their prodding that I have launched a campaign for the establishment of an American Society of Andrology. At about that time Drs Saad Hafes and Tommy Evans invited me to present a paper at a symposium on “The Human Semen and Fertility Regulation in the Male” in Detroit, Mich. I asked them—and they agreed—to have an organizational meeting of the American Society of Andrology held during this symposium and the Society was founded on April 25, 1975, in Detroit. A number of individuals were instrumental in establishing the Society, including Drs Eugenia Rosemberg, Mort Lipsitt, Al Paulson, Saad Hafes, Nancy Alexander, Jan Behrman, Larry Zanaveld, and others. During the first year, the Society attracted 200 members.

The Society was formed by “coalescing several existing areas of science and medicine to promote a multidisciplinary interest in the male reproductive system.” It was to “encompass a problem-oriented and a system-directed segments of science and medicine rather than [to form] a discipline or technique-oriented, tradition-bound area defined by political or other expediencies”; and to “promote a multidisciplinary approach [and] guard jealously the precept of a close integration between the basic and clinical sciences” (Steinberger, 1976).

With the introduction of in vitro fertilization and particularly intracytoplasmic sperm injection (ICSI), the interest in andrology has heightened. Unfortunately, there are only a few departments or laboratories involved in the training of andrologists. The best are usually trained in basic or animal science departments. There is a decline in departments devoted to research and training in the area of male reproduction. Research is frequently conducted by small groups in a variety of basic science units. Despite these changes, considerable advances are being made in our understanding of the molecular and genetic aspects of the male reproductive system. However, our appreciation of mechanisms responsible for oligospermia has evolved only a little in the past couple decades and our ability to treat spermatogenic arrest (thus oligospermia), even less. The demonstration that ICSI will result in apparently normal pregnancies diminished the need for research into spermatogenesis as a necessary prerequisite for the development of treatments of spermatogenic defects and infertility. The national and worldwide interest in developing a male contraceptive has also diminished. This resulted in a general decrease of financial support for male reproductive system research.

However, I like to be an optimist. Notwithstanding some of these “lukewarm” comments concerning predictions made in 1981 for a glowing future of andrology (Steinberger, 1982), many indeed did come through. Despite the declining financial support, a great deal of research in the past decade was brilliant. The development of ICSI, which apparently undermined the financial support for research in some areas of testicular function, was in its own right not only brilliant and daring, but it has also resolved a number of problems for infertile couples.

In view of these developments, what is the future of our Society? In the past, the Society has performed its job admirably. It fostered the scientific knowledge and the clinical practice dealing with the male reproductive system. It brought the clinical disciplines close to the basic scientist and vice versa; thus, it accomplished probably the most important task, one I emphasized for the Society in the first presidential address: “to coalesce several existing areas of science and medicine in order to promote multidisciplinary interest in the male reproductive system” (Steinberger, 1976). In my opinion, the future of the Society rests on keeping this task in the forefront of the Society goals.

Emil Steinberger, MD
ASA President, 1976–1977
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References


To the Editors:

The American Society of Andrology was founded in the years that followed the development of methods for biological applications of the electron microscope. The impact of that instrument can only be compared with the opening of a new continent for geographical exploration, and it was attended by the same excitement and anticipation of discovery. It extended the reach of morphologists down to the level of macromolecules, largely eliminating the terra incognita that had previously separated microscopic anatomy from biochemistry. In the years that followed, the coalescence of these disciplines created the new field called cell bi-
ology, and the concurrent discovery of the structure of DNA, and of its commanding role in all the vital processes of living organisms, gave rise to another new area of research, molecular biology. Studies with the electron microscope alone now yield results of diminishing novelty and significance. Research in biochemistry, cell biology, and molecular biology have become a continuum with no clear boundaries between them. Andrologists must not resist this coalescence of the basic sciences. The significant advances in the future will be made by combining the knowledge and the methods of more than one discipline.

The progress in our understanding of male reproductive biology in the past 50 years has been remarkable, but many challenging problems remain, viz, localization of the proteins encoded by genes that affect fertility; identification of paracrine secretory products of myoid cells that influence Sertoli cell function; identification of the signaling development of methods for isolation and in vitro cultivation of spermatogonial stem cells; further studies on cryopreservation of male germ cells and their intra- and interspecific transplantation, and exploration of the potential of these techniques for preservation of germ-lines of exceptional value in animal breeding; exploration of the feasibility of genetic modification of transplanted spermatogonia to prevent transmission of a heritable disease to offspring; development of a male contraceptive vaccine that would block sperm receptors on the zona pellucida or the plasma membrane of the ovum; studies of postcoital modifications in behavior of the spermatozoa in the female tract that may provide information relevant to assisted reproduction in the human.

These and many other initiatives will require a multidisciplinary approach. Electron microscopists among our membership must combine their expertise in microscopy with methods from biochemistry, from cell and molecular biology or from immunology to obtain results of greater physiological significance. Morphological descriptions of spermatogenesis and sperm ultrastructure in yet another mammal, bird, or insect species no longer command the respect of the broader scientific community. Too many of such publications in our journal may contribute to a prevailing image of andrology as an antiquated, purely descriptive branch of biological science.

Don W. Fawcett, MD  
ASA President, 1977–1978  
Hersey Professor of Anatomy, Emeritus  
Harvard Medical School  
Cambridge, Mass

To the Editors:

The world population has now topped 6 billion. Few doubt that overpopulation is the biggest problem faced by our planet. With about 3 million unplanned or unwanted pregnancies per year in the United States alone, it is obvious that currently available contraceptives are not being used effectively by a significant part of the population. More convenient, more accessible contraceptives could make possible more planned pregnancies and wanted babies. Many men are willing to share the burden of contraception, but the methods at their disposal are limited to abstinence, withdrawal, condoms, and vasectomy. These options have not changed for decades.

Effective hormonal male contraception is feasible. Administration of pharmacologic doses of androgen reduces the production of both lutenizing hormone and follicle-stimulating hormone sufficiently to dramatically decrease sperm production. A recent international multicenter trial evaluated testosterone administration for contraception. Most men developed azoosperma or severe oligoazoosperma with a high degree of contraceptive efficacy.

However, the biweekly injections used in the study would not seem to be the most acceptable approach. Long-term oral androgen administration, on the other hand, generally has been problematic because of concerns with hepatotoxicity. Molecular modifications potentially could solve this problem. A depot injection would markedly improve acceptability.

The World Health Organization, working with the National Institutes of Health, has developed a 3-month injectable ester of testosterone that has potential. Speeding the onset of contraceptive action, which is in the neighborhood of several months, could be accomplished through the use of an antagonist to gonadotropin-releasing hormone. At least one is on the US market now.

Progestins can enhance the action of androgens resulting in a greater impact on spermatogenesis. Combinations of progestins and androgens, some of which are currently being evaluated in men, may be as effective as testosterone alone—plus they have advantages in not drastically changing lipid levels. A study in Indonesia employing a combination of dehydroepiandrosterone acetate and testosterone enanthate resulted in 100% azoosperma. Antiandrogens in combination with an androgen also have contraceptive potential. Such approaches will result in lower doses of androgens with a higher contraceptive efficacy.

Testosterone and its metabolite, dehydrotestosterone (DHT), exert various effects on tissues expressing androgen receptors and consequently can mediate disparate biological actions. Testosterone mediates functions that are desirable in male contraception, including modulating gonadotropin regulation and maintaining libido and potency. DHT may exert adverse androgenic effects such as prostate hypertrophy, balding, and acne. Various analogs have been developed and are being tested. For example, 7α-methyl-19 nortestosterone has been designed to provide the functions of testosterone while resisting metabolism to DHT.

The more distant future for contraception may rest on our increased understanding of spermatogenesis or sperm maturation and efforts to disrupt these processes—for example, development of mechanisms to reversibly suppress the transformation of type A spermatagonia into the differentiating B spermatagonia, thus causing temporary contraception. Another possibility is to design specific inhibitors of meiosis. Certainly the many unique germ cell peptides and enzymes, including Mos, LDH-C4, phosphoglucerase kinase 2, and meiotic-specific heat shock protein, are promising research avenues. Since synthesis of numerous proteins and enzymes are required for spermiogenesis, a specific inhibitor might function as a reversible contraceptive approach. The Sertoli cell will most likely be pivotal in male contraceptive efforts since it rests on the basement membrane and allows compounds up to 10 000 MW to enter it. These substances could either stimulate the Sertoli cell itself or be passed directly to the germ cells. Changing the epididymal milieu to alter sperm maturation is another possibility.

Recent research with knockout or transgenic mice can provide critical information to enhance relevant studies. If a targeted gene causes infertility without other obvious phenotypic effects, an important piece of information has been gained.

New, undreamed-of approaches will quickly develop. However, the first new systemic male contraceptive will undoubtedly be a hormonal one. After all, treatment of hypogonadism has long been successful with testosterone. It seems likely that new concepts will allow even greater specific targeting of reproductive ligands. Creative investigators and innovative science will speed advances in male contraception.

Nancy J. Alexander, PhD  
ASA President, 1979–1980  
Associate Director, Medical Services  
Organon Inc  
West Orange, NJ

To the Editors:

When I started the study of the testis under Al Albert 5 decades ago, the term andrology was not known to me (and many others), although, as I subsequently learned, it had appeared a half-century earlier (Troen,
were, since they had been treating syphilis in men for decades. It was insisted that they were andrologists and the dermatologists insisted that they were not. I remember the conflict among some of the European representatives at the international meeting in Tel Aviv. The urologists insisted that they were andrologists and the dermatologists insisted that they were, since they had been treating syphilis in men for decades. It was finally resolved that both were andrologists without either losing any status.

It was not too long ago that semen analyses were conducted by measuring the semen volume with a pipet, examining a slide with a drop of the semen on it and estimating the motility, diluting a portion of the semen with a diluting fluid in a blood cell pipet, counting sperm on a hemacytometer to calculate concentration, and sometimes doing a fructose assay. This latter assay provided an additional bit of information on a report form but was really of marginal value. I never saw a semen sample with a volume over 0.7 mL that had a below normal fructose value. It did, however, help one time to diagnose ejaculatory duct blockage in an individual who had decreasing volumes and decreasing fructose levels. Then along came computer-assisted semen analysis, CASA for short. Now the laboratory technician could tell the doctor that the motility was 67% instead of the 65% that would have been estimated by an experienced technician and the concentration determinations were faster and probably more accurate. Even better, the research scientist can use the CASA to determine what percentage of the sperm fell into different categories of motility. The fertility lab was moving towards the 21st century. In the 1980s, a new procedure was introduced using the hamster nude oocyte to determine if human sperm could penetrate into the oocyte. The assay was fairly expensive, and some electron microscopy studies had indicated that when the sperm came in contact with the vitelline membrane, the oocyte engulfed the sperm and not that the sperm bore its way into the oocyte, but this assay was an important component in many fertility clinics. I am not sure if a negative assay ever ruled out trying at least one cycle of superovulation and in vitro fertilization or not.

In the last decade, there have been a number of efforts to try and determine what effects different endogenous and environmental factors may have on semen parameters, and this is where the future of andrology may lie. The effects of environmental phytostrogens have not been intensively studied relative to male reproduction. Perhaps in the next decade we can learn more about the feedback mechanisms involving inhibin and activin. Then maybe we can find a way to increase the mitotic replication of spermatogonia and the initiation of meiosis leading to increased sperm production. No semen samples that I have ever examined had 100% motile sperm. Why? Are the nonmotile sperm too old or too immature? Are there environmental factors that reduce motility in the less mature sperm? These are areas in which the andrologist of tomorrow can make a valuable contribution.

Last, the leaders in andrology must take an active role in helping the lay and legal community catch up with the science. There are as many challenges for andrology tomorrow as there were yesterday. The future looks bright for andrology.

Richard M. Harrison, PhD
ASA President, 1981–1982
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of nonpolluting energy sources, mining of the vast resources of the ocean, interplanetary if not interstellar travel, and unprecedented advances in our understanding of the genetics, biology, and health of the human condition. Given the history of mankind to date, however, I remain skeptical that we will be able to fully control interpersonal aggression, the destructive prejudices of many tribal, religious, and national entities, or the famine, poverty, and misery of the underprivileged. I am certain, though, that there will be no lessening of the passion that couples display to have children on a planned basis who can attain equal opportunity to achieve a long, healthy, happy, and prosperous life, living in a world at peace.

From my perspective in the field these past 33 years, great advances will be made in male reproductive health from a better understanding of the genetic regulation of the testis and male reproductive tract. We will come to understand not only the molecular factors that control the quantitative production of sperm, but also the factors that regulate the functional cellular components of those sperm. This would include those factors that effect sperm entry into the egg as well as the contribution of sperm to fertilization and subsequent early embryo development. This will require that andrologists develop considerably greater knowledge of egg and embryo biology. The epididymis should also be the target of considerably greater attention, as it would appear to hold many keys to the functional properties of sperm and in this regard serve as an important site for contraceptive regulation. I sense the increasing use of long-term banking of gametes and embryos during one’s youth and the development of truly effective methods of growing testicular germinal epithelium in vitro.

Although cloning in animal husbandry is likely to achieve remarkable success, the use of this technique in the human will have very restricted, though important, use. Likely we will see considerable bioengineering developments to enable strategic tissue and organ banks. Andrologists will also come to better understand the hormonal actions of androgens and estrogens on nonreproductive organs such as brain, bone, and heart so as to facilitate our understanding of male aggression and promote treatments for mental disease (especially depression and schizophrenia) and the age related disorders of prostate, osteoporosis, and coronary artery disease. Finally, I forecast that sperm will become a vital instrument for future gene therapy by providing a convenient biological vehicle for transfection of normal genes into at-risk embryos.

The American Society of Andrology is well suited to catalyse these developments. Its multidisciplinary membership facilitates the early presentation of basic science developments to clinically oriented physicians and its demand for high quality science promotes the ultimate clinical usefulness of new findings. What I feel is most lacking, however, is an effective influence of our Society on medical school training of basic science and clinical professionals to carry the field forward in the next millennium. This must become a high priority for our Society.

Richard J. Sherins, MD
ASA President, 1982–1983
Genetics and IVF Institute, Division of Andrology
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To the Editors:

On the occasion of the 25th “birthday” of the American Society of Andrology, it was decided to publish a series of letters on the future of andrology. In the midst of never-ending list of deadlines and tasks calling for immediate attention, it is a rare opportunity to pause and try to think of broader issues and the more distant future. New developments in biomedical science are happening so quickly that it is not easy to look beyond the next grant application or the next academic year. My thoughts (or should I say “guesses”) summarized below are an attempt to extrapolate from the developments of the last 25 years and to relate developments in other fields to the field of andrology.

Genetic Mechanisms—There is no doubt that studies of spermatogenesis, fertility, androgen production, and reproductive health will focus increasingly on the effects of expression of individual genes. The basic research-oriented andrologist of the future will almost certainly have a profound understanding of molecular genetics, will use animals in which expression of a specific gene is enhanced, reduced, or extinguished in selected cell types or at selected stages of development, and will rely on mice, cell lines, and cell or organ cultures in the laboratory. He will be increasingly aware of biological diversity, including species differences, strain differences, and effects of genetic background. The clinical andrologist will often analyze genotypes of his patients and consider frequency of different alleles in epidemiological studies.

Assisted Reproduction Technologies—Progress in this area has been impressive, the number of clinical andrology laboratories increased greatly, and results from Dr Yanagimachi’s group and from other investigators suggest that, for assisted reproductive technology, the sky is the limit. There is every reason to expect that more and more men hitherto considered infertile will be able to become fathers and that long-term storage of male germ cells (I am purposely not saying “spermatozoa”) will be used routinely in various clinical situations as well as for preservation of unique mutants and strains.

Antiaging Medicine—As we live longer and become increasingly concerned with avoiding the limitations of old age, the newly emerging field of antiaging medicine is certain to overlap broadly with the field of andrology. Androgen supplementation and other therapies designed to combat age-related changes in body composition, appearance, energy level, psychological outlook, and sexual functioning will be developed, aggressively promoted, and probably widely used. Prevention and treatment of benign prostatic hyperplasia, prostatic cancer, osteoporosis, impotence, and frailty will assume importance as immediate concerns of an increasing proportion of patients and as public health issues.

Although much has happened in andrology during the last 25 years, I strongly suspect that the progress and changes during the next 25 years will surpass our expectations and differ in significant ways from the predictions I made in this letter.

Andrzej Bartke, PhD
ASA President, 1983–1984
Southern Illinois University School of Medicine
Physiology Department
Carbondale, Ill

To the Editors:

It is a pleasure and an honor for me to be able to consider what may transpire in the field of andrology in the early part of the next century, and my comments will be limited to a few hormonal considerations.

With the finding of the second estrogen receptor, new avenues for pharmaceutical investigation have been opened. Estrogeniclike compounds will be identified which can elicit their agonistic or antagonistic action on specific end-organ tissues, sparing other organs for which these might have deleterious effects (Ansbecher, 1998).

In similar fashion, I expect that the androgen receptor (or receptors) will receive greater attention from investigators in order to determine if selective androgen receptor modulators exist.

The aging male has not received the attention given to his female counterpart in trying to determine what should be utilized to obviate the changes with aging, which include a decrease in lean body mass with an increase in fatty body mass; decreased bone density with subsequent osteopenia and osteoporosis; deleterious cardiovascular system changes; decreased cognition; increase in colon cancer; thinning of the dermis with skin changes; decreased libido with increased erectile dysfunction; in-
creased macular degeneration of the eye; decrease in testosterone production from a decrease in Leydig cells; and increased tooth loss.

Tissue-selective testosterone agonists and antagonists should become available that would have beneficial effects on various organ systems while sparing other tissues from adverse sequelae. Such agents should enable us to obtain additional information concerning the aging process and its effect on targeted tissues, hopefully decreasing some of the devastating effects of aging, thereby enhancing the quality of life in one’s golden years.

My thanks to the Journal of Andrology and its editors for allowing me to express the above thoughts with our Journal’s readership.

Rudi Ansbacher, MD, MS
ASA President, 1984–1985
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Reference

To the Editors:

The “famous philosopher” Yogi Bear once stated: “Predictions are very difficult to make, particularly about the future.” Thus, making predictions about the future of ASA can only be a speculation. Nevertheless, I would like to offer a few such speculations with the hope that some of them may become reality. Based on ASA’s accomplishments the past 25 years, one can be quite optimistic that the Society will continue to prosper in an energetic and mature way. After all, the age of 25 years is supposed to be most vigorous and productive!

From its beginning, ASA had every indication of becoming a great society, and great does not necessarily mean large. In fact, ASA’s relatively small size was among its very attractive features. It was easy to get to know and interact with colleagues. When I had the privilege to serve as ASA’s president (1985–86), the Society was entering its adolescence stage and exhibiting many of the typical growing-up pains and uncertainties: Will ASA become financially more secure? Will our fledgling Journal of Andrology survive and be considered favorably among other journals in the area of andrology? Who should handle publication of the Journal? Should the Society engage a professional company to handle some of its office affairs, or continue to depend totally on the volunteerism of its members? Due to the dedication and vision of its members, many of the earlier concerns and uncertainties have been overcome. ASA’s annual meetings have been progressively more sophisticated and versatile. This trend will undoubtedly continue into the future. We must also strive to increase the number of commercial exhibitors at the annual meetings by early solicitation of their participation. Many companies commit their funds at least 1 year in advance. Because andrology is a highly specialized field, ASA’s membership probably will not increase significantly; however, for the Society to remain vibrant, every effort must be made to continue attracting new members with fresh ideas and enthusiasm. It is also crucial for the Society to achieve a sound financial basis. Members of the Society, as well as commercial companies, foundations, and other sources, will need to be actively solicited for contributions to the endowment fund in order to attain a situation when the interest alone from wisely invested funds could provide substantial support for ASA’s activities.

The Journal of Andrology will most likely remain the most widely cited, top journal in its field, providing ASA members and others will submit their best manuscript to this journal. Also, the Handbook of Andrology, which proved to be very popular among students and workers in the field, should be periodically updated and widely distributed (with a reasonable charge to cover publication expenses) to researchers and practitioners of andrology in the United States as well as in other countries.

It is my hope that ASA will remain a multidisciplinary society that will continue to attract both basic and clinical scientists, as well as those devoted primarily to patient care. It is this mix of interests and expertise that has made ASA an unique society. ASA will undoubtedly remain a leader in promoting the goals of andrology around the globe through the International Society of Andrology.

I take much pride in ASA’s many past achievements and have much faith in its future. It has all the potential of becoming an even greater society. I wish ASA and its leaders much success in the next 25 years and beyond.

Anna Steinberger, PhD
ASA President, 1985–1986
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of biology and new procedures diagnostic of sperm function will facilitate development of improved procedures for sperm preservation. Such tests will have a high percentage of correct prognoses of outcome. Application of methods to harvest most sperm produced by a unique gene factory (ie, a given male) is long overdue and will be linked with new technology to improve on nature via additives increasing fertilizing potential of sperm, timed insemination once during estrus, and insemination of a reduced number of sperm. Current practice of inseminating 0.5 × 10^9 sperm per pig egg ovulated is illogical. For animals of economic importance, the goal should be maximum number of progeny, of the desired sex, from a unique young male transmitting valuable alleles, not maximum pregnancy rate for females inseminated.

These rosy predictions will not happen without substantially greater investment by society in human clinical andrology and by agricultural industries in animal andrology, in both cases including related advanced reproductive technologies. Income at human clinics is unknown, but farm gate value of animal agriculture in the United States is $96 billion. Total United States investment in reproductive research on animals is <0.1% of this value. No wonder progress is hard to detect and it is difficult to entice the best minds to the area. It will be fun to be a broad thinking andrologist over the next 25 years. Good luck.

Rupert P. Amann
ASA President, 1989–1990
Fort Collins, Colo

To the Editors:
Past presidents of the American Association of Andrology have been asked to submit a letter outlining an opinion of the future of andrology. I am pleased to do this. For the first 9 years of my career, I was involved with youngsters with maturation problems and with infertile couples with emphasis on the infertile male. For the last 22 years, I have been involved with aging males and hormone changes with aging and clinical andrology. I will address my comments to my major activities of the past 22 years and leave the remainder to others who are more familiar with the rest.

It took a long time, but I believe that everyone involved in andrology now agrees that bioavailable and free testosterone decline with aging. There is central failure and testicular failure. The question still remains should we use values found in young men or age matched normal values (T or Z scores in osteoporosis) to assess for low levels? We need to be able to assess the actions of testosterone, bad and good. Using levels alone may not be adequate as there may be individual variation in sensitivity. Ways to evaluate effects of testosterone in an individual would be useful. It would be wonderful if selective androgen receptor modulators (SARMs) could be found that would have the benefits without the potential harmful actions. We need to continue to explore delivery of replacement androgens. Longer lasting intramuscular testosterone preparations that produce flat levels of hormone, or smaller and longer lasting patches, or topical gels, or new oral medications would be useful.

Benign prostatic hyperplasia (BPH) remains a major problem, and in some patients it is not so benign. In theory, finasteride (Proscar) was a great idea. It is useful in some patients, but once BPH has occurred, treatment is only somewhat successful. Ongoing long-term clinical trials should give the answer about prevention of BPH and prostate cancer. A more selective and effective inhibitor of prostatic 5-alpha reductase or a SARM that down-regulates BPH would be useful.

Sexual dysfunction, or in particular erectile dysfunction, has been getting deserved attention. Sildenafil (Viagra) has done much for this common disorder and brought many men out of the closet. We need to stress the appropriate evaluation and management to maximize the potential for success with this drug and with all drugs, especially in the complicated patients. Other medications are undergoing clinical trials and we need to use the best drug to address the likely problems afflicting a given patient. In men who are partially benefited by one drug, it would be useful to assess treatments utilizing 2 or more drugs that have different mechanisms of action.

Prostate cancer has become a common disease, with a tremendous morbidity and mortality. The prostate-specific antigen (PSA) determination has probably been responsible for increased detection. Other aids have been prostate ultrasound and transrectal prostate biopsies. The problem now is, what should be done when occult cancer is detected? We can get some help from the Gleason sum score, which grades prostate cancers into more and less malignant forms. But some propose that occult cancer should be left alone. They are comparing radical surgery or external beam radiation therapy to no treatment. For some men, who have other terminal diseases, this may be a reasonable approach. But is it a reasonable approach for men who are otherwise healthy? I do not know of any other cancer that is left alone and not treated. More realistically, insurance carriers and others are asking if the costs, both financial and other costs, are worth doing? What this suggests is that better ways to prevent or to treat early prostate cancer are needed. Using implanted radioactive seeds in the prostate appears to have less morbidity and seems to be quite successful. Are other effective, acceptable forms of therapy available?

Howard R. Nankin, MD
ASA President, 1990–1991
Department of Internal Medicine
University of South Carolina School of Medicine
Dorn VA Medical Center
Columbia, SC

To the Editors:
When David Handelsman suggested that a fitting beginning to the millennium would be to publish comments by past presidents about the future of andrology, I readily agreed. What didn’t occur to me at the time was that I am a past president and that I also would have to predict the future. This is more difficult than I first imagined. But here goes.

When I was an undergraduate, knowledge about gene structure was very limited, except in the minds of some forward-thinking individuals, and gene function was in essence limited to classic genetics. With publication of the Watson/Crick hypothesis about the structure of DNA, knowledge in this area expanded by leaps and bounds, and the attendant advances in understanding genes and their transcription and translation products have been mind-boggling. These have had immense impact on clinical practice—even in andrology.

Will there be similar quantum leaps in the future? I believe so, and I believe they will occur in the same way advances occurred in the past. The big leaps were in large part not brought about by classically trained biologists but by physical scientists who turned to biology as their newest challenge. The same things are happening today in the area of cryobiology of gametes—the physical scientists are teaming with reproductive biologists to bring new insights and approaches to a difficult biological problem. This will continue in ways we cannot even imagine as subatomic resolution becomes an everyday approach.

I am concerned that andrologists have become isolated from the mainstream of modern biology. This not true in all instances, but there are indications that the exciting advances in molecular immunology, molecular immunology, and other areas are not finding their way into the skill sets of andrologists. For andrology to thrive in the new millennium, this must change. The advent of on-line publishing and access to huge informational databases will aid the broader perspective that is needed to peak the interests of andrologists, but there must be the willingness to “think out of the box” and to broaden horizons in order for the profession to prosper.
In spite of what I have said, I am very optimistic that andrologists will meet the challenge and that the field will grow and prosper.

David W. Hamilton, PhD
ASA President, 1991–1992
Department of Genetics, Cell Biology, and Development
University of Minnesota
Minneapolis, Minn

To the Editors:

Predicting the future provides an opportunity to combine an awareness of current shortcomings and future possibilities into predictions for the future, realizing that few predictions are accurate. I am going to confine my comments to the areas of andrology that I know best and assume that other colleagues will do similarly.

Presently, androgen deficiency is grossly undertreated. Boys with delayed puberty and aging men represent the largest groups of untreated or inadequately treated males. There also is great interest in treating androgen deficiency in women, but I will not address this issue. We must be more aggressive in identifying the 14- to 20-year-old males with androgen deficiency to improve their psychosocial adjustment and to ensure they develop a normal body mass. This will help to prevent future osteoporosis. Androgen replacement of aging males currently is problematic. The population of aging androgen-deficient men is large and increasing rapidly. Although prevention is desirable, we have few insights. It is becoming clear that androgen replacement in men over age 60 will increase lean body mass, muscle mass (probably muscle strength), and bone mineral density. We don’t know if it will prevent osteoporotic fractures that can be devastating to older men or prevent loss of cognitive function. We also don’t know if it will increase risk of developing clinical prostate cancers (CaP), require more invasive therapy for benign prostatic hyperplasia (BPH) or exacerbate cardiovascular disease. We need a large clinical trial to address these issues and determine the risk/benefit ratio for treating androgen-deficient aging men. We will develop selective androgen receptor agonists (SARMs). It is likely that some of these agents will be less stimulatory to the prostate than testosterone, thereby reducing the risk/benefit ratio. There also will be improvement in the delivery of androgen agonists.

CaP is the second leading cause of cancer deaths in men in the United States. Currently, curative therapy is restricted to disease that is confined to the prostate. Our most effective strategy is early detection. We will gain greater understanding of the molecular mechanisms that cause androgen resistance in men with metastatic CaP, and this will lead to new strategies for treating metastatic CaP. Targeted delivery of genes that restore sensitivity to androgen ablation or genes that induce apoptosis will provide effective treatment for most CaPs. CaP genes will be identified, making it possible to screen family members of probands, if not the entire population of aging men. Identification and modification of environmental risk factors and widespread use of agents that reduce clinical CaP will be very important. We will know within 5 years if chronic preventive therapy with finasteride, a 5α-reductase inhibitor, will reduce clinical CaP (Prostate Cancer Prevention Trial [PCPT]). It will take 10 to 15 years to learn whether chronic ingestion of selenium or vitamin E alone or in combination will prevent CaP (SELECT).

Prostate enlargement secondary to macronodular BPH is an important contributor to lower urinary tract symptoms (LUTS). Although BPH accounts for <0.5 of 100 000 deaths per year, more than $4 billion dollars a year are spent treating BPH and LUTS, and BPH greatly affects the quality of life of most aging men. The past 15 years have witnessed medical treatments for mild to moderate disease and less traumatic invasive therapies for moderate to severe disease. The latter therapies will undergo refinement and greater acceptance. The future will see development of effective preventive therapies. The PCPT will tell us whether finasteride can provide effective preventive therapy.

In summary, I think that the next 25 years will provide many opportunities for basic and clinical andrological research. These advances will be translated rapidly into clinical practice and will greatly impact the quality and length of life of men.

Glenn R. Cunningham, MD
ASA President, 1994–1995
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References


**To the Editors:**

Thanks for your letter inviting a comment about the future of andrology. First, I do believe that male reproductive medicine and the basic sciences that underpin advances in reproductive medicine will remain an important, identifiable unit of our scientific culture. Unfortunately, there is a threat that andrology will remain an underappreciated area of biomedicine. As is often noted, people do not die from reproductive dysfunction, and this makes it hard for the field to have an aura of importance like that attaching to the study or treatment of life-threatening disease. Public perceptions are important to both research funding and clinical engagement, so a good future for andrology demands we become better evangelists for our science and for its medical and social benefits.

Having said all that, it would be easier to visualize Andrology Future if we had a better definition of Andrology Present. The American Society of Andrology was organized in 1975, and other national andrology societies developed subsequently. Although all andrology societies have an aim of giving definition to the area of male reproductive science and medicine, what this definition is seems to vary around the world. The ASA has always taken the position that an andrologist is anyone, whether scientist or clinician, who works professionally in male reproductive biology or medicine. This has meant that the Society has taken seriously the goal of retaining a mix of both basic scientists and clinicians; likewise, the Society has insured that both types of andrologists participate in the Society at all levels. Still, the term andrology is not commonly used by scientists or clinicians in North America in describing what they do. When used, the term is mostly commonly associated with a clinical laboratory. Thus, what is andrology? Sperm watching? Surely it is more than that, but if andrologists in the broad sense of the word do not include themselves in the definition, a restricted definition will become the standard.

From the viewpoint of one encouraging diversity, the issue of identity is even more problematic in Europe. There, and in many other areas of the world, andrology seems to be conceived of as almost completely clinical in nature. One has the impression that outside North America clinicians largely constitute the discipline. Basic scientists, where they are present, play a minor role. This difference in practice illustrates a separation between andrology in North America and andrology in Europe. The difference has meant, for example, that European andrologists have made the effort to establish formal training programs for clinicians and to formulate rules and standards for clinical laboratories. The ASA, with its large component of basic scientists, has largely foregone opportunities to have a significant impact in these areas. It is debated whether this has been a good or bad idea. In any case, to the degree that differences exist between the “andrologies” of the different continents, it diffuses the vision of andrology’s future.

I am one of those who hope that andrology of the future will remain a mix of clinicians and scientists engaging in a true partnership, and I believe both reproductive biology and reproductive medicine will receive the benefit.

Terry T. Turner, PhD
ASA President, 1997–1998
Professor of Urology and Cell Biology
University of Virginia School of Medicine
Early Years of the Journal of Andrology

From the time that the American Society of Andrology (ASA) first came into existence, there were debates about creation of a specialty journal. Some members of the council and the Society felt that a US andrological journal would be important for the development of the field of Andrology in North America. Others, including myself, felt that the field of andrology was too small to support yet another journal in this field. It was argued that rather than creating a new journal, ASA should become cosponsor of the International Journal of Andrology, which was published in Europe. However, in 1978 when the ASA Council decided to launch a new journal and offered me a chance to be its first editor, I accepted this challenge. The Publication Committee, chaired by Dr Eugenia Rosenberg, negotiated a contract with Lippincott Co, and the Journal of Andrology was born.

The first editorial board consisted of Drs Nancy J. Alexander, Rupert P. Amann, Richard D. Amelar, Rudi Ansabacher, Martin Dym, Stuart S. Howards, Fernand Labrie, Thomas J. Lobl, Marie-Claire Orgebin-Crist, C. Alvin Paulsen, Kenneth L. Polskoski, Eugenia Rosenberg, Richard J. Sherins, Emil Steinberger, and Philip Troen. I selected this group, hoping these prominent figures in the field of Andrology would be reassuring to prospective authors.

Most members of the Council appeared confident that the journal would be successful. However, there was also a tangible feeling of concern and suspense. Would we receive enough manuscripts to allow timely publication of scheduled issues? Would the manuscripts be of high quality? I knew Dr Frank Comhaire, editor of the International Journal of Andrology, through a common interest in distribution of testosterone in different compartments of the testes. We both felt strongly that neither of us would consider doing anything to undermine the activities of the other journal; thus, our “competition” was friendly from the very beginning.

The first issue appeared in January 1980. It consisted of papers provided by members of the Council and the Editorial Board or submitted in response to our solicitations. Support provided by Society officers and Editorial Board members continued to be very important during the first years of the existence of the journal, but naturally, our success hinged on submission of manuscripts from outside this small group. I sent many letters to members of ASA and others soliciting manuscripts for the Journal. These included many individuals for whom I was able to “sign in” as members a few years earlier when ASA was created and I took on chairmanship of the Membership Committee. Although manuscripts initially trickled in at a fairly low rate, it was clear to all of us that the Journal would not succeed if we did not maintain high standards of peer review and acceptance. I vividly remember the task of composing rejection letters that I hoped would not offend the authors or discourage them from submitting other manuscripts to the Journal.

We quickly developed a list of reliable reviewers. Those who were tardy and unresponsive to reminders will never know that they might have received a “black testis award” initiated by Lynn Rudloff, Editorial Assistant, duly marked on their index card in our address file.

I had a great deal to learn, including some technical aspects of journal production. We enjoyed an excellent working relationship with Lippincott. On several occasions, when the number of accepted manuscripts was particularly low, I had to find out from Lippincott what the “real” (ie, the absolute rather than our standard) deadline was for assuring that the new issue of the journal would appear on time.

Looking back at this exciting period, it is difficult not to be amazed by how much everything has changed since the early days of the Journal. Did the editorial office really function without e-mail and Fax? Many younger members of ASA might find it hard to believe when our journal was started, microsurgery of the male reproductive system was an exciting novelty, research on inhibin was considered controversial, automatic systems from analysis of sperm motility were yet to be developed, and if anyone had the foresight to contemplate the use of intracytoplasmic sperm injection, it certainly would have been labeled science fiction.

Gradually, the Journal of Andrology found its niche and a group of loyal supporters. We were certainly helped by the decision of the Institute for Scientific Information to include us in “Current Contents” almost from the start. Happily, our citation index quickly placed us at the top of the list of andrology journals.

In 1983, I resigned from the editorship because of election to vice-presidency of the ASA. In the hands of my successor, Dr Marie-Claire Orgebin-Crist, the Journal of Andrology grew in size, quality, and prestige, a trend that continues to this day.

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First Editor’s Memoir
ASA – Our History
30th Annual Meeting, Seattle, Washington
by the Archives Committee
2005

Those who cannot remember the past are condemned to repeat it.
George Santayana, The Life of Reason, Volume 1, 1905

The American Society of Andrology (ASA) is thirty years old. This is an important milestone in the growth and development of a young thriving organization. Our organization has arrived at the age of reason. It began as an infant, it developed and nurtured through adolescence, and now it is a leader in the field of male reproductive medicine. It is a good time to reflect on the many professional changes that have occurred during the first thirty years of ASA and note the many leaders that led us successfully down this pathway.

What is this thing called Andrology? At every meeting a stranger on the elevator asks ‘what is andrology?’ This Society fosters a multidisciplinary approach to the study of male reproduction, exists to promote scientific interchange and knowledge of the male reproductive system. Our central topics include, but are not limited to erectile dysfunction, infertility, hypogonadism, male contraception, male senescence, and prostate disease. We are the branch of science and medicine dealing with normal and abnormal male reproductive function. ASA is a unique partnership of scientists and clinicians. Today there are over 800 members from all over the world whose specialty fields include anatomy, animal science, biochemistry, endocrinology, gynecology, psychiatry, toxicology and urology.

The ASA would not be were it is today without the brains and cooperation of many luminaries – some of whom are not here with us today. The society was built on the shoulders of clinicians and scientists who recognized the need for a community of andrologists – those with like interests. ASA is especially indebted to the doggedness of Dr. Emil Steinberger. I am told that when you met him before, and probably after 1975, he looked at you and said “you are an andrologist”. Although your first answer might well be, “what is an andrologist,” you were hooked. We know that Dr. Steinberger began his efforts in 1974 to organize ASA during the VIIIth World Congress on Fertility and Sterility in Buenos Aires in 1974.

The idea of a scientific society concerned with the area of male reproduction was not a new one. It was discussed on a number of occasions in the past. The question, however, always came up: ‘Why a new society?’ Do we not already have a sufficient number of established societies which could provide a forum for those interested in the basic and clinical aspects of the male reproductive system?’ There were predecessors that set the stage. One important ‘club’ was the Warren O. Nelson club started by Drs Nelson and LeBlond. Warren O. Nelson was the Medical Director of the Population Council and Charles P. LeBlond was chair of the Department of Anatomy at McGill University. Together they formed this Club in 1968, meeting at least through 1972. The goals were to promote and discuss the scientific study of the male reproductive system. This group may have been the most influential in the formation of ASA.

Another important group was the Comite International de Andrologia (CIDA). The aim of CIDA was to encourage and promote the study of male reproduction. The publication of CIDA was the 1978 International Journal of Andrology. American scientists involved with CIDA included Drs N. Alexander, C.W. Bardin, D. Fawcett, C.A. Paulsen, E. Rosemberg, R.J. Sherins, E. Steinberger and P. Troen. These are the same names that were so influential in the formation of ASA.
The key players in the formation of ASA were N. Alexander, S.J. Behrman, E.S.E. Hafez, E. Rosemberg, R. Sherins and E. Steinberger. The first meeting was in Detroit on April 25, 1975 and resulted in the formation of ASA. The membership drive was launched and in a few short months the Society had over 200 members. Our leaders were indeed a remarkable group of men and women. The following is the first slate of officers for ASA:

1975-76 Officers ASA

President
Emil Steinberger, M.D.

Vice-President
S Jan Behrman, M.D.

Secretary
E.S.E. Hafez, PhD

Treasurer
Nancy J Alexander, PhD

Program Chairman
Eugenia Rosemberg, M.D.

Council
Andrej Barke, PhD
Joseph N Corriere, M.D.
Fletcher C Derrick, M.D.
T.N. Evans, M.D.
Donald Fawcett, M.D.
C Alvin Paulsen, M.D.
Richard J Sherins, M.D.
Anna Steinberger, M=Ph.D.
Lourens J.D.Zaneveld, PhD

Committee Chairmen
By laws – Behrman
Membership Bartke
Liason – Behrman
Nominating Fawcett
Publication Rosemberg
Finance - Behrman

The world of reproductive medicine and andrology has changed greatly in the last 30 years. New terms, science, and techniques have entered our field. Terms such as AIH, AID (artificial insemination-husband or donor), AZF (azoospermia factor), HIV (human immunovirus), sperm banking, ICSI (intracytoplasmic sperm insertion), PGD (preimplantation genetic diagnosis) entered our vocabulary during this period. New science has included growth factors, Y chromosome microdeletions, and CAG repeats. We have discussed new methods of diagnosis, treatment and prevention. These included conventional semen analysis, CASA in many iterations, sperm function tests from hemizona to DNA fragmentation and microarray tests. We have added quality assurance to andrology laboratories.

We have developed new techniques for treatment. This has included microsurgical repairs of the vas and epididymis, IVF, ICSI and ROSI. There have been changes in the availability of drugs including new delivery systems (testosterone), formulations (gonadotrophin agonists) and analytes (antiandrogens, alpha blockers, and 5 alpha reductase inhibitors). Erectile dysfunction and premature or rapid ejaculation became part of our vocabulary. ED was no longer psychogenic but a complex problem with a myriad of surgical and medical therapies. We have gone from intracavernous injections (ICI), intrarethral pellets to oral compounds for the treatment of ED.
Even statisticians have had a hand in the field of andrology. First, they tried to tell us that vasectomies caused prostate cancer (they were wrong) to, most recently, that more frequent ejaculation could prevent prostate cancer. We hope they are correct. Finally, our occupation and environmental members have not let us forget the importance of prevention. Pollution, the workplace, and even the bicycle all may play a role in a man’s reproductive health.

Perhaps the most important change in this last 30 years (rather the last decade) relates to our communication skills. E-mail and URL are a way of ASA business. Our directory is online and we depend on Dr. Niederberger’s androlog. Internet connection is essential for committee meetings, voting, registration, scientific information and our Journal.

Most importantly, we have lost some of our outstanding leaders – Tom Chang, Min Chueh Chang, Larry Ewing, Pat Patenelli, Eugenia Rosemberg, Lonnie Russell, and Brian Vickery - to name only a few. These were important leaders in our field.

Tom Chang was a scientist at Hopkins. We now remember him with a Travel Award for students. Min Chueh Chang was regarded one of the giants of his time. His contributions primary interest from start to finish was in the free-living egg and sperm of mammals their fateful union in a process called fertilization: (Greep, 1992). Larry Ewing was Professor Division of Reproductive biology, The Johns Hopkins University School of Hygiene and Public Health. One of his important contributions was with Dr. Eik-Nes – that testosterone could be synthesized from steroid precursors by the perfused rabbit testes, and that its production was responsive to gonadotropins (Zirkin, 1992).

Dolores “Pat” Patinelli was a graduate student with Dr. Warren O. Nelson and joined the Center for Population Research, Contraceptive Development NICHD in 1972 until her retirement in 1992. She was an invaluable helper for both the Testis Workshops and ASA.

Eugenia Rosemberg was an important member of the founding meetings. She was a scientist at the Medical Research Institute of Worcester in Massachusetts and was program chain of the first annual meeting of the ASA (March 31-April 2, 1976) and the first historian of ASA (before there was history). She passed away April 16, 2004 in Worcester MA. Lonnie D. Russell was an early member of the American Society of Andrology and always attended the annual meeting. The first mention of his name in the ASA minutes from Executive Council meetings was in 1984 when he was recognized as a member of the Executive Council. In the same year he received the Young Andrologist Award. Over the years he served on two committees: Membership and Publications. It was as Chair of the latter committee that Lonnie did his best work. He loved the publishing business and understood the intricacies involved, which made him the perfect Chair of this committee. Brian Vickery was a senior scientist at Syntex and was an important help in the support of our fledgling organization.

Finally, we are the only organization that honors its young andrologist with an oversized ‘condom’ hat. The wearing and placing of this hat has become an important and honored tradition in the Society. So important that special planning must identify the party room to which both young and old will flock. As an organization we work and play hard.

The history and archives of this organization are important. If you have material or facts to share with the archives committee please share it with us.

Congratulations ASA for a successful 30 years,

Your Archives Committee
Some references:


American Society of Andrology

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American Society of Andrology
Secretary
January 25, 1980

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January 25, 1980
**American Society of Andrology**

**Roster**

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<thead>
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<tbody>
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Dear Eugenia:

I believe our letters crossed in the mail. I just received your letter of
February 10th and you have probably received mine of the same date.

I am glad to see that you agreed with some of the points I raised concerning the
"Rules for the Editorial Board" and I am sure that Rune Eliasson won't have any ob-
jections. Incidentally, concerning the UNESCO coupons, I have already received a letter
from Eliasson stating they will take appropriate measures not to utilized UNESCO coupons
for purchase of ANDROLOGIA.

Concerning the informative drive for ANDROLOGIA at the meeting in Detroit, I agree
with you and will drop Hafez a note.

I think we should get going very actively in setting up the structure of ASA. I
would like to suggest a structure which is similar to that of The Endocrine Society
and obviously would like to get a response from you and Al Paulsen.

We should have a President, Vice President, Secretary, Treasurer and Council. At
the meeting we may consider seeing about getting an office of president elected and
this individual would serve the following year. For the present year the simplest and
most effective way would be for us to decide who is going to be who because that is the
only way to really get something like this off the ground. I would like to suggest for
President either one of the three of us (Al Paulsen, you or myself), similarly for Vice
President. For Secretart, I'm not certain, maybe Hafez would be just right for the job.
For Treasurer I would like to suggest Dr. Keith D. Smith from our department. For the
Council for this year we should deal primarily with individuals that are very interested
in the Society and consequently I think we should have at least the following and I am
looking for further suggestions from you -- Troen, Sherins, Bartke and Anna.

We should have a Publication Committee, Nominating Committee, Membership Committee,
and a Program Committee. The members of these committees could be selected at the time
of the meeting.
Once we agree on the structure and on the individuals we probably should compose a white paper explaining the whole situation and the names of the individuals and have a sufficient number of copies to be distributed among the individuals who will arrive at the meeting.

I also think we should have an agenda for the ASA meeting. The meeting is being scheduled for a given period of time and somebody will have to be responsible for running it in order to keep to the agenda.

Please let me know how you feel about these things. I am sending a copy of this letter to Al. Al, I'm looking forward to receiving some scribbles from you. I have a tough time trying to stay in contact with you.

Let's hear from both of you at your earliest and with best regards from all of us.

Sincerely,

Emil Steinberger, M.D.
Professor and Chairman
Dept. of Reproductive Biology & Endocrinology

Associate Editor and Coordinator for North American ANDROLOGIA

ES:rh

P.S. Al, I'm enclosing some of the forms for your perusal.
February 14, 1975

Dr. Emil Steinberger
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in Reproductive Biology and Endocrinology
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Medical School
6400 West Cullen Street
Houston, Texas 77025

Dear Emil:

Hope you will receive the correspondence with Current Contents soon so, we could resolve the problem.

I received your letter of February 10, and the enclosures you probably have, by now, my version of the forms to be used by the Editor(s) of Andrology. I did not send you the Instructions to Reviewers. I do approve your version. The two versions, yours and mine, of the forms are very similar. We can adopt yours. However, I do think that these, and the letterhead stationary should be printed by Grosse-Verlag and sent to us for our use. What do you think?

With respect to the letters you sent to people interested in Andrologia, and in the ASA, I think these are good. We should have extras at the meeting in Detroit together with copies of all available issues of Andrologia.

With best regards,

Sincerely,

Eugenia Rosemberg, M.D.
Research Director
Research Professor
University of Massachusetts
Medical School

ER/ss
cc: C. Alvin Paulsen
February 24, 1975

Dr. Emil Steinberger  
Professor and Chairman  
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Dear Emil,

Thank you for your letter of February 14. I did have a long talk with Al prior to his departure for Geneva. We discussed a possible structure for the ASA along the lines you described, that is, something similar to the Endocrine Society structure. Al asked me to finalize things with you in this respect.

First - we think, like you do, that to start, the ASA we should have: a President, a Vice-President, a Secretary, a Treasurer and a Council.

As we have to be prepared, Al and I propose for President Dr. Emil Steinberger, for Vice-President, whoever you like. We could discuss this over the phone. For Secretary, Dr. Anna Steinberger, and for Treasurer, Dr. Keith D. Smith. For Council: Hafez, Troen, Sherina, Bartke, Nancy Alexander, Orgebin-Christ, Fawcett. I do not like the idea of Hafez in the Secretary's job. He will be all right as member of the Council.

Unlike the Endocrine Society, I would think that the Vice-President should become President the following year. As far as all other Committees, we should emphasize that the Publications Committee will have to work with the Chief-Editor and Associate Editors of Andrologia which will be the official Journal of the ASA. We should work towards a Charter Membership at the time of the Meeting. We should decide the amount for Membership fees.
We should have a copy of proposed By-Laws - I guess you could get a copy of the Endocrine Society By-Laws prior to the Meeting. Please ask for two copies and send me one. Officers should serve for one year period - Council for 2 or 3 year period.

We should have an Agenda ready. What do you think of the following Agenda:

1. Background information relative to the formation of the ASA
2. Proposed Structure and Location of Office
3. Proposed By-Laws
4. Charter Membership - Fees
5. Election of Officers
6. Election of Committee Members
7. Relationship with Andrologia
8. Future Meetings

Let's discuss everything over the phone.

Best regards,

Sincerely,

Eugenia Rosenberg, M.D.
Research Director
Research Professor
University of Massachusetts Medical School

ER/ss
Dr. Eugenia Rosenberg
Medical Research Institute of Worcester
Worcester City Hospital
26 Queen Street
Worcester, Massachusetts 01610

Dear Eugenia:

Thank you for your letter of February 25th. I essentially agree with all you say in your letter concerning the organization of ASA. I am in the process of obtaining The Endocrine Society bylaws and also will try to get a copy from SSR.

I gladly will assume the post of President for one year and obviously either your or Al should assume the Vice-Presidency with the idea that the Vice-President becomes President the following year. This is a good arrangement because it gives the President the necessary one year experience prior to assuming the office. I suppose you will have to work it out with Al as to which one of you wishes to take the office. While I feel that either one is obviously qualified for either of the offices, President or Vice-President, I think that Al, being as busy as he is now, may not wish to be saddled at the moment with this job, particularly during the formative year or two of the Society. We may want to keep him on ice as possibly the 3rd year president. With this in mind, I would favor you as the Vice-President.

I think that Keith Smith would make a good Treasurer but I do not think that Ann is ready to be Secretary of the Society, at least not this year. Her work load is horrendous and I doubt that she will be able to devote a sufficient amount of time. Maybe we could get Sherins or Orgebin-Crist for this job. Let me know what you think. As far as the Council is concerned I think it looks good, maybe we could enlarge it by putting a urologist in and I have in mind specifically several urologists, either Joe Davis from New York or Joe Corriere from our school (he is Chairman of Urology here).

The agenda you proposed is a good one. I would like to add a point concerning our relationship with C.I.D.A. and on the point you make about future meetings a discussion of the type of meetings. As you know, I favor the workshop type meetings so we would not replicate the annual meetings of the other societies with 10 minute papers.

On your point #6 concerning Election of Committee Members, I think we should rough in the different committees, not as far as the composition but the type of committees. I think we will need the following committees:

1) Membership Committee

2) Nomination Committee
3) Fiscal Committee
4) Publication Committee
5) Program Committee
6) Bylaw Committee

Let me hear from you re your thoughts on the items in this communication and with best regards.

Sincerely,

Emil Steinberger, M.D.
Professor and Chairman
Department of Reproductive Biology
& Endocrinology

ES:rh
cc: Dr. Al Paulsen
March 17, 1975

Dear Emil:

Thank you for your letter of March 12. All your points are well taken. After talking to Al we can decide who will be the Vice President—in either case, the one who will not be proposed for Vice President should be added to the Council. As far as the Secretary is concerned, I do think that we should go for Orgasbin-Crist and add Joe Corrara to the Council membership.

Concerning the agenda, we should have the following:

1- Background information relative to the formation of ASA
2- Proposed structure and location of office
3- Proposed By-laws
4- Charter Membership - Fees
5- Election of officers
6- Selection of Committees and Members
7- Relationship with CIBA and ANDROLOGIA
8- Structure of future meetings

Does it look all right now?

Best regards,

Eugenia Rosenberg, M.D.
Research Director

Research Professor
University of Massachusetts
Medical School

cc: G. Alvin Paulson

P.S. There is a strong possibility that the Serono Research Foundation, USA, is interested in sponsoring the first meeting of the ASA. I will let you know the details later.
April 9, 1975

Emil Steinberger, M.D.
Program in Reproductive Biology
University of Texas Medical Center
6000 West Cullen Street
Houston, Texas  77025

Dear Dr. Steinberger:

Enclosed you will find my contribution to the Agenda of the ASA meeting, in response to your letter of 4 April 1975. I'm sending everything along to you for printing, just in case you want to look it over first. Please give me a ring if you have any questions.

By the way, I thought the "Charter Membership" form could be distributed and collected at the meeting.

Looking forward to seeing you soon,

Best regards,

Eugenia Rosenberg, M.D.
Director of Research

Research Professor
University of Massachusetts
Medical School

pcp
Enclosures
With the formation of the Comité Internacional de Andrología (CIDA) in 1970 and the publication of ANDROLOGIA shortly thereafter, American investigators in the field of andrology felt the need for closer interaction within the USA to further the objectives expressed by the international Committee. Several of us participated in the early planning stages, most notably Dr. Steinberger, who canvassed interested scientists and, having received over 50 positive responses in a short time, prepared to lay the groundwork for the creation of the American Society of Andrology. As a great number of American scientists interested in andrology are gathered here, it was thought advisable to initiate the activities of the Society at this meeting. A statement describing the proposed structure of the Society follows.

I. OBJECTIVES

The organization shall be conducted for scientific purposes, for the advancement and promulgation of knowledge regarding the male reproductive tract, and for the facilitation of personal relationships among investigators in the subject of andrology.

II. MEMBERSHIP

The Society shall consist of active members who will be required to maintain a subscription to ANDROLOGIA in addition to the payment of annual dues.

Eligibility. Any qualified physician or scientist in good standing shall be eligible for nomination to active membership.

Nomination and Election. Nominations for membership shall be made and seconded by members of the Society on blanks furnished by the Secretary and shall be submitted to the Council. The Council shall
determine eligibility, based upon evidence of contributions of the nominee to andrology as represented by publications or as described by nominators and shall vote by ballot upon nominations. A majority of votes cast shall constitute election.

III. MEETINGS

Annual. The annual meeting of the Society shall be held at such time and place as determined by the Council.

Council Meeting. At least one meeting of the Council shall be held at each annual meeting of the Society. In the interval between annual meetings, the President may on his or her own volition or at the request of two members of the Society submit questions by mail to the members of the Council for their consideration and decision.

IV. OFFICIALS

Officers. The officers shall be the President, the Vice President, who shall be elected annually for a term of one year by the members of the Society, the Secretary and the Treasurer, who shall be elected for a term of four years by the members of the Society. The Vice President shall assume the office of the President at the end of one year. The Secretary and the Treasurer may stand for re-election, with any other nominees proposed by the Nominating Committee. The officers shall enter upon their duties at the close of the annual meeting at which they are elected. The powers and duties of the officers shall be such as usually devolve upon their respective positions.

Council. The elected officers of the Society, the immediate Past President, and ten elected members shall be known as the Council. The term of office of members of the Council shall be two or three years, as determined by lottery, using the rotation system for replacement of members whose terms shall expire. The President of the Society shall be ex-officio the Chairman of the Council. The Secretary of the Society shall be ex-officio the Secretary of the Council.

V. AFFILIATION

The Society shall be affiliated with the Comite Internacional de Andrologia (C.I.D.A.) and the official journal of publication shall be ANDROLOGIA.
The proposed fees for Charter Membership in the American Society of Andrology will be $40.00, which includes a subscription to ANDROLOGIA and annual dues.

Please complete the form below to state your intention regarding Charter Membership in the Society.

__________________________

AMERICAN SOCIETY OF ANDROLOGY

I, (print NAME)

(Address)

wishes to become a Charter Member of the American Society of Andrology.
OFFICERS

PRESIDENT
Emil Steinberger

VICE PRESIDENT
Eugenia Rosemberg

SECRETARY
M.-C. Orgebin-Crist

TREASURER
Keith D. Smith

MEMBERS OF COUNCIL

Nancy Alexander
Andrzej Bartke
Joseph Corriere
Donald Fawcett
Saad Hafez
Mortimer B. Lipsett
C. A. Paulsen
Richard Sherins
Anna Steinberger
Philip Troen
In years to come we look forward to the appropriate election of officers and Council members of the American Society of Andrology. For the time being, it was felt that a slate of officers and members of council, appointed rather than elected this year, would expedite the early organizational stages of the Society. We are pleased to entrust the leadership of the new Society in the capable hands of one of its founders, Dr. Steinberger, who will serve as President for the first year. The Vice President, Secretary and Treasurer have accepted their appointments as indicated. The following proposed committees will be formed from the membership of the Society.

- Membership Committee
- Nominating Committee
- Fiscal Committee
- Publication Committee
- Program Committee
- By Law Committee
Dr. Eugenia Rosenberg
Medical Research Institute of Worcester
Worcester City Hospital
26 Queen Street
Worcester, Massachusetts 01610

Dear Eugenia:

Thank you for your letter of March 17th. Basically I agree with everything you state in it and only have a couple of minor suggested changes. I agree that we should have the Agenda as you indicated. This Agenda probably should be typed on a separate sheet of paper. If you wish our print shop can provide a hundred copies of it. Please let me know immediately.

AGENDA

1. Background information - E. Steinberger
2. Relationship with CIDA and Andrologia - E. Steinberger & R. Eliasson
3. Proposed structure and officers - Eugenia Rosenberg
4. Charter membership and dues - Eugenia Rosenberg
5. Establishment of committees and their membership - Emil Steinberger
6. Election of officers and committee members - Eugenia Rosenberg
7. Structure of future meetings - Eugenia Rosenberg

Eugenia, please make whatever final changes you wish and as I indicated above send it to me immediately and we will print the copies.

I think we should have another sheet of paper where we state Officers of The American Society and the Executive Council.

President - Emil Steinberger
Vice President - Eugenia Rosenberg
Secretary - Orgebin-Crist (Incidentally I talked to her and she agrees to take the job)
Treasurer - Keith D. Smith
I believe we should have a third sheet with a memo where we explain the reasons for the structure and the reasons why the officers were appointed, rather than elected, for the first year and we should indicate strongly at this meeting that the officers for the next year will be elected. On this sheet we can list the Committees:

Membership Committee
Nominating Committee
Fiscal Committee
Publication Committee
Program Committee
By Law Committee

Eugenia, please let me know what you think about these items right away and if you wish, as I indicated, I can get all of this material printed pronto.

Regards,

Emil Steinberger, M.D.
Professor and Chairman
Department of Reproductive Biology
and Endocrinology

ES:rh
TO: T.N. Evans, M.D.  
FROM: E.S.E. Hafez  
SUBJECT: American Society of Andrology  
DATE: April 21, 1975

Today I received a suggested agenda for the ASA meeting to be held on April 24 at 5:00 at Scott Hall. The information was sent to me without a covering letter, but I presume that it is from Dr. Emil Steinberger. This agenda was not discussed with me before. You and I agreed on a different agenda which is printed in the program. May I suggest that we follow the agenda that you and I agreed upon then open the discussion for those interested.

As you suggested, we should select an executive committee to facilitate the proper selection of the officers just like any other scientific society.

cc: Emil Steinberger  
Eugenla Roseemberg  
M.C. Orgebin-Crist  
Keith D. Smith  
Nancy Alexander  
Andrzej Bartke  
Joseph Corriere  
Donald Fawcett  
Mortimer B. Lipsett  
C.A. Paulson  
Richard Sherins  
Anna Steinberger  
Philip Troen
Organizational Meeting of the American Society of Andrology (ASA)

April 24, 1975 -- 5:00 PM

1. Background Information - Emil Steinberger
2. Relationship With CIDA and Andrologia - Rune Eliasson
3. Proposed Structure and Officers - Eugenia Rosemberg
4. Charter Membership and Dues - Eugenia Rosemberg
5. Establishment of Committees and Their Membership - E. Steinberger
6. Election of Officers and Committee Members - Eugenia Rosemberg
7. Structure of Future Meetings - Eugenia Rosemberg
8. Discussion
AMERICAN SOCIETY OF ANDROLOGY
(to be founded in 1975 in Detroit, Michigan)

please print:

NAME:
(last name) Initial Degrees

MAILING ADDRESS:

UNIVERSITY or HOSPITAL AFFILIATION:

MAJOR DISCIPLINE: (please check one)

- □ Biochemistry of Male Reproduction
- □ Urology
- □ Gynecology
- □ Male Infertility
- □ Reproductive Biology
- □ Other (please specify)

RESEARCH and CLINICAL INTERESTS (please check one)

- □ Morphology of Male Reproductive Organs, Man
- □ Morphology of Male Reproductive Organs, Animals
- □ Pituitary-Gonadal Relationships
- □ Physiology of Semen
- □ Biochemistry of Semen
- □ Biochemistry of Testes
- □ Sex Accessory Organs
- □ Male Infertility, Man
- □ Male Infertility, Animals
- □ Male Contraception
- □ Immunology
- □ Administration
- □ Other (please specify)
AMERICAN SOCIETY OF ANDROLOGY

INITIATION:

Because of increasing interest in the growing and important field of Andrology, a Society of Andrologists will be formed in Detroit, 1975. This Society Initiation will occur in conjunction with the International Conference on "THE HUMAN SEMEN AND FERTILITY REGULATION IN THE MALE" to be held at the Wayne State University School of Medicine, April 24-26, 1975. The organizational meeting, held in the afternoon of April 24, will be followed by an initiation banquet.

AIMS OF THE SOCIETY:

The aim of this society will be to bring American and non-American scientists, clinicians, etc., who share an interest in male reproduction, together in an annual meeting to exchange ideas and introduce new concepts. With the growth of the society, there will be consequent symposia and international conferences, for the purpose of encouraging basic and clinical research in male reproduction.

The society will be affiliated with CIDA (Comité Internacional de Andrología) and will share its publication arm, the journal ANDROLOGIA.
April 30, 1975

Emil Steinberger, M.D.
Program in Reproductive Biology
University of Texas Medical Center
6100 West Cullen Blvd.
Houston, Texas 77025

Dear Emil:

Just a quick note to ask you for a complete list of names of people connected with ASA. All I have is the list of officers and council members.

Thank you.

Regards,

Eugenia Rosenberg, M.D.
Director of Research

Research Professor
University of Massachusetts
Medical School
With the formation of the Comité Internacional de Andrologia (CIDA) in 1970 and the publication of ANDROLOGIA shortly thereafter, American investigators in the field of andrology felt the need for closer interaction within the USA to further the objectives expressed by the international Committee. Several of us participated in the early planning stages and canvassed interested scientists concerning the advisability of creating an American Society of Andrology. On April 24, 1975 the American Society of Andrology was created in Detroit, Michigan.

The Objectives of ASA are:

The organization shall be conducted for scientific purposes, for the advancement and promulgation of knowledge regarding the male reproductive tract, and for the facilitation of personal relationships among investigators in the subject of andrology.

Eligibility for Membership:

Any qualified physician or scientist in good standing and expressing interest in andrology shall be eligible.

OFFICERS:

President - Emil Steinberger
Vice President - S. J. Behrman
Secretary - Saad Hafez
Treasurer - Nancy Alexander
Program Chairman - Eugenia Rosemberg

COUNCIL:

Andrzej Bartke
Joseph Corriere
Fletcher C. Derrick
Tommy Evans
Lourens Zaneveld

COMMITTEES:

Bylaws Committee -- S. J. Behrman, Chairman
Nominating Committee -- Donald Fawcett, Chairman
Program Committee -- Eugenia Rosemberg, Chairman
Membership Committee -- Lourens Zaneveld
Liaison Committee -- S. J. Behrman, Chairman
Publication Committee -- Eugenia Rosemberg, Chairman
With the formation of the Comité Internacional de Andrologia (CIDA) in 1970 and the publication of ANDROLOGIA shortly thereafter, American investigators in the field of andrology felt the need for closer interaction within the USA to further the objectives expressed by the international Committee. Several of us participated in the early planning stages, most notably Dr. Steinberger, who canvassed interested scientists and, having received over 50 positive responses in a short time, prepared to lay the groundwork for the creation of the American Society of Andrology. As a great number of American scientists interested in andrology are gathered here, it was thought advisable to initiate the activities of the Society at this meeting. A statement describing the proposed structure of the Society follows.

I. OBJECTIVES

The organization shall be conducted for scientific purposes, for the advancement and promulgation of knowledge regarding the male reproductive tract, and for the facilitation of personal relationships among investigators in the subject of andrology.

II. MEMBERSHIP

The Society shall consist of active members who will be required to maintain a subscription to ANDROLOGIA in addition to the payment of annual dues.

Eligibility. Any qualified physician or scientist in good standing shall be eligible for nomination to active membership.

Nomination and Election. Nominations for membership shall be made and seconded by members of the Society on blanks furnished by the Secretary and shall be submitted to the Council. The Council shall
May 1, 1975

E.S.E. Hafez, M.D.
Department of Obstetrics & Gynecology
Wayne State University School of Medicine
Detroit, Michigan 48201

Dear Saad:

As promised, I am sending you a suggested outline of the minutes of the Meeting of Incorporators of the American Society of Andrology.

In keeping with the spirit of open communication in the new Society, I am initiating a system of "round robin" correspondence, and hope that everyone else will do the same.

Best regards,

Eugenia Rosenberg
Program Chairman
American Society of Andrology

cc: E. Steinberger
    J. Behrman

p.s. I am also sending you the releases for my chapter in the Conference proceedings.
May 1, 1975

S. Jan. Behrman, M.D.
Department of Obstetrics & Gynecology
University of Michigan Medical School
Ann Arbor, Michigan 48103

Dear Dr. Behrman:

It was nice to see you and have the opportunity to converse with you at the Detroit meeting.

You will see from the enclosed that since Dr. Hafes asked me for a little help with the incorporation proceedings of ASA, I sent him a suggested outline for the minutes of the Meeting of Incorporators. As you know, you will have to seek legal assistance in the matter of incorporation as well as the request for non-profit status from the IRS. Regarding the latter, the purpose of the Society should be worded in such a way as to comply with Section 501(c)(3) of the Internal Revenue Code, that is, "the purposes shall be effectuated only in a scientific and educational manner" and "in the event of dissolution, . . . all of its then existing assets shall be distributed to religious, charitable, literary and educational organizations." This is the language used in one of incorporation proceedings for an organization I founded.

As to the matter of By-Laws of ASA, I strongly urge that we do not wait for proposals from the By-Law Committee. Rather, I think the incorporators should formulate these among themselves—and we should all agree—, perhaps using the list of headings in the suggested outline for Dr. Hafes. I urge this in the interest of time, since if we have to wait for the Committee it may be several months before we can begin to incorporate. The By-Laws can always be changed and we can make ample provision for this.

Best regards,

Eugenia Rosemberg
Program Chairman
American Society of Andrology

cc: E. Steinberger
    E.S.E. Hafes
MINUTES OF THE MEETING OF THE
INCORPORATORS OF
AMERICAN SOCIETY OF ANDROLOGY

The meeting of the incorporators of the American Society of Andrology was held at [address] on the 25th day of April, 1975, at [time], notice of the meeting having been waived by the incorporators.

Present were the following:
Emil Steinberger
S. Jan Behrman
E.S.E. Hafez
Nancy Alexander
Eugenia Rosenberg

being all the incorporators.

On motion duly made and seconded, Dr. Emil Steinberger was selected to preside over the meeting.

On motion duly made and seconded, it was voted to proceed by ballot to the election of a temporary Secretary. Thereupon, Dr. E.S.E. Hafez was declared duly elected to discharge the duties devolving upon him as temporary Secretary at the meeting of incorporators of the American Society of Andrology.

On motion duly made and seconded, the proposed By-Laws were discussed and voted upon, and adopted.

I. Name and Object (in compliance with Section 501(c)(3) of the Internal Revenue Code)

II. Affiliation

III. Membership

IV. Meetings and Quorum

V. Officials (including Council Members)

VI. Nomination of Officers

VII. Financial

VIII. Publication

IX. Changes in By-Laws

On motion duly made and seconded, the officers of the Society were elected as follows:

President                Emil Steinberger
Vice President           S. Jan Behrman
Secretary                E.S.E. Hafez
Treasurer                Nancy Alexander
Program Chairman         Eugenia Rosenberg
On motion duly made and seconded, the Council Members were elected as follows:

Andrzej Bartke
Joseph Corriere
Donald Fawcett
C.A. Paulsen
Richard Sherins
Anna Steinberger
Fletcher Derrick
Larry Zaneveld
Tommy Evans

On motion duly made and seconded, the Committees were named as follows:

Membership Committee
Nominating Committee
Fiscal Committee
Publication Committee
Program Committee
By-Law Committee

No further business, it was voted to adjourn at (time).

Secretary
May 18, 1975

Emil Steinberger, M.D.
Program in Reproductive Biology
University of Texas Medical Center
6100 West Cullen Street
Houston, Texas  77025

Dear Emil:

Thank you for your letter of 5 May 1975, which includes the names of officers, Council and Committee members of ASA.

Before I can send you the proposed names of members for the Program and Publications committees, I need to know the procedure you plan to follow for approval of the members. You ask that nominations be sent to all officers of the Society; does this mean that a majority of the officers (3 out of 5) must approve the nominations? Also, how many members will make up each committee? I could probably use as many as 15 on the Publication committee and six on the Program committee for the proper back-up.

Please let me know by return mail your thoughts on this. I will send you my nominations as soon as I can.

Best regards,

Eugenia Rossenberg, M.D.
Program Chairman
American Society of Andrology
TO: Officers of American Society of Andrology
FROM: Emil Steinberger, M.D.
Re: Organization of the American Society of Andrology and Election of Officers

The sequence and results of our deliberations in Detroit concerning the structure of the Society are summarized below. According to my notes and best recollections the following transpired.

1) A Committee of four was elected by the members of the Conference on March 25, 1975 and charged with election of a fifth member, election of officers among themselves, and election of members to the Executive Council. The members of the Committee elected by the Conference were:

   Drs. Nancy Alexander, S. J. Behrman, Saad Hafez and Emil Steinberger

2) The Committee met and elected a fifth member, Dr. Eugenia Rosenberg. They also elected individuals from among themselves to the various offices of the Society as follows:

   President - Emil Steinberger
   Vice President - S. J. Behrman
   Secretary - Saad Hafez
   Treasurer - Nancy Alexander
   Program Chairman - Eugenia Rosenberg

3) The officers elected members of the Executive Council. They are as follows:

   Andrzej Bartke
   Joseph Corriere
   Fletcher C. Derrick, Jr.
   Tommy Evans
   Donald Fawcett
   Alvin Paulsen
   Richard Sherins
   Anna Steinberger
   Larry Zaneveld

   One position was left open for nomination from among individuals related to the pharmaceutical industry.
Several committees were established and their Chairman and in some cases members were elected. They are as follows:

By Laws Committee - S.J. Behrman, Chairman
   Nancy Alexander
   Saad Hafez
   E. Steinberger
   J. Corriere

Nominating Committee - Don Fawcett, Chairman
   C. A. Paulsen

Program Committee - E. Rosenberg, Chairman
   Richard Sherins
   Anna Steinberger

Membership Committee - L. Zaneveld, Chairman
   F. Derrick, Jr.

Fiscal Committee - S. Behrman, Chairman
   T. Evans
   A member from pharmaceutical industry

Liaison Committee - S. Behrman, Chairman

Publication Committee - E. Rosenberg, Chairman

I would appreciate each Committee Chairman to select the appropriate number of Committee members and send their nominations to all officers of the Society.

Thank you.

ES:rh

Back to Index
The Meaning of Sperm Capacitation

A Historical Perspective

M. C. CHANG

From the Worcester Foundation For Experimental Biology,
Shrewsbury, Massachusetts

Key words: sperm capacitation, acrosome reaction, in vitro fertilization, hyperactivation.


C. R. Austin (1951) reported in an Australian journal that “when sperms were introduced into the fallopian tube of rabbit before ovulation, most of the eggs subsequently recovered were fertilized. However, if the sperms were introduced after ovulation the eggs rarely showed signs of penetration.” He concluded that “there seems to be a need for sperms to spend some time, apparently a few hours, in the female tract before they can penetrate the zona.” The same year, Chang (1951) published a paper entitled “Fertilizing Capacity of Spermatozoa Deposited into the Fallopian Tubes” in which he stated that “It is quite clear that fertilization occurs when the spermatozoa have been in the tube for six hours before ovulation, which is perhaps the time required for a physiological change in the spermatozoa enabling them to attain fertilizing capacity.” Based upon these two reports and his observations on the penetration of rat eggs examined at various times after mating, Austin (1952) introduced the term “Capacitation” to the literature of reproductive biology and concluded that “the sperm must undergo some form of physiological change or capacitation before it is capable of penetrating the egg.”

Our knowledge of fertilization before 1951 was mainly from the study of sea urchins. One would expect that mammalian spermatozoa from the male genital tract are capable of penetrating the egg. When these experiments demonstrated that mammalian spermatozoa do need to spend some time in the female genital tract to achieve their final fertilizing capacity, it was a stimulus to many scientists to seek the changes that occur in the spermatozoa during their sojourn in the female genital tract. But capacitation is a general term and may include many physiological and morphological changes about which we had no ideas at that time.

Due to the progress in the study of mammalian fertilization in recent years, capacitation of spermatozoa became a commonly used term, and the meaning of capacitation was held differently among scientists and even by the same author. This article, based mainly on review articles and some work done in the author’s laboratory, attempts to clarify some of the confusion.

Capacitation and Decapacitation

There are various ways to study the capacitation of spermatozoa. By depositing ejaculated, epididymal spermatozoa, or spermatozoa recovered from the uterus at various times after mating, into the oviducts of rabbits soon after ovulation, Chang (1955) found that fertilization occurred only following deposition of spermatozoa recovered from the uterus; this showed that capacitation can be achieved in the uterus. Further experiments (Chang, 1957) revealed that when the capacitated spermatozoa recovered from rabbit uteri were treated with 5 to 20% rabbit, bull, or human seminal plasma, and deposited into rabbit oviducts soon after ovulation, fertilization did not occur. When treated uterine spermatozoa were deposited 6 hours before ovulation, fertilization was pos-
sible. These findings show that capacitated spermatozoa can be “decapacitated” by treatment with seminal plasma, while the decapacitated spermatozoa can be “recapacitated” in the oviducts. The so-called “decapitation factor” was further studied by Williams et al (1967), and discussed by Austin (1969) and McRorie and Williams (1974) in polypeptide, molecular, and antifertility terms.

The Acrosome Reaction

The acrosome reaction of sea urchin spermatozoa upon contact with the jelly coat of the egg was first described by Dan (1952, 1956). The role of the mammalian sperm acrosome during fertilization was first studied by Austin and Bishop (1958) with a phase contrast microscope. They concluded that the acrosome becomes modified in spermatozoa passing through the female genital tract and is detached before the spermatozoa penetrates the zona pellucida. These changes in the acrosome are considered to constitute ‘capacitation.’ The acrosome reaction is an obvious morphological change of spermatozoa during their sojourn in the female genital tract. By means of electron microscopy it was observed that the acrosome reaction involves membrane vesiculation or multiple fusion between the plasma and the underlying outer acrosomal membrane for the rat (Piko any Tyler, 1964) and for the hamster and rabbit (Barros et al, 1967). Ultrastructural changes in the sperm head during fertilization in the rabbit were also described by Bedford (1968). The acrosome of guinea pig spermatozoa, a very conspicuous structure, disappears after 14 to 18 hours in culture, and these capacitated spermatozoa are capable of penetrating eggs immediately (Yanagimachi, 1972). Various aspects of acrosome reaction in vivo and in vitro were discussed recently by Yanagimachi (1981).

Capacitation In Vivo and Fertilization In Vitro

The inhibition of capacitation in the uterus of pseudopregnant or progesterone-treated rabbits was reported by Chang (1958). The capacitation of rabbit spermatozoa in the isolated bladder, isolated colon, anterior chamber of the eye, and glandular vesicularis was described by Noyes and associates (1958). All these experiments, however, were conducted by depositing spermatozoa recovered from the uterus, or from these other organs, into the oviducts of rabbits soon after ovulation and examining them for possible fertilization.

Up to 1951, the possibility of fertilizing mammalian eggs in vitro using ejaculated or epididymal spermatozoa without capacitation was never authentically demonstrated. Since the recognition of capacitation of mammalian spermatozoa in the female tract, cytological evidence of fertilization of rabbit eggs in vitro by capacitated spermatozoa was reported by Thibault and associates (1954). The production of young, genetically true to their parents, following the transfer of rabbit eggs fertilized in vitro by spermatozoa recovered from the uterus was reported by Chang (1959). Later, in vitro fertilization of denuded rabbit eggs by spermatozoa recovered from the vagina was described (Chang et al, 1971). Thus, the successful in vitro fertilization of rabbit eggs by capacitated spermatozoa further reinforced the validity and importance of capacitation of spermatozoa in the female genital tract.

Capacitation of Spermatozoa In Vitro

The first successful fertilization of hamster eggs in vitro was described by Yanagimachi and Chang (1963). They reported that in Tyrode’s solution containing glycine, 30 to 66% of the eggs were fertilized by spermatozoa recovered from the uterus 0.5 to 5 hours after mating but only 17% of the eggs were fertilized by epididymal spermatozoa. This shows that the capacitated spermatozoa recovered from the uterus are better able to fertilize eggs. If the final ability to penetrate the egg requires capacitation, then the epididymal spermatozoa must have capacitated in vitro. This finding changed the original notion that capacitation is achieved only in the female genital tract, and also opened the door to study capacitation in vitro. The possibility of fertilization of hamster eggs in vitro by epididymal spermatozoa was further confirmed by Barros and Austin (1967), who showed that a period of 4 hours is needed for sperm capacitation in vitro and described the close correlation between the acquisition of fertilizing capacity by spermatozoa and the occurrence of the sperm acrosome reaction. In vitro capacitation, including the acrosome reaction of hamster spermatozoa in the presence of tubal fluid of mouse and rat, was described by Barros (1968), and in vitro fertilization of hamster eggs in the presence of bovine follicular fluid was reported by Yanagimachi (1969).

Although the fertilization of mouse eggs in vitro by spermatozoa recovered from the uterus was described by Whittingham (1968), in vitro fertilization of mouse eggs by epididymal spermatozoa in the
presence of bovine follicular or rabbit tubal fluid was reported by Ivamatsu and Chang (1969). Finally, capacitation, including the acrosome reaction of hamster spermatozoa in the presence of blood sera, was described by Barros and Gara-vagno (1970) and Yanagimachi (1970a).

Successful in vitro fertilization of Chinese hamster eggs in media containing 1% bovine serum albumin was reported by Pickworth and Chang (1969), who also pointed out the advantage of preincubation of spermatozoa. By introducing 4 g/l of bovine albumin into the culture medium, Toyoda and associates (1971) were able to fertilize mouse eggs in vitro and concluded that "mouse epididymal spermatozoa can be capacitated in vitro in a chemically defined medium without the presence of female reproductive tissue fluid." These two studies revealed clearly that capacitation and fertilization in vitro can be achieved without the participation of specific substances from the female reproductive tissue and biological fluids.

The importance of serum albumin and metabolic intermediates for capacitation of spermatozoa and fertilization of mouse eggs in vitro was further described by Miyamoto and Chang (1973). In vitro fertilization of rat eggs in a chemically defined medium was achieved, and the development of such eggs following transfer was described (Toyoda and Chang, 1974). The capacitation of rabbit epididymal spermatozoa in vitro appeared to be difficult, but finally succeeded according to a procedure of washing twice and employing a longer preincubation time of 12 hours (Hosoi et al. 1981). Based upon the study of in vitro fertilization of hamster eggs by epididymal spermatozoa (Yanagimachi and Chang, 1963) and the induction of sperm capacitation in the presence of tubal and follicular fluid (Barros and Austin, 1967), Edwards, Bavister, and Steptoe (1969) reported the first authentic evidence of in vitro fertilization of human eggs. They stated that "Our impression is that this preincubation (of human spermatozoa) led to the attachment of more spermatozoa to the zona pellucida, and to a higher incidence of penetrated and pronucleate eggs." Austin and associates (1973) estimated that the time required for capacitation of human spermatozoa in vitro was about 7 hours, which was much longer than the present estimation. It should be pointed out here that most investigators working on fertilization in vitro consider capacitation to include all the changes before penetration because they consider capacitated spermatozoa as those able to fertilize eggs, not those only having some molecular changes in their membrane.

**Capacitation and Hyperactivation**

It was reported by Hamner and Williams (1963) that the uptake of oxygen by rabbit spermatozoa increased four-fold after they had been incubated for 6 hours in the uterus of estrous rabbit. Mounib and Chang (1964) found that "both uptake of oxygen and glycolytic activity of sperm were increased after incubation in the uterus of rabbit and the rise of consumption of oxygen was utilized to oxidize endogenous and exogenous substrates with a promotion of the hexose monophosphate shunt." The different motility pattern of golden hamster spermatozoa before and after capacitation was first noticed (1969) and described by Yanagimachi (1970b). It was observed that when hamster spermatozoa were incubated in media containing biological fluid, the spermatozoa agglutinate head to head within 30 minutes. About 2 to 3 hours later, agglutinated spermatozoa dispersed spontaneously, and free spermatozoa showed an extraordinary active movement, with vigorous whip-lash-like beating of the flagellum. Later on, Yanagimachi (1981), named this sperm movement "hyperactivation of spermatozoa" rather than "activation of spermatozoa", and stated that "the spermatozoa began to move extremely vigorously shortly before the acrosome reaction was initiated." A similar type of sperm motility was also described in the guinea pig (Yanagimachi, 1972; Barros et al., 1973) dog (Mahi and Yanagimachi, 1976) mouse (Fraser, 1977), rabbit (Cooper et al., 1979) and sheep (Cummins, 1982). It is difficult to say from these reports whether the hyperactivation of spermatozoa occurred before or after the acrosome reaction. According to Yanagimachi (1981), the acrosome reaction and hyperactivation can occur independently and should be considered as separate phenomena. If capacitation is defined to include all the changes in spermatozoa before they are capable of penetrating eggs, then the hyperactivation of spermatozoa is also one stage of capacitation. Whether hyperactivation starts before, during, or after the acrosome reaction was not exactly determined.
Separation of Capacitation and Other Changes

In a study of morphological aspects of sperm capacitation in mammals, Bedford (1970a) stated that "observations in the phase contrast and electron microscope fail to reveal any structural changes in rabbit sperm which can be interpreted as morphological concomitant of capacitation," because he found that capacitated rabbit uterine spermatozoa had intact acrosomes. In a review paper on sperm capacitation and fertilization in mammals, Bedford (1970b) remarked that "no morphological changes occur before the onset of acrosome reaction, which is not considered as a facet of capacitation itself. After capacitation, sperm become competent to undergo the acrosome reaction in response to stimuli which seem to exist in the vicinity of the egg, and in follicular fluid." Such statements rather deviate from the original meaning of capacitation, which includes all the changes that enable spermatozoa to penetrate eggs. On the other hand, the absence of acrosome in capacitated hamster (Yanagimachi, 1966) mouse (Iwamatsu and Chang, 1969) and guinea pig spermatozoa (Yanagimachi, 1972) has been reported. If we accept Bedford's notion (1970a) that the acrosome reaction of capacitated rabbit spermatozoa in vivo only occurs in contact with eggs, it does not necessarily contradict the original meaning of capacitation (changes undergone by mammalian spermatozoa in the female genital tract) because the acrosome reaction of rabbit spermatozoa occurs when the sperm and eggs are in the oviducts, which are part of the female genital tract. Moreover, we cannot say that all capacitated rabbit uterine spermatozoa have intact acrosomes because the acrosome reaction of rabbit spermatozoa is difficult to examine, and the acrosome reaction of rabbit uterine spermatozoa has not been thoroughly examined as far as the author is aware.

In an article entitled "Capacitation of Golden Hamster Spermatozoa During Incubation in Culture" Bavister (1973) remarked that "since there is some controversy over the meaning of the term 'capacitation,' it is used below to denote only those changes undergone by spermatozoa after leaving the male reproductive tract and before the occurrence of acrosome reaction."

But the results he presented in his article were based on the penetration of the eggs, which requires all the changes in spermatozoa before fertilization.

In an article entitled "Components of Capacitation" Austin and associates (1973) reported their study of in vitro sperm penetration in the golden hamster, mouse, and human. It was concluded that "capacitation is an essential physiological change in all three species studied, and in each, the spermatozoa were clearly capable of undergoing this process in vitro." Because preincubation of spermatozoa in medium without eggs for 3 to 4 hours presumably did not induce acrosome reaction, but produced a large reduction in the ultimate time between insemination and penetration, they further concluded that "the separate nature of capacitation and acrosome reaction is indicated by observation on preincubation of hamster spermatozoa." It should be pointed out here that "these experiments gave variable results," as the same authors stated, and that they did not determine the occurrence of acrosome reaction after preincubation. Moreover, even after preincubation for 3 to 4 or 6 to 7 hours, it still requires 1 to 2 hours after semination for the spermatozoa to penetrate the eggs. This shows that what has happened during preincubation is only a part of, or a preparation for capacitation, rather than the whole process of capacitation. The definition of capacitation applied originally did not fragment the process; it denoted all the changes in the spermatozoa that enable them to penetrate and fertilize the eggs.

Dealing with membrane fusion and fertilization, Austin (1975) further stressed the separation of capacitation and the acrosome reaction. He considered capacitation to involve the removal of the glycoprotein coat from spermatozoa. The removal of the extraneous coat unlocks the acrosome reaction, while the acrosome reaction allows the escape of hydrolytic enzymes for the penetration of the zona pellucida. Johnson (1975) discussed capacitation and acrosome reaction separately from membrane reaction and immunological reaction, based upon extant knowledge at the macromolecular level. In a recent review article by Yanagimachi (1981), capacitation and acrosome reaction were discussed separately. He listed nineteen detected or suspected phenomena in the sperm membrane associated with sperm capacitation from 56 references, but he was not certain whether to define capacitation strictly as a preparation for the acrosome reaction. The acrosome reaction, however, can be induced rapidly in guinea pig spermatozoa without preliminary incubation by causing calcium
uptake through the influence of ionophore A23187 (Singh et al, 1978). In a recent review article entitled “Significance of the Need for Capacitation Before Fertilization in Eutherian Mammals,” Bedford (1983) stressed the influx of calcium during capacitation for acrosome reaction. He postulated that due to the loss of the oocytes’ stimulation of the acrosome reaction, as in the sea urchin, and the unusually formidable egg investments in the vertebrate, mammalian spermatozoa must undergo capacitation in the female genital tract.

As sea urchin spermatozoa undergo the acrosome reaction without obvious capacitation, it is inconsistent to consider the acrosome reaction as an isolated event in one animal group and as an integral part of a more complex sequence of events in mammals. Whether or not the acrosome reaction of sea urchin spermatozoa may have some fast reactions similar to capacitation remains to be investigated.

The confusion created in recent years is mainly due to the fact that in the title of their articles, Austin et al (1973), Bavister (1973), and Bedford (1970a,b; 1983) imply that capacitation includes all the changes in the spermatozoa before they have the capacity to fertilize. But in the text of their articles, they have treated capacitation as a preparation for hyperactivation and acrosome reaction. The confusion is often caused by the change in the original meaning of the word.

Summary and Conclusions

It should be recalled that sperm capacitation was originally defined in 1952 as some physiological changes of the spermatozoa in the female genital tract before they are capable of penetrating and fertilizing the eggs. It was found further that capacitation can be achieved outside the female tract, first in the presence of biological fluids, and then in the absence of biological fluids. Later on it was found that capacitated rabbit uterine spermatozoa still have acrosome and that the acrosome reaction of rabbit spermatozoa occurred in contact with eggs in the oviduct. Thus, several authors separated acrosome reaction from capacitation and considered capacitation as a preparation for the acrosome reaction, even though the titles of their articles still implied that capacitation included acrosome reaction. During the past 30 years we have found many membrane changes on the molecular and immunological level in spermatozoa that prepare them for physiological changes such as “hyperactivation,” and morphological changes such as “the acrosome reaction.” These events lead to more vigorous motility and to the release of various enzymes for the penetration of the egg. Undoubtedly, further study will reveal more molecular, physiological, and morphological changes in the mammalian spermatozoa before they are capable of fertilization. There are definite changes before hyperactivation and acrosome reaction, but these changes are parts of capacitation, if we prefer to keep its original meaning. It is proposed here that in order to save further confusion, capacitation of spermatozoa should be defined as originally proposed, that is, to include all the events that lead to the development of the capacity of mammalian spermatozoa to penetrate eggs. All the changes in the spermatozoa before hyperactivation and acrosome reaction should be defined as the first part of capacitation. Certainly the writers should clearly state whether or not acrosome reaction is included in their work on capacitation.

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References


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