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REVIEW

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A brief history of the Society for Histochemistry: its founders, its mission and the first 50 years

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This review traces the origin, mission and accomplishments of the *Society for Histochemistry* through the past 50 years and focuses on some major events that have influenced and shaped its development.

The life of the *Society for Histochemistry* began in 1952. Following an invitation from the pathologist Peter Gedigk, Marburg, a small group of young pathologists and anatomists interested in histochemistry met in the library of the Pathological Institute of the University of Marburg for an exchange of ideas and experiences – the first "Symposium" – still informal and without a fixed programme.

This was an opportune time since the early fifties saw the rapid development of histochemistry, as is documented by the ever-increasing number of histochemical books and journals. Of special mention are George Gomori's classical book "Microscopic Histochemistry", which was published in 1952 and A.G. Everson Pearse's "Histochemistry. Theoretical and Applied", published in 1953, which became the "standard text" of Histochemistry. Histochemistry as a hybrid discipline, "a borderline between histology and analytical chemistry or biochemistry", was formulated in 1952 by Gomori in the introduction to his book. The field would stand or fall by its applicability to other classical disciplines. This was in fact a fundamental problem, which is reflected in some critical phases of the subsequent existence of the Society.

The second meeting followed only one year later, in October 1953, with a well-prepared Symposium of Histochemistry in Köln, with 18 presentations from the various fields of histochemistry practised at the time. This symposium was organised by the Max-Planck Institute of Brain Research on the initiative of Wilhelm Müller. The Third Symposium of Histochemistry was held in April 1955 in Bonn following an invitation from the Pathological Institute of the University. The histochemistry of enzymes (keynote lectures by A.G.E. Pearse and W. Gössner) and lipids (keynote lectures by A.G.E. Pearse, J.-H. Scharf and F. Seitelberger) were the main topics.

The participants at this symposium passed a resolution to establish an *Arbeitsgemeinschaft für Histochemie* (Histochemistry Working Party) for which they laid down the first statutes. The second paragraph of the statutes reads as follows: "The aim of the Working Group is the promotion of the exchange of ideas in the field of histochemistry". The situation in histochemistry at that time was later described clearly by the anatomist H. von Mayersbach, in his welcoming speech at the 1965 Symposium in Nijmegen. "It was not always easy to practice histochemistry in the early period. Apart from the not uncommonly cautious or even disapproving attitude towards histochemistry of our parent fields, the available material means were very limited. These were the main reasons that members from all branches of medical and biological research joined together in the Histochemistry Working Group in order to be able to pursue the exchange of ideas and experience in circles of like-minded colleagues."

All the participants in the first 1952 Marburg Symposium, the second 1953 Köln Symposium and the 1955 Bonn Symposium were admitted to the newly established Working Party without further formalities. In the beginning there were 28 members, of whom 15 were pathologists and neuropathologists and 5 were anatomists.

At the Symposium in Münster in 1961, a motion was tabled to accept the draft statutes for a *Gesellschaft für Histochemie* (Society for Histochemistry), intended as the direct legal successor of the Histochemistry Working Party. The draft statutes were revised and accepted at the Symposium in Vienna in 1962. The third paragraph states that "Membership is open to scientists of all countries irrespective of religion and race", documenting already at this time the desire to create a more international forum.

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The Second International Congress of Histochemistry and Cytochemistry was held in Frankfurt/Main in August 1964, and was to a great extent planned and organised by the *Gesellschaft für Histochemie*. On the occasion of this congress the F.K. Schattauer Press, Stuttgart, published a monograph edited by W. Sandritter, Giessen entitled "*100 Jahre Histochemie in Deutschland*". The English version, "A century of histochemistry in Germany" edited by W. Sandritter and F.H. Kasten, Pasadena, followed shortly after as a significant contribution to the history of histochemistry.

The first symposium outside Germany was held 1965 in Nijmegen and its topic was "Immunohistochemistry". This new and exciting branch of histochemistry started with the in situ localisation of proteins using the fluorescent antibody method of Coons and his associates (1941). Since this time the method has been increasingly employed as a research tool and many technical improvements have been made. The field of applied immunohistochemistry especially in diagnostic pathology soon exceeded those of any other individual histochemical technique by a wide margin. Therefore a second very successful symposium on this topic was held in Würzburg in 1980 and L.A. Sternberger, Rochester, was invited to present the Robert Feulgen Lecture.

The 11th Symposium, originally planned to take place in Halle or Leipzig in 1966, had to be relocated to München at short notice for organisational reasons. The main theme of this symposium was the "Histochemistry of Differentiation Processes", with an excellent panel discussion moderated by W. Graumann, Tübingen, and T. Schiebler, Würzburg. This was the first time that a symposium topic was chosen from applied histochemistry, all previous topics having been more methodologically oriented. At this time the Society had 117 full members.

The first Joint Meeting with the Dutch Histochemical Society was held in 1970 at the 14th Symposium in Köln. This was the first step towards a much closer cooperation with other histochemists in Europe. Many young members of the *Society for Histochemistry* took part in this meeting, prompting the pathologist R.G.J. Willighagen, Leiden to comment in his opening speech: "I am certainly very pleased that so many young members are gathered here, but I would also like to remark that many of the veterans of the Society – whom I have met at Symposiums since 1958 – are missing. Have they reached such heights that they can no longer find time for our meeting?"

At this meeting it was also decided that the panel discussions with moderators should continue as an essential part of the scientific programme of future symposia to provide an important platform for scientific communication. Actually, they were the forerunners of the workshops introduced at the symposium in München. Plans for establishing a scientific prize to be awarded by the Society were also discussed at this 1970 Symposium. The setting up of a Robert Feulgen Prize by the Society was agreed upon at the general meeting and it was awarded for the first time in 1971 jointly to O. von Deimling and H. Madreiter. At the time of writing, there have been 37 Robert Feulgen Prize Laureates, coming from Belgium, Canada, France, Germany, Great Britain, The Netherlands, Norway, Sweden, Switzerland and the USA.

The extremely successful Gargellen era, under the most effective local organisation of W. Graumann and M. Arnold from Tübingen, started in 1978 with the 20th Symposium and continued for 10 symposia until 1999. An excellent description of the specific "Gargellen-Flair" can be found in a note of the 1982 Symposium "Cell receptors for neurotransmitters, peptide- and steroid hormones, and toxins" published in the Histochemical Journal (15:89–90, 1983) under the title *Alpine histochemistry*. "For a visiting Englishman this was an amazing experience. There were some one hundred and twenty histochemists. They were mostly German (West and East) but also from Australia, Austria, Belgium, France, Hungary, Italy, Israel, the Netherlands, Norway, Poland, Switzerland, the U.K., the U.S.A. and Turkey. There were marmot-covered mountains to climb, and you started at 1400 metres. The marmots started at 2000 m. The scientific meeting too was very worthwhile. One interesting experiment, new to me, was a kind of extended poster session. People had posters plus microscopes and slide projectors, and most of a day to talk. Seemed very productive to me. Yes I have a bank overdraft, in spite of a good package deal, but no matter. Pawn your computer – the *Gesellschaft für Histochemie* meets again in Gargellen next year. See you there."

The first Robert Feulgen Lecture was presented by O. Eränkö at Gargellen in 1979. The topics of the Robert Feulgen Lectures, which to date have been presented by 24 outstanding scientists from nine different countries, reflect very well the wide scope of the symposia themes (see Table 1).

The 1990 Gargellen Symposium "Histo- and Cytochemistry as a tool in environmental toxicology", organised by W. Graumann, represented a timely and important topic of applied histochemistry. This meeting attracted scientists from many different fields of research. The proceedings of this symposium were published under the same title, edited by W. Graumann and J. Drukker, as volume 23 of the "Progress in Histochemistry and Cytochemistry" series (Fischer, Stuttgart, New York).

In the early nineties a decisive realignment was initiated by the Board of the Society to place the Society on a modern footing. In 1992, the 34th Symposium of the *Society for Histochemistry* was held in München with the main topic "Detection of (proto)oncogene and tumor suppressor gene expression" initiated and organised by the pathologist H. Höfler, München. The scientific programme represented a new era in histochemistry, namely the progressive integration of classical morphological and histochemical techniques and of modern techniques of cell and molecular biology and pathology, as well as molecular genetics.

In the same year J. Roth, Zürich, acting as Secretary General of the Society until 2001, was able to explore

Table 1 List of Robert Feulgen lecturers

O. Eränkö, Helsinki, Finland: Histochemical observations on the distribution of catecholamines and catecholamine-synthesizing enzymes in the nerve cells and SIF cells of the sympathetic ganglion. 1979 Gargellen, Austria
L.A. Sternberger, Rochester, N.Y., USA: Immunocytochemistry – past, present, future. 1980 Würzburg, Germany
G. Pfefferkorn, Münster, Germany: Histochemische Analyse mit Licht- und Elektronenstrahlen. 1981 Münster, Germany
W.E. Stumpf, Chapel Hill, N.C., USA: Histochemical characteristics and significance of cell receptors in biology and pathology. 1982 Gargellen, Austria
A.G.E. Pearse, London, UK: The phylogeny of the diffuse neuroendocrine system. 1983 Gargellen, Austria
I.B. Black, New York, N.Y., USA: Phenotypic plasticity in the nervous system. 1984 Maastricht, The Netherlands
K. Weber, Göttingen, Germany: Cytoskeletal proteins: structure, function, pathology. 1985 Göttingen, Germany
G.C. Bennett, Montreal, Canada: Radioautographic and cytochemical studies of the synthesis and intracellular transport of glycoproteins. 1986 Gargellen, Austria
W.J. Gehring, Basel, Switzerland: The generation of the body plan as studied by in situ hybridization in the developing embryo. 1987 Basel, Switzerland
L.-I. Larsson, Copenhagen, Denmark: Cytochemical detection of regulatory peptides and of mRNA molecules coding for peptide precursors. 1988 Gargellen, Austria
W.W. Franke, Heidelberg, Germany: The intermediate filament cytoskeleton and its association with other structures. 1989 Gargellen, Austria
M.N. Moore, Plymouth, UK: Environmental distress signals: cellular reactions to marine pollution. 1990 Gargellen, Austria
J.E. Dumont, Brussels, Belgium: The surface receptors in the model of the thyroid cell. 1991 Ghent, Belgium
G. Klein, Stockholm, Sweden: The contribution of oncogenes and tumor suppressor genes to the multistep development of cancer. 1992 Munich, Germany
S. Rosen, San Francisco, Calif., USA: L-selectin and its endogenous ligands. 1993 Gargellen, Austria
M.J. Karnovsky, Boston, Mass., USA: Cytochemistry and oxy radicals. 1994 Heidelberg, Germany
D. Shotton, Oxford, UK: Electronic light microscopy: past, present, future. 1995 Rigi-Kaltbad, Switzerland M. Trendelenburg, Heidelberg, Germany: Novel insights into the nucleolar structural complexity and function. 1996 Gargellen, Austria
K. Simons, Heidelberg, Germany: Biogenesis of a polarized cell surface in epithelial cells. 1997 Jena, Germany
D. Vestweber, Münster, Germany: Molecular mechanisms that control leukocyte extravasation. 1998 Giessen, Germany
A. Willie, Cambridge, UK: Apoptosis in the genesis and treatment of cancer. 1999 Gargellen, Austria
J. Lippincott-Schwartz, Bethesda, Md., USA: Dynamic fluorescence imaging of living cells. 2000 Les Diablerets, Switzerland
R.G.W. Anderson, Dallas, Tex., USA: Caveolae spatially organize signal transduction at the cell surface. 2001 Vienna, Austria
T. Misteli, Bethesda, Md., USA: New views of the cell: genomics, proteomics and dynamic networks. 2002 Vlissingen, The Netherlands

the possibility of the Society adopting "Histochemistry" as its official journal. This close connection between the Society and an international scientific journal was an important step into the future. In 1992, the journal "Histochemistry" published by Springer International, which had been edited for 34 years under the leadership of T. Schiebler, became the official journal of the *Society for Histochemistry* with J. Roth and D. Drenckhahn, Würzburg, as new Editors-in-Chief. In 1995 it was decided to extend the name and scope of the journal to "Histochemistry and Cell Biology". Each issue of the journal contains information on the annual symposium and on the activities of the society. Since 1993, the work of the Robert Feulgen lecturers and prize winners has been published as full papers. Furthermore, several timely, single topic issues were published on topics such as "Colloidal Gold Labeling" [106(1), 1996], "In Situ Hybridization and Related Techniques" [108(4, 5), 1997], "Centennial of the Golgi Apparatus" [109(5, 6), 1998], "Histochemistry in Gene Technology" [115(1), 2001] and, most recently, "Secretion, Endocytosis, Quality Control" [117(2), 2002]. A letter to young researchers in the biomedical sciences from C. Pilgrim and H. Höfler was published 1993 in "Histochemistry" [100(1), 1993]. Under the subheading "What the Society for Histochemistry stands for" they stated: "Histochemistry is the science that pursues the detection of specific molecular components of the tissue or of substances administered to trace cellular migration and metabolism while maintaining or paying special attention to topographical relationships. Histochemists are actively involved in developing or improving techniques for the localisation of functionally important molecules to certain cells or subcellular organelles, and in the quality control of immunocytochemistry, autoradiography and in situ techniques of molecular biology, and they promote the proper application of such methods to basic and clinical research."

At the 36th Symposium held in 1994 in Heidelberg, K. Schilling, Bonn, succeeded M. Arnold, who stepped down after 25 years of outstanding service, as Treasurer of the Society. An important step in the stabilisation of the financial situation of the Society was the establishment of a Foundation with the purpose of supporting the scientific activities of the Society. This foundation was incorporated in 1995 under the name "*Stiftung zur Förderung der Gesellschaft für Histochemie/Society for Histochemistry*" (Foundation for the Advancement of the Society for Histochemistry).

The 40th Symposium was held in 1998 at the Justus-Liebig-University in Giessen, where the 75th anniversary of the discovery of the "Feulgen reaction" was celebrated. At that occasion two reviews were published: one about the life of Robert Feulgen [Benedum and Meusch, Robert Feulgen (1884–1955) – some biographical thoughts. Histochem Cell Biol 111:337–343, 1999] and the other about the reaction introduced by him and Rossenbeck to detect DNA (Chieco and Derenzini, the Feulgen reaction 75 years on. Histochem Cell Biol 111:245–358, 1999).

Currently the *Society for Histochemistry* has 314 full members from 26 different countries and 9 honorary members from 5 countries. Thus, the *Society for Histochemistry* represents a truly international association of histochemists. In addition to the annual newsletter, the Society maintains an internet presence where the website, www.sfh.unizh.ch, represents a new platform for communication which has gained rapidly in importance and has proven to be of great help for both the organisers of the annual scientific symposia and the numerous participants. The *Society for Histochemistry* will continue to provide a wide forum for the exchange of information and ideas amongst histochemists and researchers from other disciplines who are not primarily concerned with normal and pathological histology, such as chemists, physicists, and cell and molecular biologists. Recently, the topics of the annual symposia have expanded into the fields of cell and molecular biology and pathology and genetics. This is actively encouraged by the Board of the Society as a really interdisciplinary forum, hopefully leading to "syndisciplinary" work and research. It is also important to remember that the *Society for Histochemistry* was and is formed by a quality characterised in the statement of H. von Mayersbach made at the Nijmegen Symposium 1965: "A striking quality of our Society should not remain unmentioned: the human bond which joins its members together that is the basis for genuine, deep friendships. May this spirit of the 'Pioneer Age' remain. May we continue, despite strong and contrasting opinions, to be joined in friendship in our efforts for science and progress."

I have had the opportunity to participate in the Society since its conception and can look back over 50 years of growth and development. The Society is now at the centre of molecular biology and molecular medicine and has fulfilled, and in many areas even exceeded, the hopes and desires expressed at the foundation of the *Arbeitsgemeinschaft für Histochemie* (Histochemistry Working Party) 50 years ago. The early foundations appear to have been very solid in view of our present robust health and standing.

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