UPPSALA NEWSLETTER
HISTORY OF SCIENCE

NUMBER 34 FALL 2003

ERNST HAECKEL'S SWEDISH CORRESPONDENTS

Ernst Haeckel was the first zoology professor at Jena University, and one of the most influential biologists of his time. His ideas were widely received throughout Europe and North America. His influence transcended the natural sciences and his monist philosophy had far-reaching political consequences. While the Haeckel reception has been documented to a certain extent in several countries in continental Europe, the Haeckel reception in Scandinavia has received almost no attention.

We have started to investigate Haeckel's correspondence with Swedes, using the archives in the Ernst Haeckel House in Jena, and at the Center for History of Science at the Royal Swedish Academy of Sciences (RSAS), Stockholm. In Jena, 96 letters from Swedish-speaking correspondents (all written in German) to Haeckel were found, most of them from scientists. Often, the letters from Haeckel to members of the RSAS could be found in the archives of the Center for History of Science at RSAS. Here we present a first report based on this ongoing work, focused on the correspondence between Haeckel and fellow scientists. This gives an indication of the breadth of topics which were covered. It also highlights the relationships between the Swedish scientists, including their conflicting political views.

Gustaf Retzius in front of the mighty tomes of his Biologische Untersuchungen.

Haeckel and Sweden

We are most of all interested in investigating what influence Haeckel's scientific (e.g. the biogenetic law) and philosophical ideas (e.g. monism) might have had in the Swedish context, and to compare this with the international Haeckel reception, in for example Austria and Italy.

As far as we know, no major investigation has been undertaken of the Haeckel reception in Sweden, although Haeckel corresponded with several Swedish scientists and leading cultural figures. He also travelled to Sweden in 1897 and 1907, and several of his books were translated into Swedish. Haeckel corresponded with Swedes over five decades (1869–1919). In the Haeckel Archive, there are letters, postcards, and telegrams from 39 Swedish sources. Among these we find well known scientists like Svante Arrhenius, Wilhelm Leche, Sven Lovén, Oscar Montelius. A. G. Nathorst, and Gustaf Retzius, as well as the explorer Sven Hedin and the physician and social reformer Anton Nyström. In Jena, letters from Haeckel are rarely found. In the archives of the Center for History of Science, we have sometimes found these missing letters when the correspondent was a member of the Academy, and had his personal archive donated. In other cases this is more difficult.

Correspondence with Swedish Scientists

We have choosen Leche, Lovén, Gustaf Retzius, Hedin and Norström as examples to indicate the breadth of topics that Haeckel discussed with his Swedish colleagues. We present each of these correspondents briefly, before describing the contents of the correpondence.

Wilhelm Leche (1850–1927) had studied with Haeckel's former colleague and close friend Carl Gegenbaur (in 1877, when Gegenbaur had moved from Jena to Heidelberg). Leche became the first professor of Zoology at (what is now) the University of Stockholm. His research clearly followed in the footsteps of Gegenbaur and mostly concerned vertebrate comparative anatomy, in particular tooth morphology. He was also chairman of the Swedish Society for Eugenics (Svenska sällskapet för rashygien), which was founded in 1909, and politically radical (left wing social democrat). Leche was a member of the board of the Stockholm Workers Institute (started by Anton Nyström). Maybe the most interesting letter (out of four) from Leche to Haeckel dates from 1911. Leche tries to explain the 1908 Nobel prize incident (detailed in the accompanying article), when the Literature prize went to another professor in Jena, Rudolf Eucken. Haeckel thought that he did not get it because of his materialist world-view. Leche wrote that he knew about this only by hearsay, but that considering the composition of the Swedish Academy, with "a bishop, an emissary, a librarian etc. and only two or three, which can be characterized as poets, although this academy is especially designated to the art of poetry", he is not surprised. He goes on to complain that none of the really important Swedish authors—Strindberg, Heidenstam and Fröding—are members of the academy. "This is exactly what one should expect when conservatives like Retzius make up all the boards". He points out that Retzius is allowed to take part in deciding "no less than 3 Nobel prizes". Haeckel visited Leche's Zoology department in Stockholm in 1897 when travelling to Sweden, Finland and Russia. They also exchanged books and papers. Leche is perhaps the clearest example of how the research programme started by Gegenbaur and Haeckel in Jena was brought into Swedish academia.

Sven Lovén (1809–1895) was a pioneering marine biologist (founder of the Kristineberg marine station) and explorer of the arctic, and professor of invertebrate zoology at the Natural History Museum (Naturhistoriska Riksmuséet) in Stockholm. When Haeckel wrote to Lovén, it was to a well known older colleague and the correspondence is about scientific matters only. Lovén wrote back (3 letters) to thank Haeckel for sending him his beautiful monographs. They also exchanged specimens, and photographs of each other. Lovén also wrote to inform Haeckel that he had successfully lobbied (with his colleagues the zoologist Liljeborg and the palaeontologist Lindström) to get Haeckel elected as foreign member of the Royal Swedish Academy of Sciences (in 1882).

Wilhelm Leche.

Gustaf Retzius (1842–1919) was professor of Anatomy at the Karolinska Institute (the medical school in Stockholm), and a well known neuroanatomist, antropologist and ethnologist. Retzius was wealthy, especially after having married Anna Hierta, and published most of his scientific work in 19 large folio volumes called *Biologische Untersuchungen* (Biological investigations) at Gustav Fischer Verlag in Jena, largely at his own expense. Among Retzius' papers, one also finds descriptions of the dissected brains of scientists, for example the astronomer Hugo Gyldén and the mathematician Sophie (Sonja) Kowalewsky. Politically Retzius became more and more conservative and used his influence against left-wing colleagues, such as Wilhelm Leche.

Haeckel was impressed by Retzius's anatomically detailed work (e.g. on nervous and connective tissue with Axel Key), and of course by the beautiful drawings, which he mentions repeatedly. Retzius wrote 14 letters to Haeckel, and received 6 in return. Retzius praises Haeckel's beautiful illustrations, and it is clear that two researchers for whom images and imagery is important can appreciate each others work. Retzius was enthusiastic about Haeckel's scientific ideas, but did not enter into discussion of them. In 1901, Haeckel started the "scientific society Ethophysis", into which he invited those he viewed as being the top scientists of his time. Of the first 24 scientists invited to become members, Retzius was the only one from Scandinavia. Retzius accepted the invitation. Haeckel and Retzius sent their scientific printed work to each other and exchanged compliments, apparently equally convinced about the great value of their work.

Sven Hedin (1865–1952) was a famous explorer and geographer, and notorious for being "German friendly" and an admirer of Adolf Hitler. We found one letter from Hedin to Ernst Haeckel in the Haeckel Archive. It is dated Stockholm, February 17, 1916. In this letter, Sven Hedin thanked Haeckel for the book *Ewigkeit: Weltkriegsgedanken über Leben und Tot, Religion und Entwicklungslehre* (Eternity: World War thoughts on life and death, religion and evolutionary theory), which he had just received. Hedin was impressed by the "many deep and magnificent thoughts and with the proof that the great scientist yet, despite advanced age, works and thinks just as freshly and brilliantly as always in times gone by. It is an honour and a joy for me to have this reminder of the great age". The first World War was ongoing, and Hedin had a clear standpoint. He wrote "Germany must win—this is a question of vital importance also for us Northern Germans

(”Nordgermanen”). Hopefully great and glorious news will soon arrive”.

From Anton Nyström (1842-1931), left-wing radical, physician and educator, a letter sent on April 9, 1909, is kept in the Haeckel Archive. Haeckel marked the letter ”Antichrist!” As a trained systematist, Haeckel often put letters into categories, and labelled them accordingly, upon a quick first reading. But ”Antichrist” was a rare label. In the letter, Nyström presents himself as an ”old admirer and pupil” of Haeckel. Nyström’s book ”Christianity and free thought”, published in Swedish, was to be published in German translation in Berlin. Nyström needed a preface by ”a prominent German scientist and thinker”. He could not think of anyone better suited than Haeckel, with his ”rare combination of exact scientific research and philosophy”.

Then Nyström goes on to describe his struggles with ”theology and the dogmatic teachings of the church”, and how he fights for the ”propagation of the scientific world view” through the Workers Institute (”Arbetarinstitutet”), a ”popular science academy” which he had founded together with other left-leaning intellectuals (like Wilhelm Leche), who wanted to further the education of workers. Nyström then describes the cultural struggle (”Kulturkampf”) between the church and other conservatives, and radicals like himself. He complains that at a meeting he ”once had against me one bishop and seven priests”, but prevailed anyway. ”The effect of the priests on the audience equalled zero”. Nyström also informed Haeckel that a member of parliament had motioned for the separation of church and state, something which finally happened, but only in the year 2000—nowhere near as fast as Nyström would have liked. Obviously Nyström saw Haeckel as an important ally in his ”Kulturkampf”.

This first overview of Haeckel’s correspondence with Swedes shows that Haeckel’s political and philosophical as well as scientific ideas were received with, often, great admiration. We never find severe criticism of Haeckel’s ideas in the letters. Haeckel corresponded with many leading scientists and cultural figures in Sweden, and it is probably the case that not only the philosophical ideas like monism, but also Darwinism, largely entered Sweden via Haeckel’s popular books. The extent of Haeckel’s influence, however, can only be gauged by further studies of the Haeckel reception. ■

Lennart Olsson & Uwe Hoßfeld

Ernst Haeckel and the 1908 Nobel Prize for Literature

Ever since the first announcements of Nobel prize winners more than 100 years ago, these events have caused both tremendous joy among the laureates and deep disappointment among those who have seen themselves as candidates. The Jena zoologist Ernst Haeckel became very disappointed when he heard that the Nobel prize for Literature in 1908 had not gone to him, but to his colleague in Jena, the philosopher Rudolf Eucken (1846–1926). French and Italian newspapers had announced that Haeckel was to be given the prize, and Haeckel had also received telegrams and postcards congratulating him to the prize. German newspapers, however, either said just that the prize had gone to Jena University, or named Eucken as the laureate. Haeckel thought he deserved the prize, and wrote to his friend the publisher Wilhelm Breitenbach on November 30, 1908: “If I were to get the Nobel prize (—which in view of my 50 years of work and according to the often expressed views of colleagues might be justified!—) I would donate the money to the Phyletic Museum.” So Haeckel already knew how he would like to use the prize money!

That the idealist and religious Neo-Kantian Rudolf Eucken got the prize was very irritating for Haeckel, who saw Eucken as an enemy in the struggle to establish his monisn as a “Weltanschaung”. In another letter from December 18, 1908 to Breitenbach, Haeckel wrote: ‘The majority of the Nobel commisson preferred Eucken as an advocate of the higher “Idealism” and pure “Humanities”, while I, as advocate of the lower “Materialism” and one-sided “Science”, was turned down. Here most people (who know Eucken) find his coronation incomprehensible’. In a letter from December 29, 1908, to his friend and biographer, the popular science writer Wilhelm Bölsche, Haeckel wrote: ‘I heard from Stockholm, that there had actually been a kind of competition in the “Nobel commission” between myself and my colleague Rudolf Eucken. But the latter von as an advocate of “Idealism” and a priest of the “higher spiritual world”, while I as advocate of “Materialism” and slave to the “lower Nature” had to lose. Eucken is a popular rhetorician and “promoter of the christian religion”; but until now he has not brought any new ideas into philosophy’. The fact that Haeckel did “daily receive enthusiastic letters of congratulation and telegrams from France and Italy”, did not make him happier.

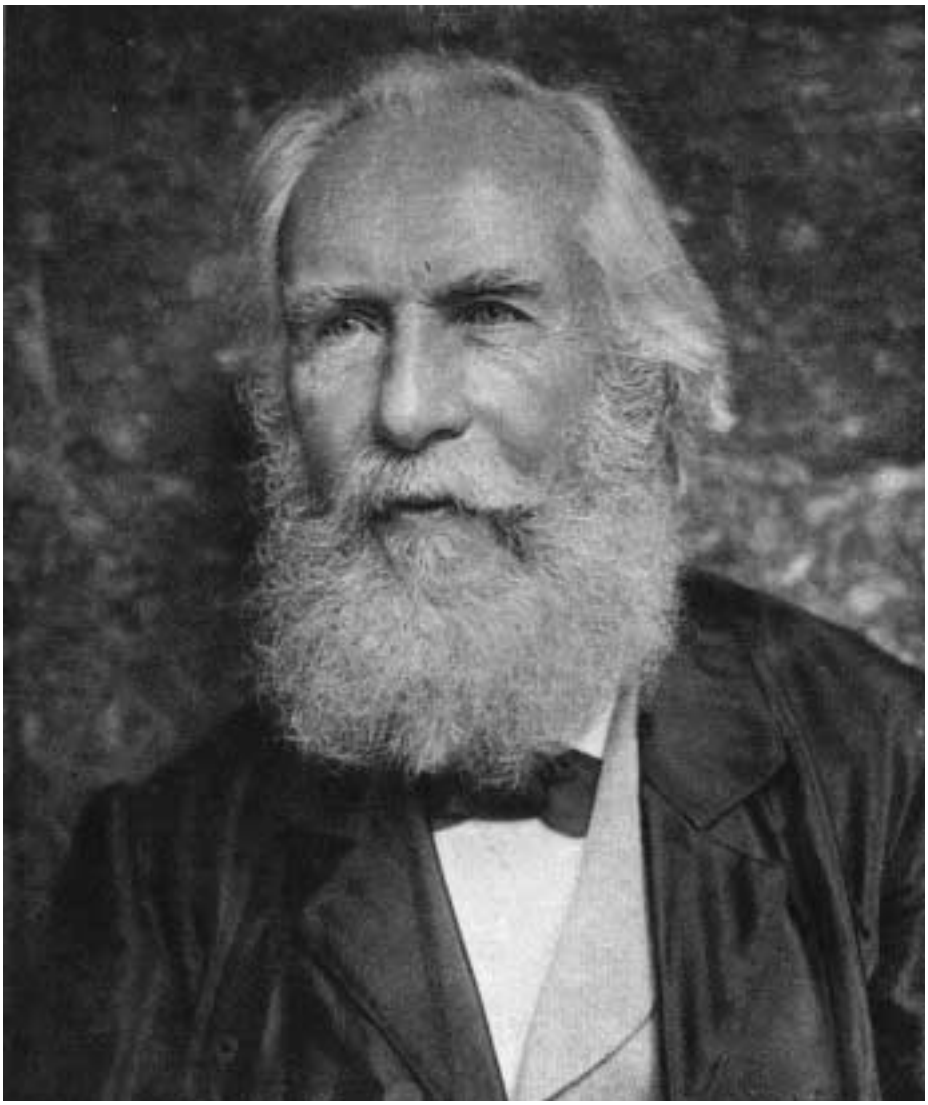
Heackel’s view is incorrect in that he was actually not nominated for a Nobel prize in literature, so the Nobel committee of the Swedish Academy did not discuss him in deciding whom to award the prize to in 1908. Among the sixteen nominees, Selma Lagerlöf and Algernon Charles Swinburne were the top candidates initially. Lagerlöf had been suggested repeatedly in the preceding years, but was blocked by some Nobel committee members who disliked her work. She finally got the prize in 1909. The Nobel committee could not make up its mind, as there were also members who were opposed

Eucken's invitation to Haeckel

to choosing Swinburne. Awarding the prize to another Englishman the year after Kipling had received it was politically difficult. In this situation, Eucken was suggested as a compromise solution by Vitalis Norström, the professor of philosophy at Gothenburg University. Norström admired Eucken's philosophical writings, and Eucken's idealism resonated well with the formulation in Alfred Nobel's will that the Literature prize should go to a work written "with an idealistic tendency". The Swedish Academy commissioned a 34 pages long review of Eucken's work by the Stockholm philosopher C. Y. Sahlin. In the end Eucken got the prize for the "warmth and strength in presentation with which in his numerous works he has vindicated and developed an idealist philosophy of life." That the literature Nobel prize was awarded to Eucken in 1908 has been described as "the biggest faux pas in the history" of the Literature Nobel prize (Lång 1984).

In the Haeckel Archive in Jena, there is a postcard from Eucken dated January 19, 1909, in which "Professor Eucken and wife kindly ask Excellency Haeckel to come and look at a torchlight procession together with them on Thursday the 21st, at 8.45 in the evening". A local newspaper (*Jenaische Zeitung*) reports on January 20, 1909 that Eucken has invited the students to take part in a torchlight procession to celebrate his "exceptional honor". We can only speculate about Haeckel's reaction. It is not known if Haeckel visited Eucken to celebrate the Nobel prize he thought he deserved to get himself. Haeckel's conviction that his materialism was unpopular among leading members of the Swedish Academy receives support in a letter from the Director of the Academy, Harald Hjärne, to academy member Esaias Tegnér jr dated November 27, 1908. Hjärne wrote that Eucken is needed "as a counterweight to the demonstrations in support of his Jena colleague Haeckel at the Linnaeus celebration here in Uppsala". In 1907, during the celebration of the 200th anniversary of the birth of Linnaeus, Haeckel had lectured to an enthusiastic audience and Hjärne hoped that Eucken's lectures in the spring of 1909 would have a benign influence on the students, whom some quarters try to convince, that only materialism and anarchy will do in our "Modern" times (Espmark 1986: 181).

Eucken, the only Nobel prize winner at the almost 450 years old Jena University, although no fiction author, was at least a leading idealist, thereby fulfilling this demand in Alfred Nobel's will. Eucken was the second German philosopher (after Mommsen in 1902) to receive the Literature Nobel prize. Since then, five Germans have been honoured in this category (Paul Heyse 1910, Gerhard Hauptmann 1912, Thomas Mann 1929, Heinrich Böll 1972 and Günther Grass 1999). They have all been fiction authors, not necessarily writing "with an idealistic tendency". At least according to the documents preserved in Swedish archives, Haeckel was never considered for the Literature Nobel prize. ■



Ernst Haeckel in 1910

Uwe Hoßfeld, Rosemarie Nöthlich & Lennart Olsson

Further Reading

Espmark, K., *Det litterära Nobelpriset* (Stockholm: Norstedts, 1986).
Feldman, B., *The Nobel Prize: A History of Genius, Controversy, and Prestige* (New York: Arcade Publishing, 2000).
Lång, H., *De litterära Nobelprisen 1901–1983* (Höganäs: Bra Böcker, 1984).
Svensén, B., *Nobelpriset i litteratur: Nomineringer och utlatanden 1901–1950: Del I* (Stockholm: Svenska Akademien, 2001)

Acknowledgment

The research of U. H. and L. O. in Sweden was supported by a grant from the Center for History of Science of the Royal Swedish Academy of Sciences. We would like to thank the personnel at the Center for History of Science for invaluable help.

Uwe Hoßfeld & Rosemarie Nöthlich
Institut für Geschichte der Medizin, Naturwissenschaft und Technik
Ernst-Haeckel-Haus
Friedrich-Schiller-Universität
Berggasse 7
D-07745 Jena, Germany

Lennart Olsson
Institut für Spezielle Zoologie und Evolutionsbiologie mit Phyletischem Museum
Friedrich-Schiller-Universität
Erbertstr. 1
D-07743 Jena, Germany
e-mail: b1olle@uni-jena.de

News at the Office

Swedish Life Science After 1900

Research and development in the area of biology is currently attracting enormous attention: genomics, proteomics, biotechnology, genetics, cloning, stem cells—these are some of the buzz words that signify seemingly endless possibilities for industrial and medical developments and at the same time a set of problems that include environmental and ethical issues on a scale that is difficult to even gauge. Much work on biology in the social sciences and humanities has been carried out in order to improve the possibilities for industrial development and to facilitate the handling of risks and ethical issues.

A new research project at Uppsala University, "Boundary-crossing science: Swedish life science after 1900" (financed by the Swedish Research Council) aims at a broader study of knowledge production in the area of biology, focussing not on innovation or ethics but on the system of knowledge production in a historical context. A principal point of departure for the project is that knowledge is not produced at academic or industrial centres and disseminated to the rest of society, but rather that new knowledge is co-produced by many actors, including industry, university scientists, the school system, amateur scientists, media, and policy makers. By taking seriously the suggestion of Thomas F. Gieryn and others that boundaries between science and non-science, or between different disciplines, are rhetorical constructs and therefore obscure important mechanisms that affect knowledge production, the participants in the project want, in a number of case studies, to investigate the development of life science as a social process.

Sven Widmalm focuses on early biochemistry at Uppsala, in particular on The (Theodor) Svedberg and the development of new technologies for protein research. Widmalm uses a network approach in order to investigate how these technologies may be seen as a product of overlapping industrial and scientific networks and how these same networks helped spread the technologies. Jenny Beckman studies the development of systematics during the 20th century, focussing on nomenclature and the relationship between professionals and amateurs. Anna Tunlid at Lund University studies the emergence of molecular biology after 1950, focussing on policy discussions concerning the relations between "classical" and the "new" biology.

An important ambition of the project is to help facilitate contacts between researchers working on modern biology within the tradition of Science and Technology Studies. A network of Swedish researchers in this area is being developed; one conference has been arranged, and a publication emanating from this conference is forthcoming in 2004. For more information, please contact any of the project participants.

sven.widmalm@idehist.uu.se
jenny.beckman@idehist.uu.se
anna.tunlid@kult.lu.se

The Hans Rausing Lecture

The recently established Hans Rausing Chair in History of Science has caused different new activities such as symposias, stipends, and guest lectures.

Every year there will be a Hans Rausing Lecture by a specially invited international scholar. The first invited was Professor Sheldon Rothblatt, University of California at Berkeley. On 6 December 2002 he gave his lecture "The University as Utopia" and was welcomed by Rector Magnificus, Professor Bo Sundqvist. Afterwards a dinner was arranged to honour Professor Rothblatt and his wife Barbara.

Professor Sheldon Rothblatt, the first Hans Rausing Lecturer.

Next Hans Rausing Lecture will be held December 8, 2003, by Professor William R. Shea, The Galileo Chair of History of Science at Padua University, Italy. His lecture will have the title, "Gallileo in Rome".

*

Every year a Rausing Symposium will be held in order to establish contact with scholars at different Swedish universities, but also to connect people from the Scandinavian countries and other parts of the world. The first Rausing Symposium was held 7–9 February 2002 under the theme of "Natural Science and Nationalism" and included 35 participants. Among invited speakers were Professor Evert Baudou, Umeå University, Dr Peter Kjaergaard, Aarhus University, Professor Gunnar Broberg, Lund University, and Professor Svante Lindqvist, Nobel Museum, Stockholm.

Rausing Symposium No. 2 was called "Modern University History" and was arranged 5–7 December 2002 with 40 participants. Invited speakers included Dr Jan-Eivind Myhre, Oslo University, Dr Henrik Björck, Gothenburg University, Dr Gustav Holmberg, Lund University, Professor Sverker Sörlin, Stockholm, and Dr Victoria Höög, Lund University.

Rausing Symposium No. 3 was called about "Modern Bioscience" and arranged by Dr Jenny Beckman and Dr Sven Widmalm. Among invited speakers were Dr Kjell Jonsson, Umeå University, Dr Anna Tunlid, Lund University, Professor Thomas Söderquist, Copenhagen University, Dr Anna Dubois and Dr Frida Wennerström, Gothenburg University, Dr C.F. Helgesson and Dr Corinna Kruse, Linköping University. Around 20 participants.

*

The first Rausing Stipend was awarded to Dr Christer Nordlund, Umeå University, who spent six months during the Spring 2003 as a guest scholar at the Office for History of Science in Uppsala.

*

The Office for History of Science has started a new series of booklets, called Salvia småskrifter. The name refers to Lars Salvius (1706–1773), who was the first scientific book printer and for many years employed by the Royal Swedish Academy of Sciences in Stockholm, but also the plant Salvia pratensis. The series contains so far three numbers:

1. Tore Frängsmyr, *Om Vetenskapshistoria: Installationsföreläsning den 7 maj 2002* (Uppsala, 2003). ISBN 91-506-1698-6.

2. Sheldon Rothblatt, *The University as Utopia: The Hans Rausing Lecture 2002* (Uppsala, 2003). ISBN 91-506-1699-4.

3. Tore Frängsmyr, *Avdelningen för Vetenskapshistoria 1982–2002* (Uppsala, 2003). ISBN 91-506-1700-1. ■

Recent Swedish Dissertations

Interpretations of Sex and Individuality

The 19th century is often described as a period when sexual differences were strongly accentuated in medical interpretations. While this is not an inaccurate description, it is in need of greater nuance. For one thing, notions of the male are usually forgotten in the process. As the female body by 1800, to a greater extent than before, became associated with reproduction and biological constraints of various kinds, representations of the male body also changed. According to medical texts published in Sweden in the 19th C, men's blood, bones, breath and digestion bore witness to their "freedom" from a forced sexual body. Physically, the male constituted an abstract, cultivated and highly differentiated individual. The male body was described as clearly fit for public and political life, which legitimized male claims to a monopoly on power as well as the doctrine of "the separate spheres" in 19th century bourgeois society.

A closer examination of more limited discussions in medical texts and advice literature reveal that representations of the male and female body were remarkably unstable and marked by tensions and contradictions. During the Romantic era of medicine in Sweden during the 1830's and 40's, the way sex and individuality in the body were valued were totally different from the description above. Reproduction and physical desires were characteristic, according to a number of medical men, of highly developed creatures, connected to God, society, and culture, whereas sexless species, immature children and "lower" peoples were seen as materialistic and focused only on their own individual development. Discussions regarding female puberty and single men further reveal the unstable polarization between sex and individuality as well as culturally constructed differences, not only between men and women, but also between classes, age groups, single and married persons, cultivated and non-cultivated peoples. Notions about nature/culture, tradition/progress, female/male, sex/individuality were not organized into stable dichotomies—rather they constituted an unstable body of representations.

Maja Larsson, *Den moraliska kroppen: Tolkningar av kön och individualitet i 1800-talets populärmedicin* [The Moral Body: Interpretations of Sex and Individuality in 19th Century Popular Medicine], (Hedemora, 2002). ISBN 91-7844-617-1.

The Social Practice of 19th C Chemistry

Mutual Favours is a study of the creation of chemistry as a science in eighteenth-century Sweden. It is argued that the chemists in the study participated in a network for exchange of scientific facts and all kinds of favours, in which science was both conducted, negotiated and created. A number of relationships between chemists are analyzed with regards to two central eighteenth-century institutions: the patron-client relationship and the egalitarian ideal of reciprocity articulated in the eighteenth-century Republic of Letters.

In the first half the background to the success of Swedish chemistry is sketched out. It is discussed which groups supported chemistry and for what reasons. There is a discussion of the theoretical and methodological changes that were initiated by Torbern Bergman when he took over the chair of chemistry in Uppsala. Bergman's attempts to marginalize his two major opponents, Johan Gottschalk Wallerius, the previous holder of the Uppsala chair and Gustav von Engeström, the head of the Board of Mines laboratory in Stockholm, are also analyzed.

In the second half the focus shifts to the interaction of university chemistry with industry. It is shown how industrial processes gradually came to be redefined as a kind of "coarse chemistry", a process which benefited both engineers employed at industrial installations and university chemists. The many themes explored in the study are brought together in an analysis of Carl Wilhelm Scheele's adoption into the network of Swedish chemists. The dissertation concludes with a survey of the more general conclusions.

Hjalmar Fors, *Mutual Favours: The Social and Scientific Practice of Eighteenth-Century Swedish Chemistry* (Uppsala, 2003). ISBN 91-506-1669-2.

Political Science and Scientific Politics

Oskar Petterssons dissertation deals with the relationship between politics and social science. It studies the field of political science in Sweden around 1900 by analyzing two political scientists: Pontus Fahlbeck (1850–1923) and Rudolf Kjellén (1864–1922). Fahlbeck was Professor of Political Science 1889–1915 in Lund. Kjellén was Professor of Political science 1901–1922 in Gothenburg and Uppsala.

Both Fahlbeck and Kjellén were also active conservative politicians. The purpose of the dissertation is to analyze how they attempted to change political science by emphasizing its significance to society, and how they simultaneously attempted to use that science to influence politics and society in various ways. I formulate the concept of conservative modernists, to describe how Fahlbeck and Kjellén utilized modern social sciences to try to preserve a conservative society.

The thesis consists of four case studies. The first deals with how Fahlbeck and Kjellén described their version of political science, its relation to other disciplines, its utility for society and its position of objectivity. The second and third case studies concern Fahlbecks and Kjelléns attitudes toward the democratization of society. In the fourth case study, I explore the discussions that ensued from a proposed political science exam.

The analysis shows that Fahlbeck and Kjellén consciously strove to prepare the way for a sphere of social sciences. Their vision was a – in their eyes - modern political science that could lead and influence politics to minimize the social and ideological conflicts in society.

Oskar Pettersson, *Politisk vetenskap och vetenskaplig politik: Studier i svensk statsvetenskap kring 1900* [Political Science and Scientific Politics: Studies in Swedish Political Science around 1900] (Uppsala, 2003). ISBN 91-506-1660-9.

The Birth of the Social

Frans Lundgrens dissertation *Isolating Citizens* is a study of the problem definitions and the governmental rationality of new activities aimed at reforming criminals, the poor and workers in Sweden during the mid-1800s. Three case studies analyse the solitary confinement penitentiary, the district visiting poor relief and the first educational societies for the lower classes, the so called *bildningscirkeln* for workers and artisans. A fourth case study analyses the institutionalisation of crime statistics and prison photography.

It is argued that these different activities were part of the historical process that have been characterised as "the birth of the social" and the new governmental rationality, "liberal governmentality". The initiators presupposed that civilisation had negative behavioural consequences among the lower classes. At the same time they expressed optimism regarding new fostering instances and how such could be integrated to a mutually supporting network. The aims of the new reformatory principles were regularly described as capacities for self-reflection, self-regulation and self-control among the lower classes.

The study shows that the new activities localised and defined a new set of problems and questions in terms of the social. "Society" was what was to be protected as its "inner" relationships were described as going through comprehensive historical changes. The ambition to lead, manage and organise the behaviours and values of the lower classes was even more far-reaching than was the desire to exert direct discipline. Order, well being and morals were integrated in a field of problems where effects on the lifestyles of the lower classes constituted the ultimate authoritative body.

Female prisoner photographed 1860 at the new penitentiary in Malmö.

Frans Lundgren, *Den isolerade medborgaren: Liberalt styre och uppkomsten av det sociala vid 1800-talets mitt* [Isolating citizens: Liberal governmentality and the birth of the social in mid-19th century Sweden] (Hedemora, 2003). ISBN 91-7844-626.

The Gothenburg Exhibition of 1923.

The Making of Industrial Heritage

The empirical focus of Anders Houltz dissertation is the Jubilee Exhibition in Gothenburg in 1923 – with more than four million visitors the biggest exhibition ever held in the Nordic countries. In its wide-ranging displays of both historical and contemporary material, technology and technological artifacts occupied a central position. The technology was by various means revealed, highlighted, and elevated. The exhibition could be compared to a temple of technology, where technology represented conceptions of both the past and the future.

The overall purpose of the thesis is to discuss the use of history and the view of technology as factors in a critical phase of the modern project in Sweden. More specifically the intention is to analyse the way in which the Gothenburg Exhibition, with its historical references and technological metaphors, constituted a resource for the implementation of the modern project. The exhibition both reflected and contributed to changes in two areas that were essential to the modern project. One is the view of museums and cultural heritage, the other the introduction of new principles and methods in modern industry. By analyzing these processes as complementary parallels in the modernization of society Holtz gives examples of how history is created and how it is used and fulfils important functions.

Starting from the technological artifacts exposed in the exhibition, the thesis discusses changes taking place in Swedish society in a large perspective. Visual material such as photographs, drawings, and plans play an important part in understanding the exhibition and its contents. The theoretical approach is inspired by cultural theory dealing with the use of history as a means of creating social community, one important concept being whar Eric Hobsbawm called "invention of tradition".

The study shows how an industrial heritage was established after the Great War, and that this process was closely related to upheavals which were currently taking place in Swedish industry and society. Rationalization, professionalization and scientific methods were advocated in industry, but also in the expanding cultural heritage sector. The study also shows that the linear approach introduced in industry must be understood as a part of a larger concept of history, based on linearity. The Gothenburg exhibition is understood as an event for social and cultural mobilization, suggesting a common past and a common path to the future.

Anders Houltz, *Teknikens tempel: Modernitet och industriarv vid Göteborgsutställningen 1923* [A Temple of Technology: Modernity and Industral Heritage at the Gothenburg Exhibition of 1923] (Hedemora, 2003). ISBN 91-7844-625-2.

The debate on satellite broadcasting, cartoon from the 1980s. Among the messages: "downthrow the electronic feudalism", "let the silent majority speak", "emancipate the audience".

Uppsala Newsletter is usually published twice a year by the Office for History of Science at Uppsala University. Its aim is to give surveys and information about our field in Scandinavia. Although there is no Scandinavian society for history of science, we have correspondents in most university towns and through them we try to reflect ongoing research.

The Newsletter will be sent without cost to anyone interested. Inquiries and information should be sent to the Editor/ Assistant Editor.

UPPSALA NEWSLETTER
History of Science
Editor: Tore Frängsmyr
Assistant Editor: Frans Lundgren
Office for the History of Science
Uppsala University
Box 2104
S-750 02 Uppsala, Sweden
Tel. (0)18-471 15 77
www.vethist.idehist.uu.se
Printed by Wikströms, Uppsala, 2003

Conflicts on Nordic Satellites

In her dissertation, Nina Wormbs analyses the satellite projects Nordsat and Tele-X. A guiding question is how a large public project on new technology, marred with conflicts, is carried out. The actor-network method (Callon, Latour & Law) is used because it takes complexity and uncertainty into consideration, because it avoids a priori divisions and distinctions, and because it usefully stresses how the relation between content and context is continually formed and changed.

Nordsat began as a cultural project, aiming partly at strengthening Nordic identity by means of direct broadcasting television. However, it met severe criticism for facilitating the flow of cheap foreign (read American) programmes and for costing too much. As the Nordsat project was delayed by a number of commissions, issued by the Nordic Council, the Swedish Space Corporation managed to launch a Swedish telecom-satellite project – Tele-X, using mainly industrial-policy arguments. During the 1980s these two Swedish/Nordic projects evolved in parallel and in conflict. By the end of the decade Nordsat died and Tele-X was launched.

The study points to a number of areas in which large public technological projects can meet challenges and cause conflicts. The strong interpretive flexibility was characteristic for the projects and played out in differing views among users and producers of the satellites, for example between the Nordic Telecom Administrations and the Swedish Space Corporation. The severe conflicts were of great importance for the outcome and points to the power of emotional engagement in technological projects.

Nina Wormbs, *Vem älskade Tele-X?: Konflikter om sateliter i Norden 1974–1989* [Who loved Tele-X? Conflicts on Satellites in the Nordic Countries 1974–1989] (Hedemora, 2003). ISBN 91-7844-640-6.

The Anatomy of Popular Biology

Popular science became a field where different actors published books and articles in ever growing numbers during the early decades of the 20th century. In his dissertation, *Biology in the Agora*, Kaj Johansson concentrates on the many forms, arenas and purposes of popular biology at this time.

Johansson argues that popular science should be regarded as a topic highly relevant for a historiography of science that seeks to describe the development of the sciences and their significance. The chief aim of the thesis however, is to demonstrate the fruitfulness of Ludwik Fleck's philosophy of science for stimulating a number of new view-points in the study of popular science and popularisation.

Taking its point of departure in the question, "What is popular science?", the dissertation articulates a comprehensive theoretical framework for adressing problems regarding the place of popular science and its multiple functions, as well as necessary preconditions needed for popularisation. The historical examples are taken from popular biology texts, both by Swedish authors and in translation. These illustrates and problematises a common understanding of the form and function of popular science as a literary genre.

Kaj Johansson, *Den torgförda biologin: Studier i populärvetenskapens problem och tematik* [Biology in the Agora: Studies on Problems and Themes in Popular Science] (Göteborg, 2003). ISBN 91-628-5828-9. ■

New titles in the Stella working papers series.

No 21. Ragnar Insulander, *Sven Nilsson och ornitologin i Sverige* (Uppsala, 2002), 63 pp.

No 22. Jakob Kihlberg, *Att organisera det sunda samhället: Magnus Martin af Pontin och Carl Trafvenfelt om etiologi och hälsans ordning* (Uppsala, 2002), 41 pp.

The Stella working papers can be ordered from The Office for History of Science at Uppsala University. ■

Wikströms, Uppsala 1031257
Tryckpak. Licens 341 051