EUROPEAN SCIENCE FOUNDATION
SETTING SCIENCE AGENDAS FOR EUROPE

Exploratory Workshop Scheme

Standing Committees for
- Humanities (SCH)
- Life, Earth and Environmental Sciences (LESC)

ESF Exploratory Workshop on

Veterinary Knowledge: Between Human Medicine and Agriculture, 1870-1970

Paris, France, 15-18 May 2008

Convened by:
Delphine Berdah, Jean-Paul Gaudillière[1] and Pierre-Benoît Joly[2]

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Co-sponsored by

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L'ECOLE DES HAUTES ETUDES EN SCIENCES SOCIALES
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CERMES

Executive Summary

The workshop occurred as we, organizers, had thought it would, thought one of us, Pierre-Benoit Joly (co-convenor of the workshop) had major personal problems which prevented him to attend the first days of the workshop. However, the global organization of the workshop was not modified as he was able to comment the various contributions (as papers were pre-circulated) during the round table discussion of the last session.

After the meeting opening (Thursday, May the 15th, 2pm), including both an introduction to the meeting scientific goals by the organizers and a brief presentation of the ESF by the ESF representatives (Dr. Constantin Doukas for the ESF Standing Committee for Life, Earth and Environmental Sciences and Dr. Gislí Pálsson for the ESF Standing Committee for the Humanities), the first session "Boundary knowledge: the veterinary profession and the control of meat" chaired by Keir Waddington began with Peter Koolmees's talk followed by Andrew Gardiner's talk. After the coffee break, David Smith's talk and Martin Rémondet's talk conclude the session, before a general discussion focused on the various forms of knowledge and expertise veterinarians developed and mobilized in European countries through their professionalization process. Then, participants had some time to go to their hotels before joining in the first conference dinner at the Restaurant 'Le Marsa', not far from the hotels and the conference place, in the 5th arrondissement of Paris.

The second session of the workshop, "Bacteriological technologies and veterinary practice", chaired by Volker Hess, opened on Friday morning with Christoph Gradmann's talk followed by Axel Huentelmann's talk. Maurice Cassier's and Delphine Berdah's talks followed after the coffee break, before a general discussion on the transformation of the field through the use of laboratory techniques and technologies and the role of the Industry. This general discussion went on during the lunch, at the Restaurant 'Chez Fernand', which was in front of the conference place. The third session, "Surveillance and control of animal contagious diseases" chaired by Barbara Orland, opened after lunch. It began by a 'joint-presentation' by Neil Pemberton and Michael Worboys, followed by Abigail Woods's talk. After the coffee break, the session closed with a talk by Karen Brown and a talk by Marc Barbier, followed by a general discussion.

The evening was free, but for those of the participants who wished to continue the discussions, a dinner in a restaurant, Les Charpentiers, (in the 6th arrondissement of Paris) was organized by the convenors.

The latest session, "The farm and the clinic: reproduction and animal modelling" chaired by Karen Rader opened the following morning, with Helen Blackmann's talk, followed by Jean-Paul Gaudillière's talk. After the coffee break, the latest presentation was given by Robert Kirk, followed by a general discussion about veterinary knowledge, the control of nature through the valuation of animals and the management of risk.

After the lunch held at the Restaurant 'Chez Fernand', the debates of the afternoon were organized into a round table session which enlarged the scope of the sessions through the global comments of Pierre-Benoit Joly, Karen Rader, Michael Worboys and Philip Lowe, who accepted to comment the conference from an external point-of view (as the Chair of the UK Defra's Vets and Veterinary Services Working Group).

Then, the three convenors, Jean-Paul Gaudillière, Pierre-Benoit Joly and Delphine Berdah, discussed the future perspectives of the workshop with all the participants, which should lead to the publication of the contributions in a special issue of a Scientific Journal in History of Science, Technology and Medicine, and closed the meeting, thanking the participants for their contributions.

Scientific Contents of the Event

Background

The history of veterinary profession and more precisely the history of veterinary knowledge is an under-researched field in general history and in the history of science. The history of veterinary medicine raises important questions, which remains to be investigated, whether considering the sociology of professions, the history of knowledge transmission and acculturation, the history of science and technologies, the history of food production and consumption, or the transversal question of expertise. For a decade, researches on veterinary medicine have been launched using the instruments and perspective of general social history as well as those of the history of "science, technology and medicine". They have pointed to new questions and objects, that were at the centre of this workshop.

Scientific content of the event

The exploratory workshop was convened by Delphine Berdah and Jean-Paul Gaudillière from the Centre de Recherche Médecine, Sciences, Santé et Société (INSERM-EHESS) and Pierre-Benoît Joly from the research unit Transformation Sociales et Politiques du Vivant (INRA). It gathered European historians and sociologists who have contributed to our understanding of the transformation of the veterinary profession, its expertise, and the roles it performed in the development of modern industrial agriculture. These questions are important for anybody interested in biotechnologies, in the transformation of the living, of the way we use it and the way we think about it.

The workshop was made possible by recent studies in history and sociology that have opened up new issues in studies of knowledge and expertise at the boundary between agriculture and medicine. Up to very recently, veterinary history has remained a prerogative for veterinarians. Whether they provide a general survey of the field or are dedicated to one institution – such as veterinary schools, state veterinary administration or military services – these studies are often very well documented and remain a precious source of information. However, they do not discuss the social history of the profession and tend to adopt a subjective and "positivist" point of view, focusing both on major "events" and on great personages, such as Claude Bourgelat, who founded the first veterinary school in Europe in 1762, or John McFadyean and Edmond Nocard who were leaders of veterinary bacteriological sciences in the 1890s, paving thus the path towards success, centuries after centuries.

As an effect of this insider approach, veterinary knowledge and profession in the 20th century have up to very recent time received little attention. This is unfortunate as the late 19th century initiated major changes in the animal sciences and in the practice of agriculture, which resulted in the definitive rupture between the empirical knowledge of farriers and the expert knowledge of veterinarians. The 20th century thus linked the "scientification" of the profession with the modernization and industrialization of agriculture. This long-term transformation culminated in the decades after World War II with the massive implication of and the veterinarians as partners in the rise of productivity and the global improvement of production. After the 1970s, new challenges have emerged with the massive introduction of biotechnologies, the claimed shift from quantity to quality in agricultural production or the emergence of sanitary risks as major categories of research and targets of policy. These new challenges raise the question of the diverse "regimes" of veterinary expertise that the workshop sought to investigate.

The plan of the workshop was to focus on four questions that provided the framework for its program: a) the problematic construction of the profession and its relation to the medical

profession; b) the control of epizootics as veterinarians' first field of expertise linked to state sanitary regulation; c) the laboratory revolution in medicine and its consequences; d) veterinary expertise and the development of biotechnology, industrial farming and the food industry. Without trying to describe individual contributions, which will be made available in a future publication, one can summarize the dynamics of the discussions along two main lines of thought.

The first set of issues is bound to the question of profession, a recurring problem in the historiography of medicine and allied sciences. The veterinary world is no exception. All the more so as veterinarians have reputedly suffered from a dramatic lack of recognition, up to the Second World War. Their strategies for professional recognition combining inclusion and exclusion – exclusion of their rivals (farriers and empiricists), inclusion of "skilled men" into a corporation of practitioners trained in schools and universities – have had an important function. Problems of veterinary school structure, teaching programs, or even on the administrative regulation of the profession, i.e. the long absence of a professional monopoly as well as the various legal arrangements organizing the care of animals have received some attention. The workshop thus addressed the making of the profession from two angles: the roles of veterinarians and their relation to physicians.

Rather than mapping the presence or the absence of the long-sought professional monopoly, the workshop approached the question of profession through a different angle, insisting on the various roles veterinarians have accepted or looked for, on the collective building of identity, on the values and the visions of animal diseases they have defended. The general difficulty at finding a place for themselves on the farm that seemed to have characterized veterinary private practice in the early 20th century was smoothed by the development of "public activities" beginning – in some European countries but not all – with the control of epizootics and meat inspection. A few authors have considered how the issue of contagious animal diseases control affected the role and status of the 19th century veterinary profession even if the regulations that were adopted after the invasion of cattle plague in 1866 were unevenly applied and resulted neither in the systematic search for veterinary advice nor in the creation of significant bodies of state veterinarians. During the second half of the century, veterinarians started to explore alternative roles among which two were singled out, namely the mobilization of veterinary expertise in the food industry on the one hand and the rise of pet care taking in urban, but not only urban, veterinary practice. These maybe not entirely new roles are not only raising questions about the self-identity of the veterinarians (for instance the often mentioned rising number of women vets) but reflect changing corpuses of knowledge and changing targets of intervention.

The workshop underlined the fact that the question of the control of epizootics by veterinarians remained central in the 20th century, but insisted upon the need to insert it as well as the other types of veterinary activities in the more global context of the "animal economy". The boundary between veterinary employed in the duty of the state and those opening a practice has thus been shifting according to regulatory measures but more profoundly following the deep transformations the industrialization of farming, the creation of national food markets or the growth of agro-business firms induced. Within this history veterinarians have not been the passive recipients of or have simply reacted to massive social and economical changes. They have actively constructed the need for the expertise, inventing means of intervention as well as defining the issues these means would be the responses for, and finally transforming the farmers themselves when supporting, helping, and negotiating with the agricultural elites.

The workshop also discussed the ways in which elite veterinarians used the medical profession as model to build up their corporation, for instance by reproducing the criteria of selection and qualification of students used in medical schools, and valuing the models of physiology, histopathology and bacteriological understanding of diseases. The troublesome

relation veterinarians have maintained to what they imagined to be the professional status of physicians is related to what was discussed during the workshop as a “third body problem”. The “patients” of the veterinarians are not their clients, the owner is an obligate third party that makes the choices of calling or not calling an outside healer, of following or not his advice, of curing, selling or killing the sick animal. It is for example only in very recent times that therapeutic intervention could in some circumstance become “competitive”, was accepted by the owner of farm animals as a better form of intervention than culling even if a veterinarian had to be called and paid. Although a permanent one, the reference to the medical model was therefore a mistaken one, an on-going source of tensions and confusions powerfully illustrated by the practical absence and the putative need for specialization.

The hierarchy between various ways of knowing and the circulation of concepts and techniques between animal and human medicine was the second major focus of the workshop. The historiography of medicine has stressed the expansion of the “laboratory”, i.e. settings for the study of physiology, histology and bacteriology during the late 19th century and early 20th century played in the transformation of medicine, establishing experimental medicine as a major pole of expertise. Veterinarians have not only adopted and adapted the new concepts, instruments or practices, they have played a critical role in the birth and development of them, bacteriology in the first place. The workshop thus explored the various links between veterinary and human bacteriology.

Discussions stressed the fact that experimentations conducted at the boundary between human and veterinary medicines had broader consequences on the perception of how human and animal pathologies might be controlled. This was obviously the case with the development – for both experimental and prophylactic purposes – of various sera and vaccines dedicated to veterinary medicine. As an alternative to slaughtering policies, their use was contested. When adopted - as it was the case in France with the anthrax vaccine or with the vaccines against foot and mouth disease or in UK with the vaccine against swine fever – these tools modified the agricultural landscape, somehow turning the farm into an experimental field, modifying the identity of the experts controlling these means. Bacteriology was however not necessarily mobilized as an alternative to stamping out. It became an integral part of a population approach of animal health that juxtaposed epidemiological surveys and bacteriological diagnosis. The centrality of bacteriology in the construction of veterinary expertise had also broader consequences on the definition of public health placing the putative transmission of animal to human at the centre of inquiries and interventions that took place in the home countries but also – it was pointed to – quite often in the colonies, both linked in the making of human public health.

Although uneven (it was less obvious in UK than in France and Germany) the deep commitment of the veterinary elite to the “laboratory revolution” is one more pattern revealing the problematic nature of the veterinary clinic. The phrase ‘veterinary clinical knowledge’ is of permanent use among practitioners as well as outside observers. What emerged out of the workshop’s exchanges is that the constant comparison with clinical human medicine has operated as a screen for understanding veterinary clinic. Although an anatomical understanding of disease causation dominated veterinary knowledge in the early 20th century, there has never been anything comparable to the combination of bed side and post mortem examinations that emerged out of the 19th century hospital system and grounded human pathology with its strong emphasis on both the generality of signs and the biographical trajectory of diseases. Veterinary schools had places called “ hospitals” but it seems that they remained small settings for educational observation.

Reproduction science is certainly the best known case among the other ways in which veterinarians have built expertise in the 20th century. The reproductive sciences have indeed largely beneficiated from the circulation of scientists, instruments, techniques between agriculture and medicine. It is now almost trivial to state that most of the recent innovations in

the management of reproduction originate in biotechnical practices, which were alternatively invented for controlling animal multiplication or in order to remediate the failings of human fertility. Other transfers of knowledge and practices have even less investigated although they might be of critical importance. One good example is nutrition since veterinarians have not only claimed a decisive role in the control of the quality of human food (as illustrated with the veterinary control of killing places and slaughterhouses) or in food policies, but have also been associated – the workshop showed – to the industrialization of food production and animal feeding through agricultural engineering, nutrition standards, industrial feed, rations supplemented with vitamins, hormones or antibiotics. One dimension of this process that retained attention because of its numerous connections to broader social transformation is the mounting importance taken by the category of risk in food policies. As it is the case in public health more generally risk is linked to epidemiological and statistical evidence. It is however equally important to analyze risk as a form of politics. Associated with cost-benefit analysis, enlarged networks of surveillance, low dose effects or the reference to precaution such politics is in the first place a question of having stake-holders negotiate their interests and what is deemed necessary on the basis of an assessment of risk for which veterinary committees have remained central (see for instance the management of the BSE crisis in Europe).

If the social, the political and the economical contexts of the deployment of veterinary expertise have been very much present since the conception of the workshop, participants have stressed the need for a strong cultural approach of veterinary knowledge. This is not only important to bring in forms of knowledge that did not easily find a place in the world of experts: the knowledge of pet owners, the knowledge of local healers, the knowledge of farmers. It is also important to address the changing relationship between humans and animals that is far from being restricted to the mounting role of pets or the recent visibility of concerns for animal welfare. The history of the human/animal relationship is also essential to understand the “old” management of diseases as powerfully illustrated by the multiple reconfigurations of rabies in the 20th century.

The various contributions of the workshop have finally shown the many important insights to be gained from an international comparison of veterinary science developments and professionalization in different cultural, political and economic contexts. Comparative analysis has often been thought of as a comparison between national configurations since the status of veterinarians, their training as well as the regulation and their activities were often defined at that level. The workshop has shown that such comparisons remain important given the variety and contrasted nature of the arrangements of power and knowledge that have been achieved in the various European nations. They should however not be exclusive of other levels of analysis, both more locals and cross-national, especially when taking into account the long-term history of globalization.

Outcomes

The aims of the workshop was to: a) to evaluate the state of research in this area; b) to reflect upon new problems and new objects in a comparative way taking into account the variety of situation and experiences in Europe; c) to establish a network of historians and social scientists engaging in coordinated investigations. All participants agreed that the first two aims have undoubtedly been accomplished during the discussions. Given the number of new and unexplored questions that were raised, the existence of small groups of scholars in – at least - four European countries and the level of competency the recent influx social and cultural history of science and medicine has brought to the field, it has been considered worth keeping a network active. This will be done through collective publications, future gatherings and the collaboration with parallel initiatives like the ESF supported DRUGS networking scheme.

Final Programme

Thursday 15 May 2008

14.00-14.45 Introductions, aims of the workshop, Jean-Paul Gaudillière and Delphine Berdah

14.45-15.00 Presentation of the European Science Foundation (ESF)
Constantin Doukas (Standing Committee for Life, Earth and Environmental Sciences) and Gislí Pálsson (Standing Committee for the Humanities)

15.00-18.30 Session 1 : Boundary Knowledge : the Veterinary Profession and the Control of Meat. *Chair*: Keir Waddington

15.00-15.30 "Constructing a profession. A questionnaire on veterinary practice in the Netherlands in 1846", Peter Koolmees.

15.30-16.00 "Courses for horses (and other animals): British veterinary education and practice before 1950", Andrew Gardiner

16.00-16.30 Coffee break

16.30-17.00 "British overseas meat inspection and the frustration of veterinary knowledge", David Smith.

17.00-17.30 "Towards rationalized cows: The invention of the French national scheme for bovine selection", Martin Rémondet.

17.30-18.30 Comments and General Discussion

20.00 *Dinner*

Friday 16 May 2008

09.30-13.00 Session 2: Bacteriological Technologies and Veterinary Practice.

Chair :Volker Hess.

09.30-10.00 "Man and Cattle in a Laboratory: Robert Koch and Tropical Veterinary Medicine", Christoph Gradmann.

10.00-10.30 "Veterinary medicine in the State-run public health institutions in the German Empire", Axel Huentelmann.

10.30-11.00 Coffee break

11.00-11.30 "Veterinarians and Louis Pasteur's anthrax vaccine: innovating by using", Maurice Cassier.

11.30-12.00 "From repression to advices: veterinarians, serum therapy and the control of foot-and-mouth disease in France in the 1930s", Delphine Berdah.

12.00-13.00 Comments and General Discussion

13.00-14.30 *Lunch*

14.30-18.00 Session 3: Surveillance and Control of Animal Contagious Diseases. *Chair*: Barbara Orland.

14.30-15.00 "Veterinarians, mad cows and other rabid animals", Neil Pemberton and Michael Worboys.

15.00-15.30 "A scientific policy? Contagious disease control at the British Board of Agriculture, 1890-1922", Abigail Woods.

15.30-16.00 *Coffee break*

16.00-16.30 "Meerkats and rabies: veterinary knowledge and environmental management in 20th century South Africa", Karen Brown.

16.30-17.00 "Veterinary knowledge and the socio-technical construction of epidemiological surveillance. A comparative approach of the emergence of BSE cases in three European countries", Marc Barbier.

17.00-18.00 Comments and General Discussion

Saturday 17 May 2008

09.30-12.30 Session 4: The Farm and the Clinic: Reproduction and Animal Modelling *Chair*: Karen Rader.

09.30-10.00 "Francis Hugh Adams Marshall and *The Physiology of Reproduction",* Helen Blackman.

10.00-10.30 "Veterinary Expertise and the DES Controversy in the United States", Jean-Paul Gaudillière.

10.30-11.00 *Coffee break*

11.00-11.30 "Life in a germfree world": Gnotobiotic science and germfree life in the laboratory, on the farm and in the hospital", Robert Kirk.

11.30-12.30 Comments and General Discussion

12.30-14.00 *Lunch*

14.00-16.00 Round Table and Concluding Remarks. *Moderators*: Pierre-Benoit Joly, Philip Lowe, Karen Rader and Michael Worboys.

16.00-16.30 *Coffee break*

16.30-17.30 Discussions on Future Perspectives (ctd)

21.00 *Dinner*

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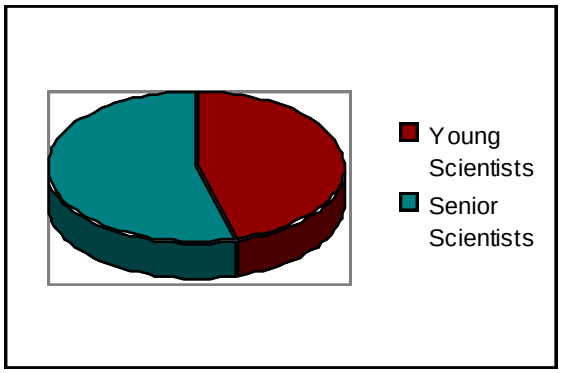
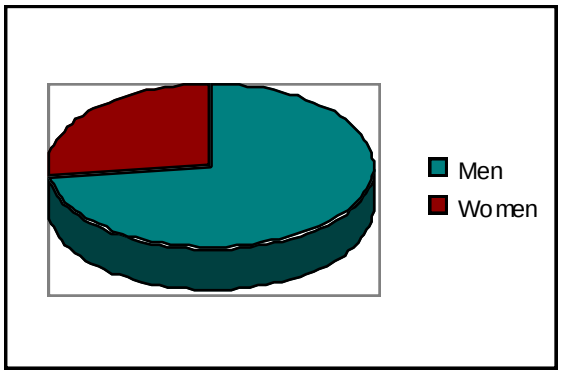
Statistical Information about Participants

Age Bracket:



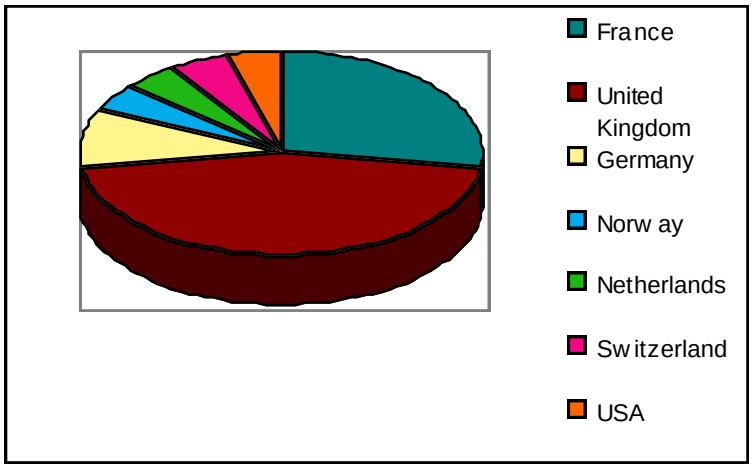
Young Scientists	Senior Scientists
10	12

Gender:



Men	Women
16	6

Country of Origin:



Country of Origin	Number of Participants
France	6
United-Kingdom	10
Germany	2
Norway	1
Netherlands	1
Switzerland	1
USA	1