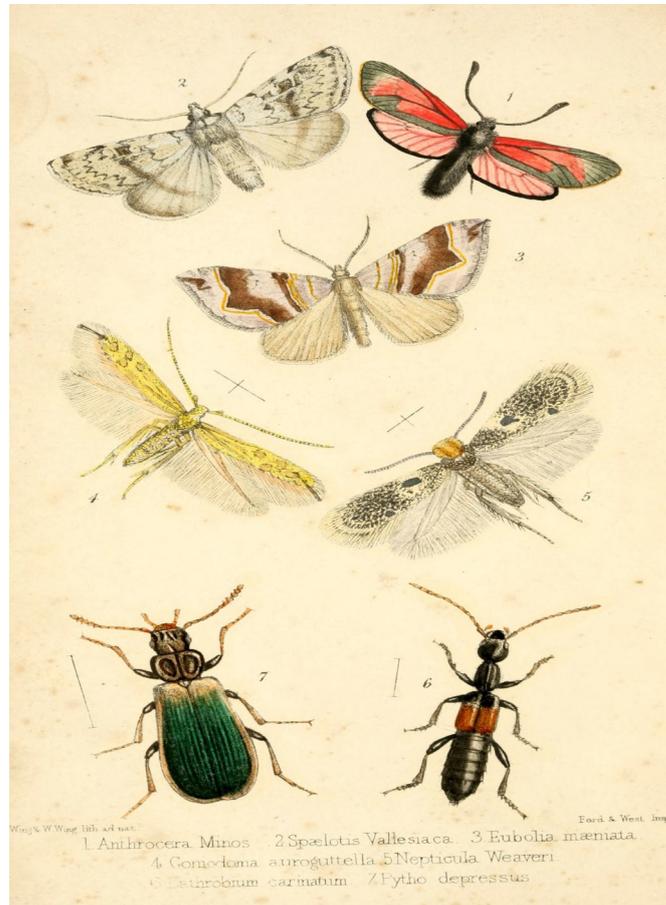


The Material Culture of Citizen Science

Friday 12 May 2017

St Anne's College, Oxford



In recent years, citizen science has flourished in and out of the academy. Across the globe, via projects such as Zooniverse, socially and intellectually-engaged members of the public contribute in crucial ways to the making of new scientific knowledge. Within academic discourse, scholars have embraced the term “citizen science” as a heuristic analytical tool for thinking about activity both past and present. Thus far, historical scholarship on citizen science has tended to focus on people and institutions. This workshop extends the current conversation by examining and reflecting upon the technologies and materials that have enabled citizen science to flourish. What are the practical means that fostered the break down of the divisions between professional and non-professional science? What kinds of technologies and materials can be identified, and how did they shape the interactions among participants and thus, the production, circulation and use of scientific knowledge, in the digital age and before? Citizen Science practitioners, researchers from the Oxford-based project ‘Constructing Scientific Communities: Citizen Science in the 19th and 21st Centuries’, and members of the Max Planck working group “Working With Paper: Gendered Practices in the History of Knowledge” will discuss these questions in historical perspective. In particular, our conversations will concentrate on the use of paper as a central means to mediate between seemingly divergent actors and spaces and those digital technologies that have replaced it.



Arts & Humanities
Research Council

PROGRAMME

Seminar Room 8, Ruth Deech Building

- 9.00—9.20 Arrivals, Coffee & Tea (Seminar Room 9)
- 9.20—9.30 **Introduction**
Sally Shuttleworth, University of Oxford
- 9.30—10.10 **Sociability, Gender, and the Circulation of Hans Sloane's Books**
Lisa Smith, University of Essex
- 10.10 — 10.50 **Pinning Down the Shell: the Lister Sisters and Strategies of Scientific Illustration**
Anna Marie Roos, University of Lincoln
- 10.50—11.20 Coffee Break (Seminar Room 9)
- 11.20—12.00 **Sensing and Presencing Rare Plants Through Contemporary Drawing Practice**
Siân Bowen, Northumbria University and Arts University Bournemouth
- 12.00—12.40 **Crowdsourcing Manuscript Transcription and Metadata**
Victoria Van Hying, University of Oxford
- 12.40—1.40 Lunch (Seminar Room 9)
- 1.40—2.20 **Paper, Everyday Technologies and Citizen Science in the Early Modern English Household**
Elaine Leong, Max Planck Institute for the History of Science
- 2.20—3.00 **Making Model Citizens: Papier-Mâché Anatomical Models and Reform in the Nineteenth Century**
Anna Maerker, King's College London
- 3.00—3.40 **The Sympathy of a Crowd: Periodicals and the Practice of Nineteenth-Century Natural History**
Matthew Wale, University of Leicester
- 3.40—4.10 Coffee Break (Seminar Room 9)
- 4.10—4.50 **Orderliness, Citizenship, and the State's Paperwork: At-Home Compilation for the Prussian Census, 1871-1910**
Christine von Oertzen, Max Planck Institute for the History of Science
- 4.50—5.30 **Aluminum, Cardstock, and Silicon: Materialities of Participation in U.S. Bird Banding**
Etienne Benson, University of Pennsylvania

Participants List

Kira Allmann	University of Oxford
Geoff Belknap	University of Leicester
Etienne Benson	University of Pennsylvania
Louise Bezuidenhout	University of Oxford
Siân Bowen	Northumbria University and Arts University Bournemouth
Berris Charnley	University of Oxford
John Christie	University of Oxford
Gowan Dawson	University of Leicester
Sally Frampton	University of Oxford
Emily Hayes	University of Exeter
Robert Iliffe	University of Oxford
Elaine Leong	Max Planck Institute for the History of Science
Anna Maerker	King's College London
Alison Moulds	University of Oxford
Anna Marie Roos	University of Lincoln
Sally Shuttleworth	University of Oxford
Lisa Smith	University of Essex
Victoria Van Hying	University of Oxford
Christine von Oertzen	Max Planck Institute for the History of Science
Matthew Wale	University of Leicester
Rosalind White	Royal Holloway, University of London

ABSTRACTS

Sociability, Gender, and the Circulation of Hans Sloane's Books—Lisa Smith

Hans Sloane was already known for having more rare titles in his personal library than any college by 1704; at his death in 1753, he had an estimated 50000 volumes in his collection. Sloane's correspondence reveals his participation in the book trade as buyer, seller, author, reader, gift-giver, and loaner. Both his library—and his own knowledge of the book trade and scholarly community—were an important resource for the wider intellectual community. Books appear in the correspondence being borrowed, gifted, loaned, or published. The movement of books was at the heart of citizen science in the early eighteenth century.

By looking at the circulation of Sloane's books, it is possible to find traces of the sociability and gender within citizen science. Discussing books solidified friendship and intellectual bonds, but the exchange of books was also a crucial way of establishing new relationships. At the same time, Sloane did not lend or give books to just anyone—they needed to be of the right social status, or doing something interesting to him; sociability shaped who had access to his networks. Even so, this correspondence reveals women's activities as citizen scientists, such as participating in botany by exchanging catalogues and specimens or emerging as the otherwise unseen participants in their husbands' work. Men's intellectual activities occurred around the margins of their regular employment and domestic lives. For them, visiting Sloane's library or regular trips to London were not possible, but by borrowing books, they continued to stay abreast of wider scholarship. I will argue that although the circulation of Sloane's books provided a crucial opportunity for citizen scientists to participate in intellectual networks, access to the tools for practicing citizen science remained circumscribed by sociability and gender.

Pinning Down the Shell: the Lister Sisters and Strategies of Scientific Illustration—Anna Marie Roos

This paper concerns the recent rediscovery and posthumous fate of the Bodleian Library's ephemera (papers and copper-plates) involved in the production of the first field guide to fossils, Edward Lhuys's *Lithophylacii Britannici Ichnographia* (1699) as well as Martin Lister's *Historiae Conchyliorum* (1685-92), the first scientific work of conchology. Lhuys worked in collaboration with Lister; both Lister's masterwork on conchs and Lhuys's field guide were reissued in revised editions in the 18th century by Ashmolean keeper William Huddesford, as the original texts contained terms for species that 18th-century readers found incomprehensible. We will examine the fate and provenance of the archives generated by the 17th- and the 18th-century editions of these books with an eye to analysing the techniques by which older taxonomic information was repurposed for Enlightenment natural philosophy. As archives engaged in a culture of more diverse materiality, we will also analyse the remaining shell specimens in the Natural History Museum of London which were illustrated by Lister's daughters to create the *Historiae*. We will concentrate upon the implications of migration of knowledge of nature from one medium to another, from object to drawing to printed image, as well as the circulation of knowledge and the establishing of credibility and taxonomic type characteristics in scientific (visual and textual) discourse and illustration. Establishment of these characteristics involved both refined powers of visual apprehension, but also tactile ones.

Sensing and Presencing Rare Plants Through Contemporary Drawing Practice—Siân Bowen

During this presentation I would like to introduce the research which is outlined below and the subject of a forthcoming fifteen-month Leverhulme Fellowship and will also discuss the crucial role that the conceptual and material aspects of paper has played in my practice as an artist.

Plants have been a 'currency' of empires, their collection and distribution having had huge social, cultural and political implications. Today, thousands of plant species are identified as endangered or possibly extinct, while bans on the transportation of plant specimens guard against bioprospecting and biopiracy. This, together with significant ongoing interest in drawing in the expanded field, and in the sensory and embodied experience of museum objects, opens a clear position for research investigating the relationships between rare plant life, drawing and herbaria.

Navigating through three distinct sites of knowledge - the seventeenth century treatise on Malabar's plants, Hortus Malabaricus; UK historical herbaria; and South Indian sacred groves - the project will stimulate innovative modes of drawing through considerations relating to the collection and preservation of rare plants. Generating a distinctive body of artworks at world-leading plant science research facilities and in the bio-diverse South Indian rainforest, the research asks: In what ways can drawing, not as analytical illustration but rather as a material phenomenon capable of generating new knowledge, represent the vulnerabilities and resilience of rare plants?

ABSTRACTS

Crowdsourcing Manuscript Transcription and Metadata—Victoria Van Hying

This paper will discuss how Victoria brought the complex problems of textual metadata extraction and full text manuscript transcription to the Zooniverse.org crowdsourcing platform. Victoria is an early modern literature scholar who focuses on convent literature and Catholic autobiography. She identified crowdsourcing as one possible way of opening up unedited, non-machine readable manuscripts to scholarly investigation. As online resources for the study of early print proliferate—such as *Early English Books Online*, *Eighteenth Century Collections Online*, and Google Books—manuscripts are in danger of having a disproportionately low impact on early modern through to contemporary studies. How might crowdsourcing enable us to recover manuscript material and put it on a par with print? What opportunities are there for engaging members of the public, aka the crowd, with real research? What does the crowd bring to our scholarly investigations, and how might we best foster non-specialist engagement with specialist topics of research?

Paper, Everyday Technologies and Citizen Science in the Early Modern English Household—Elaine Leong

The early modern household was filled with paper. In kitchens and stillrooms, it lined cake tins and glass funnels, delivered ointments and salves to the body and preserved precious fruits, cakes and materia medica. In the library and the study, it not only served as the carrier for inscription practices but paper technologies such as notebooks and loose slips enabled householders to sort, categorize and express their ideas about the human body and delineate boundaries between areas of knowledge. The ubiquity of paper use across different spaces, labor sets and knowledge spheres within the household enables us to examine a wide range of quotidian practices, juxtaposing information management strategies with bodywork and food production. Following the paper trail, this talk investigates the interconnected epistemic and hands-on practices used by householders to shift and filter, contain and shape both knowledge and things. Based on analysis of early modern household recipe collections, the talk examines the various paper-based everyday technologies outlined in the texts whilst, at the same time analyze how paper technologies were utilized to codify recipe knowledge. The focus on the household as the location of these practices offers the opportunity to uncover the activities of pre-modern “citizen scientists” and consider anew the construction of gender hierarchies in the production of knowledge. By recovering these practices, I offer a fresh perspective on everyday technologies in pre-modern medicine and science.

Making Model Citizens: Papier-Mâché Anatomical Models and Reform in the Nineteenth Century—Anna Maerker

Anatomical models have frequently been used to articulate social roles, often in the context of utopian or reformist projects. In particular, scholars have shown that they have often played key roles in articulating and affirming culturally and historically specific gender roles, despite their supposed allegiance to an objective, timeless truth. The paper argues that it is crucial to understand models not merely as representations, but as technologies, - in historian of technology Francesca Bray's terms, as material objects which "produce people, and relationships between them". The materiality of models shapes human interaction with and perception of them in crucial ways, from enabling different practices of production and use to widening access by increasing durability or decreasing price levels. Thus, a focus on the materiality of models reveals how the identities of model makers and model users are implicated in the practices of making, distributing and using models. I use the cases of some prominent nineteenth-century modelling enterprises to ask how practices of model making and model use have confirmed established social systems or contributed to utopian visions of society, how they have supported, challenged, or obscured gendered perceptions of model makers and users, and what role the materiality of these artificial anatomies played in shaping the people who interacted with them, and articulating their role as citizens.

ABSTRACTS

The Sympathy of a Crowd: Periodicals and the Practice of Nineteenth-Century Natural History—Matthew Wale

'Why do entomologists want a weekly newspaper?' was a question posed by the first issue of the *Entomologist's Weekly Intelligencer* in April 1856. Established and edited by the eminent entomologist Henry Tibbats Stainton, this was the first weekly periodical dedicated to the study of insects. The nineteenth century saw a rapid increase in the number of periodicals dedicated to the varying branches of natural history, and this paper will seek to address the wider implications of this through detailed study of the *Intelligencer*. It will focus upon the material practices of natural history, drawing on both the periodical and Stainton's extensive correspondence archive. Particular attention will be given to the ways in which such periodicals allowed for greater participation in the creation and circulation of scientific knowledge, with Stainton himself actively encouraging the pursuit of entomology amongst a diverse range of individuals.

Orderliness, Citizenship, and the State's Paperwork: At-Home Compilation for the Prussian Census, 1871-1910—

Christine von Oertzen

In 1871, the Prussian census bureau introduced a new, movable paper tool, allowing for the sorting and compiling of data in highly complex ways. The census bureau incorporated homebound middle-class spouses and other relatives of their workers into the workflow of manual paper and data work, nurturing a workforce that required circulating tons of paper between the bureau and at times hundreds of different homes scattered across and beyond the city limits of Berlin. In my presentation, I will explain why this laborious procedure was considered essential and valued necessary: Prussian officials commissioned the sorting and counting of data for the census to housewives keeping what they called an orderly home. I will examine the spatial, social, and epistemic implications of this assessment, showing that the state targeted the housewives' mental skills, their technologies of orderliness, and their loyalty towards the state in the parlors of their private homes where such virtues were most vividly displayed. Though not Citizen Science in our current understanding, I claim that the state's paper technology and its skilled at-home applications followed similar mechanisms. The material culture of their functioning at the interplay between the micro- and macro-politics of everyday life and the workings of governance reveals how gender principles were woven into the very fabric of the Prussian state.

Aluminum, Cardstock, and Silicon: Materialities of Participation in U.S. Bird Banding - Etienne Benson

This paper traces the materiality of volunteer participation in bird banding in the United States from the early twentieth century to the present. It begins with the establishment of the Bird Banding Office within the U.S. Biological Survey in 1920, which transformed what had hitherto been an activity pursued intermittently, on a regional scale, and with limited success by amateur ornithologists into a continent-wide project coordinated by professional ornithologists in Washington, D.C. Until the 1940s, virtually all bird banding in the United States continued, nonetheless, to be carried out by volunteers who had neither advanced training nor full-time employment as ornithologists. After World War II, however, the proportion of bands attached by volunteers dropped dramatically as university researchers, state and federal wildlife managers, and employees of conservation organizations became increasingly involved. While unpaid volunteers continued to contribute to bird-banding, particularly in relation to species that were neither endangered nor hunted, they no longer played a leading role. The paper links these changes in the status and role of volunteers over the 20th century to the material culture of bird-banding, showing how the distribution and use of aluminum bands, paper records, and eventually computers, smartphones, Internet connections, and electronic databases both reflected and helped to shape the meaning of participation and the organization of labor in American bird banding.