

4.3. „God is in the detail“ – Agrarian technology 1000-1600

Panel organiser: Sapoznik, Alex, King's College London, UK

Understanding the innovation, adaptation, and stagnation of technology is of fundamental importance to the study of agricultural production and productivity. Yet despite its significance, agricultural technology has been neglected by much recent research in agrarian history. This is because historians tend to focus on 'macro' innovations, such as the mouldboard plough, and in so doing fail to recognize that such technology is the result of hundreds of small innovations, each one itself linked to many other technological elements. In concentrating on 'end products', technological change is often seen as static, and dynamic developments within each 'macro' development are overlooked. In this panel we suggest a new perspective on agricultural technology is needed to open new avenues for understanding how and why change occurred – or stagnation prevailed. We therefore focus not on 'macro' innovations but on the details. We consider that there are indeed 'landslides' of new technology during certain periods, but that these changes consist of a number of interlinked innovations and must be seen as a change from one system to another. Often the overlooked detail reveals larger contexts: the form of the shepherd's staff was connected to the intensification of shepherding; the evolution of cropping patterns can by extension explain productivity differences between seigneurial and peasant agriculture; understanding that women used many of the most skill-intensive technologies to produce goods for sale deepens our knowledge of both gender-specific labour distribution within the household and the role of women within the larger framework of commercializing societies. For many years discussion of agricultural technology has concentrated on a few important innovations, such as the plough and the water mill. Whilst the development of these technologies is crucial to agrarian history, understanding the detail of innovation within its wider context offers richer insight into the development of agricultural systems.

Chair: Brassley, Paul, University of Exeter, UK

Tuesday, 20 August 2013 // 1030 – 1200 // Session 4 – Room A-122

4.3.1. The forgotten female agrarian revolution 1000-1300: Weaving, churning and cheese-making

Myrdal, Janken, Swedish University of Agricultural Sciences, Sweden

This paper will discuss the so-called agrarian revolution in the High Middle Ages from a new perspective. When this technological change is discussed, often a few "prime movers" are highlighted, such as the heavy plough and the water mill. In reality, a myriad of technological details changed: iron-spades and harrows among many others. Together these formed new technological complexes, and these were slightly different in different regions. In parts of Northern Europe we have the improved ard instead of the heavy wheel-plough, in the East the sokha-plough, and so on. In this paper I will argue that even this more elaborate picture does not give the true story. The change of technology for animal husbandry has been overlooked. This technological change concerned further processing of the products: textile production and dairy production. New and better looms were introduced. With more efficient churns more cream could be made into butter, and in addition preservation techniques developed (salted butter, hard cheese). These new technologies, which produced goods for the market, demanded a skilled workforce. This workforce was female, and a hypothesis is that large amounts of female labor were released when the hand mill became obsolete, which could be invested in a production on a higher level of refinement. The technological change in the female sphere was of utmost importance for economic change. Why has it been overlooked? The answer is perhaps that it did not make any large footprints in written sources, and so we have to go to archaeology and images and closely study the details to discover this change.

4.3.2. Aspects of peasant arable productivity in late medieval England

Sapoznik, Alex, King's College London, UK

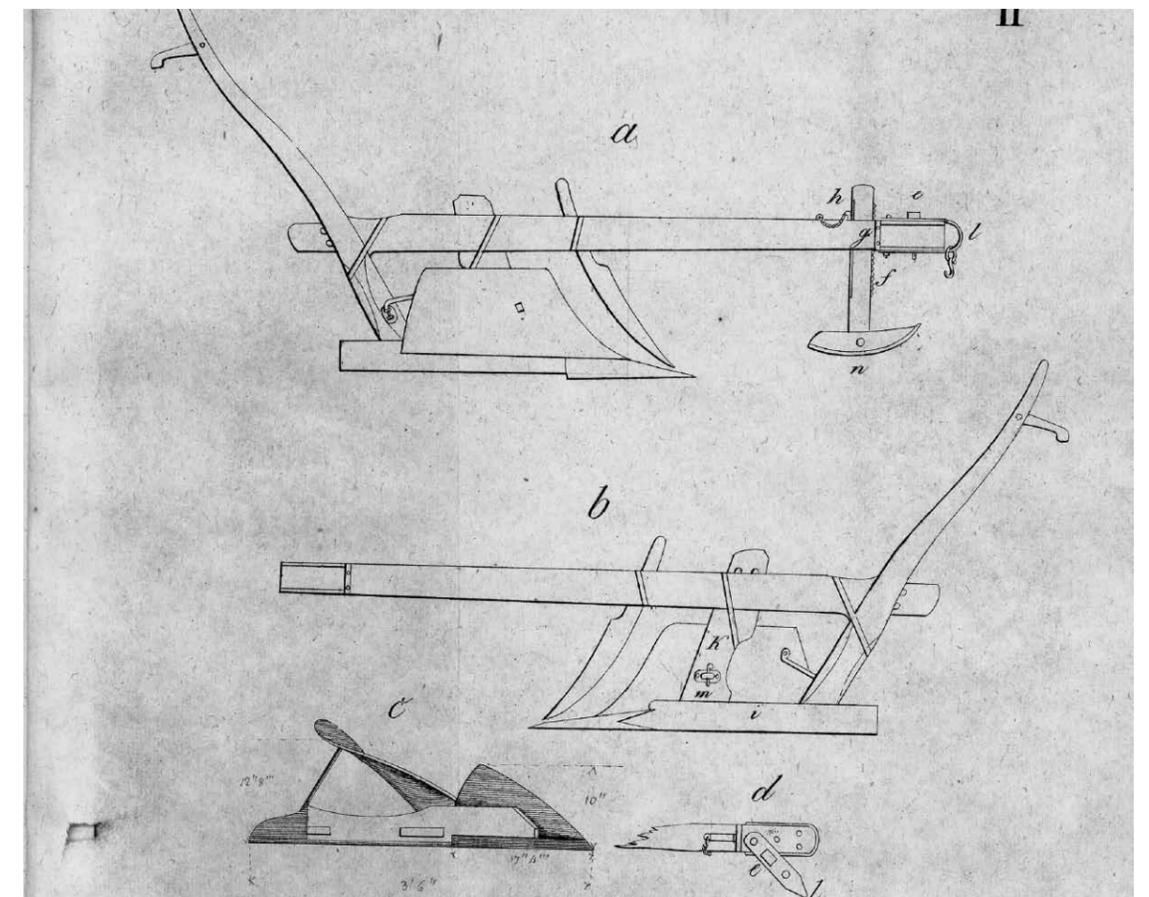
Recent research into the productivity of peasant land in late medieval England has indicated that peasants were able to achieve higher yields or higher aggregate output per acre than their lords. Although evidence for peasant agriculture is scant, what glimpses we have suggest that peasant land may have been up to 25 percent more productive than that of the demesne sector. The high levels of arable output on peasant land suggests that peasants were not necessarily disadvantaged in terms of potential land productivity, despite being disadvantaged with regard to capital resources. Research into modern developing economies has informed recent studies of medieval agriculture, considering smaller units of land to be potentially more productive than larger units due to personal motivation and high family-based labour inputs. This paper will discuss the possible technical elements which can help explain this productivity difference given the resources available to cultivators of smallholdings. These elements include more intensive weeding, drainage and soil preparation, hand cultivation practices, and the use of fertiliser, perhaps facilitated by stabling techniques.

This paper will explore the connection between the constantly evolving but largely invisible technological complexes which allowed peasants to achieve such high levels of arable output in late medieval England.

4.3.3. Learning by doing or expert knowledge? Technological innovations in dike-building in coastal Flanders (13th-18th centuries AD)

Soens, Tim, University of Antwerp, Belgium

Dike-building in coastal wetlands seems an excellent example of technological path dependency: once the decision was taken to embank permanently a coastal wetland, dikes had to be permanently upgraded and adapted to changing environmental conditions, including the slow but steady sea-level rise and the compaction of soils in embanked wetlands. The historiography on medieval and early modern embankments in the North Sea Area discerns on the one hand a gradual evolution in the height and profile of the dikes, which grew higher and less steep, and on the other hand some major turning points, like the introduction of groynes to prevent erosion and foster sediment disposal, or the covering of dike bodies using stone, straw or brushwood. Based on extensive evidence on dike construction in coastal Flanders from the 13th to the 18th century, we want to argue that such improvements – either gradual or step-wise – cannot be dissociated from their wider social and environmental context: each change in dike building implies different assemblages ('agencements' to use the concept of Bruno Latour and Michel Callon) of people, dikes, land and water. As a consequence the spread of more standardized, centrally managed and capital-intensive technologies, based on non-local expert knowledge, cannot be considered inherently 'superior' or 'more effective' than their more localized predecessors. They just correspond to different realities.



Participants

Brassley, Paul

Paul Brassley is a visiting Senior Research Fellow in the Centre for Rural Policy Research at the University of Exeter, UK. Since 2009 he has been working there on a project to investigate the process of technical change in English agriculture between 1935 and 1985. He has previously produced studies on rural issues in the Second World War, the interwar period, and the late nineteenth century. His most recent book (edited with Yves Segers and Leen Van Molle) is *War, Agriculture and Food: rural Europe from the 1930s to the 1950s* (Routledge, 2012).

Myrdal, Janken

Janken Myrdal is professor in agrarian history in Uppsala, Sweden. He has published on medieval history in general and agrarian history from the early medieval period until the nineteenth century. A main interest is the history of technology (cows and ploughs – but in a theoretical context). He also has written on economic cycles (as the crisis of the Late Medieval period). He was main editor for the five-volume "The Agrarian History of Sweden", condensed into one volume in English in 2011. Currently he is working on a project about agricultural systems in Eurasia.

Sapoznik, Alex

Alex Sapoznik is Lecturer in Late Medieval History in the Department of History, King's College London. Her research focuses on peasant land use and agricultural productivity in late medieval England, with particular interest in how and why peasants allocated their resources in the ways they did, and the implications of these decisions on peasant standards of living. Her research also considers the impact of environmental and economic crises on peasant communities.

Soens, Tim

Tim Soens is Associate Professor of Medieval and Environmental History at the University of Antwerp. He studied Medieval History at the University of Ghent, where he obtained his PhD in 2006, investigating water management and the interaction of man and nature in coastal Flanders in the medieval and early modern period. Within the Antwerp Department of History, Tim Soens has developed a new research line "Environment and Power", concentrating on the historical relationship between human societies and the natural environment, and the way this interaction was steered by evolving power constellations and formal and informal institutions.