AIMA Newsletter N°14 June 2019

Jürgen Schlüter, Sonnewalde DE, relaunching the Salt Road (Salzweg) from Soltau to Quedlinburg in 2018, Photo Ute Schlüter

Agriculture * Food * Environment * People

Special Issue – Carts and Wagons around the World

- Be sure to visit the **AIMA website** at http://agriculturalmuseums.org/ for more information and frequent updates on subjects concerning museums of agriculture.
- … and send this **Newsletter** on to your friends to encourage them to join us in the AIMA, in its networks of practice, for advice and exchange.

The Royal Agricultural show in the early 1950s from the MERL (Museum of English Rural Life) archives

Thanks to all the contributors who help us make the Newsletter

Our special thanks to the many Members and Friends who have announced the AIMA 2020 Congress to be held at the Museum of English Rural Life in Reading, England, 20-23 July 2020

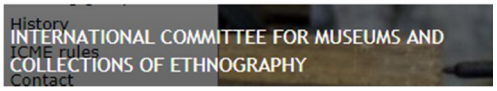
afma
Fédération des Musées d'Agriculture et du Patrimoine Rural

ALHFAM
The Association for Living History, Farm and Agricultural Museums

BRITISH AGRICULTURAL HISTORY SOCIETY
promoting the study of agricultural history and the history of rural economy and society

eu ropean
r ural
h istory
o rganisation

ICME
ICOM international committee for museums and collections of ethnography



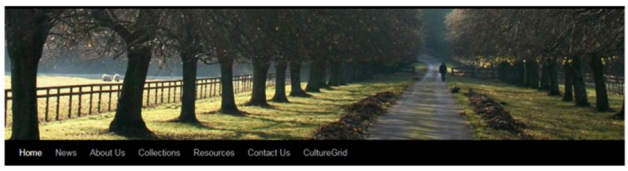
University of Reading

Museum Ethnographers Group

Interwar Rural History Group

Rural Museums Network

A registered charity that promotes learning and encourages a wider understanding of the UK's rural heritage



folk life

Society for Folk Life Studies

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How to join the AIMA

Museum of English Rural Life University of Reading to host AIMA 2020, the 19th triennial CIMA 20-23 July 2020 "Past and Future Agricultures"

Ollie Douglas and Isabel Hughes of the Museum of English Rural Life in Reading became president and vice president of AIMA in Tartu, Estonia in 2017, following the successful CIMA on *Traditions and Change; Sustainable Futures.* Plans are well underway to host AIMA in July 2020.

What better place to explore the chosen theme of ***Past and Future Agricultures*** than an institution founded to look into the past to help inform our farming future? The Museum of English Rural Life, more commonly now The MERL, was established in the aftermath of World War Two at a time of significant development for intensive farming in Britain, where food rationing continued until 1954.

North American visitors enjoying the Museum of English Rural Life's marquee at the 1956 World Ploughing Championships, as held in Shillingford, England.

The idea of starting a museum was proposed by academics within the Department of Agriculture and established with a formal Council Minute, dated 8 December 1950, stating that "The purpose of this project is to preserve some of the material that is rapidly disappearing from the countryside and to build up not only a collection but also a library of material that will be of use for research."

The Museum's first acquisitions were recorded in 1951. Established at a time of major economic, social and technological change, The MERL was the first museum of its kind in England and has grown over the last 70 years to become a national resource that holds a Designated Collection of objects, archives, and library material to record and interpret the history of food, farming, and the countryside.

Originally, collecting focused on objects in relation to technological changes in farming and traditional crafts. More recently, the Museum has begun to refocus and now collects and displays evidence of rural issues and attitudes towards the countryside. The Museum moved to new premises in 2004, reopening there in 2005, and has permanent and temporary exhibitions galleries, mature gardens with allotments, and a full programme of events. In 2016, The MERL re-opened for a second time, following a major redevelopment. It now presents ten thematic galleries that seek to engage visitors with the history of rural England and the pressing contemporary issues facing agriculture and the countryside. Since this recent relaunch the Museum has attracted a broader, younger, and more urban audience who have come to participate in fresh programming, to enjoy the garden with its new community growing spaces, and to see and hear how contemporary artists and craftspeople have responded to the collections. The MERL has played host to two folk musicians and a poet-in-residence as well as a series of challenging art installations funded through the Wellcome Trust and Arts Council England.

Increasingly, the Museum has developed a broader role within the local community and considering how to engage with both older and younger visitors. A new Youth Strategy is in its first year of delivery, in partnership with Reading Museum, run by the local borough

council. A partnership programme with both the local hospital and support groups for older people, including people with dementia, is also underway that has offered reminiscence and discussion events, gardening and dance, drawing on our collections for inspiration. The objective is to encourage positive health and wellbeing benefits for older people and the whole programme is evaluated by academics within the Schools of Psychology and Clinical Languages Science at the University.

The MERL is delighted to host CIMA, relaunching it as AIMA 2020, and bringing this longstanding organisation back to meet in Reading for the first time since 1976. We aim to explain and explore our recent activities and their methodologies. Keynote speakers are currently being approached and a full programme will be available from the Autumn of 2019. This is set to include details of proposed excursions to London, Oxford (both only half an hour away by train), and further afield to the Chiltern Open Air Museum, Buckinghamshire. There will also be opportunities to visit the University's own dairy farm in nearby Shinfield and arable farm in Sonning. We look forward to welcoming peers from the wider agricultural museums world and will also host visitors from closer afield, with members of the UK Rural Museums Network set to present and share the very best of agricultural museology from this small corner of the globe. If you would like to offer a paper, presentation or workshop, please see our call for papers on the website, now also available in French.

Call for Papers weblink https://www.agriculturalmuseums.org/wp-content/uploads/2019/02/PAST-AND-FUTURE-AGRICULTURES-CFP.pdf

Contact e-mail: agriculturemuseums.president@gmail.com

The MERL contribution to our special issue on wagons and carts

Final Call for Applications to The MERL Fellowship Scheme

As a consequence of lower levels of interest than expected, the call for applications to The MERL Fellowship Scheme for the coming year has been extended until 14th June 2019. Details of the two strands can be found on the Museum's website. Each strand carries a maximum stipend of £5,000 to be used in research collections held at The MERL. https://merl.reading.ac.uk/merl-collections/research-projects/fellowship-scheme/

Historical Note from CIMA 1966

Hanna Ignatowicz at the **National Museum of Agriculture and Food Industry in Szreniawa, Poland**, sends the following message to explain these photos.

These two photos are from the first AIMA congress held in 1966 at the castle in Liblice (then Czechoslovakia). The director of the Museum of Agriculture (Władysław Rogala) participated in the congress, which is why these photos are in our archive. In the second picture (inside the castle), the CIMA I logo is visible on the right.

Hanna Ignatowicz, Kustosz, Muzeum Narodowe Rolnictwa i Przemysłu Rolno-Spożywczego w Szreniawie. The photos are posted on the AIMA website at https://www.agriculturalmuseums.org/about/history/ If any newsletter readers would like to have the original version of the photographs to recognize colleagues and friends, please write to Hanna at h.ignatowicz@muzeum-szreniawa.pl

Vice-President's Message: Debra Reid

Agriculture and the environment: some ways of identifying key themes*

Debra A. Reid, Curator, Agriculture and the Environment,
The Henry Ford, Dearborn, Michigan

People may say that Henry Ford hated farming, but agricultural artifacts captivated him. He featured them in a 12-acre museum building, part of The Edison Institute dedicated in 1929. Peter Cousins, the first curator of agriculture (1969 to his death in 1995), reorganized the exhibit around 1977 and wrote interpretive labels. He reduced the size of the agricultural display, and its space has shrunk even more in the twenty-five years since his death. Now the

exhibit contains the pick-of-the-litter or **cream-of-the crop** of individual objects that can hold the attention of many visitors on their own merit – the 1907 Ford experimental tractor, the No. 1 Fordson tractor shipped to Luther Burbank in April 1918, and the Sperry-New Holland co-axial flow combine introduced in 1975. The exhibit title – **"Agriculture: Innovations in Farming"** – fits squarely within the current institutional mission: "The Henry Ford provides unique educational experiences based on authentic objects, stories, and lives from America's traditions of ingenuity, resourcefulness, and innovation" (see "History and Mission," at thehenryford.org). Reframing this exhibit is high on the institutional to-do list.

The main label of the current exhibit features technology. It explains that **American farmers** tried to overcome "the special **challenges**" that they faced: "dense forests, hard prairie soil, labor-intensive work, and a shortage of workers." They sought practical solutions, and persisted in their quest. "New inventions built on the successes of earlier ones." The main label explains that some inventions had "far-reaching impact, revolutionizing how the work was done and how much farmers could produce. These were the great **innovations** that not only changed farm work but transformed our lives." It concludes by inviting guests to: "Explore the many inventions that improved farming and the great innovations that transformed it."

Machines sit in one of four sections, and each section emphasizes one process **most relevant** to the purpose of each machine in that section: 1) Preparing the Fields and Planting; 2) Mowing, Reaping, and Threshing; 3) Picking and Processing and 4) Corn Harvesting and Combines. Artifact labels put machines into some context, but little interpretive intervention occurs.

I began my job at The Henry Ford in January 2017, and **rethinking interpreting agriculture** and the environment is something I do daily. I wrestled with strategies as I prepared *Interpreting Agriculture at Museums and Historic Sites* (Rowman & Littlefield, February 2017). Topics addressed in that book inform my approach. I know I need themes that capture guests' attention, captivate their imagination, and call them to action.

My first epiphany came after plowing with oxen at a Tiller's International workshop using an Oliver No. 40 plow, the Cadillac of early twentieth-century plows. The next time I walked past the Oliver No. 20 plow, situated on a pedestal at the front of the "Preparing the Fields" section, I realized that the "antique" could be made relevant by linking it to **alternative agriculture**. The plow has a remarkable pedigree, donated by James Oliver, Sr. to Henry Ford, but that's the insiders' story. Most guests care because alternative leads us to discussions of organic which leads us to discussions of livestock and draft power and local food systems. This naturally transitions guests to the diametrical opposite – agricultural practices dependent on **fossil fuels** that most of the other artifacts in the exhibit document. Most historic houses and historical societies have, in fact, more artifacts useful to interpreting the pre-fossil fuel era of agriculture and the mutual dependency of animals and soils and farm families that existed during that time, rather than the agriculture of the 1930s to today. The **big question** then becomes, how to link the "antiques" that document the era of local food systems, with the present situation without truncating the story of "modern" agriculture. The Henry Ford collection can help build that bridge.

Michelle Moon and Cathy Stanton urge readers of *The Public History of the Food Movement: Adding the Missing Ingredient* (Routledge, 2018) to engage with current food politics by cooperating with like-minded special interest groups. That resonates with my goals to interpret today's food and drink chain. Yet, their comment about "agriculture" left me pondering anew the "loaded" nature of that term. They explained that "our [Moon's and Stanton's] discussions … shift between talking about *farming* and talking about *food*…; it is

simpler to do so than to stop and dig into the question (admittedly a historically important one) of why we tend to be so fixated on agriculture to the exclusion of other kinds of subsistence and sustenance" (pgs. 8-9). The Henry Ford collection documents the scope of agriculture. It is not just about farming, nor is it just about food. **Farmers express their culture through their "agriculture."** Farmers then conduct their business through exchange with bankers and lawyers and markets and processors and other farmers and politicians. The collection that Henry Ford amassed, and that others have expanded since his death in 1947, document the business of farming as well as the culture of farmers, farm families, and associated businesses. This includes their relationships to the natural environment and their cultivated acreage and pastures on which they husband their livestock. The whole encompasses a farm ecosystem; agricultural ecology is just one of the components of this.

The biggest intellectual hurdle to overcome, that I perceive, derives from the public's avoidance, even **abhorrence, of the term "agriculture,"** not a fixation with it. Of course, farmers fixate on agriculture because that is what they do; it is their culture. Even though farm families constitute less than 2 percent of the U.S. population, they have a powerful lobby, significantly disproportionate to their demographic. Often perceptions of agriculture by the 98% of the population that depends on it but do not do it, convey personal perspectives of the public, not of farmers. I addressed reasons for such polarity in *Interpreting Agriculture in Museums and Historic Sites*. Moon and Stanton have caused me to argue for agriculture – that is, farmer culture and practice – not just food and drink chains – as the vehicles by which we tell the story.

Approaches to Take

I have long sought intellectual engagement, or what I call **"minds-on" rather than just "hands-on"** learning. Moon and Stanton affirm this. They describe interpretation focused on demonstration not reflective inquiry as the "butter churn" approach. It does not engage the public beyond the turn of the crank. Interpreting agriculture requires minds-on learning opportunities to carry the message forward.

Guest interests influence the topics to develop. During Fall 2017, I worked with an intern (Mr. Ben Thomason) to start documenting guest interests, and **guest-object interactions**. Mr. Thomason conducted a study between October 7th and November 4th of 2017. He completed 50 tracking study observations and collected 102 closed-ended surveys and 51 open-ended interviews with visitors. Evidence indicated two areas of strong interest. The first relates to machine functionality – how the agricultural machines are operated, how productive they could be, and what improvements were made over the previous machines/tools. The second strong area of interest related to the methods and processes of agriculture, meaning that visitors want The Henry Ford to **explain the entire process of agriculture**, with both the overarching history and developments, as well as the ground level seasonal labor that farmers of the past and present carried out.

These conclusions indicate that the public equates agricultural technology with improvements. The Henry Ford exists **to complicate** that impression. It emphasizes the quest for improvement, not the misperception that new machinery means better machinery. Mr. Thomason summarized the potential this way:

> I think that the functionality of the machines and the processes of agriculture are what people were most interested in and there is a lot the exhibit can teach them.… Building up the information on machine functionalities and agricultural processes will give a strong foundation on which to build other topics.… like **political, environmental, and public health issues** as well as the connection of farming to city life and the economy. More specialized

subjects will appeal to people who may be more politically, environmentally, or health-minded, which could keep people in the exhibit longer and make it more memorable for many visitors (excerpted from 15 January 2018 email from Benjamin Thomason).

One popular seasonal visitor engagement involves **soil testing**. Museum presenters have soil samples from specific locations in Greenfield Village, including Firestone Farm and Ford Home. The activity includes determining the best crop to grow on the soil given the farm's chronology and geographic location. Corn and vegetables, including peanuts, grow best in slightly acidic soil (with a pH between 5.8 and 6.8). Wheat likes a more acidic soil as do sweet potatoes (pH of 5.5 to 6.5). Horticulturalists seek neutral or slightly more alkaline soils for flowering shrubs or ornamental plants, as do market gardeners or truck farmers who might specialize in asparagus (pH as high as 8). Guests walk away from this understanding how it directly relates to their home gardens.

Other intellectual engagement includes climbing aboard and into the cab of the Sperry-New Holland combine, but this area needs more interpretation. Mr. Thomason recommended updating the current interactive with graphics to show how much corn a farmer could pick by hand and how much the Sperry-New Holland combine could pick and shell in the same amount of time. The comparison cannot stop there, otherwise it will reinforce popular opinions about technology and efficiency. Instead, the **additional context** requires incorporating facts about the number of people and animals it once took to get the corn crop in the ground, cultivated, harvested, processed, and fed, compared to the synthetics and fossil fuels and cold hard cash that it takes in **machine-and-chemical intensive agriculture**. Last, the graphic will need to indicate that the human-and-animal intensive approach is not dead, but includes **organic and alternative agriculture** today.

The Henry Ford has the luxury of additional three-dimensional interpretive spaces to reinforce ideas. Visitors to Greenfield Village can engage with several working environments, including Firestone Farm. It opened in 1985 after staff relocated the house and barn and outbuildings from Columbiana County, Ohio, and after conducting intensive research in foodways and farm practices for the third-generation German-American Firestone family. The farm models farm-to-fork concepts. The kitchen garden lies just past the kitchen window. "Chinese weeder" geese, a heritage variety, help pull weeds, and their eggs join those from the chickens as part of the daily fare. But the market production of wool and of wheat, plus the coal stove in the kitchen complicates matters. Guests could easily walk away thinking the Firestones modeled farm-to-fork agriculture, and embraced "organic" operations. Instead, they must consider the Firestone **perceptions of fossil fuels in 1886**. The coal eased the burdens of male family members by reducing the quantity of wood required to keep the home fires burning. Farmers could transfer that labor savings into a few more head of sheep or pigs or beef cattle. But more livestock required more pasture and hay or corn acreage. This could not be increased by reducing acreage dedicated to other cash crops, but clearing a bit of woodlot could help increase pasture, and pasture could shift to wheat acreage in a coal-stove world. Investing in equipment helped farmers manage the increased acreage.

Take-home Messages

The **SLOW FOOD movement** has helped focus public attention on food. Public historians should take advantage of the opportunity that the food movement provides, as Moon and Stanton argue. This is not an easy task, as Reid has argued in *Interpreting Agriculture*, largely because **few public historians have a concept of what producing food really entails**. This is agriculture. Resources exist to facilitate this critical work. These include public history support systems – organizations such as the National Council on Public History (NCPH) and

the American Association for State and Local History – but also organizations that have focused on agriculture history, and on interpreting agriculture – the Agricultural History Society (100 years old in 2019) and the Association for Living History, Farm and Agricultural Museums (50 years old in 2020).

Participants in the NCPH working group, Public History and Agriculture, share their practical approaches, and their lessons learned so others can join in on this important work.

* Contribution to the NCPH Working Group: Interpreting Agriculture (2018 conference, for discussion on Saturday, April 21, Las Vegas)

SOURCES

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Moon, Michelle. *Interpreting Food at Museums and Historic Sites*. Lanham, Maryland: Rowman & Littlefield, 2015.

Moon, Michelle and Cathy Stanton. *Public History and the Food Movement: Adding the Missing Ingredient*. New York: Routledge, 2018.

Reid, Debra A. *Interpreting Agriculture at Museums and Historic Sites*. Lanham, Maryland: Rowman & Littlefield, 2017.

AIMA Members Events and Reports

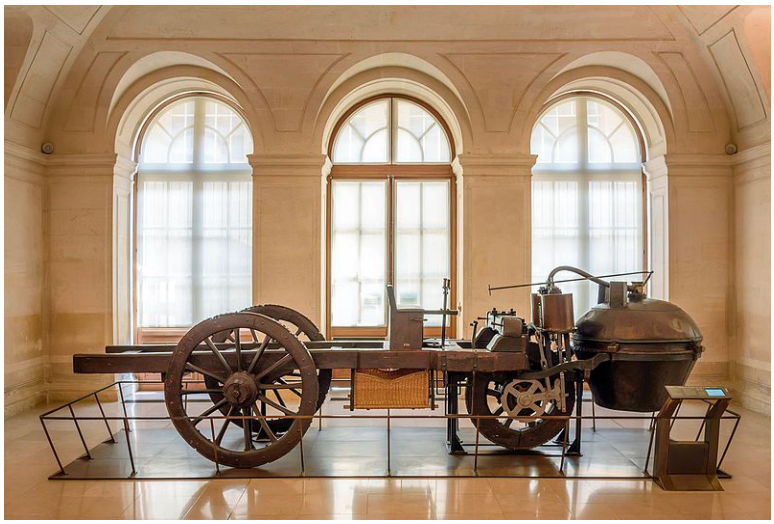
Eure & Loir Conseil Général

Le Compa

Conservatoire de l'agriculture | Chartres

Steam Passion at the COMPA in Chartres

29-30 June 2019

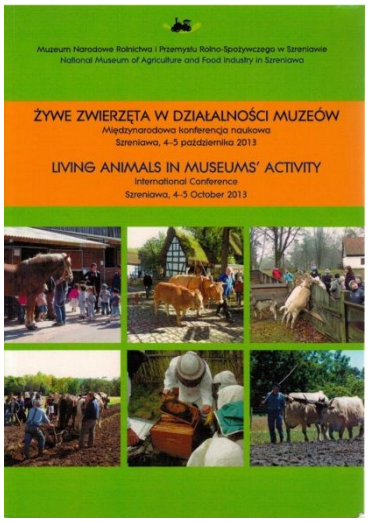


Wikipedia Creative Commons, Joseph Cugnot's 1770 "Fardier à vapeur", Author Joe de Sousa, 02-07-2015 in the Musée des arts et métiers, Paris, see https://en.wikipedia.org/wiki/Nicolas-Joseph_Cugnot

The AIMA's home base, the COMPA in Chartres, is hosting passions in steam-powered agricultural equipment, 29-30 June 2019, including a replica of Nicolas-Joseph Cugnot's dray, the world's first self-propelled land-based mechanical vehicle, that is, the first automobile. The original is in the collections of the Musée des arts et métiers at the Conservatoire national des arts et métiers in Paris. It will be accompanied by thirty plus superb pieces of all sizes from miniatures and animated models from the COMPA collections or lent by friends. This exhibit

recalls the energy-intense inventions by the likes of Papin, Cugnot, Newcomen, Newton and Watt, which included putting steam power to work for progress in agriculture.

MUZEUM NARODOWE ROLNICTWA
I PRZEMYSŁU ROLNO-SPOŻYWCZEGO W SZRENIAWIE



Livestock and Traditional Crops in the Cultural Heritage of Rural Areas Congress 3-4 October 2019 Szreniawa, Poland National Museum of Agriculture and Agro-Food Industry

The National Museum of Agriculture and Agro-Food Industry in Szreniawa, Poland, will hold an international scientific conference: "Livestock and Traditional Crops in the Cultural Heritage of Rural Areas", 3-4 October 2019. The main objective of the conference is to create an international forum for the exchange of experience and the creation of a database of good museum and educational practices. The conference will focus on five thematic areas:

- Man as part of the ecosystem in the process of domestication of plants and animals over the centuries.
- The impact of animal husbandry development and crop cultivation on shaping tangible and intangible human needs.
- The use of farm animals and arable crops in education, therapy, tourism, rehabilitation, recreation, and sport.
- Human ecological awareness fostered by traditional animal breeding and plant cultivation.
- Educational farms as a promoter of biodiversity and cultural heritage

The detailed call for papers and application form are accessible on the AIMA website at https://www.agriculturalmuseums.org/news-events/coloquia-aima-partners/ **Deadline for submission of proposals is 16 June 2019**.

Note that the 2013 Szreniawa congress on this subject was ground-breaking and provides a remarkable **RESOURCE** in the field: ***Living Animals in Museum's Activity***, ISBN 97883-64119-20-0, pp. 276, colour photographs, bilingual English-Polish volume, 17 articles on animals in museum teaching programmes, using working animals in museums and on living history farms, keeping dairy cattle in museums, agricultural implements, heritage breeds, animal welfare in museums, visitor security, animals and historical objects in films…

National Museums of Scotland

Of small things *not* forgotten: grain sieves recall EU C.A.P. development

Once commonplace things can become less necessary, then unnecessary, and eventually pass into the realm of the mysterious, if you wait long enough. Hence, the need for meticulous accessioning, so here is **the story behind these grain sieves**, which are each approximately 28cm in diameter and 5cm deep, slotting neatly one on top of the other. They were donated to The National Museums of Scotland by the Scottish Office, Hamilton, and had belonged to the HGCA (Home-Grown Cereals Authority) in the 1970s.

These small, rather uninteresting looking objects can be used to illustrate a significant impact on the Scottish landscape and are a timely acquisition, but we need a bit of background to what was going on, when they were still in use, to justify the acquisition.

1962 saw the introduction of the **Common Agricultural Policy (C.A.P.)**, the objectives of which were to provide affordable food for EU citizens and a fair standard of living for farmers. (Of course, the UK did not join the EU until 1 January 1973.) **Intervention** was a big part of the CAP for decades – it kept the grain market stable and so it provided support for farmers. It also **changed the landscape** significantly. Farmers were encouraged to grow as much as possible and as a result hedgerows, bushes, trees, fields – which were the habitats of animals, birds, insects – were destroyed.

Barley and wheat became the dominant crops and for a time oilseed rape. These crops of course had to be **stored** and so their quality and cleanliness had to be assessed, which is where the sieves come in. To quote the donor of the sieves 'Many people that owned grain stores became millionaires on the back of Intervention as they were paid a fortune to store this grain'.

Each sieve has a different size of slot and mesh, to systematically sift out insects, small grains and extraneous matter. Assessing the quality of the grain was to determine whether it met the criteria for Intervention. They were not used by the Intervention Board for research purposes, but simply **for quality assurance.** Every grain store in the country would have owned a set of these sieves. Farmers had to know the quality of the grain before sending or accepting it into store – this dictated how much they were paid for their produce. Most importantly, they showed if the grain was infested with insects, in which case it would immediately have been rejected. This would have necessitated treating the whole stored crop with insecticide. (There were electric sieves too, but these brass Endecots were the top of the range.)

A **microbiologist** (Rose Mary, who is actually the donor) was in charge of Intervention on cereals storage in the UK – which at one point in **Scotland alone stored** more than **£660 million worth of grain.** In the UK as a whole it was in the region of **over £2 billion** as England stored far more than Scotland. Scotland stored mostly barley, which was used for **animal feed** only, though occasionally the quality was so high it could be used by the distillers for **malting**. There was also feed wheat used for animals and in the 1980s, oilseed rape. England grew bread-making and biscuit wheat, which attracted higher prices for the farmer. The microbiologist was responsible for its safe storage and ensuring it was free from Salmonella, pesticides, mycotoxins, that is to say fungal poisons that cause cancer.

By 1984 farms had become so productive that they grew more food than needed. Several measures were introduced to bring production levels closer to what the market needed. Some of us will remember the **Wine Lakes** of Europe and the **Butter Mountains**! (There was also Intervention for meat, skimmed milk powder, butter.) Over the years there have been **amendments** to the C.A.P. In 1992**,** the CAP shifted from market support to producer support. Price support was scaled down and replaced with direct payments to farmers, thus encouraging them to be more environmentally friendly. This reform coincided with the 1992 Rio Earth Summit, which launched the principle of **sustainable development**. In 2003, a new CAP reform cut the link between subsidies and production. Farmers then received an income support, on condition that they look after the farmland and fulfil food safety, environmental, animal health and welfare standards. In 2013, the CAP was reformed to strengthen the competitiveness of the sector, promote sustainable farming and innovation, to support jobs and growth in rural areas and to move financial assistance towards the productive use of land.

Elaine Edwards, Senior Curator, Modern & Contemporary History, Scottish History & Archaeology Dept., National Museums Scotland

folk life

The Society for Folk Life Studies Conference Carlisle, Cumbria, England 12-15 September 2019

The SFLS annual meeting theme for this year is ***Cumbrian folklife, agriculture & industry***, which will take place in the Tullie House Museum in Carlisle. The SFLS meetings always emphasize in-depth exploration of the host museum or group's activities in their local context, so there will be an introduction to Cumbria by a local farmer and broadcaster, exploration of the Tullie House Museum's history and collections (including a remarkable quilt collection and the museum's agricultural hand tool collection). These offerings will be paralleled by discussion of local and regional food traditions, Carlisle town history, presentations of industrial heritage, vernacular architecture, heritage management schemes, as well as daily visits to other attractions such as a mining museum, an industry and maritime museum, a boats and steam power museum, debate on management of public houses, and a meeting with the local Member of Parliament. The region's mixed agriculture economy with its summer pasture shielings and present-day reconstruction of past landscape and land-use, based on archival material and placenames, will be honoured, as well as other cultural aspects such as the Romantic movement, the legacy of leading heritage actors and a local poet. Other countries in the British Isles are never left out, so there will be a presentation of the present state of social housing in Wales or a glimpse of remarkable historical events, such as the Scottish king's involvement in the Crusades and how that tradition was "received" from the 13th to the 21st century. For more information and the programme, contact Steph Mastoris Steph.Mastoris@museumwales.ac.uk and visit the SFLS website http://www.folklifestudies.org.uk/

Further notes on posture at work



These three photos were taken in a small village in Normandy in 1997, when Noelle Perez and I visited a small dairy farm with only a few cows and two elderly women in charge. They still milked the cows and occasionally used a yoke to carry the buckets back to the house.

These ladies looked very mobile even in their 70s. You can see the flexibility in hips, knees and ankles of the woman milking the cow. The other two photos show how the yoke is put on the shoulders and then latched to the bucket handles.
Thea Sawyer, independent researcher*
* Thea Sawyer's history of techniques mémoire at the Ecole des Hautes Etudes en Sciences Sociales directed by François Sigaut was on posture and gesture involved in pole or carrying yokes. If you want more information, ask Thea at theasawyer@gmail.com

News from AIMA Friends

Museums as Cultural Hubs: the Future of Tradition Kyoto, 1-7 September 2019

ICOM Kyoto 2019, the biggest conference of the museum field, will bring together more than 3000 museum professionals and experts from all international backgrounds to exchange about the topical issues museums tackle today, from sustainability and decolonisation to the museum definition and heritage protection.

This September, Kyoto will host the 25th General Conference of ICOM, the biggest and most important conference of museums in the world, with more than 3.000 participants from all international backgrounds. This worldwide reputed hub for exchange and innovation will tackle the theme "Museums as Cultural Hubs: The Future of Tradition".

It is through this lens that around 3,000 museum professionals from all over the world will explore the main topics of the conference. ICOM's International Committees and many National Committees, Regional Alliances and Affiliated Organisations will organise conferences, workshops and other events. Together with Standing Committees, the secretariat will offer plenary and panel sessions about sustainability, the museum definition, disaster risk management and cultural diversity.

For the latest updates, check http://icom-kyoto-2019.org/

EURHO Rural History Conference
Paris, France, 10-13 September 2019

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Rural History 2019

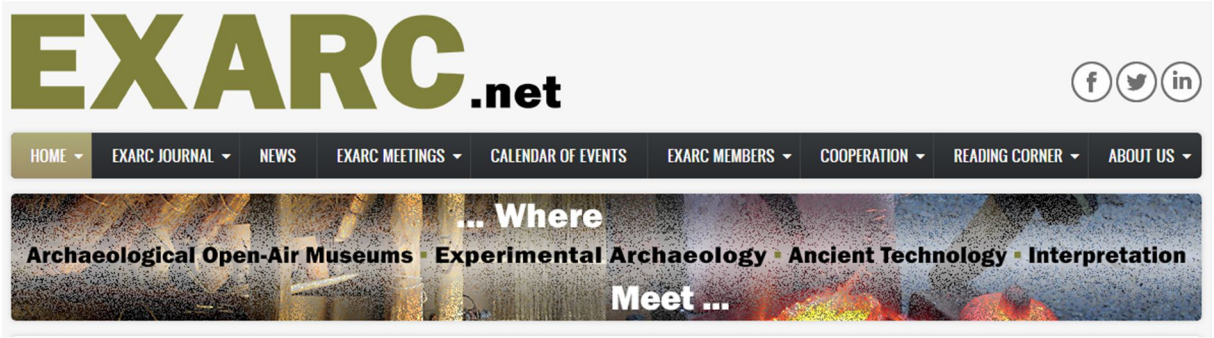
Rural History 2019, the fourth biennial conference of the European Rural History Organisation (EURHO), will take place in Paris from Tuesday 10 to Friday 13 September 2019. This meeting will be organized by the École des Hautes Etudes en Sciences Sociales (EHESS), through the Centre de Recherches Historiques (CRH), in collaboration with the Centre National de la Recherche Scientifique (CNRS), the Fondation Maison des Sciences de l'Homme (FMSH) and the Ecole Pratique des Hautes Etudes (EPHE).

The EURHO Conferences are international, multidisciplinary meetings intended for all European and other researchers applying **comparative approaches**. They aim to promote a dialogue between rural history researchers which aims to surpass national frontiers, cross chronological barriers and break down disciplinary boundaries. They welcome all and any topics that bring new insights to the historical study of the problems faced by rural society. These range from the economic and social history of the countryside (agricultural or preindustrial production, social reproduction, consumption, material culture, village life, technology, tourism and so on) to connections with environmental, political, anthropological and cultural history — and beyond these, with the preoccupations of geography, sociology, economy, archeology, agronomy, biology and zoology. They deal with subjects such as supply, power relations, gender, social well-being, and technological and scientific improvements in the historical framework of agriculture and of rural society and the relationship between city and countryside.

The success of the EURHO conferences – the inaugural meeting in Brighton (2010) and the conferences in Bern (2013), Girona (2015) and Leuven (2017) – have proved EURHO 's usefulness as a means to effectively promote the history of the countryside. The Paris Conference will be open to all proposals employing new methods or yielding new results across a wide range of themes, time periods and spatial boundaries. We encourage all scholars and researchers to submit their work and to answer the call for papers which will be issued this coming May.

I will be delighted, on behalf of the EHESS, to welcome to Paris all participants who want to bring their knowledge and experience to this event. The Paris EURHO meeting is bound to be a fruitful means of encouraging further productive rural history research in an international framework. To help make this international event a resounding success, I ask all researchers interested in these topics to set aside now the four days from 10 to 13 September 2019, and to submit their proposals as soon as the call for panels will be launched on the 18th of May.

Gérard Béaur, Chair of the Scientific Committee, Conference
Website: http://ruralhistory2019.ehess.fr/



There are at least 500 **archaeological open-air museums (AOAM)** worldwide. Experimental Archaeology takes all kinds of forms, from 'tough' science to ways of helping visitors experience the things and actions from the past, exploring ancient technology through materials and techniques we know from the archaeological past as well as from ethnoarchaeology. This places an especially high value on interpretation, which can include living history, storytelling and museum education. Interpreters present and explain the meaning of the archaeological past.

EXARC publishes a **peer-reviewed journal** enriched by additional information for members. The second 2019 issue includes **12 reviewed articles** covering subjects like ancient beer, firing pottery with camel dung, antler working and bead making, or reconstructing ornamentation on Russian pottery. For more information, see the website at https://exarc.net/ or contact Roeland Paardekooper R.P. Paardekooper r.p.paardekooper@exarc.net

Special Issue
CARTS AND WAGONS
from around the world

This section – a gift to AIMA newsletter readers from members and friends – started out small, then grew and grew, thanks to the generosity and enthusiasm of our contributors, so here is a medley of images from around the world, with some technical details thrown in to add to the pleasure. We begin here with an article contributed by the French expert on farm vehicles, Etienne Petitclerc, and move on to fine collections, large and small, but, first of all, **special thanks to our contributors**: **Barbara Corson, Brecht Demasure, Victor Hugo Gomes, Målfrid Grimstvedt, José Luis Mingote Calderón, Etienne Petitclerc, Bob Powell, Debra A. Reid, Fideliu Rubinescu-Ostriceanu, Pete Watson and the Écomusée d'Alsace.**

Etienne Petitclerc will kick off with thoughts about past and present-day animal draft and conservation of heritage vehicles in **France**. Elodie Massouine, at the COMPA in Chartres, **France**, will turn to the very small is beautiful, with a collection of model farm carts and wagons, and a hint at the wealth of their photographic archives. Brecht Demasure at the Centre for Agrarian History in **Belgium** will share three examples from the 'Collection Bulskampveld' from Flanders. Then, Bob Powell goes into the detail of one sort of cart-wagon typical of the Eastern Countries of **England** – the hermaphrodite. This is followed by a summary of the **English** cart and wagon expert David Viner's outstanding source book on the subject and a note from the Guild of Model Cartwrights, equally expert in fine-detail models of historical vehicles and implements. Back to the continent! where Målfrid Grimstvedt will

take up three examples of horse-driven transport for humans and harvests in **Norway**, while Hanna Ignatowicz at the National Museum of Agriculture and Food Industry in Szreniawa, **Poland**, provides a medley of very different transport uses, including "railroading" beets. Fideliu Rubinescu-Ostriceanu tells us the story of one highly decorative horse cart, mainly used on festive occasions and today a part of the heritage of Ialomiţa judeţ in southeastern **Romania** at the National Museum of Agriculture. José Luis Mingote Calderón concentrates on the **Portuguese** sources in postcards, especially on the carts with a moving axle and fixed wheel. In Goa, **India**, Victor Hugo Gomes introduces us to a small part of his own Goa Chakra Museum collection of vehicles of every sort and his love of highly crafted objects. Turning to **North America**, Barbara Corson uses a single example to explain how two-wheeled dump carts were constructed and functioned. Pete Watson, in the **U.S.**, emphasizes how cost-conscious farmers were, devising ways to efficiently transform vehicles to operate in all seasons, as if by magic. Debra Reid provides examples from a surprisingly **international collection** at The Henry Ford in Dearborn, Michigan, **U.S.A.** The tour is wrapped up by a photo essay on the Ascension Day Oxdrivers' Weekend 2019 at the Écomusée d'Alsace, **France**.

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Animal draft and its multiple heritage: a French problem?

Utilitarian harnessing methods are *invariably* the pertinent expression of an activity (agricultural, industrial, commercial) in a particular environment (that may be economic, geographic, technical and cultural, all at the same time).
Innovation has been a permanent feature over the last 2500 years and applies to material (harness, vehicles, tools), zootechnics, architecture, urbanism, agronomy… Over the course of time, techniques and know-how have developed, converged, been substituted one for another, or traveled (with population movements, itinerant apprenticeships, trade) and have survived in niche environments.
These parameters lend the subject of "animal draft" a patrimonial dimension that, above all, calls for a dynamic approach.

Long neglected by historians and many museum keepers, the heritage/s of animal draft "à la française", bearers of testimony to the needs, tastes and the know-how of their time, generally partake of a paradox: a past wealth and prestige equaled only by how little is now known of them, and their present fragility.

An erroneous assumption long sealed the fate of working vehicles and harness: since they seemed to be ubiquitous, they were once believed to be of unlimited availabity, whereas, very few of these objects, cumbersome and hard to handle, difficult to engage the public with, have actually made their way into museums. How many were abandoned, broken up and burned? Today, how many of them stand there as decoration for round-abouts, how many others are used to show off logos (including for museums)?... All of them are condemned to disappear in the near future.

Conserving them, however paramount this is, cannot be the only thing we must do. When they stand alone and anonymous, these objects lose all meaning, and we know that, as far as heritage is concerned, not understanding something makes it very fragile. For all the objects that some collector's benevolence managed to spare, there is now the whole issue of documentation.
Just regretting the immense losses will not change anything and the many artistic and archive traces can – at least partially – come to our rescue.
Taking into account the type of vehicle or equipment pulled, the nature and number of animals harnessed, the way they are arranged, the harness utilized, the way they are driven,

and various accessories, I estimate at around 400 the number of traditional utilitarian harness methods at work in Metropolitan France at the beginning of the 20th century… (60% are rural, 50% of those concern transport).
The backward image of animal draft was often due to the fact that the last everyday harnessing methods, as they were at the time, generally did not take into account the latest progress (in questions of harness-making, for example, a field that was highly innovative right up to the inter-war period).

We must not indulge in hasty criticism, however. Thanks to people passionate about transmission, committed professionals still make it possible to envision a future with animal draft, especially in responsible farming developments.

Born in 1972, Etienne Petitclerc trained as a historian and has been an archivist for twenty years. Fascinated since childhood by draft horses, he began early on to study traditional gestures and know-how in stock-breeding and using working animals, through fieldwork and meetings. He is a handler, collector, independent researcher and his knowledge and documentation efforts have enabled him to take part in many international juries and regularly appear as a lecturer. He is the author of some fifty papers and two books on the French heritage of animal draft. Etienne Petitclerc etienne.petitclerc@yahoo.fr

The full-length article is available online in French and English under the title Petitclerc Traction animale et patrimoine Animal draft and heritage (long) at
https://www.agriculturalmuseums.org/news-2/aima-newsletters/

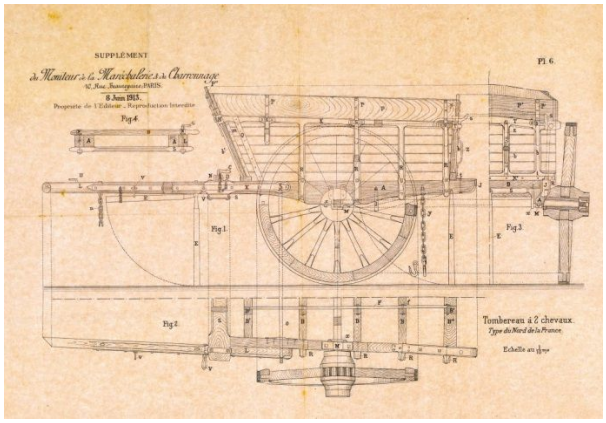


Fig. 1 – two-horse tip-cart plan taken from the *Moniteur de la Maréchalerie et du Charronnage* (French journal published under this title between 1909 and 1925), workshop drawing on tracing (62x43 cm.)

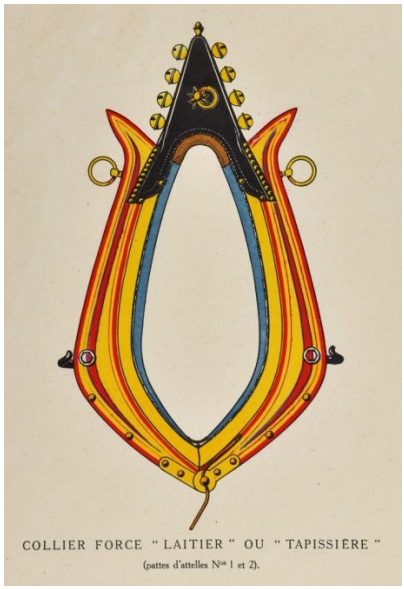


Fig. 2 – Familiar shape of a milk-delivery horse collar: pointed "ears" (the hames), bright colours, fixed shake-bells. From the catalogue of the Renaud collar-makers, 1905. Léon Renaud was a renowned work-harness-maker located at 10bis and 12 rue Saint-Maur in Paris (11th District)

Fig. 3 – Ox-drawn vinyard harness (Garonnaise breed) in Médoc (France, Gironde)

Fig. 4 – Villiers-le-Bel (France, Oise), 1909. Wagons used in the large grain-growing farms just north of Paris and south of the Oise do not look as massive as their counterparts in the North of France. Average interior dimensions: length 5.10m, width 1.20m, height of side rails 0.60m. A wagon of this type weighed around 2400 kg with a maximum load capacity of 7000 kg. They were usually equipped with double shafts (for harnessing 3 or 4 horses in line), unless they were hitched to oxen (4 to 6 in pairs with a head yoke).

Fig. 4a - Team of four Nivernais-Charolais oxen in front of a haystack under construction (France, Oise). The oxdriver is standing beside the hind pair (you can see his goad), a carter-carrier (who would have been driving another team, of horses, not shown) can be identified by the whip over his shoulder and is posing for the photograph beside the front pair of oxen

Fig. 5 – An Ardèche carter-carrier (France, Ardèche). The shaft-horse has a 'plank' collar covered with its horse-cloth; the middle horse and the leader have southern collars and their *vara* (covers made of sheepskin with coarse wool, dyed blue, called *chabine* in Berry or *chabane* in Brie). This tradition was also found in Dauphiné, Languedoc and Roussillon.

Fig. 6 – Ploughing in Berrichon Champagne (France, Indre, Déois) with Nivernais oxen (Charollais) and Percheron horses. Berry (France, Cher and Indre) is a stockbreeding region that had an important trade in working animals.

Fig. 7 – Grape harvest in Vauvert (France, Gard). A *pastière* hitched to three strong mules in festive gear (these collars were called *Sarrazins* when they had votive decorations attached). The 'ordinary' carts used for transporting harvested grapes of Languedoc wine-growers were equipped with a kind of box with a waterproof canvas spread over them (or a vat, for the more 'modern' version): the *pastière*

Fig. 8 – Multi-use fore-carriage (urban, in spite of the background here!), presented by its designer, Bernard Michon, at the "Trait Comt'Est " International Meeting of Draft Horses in Magny-Cours in 2016 (France, Nièvre).

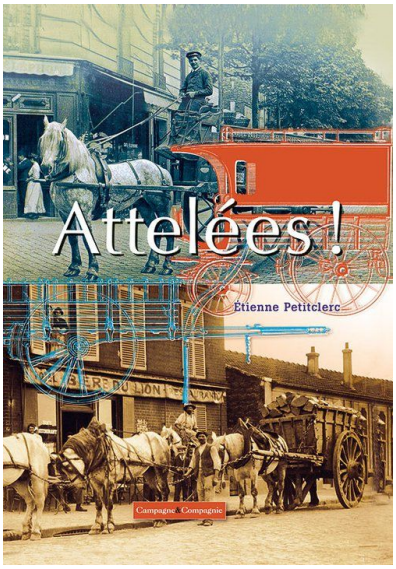


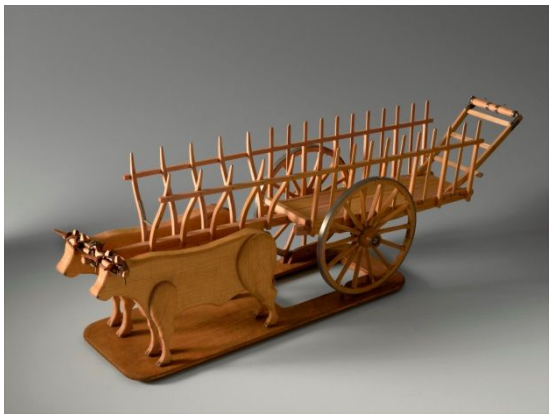
Fig. 9 – Etienne at work

Etienne Petitclerc *Attelées!* Éditions France Agricole, 2016, pp. 342, every page with black-and-white, colour photographs, drawings, vehicles plans, bibliography, weblinks, magazine sources. You won't believe it, unless you read it. (Editor's comment)

Small is beautiful – from the collections of the COMPA Chartres, France

2013.10.52_jpeg_02 Â© Jean-Yves Populu

The COMPA (Conservatoire de l'agriculture) has a very large collection of model farm vehicles and implements created in the late 1980s and early 1990s, as well as their archive collection of photographs and postcards, to share with us. With thanks to Élodie Massouline, Chargée des Collections, COMPA, Conseil départemental d'Eure-et-Loir, Direction des affaires culturelles, Chartres, France, Elodie.MASSOULINE@eurelien.fr



2012.01.51_Â© J.-Y. Populu_01

Carts and wagons in the Bulskampveld Collection Centre for Agrarian History (CAG), Leuven, Belgium

Since the beginning of 2018, the Centre for Agrarian History (Leuven, Belgium) has been responsible for the management and public valorization of the 'Collection Bulskampveld', owned by the Flemish government. The collection counts more than 8500 artefacts and consists among other things of carts, wagons, agricultural tools and material for crafts such as wheelwright, blacksmith and woodworker. Most artefacts come originally from the province of West-Flanders (Belgium). You can find a large selection of objects at this website www.collectiebulskampveld.be, clicking on 'virtuele collectie' (virtual collection, for the moment, only in Dutch). Carts and wagons form one of the spearheads of the collection. In this short contribution we have the pleasure of presenting three of them.

.....

Polder wagon

This wagon is typical for the Polder region of Flanders near the coast. They were used at big farms to collect the harvest. The polder wagon had, like all such vehicles, four wheels, of which the two smaller - the front wheels – could pivot. The container was not straight, but had a graceful, curved shape: the side panels were lower in the middle than the ones in the front and at the back. The boards were sometimes decorated. This wagon was made between ca. 1860 and 1930.

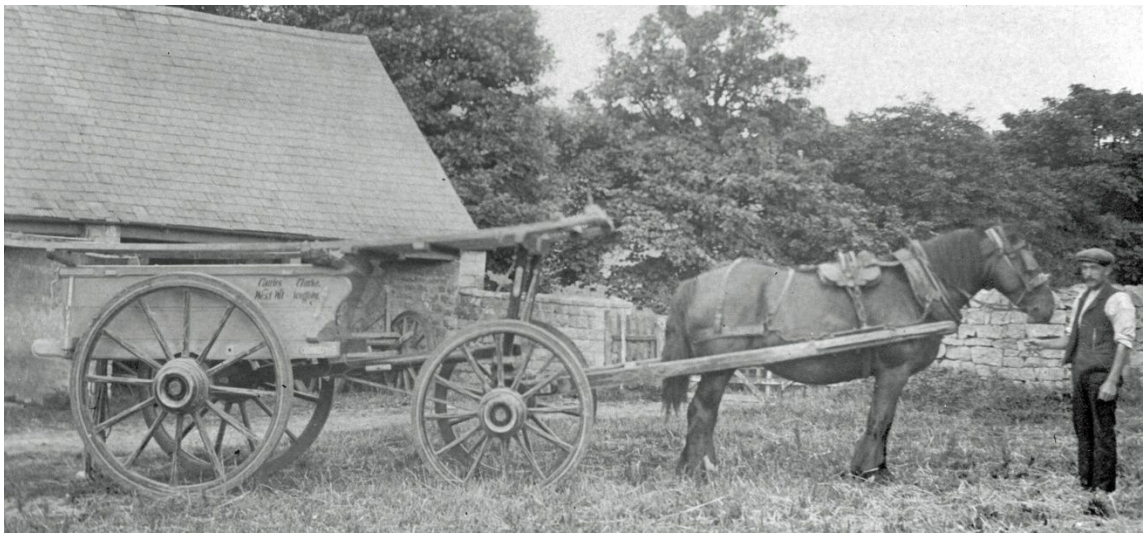
Polder wagon, Collection Bulskampveld, n° 51

https://www.erfgoedinzicht.be/collecties/detail/40f54648-65ad-53b4-92e3-412a53bcbc89/media/6d16015f-797e-f858-8a45-80f6a9bc3cdb?mode=detail&view=horizontal&q=polderwagen&rows=1&page=3

Three-wheeled cart
The Flemish three-wheeled cart was present on every farm where draft animals were kept. The container of this type of cart could tilt without unharnessing the horse. The big advantage of the three-wheeled cart was the pivoting front wheel with small turning circle which facilitated maneuvering. It was a rather heavy construction, and could therefore carry relatively large loads, but was also expensive to purchase. Since the cart was used for various purposes, it was often the only vehicle on the farm. This particular three-wheeled cart was constructed between 1860 and 1930.
Three-wheeled cart, Collection Bulskampveld, n° 75
https://www.erfgoedinzicht.be/collecties/detail/8616c42f-47be-5cd3-b81e-6d021e135bbf/media/5d923ca6-5818-fa51-2d8e-47170655cf34?mode=detail&view=horizontal&q=driewielkar&rows=1&page=9

Dog cart
Until the Second World War, the dog cart was a widely distributed and widely used vehicle, especially in the countryside. The construction differed from cart maker to cart maker, but was in essence always similar. With the dog cart the farmer went to the market, to the mill, to the dairy, to the city... From the 1920s onwards, more and more restrictive welfare measures were taken by the government to protect the welfare of the dog. In 1975, finally, the use of dogs for draft power was permanently prohibited by Belgian law, although at that time, the dog cart was no longer in use.
This dog cart is dated to between 1880 and 1940.
Dog cart, Collection Bulskampveld, n° 344
https://www.erfgoedinzicht.be/collecties/detail/7f1ca11e-61f2-5f98-9b44-f60177e993cf/media/05976619-dbb5-ebc3-0dbb-bb424d0eb27a?mode=detail&view=horizontal&q=hondenkar&rows=1&page=3
Brecht Demasure, collectiebeheerder Collectie Bulskampveld, www.collectiebulskampveld.be, Centrum Agrarische Geschiedenis (CAG), Leuven, Belgium, Contact: brecht.demasure@cagnet.be

The Hermaphrodite Cart
Eastern Counties of England



The Hermaphrodite Cart is a *type* of cart ~ waggon that was used in the eastern counties of England, for example Lincolnshire and Cambridgeshire, from the 1800s until the mid-1900s. In farm parlance, it was often called a *"*mophrey*"* and was created, primarily in hay or harvest time, by extending a two-wheeled cart through the addition of a fore-carriage and *"*raves*"* or *"*ladders*"*.

The basic cart was often, as known to the writer, a "Scotch cart" i.e. a lighter-built cart that, associated with the later 1800s migration of Scottish farmers to the eastern counties, replaced heavier "tumbrils" used in the area. The basic cart, capable of carrying one ton of such crops as potatoes, was limited for hay or grain sheaves. However, by removing the shafts and adding a fore-carriage along with harvest *"*raves*"* or *"*ladders*"* (a wooden frame used to extent the loading platform) around the cart's body and over the fore-carriage, it created a vehicle closer to a waggon's capacity. The shafts were re-fitted to the fore-carriage for the horse.

Figure 1 shows a 'mophrey' that belonged to Charles Clarke, West Willoughby, Lincolnshire circa 1910. Figure 2 shows the author in 1980 driving a 'mophrey' in the care of the Peterborough Farm Machinery Preservation Society, but which had belonged to Frank Smith of Kirton, Lincolnshire. The orange colour, traditionally correct for the area, is in fact 'red lead' paint which turns to pink as the lead oxidises, often confusing restorers who think they should be that colour!

Bob Powell, former Curator of the Highland Folk Museum, Newtonmore, Scotland; Working Horse and Farming Historian, bob.powell53@btopenworld.com

A classic source book on carts and wagons

David Viner *Wagons and Carts,* line drawings by David Wray, Shire Publications, 2008, with pp. 64, black-and-white and colour photographs, line drawings, index, bibliography, sites to see carts and wagons.

Like most Shire publications, this small volume is packed with erudition, outstanding photographs, both black-and-white and in colour, enhanced by numerous line drawings of the vehicles and of their component parts, carefully labelled, so the book punches far over its

weight. It opens with a surprise – to us, perhaps – that is, the suggestion in 1953 that a splendid way to celebrate Queen Elizabeth II's coronation would be to mass all the old farm wagons lying around and burn them. Fortunately, this gave rise to vociferous protest from many, including the MERL (Museum of English Rural Life), which mounted an exhibit of wagons to celebrate the event through their elaborate construction techniques and often impressive aesthetics. Both carts and wagons show highly regional, even deeply local, styles and names, including for their components. The book discusses such technical changes as the rise of the movable fore-carriage in the 17th century underwriting the increased use of horse power, such finesses as why wheels are "dished" (set at an angle) to counteract the sideways pressure of larger and larger loads, as well as the consequent regional variation in dishing.

It was often the fate of the hard-working, exhausted cart not to survive, in contrast to the more prestigious wagons, with their spectacular variation in body design. Their front axle could determine the "lock" (the degree of turn a wagon can achieve: quarter-lock, half-lock, ¾-lock, full lock with a fifth wheel), and dishing does create extra turning space. David emphasizes that there is no obvious linear development in this branch of technology, but overlapping innovation, much debate on whether wagon evolution was pushed by draining efforts and enabled by road improvement through the establishment of turnpike trusts. What is evident by the end of the wagon era is that they were highly recognizable to connaisseurs and one of the highlights today is when they have kept their once-obligatory owner's ID plates (accident insurance….).

Identifying regional types is one of the main points of the book, for which sketches and photographs abound, with the major division between box and bow types, and where wagons "run out" and "into" carts – in the Welsh hill country. Alas for collectors and museums, some wagon types went "extinct" and are known only by their names. The bow wagons seem to have considerable influence from Dutch traditions, and types of wagons may have "migrated" within the British Isles, but there are few traces to help researchers on this point. It is clear that box and bow wagons were often used side by side, as indicated by the classic surveys by Geraint Jones and earlier sources, such as the drawings by Arthur Young or reports by William Marshall.

The book moves on to boat, barge and trolley wagons, the last for urban delivery which eventually influenced the design of the first motorized lorries. Old catalogues, many of which were carefully archived, show the immense variety on offer, frequently used by the Guild of Model Wheelwrights as a source for their exquisite works of highly precise reproduction. The glossary includes an exploded diagram of a Suffolk wagon and a typical nave, with a detailed diagram of a cart and its vocabulary in the chapter on carts, as well as equal attention to wheel components in photographs.

News from the Guild of Model Wheelwrights

Unfortunately, the news is not too good – unable to find members who can carry on the publication of *Wheel Write* and other communication, the Guild decided to close down at their October 2018 AGM, although the website will continue for an as yet undefined period at http://www.guildofmodelwheelwrights.org/ and you can still enjoy the pleasure of a visit to the members' work over the years.

WELCOME TO THE GUILD OF MODEL WHEELWRIGHTS.

The "Guild of Model of Wheelwrights", "GOMW" or just "The Guild" has been going for about 25 years. At one time the Guild could boast an average worldwide membership of about 125 members. This number would fluctuate each year due to members passing away or ill health, but new members would join each year. Very few younger members would join.

At the Annual General Meeting of The Guild Of Model Wheelwrights held at Hartlebury Castle on 7th. October 2018, the committee unanimously decided to close down the Guild. This was due to the recent death of our Treasure Mrs Jan Kitching and the fact that no one else was willing or capable of taking the job. Other committee members, the Secretary, Chairman and Magazine Editor expressed their desire to hand over their respective jobs (we are all getting older and slower!) but again, no one else was prepared to take over.

Although the Guild has closed down and there will be no more "Wheel Writes" magazines printed, or new members accepted, this website will still continue for an unspecified period of time.

From the very beginning the Guild was formed, their were many active model makers who were willing to display their models at various venues around the U.K. A number of these earlier model making members have sadly died but new model making members have replaced them so there has always been about 20 to 25 members prepared to exhibit their models. We are a group of enthusiasts who are devoted to the promotion and construction of precision scale models of all types of horse drawn vehicles: this includes agricultural machinery, carts and wagons, light and heavy commercial vehicles, passenger and road vehicles, gypsy caravans, and many other little known but fascinating vehicles that are of great historical interest.

The picture shown to the right is a 1/8th scale model of a Lincolnshire Hermaphrodite Farm Wagon, made by Guild member Patrick Hall, from Warwickshire, from a David Wray plan. This type of vehicle was common throughout the East Midlands, and for most of the year the rear part only was used as a tip cart. At harvest time an ingenious conversion provided the wagon with a large carrying platform needed in the corn growing districts. The model here shows the forecarriage and loading platform fitted.

As an example of exactly the sort of valuable resource the Guild has represented for over two decades, here is a glimpse of the Lincolnshire hermaphrodite farm wagon. The Guild deserves a place in the AIMA Newsletter special issue on wagons and carts and this is a **note of caution to agricultural museums, researchers and their friends** that valuable resources can well disappear or, at best, be dispersed. However, it is still possible to contact the Guild:

"When you publish your newsletter please let it be known that although the Guild is closed to paying membership, we have a group who will continue as the Guild of Model Wheelwrights, and will continue exhibiting our models for as long as possible, we will be maintaining the web site but on a reduced basis, I am continuing to offer the plans service to who so ever might require its services for as long as I am physically able, and offer to provide either paper copies of plans at cost of printing, post and packing and out-of-hand expenses, or alternatively can offer to email plan files at the cost of a small donation to our funds, any scale can be accommodated." j891castle@btinternet.com

Perhaps there is an opportunity here for agricultural museums to help at the very least to support the efforts of the continuing Guild members and make their work known.

Horse-driven transport in agriculture in the collections of the Jærmuseet, Norway

Jærmuseet is a family of museums at 13 different locations across the Jæren region as well as the regional science center for Southwest Norway. Jæren is a traditional district in Rogaland county, Norway, and the largest flat lowland, including the Stavanger Peninsula, so strongly connected to the farming industry, due to its long crop period and a varied and well-developed livestock production. Jæren is home to one of the largest producers of agricultural machines in the world, the Kverneland Group. Petroleum is also an important economic activity and the headquarters of the country's largest oil company Statoil are in Jæren, as are regional offices of other international petroleum companies. Time, with its library, is one of the major towns in Jæren. (https://en.wikipedia.org/wiki/J%C3%A6ren)

Horse-driven transport in agriculture

Jærmuseet has a collection of a few horse-drawn wagons, and somewhat more two-wheeled carts. They were used for a multitude of purposes at Jæren. In the spring, carts transported manure out onto the field, in the autumn they carried the produce back to the farm. In between, they put in a seat for one or two persons and drove to the shop.

Some people had a better "town cart" for going to church and other more prestigious business. In other parts of Norway, with more prosperous farms, the selection of wagons and carts would have been larger.

Horse-driven transport was not common in agriculture until the 19th century, with the building of roads between farms and valleys. At Jæren they used the spade and not the horse-drawn plough in the fields. During the 19th century, they started to clear the fields of stones, and that cleared the way for the horse and carts in agriculture.

Målfrid Grimstvedt, Head curator, Head Curator, Jærmuseet, Nærbø, Norway,
Maalfrid.Grimstvedt@jaermuseet.no

Tranport to church in the 1920s. This spring cart is typical for the early 1900s. Photographer unknown, Time, Library

The whole family at work in 1935. A full and an empty two-wheeled cart for transporting hay. Photographer unknown, Time, Library

Taking the swedes home from the field in the 1930s. This was the most common cart for different purposes. This cart was usually a tipper. You could open the back and tip up the front. Photographer unknown, Time, Library

A medley of transport vehicles for multiple uses from the National Museum of Agriculture and Food Industry, Szreniawa, Poland

The following pictures come from the museum's collection and from the exhibit catalogue *Historia Transportu Wiejskiejo* (History of Rural Transport) with illustrations of vehicles, wheel and carriage design, implements, horse harness, human draft (carry yoke), and even field carts for small-scale railway transport.


Left: a sulky, Right a “zardiniera”



Animal transport in a *handlarka* and on the right, a *handlarka* for meat transport, inter-war period, from Wielkopolska


A 1930s wagonette from Wielkopolska and a Posnan *hela* farm cart


Portable railroad for beet-collecting cart and a field railroad carriage

Hanna Ignatowicz, Kustosz, Muzeum Narodowe Rolnictwa i Przemysłu Rolno-Spożywczego w Szreniawie, Poland, h.ignatowicz@muzeum-szreniawa.pl

THE HORSE CART OF BRĂILA
A SYMBOLIC TALE FROM THE WORLD OF THE VILLAGES OF IALOMIȚA

The history of traditional transport brings with it an emotional charge that is hard to imagine in a century centred on individualism and speed. From the research projects of the National Museum of Agriculture, materialized through the acquisitions of objects, we would like to present *the horse cart of Brăila.* This cart impresses the visitor not only with the colour palette that wraps the outside of the cart basket and its accessories. The cart has an interesting journey from when it was commissioned and made in 1931 until it entered the heritage collection of the National Museum of Agriculture.

The history of this piece begins with Mr. Coman Ene's wish to have a cart that would satisfy his peasant pride as a land labourer, who knows how to appreciate and enjoy a thing well done. In order to achieve this, he approached the master Nicu Munteanu from Brăila, a man with technical and artistic sense. According to the story of the former owner, who was a child back then, he remembered when his cart was brought home by his father, surprised by his beauty "... when he brought it, it was dyed, it looked like a decorated Easter egg.. . " His love for this cart led him to keep it up and, in 1954, the colours of the cart were refreshed by master I. Cretu of the Gheorghe Lazar commune, a name the owner wanted to inscribe on the back of the cart. The Brăila cart was very rarely used for farm business, only when the cart he generally used was overloaded. According to the owner, the cart would hold about 50 pots of corn.

Left: Details on restoration of painting: Master I. Crețu 1954, beside the Owner's name, Constantin Ene
Right: Details regarding the year of construction, 1931

Why is this cart so special? Of course, there are several reasons that should be examined systematically. There is not just a single point of reference to show its value and the beauty of the cart is interwoven with the majestic soul of the owner. The technical aspect also has its role in the fame of this cart. Here is how Ene Constantin, the former owner, describes it: "It was built of amazing shafts, spare parts, pipes, some fine and thin steel sheets; these were punched and pounded and then thinned, as thin as possible, and then were pressed... The noise it made was deafening, it sounded like a bell." Also, according to the former owner, there was a version of a Dobrogean cart, but it did not have as fine a sound as the Brăila version. The harnesses with bells and the sound of the metal sheets attached to the shafts of the cart made you notice the cart as soon as it entered the village. It was a joy, watching it and listening to it.

Another aspect that led to the joy of using this cart was determined by the transport. The former owner remembers that he transported more than 40-50 brides at weddings, in the past, when a convoy of carts was formed for the wedding procession. Ene Constantin did not get rich from this activity. The transport was free and, as he said: "... that's what I did for the sake of the father-in-law ..." It is in fact yet another emphasis on the village's affiliation, honouring the events that took place inside it, offering the most valuable goods.

Thus, this cart remained in the memory of many generations, as well as its owner, Ene Constantin, a memory that goes on, by entering the collection of "Traditional Transport Means", at the National Museum of Agriculture in Slobozia (inventory number 3427). At the same time, the cart helps us open another page of Ialomiţa history, whence the villages in this area can be known by the moral and ethical values they embrace and, of course, through this collection, including the Brăila horse cart.

Fideliu Rubinescu-Ostriceanu, Museum Curator, National Museum of Agriculture, Slobozia, Romania, mna_slobozia@yahoo.com

Portuguese carts in postcards

José Luis Mingote Calderón reminds us that postcards figure among the finest documents attesting to rural and urban traditions in Portugal, if their limitations – so often being posed for the photographer, among others – are taken into account.

Fig. 1. Portugal. North of Portugal, probably from Minho. Cart with moving axle and solid wheel, carrying sacks and in which a neck and board yoke (*canga*) can be seen. We must especially note the man wearing shoes and the woman without. Uncertainty about precise geographical location may be taken as quite normal in old postcards.

Fig. 2. Moura. Alentejo carts, fixed axle and spoked wheel, pulled by oxen and mules. They are unloading bundles of wheat onto the threshing floor. The postcard was sent in 1914, but the image seems older because of the static attitude seen in the people. The postcard was used as an advertising element by Aguas de Moura [Moura Waters].

Fig. 3. Porto. Cart with moving axle and solid wheel, pulled by oxen, transporting a large vat of wine in the vicinity of the São Bento station, in the center of the city. In the picture, it coincides with trams and horse-drawn carriages. The postcard was sent in 1906.

Fig. 4. Serra da Estrela (Beira). Cart with moving axle and solid wheel, pulled by oxen. According to the caption [bottom right], it is loaded with hay (*feno*), but it seems more likely to be branches.

José Luis has been kind enough to send us an extensive **bibliography in Spanish on carts with a moving axle and solid wheel**, which can be accessed on the AIMA website under the title Mingote Calderon BIBLIOGRAFIA RELATIVA AL CARRO CHILLON EN ESPAÑA at weblink https://www.agriculturalmuseums.org/news-2/aima-newsletters/

José Luis Mingote Calderón, Conservador de la Colección de Europa, Museo Nacional de Antropología, Madrid, Spain, jluis.mingote@mecd.es

The Goa Chakra Transportation Museum

A moving experience

Goa Chakra is a transportation museum, the first of its kind in India. Conceived, created and curated by Victor Hugo Gomes, it is a place for collection, restoration and documentation of the rich heritage of the wheel. Exhibition galleries display a unique collection of over 70 non-mechanized indigenous carriages, carts, palanquins and other historically significant artifacts from across the country, each handpicked to showcase the craftsmanship and ingenuity of its creator.

The collection has special relevance for a country which bears at the very centre of its national flag, the Ashoka Chakra. This wheel—of the law of *dharma* or virtue, and *satya* or truth—was conceived as the guiding principle for those who pledge allegiance to the flag. The Chakra also represents motion and the belief that there is death in stagnation and life in movement. Symbolizing more than just carts and carriages, this museum celebrates the wisdom of our ancestors, their creativity and eye for detail and their love for beauty and art.Goa Chakra is presently being housed along with Victor Hugo Gomes' first venture, Goa Chitra, an ethnographic museum set against the backdrop of a working organic farm in Benaulim.

During his years as a fellow researcher of tribal art in North India, Victor witnessed the lifestyle of the artisans and the skill that went into creating wheels and other items for their carts and carriages. On being offered a Lalit Kala Academy scholarship, Victor studied "Experimental transitions in the world of art", a subject that covered the use of different materials and processes in art over time. Researching the countrywide ban on carts, carriages and *tongas* [or *tanga*, a light one-horse carriage], he realized that it wasn't just the vehicles that were becoming extinct but also a way of life for the Gadulia Lohars and other tribes and nomadic groups. Any memories that remained were hidden away in *godowns* [warehouses]

and storerooms of antique dealers, occasionally repurposed by lifestyle designers with no documentation or record of their once-glorious past.

The carts and carriages themselves were obtained by curator Victor Hugo Gomes, from their owners who had abandoned them in their backyards and from the storehouses and dump yards of antique dealers. Every cart was acquired at a price but each of them has undergone extensive restoration which highlights the craftsmanship of their inventors. Gomes' personal collection is a result of two decades of painstaking travel, documentation and research. The Goa Chakra Museum is being temporarily housed as an extension of the Goa Chitra Museum. Goa Chitra, the Ultimate Museum of Goan Ethnography https://www.goachitra.com/

Victor Hugo Gomes, Founder and Curator, Goa Chitra Ethnographic Museum, goachitra@gmail.com

An American two-wheeled dump-cart

Right: dump cart off hub outside view

Two-wheeled dump carts were common in America prior to the Petroleum Era. This one was purchased in the late 1980s at an antique store in Gap, Pennsylvania. The shafts are not original and do not have the typical hardware: a metal staple to which the draft, support, and hold-back straps connect on each side. The axle is made of wood and is fixed to the cart bed. At the hub, the axle is strengthened with a metal cuff. The wheel is held in place with a washer and pin. The shafts attach in front of the axle via an iron hook and loop. This allows the bed to pivot on the axle, into a nearly vertical position without affecting the shafts much. In fact, if the wheels are blocked, the horse (or ox) can dump the wagon by backing.


Left: dump cart near shaft hook from rear; Right: dump cart near shaft hook

Barbara Corson, VMD, retired veterinary pathologist, amateur historian and agrophile, hooftales@MSN.COM

Presto changeo!
Farmer's magic: summer wagon to winter sled


The Sunny South wagon and bobsled pictured is part of the 'working collection' used on a 130-acre historic site operated by the Mercer County Park Commission as a "living history" farm where visitors can learn about the lifestyle, buildings, and crop/livestock operations commonly seen in rural New Jersey (USA), circa 1900. In keeping with the cost-saving practices of many farmers of the times, the wagon body or box that is shown on running gear (wheels) is transferred onto a set of bobs (sled) during the winter, so that seasonal work can be done without the need to purchase two boxes. For example, the standard "10-foot 6-inch box with bottom bed, 14 inches deep" that sold for $9.85 in the 1907 Sears, Roebuck Catalogue (see below), was made in 38" or 42" widths to fit on gear or bobs with bolsters of equal width. Farmers could buy a deeper box for an additional $.85, a "high grade spring seat" for $1.85 and a "box brake attached" for $1.80. At Howell Farm, farmers are careful to avoid transferring the box from the bobs to the gear too early, for fear of causing a Spring snow.

Pete Watson, Director, Howell Living History Farm & Pleasant Valley Historical Park, Hopewell Township, New Jersey, USA, pwatson@howellfarm.org

For a world tour, start at The Henry Ford in Dearborn, Michigan, U.S.A.

All the following photos are by kind permission "From the Collections of The Henry Ford".*

Fig. 1. THF72164: Lantern slide, Man with Ox Pulling Cart in Japanese Village, New York to Paris Race, 1908; Glass lantern slide with black paper tape on all 4 sides. Creator: Arnold, C. D. (Charles Dudley), b. 1844. Dimensions: Height 3.25 in, Width 4 in

Remarks: Glass lantern slide shows a line of oxen and ox carts being walked through the streets of a small Japanese village by men in local clothing. Taken when the Thomas Flyer was going through their village but is not seen in this image. This image was taken during the 1908 New York-to-Paris automobile race. which started on February 12, 1908, with 20 teams from different nations and ended after 169 days on July 30, 1908, with a win by an American team driving a 1907 Thomas Flyer. Note: The Thomas Flyer team was in Japan from about May 3 to May 16, 1908.

Fig. 2. THF72235: Lantern slide. Team of Oxen with Thomas Flyer in Manchuria, New York to Paris Race, 1908. Creator: Riley Optical Instruments Company. Dimensions: Height 3.25 in, Width 4 in.

Remarks: Glass lantern slide shows an image of a wooden cart with large wooden wheels hitched to 2 oxen in front of the Thomas Flyer in a grassy field. Miller, Schuster, Hansen and a local man are in the image. This image was taken during the 1908 New York-to-Paris automobile race [ed. note: see further on dates of race above]

Fig. 3. THF72265: Lantern slide. Village in Russia, New York to Paris Race, 1908. Creator: Unknown. Dimensions: Height 3.25 in, Width 4 in.

Remarks: Hand colored glass lantern slide shows an image of a man perched high up on a horse drawn cart of hay, in an unidentified village in Siberia. Two young boys are walking beside the cart. This image was taken during the 1908 New York-to-Paris automobile race.

Fig. 4. THF119038: Photographic print. Technique: Gelatin silver process, Toning (Photography). Boys on Donkey Cart, Street Corner of the French Market, New Orleans, Louisiana, circa 1905. Creator: Detroit Publishing Co., Glover, L. S. (Lycurgus S.), 1858-1935. Dimensions: Height 6.875 in, Width 9 in

Remarks [abridged]: View shows 5 boys on a donkey cart, 2 others on the ground behind the donkey. Fruit stand behind. On verso: In pencil, a corner of the French Market | [scribbles, partly cut off:] ...hotel..good VN "... Ok Mag /. Photographer: Lycurgus S. Glover /. B85926 Neg No. (1-15-79). In grease pencil 039639 X. Ink stamp on verso reads: This is a preliminary and incomplete proof; the sole property of Detroit Publishing Co. which reserves the rights of use. It is loaned on express condition of being returned for correction without publication.

Fig. 5. THF252060, Photographic print. Harvested Tomatoes Delivered by Wagon, circa 1910 (coastal New Jersey – exact location in another entry).

Remarks: Photo shows horses pulling wagons filled with bushel baskets of tomatoes that have just been harvested. [Reid: NB farmers were contracted by Heinz to grow for them.]

Last, but not least, a view of the contrasts in “modern” life expressed through photography and the invaluable archive collections it gave rise to – American and French pioneer pilots, their flying machines captured above farmers at work on their land.

Fig. 6 THF 285541 Wilbur Wright Flying over a Farm, Pau, France, 1909.

Fig. 7 THF 285500 Louis Blériot in Flight, 1908.

Debra Reid, Curator, Agriculture and the Environment, The Henry Ford, Dearborn, Michigan, USA, DebraR@thehenryford.org

*With special thanks to Jim Orr, Image Services Specialist at THF, and Debra Reid for enabling the AIMA Newsletter to utilize these documents.

Working carts, wagons and timber-carts at the Écomusée d’Alsace (Alsace Open Air Musuem) Oxdrivers’ Ascension Day Weekend 2019

Milk cans arrive for Cow and Calf Day

Green fodder freshly cut arrives at stables
(Photos Cozette Griffin-Kremer)

Char-à-banc for visitors' tour

Visit to the Kuhlmanns' hill farm

Ready for quiet field work

and part of the log-hauling parade to celebrate re-opening of the water-driven sawmill

News about Food and Agriculture

The Amazon forest once harboured high populations of farming-fishing communities

Once considered wild and pristine, ideas about the Amazon rainforest have been turned on their heads – it was an anthropogenic landscape long before the arrival of Europeans and inhabited, not by the handfuls of peoples it is today, but by a society of millions who built vast earthworks and cultivated multitudes of plants and animals. The earliest European explorers wrote of sprawling towns and impressive monuments, all of which seemed to have vanished and the argument prevailed for decades among researchers that the soils were too acidic and nutrient-poor to enable agricultural practices supporting large populations.

Fig.1

This dogma was turned round in the 1990s, when native Amazonians showed a series of remains of palisaded villages to scholars and one of the critical clues to the viability of the area had been known since the 1870s: terra preta, Amazonian dark earth, patches of highly fertile soil that was created by prolonged cultivation. These soils are only part of the story, as the Amazon was densely populated well before they were encouraged and Amazon peoples gradually domesticated impressive numbers of plant species – some 83 by today's count – with some 37 species of fish appearing from archaeological examination. Population appears to have peaked around 1000 years ago at around 8 million.

One of the reasons archaeologists and modern-day explorers overlooked the extensive remains is that they were looking for the wrong thing – stone – whereas the monumental mounds and other features were built entirely of soil, with villages linked by networks of broad, straight roadways. One of the most intriguing additional features of the landscapes are the some 450 geometric earthwork geoglyphs, usually a square or circle, posited to be ritual areas, at times 100 to 300 metres in diameter. Satellite imaging has much advanced the rate of discoveries found.

Fig.2

Fig. 3

Archaeologists presently tend towards envisioning the settlements as non-traditional (for Westerners) cities, though rather comparable to the garden cities of the UK, although the road networks suggest centralized authority of the diffuse cityscapes around a plaza, a kind of mirror image, alter ego of European towns, in which the people farmed fish and trees, rather than wheat, barley and cattle and the contrast is greatest in European reliance on a small number of species compared with the Amazonian agroforesters' use of some 100+. The land-use model may be the optimal way of using tropical forests and their indigenous plant and animal resources.

Michael Marshall "Finding the real El Dorado" in *New Scientist* N°3213, 19 January 2019, 26-29.

Fig.1: Wikipedia Creative Commons. "View of Amazon basin forest north of Manaus, Brazil. Image taken from top of a 50 m tower for meteorological observations, and the top of vegetation canopy is typically 35 m. The image was taken within 30 minutes of a rain event, and a few white 'clouds' above the canopy are indicative of rapid evaporation from wet leaves after the rain." 27 March 2001, Phil P Harris.

Fig.2: Wikipedia Creative Commons. "This is a map location of the Amazon Basin. The yellow line encloses Amazon Basin as delineated by the World Wild Fund for Nature. National boundaries are shown in black. I, Pfly, made it using NASA Blue Marble imagery and ecoregion GIS data which I simplified and digitized in Photoshop. 24 January 2007, Author: Pfly (NASA, plus my additions), Public domain, solely created by NASA. NB the area discussed in *New Scientist* covers all but the most easterly portion of this map.

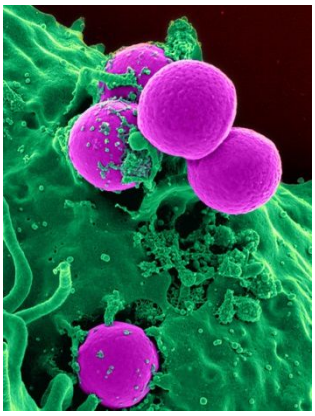
Fig.3: Wikipedia Creative Commons. **Geoglyphs** on deforested land at the Fazenda Colorada site in the Amazon rainforest. Rio Branca area, Acre. Site dated c. AD 1283, 23 July 2012, Author Sanna Saunaluoma. For more on geoglyphs, see http://www.eso-garden.com/specials/eldorado_found.pdf

NB ***Terra preta*** has been in the news for many years and **online programs** are available in several languages. For example, see BBC video at http://www.bbc.co.uk/science/horizon/2002/eldorado.shtml or full-length version at https://www.youtube.com/watch?v=0Os-ujelkgw (English) and a short National Geographic video https://www.youtube.com/watch?v=UJ8-3VaHTVI (French)

The battle against antibiotic resistance

Many people in countries well-endowed with medical treatment systems have forgotten that their grandparents or great-grandparents often saw others die of a minor wound, the flu', or childbirth. Antibiotics have changed what it means to be human, and this applies as much to stock-raising and the agricultural practices that accompany it. Unfortunately, antibiotics have long since ceased to be money-makers for the pharmaceutical firms that must invest heavily in research to find new ones or other pathways to combatting infection and there have been massive closures of the R&D departments that pursued this. Antibiotics simply do not pay,

because they are short-course medicines: US sales of all antibiotics still under patent in 2017 totaled only $700 million, less than what a new cancer drug makes in a single year. However, the human and economic cost of a generalized crisis in antibiotic resistance is inestimable – at the very least, rising to trillions of dollars.



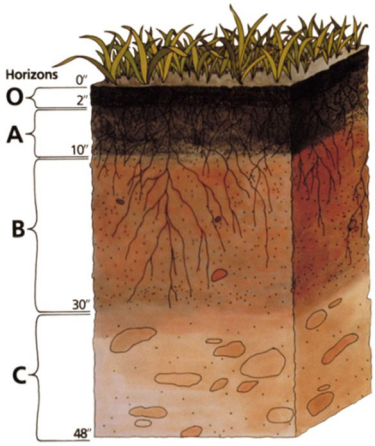
In 2015, a UK government commission called on governments to step in for new R&D with a strategy of "push" (new research funding to pharmaceutical companies) and "pull" (directly paying companies their costs in advance to bring new antibiotics to the market). The US Congress is contemplating a "play or pay" programme under which companies that do not contribute to research help to fund those that agree to do so – and many seem willing, considering that the cost of treating resistance in the US presently stands at $2.2 billion per year there, not considering the costs to animal care.

Such research can include entirely different strategies such as two-drug treatments, finding other bacteria that combat dangerous infection-carrying bacteria, utilizing antibodies from animals to synthesize new medicines, attacking bacteria in entirely new ways, and – back to nature for help at the source – screening soil microbes for antibiotic-like products they have evolved to combat bacteria.

Debora MacKenzie "Facing the resistance" in *New Scientist* N°3213, 19 January 2019, 20-21.

Illustration: Wikipedia "Antibiotics". Scanning electron micrograph of a human neutrophil ingesting MRSA National Institute of Allergy and Infectious Diseases (NIAID), 20 December 2010, in the public domain due to the terms of Title 17, Ch. 1, Sec. 105 of US Code

Only 100 harvests left before agricultural Armageddon?



Left: Soil profile, unknown date, USDA, Wikipedia https://commons.wikimedia.org/wiki/File:Soil_profile.png
Right: Wikipedia Creative Commons, Source: *Governor of Volgograd Oblast at* www.volganet.ru, Author: администрация Волгоградской области, 15 July 2009, CC-BY-SA 3.0 Unported and GNU Free Documentation License 1.3, https://commons.wikimedia.org/wiki/File:Agriculture_in_Volgograd_Oblast_002.JPG

Headlines vary about the disaster in soil degradation that may be looming over the future of food production – from the threat of only 100 harvests more in the United Kingdom up to 100 years into the future – so an inquiry into the scientific support behind such claims is well

worth undertaking. Surprisingly, only one peer-reviewed paper in a scientific journal has been cited as suggesting this, but…. it does not. No other peer-reviewed papers were found, so the author contacted six leading soil scientists around the world. Their comments ran from "too Malthusian" to "I have used this in my soil science lectures to show the students to be wary of headlines". All the scientists agreed there *are* many reasons to be concerned about soil health world-wide, depending on location, but emphasized that the calculations needed to make such predictions are incredibly complex, to the point of being impossible. Also, while soils in some parts of the world are certainly in decline, others are not. Not all modern agricultural practices are contributing to soil quality decline – some are improving it. Closely aligned to current cultural attitudes and conveniently plausible, this particular buzzword headline, if not an outright example of fake news, is to be taken with a very large grain of salt.

James Wong "Are there really only 100 harvests left?" in *New Scientist* 3229, 11 May 2019, p. 24

How Ketchup Made Food Safer

The early forms of ketchup were radically different than today's recipes – from tomato scraps to red dye, described by a French cookbook author in the 19th century as "filthy, decomposed and putrid". The re-invention of ketchup took place in the 20th century with an alliance between one of the richest American food manufacturers, Henry J. Heinz, and an underpaid federal chemist, both in agreement that the nation needed safe food. The chemists at Harvey W. Wiley's tiny section in the Department of Agriculture had long since exposed widespread fraud – from gypsum in flour to brick dust in cinnamon, and "preservatives" ranging from formaldehyde to borax, and Heinz stood up to his business colleagues' resistance to change to join Wiley's crusade.

Heinz, a self-made man with ethics, was wealthy by the late 1800s, the company making some 60 products at the end of the century and 200 by 1900, including horseradish, pickles, vinegars, ketchup, chili sauces, tomato sauce, baked beans, preserved fruit and fruit butters, jellies, mustards and canned pastas, using the high-tech communications of the day: lighted billboards, painted wagons and displays at World Fairs. However, for Heinz, public trust in food quality was paramount and the cleanliness and hygiene of his factories were on public display, with clear glass a hallmark of the company – think the 8-sided ketchup bottle.

Left: Heinz ketchup bottle, E-Bay; Right: Wikipedia Creative Commons, uploaded18 August 2009, 12:00 by Jim Fitzgerald; **Jim Fitzgerald**, tagged "*no known copyright restrictions*" https://commons.wikimedia.org/wiki/File:Portrait_of_Dr._Harvey_W._Wiley.jpg

Where ketchup originally came from is still under debate – China? Vietnam? In any case, it was an ideal environment for bacteria and molds. Heinz first used salicylic acid from tree bark as a preservative, then sodium benzoate, synthesized by German chemists in 1860, but it did not pass the Wiley team's safety tests and… Heinz paid attention, requesting his general manager to do research into preservative-free products, in spite of the presumed costs involved, as Heinz products had a money-back guarantee. A longer shelf-life could come from the right balance of vinegar and pectic acid, naturally occurring in tomatoes, but it required high-quality tomatoes with high pulp content, not the earlier thin sauces.

This awareness of the pitfalls of poor safety must be set in context: Wiley's own highly publicized research using a human test group nicknamed "The Poison Squad" coincided with publication of Upton Sinclair's novel *The Jungle* on meat packing in Chicago, leading to the first two pieces of legislation in 1906 on consumer protection. So Heinz ketchup was "recognized as the standard by Government pure food authorities" and became the new mixture of food safety – a thick blending of politics, personality, consumer concerns, business astuteness and… tomatoes.

"How Ketchup Made Food Safer" by Deborah Blum in *National Geographic*, February 2019, 17-20. Also see Deborah Blum *The Poison Squad*, Penguin, 2018, publisher's presentation at https://www.penguinrandomhouse.com/books/312067/the-poison-squad-by-deborah-blum/9781594205149/

Another "inconvenient truth": cheese may not be a panacea to meat consumption

Some methods and scales of dairy farming might discourage those eager to switch from meat to cheese and the cheese industry presently produces 22 million tonnes a year, up from 15 million in 2000 – set to rise as people in Asia increasingly adopt it. In a traditional cheese-eating culture such as France, consumption was 27 kg per person per year in 2015, mirrored by the work production of milk in 1970 at around 480 million tonnes and today at 800 million, while meat consumption is falling in the European Union. A 2017 study by the University of Oxford indicated the population group eating the most cheese were the vegetarians, at an average of 30 g per day, but this is not necessarily good news for the environment. The livestock sector contributes 14.5% of greenhouse gas emissions, with cattle accounting for two thirds of this. Adding in sheep, goats and buffaloes, this rises to 81%. Milk production alone is far less taxing than meat: 1.3 kg of CO_2 in comparison with beef production at 26.5 kg of "carbon dioxide equivalent". However, cheese magnifies: 10 litres of milk make 1 kg of cheese, depending on the variety, with U.S. cheddar as the highest consumer, due to production with Holstein-Friesians at 16 kg of CO_2. Calculating the impact on your carbon footprint is complex, and the environmental impact goes beyond footprints.

Author Eva Kröcher, Title "Different hard cheeses", 7 March 2009, the GNU Free Documentation License, Version 1.2, Wikipedia https://commons.wikimedia.org/wiki/File:Hartkaese_HardCheeses.jpg

By the measure of carbon footprint per calorie, dairy products definitely leave a lighter mark than meat, but published studies have not yet addressed cheese on its own. The plus side: dairy calories gobble less land than meat calories, but remain a concern. In Finland, a world leader in developing a carbon-neutral

economy and possessor of a large dairy industry, has halved its emissions since 1970 by breeding less burpy cows and improving feed, while intensifying, so the current reduction of methane production has reached its limits.

Will the Finns invent a "zero carbon cow"? Not in the immediate future, as methane production is inevitable and cannot be "captured", so they opt for offsetting it: manage the pasture itself better so that it becomes a carbon sink. NB the FAO indicates that improved grazing land management can sequester up to 3 tonnes of carbon per hectare per year, more than equal to the same area of boreal forest. Other actions, such as using manure as biofuel and capturing methane inside barns might push towards "zero". This is without considering animal welfare, where dairy is production.

Author Gunnar Richter, Rotary milking parlor, 7 June 2008, Wikipedia Creative Commons https://commons.wikimedia.org/wiki/File:Melkkarussell.jpg

The European Dairy Association endorses the "five freedoms" set out by the World Organisation for Animal Health: freedom from hunger and thirst; from fear and distress; from physical and thermal discomfort; from pain, injury and disease, at times as egregious an issue as meat. Recall there are 9.3 million dairy cows in the United States, for example, often living in high-stress industrial production sites that scientists often cannot access adequately for thorough studies. Dairy calves are separated from their mothers immediately after birth, then artificially inseminated at 18 months, dehorned, ear-tagged and their tails are often docked (without anesthetic), then inseminated every following year. Animals raised for meat are usually slaughtered young, at about 5 years, while a cow's natural lifespan is about 20. Dairy may outweigh meat in distress, and intensification increases stress still more, as a high-producing cow milked three times a day may literally be starving, as she cannot eat enough to compensate milk

and freedom to express normal patterns of behavior. These ideals are difficult to achieve and apply equally to all breeds of milk-producers. Switching to plant-based cheese imitations ignores their lack of nutritional quality and frequent basis in palm oil, associated with deforestation. Attempts to work with "calf-at-foot" farming are better for welfare, but, like extensive dairy farming, requires more land occupation and there is not enough land available to make this a large-scale perspective.

On a lighter note, New Scientist convened staff to sample five vegan cheeses. Result? The prosciano might be edible, if grated onto pasta. Violife Original Slices are inoffensive, if tasteless. The three other cheeses tested were judged "nothing like the real thing".

Graham Lawton, "Cheese Meltdown" in *New Scientist* 3217, 16 February 2019, 30-35.

Around the world, life is getting better, but diets are getting worse

This is the bittersweet dilemma of food for our times. Eating unhealthy food eaten in a hurry – is this the price we pay for living in modern societies? **For example, take a look at a bunch of grapes.** They have become a piece of engineering designed, often with no seeds. Strains of seedless varieties have been cultivated for centuries, but it is only in the past two decades that seedless has become the norm, to spare us the dreadful inconvenience of pips. Another strange new thing about grapes: the ones in the supermarket are always sweet, not bitter, acidic, or foxy, not excitingly aromatic like one of the Muscat varieties, but just plain sweet, like sugar. On biting into a grape, the ancients did not know if it would be ripe or sour. Even as late as the 1990s, there was still grape roulette: a truly sweet one was rare and therefore special. Today, the sweetness of grapes is a sure bet, because in common with other modern fruits such as red grapefruit and Pink Lady apples, our grapes have been carefully bred and ripened to appeal to consumers reared on sugary foods, good energy providers, but containing fewer of the phytonutrients that give fruits and vegetables many of their protective health benefits. We produce and consume twice as many as we did in the year 2000, an edible sign of rising prosperity, because fruit is one of the first little extras that people spend money on when they start to have disposable income. Their year-round availability also speaks to huge changes in global agriculture. Fifty years ago, table grapes were a seasonal fruit, grown in just a few countries and only eaten at certain times of year. Today, they are cultivated globally and never out of season.

Left: Wikipedia Creative Commons, public domain, concord grapes, https://commons.wikimedia.org/wiki/File:ConcordGrapes.jpg; Right : Wikipedia Commons, Top production grapes in world 2012 *faostat.fao.org* using file:File:BlankMap-World-v6-Borders.png, Author Alborzagros, https://commons.wikimedia.org/wiki/File:Top_grapes_countries_producers_in_the_world.png

What we eat now is a greater cause of disease and death in the world than either tobacco or alcohol. In 2015 around 7 million people died from tobacco smoke, and 2.75 million from causes related to alcohol, but 12 million deaths could be attributed to "dietary risks" such as diets low in vegetables, nuts and seafood or diets high in processed meats and sugary drinks. This is paradoxical and sad, because good food – good in every sense, from flavour to nutrition – used to be the test by which we judged the quality of life. Talking about what has gone wrong with modern eating is delicate, because food is a touchy subject. No one likes to feel judged about their food choices, which is one of the reasons why so many healthy eating initiatives fail. The rise of obesity and diet-related disease around the world has happened hand in hand with the marketing of fast food and sugary sodas, of processed meats and branded snack foods. Our culture is far too critical of the individuals who eat junk foods and not critical enough of the corporations who profit from selling them. A survey of more than 300 international policymakers found that 90% of them still believed that personal motivation –willpower – was a very strong cause of obesity. This is absurd. It makes no sense to presume that there has been a sudden collapse in willpower across all ages and ethnic groups since the 1960s. What has changed most since the 60s is not our collective willpower but the marketing

and availability of energy-dense, nutrient-poor foods. Some of these changes are happening so rapidly it's almost impossible to keep track. Sales of fast food grew by 30% worldwide from 2011 to 2016 and sales of packaged food grew by 25%.

Take the most recent case of high-speed change: China. Barry Popkin, a professor of nutrition at Chapel Hill University, North Carolina, can identify the year when snacking took off in China – 2004. Before that, the Chinese consumed very little between meals except green tea and hot water. In 2004, Popkin suddenly noticed a marked transition from the old Chinese ways of two or three meals a day towards a new pattern of eating. In collaboration with a team of Chinese nutritionists, conducting regular surveys of around 10,000-12,000 people. Back in 1991, Popkin found that at certain fixed times of year, there were treats to supplement the daily diet, feasting foods were ritualised and rare, nothing like a casual cereal bar. In 2004, as incomes rose, the number of Chinese adults between 19 and 44 describing themselves as eating snacks over a three-day period nearly doubled, while the number of children between two and six eating snacks rose almost as much. Based on the most recent data, more than two-thirds of Chinese children now report snacking during the day. This is an eating revolution.

Left: Wikipedia Commons, A farmer of the Hani minority near his village of Puduo, Yuanyang county, Yunnan, China, Author Takeaway, https://commons.wikimedia.org/wiki/File:Yuanyang_hani_farmer.jpg; Right: Wikipedia Commons, Author Pratyeka, rice noodles being cooked at a noodle restaurant in Kunming, Yunnan https://en.wikipedia.org/wiki/Noodle#/media/File:Mixian_Rice_Noodles_Being_Prepared_in_Copper_Pots.jpg

The curious thing about snacking in China is that to start with it actually made people healthier, because they were snacking on fruit, foods that people had always aspired to eat, but couldn't afford in the past. Phase two of snacking in China has been very different. "The marketing comes in," Popkin tells me, "and boom! the snacks are not healthy any more." As of 2015, the commercial savoury snack food market in China was worth more than $7bn. China is not alone. Almost every country in the world has experienced radical changes to its patterns of eating over the past five, 10 and 50 years. For a long time, nutritionists have held up the "Mediterranean diet" as a healthy model for people in all countries to follow, but today most children in the area no longer eat foods such as olive oil, fish and tomatoes. As of 2017, they are among the most overweight in Europe. On every continent, there has been a common set of changes from savoury foods to sweet ones, from meals to snacks, dinners cooked at home to meals eaten out, or takeaways.

The nutrient content of our meals is one thing that has radically changed; the psychology of eating is another. Much of our eating takes place in a new chaotic atmosphere in which we no longer have many rules to fall back on. You do what you like, if and when you like. With Brexit looming, food worries in the UK have become political, with panicked discussions of stockpiling and the spectre of US imports, but the bigger question is not whether American standards are lower than those in Britain. It is why food standards across the world have been allowed to sink so dramatically. If you go into the average western out-

of-town supermarket, you can choose from thousands of different sugary snack bars (many of them protein enhanced in some way) but only one variety of banana, the bland Cavendish.

"There are so many myths about food," says Fumiaki Imamura, an epidemiologist who has spent the past 16 years in the west, studying the links between diet and health. One of the food myths Imamura refers to is the notion that there is such a thing as a perfectly healthy diet. He offers himself as an example. Like many Japanese people, he eats a diet rich in fish and vegetables, but he also eats a fair amount of supposedly "unhealthy" refined white rice and high-salt soy sauce. But Imamura is conscious that no population in the world eats exactly the combination of healthy foods that a nutritionist might prescribe. Every human community across the globe eats a mixture of the "healthy" and the "unhealthy", but the salient question is where the balance falls. Take ultra-processed foods. When they start to form the bulk of what whole populations eat on any given day, we are in new and disturbing territory for human nutrition. More than half of the calorie intake in the US – 57.9% – now consists of ultra-processed food, and the UK is not far behind, with a diet that is around 50.4% ultra-processed. The fastest growing ingredient in global diets is not sugar, but refined vegetable oils such as soybean oil, which are a common ingredient in many fast and processed foods, and which have added more calories to what we eat over the past 50 years than any other food group.

Left: Wikipedia Commons, Variation in body fat, Author Walter Siegmund, https://commons.wikimedia.org/wiki/File:Variation_in_body_fat_12577.JPG; Right: WC, Bicentina Auma, chairperson of a small farmer's co-operative in northern Uganda, harvesting finger millet, DFID - UK Department for International Development, https://commons.wikimedia.org/wiki/File:Harvesting_hope_after_war_in_the_fields_of_northern_Uganda_(6721493499).jpg

In 2015, Imamura was the lead author on a **paper in the medical journal the *Lancet*,** which caused a stir in the world of nutrition science. This team of epidemiologists based at Tufts University has been seeking to map the healthiness, of how people eat across the entire world, and how this changed between 1990 and 2010. **The biggest surprise to come out of the data was that the highest-quality overall diets in the world are mostly to be found not in rich countries but in Africa, mostly in the sub-Saharan regions.** The 10 countries with the healthiest diet patterns, listed in order with the healthiest first, came out as: Chad, Mali, Cameroon, Guyana, Tunisia, Sierra Leone, Laos, Nigeria, Guatemala, French Guiana. Meanwhile, the 10 countries with the least healthy diet patterns, listed in order with the unhealthiest first, were: Armenia, Hungary, Belgium, USA, Russia, Iceland, Latvia, Brazil, Colombia, Australia.

The idea that healthy diets can only be attained by rich countries is one of the food myths, Imamura says. It was Imamura's conclusion about the high quality of African diets

that ruffled feathers in the world of public health. Imamura does not deny that the quantity of food available is very low in some of the African countries, but adds: "That's not the point of our study. We were looking at quality." His paper was predicated on the assumption that everyone in the world was consuming 2,000 calories a day. Imamura was well aware that is far from the case in sub-Saharan Africa, where the prevalence of malnourishment is around 24% according to the Food and Agriculture Organisation. But he and his colleagues wanted to isolate the question of food quality from that of quantity. For 50 years or more, our food system has been blindly fixated on the question of quantity. Since the end of rationing after WWII, our agricultural systems have been focused on supplying populations with enough food, without considering whether it was beneficial for human health. **But now there are glimmers of a return to quality.**

For example, **Amsterdam has been the first rich city in the world to bring down child obesity**, through the Amsterdam healthy weight programme (AHWP). From 2012 to 2015 the percentage of children there who are overweight or obese declined by 12%. The AHWP worked on many fronts at once, from banning junk-food marketing at sporting events to increasing water fountains in the city, but the guiding philosophy was to change collective ideas about what is normal when it comes to food and health. Now, when a child celebrates a birthday in an Amsterdam school, he or she cannot bring in packs of cookies or Haribos. Instead, a popular option is a selection of vegetable skewers to share with friends, consisting of tomatoes, cubes of cheese and green olives.

To reverse the worst of modern diets and save the best would require many other things to change about the world today, from the way we organise agriculture to the way we talk about vegetables. A smart and effective food policy would seek to create an environment in which healthy food is easier to adopt, and it would reduce the barriers to people actually buying and eating that food. **If the transformations we are living through now teach us anything, it is that humans are capable of altering almost everything about our eating in a single generation.**

Extracted from Bee Wilson "Good enough to eat? The toxic truth about modern food" in The Guardian online, 16 Mar 2019. Also see *Bee Wilson's The Way We Eat Now, published by 4th Estate, publisher's presentation at* https://www.harpercollins.co.uk/9780008240769/the-way-we-eat-now/

What to do about animal poo?

Recent research has estimated that by 2030, the planet will be generating at least 5bn tonnes of poo each year, with the vast majority being deposited by livestock. This is a major environment and health challenge that few people are talking about. In the UK, dairy, poultry and pig farms were responsible for 424 serious pollution incidents between 2010 and 2016 and cows produce 36 million tonnes in waste every year. Inhaling toxic fumes from intensive faecal production can be lethal in large quantities, and studies have repeatedly shown that people who live near industrial farms have a much greater risk of asthma, respiratory irritation, immune suppression and mood disorders.

Left: Wikipedia Commons, Cow dung, Author Serenity https://commons.wikimedia.org/wiki/File:Cow_shit.jpg
Right : Wikipedia Commons, Author Robin Drayton / *Counting sheep at Newport Cattle Market* / CC BY-SA 2.0, 1 October 2008, https://commons.wikimedia.org/wiki/File:Counting_sheep_at_Newport_Cattle_Market_-_geograph.org.uk_-_995447.jpg

The greenhouse gas **methane** is produced in large quantities when waste is left to decay uncontrollably. Many scientists believe animal waste is already a vastly overlooked component of climate change. In the case of China, methane from animal waste is thought to be one of the main reasons why greenhouse gas emissions to the atmosphere have doubled worldwide since 1980. So far, it is the impact of manure on waterways that has received the most attention, but the ecological consequences are equally drastic, with high levels of nutrients such as phosphorus and nitrates in manure leading to the spread of waterborne pathogens, and the growth of harmful algal blooms. The latter can poison wildlife by releasing deadly **neurotoxins**, and if they become widespread in fresh and marine water, they can end up getting into the food chain and being consumed by humans.

In sub-Saharan Africa, many **sanitation** initiatives have focused solely on human waste, but scientists fear they have overlooked a much greater problem in animal waste, as the incidence of diarrhea has not changed overall. Enteric infections are still a common cause of death, especially in children, and many of these infections are transmitted directly from animals. In countries where farmers use high amounts of **antibiotics** in their livestock, many of these strains are now becoming antibiotic resistant.

Much hope was held out to technical innovation. However, using animal waste to produce environmentally friendly **energy** through anaerobic digesters requires vast slurry stores to hold the manure, and studies have found that a store big enough to hold the waste produced by 100 cows costs UK farmers tens of thousands of pounds. For many, it is more economically viable to pay a fine for illegally disposing of waste than buying a new slurry store.

David Cox, "The planet's prodigious poo problem" in The Guardian online, 25 March 2019, https://www.theguardian.com/news/2019/mar/25/animal-waste-excrement-four-billion-tonnes-dung-poo-faecebook

Yes! At least one museum is trying to do something with "poo". See "Il Museo della Merda a Castelbosco" (the **Shit Museum**) in Italy at http://www.theshitmuseum.org/ and there is the soon-to-come **National Poo Museum** in Sandown on the Isle of Wight, now moving from traveling-exhibit format to a permanent home https://www.poomuseum.org/

Brexit is bad for farmers' health. To say the least…

United Kingdom charities and the National Farmers' Union (NFU) are raising red flags over farmers' **suicides**, noting that the combination of Brexit uncertainty and bad weather (2018 storms and drought) is still taking its toll nation-wide. Sheep and other stock-breeders still do not know if they will be able to export in coming months, cope with unpredictable feed bills and uncertainty about animal housing. Much of the distress is financial and charities can only partially provide monetary aid. The minister of agriculture, himself a farming expert, resigned over Brexit delays in late February of 2019.

Nazia Parveen "Brexit and bad weather puts UK farmers at risk of suicide, say charities", The Guardian online, 3 March 2019, https://www.theguardian.com/environment/2019/mar/03/brexit-and-bad-weather-puts-uk-farmers-at-risk-of-suicide-say-charities

French studies also indicate that farmers' suicides are not easy to study, but they most definitely resort to suicide more often than non-farmers over the1970 to 2008 period examined in a recent doctorate. Comparison with statistics from Great Britain and the United States confirm similarities. However, suicide also occurs more in rural areas than in urban settings in all three of these countries, as well as in Australia, Poland, Portugal or China. Small farmers commit suicide more frequently than "strong" farmers such as grain producers, and for a multitude of reasons: a strong factor is knowing another farmer who has taken this route and the indissociability of work and family life as a source of stress. Farmers in France bear a heavy burden of expectations, when they continue with a family farm. Older farmers with no one to take over their land are also victims to despair. Some farmers' main motivation is isolation, having remained single and now often cut-off from the rapidly changing communities around them.

Nicolas Deffontaines. Les suicides des agriculteurs. Doctorate defended 29 May 2017, Université de Bourgogne Franche-Comté, notice published in the newsletter of the Académie d'agriculture de France, 2018.

Resources

Draft Animal News is coming out again!

This multi-lingual website provides links to all the major animal-draft organizations based in Europe and working world-wide. Here is a taste of their commitment to working animals.

THE IMPORTANCE OF WORKING ANIMALS

Hunger and malnutrition kill 25,000 people, mostly children, every day. In addition, some 900 million people suffer from hunger. Wrong development strategies, the neglect of agriculture over decades, the liberalization of markets of developing countries through the World Bank and the IMF's structural adjustment programs, dumping exports of food products by industrialized countries, the priority given to export crops, the unbalanced role played by multinational corporations, the lack of agrarian reforms and urban bias are among the main causes of this daily scandal. New risks for agriculture are arising through climate

change, the rapid degradation of eco-systems as well the speculative investments in the agricultural sector, including land-grabbing, the development of agro-fuels and the speculation on food commodities.…

Agriculture should be put at the heart of any poverty reduction strategy, especially in the least developed countries. Its basic principles should be food sovereignty and agro-ecology, support for small-scale farmers and family agriculture and the full recognition of the role of women. The participation in the decision-making process of all concerned, especially farmers organizations, is vital.

The issue of working animals needs to be put far higher on the agenda of all relevant international organizations, like the FAO, OIE but also IFAD and WFP. They should better recognize the contribution of working animals in the fight against hunger and poverty, their fundamental role for the sustainable revitalization of agriculture and also for transport of goods and people as well as the incomes, food and services they provide to families.

Extracts from the introduction by Jean Feyder at http://www.draughtanimalnews.org/index.php/en/about-dan/jean-feyder-s-preface
The DAN homepage is at http://www.draughtanimalnews.org/index.php/en/

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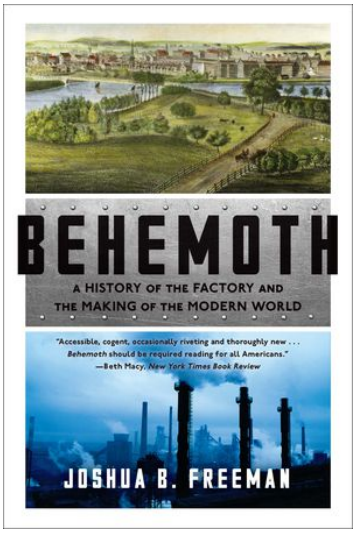
A "Behemoth" fed by the countryside



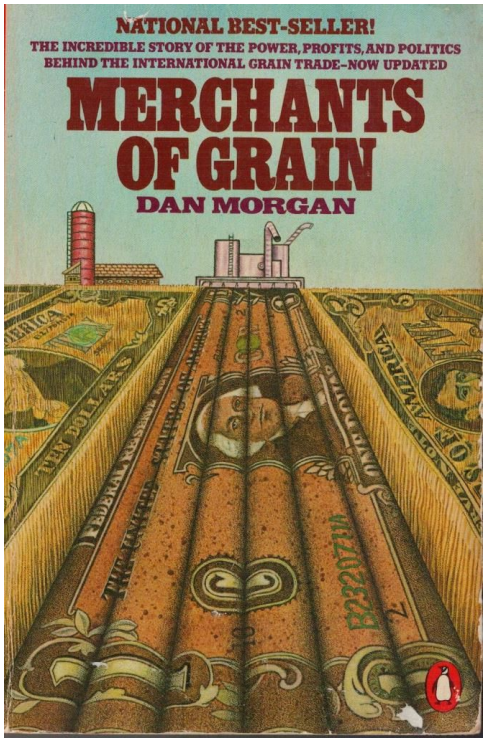
Joshua B. Freeman *Behemoth, a History of the Factory and the Making of the Modern World*, W.W. Norton & Co., 2018 (paperback 2019)

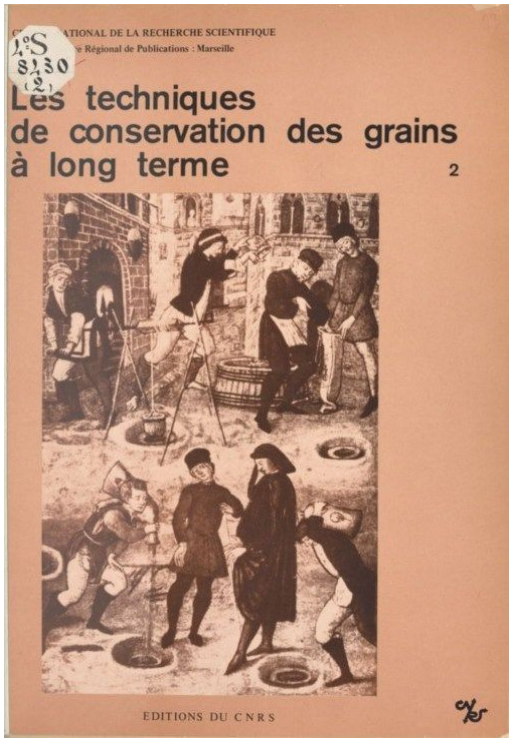
As is clear in this wide-ranging and highly reviewed book, there are smokestacks, but also countryside on the cover and in the heart of the book, and Freeman emphasizes in every chapter the significance of rural and most especially agricultural populations as prime cannon fodder for giant factories, from the budding textile mills of the late 17th century to the present-day Foxconn plants in China, where workers occasionally strike, but also throw themselves off the buildings' roofs in protest at their living conditions. The book shows the impact of idyllic images, with a great emphasis lent to portrayal of giant factories by artists and most particularly those producers of "image", photographers and film-makers, whose work marked minds in the 19th and 20th centuries, as well as discussing how these observers came to see into the violence that ran parallel to efforts to educate, entertain and insure working people. Just as the prelude to present desolation in Detroit and worker suicide in China – putting together iPhones at midnight is not much fun – are amply dealt with, so are the efforts to fabricate a higher level of human being, a "new man". Nor are the new women, neglected, in both socialistic and capitalistic lands. The presumable or less likely "convergence" of giant factories in perhaps not so opposed political systems is one of the main threads of the analysis. A particular strength of the book is its comparative approach, which lends it both an overarching grasp of the dynamics of

giantism in its social contexts, and an opportunity to examine the nuances that distinguish one national system from another within an overall cycle of industrial life and death. It is also a reminder of global cooperation that may not at present be sufficiently evident – who remembers now the days when the Soviet Union welcomed American engineers and workers, and Fordism and Taylorism were an illumination to Leon Trotsky? Needless to say, Freeman regularly repeats that the Promethean factory was and still often is built on desolation, even famine, in the countryside, so readers and museum professionals looking for leads on how to link town (even instant-made cities with millions of inhabitants) and country will find this a fruitful read.

The book has been widely reviewed, for example, see Ian Jack "*Behemoth* by Joshua B Freeman review – how factories changed the world" 4 March 2018, *The Guardian* online, https://www.theguardian.com/books/2018/mar/14/behemoth-joshua-freeman-history-factory-review or Wolfgang Streeck "Through Unending Halls" for *London Review of Books*, 41 (3), 2019, 29-31. https://wolfgangstreeck.com/2019/02/05/through-unending-halls/

Cereal grains yesterday, today and tomorrow





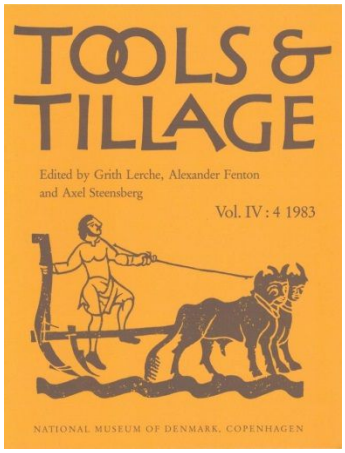
Two classics about cereal grains are still easy to access. **Dan Morgan's *Merchants of Grain*** was published in paperback by Penguin in several editions from 1980 on.

"When Dan Morgan published *Merchants of Grain*, it was the first major work on the international grain trade. Originally assigned to write an article for The Washington Post on the "well-publicized and controversial sales of American grain to the Soviet Union in 1972," Morgan became motivated to write something more substantial after the OPEC oil embargo of 1973. He writes in his introduction: "This book is intended to contribute to a better understanding of the world that was so suddenly and painfully revealed to us in 1972 and 1973 – a world in which nations all depend on each other for basic needs, and a few giant international companies and banks allocate and distribute the essential raw materials and the

capital required to produce them." … Morgan's book remains relevant today precisely because this world of "global dependency" still exists: it is *our* world." From William J. Brown *American Colossus: The Grain Elevator, 1843 to 1942*, Colossal Books, Brooklyn, New York, 2009, 2015 edition, p. 25.

Widely considered the definitive study of grain storage, ***Les techniques de conservation des grains à long terme*** (Long-term grain conservation techniques), directed by François Sigaut, Marceau Gast *et al*., CNRS Editions, appeared as a series. Volume II (Sigaut, Gast, Bruneton-Governatori) is available online at the French National Library digital collection GALLICA at https://gallica.bnf.fr/ark:/12148/bpt6k33344408/f9.image.texteImage. Extracts are downloadable in pdf format through the François Sigaut website by René Bourrigaud. For selected extracts see http://www.francois-sigaut.com/index.php/publications-diverses/ouvrages. These volumes are available in many university libraries and for purchase online.

Discover *Tools & Tillage* with AIMA

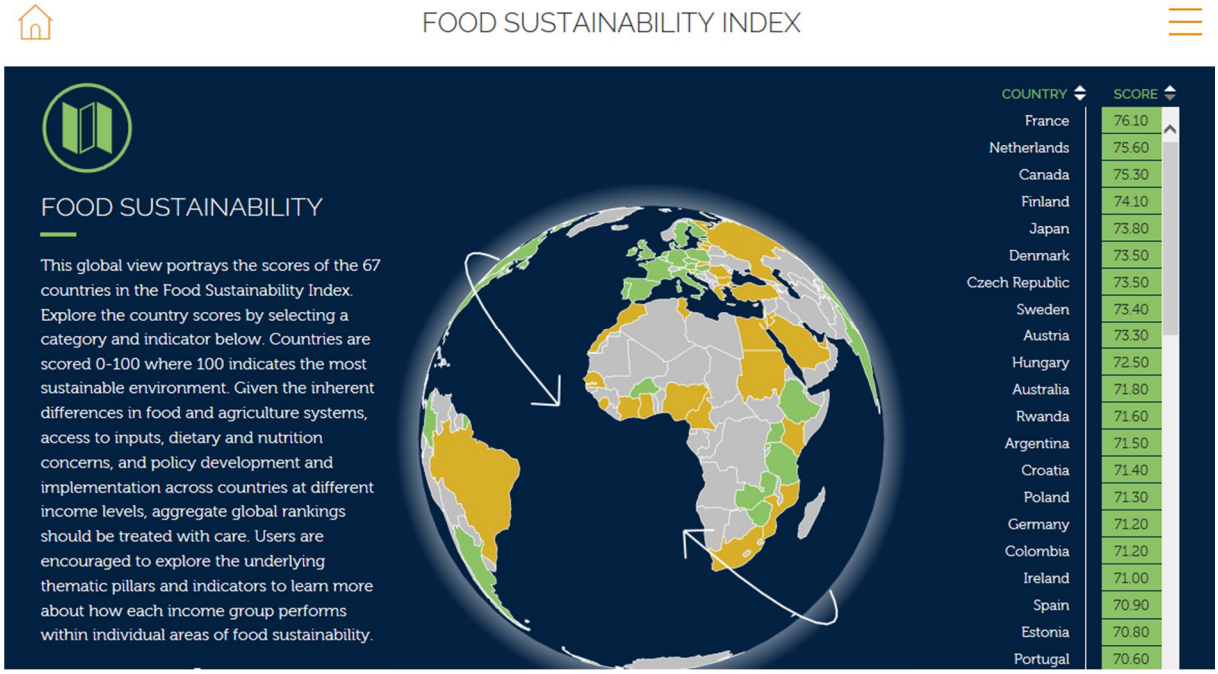


Tools and Tillage: A Journal on the History of the Implements of Cultivation and Other Agricultural Processes (ISSN 0563-8887).

Grith Lerch, Alexander Fenton, and Axel Steensberg edited this journal between 1968 and 1995. Articles documented tools used from 9,000 years ago to the industrial era. The journal provided a world-view of tools and tillage practices. Indexes appeared at the end of each volume.

The AIMA has a commitment to making new and classic sources for museum professionals and researchers better known and provides the full indexes to Tools & Tillage online at https://www.agriculturalmuseums.org/news-2/tools-tillage/

The Food Sustainability Index



The Barilla Center for Food & Nutrition Foundation follows a multidisciplinary approach to tackle today's major food-related issues from an environmental, economic and social perspective, to secure the well-being and health of both people and the Planet. The coexistence of hunger and obesity, the overexploitation of natural resources and the large amounts of food lost and wasted are the three food paradoxes identified by the Barilla Center for Food & Nutrition Foundation.

With its action-oriented approach, the BCFN seeks to act as a catalyst to develop frontier ideas, promote solutions and identify new, innovative ways to generate a positive impact towards the achievements of the United Nations Sustainable Development Goals and the Paris Climate Change Agreement.

The BCFN also provides a Country Index & Data section, the Food Sustainability Index (FSI) which ranks 67 countries. It is a quantitative and qualitative benchmarking model constructed from 38 indicators and 90 individual metrics that measure the sustainability of food systems across three categories: Food Loss and Waste, Sustainable Agriculture and Nutritional Challenges. The index has three key types of performance indicators – environmental, societal and economic.

Countries are scored 0-100 where 100 indicates the most sustainable environment. … Users are encouraged to explore the underlying thematic pillars and indicators to learn more about how each income group performs within individual areas. France had the highest performance score (see details on how indicators are evaluated) at 76.10, followed by the Netherlands, Canada, Finland and many others in the 67+ category. The 33-67 category is headed up by the Côte d'Ivoire (at 65.90), Senegal and Cyprus. These indicators can be filtered by income, which changes the picture, to say the least, and by the 7 regions: Europe, North America, East Asia-Pacific, Latin America, Middle-East/North Africa, South Asia and sub-Saharan Africa. Discover the website at http://foodsustainability.eiu.com/heat-map/; country ranking at http://foodsustainability.eiu.com/country-ranking/ and go on to explore the country profile, for example, Argentina at http://foodsustainability.eiu.com/country-profile/ar/

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https://www.agriculturalmuseums.org/membership/application-forms/