

Interpreting dairying and beekeeping collections in rural life museums

Milk & Honey



Traditionally in rural life museums foods are approached through displays of the equipment and processes involved in making them. Packaging and distribution are often considered, as are the domestic aspects of consumption. Such displays have much to offer, but there are other interpretive approaches that are perhaps more relevant to today's audiences.

In general grass grows well in the UK in our temperate climate and dairy cattle are ideal livestock to make the most of this. The production of milk, cheese and butter evolved in regionally distinctive ways and this diversity gives us the specialised local foods that we recognise today. It is a subject that touches on issues of food security, diet, and animal welfare.

Our relationship with honey bees is complex. We value them for their honey and beeswax, and recognise the industrious way they go about making these useful materials. We also surround them with mystery and extensive 'bee-lore' has developed around them. Bees are important as pollinators of crops and hence beekeeping was traditionally a rural pursuit, but nowadays it has a considerable urban following.

Food hygiene regulations make it difficult for rural life museums to be directly involved in food production, but the high level of public interest in local food and food heritage makes food an important topic. In this resource Sally Ackroyd investigates how museums make the most of their dairying and beekeeping heritage.

David Walker
RMN Chair

April 2014

Cover image: Hiving the swarm by Kate Lynch

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Stories to be told

Both beekeeping and dairying lend themselves to a variety of themes. They are both visible in many periods of history, they feature in folk tradition and also of course link to current issues in farming.

Prehistory to present day



Bees in History

Bees have been important to people and animals since prehistoric times. For years they have made honey which we can eat, and which is considered to be healthy throughout the world.





Hieroglyph of bee

The ancient Egyptians used honey to sweeten their food and as a gift to their gods. Pharaohs used the hieroglyph of the bee as a symbol of royalty.

The Greeks and Romans were bee farmers and used hives made of pottery. They ate honey and also used it as medicine.

In Spain there is a cave painting dated from about 7,000 BC that shows someone collecting honey from a wild bee hive.



Cave painting from Las Cuevas de la Arana in Valencia, Spain

Stockwood Discovery Centre, Luton

▲ We can find historical beekeeping references from Prehistory onwards. The Egyptians valued cows for their milk and the cheese it yielded, as well as for their meat.

Milk, butter and cheese were important dietary items in Greece (from as early as 1500 BC) and Rome (from about 750 BC). In both cultures, dairy products became important articles of commerce.

They alone know a country, and a settled home,
and in summer, remembering the winter to come,
undergo labour, storing their gains for all.
For some supervise the gathering of food, and work
in the fields to an agreed rule: some, walled in their homes,
lay the first foundations of the comb, with drops of gum
taken from narcissi, and sticky glue from tree-bark,
then hang the clinging wax: others lead the mature young,
their nation's hope, others pack purest honey together,
and swell the cells with liquid nectar:
there are those whose lot is to guard the gates,
and in turn they watch out for rain and clouds in the sky,
or accept the incoming loads or, forming ranks,
they keep the idle crowd of drones away from the hive.
The work glows, and the fragrant honey is sweet with thyme.

▲ Virgil's Georgics Book IV, c. 29 BC, translated by A.S.Kline, 2002.

© British Library Board (Royal 12 C. XIX)



◀ Straw bee skep, approximately 1200 AD (page from 'Bestiary' Royal 12 C. XIX, f.4, English, probably from Durham). At this time a skep was used to house a colony of bees throughout the year as a predecessor to the wooden hives which began to appear in the 19th century.



Dairying has been a feature of all periods of British history from at least the Neolithic period onwards.

◀ **Romano British cheese press found at Boxstead Farm in Kent.** Cheese moulds and strainers have been found at many Romano-British sites across the country.



▲ **Dairy image from 1825.** The Cow Keeper image was drawn by George Scharf as part of his studies of London life – “This I drew in Golden Lane in the City, in order to compare it with an elegant Milk Shop in the Quadrant, Piccadilly.”

Current issues

As well as historical interpretations, current environmental issues are also relevant for the interpretation of beekeeping and dairying collections.

Key ideas which could be followed up include:

- **Bees in the UK are currently under threat**, and reduced bee numbers not only impact on honey production, bees are needed as pollinators for us to grow a whole range of food crops.
- **A series of problems have beset European honey bee colonies** making beekeeping more problematic. Infestation by the Varroa mite, first recorded in the UK in 1992, weakens colonies and can kill them. Impossible to eradicate, the infestation can be controlled by various forms of management throughout the year.
- **Recently, Colony Collapse Disorder has been identified.** Here whole colonies dwindle and die abruptly through the disappearance of the adult bees. The causes are unknown, but neonicotinoid pesticides are possibly implicated. In 2013 the European Union restricted the use of several neonicotinoid pesticides for two years.
- **Could you imagine a world without milk?** Without doubt dairy foods have great cultural and economic significance, particularly in Western society. However there are health, ethical, and sustainability issues relating to dairy food.
- **Milk is a good source of calcium, potassium and vitamin D**, essential for a good diet. But is also high in saturated fats and calories, associated with heart disease and some cancers.
- **The welfare of dairy cattle** bred for maximum milk production and farmed intensively is also a concern. Nowadays in a ‘mega-dairy’ 1000 head of cattle may be kept indoors all year without access to pasture.
- **Cattle emit large amounts of methane, a gas linked to global warming.** To maximise milk production dairy cattle are fed large amounts of animal feed grown on land that could be used to directly grow food for humans.

Displays – ideas from current practice

Cased displays

▼ At Hereford the traditional gallery display is enhanced by a viewing hive.

Hereford Museum & Art Gallery



◀ The display hive is in many ways like the simple hives that are still used by some beekeepers, in that there is no structure to prevent brood and honey storage being mixed. The hive is flat and has two transparent sides, allowing the visitors to see through. They are perennially popular, and most people ask if the bees are still there?

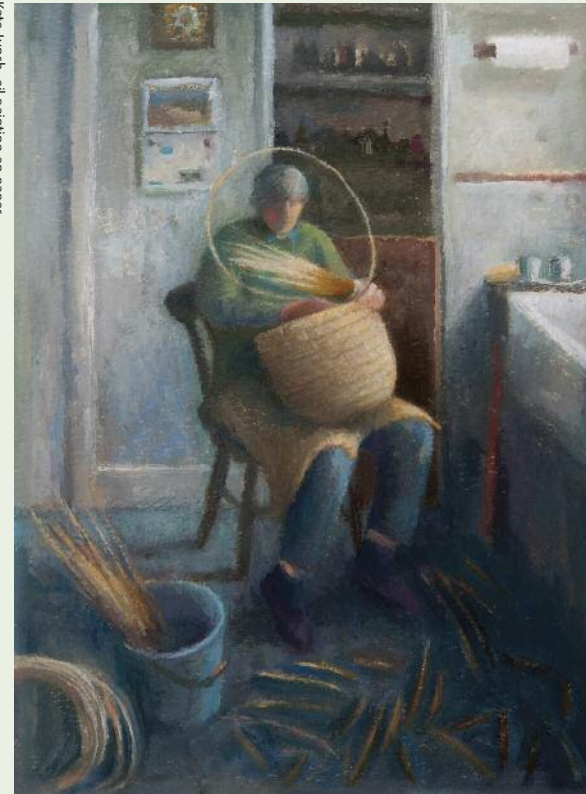
The bees are adjacent to the display containing the skep, medals, puffer, Bee Mimics from the entomology collection and photos of beekeeping. Ben Moule, Herefordshire Museums Service

Hereford Museum & Art Gallery



Art displays

Kate Lynch, oil painting on paper



Other sources of inspiration for bringing art and beekeeping together.

Staatliche Museen zu Berlin



◀ **Weaving a bee skep: by Kate Lynch.** One of her many studies of beekeeping in Somerset.

Artist and author, she specialises in rural subjects, and recently she has worked with beekeepers to produce a travelling exhibition and book on beekeeping.

See her website for further details.
www.katelynch.co.uk

◀ **The Beekeepers by Pieter Bruegel the Elder, c. 1567.**



▲ **Cartoon by Zebedee Helm.** www.zebedeehelm.com
Also see www.beesinart.com



Museo Nacional del Prado, Madrid

▲ **Flemish Dairy** c. 1621 by Jan Brueghel

www.bbc.co.uk/arts/yourpaintings has plenty more farm and dairy paintings to use as inspiration.

Handling objects

Much of the dairying equipment held in museums lends itself to being handled – whether it is a non-accessioned original item, or a modern reproduction.

Gressenhall Farm and Workhouse, Norfolk Museums Service



Hereford Museum & Art Gallery



◀ One of our most popular dairying interactives is our milking bar. Here children (and the young at heart!) can try their hand on our bucket milkers. As well as providing lots of splashy fun the bucket milkers are also historically accurate training equipment - the whole construction being based on a photograph of World War Two training for Women's Land Army recruits.

Megan Dennis,
Gressenhall Farm and Workhouse

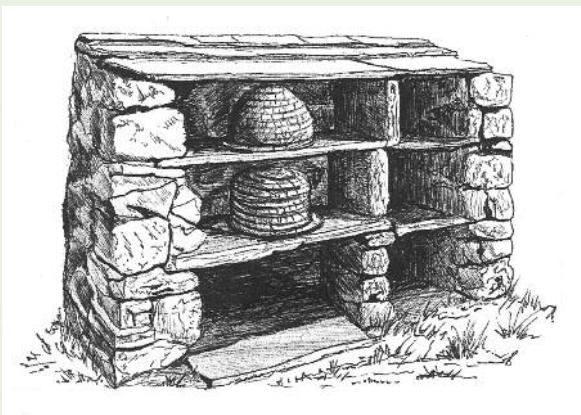
◀ A non-accessioned, but original dairy yoke – but without milk – in use in the museum exhibition area.

In context

Bee boles and shelters

Some museums are lucky enough to have original bee boles and shelters as part of their buildings and can use them to add context to their beekeeping equipment.

Gareth Beech, St Fagans National History Museums



▲ Bee shelter at St Fagans National History Museums.

St Fagans National History Museums



◀ The bee shelter at St Fagans was originally built in the nineteenth century at Devauden, Monmouthshire. It now stands in the garden of Kennixston farmhouse. It can accommodate six skeps on two stone shelves. There is an information panel for the bee shelter, and a specific entry for it in the visitor guidebook. It has bee skeps in it, although no bees. The museum has previously been able to demonstrate skep making as a complement to the bee shelter. The photo shows the late Ian Beaty, a talented skep maker. Gareth Beech, St Fagans National History Museums

► At Ryedale Folk Museum there is a set of three bee boles in a wall.

The museum has not previously drawn attention to them in their interpretation materials, but they hope to do so in the near future.



A farm, dairy and walled garden at Shugborough



The Park Farm and dairy were designed by Samuel Wyatt for Thomas, Viscount Anson as part of the agricultural improvements made to the Shugborough estate in the early 1800s. Together they provided the estate with foodstuffs, malt for brewing and supplies for the stables.

Thomas Wheelock, farm steward in 1805, had 22 workers and farmed about 350 acres. Over half was pasture, grazed by Longhorn cattle and Southdown sheep. The rest was used to grow wheat, barley, oats and peas. Devon and Dairy Shorthorn cattle produced milk for the dairy. Pigs and poultry were also kept.



Jerry Hudson, cowman, and longhorn. Shugborough, about 1800

Around the Park Farm yard stood the granary, mill, malthouse, brewhouse, hoggery, animal pens and cattle stalls. The water powered corn mill ground wheat and barley for flour and animal food.



The Tower of the Winds in about 1770

The Tower of the Winds was built in about 1765. Samuel Wyatt converted the lower two storeys into a dairy in about 1805. Most of the cheese, butter and cream made in the dairy was consumed by the Anson family and their servants. Any surplus was sold at local markets, or transported by canal to Birmingham for sale.

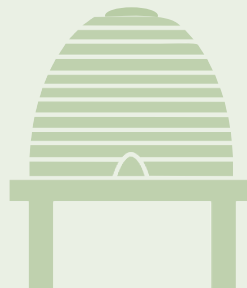


◀ At Shugborough, Dairy Shorthorn cattle are milked by hand or using the milking parlour (with modern vacuum pulsator system) during the open season at Park Farm.



◀ Cowman Jerry Hudson with a Longhorn at Shugborough in this Estate painting c. 1800-1810.

Longhorns pre-date the current generation of Dairy Shorthorns on the site.



▲ There are plans to move the focus of the beekeeping displays to the Walled Garden where there is a clearer (and more historically accurate!) link, i.e pollination and honey production. We hope to revive demonstrations by the South Staffordshire Beekeepers Association as part of the Walled Garden visitor experience. We are looking to open up the ground floor of the Head Gardener's House to interpret the Walled Garden (built like the Farm around 1805) and beekeeping would be an element of this development. SSBA would be the natural partner to deliver any demonstrations. SSBA still have hives at the Walled Garden and so play a vital, if at the moment hidden, role in the success of the garden.

Chris Copp, Archives & Heritage, Staffordshire County Council

A cottage dairy, with oral history



Museum of East Anglian Life

▲ We have a dairy set up in the Crowe Street Cottages – these are a pair of original workers cottages for the Abbots Hall Estate... We don't know what the original dairy looked like but we've tried to reconstruct an appropriate version from the oral history of Mrs Wilding... the lady who lived in these cottages most recently... running the estate dairy from the back room of the cottage – selling Red Poll cow milk from the door to townspeople, and providing milk and butter to the family in Abbots Hall. When she moved into a care home in the late 1970s she left most of her belongings to the museum.

Access to the dairy is mainly via guided tour, so most of the information for visitors comes via our Museum Assistant guides although we have put a buildings book together that contains a certain amount of information and our research material.

Lisa Harris, Museum of East Anglian Life

Museum of East Anglian Life

A Much Loved Dairy



The Crowe Street dairy formed an important link between Abbot's Hall, its farm and the town of Stowmarket.

The family Red Poll cows were an 'all round' breed. They gave good quality milk and were a good milk-pair, which was added to residents in the town within hours of being milked. The milk could, often undertaken by an estate worker's son, take place morning and evening the only exception being Sunday evenings. The milk had carried 'no tons of milk' transported on foot and measured into the customer's own containers at their door.

Many older residents of Stowmarket still remember visiting the cottages to buy milk.

Mrs Wilding made butter once a week - normally 'lancashire' - which was taken to the hall for the family to use.

Newsdays Stowmarket residents can buy these assemblies in the supermarket on the old Cattle Market site behind the cottages.

Source: The Abbots Hall Dairy, Stowmarket



What went on in the Dairy?



Mrs Wilding recalled that the stockman brought the milk down from the farm to the dairy in churns on a sack barrow. It was wheeled down the garden path and in to the kitchen by the back door. The morning milk arrived at 7am and was available to buy from the door by quarter to eight.

As well as preparing the milk for sale and organising the local milk round, Emily sold milk and cream at the door. She took butter and did all the washing up!

To prepare the milk for sale, Mrs Wilding had to 'heat' it. This involved pouring the milk in big pans and allowing the cream to rise to the top so that it could be separated or skimmed. At this point it became known as skim or 1% fat milk.

Hygiene was very important. The dairy was regularly scrubbed and had a covered floor with a central drain to carry away waste water. The milk pans and tins were washed very carefully - with water that, after use, they dipped in and out of a boiling copper. The copper originally stood where Drury's kitchen cabinet is now.



Source: The Abbots Hall Dairy, Stowmarket

▲ The Crowe Street Dairy has two panels of information that stand inside it, as well as a couple of oral history pieces accessible via QR code or via our website.

Lisa Harris, Museum of East Anglian Life



Live interpretation



National Museum Scotland

▲ Ayrshire cows.

1950s milking process is demonstrated every day with the Ayrshire herd at the National Museum of Rural Life in Scotland.

▲ Maggie McDougall, our Stockperson gives a commentary to visitors about what she is doing, re-inforcing what some visitors will have seen on the film before they get there. The film plays in the waiting area for the tractor-trailer which takes the visitors up to the farm to see the milking – then Maggie, or whoever is milking, does a running commentary explaining what's happening. Similar information is on the museum website.

Elaine M Edwards,
National Museums Scotland

The museum website explains the dairying process:

Milking takes place twice daily at 06:00 and 15:00. The afternoon milking is slightly earlier to enable the farm visitors to observe the milking process. A 1950s milking system is used which is part automated but still labour intensive.

In the 21st century milking parlour everything is done at the touch of a button and cows enter an automated milking machine. Each cow's feed is automatically released into a trough in front of them. At Kittochside, the cows are fed from bucket into the stone troughs in the stall.

The cows are washed prior to milking in the modern parlour by automated warm water hoses but here we wash with a cloth and disinfectant manually. In the modern parlour, the milking machine detects when the milk flow stops and removes itself automatically from the cow. At Kittochside the cows are watched to assess when the milk flow has stopped, the milking machine is emptied and then used for the next cow.

In the modern unit the machine is emptied automatically by means of a pipeline to the tank and at Kittochside it is carried from the bucket to the tank. At Kittochside milking is a great deal more labour intensive as it takes 2.5 hours to milk 13 cows however the modern dairy parlour could milk 180-240 cows in that time!

...The top cow, Kittochside Nora-Louise, can produce 35 litres of milk per day...

www.nms.ac.uk/our_museums/museum_of_rural_life/things_to_see_and_do/working_farm/kittochside_ayrshire_herd/milking_process.aspx

Family Tours



Museum of English Rural Life, University of Reading

▲ In the displays at MERL we have quite a large number of objects relating to dairying, both domestic and commercial. The main displays, which are currently organised by material (wood, metal, straw and leather), have been in place since 2005 and are due for complete re-development in the very near future. In the meantime we have added some more interpretation through our recently developed 'family tours' – shorter guided tours aimed at families with children, with guides in costume as rural characters. The 'milkmaid' describes her typical working day around the dairying objects. The tours are generally on in half terms and holidays and visitors can join one during their visit.

Felicity Ann McWilliams,
Museum of English Rural Life

Avoncroft Museum of Historic Buildings



▲ We had the Worcestershire Beekeeping Association come and do a couple of events recently. They use our site for their beekeeping courses sometimes and did a taster session for their term-long course here in the autumn.

They have an (empty) demonstration hive which they show to children and take apart to show where the bees live, and a set of beekeeping protection outfits which people can put on. Then they'll do walks to our orchard, where they show the public our hives and will take out a frame to show the public the bees making the honey (the beehives are behind a netted off area) and talk to visitors about what the bees live on and the types of pollen they collect etc. They also sell some of the honey made from the bees on our site at the event.

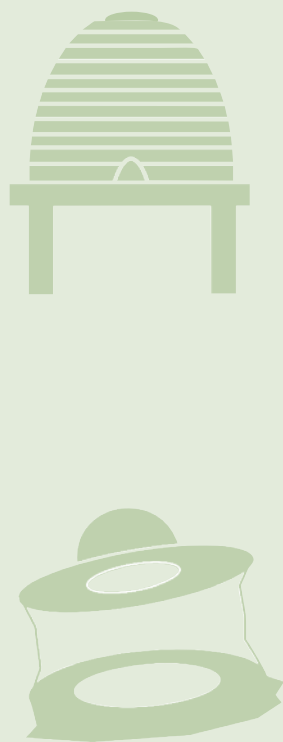
Simon Carter, Avoncroft Museum of Historic Buildings

Live bee hives and community involvement

We have hives in the orchard at the Somerset Rural Life Museum. They are managed by local bee-keepers, which is good community participation, and on good years the honey is sold in the museum shop. In the past we have worked with local beekeepers associations, but they are now an informal group. The hives are an important part of interpreting the orchard and the role of the bees in pollinating blossom.

David Walker,
Somerset Rural Life Museum

Beekeeping courses



Beamish, the Living Museum of the North

▲ We've been using our hives at the museum for the last year or so, not only as a source of honey, but as a real vehicle for engagement. We've been working closely with local beekeepers to improve our knowledge and to offer some of our visitors the chance to really get close to the hives and their inhabitants. This is done through pre-booked courses, but as the photograph shows you can't really get much more hands on or as closely engaged with developing an understanding of the craft than this.

We have had observation hives at the museum for many years, but that is really what they are, 'observation'. We wanted to take things a couple of steps further.

Seb Littlewood, Beamish the Living Museum of the North

Health and Safety and live bees

A few suggestions.

See page 13



► At Somerset Rural Life Museum we stipulate that the hives are only visited when the museum is closed to the public, i.e on Sundays, Mondays and in the evenings. This seems to work.

Also the hives are surrounded by high structures so the bees learn to come and go above head height.

We have first aiders who would recognise anaphylactic shock.

David Walker,
Somerset Rural Life Museum



Somerset Rural Life Museum

"The keeping of bees is like the direction of sunbeams."

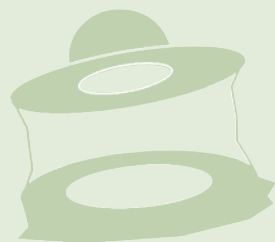
Henry David Thoreau, 1817-1862

At the National Trust's Oxburgh Hall, staff have put together a comprehensive risk assessment to consider the potential hazards of live bees at the site.

There is an accompanying document/emergency card which covers 'what to do in the event of a bee sting'.

A few of the key features of the risk assessment are:

- Selection of a relatively docile strain of the species *Apis mellifera*,
- The monitoring of the colony by staff to look for signs of aggression and regular inspection.
- Only trained beekeepers or trainees suitably supervised will open the hives. They will wear their full protective bee keeping kit and only be opened in appropriate weather conditions to reduce the risk of potentially annoying flying bees.
- Access to the hives restricted by placing them in an unmowed area of grass, within a specific area with appropriate signage.
- Hive entrances faced away from the areas with visitors.



The National Trust have kindly allowed access to a full copy of the risk assessment for people to use for ideas for their own. See the Resources section at the end of this publication.

N.B It is site and time specific, so anyone using it as reference would need to tailor it to their own location.



Events and family learning

Buttermaking demonstrations, using replica plunge churns (procured from Poland!), are a regular feature in our events, open days and educational activities.

In one of our event-day specials at Achamh an Droighinn/Auchindrain our Polish demonstrator, Karol, demonstrates how butter was made on a small scale in the townships and farms of Argyll – for family use or to trade with neighbours, rather than for public sale.

The process starts three days before, with a delivery of pasteurised cream. A sachet of the correct *Streptococci* bacteria is added, and the whole lot set to ferment at a constant warm temperature. When the time comes, the traditional plunge churn is scalded with hot water and then filled with around half a gallon of the fermented cream. Turning this into butter is quite hard work, but children love the opportunity to have a try. After about 20 minutes, the result is a piece of tasty fresh butter to try on an oatcake, and a jug of buttermilk for use in the next batch of scones.

Bob Clark, The Auchindrain Trust



Michael Boyd & The Auchindrain Trust

▲ **Karol making butter.** His method is available in the Resources section at the end of this publication.

At a Country Fair

We invite the Eastwood beekeeper group to the National Museum of Rural Life's annual Country Fair. Here we look at traditional crafts and rural skills and the group set up a table in our main gallery. They bring a section of hive in a display case with some varieties of honey. They also have equipment to show how honey was made. They are mainly there to answer questions and give advice to the public – they are very popular though – I don't get a proper chat with them all day they are that busy!

Nicola Bray, National Museum of Rural Life, Kitchside

Save the Bees event at Rutland

▶ Rutland Museum does not have bees, or beekeeping equipment in its collections, but this didn't stop them from putting on a beekeeping event ...



Rutland County Museum

▲ Our Save the Bees event was part of National Science and Engineering Week. We had beekeepers at the event telling the children all about bees and beekeeping and the children made their own compostable pots and planted a bee friendly seed to take home and grow on. There were also some craft activities where they made their own bee and they could dress up as a beekeeper. The day continued with an evening talk by a representative of the Leicestershire and Rutland Beekeepers Association. Though it was a few years ago we all remember the event clearly and 'the museum was quite literally buzzing with activity'. We developed the events with the help of a Bee Activity Pack put together for National Science and Engineering Week.

Lorraine Cornwell, Rutland Museum

Honey refreshments at Bee Aware

The West Norfolk Beekeeping Association will have a marquee at the Bee Aware Day at Oxburgh Hall in June. One of their members runs twenty beehives at Oxburgh. There will be a demonstration beehive with timed talks, candle making and interactive exhibits. There will also be a honey themed menu in the tea-room.

It is an annual event and we are hoping to grow this in the future, extending it to include not just raising awareness about honey bees but also bumble bees. Having beehives in the orchard enables our garden stewards to bring the importance of pollination into the conversation and visitors appreciate this. Beehives provide the link between the natural world and our formal gardens demonstrating the symbiosis between nature and mankind that we forget at our peril.

Helen Gregory, The National Trust, Oxburgh Hall

"If the bee disappeared off the face of the earth, man would only have four years left to live."

Albert Einstein, 1879-1955

Child and family focused displays

▶ At Stockwood Discovery Centre in Luton, the bee displays have for many years had a large element of children's activity and fun in them.

The footprints on the floor mark out the pattern of the bees' waggle dance.



Stockwood Discovery Centre, Luton



Stockwood Discovery Centre, Luton

▲ The bee gallery at Stockwood Discovery Centre was designed to be a fun and engaging space for families and children. There are colourful cartoon graphics, bee sounds to listen to, games to play and dressing up. There is also a fascinating film made by the Bedfordshire Beekeepers about the life of a bee. At one end of the gallery there is a honeycomb shaped viewing window into our 'beekeeper's garden' which contains a live viewing hive. The bees can be seen close up by lifting a flap on the outside wall of the gallery.

Philippa Bakker, Luton Culture



Learning sessions for schools

Beekeeping and school learning sessions

Ideas on how the study of bees and beekeeping could be included in the new science curriculum (September 2014 onwards).

As elements at the following Key Stage One and Two programmes of study:

1. Animals including humans

Year One

- Identify and name common animals that are birds, amphibians, reptiles, mammals and invertebrates
- Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets)

Year Five

- Explain the differences in the life cycles of a mammal, amphibian, an insect and a bird.

2. Plants

Year Three

- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

3. Living Things and their habitats

Year Two

- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Year Four

- Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things.

It could be studied as elements at the following Key Stage Three programmes of study:

Biology: Interactions and interdependencies

Relationships in an ecosystem:

- the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
- the importance of plant reproduction through insect pollination in human food security
- how organisms affect, and are affected by, their environment, including the accumulation of toxic materials.

Bee Smart

Rural Museums Network member Robin Hill runs a KS 1 and 2 introduction to beekeeping sessions for schools at his smallholding in Worcestershire – perhaps seeing a gap in the market left by museums! It looks at traditional farming methods, bees, beekeeping equipment, methods and also honey and beeswax. The session Bee Smart was linked to the science curriculum, but has plenty of cross-curricular potential.

The team (class) have been beekeepers since April and have made their own company to supply honey to the factory. We have 'visited' Australia and come across a lot of problems that have had to be solved in many enlightening ways. We have used ICT, Literacy, Numeracy, Science, Geography, History, PHSE, Art, D&T, Music and PE.

A teacher using the Bee Smart session



Dairying equipment and school learning sessions

Ideas on how dairying collections could be included in the new curriculum (September 2014 onwards).

As elements at the following Key Stage One and Two programmes of study:

1. History

By studying how farming/processes in making dairy products has changed:

KS1: changes within living memory. Where possible these should be used to show changes in national life

KS2: a local history study

KS2: A study of a theme or aspect of British history that extends pupils' chronological understanding beyond 1066.

2. Geography

KS2: Locational knowledge

- name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time

KS2: Human and Physical geography

- human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water.

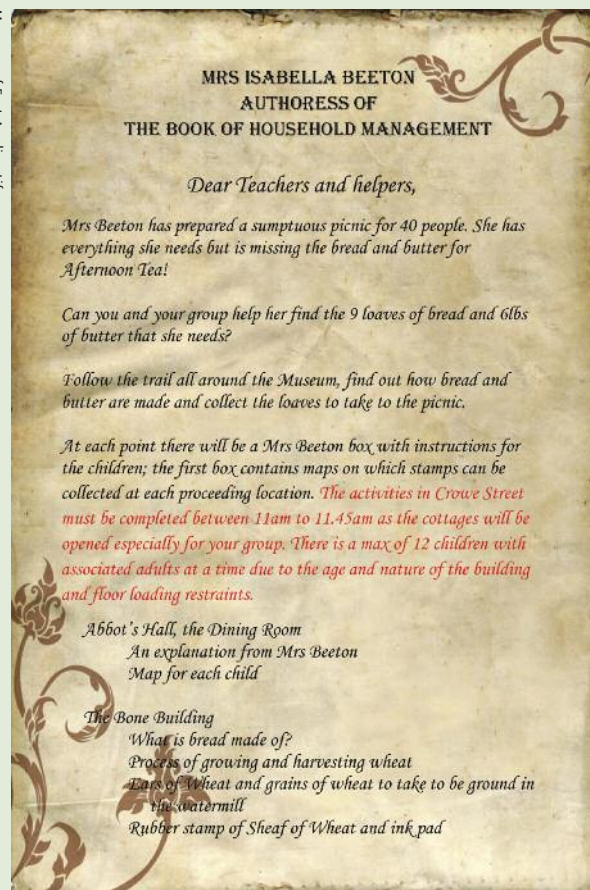
3. Science

(KS2) Year 4: States of matter

Pupils should be taught to:

- compare and group materials together, according to whether they are solids, liquids or gases
- observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).

Bread and Butter



*"Come butter come
Come butter come
Peter stands at the gate
Waiting for a buttered cake"*

Traditional song

History detectives

◀ The Museum's Mrs Beeton's Bread and Butter Trail and workshop explore the processes behind making bread and butter. Even with the changes in the new curriculum activities such as these, that use the Victorian period, can still be used by school groups. Buttermaking especially due to the chemical and material changes that take place during the process. We do use a dairy display as part of the trail but the main reason it works well is the opportunity for children to get close to and touch dairy equipment. We have an up-and-over churn as well as butter pats in our handling collection that they can use and they have a go themselves at making butter using plastic screw top tubs.

Jo Rooks, Museum of East Anglian Life

▶ We have been using the dairy as part of a Victorians Session or What Life was Like in the Past. We usually do this session for KS1 and 2. We also do the session in some form or other for other groups – WI cubs, evening events. Because of our limited space, the session is part of 3 or 4 activities that the children may do in one visit. The costumed interpreter encourages them to be history detectives and find out what the different objects were used for. Ruth Howard, Vale and Downland Museum



▲ The sessions are also very popular with groups of WI and U3A visitors. These sessions are more informal and usually end up in recollecting the kitchen utensils they remember from childhood. Dorothy Burrows, Vale and Downland Museum

Cheesemaking – school groups getting messy

► At Shugborough Farm and Mill visitors can find out about cheesemaking in 1805 with the help of the first person interpreter dairymaid in the Farm House. Just one of several costumed staff interpreting the site.



Staffordshire County Council

▲ Key stage 1-2 pupils can join in in the dairy to make real cheese and butter the traditional Georgian way. This is more of a 'hands-in' demonstration than hands-on! The maid involves the children in the entire fun process from the cutting of the curds until the cheese goes into the press, and the churning butter is taken back to school. During this session children learn about the life of the dairy maid.
Shugborough schools brochure

Where to buy a butter churn?

One option is a blow churn, easily available secondhand on e-bay. Being glass-bodied they give a good view of the cream changing into a solid. Two current manufacturers of wooden churns are Polish, addresses below. These Polish churns differ in style from those generally used in the UK. Ours have a flat lid made of boards, in which there is a tight-fit hole for the handle. With theirs, the top section of the churn is a container for liquid that may be plunged upwards through the (looser) hole before running back inside rather than spilling everywhere, and jams in place into the mouth of the lower section. These Polish churns are working small-farm tools rather than theatrical props, and they really do work. (Bob Clark, The Auchindrain Trust)

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Additional websites not mentioned in the text

British Beekeepers Association: www.bbka.org.uk/

Urban beekeeping idea:
www.ridleybuchanan.co.uk/index.php/2012/urban-beehives/

Bumblebee conservation Trust: <http://bumblebeeconservation.org/>

Soil Association's Keep Britain Buzzing campaign:
www.soilassociation.org/wildlife/bees?gclid=CPydnurfXrsCFY3LtAodcAsAVw
www.havemilk.com

Book

www.amazon.co.uk/Complete-Guide-Beekeeping-Jeremy-Evans/dp/0954969200



Risk Assessment

Work Activity	Beekeeping		
Property	Oxburgh Hall	Region	East Of England
Other relevant Risk Assessments		Department	Outdoors Team

Explanatory note: A professional bee keeper will keep two honey bee hives in the southern part of the orchard from the end of May 2013. Both hives will be placed nine metres in from the central footpath and will both face south away from the Central orchard path.

Nature of hazard	Worst outcome	Groups at risk	Current precautions	Estimation of risk	Further precautions	Legal requirements
Bee Stings	Anaphylactic shock	Beekeeper, Staff, Vols & Visitors	<p>Two bee hives will be placed in the southern section of the orchard by the end of May 2013 by our bee-keepers. The bees which will be brought in are <i>Apis mellifera</i> Honey bees which have a tendency to be peaceful if undisturbed. Calm queen bees have been specifically chosen for these two hives due to the proximity of visitors. The bees will be monitored and if a colony becomes aggressive it will be removed.</p> <p>Only trained beekeepers or trainees suitably supervised will open the hives. They will wear their full protective bee keeping kit.</p> <p>Hives will be opened in appropriate weather conditions to reduce the risk to visitors of potentially annoying flying bees. Hives will be inspected to prevent swarming and to retain healthy bees during the active season every 7-10 days.</p> <p>Staff and volunteers to be educated about sensible working practices around beehives. Volunteers will not be allowed to mow the outer strip of grass or western border lawn around the orchard. This will be carried out by Damon Hill, Ranger who will be attending a Bee Taster Day on 6th July 2013 to raise awareness about 'bee behaviour'. (Outdoors Manager also attending course). Damon is not allergic to bees but a veil will be worn for mowing.</p>	<p>Severity of hazard: high</p> <p>Likelihood of event: possible</p> <p>Adequacy of controls: good</p>	<p>Beekeeping records are kept up to date and held by the beekeeper.</p> <p>The beekeepers telephone numbers are kept with the ticket office, Outdoors team, the Property Office staff and Duty Manager.</p> <p>There is a stinging information card available in the ticket office, Property Office, and Gardeners Bothy</p>	

Use of chemicals associated with beekeeping	Burns or respiratory problems	Beekeeper	<p>Only use DEFRA approved chemicals. Beekeeper is qualified to use the chemicals and will be the only person to use them. Chemicals are not stocked on site.</p>	<p>Severity of hazard: moderate</p> <p>Likelihood of event: remote</p> <p>Adequacy of controls: good</p>	<p>Only small amounts of chemicals will be used as necessary and the restricted</p>
			<p>Gardeners and Volunteers who work in the area, to be advised that wearing perfume or clothes washed in fabric conditioner may attract bees.</p> <p>Mobile phone to be carried at all times by Ranger, Gardener and Outdoors Manager.</p> <p>Mowing: Before mowing the outer strip of lawn, or the western lawn by the Medlars an inspection of the mood and activity of the bees needs to be made. If they show signs of agitation, mowing will be done at a later time. If the mower needs emptying whilst on the lawn, it must be done at the furthest end away from the hive. Mowing should be done as quickly as possible.</p> <p>Mowing the orchard meadow: Once meadow has finished flowering and prolonged grass cutting machinery is mowing the orchard, an assessment of the bees must be undertaken</p> <p>Weeding, etc; before any work in the nearby border commences, an inspection of the mood and activity of the bees must be made. If they show signs of agitation, the work must be postponed.</p> <p>Scything Day: Scythers to concentrate on northern section of orchard away from the hives.</p> <p>A low box hedge divides the orchard meadow from the footpath and the hives will be placed 9 metres in from the hedge. Although the hedge is low it is considered that this is a psychological barrier and visitors should not cross it to approach the hives. Signs will be discreetly placed to alert visitors that they should not approach the hives. Hive entrance will face away from the central path and face southwards in the orchard, thus the bees should be flying high out of the hide before reaching the paths. As the bee hives have not been placed in the orchard before, the bees' flight path will be initially monitored. If the bee flight path is too low, a physical barrier, such as a hurdle, may have to be erected to encourage the bees to fly higher.</p> <p>http://www.bbka.org.uk/files/library/bee_stings-002_1342858887.pdf</p>	<p>Notices will be put in the garden advising visitors that there are bee hives on site</p> <p>First Aid provision available on site to staff, volunteers and visitors through trained First Aiders and first aid kits.</p>	

Uneven ground	Slips or trips	Beekeeper, Staff and Volunteers	Beekeepers to be warned of ground conditions and should take great care.		nature of access to the site reduces risk.
Manual Handling	Minor injury, Strains, sprains, slipped disc in back	Beekeeper	All beekeepers aware of and using safe handling techniques and seek assistance when lifting as necessary	Severity of hazard: low Likelihood of event: medium Adequacy of controls: fair	
Swarms	Anaphylactic shock, panic/hysteria	Beekeeper, staff, volunteers and visitors	The bees will be inspected and managed to prevent swarming. If there is any sign of swarming, queen cells will be removed or other action taken to eliminate the risk by the beekeeper.	Severity of hazard: medium Likelihood of event: possible Adequacy of controls: good	
Contact with vehicle	Major injury	Staff and visitors	Access (when needed) for vehicles will be via the Beddingfield's leased area of land. This will normally be at property closed times to avoid visitors.	Severity of hazard: high Likelihood of event: possible Adequacy of controls: good	
				Severity of hazard: Serious Likelihood of event: Possible Adequacy of controls: Good	



Assessment carried out by	Helen Gregory	Signed	
Job title	Outdoors Manager	Date of assessment	12 th May 2013.
Review carried out by		Date of Review	30 th October 2013.



The Auchindrain Trust

Karol's Method for Butter-Making

Equipment

A small plunge churn, capacity about 5 litres
Two large bowls
A piece of butter muslin
A small bowl
A large wooden spoon or a pair of butter hands
Cold water
Boiling water

A table with a wipe-clean surface
A chair
Hand-washing facilities
Equipment cleaning facilities
Wiping cloths or paper roll
Clean kitchen clothes, apron or equivalent
Clean cloths to cover bowls

Ingredients

3 litres of double cream in 1-litre containers, minimum 18% fat content, not sterilised or homogenised.
One packet of dried *Lactococcus Lactis bacteria*. Buy "Choozit M100 50 DCU" from Orchard Valley Dairy Supplies, 4 Lower Teme Business Park, Burford, Tenbury Wells, WR15 8SZ, 01584 811137. This comes in small sachets, and is commonly used by cheese-makers.

Preparations

Buy the cream 3 or 4 days before you want to make butter. Allow the cream to reach room temperature. Open the cream containers and divide the packet of bacteria equally between them. Replace the caps and shake to mix. Remove the caps. Leave for two to three days in a temperature of 18-20 degrees. The amount of time has to be established by experience according to personal taste: the longer the cream is left to ferment, the more sour it will become and the stronger the butter will taste. Prepare all the equipment by sterilising it or scalding it with boiling water. Sterilising chemical must not be used for the inside of the churn – it gives the butter an aftertaste.

Making the Butter

Replace the caps on the cream containers for movement to the butter-making location. Keep the cream at 18-20 degrees until the last possible moment – if you move it too early to a colder location where the butter is going to be made, the cream will cool and the butter will be more difficult to make.

Pour the cream into the churn: it should just over half fill the churn. Sit on the chair with the churn on the ground, and plunge. Plunging should be a regular process and at a steady speed: up and down sharply, within two seconds. Continue until significant resistance is felt, as the butter begins to foam: look out for small pieces of butter sticking to the handle when it is at the top of its stroke. With double cream this process takes 15-20 minutes of steady plunging. The time required will be longer in cold temperatures, if the fat content of the cream is low, or if there are breaks in the plunging process for example to allow different people to have a go.

Put the butter muslin over one bowl, and carefully pour the contents of the churn into it. Transfer the butter back into the churn, using the wooden spoon or butter hands to lift all of it off the muslin. Put the used butter muslin into small bowl for cleaning later. Cover the buttermilk with cloth – it can be used later to make scones, or drunk.

Add enough cold water to the churn to cover the butter. Plunge again for 5-10 minutes. This washes the remaining buttermilk out of the butter, and also binds a certain amount of water into the butter as an emulsion – this makes it easier to foam into a piece, and later to cut or spread. Use the wooden spoon (or a pair of wooden butter hands) to lift the butter out of the churn into the second large bowl. If desired for taste (or long-term keeping), salt can be added to the butter in the bowl. This is done to personal taste, but for the butter from 3 litres of cream one to two teaspoonfuls of salt will be sufficient. In the bowl, form the butter into a regularly-shaped piece by rolling it around and working it with the wooden spoon or butter hands. If salt has been added, the butter needs to be worked this way for 5-10 minutes to ensure the salt is evenly distributed through the butter. If salt has not been added, the butter only needs to be worked long enough to form it into one piece without large air bubbles. The butter is now ready for use.

Clean all the equipment and put it away: do not use anything except boiling water to clean the inside of the churn.

Keep the butter in a bowl in cold water, covered by a cloth: this stops air from coming into contact with the butter, to keep it fresh and prevent oxidation. The butter does not need to be kept in the fridge, which will also make it easy to spread. It will keep for up to two weeks – if it lasts that long.

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