

Keyworth & District Local History Society

PLANTS THAT CHANGED HISTORY

a celebration of cereals and grasses



Text and pictures by
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Plants that changed history,
Keyworth & District Local History Society's
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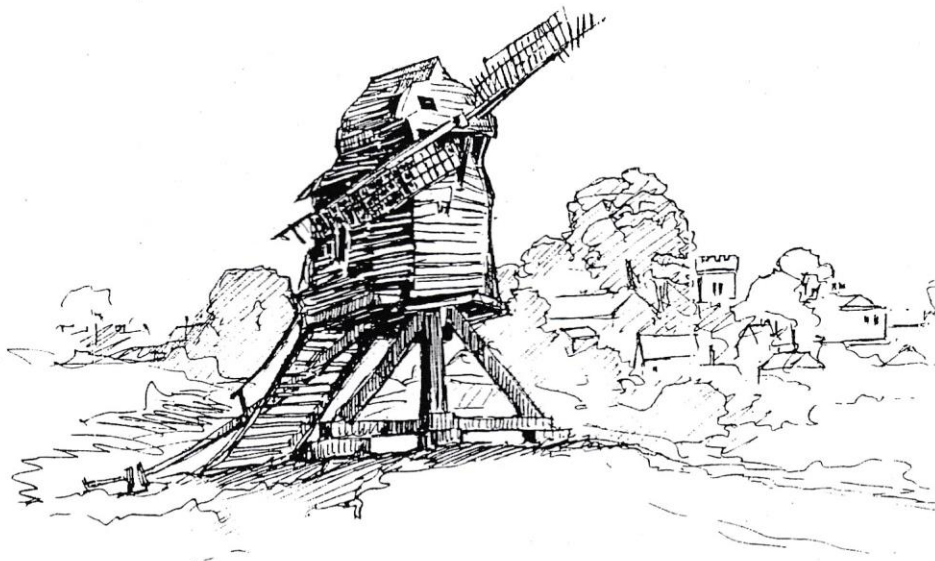
PLANTS THAT CHANGED HISTORY

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Introduction

Keyworth's emblem is a windmill. This fact suggests that we feel, somehow, that our local windmill played a significant role in the life of the village.

Why were windmills such important features of English villages and landscape? To answer that question we need to examine the crucial part which the cereals played in the history, not just of this area, but of our species. Arguably their domestication and exploitation made civilisation, history, the arts, science, technology, and all of modern human life as we know it, possible. Small wonder that they feature so prominently in art, mythology, culture, literature and poetry.



Old Windmill, Plumtree - looking towards Plumtree from the railway, 1912: by Wm. Kiddier. Pen & ink.

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Grasses and cereals in history

Early man was a hunter-gatherer. The gatherings probably included grass seeds. Such carbohydrate-rich seeds would have been a useful supplement to a diet of hunted meat.

Many of the grasses grow well in disturbed soil and it may have been an accidental discovery that spilled gatherings germinated in the disturbed mud around the camps. Somewhere in the Middle East, about 9,000 BC, this led to the neat idea that it might be easier to encourage them to grow near the camp rather than to go out searching for them.

In some recently published research using DNA finger-printing, a wild group of strains of einkorn wheat (*Triticum monococcum boeoticum*) from south-east Turkey has been proposed as the progenitor of cultivated einkorn.

The domestication of that other great staple energy source for mankind, rice (*Oryza sativa*), had to wait until a little later. The exact date of that important event is a little obscure: perhaps about 3,000 BC in India, but some have attributed it to China by 5,000 BC.

Once the cereals were being grown routinely, conditions were right for several major cultural changes. The new technology led to the end of the dependence on herding and shepherding and permitted the development of mixed farming. It became possible for communities to settle down in fixed homes and to be fed without the entire population being involved in food production. Once techniques for the storage of crops had been mastered, it also meant that the occasional mass-mortality of lean years happened less often. This was helped by the domestication of the cat, which prevented the rats and mice stealing the stores - hence the sacred status of the cat in ancient Egypt.

These dramatic changes made all sorts of hitherto undreamed-of human activities and specialisations feasible. People no longer needed as shepherds and farmers could develop other skills. The resulting increasing complexity of communities led to the development of more elaborate cultures and social structures. The need to measure fields and to weigh crops for trading led to the invention of numbers, weights and

measures, and to the foundations of mathematics. The need to plant at the right time led to the development of the calendar, supported by the study of astronomy. This in turn probably affected the course of development of both the sciences and the world's religions.

Cereals and grasses in art and mythology



So important were these plants in the ancient world that the Romans, for example, had a corn goddess called Ceres - whose name lives on in our word *cereals*. Cereals occur repeatedly in classical mythology and art.

Examples in more recent art include the paintings *The Reapers' Noonday Rest* and *The Cornfield Shelter* by John Linnell, *The Hayfield* by F.M. Brown, and, of course, John Constable's *The Haywain* and *The Cornfield*.

Cereals in modern life

Modern life still owes its very existence to grains, and in particular to the species wheat (*Triticum aestivum* and *Triticum turgidum*, depending on whether you are a bread eater or a pasta eater), maize (*Zea mais*), barley (*Hordeum sativum*), rice (*Oryza sativa*), sorghum (*Sorghum vulgare*), and millet (*Panicum miliaceum*).

According to the Food and Agriculture Organisation of the United Nations, current world production of wheat is about 541 million tonnes (figure for 1997). It may be easier to think of that as a pile of grain about 315m (1000 feet) deep, all the way along 100 km (62 miles) of a 6-lane motorway, including the hard shoulder and the central reservation! Total world production of all the cereals in that year was estimated at nearly 1,900 million tonnes, or a pile 1100m high (3,600 feet or 2/3 of a mile).

In fairness it must be acknowledged that not all historical commentators have regarded the cereal revolution as an unequivocally good thing. Some have accused settled agriculture of unbalancing our diet, on the grounds that the hunter-gatherers would have consumed a rich variety of foods. Other commentators have reminded us that many cultures became too dependent on one crop, and therefore vulnerable to crop failures. The need for settled fields led to the potential for territorial disputes. Concentrated populations in the new towns and cities sometimes led to newly important diseases. A high-cereal diet probably worsened tooth decay problems. A recent author argued that cultures based on farming became less settled than hunter-gatherers rather than more, because as populations increased they were forced to find new lands to cultivate.

However, it must surely be undeniable that hunter-gathering could only support tiny populations at low cultural levels. Furthermore, if food variety is to be offered as a criterion of the success of a food provision system, then the modern supermarket must compare rather well with even the most optimistic and romantic view of hunter-gathering.

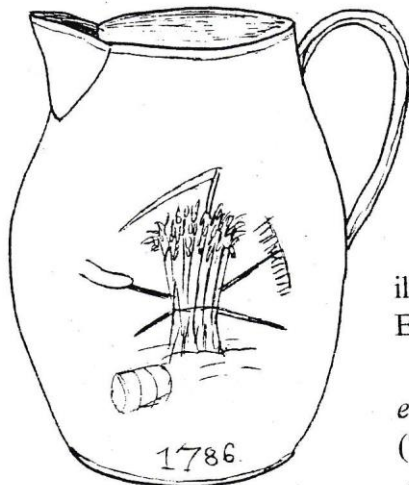
Cereals and grasses are important not merely because we eat them, but because farm animals eat them too. The remarkable ability of ruminant animals - or rather, of the microbes in the rumen (the first compartment of a ruminant's stomach) - to digest cellulose, has made possible the exploitation by humankind of the uplands, semi-arid areas and rough grazings of the world. This depends on the numerous grazed species of grasses, some of which are drought-resistant, and it accounts for why many cultures originally measured their wealth in camels, cattle, sheep or goats, as some still do. The non-ruminant farm animals (pigs and poultry) increasingly provide protein for the growing populations of the world, and their staple foods are cereal grains.

Related to the grasses, sugar cane (*Saccharum officinarum*) is one of the world's impressive producers of biomass. It is important in food preservation as well as sweetening. Before the invention of canning and freezing, homely technologies like jam making were critical to the preservation of seasonal foods.

Grasses and cereals in literature and poetry

In view of their essential contribution to human life it is not surprising that this group of plants and their products feature so prominently in literature.

Biblical references to bread as the staff of life, such as "Give us this day our daily bread" are typical indicators of how important bread was to ancient peoples. Harvest festivals are still celebrated in modern churches, even though few of today's congregations have anything to do with the land. This is because for most of recorded history, and for a long time before, to people in rural England the state of the grain harvest was critical to the vital matter of surviving until next year. This would certainly have been true for the populations of Keyworth and district. Harvest festivals are probably Christianised versions of much older harvest celebrations.



Until quite recently the great agricultural estates and the larger farms often had harvest suppers to acknowledge the importance of the grain harvest to the local economy. The harvest jug illustrated [left] celebrated the harvest of 1786.

Two literary quotations may suffice to illustrate the part played by the cereals in English rural life.

The first is a line from Gray's *An elegy written in a country church yard* (Thomas Gray, 1716-1771):

Oft did the harvest to their sickle yield,
Their furrow oft the stubborn glebe has broke.

Note the allusion to the hard physical labour associated with the cereals in former times, contrasting with our modern, sometimes rather romantic, perception of the ideal countryside. Some attribute the turning point in these perceptions to the romantic poets and artists of the 18th and 19th centuries; yet Wordsworth's view of nature, though

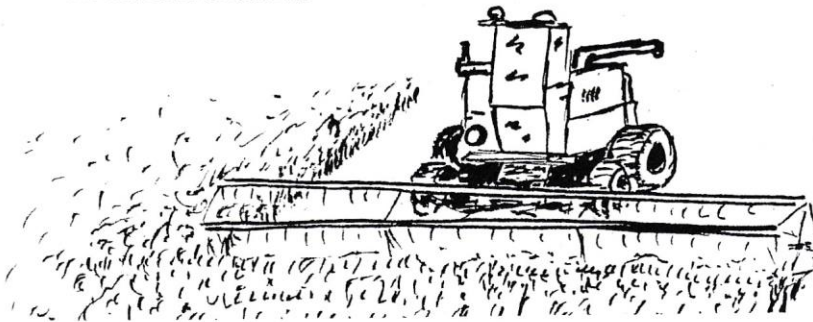
picturesque, was also realistic. The desire to romanticise the countryside is not new and has even been applied by artists to the Greek countryside of classical times. The real-life Arcadia region of ancient Greece was probably not particularly 'Arcadian'!

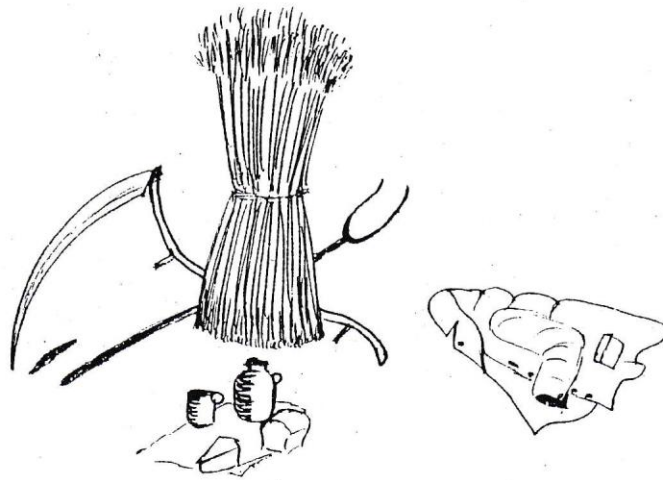
The hard physical work associated with pre-mechanisation cereals is even more sternly depicted in a piece from *Tess of the D'Urbervilles* (first published 1891) by Thomas Hardy (1840-1928). The scene is a cornstack by which is a threshing machine, such as would have been steam-powered in Hardy's time. Tractor-powered belt-driven examples were still in commercial use on some British farms until at least the late 1950s.

Close under the eaves of the stack, and as yet barely visible, was the red tyrant that the women had to serve - a timber framed construction, with straps and wheels appertaining - the threshing machine which, whilst it was going, kept up a despotic demand upon the endurance of their muscles and nerves.

But, demanding as the new machines were, the advent of some degree of mechanisation in growing the wherewithal for the daily bread was a great improvement on the hand and muscle power which went before. A quotation from the 16th century agricultural journalist Barnaby Googe, on a fact-finding mission to the Netherlands in 1577, is a piece of literature in its own right, driven by the disbelieving wonder he felt on being shown an early reaping machine (quoted by the agricultural historian Prothero in 1936):

... a lowe kind of carre with a couple of wheeles and the frunt armed with sharp syckles, whiche, forced by the beast through the corne, did cut down al before it.





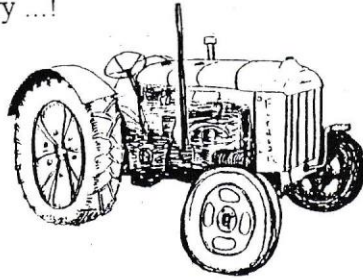
Cereal foods ancient and modern

A glance along the shelves of local supermarkets sometimes reveals as many as 50 versions of bread, rolls and bread-based products. In addition cereal flours are used in the making of cakes, pastries, tarts, puddings, biscuits, oat cakes, pancakes, buns, cornflour and rice products. Then there are the delicacies and puddings, including savoury delicacies like Yorkshire puddings and dumplings, and exotics (becoming more commonplace all the time) such as tortillas, polenta, pasta products and pizzas. Finally, but very importantly nowadays, there are breakfast cereals and porridges.

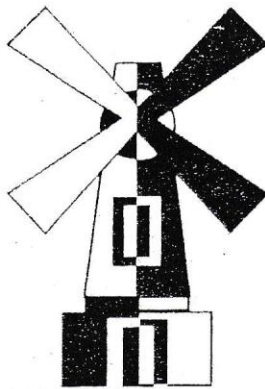
In former times few cottages had an oven, so all villages had one or more bakers (Keyworth and district included). Griddle cakes were a home-produced flour-based item, hence the many regional versions of pancakes and oat cakes. Bread was often made from barley in poorer households, and oats was the staple cereal in the uplands, where ripening wheat was more difficult.

In historic times bread was probably more prominent in people's minds than it is now, but it was far from the only cereal product of importance. The cereals are also the basis of ales, beers and lagers, and of whisky. Since the water was often not safe to drink, ale or small beer (a dilute beer) was drunk instead.

In many lowland areas of England the equivalent of the Scottish porridge was a mixture of crushed wheat and warmed milk, called *furnity* (though there are at least five spellings of the word). Sometimes dried fruits such as currants and raisins would be added to make it more interesting. In Thomas Hardy's *The Mayor of Casterbridge* the *furnity* seller at a sheep and hiring fair added rum, thereby changing the course of the story ...!



Wheat and barley are not edible until ground or milled. Early English peoples used a hand-powered device made of two stones and called a *quern mill*. It worked on the principle of a pestle and mortar. Later came watermills and windmills to which local people would take their corn for grinding by the professional miller, who worked either for money or for a share of the corn. Hence the prominence of the miller and of the mill in local communities. And hence, too, **Keyworth's emblem is a windmill.**

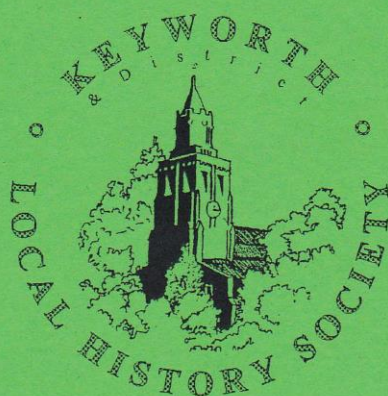


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