

The Medical Conditions of Our Ancestors

Recently, with the analysis of skeletons from the Ebor site (INTERIM vol 1 no 3 & 4), interest in York has been focused on the medical condition of our ancestors. Judging from the preliminary findings they weren't a particularly healthy lot: tooth decay, arthritis, rickets and several other conditions have already been reported.

Medical treatment was, of course, readily available in the Middle Ages. Many Anglo-Saxon and medieval medical treatises are known, with a remarkable range of ailments. Some of the components of these remedies are more exotic than others. For example, a particularly potent plant ingredient was the Mandrake (*Mandragora officinum*) which had great magical powers - and could, besides, cure toothache. Another treatment required the bark of a tree which grew only in Paradise. As the Anglo-Saxon author remarks, this could be obtained only with difficulty. Other materials were more mundane. The 15th century *Liber de Diversis Medicinis*, probably written in East Newton near Helmsley, recommends the herb Henbane (*Hyoscyamus niger*) as a part of prescriptions for abscesses, gout, Lenten fever, palsy, 'to sla wormes in þe tethe' and as a 'gude oynement for wondes (and) broken bones'. It may also have been the 'cursed hebenon' used to kill Hamlet's father. Another common ingredient, Mugwort (*Artemisia vulgaris*) was employed for backache, 'euyll at þe herte', 'to delyuer a woman of a dede childe' and to find out 'if a sike man or woman sall live or dy'. Scores of plants have common names which end in 'wort', which indicate their former use in medicine.

Many of the treatments sound unpleasant, and some dangerous. One even ends with the words "with God's help no harm shall come to him". Most, however, were probably totally ineffective; although in the Middle Ages an impressive - and useless - concoction administered with a good bedside manner would be no less effective than it is today. On the other hand, some recipes show a real knowledge of the pharmacological properties of herbs. Deceptions of willow were used in the treatment of fever for centuries before the active principle was extracted, synthesised chemically, and named "aspirin"; and Henbane

is still used in the treatment of certain nervous tremors.

Serious illness apart, herbs would have been a valuable source of vitamins for a population which during the winter had little to eat but salt meat and dried peas. There is an account from a monastery in Wales of how the monks here given a daily dose of an herb infusion for the sake of their health. This was probably general practice. For medical, as well as culinary reasons, every monastery would have had its own herb garden.

Several investigations of monastic sites in Denmark (reported in the Danish archaeological magazine *Skalk*) have shed an unexpected light on this. Following disturbance of the earth, by roadworks as well as by archaeological digs, large numbers of herb plants were noticed growing nearby. Among these were Henbane (in an area where it was not otherwise found), Great Mullein (*Verbascum thapsus*), Greater Celandine (*Chelidonium nigrum*) and the Black Horehound (*Ballota nigra*); all herbs formerly used for medical purposes.

One such site was an excavation at Asmild Bispegård, in central Jutland. This was a house associated with a monastic church. The monastic community flourished in the late 13th and early 14th centuries, the house is known to have been demolished by 1580, and the site had remained unoccupied ever since. After excavation of an area between the house foundations and what may have been a garden walk, a rich crop of young plants of the Great Mullein was noticed on the spoil-heap. More plants were found growing on the vertical wall of one trench, at a depth of 50-60 cm, in a roughly horizontal line which presumably represented an earlier ground even onto which the seeds had fallen.

The absence of any seedlings at other levels makes it seem unlikely that the seeds were accidentally introduced during digging. This has been tested by carefully removing soil samples from undisturbed soil behind the wall of the trench, and sealing the samples in plastic bags until they could be opened inside a greenhouse. Accidental intrusion of the seeds could then be ruled out. When this was done with the Asmild Bispegård samples, germination, of Mullein seedlings occurred - together with dandelions, clover and other weeds.

This suggests that the seeds had in fact been lying dormant in the soil since the time the site was last disturbed, at the demolition of the house in the late 16th century, and had subsequently been buried by accretions of soil. Presumably they were produced by descendants of the plants cultivated in the garden of the house while the monastery was still active.

Is it possible for seeds to survive in a dormant state for nearly three centuries? There are many accounts of the germination of ancient seeds; for example, the mummy wheat obtained from tombs of the harlots, and therefore several thousands of years old. However, most such tales have been discrediting apart from the biological improbability no precautions were taken to rule out the possibility of accidental introduction of modern seeds, or even of a deliberate hoax. On more solid ground is the case of the germination of Lotus seeds (*Nelumbo nūcifera*) found in an ancient peat bed in Manchuria. According to radiocarbon dating, these had an estimated age of 1040 +/- 210 years. This is, however, an isolated case.

Ideally, experimental evidence is needed. Few scientists have the patience to bury seeds deliberately in the soil and wait several hundred years for their results. However, an American scientist, Dr W.J. Bea1, did start such an experiment, which has now outlived him. In 1879 he put seeds from a variety of plants into bottles, and buried the bottles in the ground. At intervals of 5 or 10 years since then, some of the bottles have been dug up and the survival of the seeds tested. In most species, germination no longer occurred after the first 20 or 30 years, but seeds of two species were still capable of germination after 80 years. A similar experiment set up in 1902 was terminated after a mere 39 years; here one of the species whose seeds had retained the highest germination rate was Mullein.

There are authentic records of seeds germinating after even tonier periods of time. Museum collections of seeds, where the date of collection is accurately recorded, have been tested for survival. In one experiment, seeds from a collection in the Paris Natural History Museum germinated after periods of up to 158 years. A similar test on specimens from an Oslo museum gave survival times of over a century, while in the British Natural History

Museum a single lotus seed, known to have been collected before 1718, germinated when it got wet following damage to the Museum by a wartime bomb.

There is good evidence, therefore, that seeds can germinate after lying dormant for considerable times; the seedlings which grew at Asmild Bispegård and other sites may well have been the immediate descendants of plants cultivated in a medieval medicinal herb garden.

York in medieval times had several monasteries, almshouses and hospitals. Those who tended the sick in these institutions must have cultivated herb gardens to supply the necessary ingredients for their medicines. Perhaps archaeologists (and even enthusiastic gardeners) should keep an eye on the plants which grow in and around excavations in the City - far from being mere weeds, they might supply information on the nature of the sites centuries ago.