"I will heal me of my grievous wound"

Wounds of one sort or another must have been daily encounters since the human race made its troubled way through thickets and over mountains in the dawn of history. So it is not surprising to find records of many attempts to heal them with the help of natural products.

One of the most intriguing groups of plants sought for their healing qualities, the woundworts, offers plenty of material for the researcher. The group includes five plants growing wild in Britain, all belonging to the genus *Stachys*. They are betony (*S betonica*), true woundwort (*S germanica*), marsh or clown's woundwort (*S palustris*), field woundwort (*S arvensis*) and hedge woundwort (*S sylvatica*). They are all to be found blooming now, and all are decorative.

Betony was held in high repute as a wound herb during the Middle Ages, and was indeed earlier extolled by the ancient Greeks and Romans. Antonius Musa, physician to the emperor Augustus, wrote a lengthy treatise on it, naming no less than 47 disorders for which it was a certain cure. Not surprisingly, this herb was cultivated in physic gardens of monasteries, and it still survives in now neglected sites.

In addition to its healing powers, betony was thought a good protection against the powers of evil, and was grown in churchyards. In medicine it was a sovereign remedy for maladies affecting the head. Its leaves were used in poultices and, curiously enough, when dried, employed as a substitute for green tea in beverages.

Marsh woundwort, which has the most attractive blossoms of the group, was celebrated by John Gerard in 1633 for its vulnerary qualities. He related in his herbal how a poor reaper in Kent who gashed his leg with a scythe, was seen to rush to a stand of marsh woundwort, bruise a handful, and apply it to the wound, and cover it with a piece of his shirt. After a few daily applications of the herb, stamped in lard, the wound was healed.

Gerard himself, he claims, applied a poultice of marsh woundwort to heal a Gray's Inn brawler with a stab wound that had penetrated the lung.

It is interesting to note that marsh woundwort has also been recommended as a source of food. Its tuberous roots attain a considerable size. When boiled they yield a nutritious dish with an agreeable flavour. Moreover, the young shoots can be cooked and eaten like asparagus. However, despite a pleasant taste their odour when cooking is said to be disagreeable.

The higher up the mountain the thinner grows the air

At a recent conference in University College London, plans to investigate physiological adaptation to hypoxia included the outlining of a proposed scientific expedition to Everest.

The discussion has been reported in the 10 June issue of *Science*. The research may be able to shed light on why some patients suffering from heart and lung disorders prove more vulnerable than others, and may elucidate the life-threatening conditions faced by some patients in intensive care units whose blood oxygen levels may fall below 4kPa.

The normal oxygen pressure in the blood is 12–14kPa, and when it falls below 5kPa people usually become unconscious. Individuals climbing to the summit of Everest without oxygen supplements are estimated to have blood oxygen levels lower than 4kPa. Patients with acute respiratory distress syndrome have dangerously low blood oxygen levels. Not all survive, but some do. Some climbers and high-altitude dwellers cope successfully with hypoxia, whereas others cannot. Explanations of human adaptability to hypoxia depend on changes that enhance oxygen delivery to cells and tissues, such as increased breathing rate, increased heart rate and red blood cell mass. Maximum oxygen consumption during exercise varies greatly between individuals.

Adaptations to hypoxia in sick people in respiratory distress are difficult to determine. It is more instructive to observe the effect on healthy people of physiological limitations. On the proposed Everest research project, medically trained, experienced climbers will conduct physiological and mental performance tests at several stages. Some will climb without oxygen supplements while others will use a closed-circuit breathing device recycling exhaled air. A lightweight compact system as an alternative to conventional open-circuit systems now used by patients with chronic respiratory diseases should result from the research.

Coloured glass through the ages

Percy Bysshe Shelley remarked that "Life, like a dome of many-coloured glass, stains the white radiance of eternity." We tend to regard glass as a natural constituent of our civilisation, but although its production can be traced in various regions back to the 15th century BC, there are arguments over its sources during the Bronze Age in the Near East.

Glass is defined as a hard transparent or translucent material made by fusing together a mixture of sand, limestone and soda into a liquid at about 1,350–1,600C. On cooling to about 500C it becomes the substance which we call glass, a supercooled liquid.

Throughout history, glass was used as a glaze before it became an independent material for construction. Glazed objects of steatite and faience were made in northern Mesopotamia in the fifth millennium BC, and were exported by way of trade to other regions of the ancient East, including Egypt.

In *Science* for 17 June, Caroline Jackson of the University of Sheffield has discussed aspects of glassmaking in Bronze Age Egypt. She comments that in the late 19th century Sir Flinders Petrie discovered evidence for glass production in Tell el-Amarna, but aroused some controversy. The argument has been over whether glass was made from primary materials or whether manufactured glass was imported and worked into artefacts. New evidence has suggested that primary production took place in Egypt at Qantir in the eastern Nile delta, in a few large centres where a particular colour of glass was manufactured.

The finding of cylindrical vessels filled with partially fused glasses indicates a two-stage process. The first stage involved low-temperature heating in jars. The material was then removed, the unfused matter discarded, and more flux and a colouring agent were added to the residue. This was then melted into ingots. Most glass from Qantir is red, for which copper was added, but cobalt blue glasses were produced by a simpler method. The production of ingots at Qantir is believed to indicate export from Egypt. Glass at that time was a commodity of high commercial status and those who controlled it must have had considerable power in the region.