

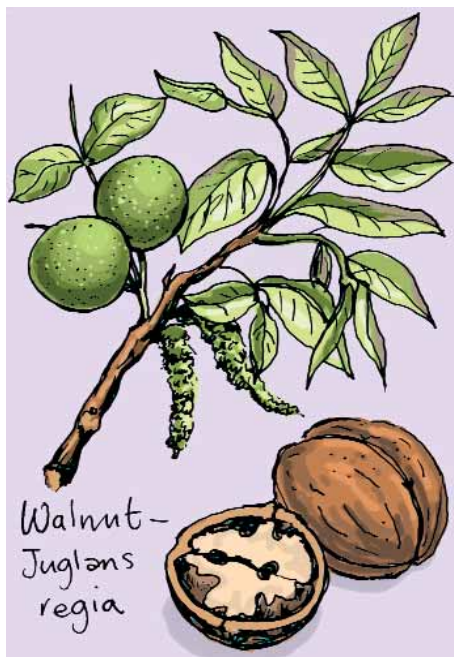
Growing food of the gods

There is reported to be a growing tendency among farmers and smallholders to cultivate the walnut tree for a number of uses. I learn from a recent issue of the *Countryman* that notably high densities of the tree now occur in Cambridgeshire, Devon, Hampshire, Kent, Somerset, Warwickshire, Worcestershire and Powys.

In its natural habitat, the walnut (*Juglans regia*) thrives from Greece and Asia Minor to the Himalayas and is particularly abundant in Kashmir, whence it reached the plains of India. Pliny noted that the walnut was imported into Italy from Persia, where it is a native. There was a legend that while ordinary humans were eating acorns the gods were feeding on walnuts, which therefore became known as Jupiter's nuts. The tree is believed to have reached Britain during the 16th century.

The walnut tree has been widely resorted to in folk remedies. The bark and leaves are laxative, astringent and detergent, and have been useful against skin disorders. An infusion of the bark is purgative. The juice from green fruit husks, boiled with honey, has been used as a gargle for sore throats.

The leaves and fruit husks in infusion make a serviceable yellow to brown dye for wool, and gypsies have used this to darken the skin.



The whole of the walnut tree contains juglone as its main active principle, with oil, mucilage, albumin, cellulose and minerals. Other constituents are said to include vitamins that lower cholesterol and help brain development.

How life emerged

Experts in France and Germany have suggested that earthly life probably originated in the depths of the ocean rather than on the surface of the land. A note on this supposition appears in the November issue of *Chemistry World*. It is argued that when life emerged some four billion years ago the conditions on the earth's surface would have been distinctly unfavourable to developing organisms. Few modern plant or animal species could survive under the conditions prevalent at that time, when volcanic eruptions and meteorite impacts created an erratic climate above ground. However, the same volcanic activity would have ensured a favourable temperature of 20–50°C at the bottom of the oceans. The ocean would have filtered out harmful radiation and high sea-floor pressures would have stabilised such essential biological molecules as DNA and RNA.

Most surface organisms can withstand high pressures without detriment to their metabolism or life cycles. It seems probable that a common ancestor of all living organisms was a piezophile, a type of creature that prefers living under high pressures. This raises an intriguing question of the possibility of life today on other celestial bodies such as in the deep oceans of Jupiter's moon Europa, something that would be exceedingly difficult to determine through the procedures currently available to investigators.

Taking a risk with unique museum specimens of early hominids

There is a comment in the 2 November issue of *Nature* that draws attention to one of the hazards involved in handling valuable and sometimes unique palaeoanthropological museum specimens.

Unease has been aroused over the transfer of the 3.2 million-year-old remains of the hominid known as Lucy, discovered in Ethiopia and maintained in the basement of the national museum in Addis Ababa. The Ethiopian government agreed in October to permit the Museum of Natural Science in Houston, Texas, to exhibit the skeleton, which is 40 per cent complete. It is the general opinion among archaeologists that original fossils should not travel, so that they may be kept safe and available for research in a known location. They should be moved only for "compelling scientific reasons". Normally, casts should be exhibited instead.

Details of the proposed tour of the Lucy skeleton, and how much Ethiopia will be paid for the loan, are unknown. Other great museums in the US are too concerned over the possibility of damage to consider handling it. Another famous fossil, the 1.6 million-year-old Nariokome Boy, which has been recognised as a youth of *Homo erectus*, has aroused a similar argument over preservation, when attempts have been made to borrow it for exhibition.

Those who advocate sending African fossils abroad argue that museums have the expertise to handle such fragile objects. They say that allowing the fossils to travel encourages tourism and trade in the countries of origin as well as permitting their study in reputable institutions. Others consider that adequate arrangements for research already exist in the country of origin, and that tourism to see them will not be encouraged if they can be viewed as casts in the US and other countries.

Two different aspects of science in the Arabic world revealed

Between the eighth and 13th centuries AD the greatest advance in scientific knowledge stemmed from the Arab Muslim civilisation. The rest of the world, and western cultures in particular, learned much from the wisdom of the Arab countries.

At that time Arabic was the language of science; today Arab countries tend to spend much less on scientific investigation and education in general than do most other nations. Indeed, their output of scientific publications is less than that of any other region of the world with the exception of sub-Saharan Africa. The obstacles to progress are several, but the primary one is political in nature, according to a series of commentaries in the 2 November issue of *Nature*.

Political control in some Arab countries has resulted in purging, criticism and restrictions of communities that try to develop independent thought and expression. Academics have been forced into retirement and students who become politically active have experienced repression in the face of religious conservatism. Admission of women to universities is restricted. Knowledge-based activities that involve innovation, book publishing, art and wider literature in Arabic-speaking countries are now said to be among the weakest in the world.

Political leaders need to change their mentality to show more commitment to science if the trend is to be reversed. The functions of science in society are to help humans to enjoy a higher quality of life through technical advances, to solve problems afflicting the poor and to deter aggression. Some believe that strengthening religious belief may be one result of scientific advances. But Darwin's idea of the origin of the species has lost favour in Muslim countries. As in the US, creationism has become more accepted and scientists who are exponents of evolution are now afraid of speaking out too loudly.