

Out on the spice trail

January 6 is the Christian celebration of the feast of Epiphany ("manifestation"), also observed as the 12th day of Christmas, when Christmas trees are removed from the house and decorations are taken down.

Epiphany marks the discovery of the infant Christ by the Magi, arriving in Bethlehem from the east with their gifts of gold, frankincense and myrrh. Because of the spice connection, Epiphany has long been associated with high-seasoned foods, including spiced Epiphany cake and spiced cider or ale.

From the earliest days, spices have been valued by humans for many different reasons. For the most part they have been seen as precious foreign substances, miraculous because they offered pleasant odours and tastes in small quantities. And because of their use in the making of incense, they came to be regarded as favoured by the gods to whom incense was offered.

The term spice was applied to dried bark, leaves, flowers or fruit of aromatic plants, usually of tropical origin, distinguishing them from herbs, which were generally used fresh as food flavourings.

Spices carried a high value in the market, being ranked with gold and silver, and so became an important feature of trading ventures. Possession of spice islands and other territories came to be violently contested, and was a feature of warfare and piracy and a factor in the institution of slavery. From 1000BC spice trading between east and west was dominated by Arabia, until the Romans intervened and the Phoenicians commanded much of the sea-borne trade.

Vasco da Gama in 1498 voyaged into the Indian Ocean in search of spices. Christopher Columbus in the Caribbean decided that many of the aromatic trees and shrubs he encountered would be highly



valued in Spain for dyes and medicines. On his second voyage Columbus was accompanied by a physician called Chanca, who remarked on the cinnamon and mastic he encountered.

In 1600 Elizabeth I gave a charter of trade monopoly in the Far East to the East India Company. The London Guild of Pepperers joined forces with the spicers and apothecaries and increased the competition.

Meanwhile, the Portuguese from 1552 were landing cloves in Antwerp, making a substantial profit, and the Dutch trader Cornelius van Houtman was importing pepper and cloves. Malaya and Zanzibar were important sources of cloves, vanilla and cinnamon, used not only for incense but also as an ingredient of chocolate, already a popular beverage.

Road ahead in 2006

For some, the arrival of a new year is a moving occasion, although it is really just a matter of dates. We take the start of a new year as the first of January but it was not always so. The Romans began their year in March and during the Christian era the year has commenced at various times — Christmas Day, 1 March, 25 March, Easter Day — without much logic in choice. And, of course, other religions celebrate their new year on various dates dictated by the lunar cycle.

Nevertheless, the arrival of 1 January has long been an occasion for taking stock of our behaviour in the past and making pious resolutions to improve it in the future. We assess our attitude towards our relationship with our fellow humans in particular.

As a guide to intended progress we have been exhorted to meditate upon the seven deadly sins, which are listed as pride, covetousness, envy, lust, anger, gluttony and sloth, and by contrast the theological virtues of faith, hope and charity and the cardinal or natural virtues of prudence, temperance, justice and fortitude.

It is easy to make a silent resolution to eliminate the sins and practise the virtues, but almost impossible to follow it up month after month through the year. In our so-called consumer society envy and greed are openly encouraged while temperance and contentment are stigmatised as being unhelpful in a highly competitive and unreflective race against time.

I am convinced that the first step we should take to make this world a happier and more peaceful place is to dissociate ourselves from blind haste. While we goad ourselves with the delusion that time is money, and so long as money is accepted as the hallmark of social success, we are harming both ourselves and our neighbours. I am reminded of the words of William Henry Davies: "What is this life if, full of care, / We have no time to stand and stare?" One outstanding good resolution to take us through 2006 must be — relax!

Use of animals in drug testing is urgently due for re-evaluation

The necessity for using animals in the preliminary and later testing of drugs and chemicals for toxicity has been queried in many quarters. Protesters against animal testing have recently stepped up their efforts to have the practice abolished, to the extent of resorting to violence on occasion, and the tendency is on the way to becoming a major issue when it comes to safety regulation.

The European Parliament has recently approved a policy of registration, evaluation and authorisation of chemicals (REACH), which is expected to come into force late in 2006 or early in 2007. It will involve the evaluation of at least 10,000 chemicals handled in industry. The complications encountered are reflected in the need for

voting on 1,038 amendments during the approval process.

It has not yet been resolved whether authorisation for marketing and use of substances potentially harmful to health or the environment should have a time limit rendering it liable for periodical reassessment, and a second reading of the proposal is due during 2006. Germany has powerful commercial interests in chemical production. The United States is expressing anxiety over the probable reaction of public health and environmental activists.

Alternative approaches to using animals in testing are necessary, since currently 10.7 million animals are used annually in Europe and a vast increase is predicted unless newer

test methods can be devised. It is already established that no animal experiment should be performed if an alternative exists, and duplication of tests should be reduced by different companies sharing their test results instead of testing independently.

The many reasons for reducing testing in animals include ending animal suffering and avoiding the possibility that animal results do not reflect effects in humans. Some chemicals, particularly those intended for cosmetic and cleaning purposes, can be tested on cultures in place of living animals. Greater funding for and encouragement of new testing methods are urgently needed, comments an editorial in the December 2005 issue of *Chemistry World*.