

Chinese tradition meeting the challenge of today

An editorial published in the May issue of *Chemistry World* offers some observations on traditional Chinese remedies and, in particular, their role in China.

Herbal remedies, it observes, have for ages been a source of inspiration to chemists and, in the search for pharmacologically active natural products, attention is increasingly being drawn to traditional Chinese remedies, which are many. Among the list of past discoveries must be reckoned the bronchodilator ephedrine and the antimalarial artemisinin. The age-old use in China of remedies such as horny goat weed (*Epimedium sagittatum*) and black bears' bile has suggested that extraction of the active principles from such substances might help in developing useful derivatives. Synthetic alternatives are urgently needed because many native species of plant and animal are coming under threat from the booming trade in Chinese medicines around the world.

The Chinese government has recently revealed a 15-year plan to research and develop its traditional remedies, to improve manufacturing and to set stringent standards for quality control. Unfortunately, the state food and drug agency has been accused of offering bribes, and the process of drug evaluation and approval is said to be seriously affected by corruption.



Western businesses moving into China need reassurance that the local companies and government agencies are following the rules. To help meet this need, *Chemistry World* is to be published in a Chinese edition from September.

Is a growing exposure to musk perfumes putting health at risk?

A rather disturbing possibility is suggested in a recent report from the department of health of New York State. Researchers measured the concentration of several synthetic musk perfumes in breast milk from 39 American women and found that it was five times as high as that found in European women nearly a decade ago.

Since musk perfumes do not accumulate in human tissues the researchers argue that their findings indicate a rise in exposure in the environment. On further investigation, they detected an increasing contamination by musk in local soil water, in wildlife and in human fat.

Little is known regarding the health risks of polycyclic musk perfumes. On the other hand, it is recorded that older fragrances called nitromusks have induced cancer in animals. There have also been indications that in large doses of polycyclic musks have brought about developmental and reproductive problems, although the possibility of more subtle effects of minimal exposure has not hitherto been examined.

In the American women studied, the sources of the polycyclic musks are believed to have been synthetic additives that are among the ingredients of widely used cleaning, deodorising and beauty products. Their main application has been to add fragrances to cosmetic products.

Hand structure suggests Flores "hobbit" is not our close relative

The minute hominoid — only one metre tall — whose remains were recovered from the Indonesian island of Flores continues to provoke interest and to stimulate controversy among palaeoanthropologists. He has been called many things, having been pronounced a pygmy, a diseased sample of *Homo sapiens* and a hobbit.

At a meeting of the Palaeoanthropology Society in April, a postdoctoral researcher claimed that the primitive nature of the creature's wrist bone makes it impossible to class him among our relatives. Their structure does not even approximate to the human structure, according to Matthew Tocheri of the Smithsonian Institution in Washington. The five bones of modern humans are designed to ease stress on the wrist when the hand is applied with force. This design dates back to Neanderthal times but does not occur in apes or early humans as we know them. In the Flores skeleton, the shape of the hand bones is primitive, with the three bones that distribute force from the base of the thumb across the wrist resembling those of a hominid and not a modern human. Many experts who have examined the bones are now convinced that they represent a racial variation and not any kind of deformity in its own right.

However, although the bones show no sign of having been altered by disease, there are still some critics who maintain that disease rather than inheritance is responsible for the skeleton's unusual features, and it has been suggested that the skeleton's tiny skull might represent the presence of microcephaly.

US chemistry research is no longer in a dominant position

When the American Chemical Society held its spring meeting in Chicago in March, a stormy future for chemical research in the US was forecast. A report from the National Research Council suggested that the future, in weather terms, was cloudy with a chance of showers. Another report considered that chemical engineering had a reasonably bright future but that future strength might depend on developing newer areas such as nanotechnology.

At present the US shows global superiority in chemical research but has seen some significant downward trends. During the past decade the proportion of chemistry papers published by US scientists worldwide has fallen from 23 per cent to 19 per cent. Meanwhile, the output from Asia, if Japan is excluded, has trebled and has come to match that from the US. Research quality has remained high.

Critics in the US are most worried about education. The number of chemistry doctorates awarded to native students has fallen by a quarter since the 1970s, although it is noted that women graduates now show an increase. Foreign students have compensated to some extent for the difference, but since 2001 they have tended to emigrate after graduation to Asia and Europe rather than stay and work in the US.

The main problem is one of funding. In recent years, China and India have dramatically increased their investment in science and technology whereas investment in the US has barely kept up with inflation. The great worry is over quality of research.