Softening chemistry

It was Anton Chekhov who wrote in 1887: ìA writer must be as objective as a chemist: he must abandon the subjective line.î Nevertheless, it is not always that a chemist sticks strictly to objectivity.

In *Chemistry in Britain* for September, Philip Ball, a consultant editor for *Nature*, has drawn attention to a few instances where chemists of solid reputation have engaged in sentimental and subjective statements regarding their profession. On the whole, asserts the author, chemistry seems to have had more than its fair share of romance, and certain stories ìrepeated endlessly and uncriticallyî have entered its mythology. Many of them are based on flimsy evidence, and some may be outright fabrications arising from wishful thinking, inflated recollection, wilful attempts at self-aggrandisement or distorted history. Popularisers of the sciences are still allured by romanticism and prepared to stretch the facts to suit the presentation.

We have all heard of Friedrich KekulÈ daydreaming on the Clapham bus of chains of carbon atoms in 1854. And in that same year Hermann Kolbe in his chemistry textbook retailed the story of how Friedrich W^hler in 1828 synthesised urea from ammonium cyanate and was acclaimed as having united the organic and the inorganic, the living and the dead.

Then at the end of the 18th century we find Humphry Davy combining the roles of chemist and poet and persuading Wordsworth and Coleridge to listen to the magical voice of chemistry. When Davy lectured at the Royal Institution, fashionable ladies flocked to hear him and sent him anonymous sonnets in admiration. So popular were his Friday evening discourses that Albemarle Street was made the first one-way street in London.

Davy, though a first-rate chemist, was still an incurable romantic. Faraday, on the contrary, did not allow physics to distract him into romanticising his science, although his progress from bookbinderís assistant to physicist was in itself a subject for romance.

It is difficult to understand why chemistry was considered so romantic by layman and chemist alike while physics was rarely seen in a similar light. The one is surely no more mysterious than the other. However, at the end of the 18th and the beginning of the 19th centuries chemistry was closely linked to electricity, and thus overlapped with physics and was seen to be concerned with the forces of nature rather than the nature of matter.

For people of romantic tendency chemistry became the science of choice. It inspired the philosopher Hegel, the painter Runge and the poet Goethe. At one time during their close association with Davy, Wordsworth and Coleridge proposed to set up a chemical laboratory, which never materialised. Yet it shows that the romantic urge was close to the scientific one especially the urge to perform chemical reactions. No doubt it drew on ancient alchemy for its mystical roots.

Peat in prehistory

Deposits of peat form by decomposition of plant material under water-saturated conditions of subsoil and atmosphere. In moorland situations such as occur on the heights of Dartmoor, true peat accumulates where the underlying granite has partly or wholly decomposed over the millennia, on high levels where wet ground and moist air combine with low temperatures. The depth of the peat blanket varies considerably. On Dartmoor it is between 1m and 7m.

Dwellers in such country have used peat in various ways, first digging out peat bricks, which are stacked to dry on the hillsides, and then either burning it for warmth or smelting or using it as a soil conditioner. In Devon in the 12th century local tinners were granted a charter to dig peat for industrial purposes, and since then the right of gathering it has been jealously protected by the local people. The results of their efforts are apparent in the many curious and gloomy canyons through which the local trackways pick their path.

That peat extraction has a longer history than hitherto thought appears from investigations of a pyramidal peat stack discovered in the Isle of Barra in the Outer Hebrides, described in the September 2002 issue of *Antiquity*. This stack has been dated to the second millennium BC, and so is of Bronze Age culture. A local crofter had found when peat cutting that his spade met resistance about 0.3m below the cut face of his own bank. The obstacle turned out to be a hard slab of dried peat which bore the clear impression of two fingers and a thumb, where it had evidently been grasped by the original digger when first it was lifted into the open for stacking. Further investigation revealed a further 14 or more hard turfs arranged in a stack, with a second stack alongside it.

Radiocarbon dating of a sample showed an age of 3310±50 years before present. Pollen analysis revealed heather, sedges, grasses, sphagnum, alder, oak and hazel. Some charcoal was also found, but whether this indicates burning of the cover at some remote date is uncertain. Equally uncertain is what material constituted the spade used for extraction of the original peats; it might have been bronze, the only metal then available, or possibly slate.

Deadly chains

I was astounded to come across a press report that a move is afoot to forbid the making of daisy chains by schoolchildren: surely a piece of nanny-lunacy if ever there was one. A London primary school has banned the picking of daisies to make chains, not because the chain might choke a child, but because plucking flowers so near the ground might expose it to germs. One wonders how daft people can get in their terror of the lawyers.

However, the daisy has not only been associated with childrenís games. There is an ancient belief that boiling milk with daisy roots and feeding the product to young puppies would stunt their growth. Yet Chaucer called the flower the ìdayís eyeî because it opened at dawn and reflected a sunrise-pink in the underside of its petals. And Shelley in 1822 spoke of ìDaisies, those pearled Arcturi of the earth, / The constellated flowers that never setî, linking them with the bright star prominent in the northern hemisphere.

The Scottish name for the daisy, bairnwort, was given because children much enjoyed plaiting it into chains to hang round the neck. As well as chains there were ìdaisy caterpillarsî, where flower heads were threaded on to a common stalk, the ìIrish daisyî, where detached heads were turned upside-down and rethreaded on to the stalk, and ìdaisy plaquesî, where heads were inserted into a layer of mud on a plate.

In folk medicine daisy flowers were infused as an antifebrile drink, and an ointment from them applied to bruises. Despite the caution implied in the notion that daisy roots stunted the growth of puppies, a decoction of them was once employed to ward off scurvy, although patients were warned of the necessity to continue the treatment for a long time.