

By the light of the silvery moon . . .

Exposure to too much sunlight is unhealthy for us, we are told. We know there are links between sunshine holidays, sunbeds and skin cancer. Conversely we have recently been informed that too little time spent in the sun is also bad for us. Anyone living north of Birmingham in our dark winter days is unlikely to be producing enough vitamin D. Taking a vitamin supplement has been recommended to prevent rickets, which we had hoped was a problem of the past for children.

Although much research has been carried out on sunlight little if anything seems to be known about the properties of moonbeams. We know the effects the moon itself has on cycles of life on earth and in the sea. The relative positions of the moon and earth give us spring and neap tides, for example, which affect many forms of wildlife, not to mention sailors.

On a different tack, David Criswell of the University of Houston in Texas has suggested using power-beaming satellites to turn the moon into our energy-hungry planet's equivalent of a wall plug. However, other than the fact that moonlight is reflected sunlight, we do not know that much about it.



However, an inventor and businessman, Richard Chapin, has built a device to collect and concentrate moonbeams. His \$2m five-storey-tall "interstellar light collector" project

is in a 14m deep crater near the Kitt Peak National Observatory in Arizona.

It consists of 84 individually adjustable mirrors that can focus the collected moonlight onto an area as small as a human head.

Over 1,000 visitors so far have spent a night lying out under his desert moonlight. Many of them reported it was a calm, relaxing experience which left with uplifted spirits, and some found it promoted their creative juices.

Differing levels of light intensity are known to influence circadian rhythms and thus possibly affect ageing and age-related conditions. Levels of melatonin might have been altered, possibly affecting sleep cycles and serotonin production. It could, of course, simply have been a placebo effect.

Further research may show whether concentrated moonbeams create light intensity of any therapeutic or energy use. In the meantime, if relaxing in the desert by the light of a silvery moon, perhaps humming "Home on the range" and counting stars instead of sheep lights your candle, this would seem to be the place to be.

Leave those freckles alone

A discussion broke out recently as to whether freckles are an attractive part of one's features or something to get rid of.

My suggestion that they be renamed Areas of Outstanding Natural Beauty, particularly on the example before me (I name no names), was rejected so we looked into what they are and ways of dealing with them.

The word "freckle" comes from Middle English *freken*, which itself comes from the Old Norse word *freknur*, meaning, would you believe it, freckled.

Basically freckles are cells in the skin, particularly on the cheeks and nose, containing a build up of melanin. When the skin is exposed to extra sunlight, melanin-containing cells enlarge and thus many people, especially if fair-skinned, find their freckles show up more in the summer.

They are usually permanent and probably hereditary. There is a striking similarity in the number of freckles on identical twins but somewhat less so with non-identical twins. A gene for freckles has been mapped on chromosome 4q32-q34.

Attempts to get rid of them go back further than Old Norse. Ancient Egyptians used oil of fenugreek to fade age spots and freckles. Sour milk and lemon juice have been tried, as has warmed honey with and without added wheatgerm. Some recommend the regular use of fruit and vegetable face masks, particularly those with apricots, strawberries, cucumber or redcurrants. An infusion of parsley mixed with equal parts of lemon juice, orange juice and redcurrant juice has also been suggested.

Many plants and herbs have been used including silverweed (*Potentilla* species), Solomon's seal (*Polygonatum odoratum*) and the lovely, fragile, pink-flowered common centaury (*Centaureum erythraea*).

Whereas any significant change in the appearance of skin should be checked, of course, on the whole we should leave those freckles alone.

How biowalls improve well-being

We are gradually understanding the need to improve our environment. Wind turbines, like them or not, are multiplying, and solar panels with their big brothers, solar walls and solar roofs are helping to produce "green" energy. Green roofs covered with closely packed plants growing in a few inches of soil on a waterproof layer in place of roof tiles help to insulate buildings, collect rainwater and reduce air pollution.

The use of biowalls to absorb air pollution has not so far become widespread but some research into their possibilities is going on. We are unlikely to see whole skyscrapers covered with plants but small scale indoor biowalls have been used, if only to enhance the appearance of some office developments.

Millions of working days are lost annually due to illnesses related to poor indoor air quality which has also been linked to sick building syndrome. One of the major contaminants of indoor air is a class of chemicals known as volatile organic compounds (VOCs), which include formaldehyde, benzene, toluene, ethylbenzene, trichloroethylene and naphthalene. Sources of these compounds include building materials, textiles, new office furniture, electronics equipment, cleaning agents, adhesives, antiperspirants, hairsprays and other perfuming agents. These VOCs, along with carbon dioxide, have been shown to be degraded by micro-organisms in plant roots and by photosynthesis. However plants reproduce CO₂ at night so a few plants in an office will not do much to reduce CO₂ levels. However, studies have shown that where high levels of VOCs (above 100 parts per billion) occur just having a few potted plants in the office can reduce them by up to 75 per cent. We do not see many plants in pharmacies or indeed in shops generally. Perhaps we should expect them to be there. Plants can also help people "feel good" as long as the choice of plant carefully avoids potential allergies or attracting pests.

Overall biowalls seem to have many physical and psychological benefits so mini biowalls or even indoor gardens could be used by the environmentally conscious employer to improve our work areas both for us and for our customers and patients.