

What has happened to our house sparrows?

The Royal Society for the Protection of Birds held its annual Big Garden Bird Watch last weekend, when people were asked to count the birds they saw in one hour in their own gardens or a local park. One formerly common garden bird that observers may well have failed to spot is the house sparrow, whose numbers have declined at a disturbing rate over recent years.

Britain's house sparrow numbers have fallen to less than half since the 1970s, the massive decrease being especially marked in south-east England. And in towns and cities the decrease is more rapid than in the countryside. Greater London lost 70 per cent of its house sparrows between 1994 and 2001.

The house sparrow is currently the subject of an RSPB appeal. Donations will support research to find out what has gone wrong for the species and how to restore its numbers. Possible reasons for the decline include a shortage of insects for the chicks in summer, a lack of seeds for fledglings to eat when leav-



ing the nest or for adults at other times of the year, a shortage of suitable nest sites, environmental pollution by chemicals or possibly some avian disease.

Immediate research is being directed towards dietary requirements, particularly in winter and in summer. The hatching of eggs is also being studied, together with the development and mortality of chicks, and survival into the flying stage. The value of providing seed in gardens is being observed, in particular since this practice offers a safeguard against winter mortality.

Science should be used to foster world peace and stability rather than weapons research

There is a sharp criticism of the present tendencies in science education by Chris Langley in *New Scientist* for 22 January. He points out that an association between science and the military hierarchy has existed for ages. Galileo and Leonardo da Vinci, inventors of telescopes, submarines, catapults and parachutes, had their ideas pilfered by military strategists.

By the time of the 1939–45 war, research into weapons occupied much attention in industrialised nations. Since then, the “cold war” between east and west and more recently the “war on terror” have boosted military expenditure and so promoted the scientific research behind weapons production.

Langley makes the point that world security is not just a matter of the strength of military forces or advanced weapons systems, and we need a new approach. The science community should take more responsibility for driving home this notion. Scientists could do more for international peace and stability

by concentrating on efforts such as access to clean water and clean energy, improvement of the environment and reduction of world poverty. Spending on military technology in the UK and the US is enormous, and governments have turned their attention towards exploiting the potential research capacity of university science departments. The efforts are not aimed at conflict resolution or peace building but at more offensive weapon production.

Lateral thinking is called for. Budgets of military significance should be shifted to humanitarian goals. Public confidence in science and its objectives has slipped, and could be restored if scientific institutions concentrated upon constructive rather than destructive projects. More funds should be allocated to developing drugs to combat prevalent epidemics and threats of emerging ones. Scientific organisations, writes Langley, should reduce or eliminate their financial ties with military journals to avoid any further bias.

The price of trying to keep the planet clean

A commentary by Rebecca Renner published in *Science* for 10 December 2004 draws attention to the menace posed today by products based on perfluorinated chemicals that are designed to protect our domestic furnishings from staining.

Fluorinated stain protectors are widely used in the home to guard fabrics and clothing from being ruined by spilt food products. The protectors consist of fluorinated surfactants chemically bound to polymers. Most of these surfactants do not travel far in the environment, but their volatile precursors, which are fluorotelomer alcohols, do travel and degrade into perfluorocarboxylates. These degradation products are being detected in increasing concentrations in seals and polar bears in the Arctic and dolphins in mid-Atlantic.

The volatile precursors of stain protectors are able to travel thousands of miles in atmospheric air currents and then react with oxygen to produce stable perfluorocarboxylates. Concentrations of the final products are said to be doubling in Arctic animals every four to 10 years. The alcohols concerned are released into the atmosphere during both the manufacture of the surfactants and the application of the stain protectors.

In another study in the same issue of the journal, Paul Webster reports that indigenous people living in the Arctic are exposed to pesticides, heavy metals and industrial compounds, with uncertain effects on health. Breast milk and maternal blood samples have shown high concentrations of hexachlorobenzene, hexachlorocyclohexane, dioxins, dicophane, oxychlorodane, toxaphene, brominated flame retardants, mercury, cadmium and lead. The highest levels occur where the local population eats large amounts of marine mammals and fish. Such products may be linked to reproductive effects such as stillbirths, birth defects, low birth weight and spontaneous abortions. Exposure to lead or to polychlorobiphenyls apparently reduces the numbers of male births in the Arctic. Further close investigations are urgently called for.

And I quote . . .

We have a choice — for now

“Either the world will continue to rely on oil, burning it as quickly as it can, at any price, until there just isn't enough to be had so that the whole world breaks up into scavenging bands, each trying to survive at the expense of the others, and civilisation is destroyed — or else the world must make the deliberate decision to spare oil, lower waste and needless luxury use, and develop alternative sources of energy.” — Isaac Asimov, ‘The roving mind’ (1985).