1979—a year of poor harvests. Thus the 1980 harvest was still some 3% below that of 1978. Meanwhile, the world population had grown about 3.5% in those two years. Blame has been variously assigned to 'unusually' adverse weather, rising energy-costs, and problems in extending the 'green revolution'—none of which was unforeseen.

On a *per caput* basis, too, the 1970s saw a change. Averaged over the decade, annual increases in food supplies per person were distinctly smaller than in previous decades. Regionally, the trend was even more ominous: in most of the less-developed regions, there was no significant gain; in subsaharan Africa there was actually a *10% decline* in food production per person over the decade. Such trends, reinforced by the rising world-wide rates of inflation—including the prices of food and farmland—demonstrate that it is becoming progressively more difficult to keep on increasing food production every year. It is also clear that, in many regions, greater and greater pressures are being put on other resources—such as freshwater supplies, soils, and fossil fuels—in order to keep on producing, thus undermining the land's future productivity in order to keep its present production at or near the maximum.

No sensible person, aware of the current and foreseeable food/resource situations, could view the demographic prospect with equanimity. Of course, very laudable progress has been made in the past decade, both in raising global awareness of the dangers of population growth and in encouraging a decline in fertility in a great many nations. For their role in catalysing this unquestionably momentous world-wide social change, the people at UNFPA deserve our congratulations. But apparently they have looked only at the demographic aspect of the human predicament, completely ignoring the visibly tightening constraints on further population growth and the rising international tensions that are clearly associated with them. If the demographers would only raise their eyes to examine the other components of the population/resource/environment balance (in this context, food is clearly a resource), they would quickly realize that this is no time to rest on their laurels.

On the contrary, it is essential that they redouble their efforts and hasten as much as possible the arrival of zero population growth, followed by a prudent reduction in numbers. The goal should be to hold the peak world population, if possible, below 8 thousand millions—less than twice today's population size. If the human population cannot soon be curbed by humane means, Nature will do the job for us—and she is not noted for her kindness and compassion.

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Population and Pollution

Man's prehistoric ancestors were unhygienic creatures. Archaeologists find the bones and other remains from their meals, mixed with miscellaneous debris, littering the floors of their caves. This enables scholars to put together a picture of their life-style. As human numbers were small, the general effect of this domestic squalor on the world's environment must have been slight. Smoke from their cooking fires was rapidly dispersed to insignificant levels, and the rivers must have been able to cope with the small amounts of ordure by the normal processes of self-purification—even if pathogenic worms and other organisms were transmitted by their waters.

As human numbers increased, and as urbanization developed, pollution became more serious. While the wastes from a family group soon decomposed and re-entered the cycle of nutrients, those from larger human aggregations presented problems. As cities grew larger and larger, the problems became more and more serious, and then, with the coming of industrialization, many new and dangerous substances were added to Man's wastes. Cities thus became stinking, disease-ridden places.

Eventually, things got a little better—particularly in Western Europe—but in some cases, improvements in certain areas meant more serious damage in others. Thus before water-borne sanitation was introduced into London in the nineteenth century, the Thames was a relatively clean river where Salmon (*Salmo salar*) passed upstream through the urban waters. However, conditions on land were apt to be quite dreadful, for the overcrowded slums were highly insanitary. Although some of the 'night-soil' was collected and used as manure (an admirable instance of recycling), dirt diseases were rife in the city, and the death-rate was high. Then hygiene and health were greatly improved with the introduction of the water-closet; but the Thames, which received the untreated waste products, became an almost lifeless 'open sewer'.

Other rivers, in England and elsewhere, suffered similar fates. It is recorded that, when Queen Victoria looked over the bridge of Trinity College, Cambridge, she observed many sheets of what were in fact toilet paper in the water. When she asked the Master what the paper was, he, delicately, replied 'Notices saying bathing is dangerous'. Although the population of most cities has greatly increased since Queen Victoria's reign, many rivers have improved in quality, due to better sewage treatment—particularly in the last 20 years. Their pristine, unpolluted state is still some way off, but quite numerous species of fish have returned to the Thames.*

Before the industrial revolution, the environment suffered only locally from the effects of manufacture and mining. The iron workers of the Weald in England destroyed much of the forest to produce charcoal for iron-smelting; but their works were small, and the vegetation which survived had little air-pollution with which to contend. The spoil-heaps from lead-mines were unsightly, and fields adjacent to the workings were contaminated with high levels of this dangerous metal; but again the effects were strictly local.

After the industrial revolution, the situation became very different, with ever-widening devastation and pollution spreading practically throughout the world. Coal mines in Britain produced huge areas of unsightly spoil-heaps from which the products of erosion polluted inland waters. Metal-mining in many countries permanently scarred vast areas of landscape, as at Captains Flat near Canberra in Australia. The whole of the Lower Swansea Valley in Wales was permanently contaminated with heavy-metals and arsenic from the smelters operating in that area. Trees could not survive the air pollution within miles of the ironworks at Port Talbot, ten miles (16 km) to the east of Swansea. As, until recently, the work-force could not travel far, the effects of industry were most serious in the towns, though they also affected the surrounding countryside. However, the dirt was accepted as inevitable, and even welcomed as a necessary concomitant of industrial prosperity; so there was some truth in the saying 'Where there's muck there's brass' [where there is dirt there is money].

Here again there have been recent changes which alter this picture. The largest smelters, with many times the output of those which polluted the Lower Swansea Valley in the nineteenth century, are comparatively 'clean', as is indicated by the public outcry when quite small amounts of toxic materials are found escaping from them.

Thus today we have a situation where the commonly-held view, that increased population (and industrialization) will *inevitably* increase the level of pollution, is clearly untenable. In most advanced countries the environment is getting cleaner, not dirtier, even when the population is still growing. The rate of cleaning up is still too slow, and not all pollutants are being dealt with equally effectively, though this is often because there is disagreement about the seriousness of the problem. Thus in Britain we still discharge sulphur dioxide from tall chimneys serving electricity-generating stations. This prevents dangerous levels from being reached locally, but contributes to the acidity of the rain and snow in distant Scandinavia. If thousands of people were dying as a result, the output would be stopped at once; but the expense of doing this is unlikely to be faced when there is continuing doubt about its necessity.

It is in the less-developed countries, where the human population is still growing rapidly, that pollution is likely to present the most serious problems. Here we still find that, in a desperate effort to raise productivity and the standard of living, the same environmental errors which developed countries made in the nineteenth century are being repeated. We should, however, realize that, even in the Third World, pollution and population are not *necessarily* linked. There are good reasons for population control, but that this is prerequisite to the preservation of a clean environment is not one of them.

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*The latest accounting which we have received for the tidal reaches is 91 (Alwyne Wheeler, *in litt.* February 1978).—Ed.

H.E. Cecil E. King, 1912–81

By the death in London on July 4th of former Ambassador King, the Diplomatic and United Nations worlds have lost a widely-respected figure and this Journal mourns one of its favourite and most effective reviewers.

Born in March 1912 of Anglo-Swiss parentage, Cecil Edward King was educated at Charterhouse and Queen's College, Oxford. Commencing in HM Consular Service in 1934, he served in various posts in Europe, North America, and South America, before being appointed HM Ambassador to Cameroun (1961–63), Minister for Trusteeship Affairs at the UK Mission to the UN (1963–65), Assistant Under-Secretary of State at the UK Foreign Office (1965–67), and HM Ambassador to the Lebanon (1967–70). His last official post was as an Inspector of the United Nations, based in Geneva, where he suffered a distressingly painful illness before finally retiring in 1978. Visiting him in hospital, and despite his exemplary fortitude, we used to come away with the feeling that we would never see him outside again. Mercifully this impression proved wrong, and he recovered sufficiently to review many books for our columns, to the welcome enlightenment of our readers throughout the world.

Cecil King's last review for us was published as recently as our latest Winter issue when, boldly treating three works together, he opened with one of his characteristic 'nutshell' statements that they 'deal with various aspects of what can fairly be described as the greatest and most alarming complex of problems confronting mankind—namely, the threatening failure of the world's food and energy resources to meet the needs and demands of an ever-growing human population.' Not so long ago we had a memorable last visit from him and his courageous wife, Isabel, to whom our deepest sympathies are extended—likewise to their three children, of whom the eldest is now a Managing Editor at Pergamon Press, Oxford. We ourselves shall always remember their distinguished father for his quiet humour even in the face of physical adversity, his penetrating understanding of the modern scene, and the moral support which he gave to the environmental movement in times of public apathy or worse.

N.P.