

Suggested Actions for the Forthcoming 'World Decade of The Biosphere'*

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INTRODUCTION

The proposal of an 'International Year of The Biosphere' (as advanced by Vallentyne *et al.*, 1980a; cf. Cloud, 1980, and N. Polunin, 1980a) having apparently fallen into the abyss of official apathy or worse (despite widespread support as indicated in Vallentyne, 1980), we drove to the Bernese Oberland for a night of respite in one of our favourite villages. It was still early spring in that charmingly unspoiled subalpine non-resort, but the days were lengthening and Nature was awakening, so before dinner we strolled to the outskirts of the village and there, in the gathering gloom, watched a deer skirting a fence that deflected its way and then seemed to fly over another that would have barred it.

This gave to my Wife the idea that we should 'by-pass officialdom', and to me forthwith another idea of how to do it. So on our return home the next day, I wrote to the new Executive Officer of the World Environment and Resources Council (WERC, *see* Laconte & Jones, 1980), proposing that they proclaim, and henceforth promote in every possible way, a *World Decade of The Biosphere* (N. Polunin, 1980b; Vallentyne *et al.* (1980b)). This would seem likely to go hand-in-hand with their planned new international journal stressing environmental education, which is to be called 'The Environmentalist', and could give it immediate focus in a particular direction of vital importance. For unfortunately few people are familiar with the concept of Biosphere and understand how we humans are not only an integral part of it but also are utterly dependent on it as our life-support system, while fewer still realize how The Biosphere is threatened and must be safeguarded if our life is to continue indefinitely in anything like the present form.

IMPORTANCE OF UNDERSTANDING THE BIOSPHERE

The Biosphere concept is simple enough but is still confused in many good minds. This situation was scarcely

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helped by what was popularly called 'The Biosphere Conference' being officially styled with the prolix title of 'The Intergovernmental Conference of Experts on the Scientific Basis for Rational Use and Conservation of the Resources of the Biosphere', which took place at the headquarters of UNESCO, in Paris, France, during 4-13 September 1968 (cf. N. Polunin 1969; UNESCO, 1970). Secretary-General of the Conference was Dr Michel Batisse, who has done so much in developing the subsequent 'Man and the Biosphere' programme (cf. Batisse, 1980).

To understand this concept of Biosphere requires only a modicum of imagination and not much scientific knowledge. Although The Biosphere has been variously defined and considered (e.g. Vernadsky, 1926; Kovda, 1970; N. Polunin, 1972; Ehrlich *et al.*, 1977), it '...seems best described as "the peripheral envelope of the Earth together with its surrounding atmosphere [so far down and up as] living things exist, ranging from the deepest layers of soils and bottoms of 'trenches' in oceans, upwards to the highest levels of the atmosphere in which any form of life—including dormant spores and bacterial or other cells—is present at all naturally. (By use of the last phrase, we exclude artificial projections into space and descents into deep mines, etc.)"' (N. Polunin, 1980b). Thus The Biosphere, though characterized primarily by the presence of life, comprises both living and inert components, rather than merely the former in the manner proposed by some earlier authors. Indeed it is neither less nor more than *our planetary life-support system*.

SOME DANGERS OF HUMAN 'INTELLIGENCE'

But what else characterizes The Biosphere as defined above? I submit that one leading such feature is the intelligence and cognate capability of Man (comprising also women and children), which puts mankind into a category of its own. Human intellect can be used for good or evil—the latter being considered as against the real general interest—and thus Man is firmly placed in a unique position of power, having emerged as the world's undisputed pandominant (Johnson, 1980).

As vividly recounted by Brower (1972) and Kuenen (1980), in terms of geological time things have not long been so, while latterly Man's 'advances' in conquering

Nature and indeed the world have been stupendous—to the extent that life as we know it is now so widely changed and indeed threatened that we must beware of harming The Biosphere to such an extent that we may prove incapable of supporting the dire consequences.

For its effective defence The Biosphere needs understanding—not only in itself and with its vicissitudes, but especially in its fragility in some respects. Basically it is jeopardized by ever-increasing human populations and their profligate use of many of the planet's limited resources, as well as by their dangerous misuse of some others.

This and much more we most of us know full-well, and so I need not enlarge on it to such a select and enlightened readership as may have borne with me thus far. But we do not always realize that most of the world's demomass of humans knows or anyway cares about such matters little if any more than does the remaining biomass! Herein lie some of the dangers of human intellect and its concentration on short-term mundane matters, as recounted for example in *The Reykjavik Imperative on the Environment and Future of Mankind* (Foundation for Environmental Conservation, 1977, and cf. N. Polunin, 1980c), and therein lies the challenge which has to be met by the World Decade of The Biosphere.

The main objective of this Decade, with which we seem to be becoming more involved than was earlier intended and so must now contemplate further, is: global enlightenment concerning The Biosphere as a prelude to caring for it in the ongoing and widely overlapping interests of both Man and Nature. At present The Biosphere is being increasingly threatened by various possibilities, including nuclear holocaust and human population-swarming—even as Man is threatened by pandemic disease and famine, and Nature is threatened by most of these things and, in addition, the pandominance of modern Man. And then there are such more insidious tendencies as depletion of the stratospheric ozone shield, build-up of atmospheric carbon dioxide, chronic killing as presaged in the 'Beirut Syndrome', and progressive erosion of our very life-support. Any of these evils could prove quite devastating in time, even without the operation of the above threats, while the possibility cannot be ruled out that two or more of them might accentuate together.

SLOWNESS TO ACT

One of the most disconcerting, and in some ways devastating, of realizations about Man is that, although it seems clear that he now has the knowledge and means to save *his* world, he still lacks sufficient urge and collective selflessness to do so. That was a leading conclusion of our Second International Conference on Environmental Future, held in Reykjavik, Iceland, in 1977 (N. Polunin, 1980c), and it will be a basic objective of the next Conference to discover *why*, following a pre-Conference book discussing what has gone wrong and how.

Not a few, often rather slick, answers to these twin questions spring to mind: personal and corporate or

national greed, personal and corporate or national selfishness, apathy, ignorance, arrogance, or whatever. Similar blame can be attached to sectarianism, racialism, militarism, unwise and voracious technology, and even crass profligacy. Beware the vested interests of over-powerful considerations in commerce, and of religious or political pressures in demography: they think not globally but (if at all!) chiefly or only selfishly. And then there is the widespread lack of ecologically sound bases and imagination in planning, and an often excruciating lack of finance for effective execution.

None of us wants to give up 'the good life', and few would be prepared to do so unless they were struck by some major ecodisaster or other event inculcating realization of impending doom '—unless'. To get mankind to act effectively might even take the greatest calamity of all time, if indeed it left enough of humanity with the will to change in 'the right direction'—whatever that might emerge as being.

But rather than await some fantastic ecocalamity of nuclear holocaust, widespread famine, or pandemic disease—or conceivably a combination of all three of these—such as might finally force the world's residual population to take the necessary steps to save itself and its successors and what remained of Nature for posterity, preparations should start forthwith for more positive and timely action.

NEED FOR EDUCATION ABOUT THE BIOSPHERE

It is felt that a major step in the right direction could come through the widest possible education of mankind concerning The Biosphere, based on knowledge in depth stemming from research and concomitant thought and learning. The teaching should include all pertinent aspects of the subject, stress Man's utter dependence on The Biosphere of which he forms an integral part (whether he realizes and likes it or not), and greatly increase environmental awareness; it could thus constitute a major advance in a much-needed *march for survival*.

Such a move is being supported by (1) a planned new international journal stressing environmental education, (2) appropriate existing journals including our own, *Environmental Conservation*, (3) the planned book mentioned above as discussing what has gone wrong in the past, and how, (4) a high-level but 'free' Third International Conference on Environmental Future discussing how Man must act to save his world, and (5) the launching, by the World Environment and Resources Council and other appropriate bodies, of an active and even aggressive educational and action-oriented campaign entitled:

THE WORLD DECADE OF THE BIOSPHERE, 1982–92

In order to indicate how we think this initiative can best be served and fostered, let us enlarge upon some of the above suggestions and add others.

A: *Support in Scientific Journals and Major Newspapers*

This should include appropriate editorials, research papers, and survey articles, in such wide-circulation but high-level general journals as *Science*, *Nature*, *New Scientist*, and *Scientific American*, and also in such general environmental journals as *Environmental Conservation*, *Environment*, *The Ecologist*, *Mazingira*, and a few others of international circulation and impact—to mention only some in English. In addition the daily and other 'popular' press should be involved, through such internationally-oriented newspapers as *The Times*, *The New York Times*, *The International Herald Tribune*, and their counterparts in other languages having a widely-international readership. If the big internationals lead the way with persistence and imagination, it seems reasonable to expect that the local and widely-quoted press will carry on the message—let us hope throughout the world.

B: *Other Vehicles for Desirable Publicity*

These include such further 'media' as television, documentary or even fictional films and writing, radio broadcasting, the pulpit, and possibly the stage. In all should be inculcated the importance of real knowledge of The Biosphere, and the urgency of passing it on to the widest possible audience everywhere—see also 'J', 'K', and 'O', below. Means must be found by which proprietors and exponents of the various media, and ultimately their clients and supporting public, become really interested and involved.

C: *Research and Application*

Although it can be said with some truth that enlightened workers, or even 'we', already have the answers to many looming questions, and that what is most needed is due application, there can scarcely ever be too much basic research and applicational testing of pertinent results emanating from it—at least where ever-changing life and its environment are concerned. And who can tell, at any particular stage, what research results are pertinent—or, accordingly, that any sound ones are not? Here we recall Faraday's work with electric sparks and his proverbial retort about a new-born baby to his questioner as to what use they were. So we must push on with more and more basic and pertinent applied research, and with the widest possible dissemination and application of new as well as old knowledge.

D: *Basic Need to Control Human Numbers and Behaviour*

Perhaps the most fundamental thing that Man has so far failed to do is to control his own numbers, despite having the necessary knowledge of how to do it quite humanely; so the remedy is left to Nature's way of famine etc., or Man's way of increased violence. But why?; and how can this ever-deteriorating situation best be remedied? Yet remedied it must be, if our beautiful world is not to deteriorate widely into a situation of dreary monotony, monocultures, and ultimately squalor.

For such a remedy, environmental education and due awareness should at least provide an overdue warning.

E: *Study Manuals Needed*

In the above connections some striking research or testing projects could help to fire people's imagination, and small illustrated books (for example on less-developed regions or particular biomes and their component ecosystems) could help with enlightenment and due guidance. They should not be distributed free but bought at the lowest possible price, following experience that people are apt to appreciate what they feel they are paying for—see also 'O' below.

F: *Biosphere Reserves and Biological Gardens*

The National Parks and Protected Areas movement has gathered considerable momentum in recent years,* *inter alia* in relation to the rights of indigenous peoples and some integration with development (cf. Eidsvik, 1980; Guppy, 1980, and 'H' below). It is extending actively into the marine environment (cf. Björklund, 1974; N. V. C. Polunin, 1979), while further useful educational tools—ranging from the research to the popular levels—to invoke in support the World Decade of The Biosphere are the Man and the Biosphere Programme and Biosphere Reserves (cf. Batisse, 1980), together with such Biological Gardens as those recently proposed for Madras by H. & N. Polunin (1980). The inspiration of a wilderness area can be supreme, and communion with Nature an aesthetic experience leading to productive enlightenment.

G: *Conferences and Meetings*

Our Third International Conference on Environmental Future and its pre-Conference book (both mentioned above) should lead to some elucidation and considerable discussion of problems of The Biosphere in general and its equitable maintenance in particular. So should the launching of the World Decade of The Biosphere in 1982, whether this is done during our Conference or earlier, and whether or not it is accompanied by widespread publicity. In addition, 'in 1982 (ten years after "Stockholm"†), WERC is proposing to organize, in the same year [most likely in Egypt], an allied international conference on "Education for the Protection of The Biosphere". Moreover, a further series of symposia, culminating in a world conference, is being planned to deal with the wise management of biospherical resources' (Laconte *et al.*, 1980).

*A useful indication of the truth of this happy contention lies in the response to a paper on 'Ecological Principles for the Establishment and Management of National Parks and Equivalent Reserves' which we published with a specialist colleague, Harold K. Eidsvik, in last year's Spring issue of *Environmental Conservation*. For reprints of that paper we have had something like 450 requests from practically all over the world, and they still keep coming in—so providing a splendid demonstration of the widespread and active interest in this topic, as well as a gratifying indication of how our Journal 'gets around'.

†and, as a referee points out, nearly '5 centuries since the last discovery of the New World'.

H: *A World Peasant Association?*

As a possible device to help uphold real 'workers on the land' and 'traditional peoples' everywhere, some *ad hoc* glorifying organization might be a useful idea. For are not these people commonly the ones who know best their own small piece of The Biosphere—whatever they may call it, although surely not that—and are not they the ones who can most clearly understand its needs and foster it best? Moreover it is ultimately on them, rather than on politicians or industry or even Big Agribusiness that, with the erosion or ignorant destruction of more-and-more of our life-support system, we are dependent for our food and much else, as people flock in ever-increasing numbers to insupportably large conurbations?

I: *Need to Change Attitudes*

Whether or not there is real need of change to a 'new international economic order', it seems important that people's attitudes towards the future be changed in consideration of 'generations yet unborn', and only right to preserve options for them by such means as limiting ourselves to efficient use of the remaining stocks of certain 'hard' minerals and fossil fuels. When asked, as I am apt to be, why I care so fervently about the future 'when you won't be around yourself', I recall the time when I was on the Governing Body of my other beloved Oxford College. What did we, as Fellows of New College, discuss most heatedly at College meetings under Warden Smith—our corporate finances or comfort, or whether to send down the Hon. Mr so-and-so? No: it was, rather, such matters as what trees to plant where, so that foreseeable amenities would be preserved for centuries to come,* in accordance with our *stabilist* viewpoint and policy for the future.

J: *Instructive Advertising*

One of the prevailing means of changing people's attitudes is through advertising in various media, including television, radio, posters, and newspaper notices and announcements. However this may be done by or for us, it must be scientifically sound, wholly accurate throughout, and strictly factual without ever being unduly alarmist. Nor may it risk misleading any fraction of the populace in any avoidable way.

Unfortunately, advertising is nowadays apt to be far too costly for most leaders and others in the environmental movement to pay for personally; but, on the other hand, governments and major industries cannot afford to have happen the kind of things that ecologists and realistic demographers feel bound to warn them about, and herein should lie the basis of bill-footing on behalf of The Biosphere. Moreover we are confident that some multinational or other corporations, which may have far larger budgets than those of entire nations, could

*In the main garden of New College, completing a row near the ancient city wall, are to be seen two Horse Chestnuts that I gave the College following my departure to the New World again after the war, and a row of Limes—also as replacements. But in general one favoured longer-lived trees.

be prevailed upon to 'help out' with major newspaper and/or other advertising of a dignified and effective nature, while the newspapers themselves can be as 'sympathetic' as their budgets permit. Indeed the goodwill is often such that much can be done to mutual satisfaction without payment.

K: *Audience-attracting Showmanship*

When not too exaggeratedly personal, showmanship can be effective if it leaves a lasting impression on people's minds—which is particularly the case when it makes a striking point as part of an auspicious occasion. Exhibitions and poster sessions and some lecturing may offer such possibilities, and it is to be hoped that some can be devoted to biospherical topics and become travelling shows in the future. Another type in this last category is illustrated in Fig. 1, where Dr John R. Vallentyne, recently (1974–80) President of the International Association of Limnology (SIL), and a Senior Scientist of the Canada Centre for Inland Waters, Burlington, Ontario, is seen riding a bicycle while 'carrying the Biosphere on his back'—as an example of his unusual approach to presenting scientific concepts in a striking and memorable way.

L: *Organizational and Institutional Involvement*

It is important that a large number and wide range of leading international organizations and institutions, national and other academies and associations, and university and other departments and research institutes, etc., participate in fostering and promoting the World Decade of The Biosphere. Such agencies etc. as UNEP, IUCN, INTECOL, ICEFs, WERC, and WWF (our covered collaborators in maintaining *Environmental Conservation*), are obvious cases in point, while other notable ones should include UNESCO, FAO, WMO, WHO, the World Bank, and perhaps further UN agencies, the

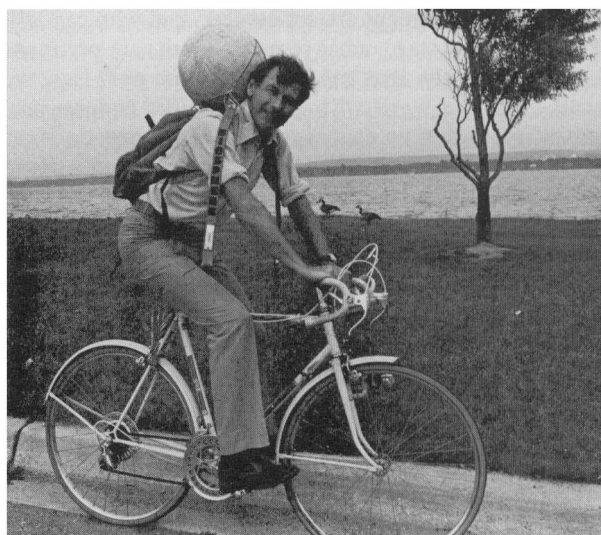


Fig. 1. *By-passing officialdom: Dr John R. Vallentyne riding a bicycle in Burlington, Ontario, with 'The Biosphere' on his back. Photo: Kaz Novak of the Burlington Gazette.*

Smithsonian Institution and various national and other museums, and pertinent government departments and research institutes. The International Red Cross, OECD, various religious factions, the Sierra Club, Friends of the Earth, and Institut de la Vie, should all be actively involved, as should many less-widely-influential organizations.

Some arrangement for national, institutional, individual, and young people's, memberships in an *ad hoc* organization might well be worked out, with payment of dues at least to cover the costs of registration and a periodical newsletter, qualified and selected individuals being designated 'Guardians of the Biosphere' (see 'P' below). Ideally, much larger funds should be sought for allied purposes, including endowment of the next item, but it is thought that no major budget will be required to promote most aspects of the Decade; indeed the absence of major funding might well be an advantage *inter alia* in limiting the promoters to enthusiastic scholars and other dedicated workers lacking financial aspirations and concomitant promotional ambitions.

M: System of Awards and Certificates

With the apparent demise of the International Pahlavi Environment Prize and the suspension, at least, of the Tyler Award in Ecology, the environmental movement is in dire need of 'open' international prizes of sufficient magnitude to be of real help to worthy groups or outstandingly deserving individuals, and so it would surely be beneficial if there could be at least one annual Biosphere Prize—at least on a par with the Nobel Prizes, for all of which environmentalists are virtually ineligible.* There could also with advantage be a few lesser annual awards, and periodical issues of certificates to deserving workers (e.g. in some such manner as that suggested in the preceding paragraph).

N: Ethics and Laws

In their aggregate paper 'Ethics of Biospherical Survival', contributed from the vantage-points of cultures based on four different continents, Willard *et al.* (1980) emphasize the need for fresh thinking and ethics on behalf of The Biosphere, while Widman & Schram (1980) deal with the hopes for 'Common Laws for Earth and Mankind' in a similarly innovative fashion. Much more of this kind of thinking seems to be urgently needed, as a prelude to appropriate action in the near-future world. For without some ethical re-thinking 'in the corridors of power', and along the wider roads that lead to them and in edicts that spout from them, there can be little hope for a better world, while one of the most obvious actions that will surely be needed in future will be suitable laws and their enforcement on behalf of Man *and* Nature.

*A possible exception might be the Nobel Peace Prize, for which we were planning to propose nomination of the President of the Third United Nations Conference on the Law of the Sea if it had come to a satisfactory conclusion soon, as seemed probable at the end of the latest session. But to our deep regret this veteran diplomat of patient courage died on 4 December 1980, after coaxing the Conference from its beginning more than seven years earlier.

O: Book on The Biosphere

A scientifically-based volume on The Biosphere, with a mass-produced and inexpensive paperback edition, should be included at an early stage in the policy-oriented series that is being planned as complementary to the more 'crisply scientific' Environmental Monographs and Symposia that are to be published by John Wiley & Sons as recently announced (Polunin, 1980d).

P: 'Guardians of The Biosphere'

It is a matter of strong personal conviction that substantial betterment would accrue in the prospects for our tottering world, if only people of all sorts and sizes everywhere would learn about The Biosphere and realize their collective responsibility, as its stewards, to preserve and foster it in all possible ways, applying this responsibility in their day-to-day as well as long-term actions and reactions. Might not such learning and cognate behaviour then take the place of the fervoured discipline stemming from religious beliefs whose erosion in the modern world is so much to be deplored? To become thus the profoundly conscious (and why not recognized or even official, as suggested in 'L' above?) *Guardians of the Biosphere*, should give to all such adherents a feeling of 'togetherness'. A pervading attitude of 'this is Our Biosphere to cherish and maintain', should then underlie their concerted resolve to preserve peace on Earth and do all in their power, individually and collectively, to assure for Man and Nature a *lastingly robust future*.

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SUMMARY

A new thrust will be needed if the environment of Man and Nature throughout the world is to be preserved

*For a report on this notable Symposium, see our next issue.

for posterity in anything like its present form. The required change in attitude and concomitant action should concern all peoples, involve most resources, and underlie many future developments—which last could well be in line with environmental conservation. It is believed that much benefit could accrue in this worthy direction through global exhortation of *The Biosphere* as mankind's planetary life-support system, which needs widespread understanding to allay increasing threats due basically to burgeoning human populations and the demands which they make on the limited resources of our planet.

The Biosphere may be defined as the Earth's peripheral envelope, together with the oceans and the atmosphere as far up as living things exist in it naturally, and thus ranges from the deepest layers of soils and ocean floors upwards to the highest levels of the stratosphere in which any form of life persists. This includes Man, with his unique intelligence and cognate capabilities that have enabled him to evolve latterly as the world's undisputed predominant, change the surface of the Earth very considerably, and even alter the composition and content of *The Biosphere* quite appreciably.

Although it seems clear that Man now has the knowledge and means to save *his* world, he still lacks sufficient will and unselfish urge to do so. Consequently, rather than await some fantastic ecalamity of nuclear holocaust, pandemic disease, and/or widespread famine—such as might force the world's residual population to take the necessary steps to save itself for posterity together with what remained of Nature—it is urged that preparations start forthwith for more positive action, commencing with the widest possible education about *The Biosphere* and Man's utter dependence on it of which he forms an integral part. The real crux lies in the need for his integration in *The Biosphere* to be far more conscious and thorough than it currently is. Towards such ends was recently proposed—and is now incipiently planned—a World Decade of *The Biosphere*, to start in 1982 just ten years after the world's political awakening to environmental problems at the 'Stockholm' Conference on the Human Environment.

As some means by which this Decade might be furthered, are briefly discussed the following sixteen possible actions etc: A, (obtaining) Support in Scientific Journals and Major Newspapers; B, (seeking) Other Vehicles for Desirable Publicity; C, (promoting) Research and Application; D, (fulfilling the) Basic Need to Control Human Numbers and Behaviour; E, (producing the) Study Manuals Needed; F, (establishing and using) Biosphere Reserves and Biological Gardens; G, (promoting suitable) Conferences and Meetings; H, (establishing) A World Peasant Association?; I, (acting on the) Need to Change Attitudes; J, (undertaking) Instructive Advertising; K, (encouraging) Audience-attracting Showmanship; L, (arranging for suitable) Organizational and Institutional Involvement; M, (creating and maintaining a) System of Awards and Certificates; N, (upholding appropriate) Ethics and Laws; O, (publishing a) Book on *The Biosphere*; and P, (organizing) 'Guardians of *The Biosphere*'.

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Welcome Ronald Reagan and George Bush

Why is it that, in such activities as this Journal and the allied International Conferences on Environmental Future, we may often seem (and get asked the reason) to favour the participation of North Americans? The answer is simply that, time and time again though of course by no means always, their ranks supply what appear to be the clear leaders in the various fields of environmental endeavour, whether scientific or otherwise. Thus for each of our Conferences there is a special International Steering Committee that is chosen under a written constitution which requires that it 'shall consist of not fewer than 8 members who shall be resident in 6 or more different countries representing at least 4 continents.' This Committee, having selected the theme and component sessions for a Conference, then deliberates around a table to choose the best man or woman—in their collective opinion and no matter from where in the world—to invite to occupy each key position. Consequently,

if this turns out to be a United States or Canadian citizen too frequently for the liking of some others, it is up to these last to produce candidates of at least comparable qualifications and quality.

Meanwhile it seems that we have a sound basis for looking to North America for leadership of, or anyway in, the environmental movement; and although we have not yet received their 'ranking' in this respect from such dedicated sources as the Sierra Club and Friends of the Earth, we would like to commend the emergence of a President and Vice-President of the United States whose decisions will surely be based on the best available advice and, in the end, be courageous and firm. This should apply directly in the environmental field and, we ardently hope, also in the basic one of combating population pressures and ultimately reducing them.

N.P.

Organochlorines in Mediterranean Seabirds

As there have now been at least four different reports on the occurrence of chlorinated hydrocarbons in Mediterranean seabirds, so separate that none refers to any of the others, and the last of which (Bijleveld *et al.* 1979) expresses concern about the potential effect on the reproduction of the scarce endemic Audouin's Gull (*Larus audouini*) in the western Mediterranean, it may be useful to compare their conclusions. The studies also included one of eggs taken from the Rhone Delta in the spring of 1972 (Mendola *et al.*, 1977), one of fish and bird migrants from the Po Delta during the following autumn (Viviani *et al.*, 1974), and another of a small series of representative species from the whole width of the Mediterranean area in 1973–75 (Bourne & Bogan, 1976). The results of these different studies are compared in Table I.

It will be seen that fairly similar levels of the commoner contaminants are found throughout the Mediterranean area—including several mg per kg of PCBs, rather less DDE, and only traces of Dieldrin and other compounds. The highest PCB levels were found in Herring Gull (*Larus argentatus*) eggs from the Rhone Delta, and the highest DDE levels in Herring Gull eggs from Cyprus and a Little Gull (*Larus minutus*) collected in winter in Malta.

The levels are fairly typical for comparable birds throughout the more-developed parts of the world today, and those for the most contaminated Herring Gulls are still substantially lower than those recorded for this species in the North American Great Lakes (Teepie, 1977) and the Baltic Sea (Falandysz, 1980). Proportionately large amounts of DDT residues have also been reported in the eastern Mediterranean, along the south coast of Turkey, by Bastürk *et al.* (1980).

In general, while it is clearly undesirable that persistent synthetic compounds should be allowed to accumulate in the Biosphere, there seems to be no immediate cause for concern about Mediterranean seabirds. The organochlorine levels found in Audouin's Gulls' eggs in particular are not remarkably high for a member of the genus *Larus*, which appears to be generally rather resistant to this form of contamination, with many more highly polluted populations continuing to flourish elsewhere. There seems more room for concern over the slightly-raised DDE levels in Herring Gull eggs from the eastern Mediterranean, and in the Little Gull which breeds inland somewhere to the east and becomes pelagic in winter, so clearly it is desirable to continue to watch the situation.