

PRESIDENTIAL ADDRESS: A PERSPECTIVE AT YEAR 26

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My address is chiefly concerned this year with the policies, development and principles of our Society. In attempting this review, I am particularly conscious of the fact that the Society has had its 25th anniversary; and that at last year's AGM, both the first President and the Immediate Past President addressed us on the history of the Society and made mention of the emergence of a dichotomy of interests between concern for ecology as a scientific discipline, and the more general topic of concern for the environment. Like those two speakers, it is not my task to take sides, nor my role to remind you of two basic truths of the nature of organisations: that any Society is the integrated sum of the interests, prejudices and enthusiasm of its members; and that no matter what the rules state, if a Society has the right people with the right interests at heart, the right course will be followed.

So what is "right" for this Society? From what perspectives? Dr Bull, in his address last year, reminded us that the object of the Society, laid down in 1952, is "to promote the study of ecology in all its aspects". Do we actually do this? Or have we evolved, imperceptibly or otherwise, into an organisation of some different kind? Specifically, of course, I am spelling out a concern expressed to me by many members over the past few years, that we have become, to some degree, a wing of the activist conservation movement, and that in so doing we have tended to lose sight of our founding objectives. The first-and obvious-difficulty in discussing the ecology / conservation spectrum, and our role in it, is that we must first define both ecology and conservation. The dictionary gives the first as the "study of the relations between organisms and their environment". Do we accept that it now means everything from populations theory to removing old bottles and bicycle frames from the Avon River? Conservation, as I understood the term a few years ago, was defined as the "wise use of resources". Now, it seems to me, it has, *mutatis mutandis*, become synonymous in many minds with preservation. Have we indeed drifted from ecology,

past conservation, to a preoccupation with Preservation?

Looking back, it is interesting to reflect how a lasting concern with conservation matters arose within the Society. By the early 1950s, many ecologists were aware of the imminent demise of many species and distinctive communities, and efforts were made to establish reserves to preserve both the objects of interest, and the opportunity to study their ecology. Subsequent to the Third AGM, reserves proposals were elaborated by compilation of a list of 36 native communities which might disappear within 10 years if no examples were preserved. "Conservation" thus became an essential part of "ecology". But the emergence of wide interest in conservation affairs came towards the end of the 1960s, and was galvanised in this country more by the Manapouri affair than by any other issue. Of course, that event followed a long way behind the awakening in the Northern Hemisphere of concern at the profound impact of industrial society on the natural environment. The Great Lakes were dying; chlorinated hydrocarbons were permeating throughout food chains-even to the penguins of the Southern Oceans; the atmosphere was subject to gigantic loads of garbage such as carbon, nitrogen and sulphur oxides; copper needles, freon propellants, and other debris were accumulating; and speculation intensified on the effect of these pollutants on the climate of the earth and on the hazards to human health. Bizarre events like the thalidomide tragedy and methyl mercury poisoning through fish food chains occurred; Sweden objected to the deposition of lead and other unwanted chemicals borne thence by the prevailing winds from the industrial hearts of Germany and Britain. The "comfortable classes of the developed countries", and particularly their perceptive young, saw, felt and rebelled at the concept of unlimited exploitation of the earth's resources. Developing avenues of expression through massive public participation movements as an "in" thing to do, they brought tremendous pressure to bear on governments and

political agencies to recognise that no matter how much we may equivocate, there is a day of reckoning with the finite capacity of what became known, in the jargon of the day, as Space Ship Earth.

Behind the scenes, ecologists have in many ways played special roles in the development of the emerging philosophies about the excessive use and abuse of resources. The concept of ecosystems is fundamental to such philosophies and it only required man-at-large to recognise that he himself is part of the earth's ecosystem-not its Biblical master. Ecologists are accustomed to recognising that population growth is only part of a sigmoid curve which is bound to be terminated sooner or later by stability or-if resources are depleted-by decline. No group has pointed out more forcefully than the Ecologists that many of the components which are included in computation of that magic economic statistic, the Gross National Product-police, medical and sanitation services and so on-are not in fact products, but costs. No other discipline has pointed to the fundamental importance of energy and biological energy flows and the importance of the concepts of biomass and biological diversity in regulating climate, stability of land, and stability of ecosystems. Ecologists are in the lead in pointing out the intricacy of food chains and the links between such apparently disconnected events as virtual extermination of whales and increases in krill numbers.

Perhaps the most remarkable thing about all this is that the message has got through. Articles on change of climate, pollution, population policy, maintenance of agricultural and forestry systems on a fossil energy base, conversion of native forests into exotic forest and farm, and conservation and management of fisheries, are discussed and described almost daily by the press. Ecology, or at least a caricature of it, has metamorphosed from being an obscure part of Natural History into a household, lecture room and a mass-media word.

In our New Zealand microcosm, I think this syndrome is well shown by the current controversy over milling of podocarps in Westland. From the time of separation of the Forest Service from Lands Department it was realised that indigenous podocarp saw-log resources were diminishing, and the planting of exotics was expanded. But the volume of exotic timbers on the market did not overtake the indigenous cut until as late as 1956-57. Even by 1974, as indicated by the 1977 Forestry Handbook, the annual cut of indigenous timbers still exceeded half of the greatest cutting level ever recorded. Therefore, despite the fact that the indigenous cut is now only about 1/10th of the total, it appears that, like

pelagic whaling, sustained economic pressures will continue to pursue the depleted indigenous resources until the last accessible tree is cut. Thus ecologists, mindful of the vital roles of low altitude forests as the habitat of many indigenous birds; as the only possible areas where chronological, pedological and other sequences can be determined; as vegetation/soil systems which provide bench marks against which changes induced by conversion to farming or exotic forestry can be measured; and where the ecology of these systems can be studied and taught -have been involved in the wider field of an Ecological *cum* Conservation debate. Despite this, criticism of scientists of all shades as impractical and selfish of their own academic pursuits, and rejection of reserve proposals as totally unacceptable by at least one politician, suggest that the "great Ecologically unwashed" have really progressed little in their regard for Nature. There is a feeling abroad that ecologists should be satisfied with nostalgic memories of lowland podocarp forests in the same way that Britons can now show a few straggly Scots pines on wind-swept moorland as the remnants of the Caledonian forests burned in the iron smelters of the 19th century. It becomes equally clear that, despite wide recognition of the principle that continued growth solves no problem without invoking even more intractable ones, when the chips are down and next week's wage packet is at stake, conservation principles go out of the window.

Because of our citizenship as part of this changing scene, as well as being ecologists, it is by no means surprising that, along with scientists of other disciplines, and lawyers, teachers, clerical workers and labourers-in short, a fair sprinkling of perceptive people from all walks of life-there is a sense of urgency and almost desperation among some members who feel that although the outcome of growth is starkly obvious, "the system" still advocates growth, or at least is still growing. They (we) fear, quite rightly, the overshoot of the sigmoid curve beyond carrying capacity, and the bitter contest for resources which would inevitably follow. We, in recent years, have therefore been up to our ears in the action. To borrow the adage of a Mississippi land developer: "when you're up to your backside in alligators, it's hard to remember that your primary job is to drain the swamp". The swamp in this metaphor is the way in which the Society interprets the Object: "to promote the study of ecology in all its aspects". I incline to the view that we spend too much time shooting alligators and have almost forgotten that there is an ecological swamp to be drained.

Many of the recent activities of Council illustrate

the basic dilemma. We presented a very well thought-out submission on the future of West Coast Forests and Forest Industries to the Minister of Forests in response to an invitation to do so extended at the conclusion of the Symposium at Hokitika. But in the absence of basic ecological information on forest types and the faunistic values which require the protection of a reserves system, that submission (which can be found elsewhere in this Journal) is almost intangibly general. In similar vein, some members will no doubt be pleased to know that in the past year alone Council responded to the Forests Amendment Bill, the "Save our Thar" campaign, the Reserves Bill, proposals for reservation of a Manawatu Sand Dune area, the Royal Commission on Nuclear Energy, the Review of Environmental Impact Reporting Procedures, the Clutha hydro-electricity scheme, and the controversy about goats on Arapawa Island. But as a practising scientist I regret two qualities of many of these submissions: they are characteristically light on definitive ecology, but heavy on political gambits; most of them will be forgotten by the Society and the community when the current Council is replaced by the passage of time, merely because the information was not properly recorded and formally published.

The difficulty, of course, is that we have, as a Society, a finite capacity to deal with what can legitimately be regarded as an infinite range of problems which are of interest to ecologists and it has become our habit to come out fighting whenever our conception of the public good seems to justify it. I think we are now a little bit punch-drunk; not quite certain which ring we are in. Confusion of this kind was, I believe, the goad which prompted a Motion at the 1976 AGM, to recommend "that the incoming council consider changing the operation of the Society by confining its public involvement to ecological issues clearly of national importance", and an out-going councillor to move that "careful consideration be given to the implications of membership of the Ecological Society to other Societies or Associations, with a view to reviewing its membership commitments".

It is not a question of right and wrong: it is a question of priorities. In short, I believe that we have to get out of a lot of the action to which we have become accustomed and return to the discipline of ecology. Above all, we should publish in a durable way the results of enquiry, and the rationale of policy, as it is promoted by the Society from time to time. I would go so far as to say that among all the things we have done over the years, just three* enquiries which have culminated in formal published

papers will have more impact upon the shape of Conservation in future than all the dialogues with Ministers of the Crown of any 10 successive Councils: I refer to the "Critique of the Environmental Impact Report on the Proposed Utilisation of South Island Beech Forests" compiled by Molloy (1973), "An Ecological Approach to New Zealand's Future" compiled by Fordham and Ogden (1974), and "An Inventory of the Status and Origin of New Zealand Estuarine Systems" by McLay (1976). Apart from their scholarly qualities, their paramount feature is that they are freely-available and durable records in libraries throughout the country and overseas, for members and non-members alike. On these grounds I believe that Councils of the future, with the aid of far more assistance from members than has recently been the case, should concentrate their energies on compiling the facts, and making them available. This is what we are good at; this is the discipline for which we claim value to the community; ecology is the common denominator of our 450 members. This is, I believe, what was meant by that inscrutable rule of the Society: "to promote the study of ecology in all its aspects". In advocating this emphasis I am, of course, suggesting that the main role of the Society is educative rather than combative. For this reason, our past preoccupation with the production of the Proceedings is, and will continue to be, by far the most important function of the Council and Society.

The Proceedings evolved through an adolescence in which, in early years, brief abstracts and essays were its most numerous component. But as the quantitative nature of the Science has developed, and the stature of the Proceedings has increased, it has become an important journal of the South-West Pacific region, and, particularly with the development of International Abstracting Services, it finds a wide specialist audience. It is, indeed, already the New Zealand Journal of Ecology, and through the services of a succession of Editors, to whom the Society owes a great debt, it is a journal in which the Society can take pride and pleasure.

Another reading market has developed rapidly over the past few years. Every Council meeting of this past year has received a sheaf of letters from school children, mostly at secondary school level, seeking information on current ecological and conservation issues, usually as background material for a class project. The current standard reply is a letter directing the enquirer elsewhere because we have no material to offer. What a pity! What an

* now five, with publication of the Society's statements on Nuclear Energy and West Coast Forest Industries.

opportunity lost to introduce ecological concepts and the policies of the Society, through the classroom, into the education of thousands of young people. In this context, is this not potentially the most influential method the Society could adopt to promote draining the alligator-infested swamp? Four hundred and fifty Society ecologists do not pack sufficient political wallop to introduce the necessary *ecological* sanity into planning for the future. But as educators we can help to mould the attitudes of thousands every year, who "actuarially" have even more compelling reasons than you and I to be concerned about the shape of the world a few decades hence.

The Proceedings, as I indicated earlier, has been our principal voice for two decades, and gives an insight into the evolution of our interests as a corporate body. Comparing the periods 1952 to 1966 with 1967-1976, the list of titles in the recent author index (Proceedings 22) shows that papers on description and function of communities have remained at about 30 percent of the total; those on population dynamics have risen from 11 to 14%; those on autecology and behaviour have remained steady at 13 %; discussion of ecological concepts has simmered gently at 1-2 %; those on harvesting, use and control of populations have doubled from 5-10%; but papers on biogeography, palaeoecology, climate, pedology and geology have virtually disappeared. Looking at the "geography" of these papers, it is interesting to see that 25 % are of general relevance; marine and coastal papers dropped from 18 % to 3 %; freshwater studies rose from 7 % to 11 %; agricultural, pastoral and urban papers dropped from 20 % to 12 %; production forestry rose from 4 % to 9 %; last, but clearly not least, papers concerned with unoccupied lands such as National Parks, Protection Forests and Offshore Islands rose from 23% to 41 %. In a sense, we now have our feet in the estuarine mud and our heads in the montane fog-belt, or are gazing wistfully at the sanctuary of an offshore island. Our corporate interests in agriculture, forestry and marine economic ecology are slowly dwindling. I consider this to be a serious commentary on the Ecological Society of a small country, the economy of which is so directly dependent upon the wise stewardship of biological resources.

Can we reconcile these trends when we know well that the great problems of the future are related to population, pollution and energy policies? Obviously, ecology can claim that its work has played a vital part in bringing the impact of human societies upon Nature to the notice of the World Community. Equally obviously, the feedback from this ecological

documentation has amounted to a profound influence upon public attitudes to population and energy policies. So the importance of such ecological research cannot be gainsaid. But equally, or more important, success or failure at coping with the population, pollution and energy bogeys will remorselessly set the seal on all the issues we hold dearly, including reserves, indigenous forests, goats on Arapawa, and a cup of clean water, regardless of the desires and policies professed by Governments of the present day.

I am well aware that Ecologists are already involved in many aspects of these cardinal problems. Of all unlikely sources, Ecologists who have spent most of their professional lives studying ecosystem energetics have been outstanding in forcing the engineers and economists to more careful analysis of oil, nuclear and renewable energy strategies. The implications of the appalling energy budget of "civilised" agriculture-about 10 joules in for one out--depended upon an enormous amount of ecological work and are now a hot topic for the engineers and planners.

Despite these pointers to the role of Ecologists in the world-wide energy question, it does not seem to stir our society unduly. Where, in a New Zealand energy policy, does energy farming fit in? What is its potential contribution to a sustainable energy market? Does indigenous vegetation fit into an energy industry? How do Ecologists see the energy future as a parameter of the human carrying capacity of New Zealand? I cannot believe that Ecologists-and the Society-have no part to play in this, nor that the main roles are reserved for those scientists and technologists who might even resent the label "Ecologist", be they members of the Institutes of Agricultural Scientists, Foresters, Chemists, Physicists or Engineers. Regardless of who is involved, there is little doubt that, with the last barrel of oil virtually in sight, the concepts and magnitudes of renewable energy forms are of the greatest importance.

Similarly, although as ecologists we espouse the principle of biological control of pests, virtually all pest control in New Zealand-from the opossum and rabbit to the grass grub, codlin moth, and potato blight-is waged by the chemist and the engineer. There have, of course, been successes in the field of biological control; against the European wood wasp, St John's wort, and I imagine others. Of course, there was the perverse success of the manuka blight blunder. And it is undoubtedly true that many other organisms would be pests if the processes of biological control were not going

on, even without due recognition. But where were the professional ecologists?

On a more prosaic level, I am aware of the unsatisfactory state of the art and science of describing plant and animal communities, understanding the evolution of the native biota, counting and estimating animal populations, estimating the effect of control (let alone understanding the cause of failures of control), or describing the condition of animals within a meaningful evolutionary and mathematical framework. But I do not see our Society writing submissions to Government on such topics.

Sufficient then, to conclude with the inference of my remarks rather than a recapitulation. In our first 25 years as a Society, New Zealand Ecologists have had an interesting and often exciting time, exploring new ground in every sense of the word; developing

concepts of ecosystems; mapping, describing and analysing the intricacies of nature in a way which most informed people now realise has profound implications for the ecology and survival of man. While the past has been a picnic, in many ways almost a dilettante picnic of self-amusement, I think we all realise that the next 25 years will be a much more sober and worrying time. Progressively, I believe the Society must become deeply involved in all levels of Ecological education, and with economically-oriented work, relating, as indicated earlier, to populations, pollution and energy. If it does not, it will achieve, I am bound to think, the same kind of importance by which one might describe philately and numismatics as branches of the postal services and banking. Quaint and interesting, but unimportant. Such a prospect would be disappointing-to put it mildly.