



# ENVIRONMENTAL EDUCATION PROJECT

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## NEWSLETTER No.10

After an intensive week of reviewing E.E.P. manuscripts and after hearing of the exciting moves going on in N.S.W., Vic. and W.A. I cannot help but conclude that environmental education in Australia has come of age!

It is appropriate therefore that the Australian Association for Environmental Education has been formed and will hold its first national conference in October 1980. It is also encouraging that the Curriculum Development Centre will retain its involvement in environmental education through that association and through its proposed publishing program in 1980, 1981 — CDC aims to release its National Estate materials in March 1980 and the primary level E.E.P. materials (4 of the 9 packages) in time for the October conference.

The Association's interim executive contains people from Tertiary, Secondary, Primary and the Informal education sectors, some of whom are curriculum consultants whilst others are classroom teachers. It now remains up to you to determine the strength and direction of that Association through financial support and more particularly through written contributions to the newsletters.

The newsletter will, I hope, remain a symbol of the success of environmental education in Australia which, although still "thin on the ground" is amazingly diverse, as the articles in this - my last edition - indicate. To help it continue to bring you news from elsewhere resolve now to write one article about your scene, review one book, or contribute one cartoon or snippet

Alan Reid from the Australian Conservation Foundation and the Victorian Gould League, and Marta Hamilton from the Victorian Ministry for Conservation have taken on the role of editors and I urge you to give them the generous support you have given me over the past two years.

I wish the executive all the best in their challenging role of establishing a viable and vital association. It has been my pleasure to work and correspond with many of you and it has confirmed my feeling that state boundaries are no obstacles to educational ideas. I wish you all a relaxing holiday.

### AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION

The interim executive was formed on November 29, 1979 and charged with -

- : establishing contact with individuals and organisations involved in e.e.
- : drafting a constitution
- : establishing a regular newsletter
- : organising a national conference in 1980
- : lobbying for e.e. at state, national and international levels

Office bearers and delegates are shown on the following page.

National Project Director: John H. Smith



A C.D.C. funded project.

PLEASE NOTE: This office closes at the end of 1979. All future correspondence should be addressed either to A.Greenall, CDC Canberra, or to the Secretary of A.A.E.E.

# AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION

## OFFICERS

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Peter Fensham Vic.

VICE-PRESIDENT



Russell Linke S.A.

VICE-PRESIDENT



Frank Haddon N.S.W.

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TREASURER  
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Alan Reid Vic.



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Brian Foreman S.A.



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Lee Williams Qld.



Grant Godfrey Tas.



Peter Davidson A.C.T.



Stuart Trainor N.T.



Keith Anderson W.A.



Annette Greenall C.D.C.

## CONTACT ADDRESS

A.A.E.E. c/- Mr. Jim Wilson, Forestry Branch, 234 Queensberry Street, Carlton, Vic. 3053 Tel. (03) 347 3833.



There have been many favourable comments on the development of the Project Newsletter during 1979. I hope that Marta Hamilton and I, as the new editorial staff, can maintain the same high standard of news and comment and the same interest and variety that the previous editor has managed to extract and distil from this great turbulent field of environmental education.

At this stage we would like to keep the same format of articles on a variety of themes, together with news from around the states. As the official organ of the new association, the Newsletter will obviously have an additional role of reporting association activities.



The next issue will be a free one, produced in March 1980. We will acquaint you then of the necessary financial arrangements to continue its production and its relationship to association membership.

In the meantime we would welcome theme material on such issues as environmental education and Local Government, environmental education and the Conserver Society and Involvement of Youth in conservation education programs. News on teaching resources, book reviews, and your ideas on Newsletter layout, name and the desirability of a new logo would also be welcome.

Alan Reid

Please forward items to:

Assistant Editor, A.A.E.E. Newsletter,  
c/- Mrs. M. Hamilton,  
Ministry for Conservation,  
240 Victoria Parade,  
EAST MELBOURNE. 3002 Tel.(03)651 4796

THE 1980 CONFERENCE

October 12-17, 1980 has been set aside for a residential national conference on environmental education at Arbury Park Outdoor School in the Adelaide Hills.



The aims would be to:

1. Demonstrate the relevance of the methodology of environmental education in the arts, humanities, outdoors and urban scenes.
2. Provide an opportunity for practitioners from Education, Environment, and the Community to share their aims, methods, successes and failures.
3. Share resources developed by each organization or individual, and contribute to future planning.
4. Formally establish the executive, constitution and role of the Australian Association for Environmental Education.

Rationale

The 1970s saw the spread of the move to save the environment into many countries of the world and into most education systems, both formal and informal.

Environmental education was interpreted in many different ways from a fresh look at the old areas of knowledge to an opportunity to indoctrinate children with a set of values.

It took a decade and much money for Australia to reach a consensus on "what is environmental education?" The aim for the 1980s is to reach a consensus on what is good environmental education and to use such implements at

all educational levels. This inaugural conference of the newly formed Australian Association for Environmental Education will provide a forum to analyse and discuss the methodologies used in a variety of subject areas not often associated with environmental education by a variety of people from within or without the formal education sector.

It will address the problem of education for the environment - of how to ensure students' attitudes are based on accurate and relevant information and on a critical awareness of the implicit values in the medium providing it.

Educators and education systems have realized the importance of a new agenda for students but now a new methodology must be faced.

Brian Foreman

## PEAS — OUT OF THE POD AND INTO THE PACK

A few years ago a large Australian food processing company, the Edgell Division of Petersville, conducted a study of the merits of supplying preserved peas as against fresh peas to the market.

The study showed that for an estimated total annual consumption of 48,715 tonnes of preserved (both canned and frozen peas), the company would need to harvest 112,900 tonnes of peas in the pod.

This meant that if the peas were delivered in a fresh form, the company would be carting some 64,185 tonnes of pea pods to the market. Incidentally, this volume of vegetable waste would then have to be disposed of through the municipal waste stream, whereas the company's method of harvesting and depodding in the field meant the waste could be ploughed back into the ground, with a resultant soil benefication.

In any event, the 64,185 tonnes of vegetable waste is replaced by 5,346 tonnes of packaging materials, so that the company, in delivering the same quantity of peas to the market, in fact transports only 58,947 tonnes ... made up of 48,715 tonnes of peas, 4,886 tonnes of brine used in the processing, and the 5,346 tonnes of packaging ... a reduction of 63,953 tonnes.

It was calculated that in transportation from the growing area to the market, the net saving in fuel was 1.7 million litres per year. The cost of transporting the processed peas was only 18.8 per cent the cost of transporting fresh peas, and the total freight cost saving was estimated at a staggering \$5.25 million!

Who said packaging added to the cost of food?



## packaging today

Published by  
Packaging Council of Australia  
370 St. Kilda Road  
Melbourne 3004  
Editor: Mike Kettle



## THE JUNKYARD

On a cold winter day the junk-yard was like snow-capped mountains, reaching hopelessly to the now light blue sky. Blistered paint scarred many cars' paint; they looked sad and dead.

On a crisp spring morning the once dead junk-yard was now teeming with new-born life.

The birds chirped gaily, going to and fro from their nests. Small green plants thrust themselves slowly but steadily to the new-born sun.

The junk-yard was ALIVE!

Andrew Wallis  
Young Town Primary School

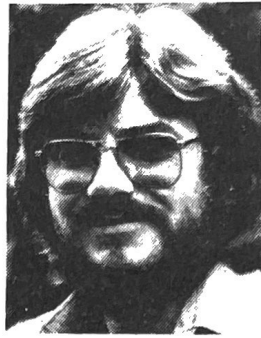
POPLARS AND DANDELIONS Education Department, Tas. 1979

## MORAL DIMENSIONS OF

## ENVIRONMENTAL

## EDUCATION

Noel P. Gough  
Rusden State College  
Victoria



(Following is a very condensed version of an article which was published in "Unicorn: The Bulletin of the Australian College of Education" Vol. 5, No.2, 1979.)

Moral education is frequently associated with religious education. In schools with religious affiliations, the relationship between faith and morals is taken for granted; the inclusion of religious education in the curriculum allows these schools to claim that they clearly contribute to the moral development of their pupils. However, there may be dangers inherent in tying morality to religion, and schools may contribute too little to moral development if they assume that it is chiefly to be achieved through religious education.

The relationship between morality and environment has also been taken for granted in the past, particularly in pre-industrial societies in which the ties between man and nature were more intimate. Some present-day agricultural and hunting societies also provide evidence of close relationships between morality and environment.

The intentions of present-day environmental educators are clearly moral in character: environmental education seeks to promote concern for the quality of life, and involves a commitment to the principle of environmental conservation. It is in relation to these characteristics that environmental education in schools can be expected to contribute to moral development.

"Morality" has two related meanings: it implies both conformity to the prevailing social morality and also pursuit of an individual ideal. Moral education therefore faces a dilemma, for social morality cannot be imposed in such a way as to prevent the possibility of forming personal ideals. Indeed, moral progress has often been made by individuals who have gone against the accepted morality of the day, and who have generally suffered for doing so.

Social and individual morality are interdependent, and "moral behaviour" is therefore a complex matter. We can consider four different levels of moral behaviour as a starting point for considering the nature of environmental morality, using the disposal of household waste as an illustrative example.

At the lowest level, a man may dispose of his garbage with complete disregard for anyone else. His sole concern is his own pleasure in keeping his near environment free of refuse, and avoiding the harm to himself that might be caused by an accumulation of waste. His sanctions and controls are simply pleasure and pain. At a second level a man may dispose of rubbish with care, but only from fear of the law and the consequences of breaking it; here, the sanctions are punishment and reward. At a third level, a man may also dispose of his waste with care, but motivated by concern for others and for his reputation among them. Here the sanctions are social praise and social blame. At a fourth level, a man may dispose of rubbish with care, motivated solely by his inner principles of conduct, dependent neither upon the external constraint of law nor upon the external force of public opinion. His over-riding concern is not simply living with others, but living with himself; his sanctions are internal: self-praise and self-blame. The first level is pre-moral, the second is an external morality, the third is part external and part internal morality, and the fourth is wholly internal.

The continuum represented by these four levels of moral behaviour can also be seen as broad stages through

which a child develops into a moral being, and allows one to see how two major roots of moral behaviour - social conformity and pursuit of an individual ideal - are intertwined. The waste disposal example also shows how behaviour toward the environment can spring from these two roots. But consideration of environmental issues demands an expansion of our moral horizons: the roots of behaviour toward the natural environment may extend beyond mere social conformity and, indeed, may require us to expand our notion of "society". For example, those who argue that prejudice against members of other species is no less objectionable than prejudice about a person's race or sex, are also arguing for a moral code within a "society" that includes species other than humans.

Further expansion of our moral horizons is suggested by considering the second level of moral behaviour, characterized by external sanctions of reward and punishment engendered by civil law. The environment can be perceived as a source of similar sanctions and many arguments urging conservation of natural resources are based on fear of the consequences of breaking some perceived natural "law". Unfortunately, much environmental education tends to emphasize this second level, using threats to man's survival as the ultimate consequence of breaking natural "law" which, in turn, tends to militate against environmental morality being developed at higher levels. But if environmental education entails self-formulating of a code of behaviour about issues concerning environmental quality, then we ought to expect environmental education to encourage moral evaluations which are not wholly dependent on external criteria.

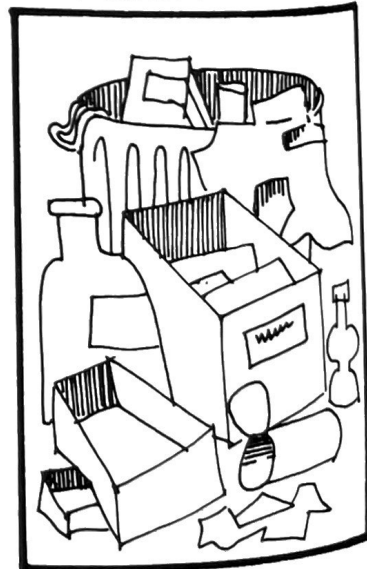
The third level of moral behaviour is of particular interest in relation to environmental education because it is the stage in which both an external and internal morality operate. At this level a person's behaviour is motivated by his concern for others and for his reputation among them. Sanctions of praise and blame are here affected by each individual's beliefs as to who these "others" might be. The ancient Greek tragedies contain many illustrations of men acting out of concern for their reputation among their gods, thus extending the sanctions of praise and blame beyond the society of man; some arguments for more humane treatment of other species use comparable notions. For example, in a science fiction novel a character pleads for an end to commercial whaling for the following reason:

"Sooner or later we will meet types of intelligent life much higher than our own, yet in forms completely alien. And when that time comes, the treatment man receives from his superiors may well depend upon the way he has behaved towards the other creatures of his own world."

This passage might appear fanciful, but moral education should appeal to the imagination as well as to reason. Indeed, this example, to a non-religious person, may be no more fanciful than the "judgement day" scenarios of many modern religions.

Subjects such as biology often appear to be taught in a moral vacuum, and one of the most important functions of environmental education may be to heal the rift between science and ethics. The moral dimensions of environmental education make a virtue of scientific

materialism by basing the formation of an environmental ethic on what we know of the origin and evolution of life, on the assumption that we would behave differently if we could see ourselves and all life as parts of a natural process in the development of the earth. The image of man presented by the modern biological sciences suggests that our notion of morality must incorporate a kind of





environmental "conformity, and not just social conformity, i.e. man ought to be in an equilibrium relationship to the rest of the earth, and ought not to stand apart from it in some position perceived (by man) as superior. Similarly, the rest of the earth - living and non-living - is to be included in one's image of the good life, rather than subordinated only to human needs and wants. Thus, the moral principle guiding our behaviour towards the earth's resources is concerned not only with what is good for us, but also with what is good for the natural environment. Such moral principles would radically alter our behaviour because, like the principles which arise from religious conviction, they demand of us that we think beyond the span of our own lives. In environmental terms, it is just as immoral to be cremated as to be embalmed: both interfere with the optimal use and recycling of earth's "precious" substances.

An environmental ethic is similar in some respects to contemporary secular humanism in that it is an atheism that has no belief in transcendental reality and, therefore, gives no place to the supernatural as the source or sanction of morality. Secular humanism starts with man and with the needs of human society rather than with any transcendental obligations: moral duty is towards man, not God. An environmental ethic differs in that it starts with what we know of (or believe about) the dynamic equilibrium of nature, and it is this equilibrium which is the focus of moral duty. Man, being a part of nature, is important, though not as important as he is to the humanist. Thus, within an environmental ethic we have a moral duty which transcends the needs of man but which is still concerned with the natural rather than the supernatural. Such an ethic could be characterized as secular environmentalism.

On a practical level, many (if not most) moral values are shared by Christians, secular humanists and "secular environmentalists", so that in living and working together their respective dogmatic differences may appear to be largely irrelevant. Nevertheless, exploration of the sources of their values might be profitable within moral education. For example, historically sin (offence against God) and crime (offence against man) have not clearly been differentiated, and the idea of a moral duty toward the natural environment introduces a further complication into any attempts to clarify our concepts of "sin" and "crime". Currently, certain offences against the natural environment are discouraged by being treated as crimes but the justification for laws in these areas is that such offences are, in fact, offences against man. In the course of an individual's moral development it is important to consider such questions as whether or not we can distinguish sin from crime in a democratic (and therefore, presumably, tolerant) society whose members may be adherents of many different faiths, or of none, and whose various sub-cultures may have varying moral codes. These questions may be raised in religious education, and in some forms of secular education. Environmental education is another appropriate context in which to consider such questions, if only because questions about "sin" and "crime" in relation to environmental matters are likely to confront pupils with novel and challenging moral problems.

The major concerns of environmental education - the quality of life and conservation of natural resources - provide a challenging context for the formation of personal ideals. Environmental education also expands the concept of moral education to include not only the socialization of the child (shaping him into a conforming member of society) but also encouraging him to play a responsible role in monitoring the dynamic equilibrium between man and environment. The moral controversies which surround many environmental issues, such as whaling and uranium mining, are symptomatic of this expansion of our moral horizons: moral evolution usually stems from individuals pursuing their ideals in defiance of the prevailing moral code. For teachers the implications of the links between environment and morality are twofold. Firstly, environmental education can be identified as a component of the school curriculum through which moral education may be pursued (although not necessarily as a separate subject). Secondly, the environmental aspects of all subjects are suitable (and, perhaps, inevitable) foci for activities which might contribute to moral development.

## CONSUMER EDUCATION : ITS ROLE

### IN ENVIRONMENTAL EDUCATION

Elizabeth French

Consumer Education Officer (Schools)  
S.A. Department of Public & Consumer  
Affairs



In the recent Study Group Report on Consumer Education in Australia, which was funded by the Commonwealth Department of Business & Consumer Affairs and the Curriculum Development Centre, consumer education was taken to be "the development and refinement of the concepts, knowledge and skills relating to the role of the consumer in contemporary Australia. Consumer education includes more than understanding areas such as 'good buymanship' and 'effective money management'. The definition includes a consideration of what some may regard as non-market considerations, such as the environmental impact of consumer decisions and the social and political role of organised consumer groups. It embodies the idea that consumers have responsibilities as well as rights, that whenever choices occur regarding consumption-related matters, questions of human values and ethics are deeply involved and that judgement and discernment need to be cultivated."

The objectives for consumer education proposed by the S.A. Consumer Education curriculum committee include that of enabling students to identify consumer responsibilities which include self protection and the responsibility to ensure that no harm results from actions as a consumer. Specifically related to the environment, students should recognise that the right to the use of natural resources is not unlimited and that consideration must be given to the conflict between personal and economic benefits; that the consumer has the responsibility to reduce pollution and destruction caused by the disposal of waste products in order to preserve the environment and conserve natural resources.

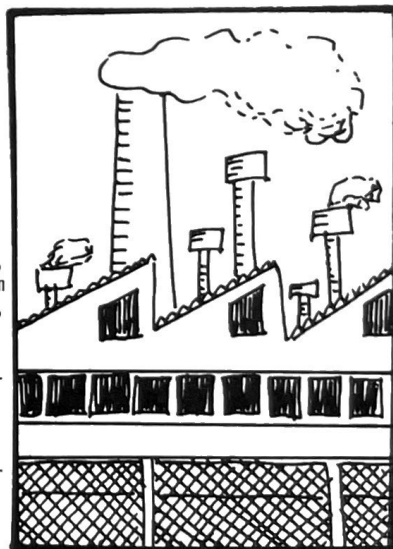
Consumer education and environmental education have much in common. Both are concerned with the results of the satisfaction of needs and wants on the quality of life; both are concerned with values and ethics.

The need for this kind of education is a result of the rise of the consumer society over the past hundred years or so. The advent of mass production, quick and easy transport brought about by the invention of the internal combustion engine, the growth of the electrical and oil industries, the development of synthetic materials and consequent changes in shops and shopping habits have all made life more complex for the consumer and brought changes in the environment.

Packaging is one example that concerns both consumer educators and environmentalists. Modern marketing methods of pre-packaged goods create problems of waste disposal and the use of natural resources such as oil or cellulose. The question of how to deal with this problem should be considered by consumers.

Consumers need to know more about the results of the use of chemicals, so that they can choose what detergents, insecticides, or foods to buy after considering the effects of the long-term use of them.

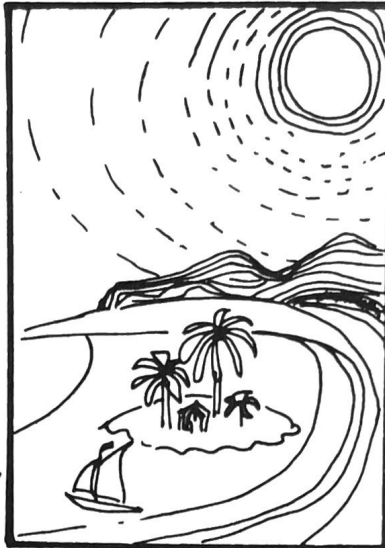
Noise is also consumed, often unwillingly, and consumers should learn that radios, stereo sets, especially when amplified, can cause noise pollution just as much as industrial machinery, to the extent that hearing can be endangered. The use of stereo head-phones can be encouraged so that those who



must have their music loud do not compel the rest of the neighbourhood to share their choice of program.

Tourism is another consumer activity which can have significant implications for the environment in the changes made to the site on behalf of or by the tourist. The demand for facilities such as a chair lift for Ayers Rock can be discussed and considered in the context of consumer education.

Even the siting of a house, or for that matter a shopping complex, and the choice of building materials, are responsibilities of a consumer. Most consumer transactions, in fact, have an eventual impact on the environment.



Environmental education and consumer education can support one another across curriculum areas and levels and ensure that everyone gains the knowledge, skills, attitudes, motivations and commitments to work individually and collectively toward solutions of current problems and prevention of new ones. Consumer education needs constant reinforcement to promote new perceptions whenever new problems or solutions become apparent, and like environmental education must therefore be lifelong.

#### ENVIRONMENTAL EDUCATION AND TELEVISION

Frank Haddon

Education Department N.S.W.

It has proven fascinating to listen to the comments of environmentalists concerning the value of television - "it represents the worst in consumerism" - "it encourages children to experience their environment vicariously, rather than actually" - "it promotes attitudes of sexism, racism, tokenism, materialism ...". All of this is probably true, but it also represents the greatest single attitudinal influence in the lives of a majority of Australian people.

How can we, as people interested in furthering the concepts of environmental education, make use of this influential medium? Perhaps a first step would be to critically consider some of the attempts which have been made to develop television programs based on environmental education. Necessarily, it will only be possible to fully consider programs developed in N.S.W., with specific reference to segments produced for children, giving scant consideration to many excellent programs developed for a wider audience. The shows or segments will be considered as case studies or descriptions of the evolution of involvement in children's television. Because the segments were created as attempts in attitude development, evaluation is extremely difficult - the only short-term method is to consider each segment or show and ask the question - "What is the obvious attitudinal change this is attempting?"

In 1973 members of the Council of the Gould League of N.S.W. were invited by TCN Channel 9 in Sydney to present a segment on a morning program called "The Super Flying Fun Show". The show is beamed to Sydney and Melbourne and it has a viewing audience of 1,000,000 plus. The Gould League has had a ten-minute weekly segment on the show since 1973. From the viewpoint of numbers reached, the impact has been enormous. From an attitudinal viewpoint the result has been patchy, primarily because of the lack of time available, both in the studio and out, for full preparation of each segment. However, the continuous presentation over a period of seven years (approximately 300 segments) must be having some sort of cumulative effect. The question remains - "How does one evaluate such an effect?"

A "spin-off" from this segment was a ten-minute segment in "Look, Listen, Laugh and Learn", again with TCN 9. These shows were highly professional in production, containing

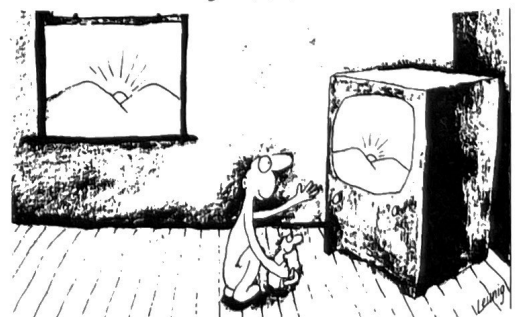
three random segments on subjects ranging from art to archery, with one segment each week being on environmental matters. Approximately 70 environmental segments were made over a period of eighteen months. Once again, the number of viewers totalled into the millions, as the show has had several runs in almost every state. The major failing of the segments was that they were uncoordinated, being usually thought of as separate units or ideas. Production of the shows finished in 1975, and with hindsight it is obvious that an overall plan should have been made and adhered to. However, as there are no guarantees that a television channel will be able to, or wish to, continue the run of any show, long-term planning can be very disheartening.

A.B.C. T.V. has been transmitting a program called "Out'n'About" for some time. Its content was primarily agricultural science with some inclusion of environmental studies segments. In 1979 the producer of the show decided that a majority of shows should be totally environmental education. As a result 9 shows of 25 minutes each will be broadcast in school time in April and May 1980, with some small chance of broadcast in general viewing time as well. These shows have yet to be edited and completed so it may seem previous to be considering evaluation. However, they have all the factors which seem to indicate that they will be valuable for the development of environmental education concepts. These factors are:

- (1) Production by a highly professional team.
- (2) Sufficient time to allow for careful and thoughtful scripting, with consideration being given to each of the shows being part of a pattern of attitude development.
- (3) A show which runs for 25 minutes, allowing scope for sufficient visuals and voice pieces to cover what may be a moderately complex idea.
- (4) The experience of the show's producers in using the unforgiving medium of television.
- (5) A realisation of what is actually occurring in schools, rather than a belief of what should be happening.

Recently A.B.C. T.V. has also produced a program called "Earthwatch". From a rather shaky start it has blossomed into a show with high potential. While it continues to present positive attitudes, rather than the negative views of P.I.P. - pollution, issues, problems - it must be seen as worthwhile and encouraged in every way possible.

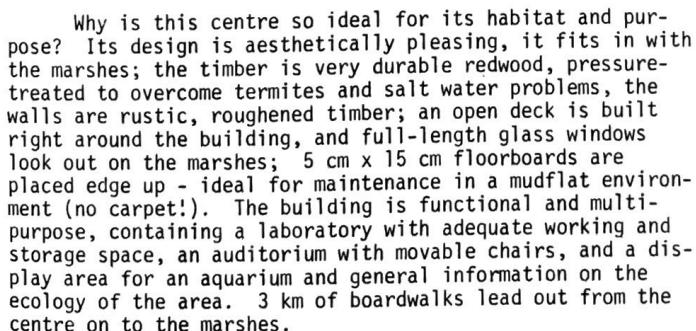
In any consideration of television and environmental education thought must be given to the multitude of "nature" and "wildlife" shows which have proliferated in the last five years. A simple rule of thumb must apply. After seeing such a program, ask this question - "What was the predominant attitude or value change that show asked of me?" Maybe for those people who are totally involved in environmental education the show did not cause any alteration of attitudes and values, rather it strengthened existing ones. For the casual viewer it should have contained opportunities for presenting viewpoints which would encourage attitudinal change, no matter how subtle. If the person viewing the show is encouraged to pick up animals and admire them - "What a lovely creature!!" - or to drive four-wheel drive vehicles over endless Centralian sand dunes, then the environmental education merit of such shows has to be questioned. However, if the viewers are left with the impression that they need to discover the environmental debits and credits of their own "backyard" or that conservation of resources is their responsibility, not a matter dependent upon the whim of others, then such shows should be encouraged or assisted. Further, they should include the involvement of environmental educators, wherever possible, who are conscious of the demands of television programming and the realities of education in general.



From 'THE PENGUIN LEUNG', by Michael Leung, Penguin 1974

Kuring-gai College of Advanced Education, N.S.W.

On a recent visit to San Francisco (July 1979), I was fortunate enough to visit a number of centres, many of them purpose-built to cater for a certain set of objectives, a certain clientele, and as well, a certain environment. One was the Baylands Nature Interpretive Center (whose focus was not just "interpretation") set up by the City of Palo Alto - a centre of unique design set out in the middle of the Baylands saltmarshes. Its purpose is to develop in the general community an awareness of the vanishing wetlands so that people can make decisions based upon this knowledge. It is therefore open seven days a week, and includes activities such as nature walks, laboratory workshops, lectures, seminars, research, films, and fieldwork such as netting and seining in the lagoon.



This centre, I conclude with admiration and envy, was built at the request of local community groups and the residents of Palo Alto. The envy is directed towards the high level of community interest.

## STATE NEWS

WESTERN AUSTRALIA



Plans are well underway for an Urban Studies Centre to open in Fremantle, the chief port of W.A. Fremantle is rich in history and community spirit, containing a wide variety of urban environments. The city is a living, breathing, working "museum" that has successfully incorporated the old with the new.

It is anticipated that both students and adults will be able to make use of the Urban Centre, and a wide range of activities, worksheets, and resources is being planned.

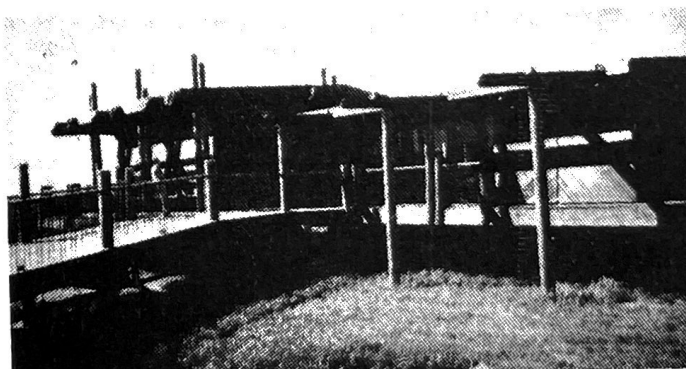
In opening the Urban Centre a new era of community liaison and cooperation will begin. Various local associations, City Councillors, Regional Education Officers, Community Education Centre staff and Education Department staff have all expressed their willingness to participate in providing help and resources. (No staff will be attached to the Centre.)

The Urban Centre is also expected to become part of the resources available to teachers during out-of-school hours for research and preparation of programs involving Fremantle. In-service courses and teacher workshops are also being planned to make full use of the Centre. In many ways the Urban Centre will provide the stimulus and resources for teachers wishing to make greater use of their city as well as for teachers visiting the city.

More news as the Urban Centre progresses!

- A series of short video-tapes is being planned for 1980. These will help to explain the Education Department's policy on environmental education and the ways in which it can be implemented. The video-tapes will be used in inservice work and, more importantly, they will be available on request to schools for use in staff and/or subject meetings.
- A program of inservice work for primary teachers wishing to become more involved in environmental education is being planned for 1980. The theme will be "Environmental Education in the School and Local Community".

Keith Anderson



Baylands Nature Interpretive Center



## NEW SOUTH WALES



More than 800 pupils, teachers and parents of Killarney Vale Primary School are taking part in an extensive and ambitious environmental education program aptly named "School Without Walls".

The project won for the school this week the coveted Gould League Award for N.S.W. for environmental education.

Resource teacher at Killarney Vale, Mr. George Cantello, explains how it operates:

It is probably unique in a school of the N.S.W. Department of Education, if not in Australia.

Children from Kindergarten to Year 6 are learning to discover, understand and appreciate their local area through the utilisation of teaching resources which cannot be brought into the classroom. Through many excursions to sea-side and lake study areas, teachers make use of natural as well as the man-made environment to create a realistic learning climate.

**The Importance of Environmental Education:** Educationists are well aware that the multi-sensory learning of seeing, touching, smelling, hearing and doing in real situations is sound practice.

Stimuli within a classroom are poor substitutes for first hand experience. The child's drive to explore and find adventure can be well satisfied by providing opportunities in outdoor settings.

All subject areas are enriched and, at the same time, children are prepared for a creative use of leisure time.

In seeking answers to the major issues, "What do I know about the local environment?" and "How has man affected this environment?" the child is preparing for wise decision making in the future. This exploration and detailed study of the natural and man-made environments of the local community provides an essential link between school and life.

**The School's Program:** Realising that two important features of the surrounding environment were the seaside and the lakes system, an integrated, development program for pupils of Years 1, 3 and 5, entitled "Classroom by the Sea" was introduced in 1978.

This received such wide acclaim that a special environmental award was made by the N.S.W. Gould League.

The second major part of the program, "Lakeside Learning" for pupils of Years 2, 4 and 6 was prepared and is being implemented concurrently with "Classroom by the Sea" at present.

Kindergarten pupils, not to be left out, are undertaking a Language Enrichment and Discovery Unit to familiarise them with the seaside and lake environments.

Twentyfive class groups with teachers and parental assistance and community cooperation are undertaking field work of an extensive nature over a period of five weeks.

Each out-of-school study tour is followed up by intensive classroom activities in all subject areas.

The merit of the over-all program has been eagerly accepted and supported by the parents who have been actively informed and utilised at all stages - development, implementation and evaluation.

Community bodies and government instrumentalities have given outstanding support by making facilities and resources readily available.

"Weekender Magazine" Feature  
Central Coast Express Nov. 9, 1979

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David Tribe, Gould League organiser, says the League and environmental education are galloping in N.S.W. With 300 requests a year for visits, 5 requests per day for materials and Leagues in one-third of schools in N.S.W. I know why he doesn't answer my letters! - Ed.

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## RESOURCES



ENVIRONMENTAL EDUCATION IN AUSTRALIA - R.D. LINKE

ALLEN & UNWIN 1979

This book presents a detailed analysis of the recent environmental movement and of the way in which it relates to the characteristic purpose of environmental education. It then examines the basic objectives of environmental education in terms of knowledge and understanding, attitudes and teaching approaches, and presents a detailed review of recent Australian and overseas trends in both course development and evaluation at the primary, secondary and tertiary levels. This establishes the general framework for the second part of the book which examines critically and comprehensively the status of environmental education in Australia.

This survey is in several respects unique, not only within Australia but internationally. Firstly in scope: it extends beyond the prescriptive syllabus to examine a wide range of other curriculum resources commonly used in schools, and beyond the school curriculum to the tertiary undergraduate and postgraduate levels and into the public education sphere. Secondly in approach: it examines not only the emergence of courses concerned directly with environmental studies but also the nature and extent of environmental influence in other more traditional subject areas. And thirdly in design: it involves the use of content analysis procedures developed specifically for this study to give a valid and reliable measure of explicit environmental emphasis in books, newspapers and other written resource materials.

Although most of the information was collected during 1973-74 there is much of relevance for those planning or doing environmental education, whether as a subject or a general curriculum influence.

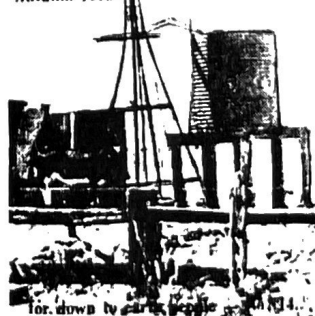
The book is due to be released early in 1980 and can be ordered from George Allen & Unwin Australia, 8 Napier St., North Sydney, 2060, at \$14.95.

## THE ENVIRONMENT TIMES



Published 9 times a year by the National Association of Geology Teachers, University of Minnesota, 2215 East Fifth St., Duluth, Minnesota 55812 at \$8 US p.a. This newsletter represents topical newspaper and journal items of a scientific or environmental management nature. Most articles are easily readable by students and although American the "Environment Times" still represents a handy distillation of ideas for teachers in Australia.

## GRASS ROOTS



Published quarterly by David and Meg Miller, Box 900 P.O., Shepparton 3630 at \$8 p.a. This is one of the alternative life-style magazines which can provide a refreshing burst of new ideas about employment, self sufficiency, healthy living, communion with nature, creativity and self concept. It is particularly relevant to teachers of the "soon to be unemployed" but also to Science, Art, Craft and Economics teachers who wish to encourage lateral thinking.

## FOR EDUCATORS CONCERNED ABOUT THEIR ROLE AS CREATORS OF

## THE FUTURE

More than a hundred years ago, John Stuart Mill realized that industrial society, by its very nature, could not last for long and that the stable society that must replace it would be a far better place. He wrote:

"I cannot...regard the stationary state of capital and wealth with the unaffected aversion so generally manifested towards it by political economists of the old school. I am inclined to believe that it would be, on the whole, a very considerable improvement on our present condition. I confess I am not charmed with the ideal of life held out by those who think that the normal state of human beings is that of struggling to get on; that the trampling, crushing, elbowing, and treading on each other's heels which forms the existing type of social life, are the most desirable lot of human kind... The northern and middle states of America are a specimen of this stage of civilisation in very favourable circumstances; and all that these advantages seem to have yet done for them ... is that the life of the whole of one sex is devoted to dollar-hunting, and of the other to breeding dollar-hunters.

"I know not why it should be a matter of congratulation that persons who are already richer than anyone needs to be should have doubled their means of consuming things which give little or no pleasure except as representative of wealth... It is only in the backward countries of the world that increased production is still an important object; in those most advanced, what is economically needed is a better distribution, of which one indispensable means is a stricter restraint on the population... The density of population necessary to enable mankind to obtain, in the greatest degree, all the advantages both of cooperation and of social intercourse, has, in all the most populous countries, been attained... It is not good for a man to be kept perforce at all times in the presence of his species... Nor is there much satisfaction in contemplating a world with nothing left to the spontaneous activity of nature... If the earth must lose that great portion of its pleasantness which it owes to things that the unlimited increase of wealth and population would extirpate from it, for the mere purpose of enabling it to support a larger population, I sincerely hope, for the sake of posterity, that they will be content to be stationary, long before necessity compels them to it.

"It is scarcely necessary to remark that a stationary condition of capital and population implies no stationary state of human improvement. There would be as much scope as ever for all kinds of mental culture, and moral and social progress; as much room for improving the Art of Living and much more likelihood of it being improved, when minds ceased to be engrossed by the art of getting on."

From : "A Blueprint for Survival" 1972 Penguin.

"Goals for Mankind: A Report to the Club of Rome on the New Horizons of Global Community". Ervin Laszlo et al. E.P.Dutton, New York, 1977.

Of the books I have had the pleasure of reviewing for the "Kappan" in recent years, this one far overshadows the others in urgency and relevance. Indeed, I am persuaded that "Goals for Mankind" is the single most comprehensive and powerful interpretation of its subtitle - "New Horizons of Global Community" - that has thus far been published.

My judgement is not made impulsively. This report to the Club of Rome (a follow-up of its famous "Limits to Growth") will be ignored by students and teachers at great cost, for it can help them fulfill their inescapable role in creating the future. When one realizes that the year 2000 is already less than a quarter century away, the future seems very near.

The goals for our global community, evaluated and described by more than 100 scholars and leaders in many countries, have been defined with extraordinary care and inclusiveness. The book is divided into three clearly interwoven parts:

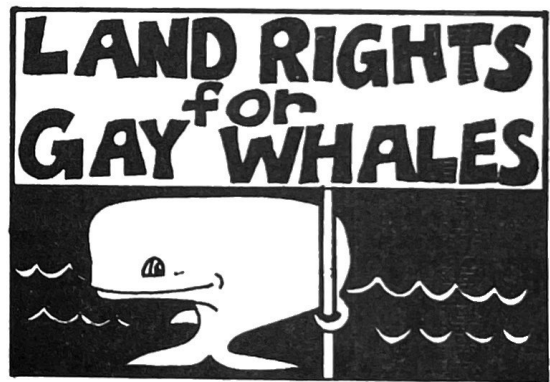
- (1) A World Atlas of Contemporary Goals, which in turn is divided into two sections - an "atlas" of national and regional goals and an "atlas" of international and transnational goals;
- (2) New Horizons through Global Goals; and
- (3) Breaking through Inner Limits.

The three parts thus extend logically from national and regional goals to an increasingly planetary inclusiveness. The narrower or more regional goals begin with Canada and the U.S. and extend to Europe, Asia, and Latin America; international and transnational goals reach from the United Nations to multinational corporations and world religions.

The second part, dealing with new horizons through global goals, embraces such areas as energy, food, and population. The second and third parts both place great emphasis on obstacles as well as expectations. The authors pay substantial attention, for example, to the philosophies of democracy and Marxism, and their application of the latter, as manifested especially in the People's Republic of China, is remarkably appreciative of its "inner limits". This concluding part, however, seems less dramatic than it might have been without the use of charts that, however skilfully designed, leave me at least somewhat chilled as I contemplate a "world solidarity revolution".

In any case, it is nearly impossible to summarize adequately the tremendous scope and depth of this work. It encompasses such a vast array of significant information about major cultures, religions, life-styles, economic structures, and political systems as to become overwhelming. Nevertheless, Professor Ervin Laszlo (professor of philosophy at the State University of New York at Geneseo) and his team of associates must be congratulated. Their book is a major guide for those who hope to preserve a decent future for mankind.

Theodore Brameld  
in "Phi Delta Kappa", Oct 1978



## THE EDUCATION OF PLANTS

by Neil Elman

Mr. Elman throws some blight on a shady area of American education.

For many centuries, plants - particularly the geranium (*Pelargonium*), dracaena (*Dracaena*), and all forms of cactus (*Cactaceae*) - were considered uneducable. But then came a discovery that was as fundamental and far-reaching for the education of the plant as the invention of the hickory stick was for the education of the "whole child": Plants could respond to musical and verbal stimulation. Since that great moment when an African violet (*Saintpaulia ionantha*) first withered under a devastating barrage of verbal abuse and then revived to the strains of Mahler's *Fifth Symphony*, there has been a rush of research and polemic in the field.

At first the findings were attacked by the traditionalists, who insisted that plants have no innate intelligence and therefore could not be trained at even the lowest levels of the cognitive domain. Called... (see next page) ..

obstructionists and reactionaries by their more liberal colleagues, these men and women persisted in their attacks. As John Futterkin, president of the American Mental-Disciplines Association (AMA), explained, "You put 30 begonias (*Begonia*) in a classroom, and they'll just sit there like vegetables."<sup>1</sup> The militant proponents of progressive plant education — called posies by their less militant



"Each plant — regardless of genus, family, or coloration — should be treated as an individual."

colleagues — were quick to respond that 30 begonias in a classroom constitutes an unmanageable situation that is counterproductive to their intellectual development. Differentiating between education and schooling, the progressives also posited that the greenhouse is as much the proper place for learning as is the classroom.

It was further pointed out that plants function primarily in the affective domain and thus could not be expected to master higher-level mental tasks. John Stilt, for instance, has insisted that contemporary plant education be geared to emotional growth and responsiveness: "Each plant — regardless of genus, family, or coloration — should be treated as an individual, and its education directed toward its fulfillment and self-actualization as a member of the plant community."<sup>2</sup> Not having the social need to read, write, and compute, plants should not be expected to develop these skills.

The traditionalists responded in turn. Citing the fact that house plants are a burden on society because they are not

eaten but must be fed, watered, and pruned regularly, the traditionalists have demanded the development of basic skills and survival competencies. If a flame violet (*Episcia*) cannot make it on its own in society, the argument goes, society should not be expected to expend its limited resources on it. Meanwhile, the progressives have countered with a call for greater collective and social responsibility coupled with a more humane attitude toward all forms of life.

This debate has done little to persuade the traditionalists. Their intransigence was more than evident at the 1975 convention of the Plant Educators Association (PEA), at which they deliberately defoliated a Singapore holly (*Maltighia coccigera*) and deposited the clippings in the hotel lobby. The convention was a turning point for plant education, for both sides became frozen in their respective positions, and prejudice began to rear its ugly head.

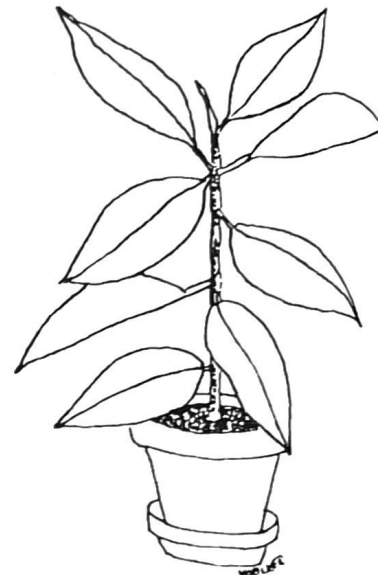
It began with the claim that only green plants could be educated to any appreciable degree — the only exception being the wandering Jew (*Tradescantia*), which has a tradition of scholarship. Non-green plants, on the other hand (or leaf), were said to be incapable of responding even to the music of Donny and Marie Osmond. Racial slurs flew like wind-borne pollen.

In this atmosphere of self-righteousness and vituperation, which continues even now, there is little room for intelligent discourse. We need clear, unemotional statements based on solid research evidence derived from carefully constructed research. One such study, which can serve as a model for future efforts, has demonstrated that philodendrons (*Philodendron*) do not respond to systematic instruction in grammar.<sup>3</sup> However, the author of this research has re-



"What should be done if a plant refuses to salute the American flag?"

fused to generalize the findings to all forms of plant life, and she has not ruled out the possibility that a transformational grammar will produce more positive results. Other studies have proved that Brazilian edelweiss (*Reichsteinera tricha*) responds only to Portuguese, and that the Boston fern (*Nephrolepis*) communicates only with other Boston ferns.



"One study . . . has demonstrated that philodendrons do not respond to systematic instruction in grammar."

Nevertheless, there are critical questions still to be answered. Is the Flower Interaction Analysis System (*Verbustactus*) useful for the study of plant communication? Should plants be subjected to compulsory education laws? What should be done if a plant refuses to salute the American flag? Is photosynthesis representative of the cognitive or psychomotor domain? And how can immuno-pollination be prevented on school grounds? Until these and similar questions are answered, the progress of plant education is likely to be minimal; and it will be the plants, not the educators, who will suffer the greatest blight.

"Il faut cultiver lettres ou son jardin."

— Voltaire

"The greatest service any man can do for his country is to add a useful plant to its culture."

— Thomas Jefferson