In This Issue

America’s spiritual and mental environment has been severely polluted in the last two or three years, polluted with, among such catastrophes as the Watergate scandal, all the brouhaha about ecology.

The word ecology has been used and superficially applied until it is virtually meaningless. It has become a patron saint of a commercial label which a company can invoke and reap the resultant bountiful sales benefits. Every evening we can watch an Exxon or Gulf “scientist” explain their concern with “ecology.” We are brought to realize the great providential impact of the recent “energy crisis,” for, with the sprouting of many new offshore drilling rigs, new and beautiful habitats have been created for marine creatures. Another sign of the times, however, is the media treatment of environmental news of real content. This past June, a month-long pipeline leak dumped hundreds of thousands of gallons of crude oil onto the tundra of the most pure wilderness of the world, the Brooks Range in Alaska. This was reported in a three-inch long article well hidden, ironically enough, among the obituaries of The Grand Rapids Press.

Unfortunately, many people, myself included, find this greening of ecology extremely distasteful. I’m tired of this commercial prostitution of an innocent and wholesome cause. The misfortune of this condition is that we are being conned by the commercial jabber and are, perhaps, satisfied that all of the environmental problems are soon to be solved. On the other hand, if we do evade the commercial coverup and are convinced that great problems still exist, we are tempted to throw up our hands in frustration and to quit trying to fight the omnipresent “them” of anti-environmental interests.

The inherent tragedy of this situation is that we are dooming ourselves and our children; we are losing spiritually and physically. Within most environmental questions lie implicit moral problems. When I drive to and from Calvin alone four times a day all winter long, I am making a decision of ethics. In this act, I proclaim that my feelings of individualism and freedom derived from driving alone are more important than my social and spiritual obligation to properly and efficiently utilize the earth’s resources. I’m making a similar decision if I leave a lot of lights on, if I turn the furnace up instead of putting on a sweater, if I spray my armpits with an aerosol deodorant.

Furthermore, while I lead a comfortable existence at Calvin, the aesthetic quality of our world is disintegrating. Every month, more sand dunes disappear from along Lake Michigan. We have been dumping every sort of pollutant from arsenic to human waste into the oceans at such a rate that in the last decade 42% of the marine life has disappeared. Whales, the largest animals in the world and virtually extinct, are daily being massacred to produce such insignificant commodities as car wax and mink food. These events compose to a great degree the legacy which I will leave and which you will leave to my and your children.

I am rediscovering my responsibility to the earth, and I, with the Dialogue staff, hope that this issue of Dialogue helps you to arrange your values. This issue is not at all an attempt to comprehensively deal with all the problems or solutions connected with the environment. It is a collection of articles on the environment coupled with an unfortunately limited (but, hopefully, helpful) sourcebook. I hope it is helpful. I hope you see there is a possibility to act with impact to maintain environmental quality, and that you can say with Thoreau that “in wilderness is the preservation of the world.”

Don Hettinga
The original negative of the windmill series (see also page fourteen) was exposed on November 15, 1974 in the vicinity of Austin, Texas. This particular windmill is no longer being used (note the absence of a tank) and there are many other such abandoned servants of an earlier era to be seen in this part of the country. However, in the less populated areas of west Texas most of the windmills seen are still operating, primarily to provide water for livestock.
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Covers by Howard Van Til
"Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth."

These words have been hailed as "revolutionary" and "progressive" for the advancement of mankind. Such they surely are if one recognizes that these words were written more than two millennia—perhaps three millennia—ago. They were penned at a time when men commonly worshipped nature rather than mastered it. One need only to think of India's "holy cow" to recognize that nature-worship is still with us.

Until recently, nature worship was regarded as one of the regrettable vestiges of paganism, and it was hoped that by means of the missionary movement and intensive education nature worship, like cannibalism, would find its place only in museums and history books. In recent years, however, the "man-over-nature" model has been seriously challenged, and it has been suggested that in large part the blame for our ecological problems must be laid at the door of the Judeo-Christian tradition because of its strong emphasis on man's superiority to and domination of nature. The words of Genesis 1:28, quoted above, are ample proof that this tradition strongly asserts the "man-over-nature" model, and it attributes these words to none other than the Creator himself. It appears not simply as a statement of fact, but as a command. The language of this statement is very forceful not only because it is in the imperative mood, but the words employed are very dynamic. The Hebrew word kabash, translated subdue, is one of the few Hebrew words that has crept into our parlance, particularly that of the fingers' ring. In Hebrew literature it expressed the idea of treading down, and it is even used for rape in Esther 7:8. the Hebrew word radah, translated as have dominion, is only slightly less dynamic since it too can be used to express the idea of treading down or out (cf. Joel 4:13 where it is used to describe the treading out of grapes in the winepress). The conclusion is inevitable; Genesis teaches that man is to be master of his environment. He rules nature; he treads upon it; he may change its form. He may make grapes into wine (at least grape juice!). A more modern version might indicate that he beats (kabash) wood into pulp so that he can make paper or rayon of it.

One can hardly say that the ecologists' charge that one of the main causes for our ecological crises is to be found in the Judeo-Christian emphasis of man's dominance over nature is without basis. Man, the noble dominator, has become man, the demonic destroyer and polluter of nature. To make matters even more grave, he can appeal to none other than the "good book" as giving him license to "subdue the earth." Paul R. and Anne H. Ehrlich feel that this religious teaching of "man-over-nature" is one of the most serious obstacles to progress toward a more sound ecological approach. The Ehrlichs quote Lynn White Jr. with apparent approval, when he says, "By destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects." The Ehrlichs then go on to posit that "the 'frontier' or 'cowboy' economy which has characterized the United States seems to be a natural extension of the Christian world view." They see little chance for correcting the situation unless there is a change in religious attitudes; again White is quoted: "Both our present science and our present technology are so tinctured with orthodox Christian arro-
gance toward nature that no solution for our ecologic crises can be expected from them alone. Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not."

Such charges can hardly be ignored, for they seem tantamount to saying that Christianity does not have the answer to the problems of the day but, in fact, is a contributor to them. Is it true, as some have suggested, that if the white man in coming to this continent had followed the life style of the Indian, most of our environmental problems would never have appeared? No doubt it is idle to speculate about such things. It would seem better to carefully re-examine our own tradition to see whether we have understood it correctly. That is the approach this article seeks to follow.

As noted above, there is little doubt that Genesis 1 emphasizes man’s dominance of nature. We should not overlook, however, that the Bible does not have only one creation story but two. While the story as told in Genesis 1 gives one emphasis, the story of Genesis 2 gives quite another emphasis in describing man’s relationship to the earth. These emphases are so different that some might consider them to be contradictory. This different emphasis is found especially in Genesis 2:5 and in Genesis 15.

Most translations agree substantially with the RSV in translating Genesis 2:5b, “and there was no man to till the ground.” In the same way Genesis 2:5 is translated, “Lord God took the man and put him in the garden of Eden to till it and keep it.” A careful scrutiny of the Hebrew gives one insight into the phrase “and keep it.” The Hebrew word here is shamar, which is commonly used to express the idea of actively preserving in a thoughtful and purposeful way. The pious man keeps (shamar) the commandments. The good shepherd solicitously keeps (shamar) his flock. It is the Lord who keeps (shamar) Israel. This word alone alerts us to the fact that Genesis 2 offers us quite a different emphasis on man’s relationship to the earth. From this story we learn that man is the keeper of the garden. He is the preserver and developer of the ground.

Further examination of these two verses discloses that the Hebrew verb translated to till is ‘abad; this verb is nearly always translated to serve. If one followed the more common way of translating ‘abad it would suggest that man was to serve the ground or the garden. Few translators have been able to bring themselves to the point where they translate ‘abad in Genesis 2:5 and 15 as serve, but some deserve to be mentioned. Young’s Literal Translation of the Holy Bible is true to its “literal” purpose and translates ‘abad in both verses as serve. J. Spener Weiland in his Genesis which is a Dutch translation and commentary also translated ‘abad in verse 15 literally as dienen, and his commentary adds the constructive insight that when man exercises his authority in this fashion all tensions and conflicts between man and his environment will be removed and harmony will prevail.

The conclusion seems inescapable: there are two distinct emphases in these two chapters. Genesis 1 stresses the dominance of man over the rest of creation. This emphasis was very important to resist the universal tendency toward nature worship. On the other hand, Genesis 2 stresses the manner in which this authority is to be exercised. It is to be exercised in a most benevolent and constructive manner. The terminology in Genesis 2 is also forceful; so forceful in fact that most translators “boggled” at the plain and literal meaning of the words. There is, however, no reason why the most common meaning of ‘abad should not be given full force. It would mean then that the proper way to relate to nature demands that one “lay himself upon the block” and become a servant. It means that authority is exercised correctly only when there is genuine concern for that over which one exercised authority.

These two emphases may seem to be contradictory or even mutually exclusive. But this objection tends to disappear as we carefully scan other areas of Scripture. Scripture repeatedly confronts us with emphases that seem to conflict with one another. Paul stresses salvation by grace; James emphasizes the importance of works. It would be heresy, however, to embrace James and repudiate Paul or vice versa. Instead it should be recognized that these tensions supply the constructive dynamics of life. They are like the opposing rafters in a building; if one is removed, the opposing rafter not only loses its function, but the entire structure is in jeopardy. Heretical positions often originate from the desire to remove tensions, tensions which were intended to give balance, mobility, and life. Therefore, the
there is no ultimate contradiction in being a master and a servant. Anyone who insists that there is a contradiction is under the influence of a warped sense of authority that they could hardly believe that God intended man to serve the ground or the garden. "Common sense" dictates that it is just the other way. The garden, the inferior, is to serve man, the superior. It is always thus, at least in the world we observe. Authority as we understand it is the power of the strong over the weak. But this is precisely the cause of much of our trouble. We all want to be masters. But we forget that according to God’s design one cannot be a true master unless he is a servant. The true Servant is not a docile, obsequious slave but the noble creature created in the image of the Creator. There is no ultimate contradiction in being a master and a servant. Anyone who insists that there is a contradiction here has never really been introduced to the Master.

In conclusion, is the Judeo-Christian a major contributor to our ecological crisis? The answer is yes, but only in so far as the adherents of that tradition have been heretical and were willing to follow only one emphasis, namely that of domination and persistently refused to respond to the call to service.

Such heresy makes one a despoiler of nature, a despot in administration, a tyrant in government, and an oppressor of fellow creatures. Such heresy surely does contribute to our environmental problems. Unfortunately, our believing community is infected with this heresy. It is doubtful that anyone of us is immune to this sickness. Each of us must cope with that sickness in our own lives. What we eat, how we eat, and what we do with the garbage reflect to what extent we are domination mad and service poor. Our life style in dress and travel all betray how conscious we are of the Biblical model “dominion and service.”

Today we see the results of centuries of domination with little or no consciousness of service and preservation. The environment is only one of the areas which suffer from this lack of balance. Other areas suffer too. In government we have the power grabs with the accompanying corruption. In business the profit motive so determines all decisions that little or no attention is given to the welfare of the customer nor to the conservation of resources.

The kingdom of Heaven is not other-worldly. The kingdom of Heaven involves good housekeeping—good maintenance of this earth.

FOOTNOTES

2 Ibid., p. 263.
3 In the KJV the verb 'abad is translated as serve 214 times. It is translated 'til' 10 times (Gen. 2:5, 15; 3:23; 4:12; 2 Sam 9:10; Prov. 12:11; 28:19; Jer. 27:11; Ezek. 36:9, 34), but in many cases—except perhaps Ezek. 36:9—the translation to serve would be meaningful the probably fit the context better. For example in Prov. 12:11 the translation to serve his land would seem more appropriate than to till since verse 10 had indicated that the righteous man had a concern for his beast.
4 B. Jacob, The First Book of the Bible, GENESIS, New York, KTAV Publishing House Inc., (1974), p. 16, “Man’s relation to the soil has two aspects: he may rule it (1, 26-28), but he must also serve it in order to gain his living.” U. Cassuto, A Commentary on the Book of Genesis, Vol. I, Jerusalem, The Magnes Press, The Hebrew University (1961), p. 122. He indicates that the rabbinic interpretation understood the term to mean that man was to serve God. That, however, seems a strained way to avoid the simpler reading, namely, that man was called to serve the garden.
6 J. Sperna Weiland, Genesis, Amsterdam, De Bezige Bij (1964), pp. 62, 92. “There is no contradiction between ruling . . . and serving . . . . To the contrary, only he who serves, serves the earth, can reflect (image) the ruling Elohim. The moment he no longer serves, but in his own power takes the earth into his own service he is estranged from God and from himself; he then is no longer the image of God, but its caricature. This expression to serve the earth is of great significance for not only the anthropology of the Old Testament, but also for the manner in which God is introduced.” (transl. mine, cjv)
In 1836 Thomas Cole, an American artist, conceived and completed a series of five paintings which he called, “The Course of Empire.” The titles of the five paintings suggest the lesson: they are “Savage State,” “The Arcadian,” “The Consummation of Empire,” “Destruction,” and “Desolation.” Cole furnished his countrymen with a warning of the evils of civilization and with a plea for care in dealing with nature. In each painting a conspicuous mountain remains stable while all else changes for the worse. Some interpreters suggest that the mountain represents that part of nature which resists change, while the civilized valleys display man’s mutilation of nature or nature in a changeable form. Aside from detailed analysis, the central message is clear—man has not dealt wisely with his natural surroundings.

Thomas Cole was noteworthy because of his accomplishments as an artist and because he represented in his art and writing an attitude toward nature that was typical of the American Romantics. A fear of human progress, of civilization, and of the axe are characteristic of Emerson, Bryant, and Asher B. Durand, and, like Cole, a concern for retaining the American wilderness emerged in their work. American Romantics developed a unique brand of nature worship out of their awareness of the new land with its abundance of unmarred territory, and they were constantly aware of Cole’s “Course of Empire” warnings. They sermonized about the nation’s beauty and reminded their countrymen of the results of carelessness. Americans heeded these words: a spirit of national pride in the country’s wild beauty arose and survived for a time. An early protectiveness of the environment became a popular cause due, to a great extent, to man like Thomas Cole.

But Cole altered his themes. He began to paint moralizing series which ignored man in relation to nature. And he produced pictures like “The Architect’s Dream,” pleasantly depicting man dominating his surroundings. Romanticism lost its energy and mechanical progress began to excite Americans. The wilderness was remembered only as something to exploit.

Our decade is host to some of the same declarations of love for what is left of American wild territory and we hear many proclamations of good intentions. It would be a pity if this concern, like that of the Romantics, gave way to other preoccupations, or if, like Thomas Cole, it was merely a passing fancy to be discarded when it was no longer in vogue.

Environmental interest has historically been a luxury of rich people in rich nations in times of prosperity. A middle class movement highlighted by the Earth Day celebration of April, 1970 left a legacy of laws to curb air and water pollution. But the housewife scraping to meet her food budget hasn’t the hours or the stamina to picket against highway construction and sooty air. President Ford has skillfully set up a trade-off: jobs and prosperity or clean air and water. It’s a bogus disjunction.

Solar Energy

Yes, it still is possible for one man with an idea to implement it without the help of our omnipresent big brother, the United States government. For an example of that rare breed, witness Merlin Card and Jordan College in Cedar Springs, Michigan. While the national media and our legislators are spending their time and our money debating the possibilities of solar energy, Jordan College has gone ahead and built a solar heated classroom building. It is estimated that Jordan College’s system will cost about six thousand dollars, including storage units. In the meantime, the Energy Research and Development Administration is spending 100 million dollars a year on solar programs, with the amount expected to soar into billions of dollars over the next decade. But, as is so often the case, the money is not filtering down to those like Mr. Clark who have practical solutions to the problem, but to the large corporations schooled in research grantmanship. The country, in short, may be getting another pork barrel.

The heat collector for the Jordan College facility is made out of 35,000 tin cans sawed in half manually by students and faculty over a three-month period. The cans are mounted to corrugated aluminum sheets and painted flat-black. Home-made thermopane glass panels are mounted above the cans to trap the heat, and then small blowers route the air over the sun-heated cans and back to the classrooms. A storage facility which will consist of three rooms each filled with 50,000 pounds of rocks is under construction. These rocks will be heated during the day by the air routed through them and at night, by re-routing the air, the heat they give off will be used to heat the building. Jordan College has applied to the federal government for a $68,000 grant but, according to Merlin Card, their application doesn’t stand much of a chance because they are competing with large oil and energy companies who have the funds to prepare professional looking applications. As Fortune magazine mentioned, these corporations are “schooled in the art of research grantmanship.”

Unfortunately, some of this money [Federal grants] is even now being spent on demonstrations of solar heating and cooling systems known to be overpriced, and on what might be termed—technological warfare: research on futuristic solar contrivances by surplus aerospace engineers. Much of the government money, moreover, has gone not to the small inventors and entrepreneurs who have done much of the innovating and taken most of the risks, but to the large corporations schooled in research grantmanship. The country, in paradoxically, discouraging to that faith to consider the case of Jordan College. It is a re-affirmation in that a few men have come up with a practical idea and have gone ahead, on their own, to implement it. It is discouraging to witness the “pork barrel” politics of research grants administered by the government which reinforce the status quo rather than help the private entrepreneurs as they were intended to do. Incidentally, according to Merlin Card, the best thing that could be done to promote the development of solar heating systems would be for the Michigan Legislature to pass a bill presently before it which would give credits on income and property taxes for capital investments in solar heating equipment. This bill, H4137, is sponsored by Representative Perry Bullard and is presently in a House-Senate Conference Committee where matters have been complicated by the addition of a rider to the bill concerning property tax exemptions for nursing homes. The members of the Conference Committee are Senators: Bowman, Corbin, O’Brien, DeMasso; and Representatives: Bullard, Legel, and Stevens. If you are concerned, you should write to these legislators—especially if one of them is from your home district—expressing your interest in seeing the bill reported out of the Conference Committee intact, without the rider. It’s one way we all can help entrepreneurs like Merlin Card and Jordan College.

Today we use several times more energy as fuel to produce, process, retail, and prepare foods than the food itself contains. None of the energy in the fuel is actually transferred to the food; food energy is all obtained from sunshine. The fuels used in the food system are substitutes for labor, land, capital, rain, and so forth—not for sunshine. In an era when food and fuel are jointly responsible for almost half of our spiraling inflation, the increasing fuel-intensity of the food system deserves close scrutiny.

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Nuclear fission, the fairly common and much debated energy source, is not the only nuclear energy solution. Nuclear fusion—the transmutation of hydrogen to helium—is the reaction which produces the energy which fires the sun and other stars. Researchers have recently had a good deal of success using intense laser beams to blast frozen pellets of hydrogen, instantly releasing vast amounts of useful energy.

At present the energy required to power the lasers is so great that the relative energy payoffs from fusion have not been impressive. However, with more research, thermo-nuclear fusion could be the ultimate solution to our energy problems. Fusion produces much more energy per unit of fuel than fission. In addition, fusion is inherently safer than fission because there is no danger that a fusion plant will surge out of control and melt or explode. Finally, the basic fuel for fusion—a slightly heavier form of hydrogen called deuterium—is practically inexhaustible; it is contained in all the waters of the world. The deuterium in the seas alone could supply all the world’s energy needs for billions of years.

The natural question to ask now is why the public never hears anything about thermonuclear fusion. The answer, as suggested by Lawrence Lessing in the May 1974 issue of Fortune (an excellent article to read to find out more about fusion), is that laser fusion development has been controlled since its inception by the Atomic Energy Commission Division of Military Applications which has turned the research into a cloak and dagger affair. It seems that the AEC, with a typically counterproductive cold war mentality, has decided to label all research “top secret” to prevent it from falling into the hands of Soviet scientists. The irony of this act is that it is apparent from published Soviet papers that the Russian scientists already possess these “secrets.”

The only pollution problem with laser fusion is a radioactive hydrogen isotope called tritium created as a byproduct of the process. In present prototype reactors, tritium could escape into the atmosphere and fall to the earth in rain water. However, tritium is more easily trapped by established chemical technology than are the solid wastes produced by other energy systems, and furthermore, since it can be recycled into the fusion fuel chain there would be great incentive to recover.

In view of our present scramble for new energy sources, there could be no better time for you to sit down and write Senator Griffin, Senator Hart, and Congressman Vanderveen (or your own legislator) urging them to support legislation which would provide appropriations in this very promising area of research and development.

Robert F. Kennedy on why American’s perception of the quality of life was going down while the GNP was going up:

For the gross national product includes air pollution and advertising for cigarettes, and ambulances to clear our highways of carnage. It counts special locks for our doors, and jails for the people who break them. The gross national product includes the destruction of the redwoods and the death of Lake Superior. It grows with the production of napalm and missiles and nuclear warheads, and it even includes research on the improved dissemination of bubonic plague. The gross national product swells with equipment for the police to put down riots in our cities; and though it is not diminished by the damage those riots do, still it goes up as slums are rebuilt on their ashes. It includes Whitman’s rifle and Speck’s knife, and the broadcasting of television programs which glorify violence to sell goods to our children.

On Matter, Living Force, and Heat
—James Prescott Joule
They Also Serve Who Stand and Wait

Howard Van Til
Wind Power

One of the more profitable sources of alternative energy in the coming decades may involve a return to a portion of our Dutch heritage—wind power. The windmill may soon become as common a fixture on the American landscape as it was in the Netherlands two centuries ago. Wind power is distinct from some of the other alternative energy sources in that it is a proven success; there is, in fact, only one major problem—whether or not it can be made economically feasible.

At the moment, if you decided to have a wind-generator (as they are now called) installed to power your home, it would cost you about $10,000. Obviously, that much money is out of the reach of most Americans. There is hope, though, that the cost may be brought down in the near future. The gearbox, one of the most expensive parts of a wind generator, is being replaced in some experiments by a simple belt driven system.

It is estimated that there are 150,000 windmills in operation today in the United States—most of them on farms, being used to pump water—and 50,000 windmills which could be cheaply repaired and put into operation.

Another problem with windmills is the method of storing the electricity. A simple solution would be to route the electricity directly into the existing electrical lines and to let the existing electrical system supplement the wind-generated electricity when there is no wind. Also, scientists are now working on a system which would use the wind-generated power to break down water molecules into oxygen and hydrogen. The hydrogen then could be burned (cleanly) to make steam or could be combined with organic materials to make methane, which could conceivably be used to power automobiles. The only problem with this approach is to develop safe methods of storing hydrogen so that our cars wouldn’t become potential mini-Hindenburgs.

The United States’ government is fully aware of the potential of wind power and will spend 12 million dollars in fiscal year 1976 on related research (compared to an expenditure of $200,000 in 1973). The agencies responsible for the research are NASA and ERDA (Energy Resource and Development Agency). Many of the prototype wind-generators under consideration look much different from the traditional windmill. They will in all likelihood be very large in order to capture the powerful winds of higher altitudes (e.g. the wind is 15-25% stronger at thirty feet than it is at three feet). Areas must also be located where there are very strong winds, since, for wind generated electricity, the force of the wind is more important than the average wind speed. In fact, the potential power increases as the cube of the wind velocity. For example, the power in a twenty mile-an-hour wind is eight times greater than that in a ten mile-an-hour wind.

Because of the size demands, there is a problem of aesthetics in deciding where the wind generators should be placed—many environmentalists are concerned about the visual pollution which would result from huge wind generators dotting the landscape in some areas. Another problem is that these large structures could interfere with the migratory patterns of birds; hence, it is important that much consideration be given to their placement. One rather speculative worry is that a great number of wind-towers could actually slow down the wind and change the nation’s weather.

All things considered, wind power appears to be one of the most fruitful areas of alternative energy sources now under inquiry. By the year 2000 wind generators could be supplying 10% of the United States energy demands.

Energy Conference

The Alliance for Clean Energy, a Grand Rapids based coalition of about 25 community groups, is sponsoring its second conference on energy related issues. The conference, “Energy: What are the Options?” will be held on April 30 and May 1 (a Friday evening and Saturday) at Aquinas College in Grand Rapids. Last year’s ACE conference on “Nuclear Energy and the Alternatives” drew over 200 people for a full day of workshops and an address by Professor Dean Abrahamson from the University of Minnesota.

The focus of this year’s conference is alternative solutions to the energy problem, including such options as conservation, mass transportation, solar energy, new building design, and community planning for energy efficiency. Workshops will be held at 9:00-10:30, 11:00-12:30, and 1:30-3:00 on Saturday. In addition to these workshops on Saturday, there will be a major panel discussion on Friday evening focusing on national and state energy policies and priorities and on current and future research trends in the energy area. Films relating to energy issues will be shown throughout the conference.

Registration for the conference is $2.00 for the general public and $1.00 for students and senior citizens. Registration material and a complete schedule of workshops will be available from the Alliance for Clean Energy, 822 Cherry St., S.E., Grand Rapids, Michigan 49506, on or about April 1.
The MAD Bill

The Michigan Senate Committee on Public Health, Social Services, and Retirement, chaired by Senator John Otterbacher, is presently considering the MAD Bill which would set up Mosquito Abatement Districts. Each district would have a board with the power to determine mosquito control activities in its district. Environmentalists fear that two harmful methods of control will be employed: the elimination of wetlands and the use of pesticides. Removal of wetlands or swamps would upset the natural balance of many living things, as would pesticides. Often more problems are created than are eliminated, especially with the use of pesticides.

Alternatives to these controls should be considered. The Michigan Department of Agriculture is experimenting with various methods of insect control. Disparlure is a sex attractant which confuses gypsy moths and thereby controls their breeding. Small fish, guppies for example, are planted to reduce mosquito populations. The new methods being worked with will deal with the target insect and have less effect on other living things.

Concerned persons should write Senator John Otterbacher and state their objections to the MAD Bill. More information on pesticides can be obtained by writing:

Dr. Joseph Kleiman
Michigan Pesticides Control
18915 Bedford Road
Birmingham, Michigan 48009

Dialogue suggests that interested persons read three books in particular for more information—Silent Spring by Rachel Carson, Since Silent Spring by Frank Graham, and The Web of Life by John Storer.

Ozone

“Get off the can, get on the stick,” states a current television commercial trying to ride the wave of the controversy over aerosols and ozone. Before you rush out to buy a new stick of deodorant, maybe you should know why.

Aerosols are now being used in more products than ever—over 900 million pounds last year. One-half of all aerosols made are now being consumed in the United States. One-half of these are being used for personal care products such as deodorants and cosmetics and another one-fourth for household products. What is important about aerosols though, is not the product they spray, but the propellant that accompanies it along the way. This is a substance known as Freon 11 or Freon 12, a trade name used by DuPont for two Fluorocarbons. These Fluorocarbons have the chemical formula of CFCl3 and CF2Cl2 respectively.

Freon 11 and Freon 12 are what the controversy is really about. These compounds are so inert that there is no known way for nature to rid itself of them until they float up to the ozone layer and there the black-magic begins. In the upper atmosphere, freon absorbs energy available in the form of intense sunlight. The mischief-making fragment of this split-off is a highly reactive chlorine atom which, unhappy with its situation in life and alone in the world, attacks an ozone molecule, stealing atomic oxygen from the molecule. When ozone to yield a more stable oxygen molecule and a complex of atomic oxygen and chlorine. This complex of atomic oxygen and chlorine is unstable. The atomic oxygen is a fickle young thing (not unlike the singles bar type) and would rather find someone like itself than be with chlorine. Upon introduction to another oxygen atom the pair of oxygen atoms forms a stable molecule which is reborn by nature only as fast as it is being used.

By adding the problem of free chlorine to this, the amount of ozone is decreased and more ultra-violet light is allowed to hit the earth. The amount of ozone depletion has recently been the object of many studies by atmospheric physicists. Recent estimates predict a 1.2% decrease by 1990 and a 16% decrease by the turn of the century. Other studies have shown that a 10% loss of ozone will result in a 20% to 23% increase in ultra-violet light. For you this means that a 10% decrease in the ozone layer will result in an increase of on the order of 20% to 45% of all three types of skin cancer, one of which is malignant. What this means is an increase in the United States of 100,000 to 300,000 additional cases of skin cancer yearly and 1,000,000 cases worldwide. Beyond these factors we do not know the effects on other elements in...
the environment.

So the next time a man comes on the tube and tells you to get off the can, go ahead. You will not only smell better, but you'll stop contributing to a problem that may disfigure or cause death to thousands due to skin cancer.

Even as this issue of Dialogue goes to press a bill comes before the Michigan House of Representatives. The bill, H-4340, would outlaw the use of fluorocarbon propellants. You may wish to keep track of the bill’s progress and how your representative votes. If the bill passes the House, it will be sent to the Senate and a letter to your Senator encouraging speedy consideration and passage of the bill may be instrumental in eliminating this threat to future generations.

In the universal order of things the top of an inferior class touches the bottom of a superior; as for instance oysters, which occupying as it were the lowest position in the class of animals, scarcely rise above the life of plants, because they cling to the earth without motion and possess the sense of touch alone. The upper surface of the earth is in contact with the lower surface of water; the highest part of the waters touches the lowest part of the air, and so by a ladder of ascent to the outermost sphere of the universe. So also the noblest entity in the category of bodies, the human body, when its humours are evenly balanced, touches the fringe of the next class above it, namely, the human soul, which occupies the lowest rank in the spiritual order.

Polychronicon—16th century
-Higden

According to early cosmology there were five basic elements each having its own realm, and the harmony of the universe depended on a concentric ordering of these five elements. After earth and water there was air, strictly speaking diatomic oxygen, O₂—the eter vitae. But oxygen comes in other forms. Monoatomic or simply atomic oxygen, O, is a shortlived reactive species. Troatomic oxygen, O₃, still another form is commonly termed ozone. No one contests oxygen's (the O₂ form) essential role but perhaps we should examine the significant contribution of the ozone. Ozone may be that quintessence beyond earth and air, nudging the heavens, and quite primary in the construction of the universe. Freon (the aerosol propel-lant) however threatens to disrupt cosmic harmony.

Dune Mining

Towering like beacons above the eastern shore of Lake Michigan are some of the largest and most beautiful sand dunes in the world. These unique formations are the result of natural forces working over many centuries. The Lake Michigan coastal dunes provide an incomparable habitat for many forms of plant and animal life. To residents of Michigan and visitors from other states, they offer a wealth of scenic beauty and opportunities for recreation.

Today many of the great dunes along the Lake Michigan shore are facing the threat of extinction. Several large dunes—like Pigeon Hill, near Muskegon—have already disappeared. The same fate appears to be in store for others, as a result of unrestricted sand mining along the Lake Michigan shoreline.

The sand taken from sand dune mining is principally used by foundries. Dune mining provides considerable short term economic benefits but, in the long run, will severely harm the tourist industry along our entire Lake Michigan shoreline. In contrast to the economic impact of sand dune mining, the aesthetic impact of the operations are immeasurable. In January of 1975, the West Michigan Regional Development Commission published the following report regarding the effects of sand dune mining:

There are no known beneficial effects of dune mining on the natural environment... It scares off or kills the animal life of the area, totally destroys the vegetation and soils of the mined areas, and literally trucks away the land forms. The degradation even extends to the weather, since the mined area is left hotter in the summer, colder in the winter, and dustier and windier at all seasons. The damage is not restricted to the mined areas alone, but extends (to a certain degree) into peripheral land holdings as well.

There presently is a bill (H4038) in the Senate Conservation Committee which would restrict sand dune mining. Write to Senator Robert Vander Laan, a member of the Conservation Committee, urging him to pass the bill complete with the “surveillance fee provision” (without which the bill will never be implemented because there will not be any funds to do so).
The Bottle Bill

House Bill 4296 which would outlaw the use of non-returnable bottles and cans in Michigan now faces almost certain death. The bill was originally introduced by Representative Lyn Johndahl (D-E. Lansing) and was sent to the House Consumers Committee. After it was passed by that committee, it was routed to the House Appropriations Committee by Speaker Bobby Crim and the House Democrats, rather than being sent to the floor of the House for consideration. The reason for this move was one of political consideration, not of logic. The bill would require no expenditure of state funds for implementation, so it actually was not necessary to send the bill to the Appropriations Committee. However, there is a very powerful alliance of retailers associations, the bottlers, and the AFL-CIO opposing this bill.

On the other hand, a poll commissioned by Governor Milliken showed that 73% of the people of Michigan desire the bottle bill. Obviously, this is not an enviable situation for the Michigan legislators to be in. The Democrats did not want the bill to come up for a public vote where they would be forced to make a tough decision, so they shifted the heat to someone who could bear it—Representative Dominic J. Jacobetti (D-Negaunee), Chairman of the House Appropriations Committee. Representative Jacobetti is serving his eleventh consecutive term in the Michigan House and isn't worried about being re-elected this year. He is, therefore, keeping the bill “bottled up” in the Appropriations Committee, refusing to allow it to even come before the Committee for discussion. According to former Calvin Political Science professor and present Representative Stephen Monsma, the bill is therefore “assumed dead.” Unfortunately, it appears that the anti-environmentalist forces led by Representative Jacobetti and Senator Mack have been successful this time.

However, if you are concerned, write the members of the House Appropriations Committee urging them to send the bill to the House floor for consideration. The members of the Committee are Representatives Jacobetti, Kehres, Goemaere, Hellman, M. Hood, Mahalak, Mastin, O’Neil, Owen, Wierzbicki, J. Young, R. Young, Cramtin, DeStigter, Jowell, Kok, Larsen and Sharpe. It is especially effective to write any of the above who may represent your home district. It may also prove effective to write Speaker of the House Bobby Crim and let him know that you hold him accountable for the bill’s assignment to the Appropriations Committee (the Speaker of the House decides to which committee a bill will be sent).

Lighting

Lighting uses almost one-quarter of all electricity sold in the United States, and in the urban areas the percentage can be much higher (almost two-thirds of the total in New York City). Some controversy exists over just what level of lighting is necessary and desirable, but a growing body of evidence suggests that prevailing lighting standards are at least two times higher than required for optimal performance. Moreover, lights seldom focus solely on work space; instead, large rooms—or even whole floors of buildings—are unnecessarily illuminated. Enormous amounts of energy could be saved by switching from filament to fluorescent bulbs whenever possible; fluorescent bulbs deliver three to four times as much light per unit of electricity as incandescent bulbs. Moreover, light bulbs produce heat as well as light. Reducing the lighting level of buildings and switching to more efficient bulbs reduces the size of the needed cooling system and lowers the initial cost of light fixtures and wiring.

The average American diet consists of almost 20% refined sugar and 45% fat.

The human body uses about as much energy as a steadily glowing 100-watt bulb.
The white people never cared for land or deer or bear. When we Indians kill meat, we eat it all up. When we dig roots we made little holes. When we build houses, we make little holes. When we burn grass for grasshoppers, we don’t ruin things. We shake down acorns and pinenuts. We don’t chop down the trees. We only use dead wood. But the White people plow up the ground, pull down the trees, kill everything. The tree says, “Don’t. I am sore. Don’t hurt me.” But they chop it down and cut it up. The spirit of the land hates them. They blast out trees and stir it up to its depths. They saw up the trees. That hurts them. The Indians never hurt anything, but the White people destroy all. They blast rocks and scatter them on the ground. The rock says, “Don’t. You are hurting me.” But the White people pay no attention. When the Indians use rocks they take little round ones for their cooking. . . . How can the spirit of the earth like the White man? . . . Everywhere the White man has touched it, it is sore.

—spoken by an old holy woman of the Wintu Indians of California

Our land is more valuable than your money. It will last forever. It will not even perish by the flames of fire. As long as the sun shines and the waters flow, this land will be here to give life to men and animals; therefore we cannot sell this land. It was put here for us by the Great Spirit and we cannot sell it because it does not belong to us. You can count your money and burn it within the nod of a buffalo’s head, but only the Great Spirit can count the grains of sand and the blades of grass of these plains. As a present to you, we will give you anything we have that you can take with you; but the land, never.

—response of a chief of one of the principal bands of the northern Blackfeet, upon being asked by United States delegates for his signature to one of the first land treaties in his region of the Milk River, near the border of Montana and the Northwest territories.
Transportation

The physicist's conception of the "ideal" vehicle is one that operates without friction. At a steady speed on a level road, it would consume no energy. Energy used for acceleration would be recovered during braking; energy used for hill-climbing would be recovered when descending. In the real world, of course, friction cannot be avoided: engine parts rub one another, tires encounter road resistance; and the chassis must push its way through resisting air.

But car manufacturers could approximate the physicist's ideal much more closely than they do—witness the 377-miles-per-gallon achieved in the Shell Mileage Marathon of automobiles. Abandoning automatic transmissions would save one-tenth of automobile fuel use. Switching to radial tires would save another tenth. Since fuel consumption decreases about 2.8% for each one hundred pounds of weight reduction, reducing the size of the average vehicle from 3600 pounds to 2700 pounds would save the nation one-quarter of its present gasoline usage. A further reduction to 1800 pounds would reduce automobile fuel needs by nearly half. These smaller cars would require smaller engines which would reduce fuel requirements still more.

Streamlining automobile bodies would greatly reduce air drag. For trucks, the potential fuel savings from improved aerodynamic designs has been estimated at from 20 to 30 per cent. Slowing down on the highway will produce the same results: air-resistance increases greatly when vehicles travel at high speeds. Well-tested alternatives to the internal combustion engine would allow substantial mileage increases with a much smaller discharge of pollutants. Better ignition systems could save the 7.5% of all automobile gasoline now wasted while cars idle. Moreover, 32% of the fuel used in urban driving is dissipated in braking; much of this energy could be recovered by using new technologies. An even better approach would involve more careful driving, fewer rapid accelerations, and less quick braking; calm steady driving conserves fuel.

There is similar room for improvement in automobile options. For example, cars are presently so poorly insulated that they require air conditioners capable of cooling a small house. Insulation should be substantially improved, and absorption air conditioners for automobiles should be designed to be powered by waste heat from the car engine.

Our automobiles are also junked too soon. Replacing worn car parts can triple the life expectancy of the average vehicle for an energy cost of only about 15% of that of a new vehicle. When a car reaches the end of its life cycle, recovering its ferrous and other metallic components with a modern shredder would save more than one-third of the energy needed to manufacture a replacement vehicle. Coupled with the inevitable reduction in materials needed for lighter weight vehicles, recycling would greatly reduce the energy cost of automobile production. The auto industry currently uses about one-fifth of all United States' steel, two-thirds of our rubber, one-third of our tin, and one-tenth of our aluminum and copper—all of which require energy to extract and refine. Little of this material is currently recycled.

This brief list does not begin to cover the possibilities for energy conservation through increased automobile efficiency. It is intended only to provide a somewhat clearer understanding of the range and size of the opportunities for savings. Gradually tripling vehicle mileage and cutting production energy costs by half are conservative goals that can be confidently pursued even while we begin to wean ourselves from petroleum-based fuels.

30,000 people travel into the downtown area of Grand Rapids every day by car. They do this at a rate of 1.4 passengers per car. So, about 42,400 cars make the journey into the city every day.

If these same 30,000 car passengers rode in one bus at thirty passengers per bus it would take 1000 bus trips to transport them into the city. The engine of a car releases four times as many pollutants as the diesel engine of a bus. If the air pollution factor for a car is x, then the amount of air pollutants released every day by trips to the downtown area would be 21,400x. The air pollution factor for the diesel engine of a bus would be 1/4x and the amount of air pollutants released by the buses would be 250x. From a pollution standpoint alone, buses are considerably less detrimental than cars.

There is something basically wrong with the way Calvin students and with the way most people in Grand Rapids get from one place to another. An enormous amount of energy is wasted simply because we are unwilling to cooperate with our neighbors. Dialogue has a proposition to make; we think that there are ways for us to get around that will be more efficient and will be cheaper, and—as President Dickema has said—we feel that the college should lead the constituency and the community.

The metropolitan Grand Rapids mass transit system is noticeably deficient. Statistics from the Grand Rapids Transit Authority establish that there is an average of 1.4 persons per car driven in Grand Rapids. People are obviously not using car pools in an attempt to save gas or to cut down on pollution.

Calvin seems to reflect this individualistic mentality. The Student Senate Transportation Committee found this out when they recently tried to organize car pools. Although there are 1,956 cars registered to off-campus students, only seventy-two students signed up for these car pools.
first semester of this year, and only nine people signed up in the second semester.

Last year, another Student Senate attempt to coordinate mass transportation failed. Senate contracted with the Grand Rapids Transit Authority to reimburse them for the difference (after federal and state subsidies and fare collected) in cost of including Calvin in their bus routes. Part way through the semester, however, Student Senate ran out of money and the Transit Authority cancelled the service at the end of the first semester.

It should be noted here that the bus story is not history, and this, then, is the basis for Dialogue's proposition. A Transit Authority spokesman said that the Transit Authority would be very interested in running a bus to Calvin, if Calvin would underwrite the cost of the bus after federal and state subsidies. We therefore suggest that the college either cooperate with the Transit Authority system or initiate a system which could be worked in a similar manner to a high school bus system. The buses would run in regular routes at regular intervals and could be subsidized either by student subscription or by the College's absorption of these costs. We suggest that any persons interested in helping to organize such a program call Dialogue at 949-4000 ext. 2899.

**Seminars**

The West Michigan Environmental Action Council is holding a series of seminars about varying environmental subjects. The purpose of the seminars is to examine the controversial subjects of open spaces and recreation land (3/11/76), pesticides (3/24/76), solid wastes (4/8/76), and energy (4/22/76).

All the programs will be held at Aquinas College Administration Building, Room 18 on Wednesday nights, Room 351 on Thursday nights. Each seminar will run from 7:30 to 9:30. For more information call the West Michigan Environmental Council or the Dialogue office, ext. 2899.

**Reusable Waste**

Garbage is becoming a significant energy consumer in the United States. Collecting and disposing of garbage uses about five million BTU's of energy for each ton of garbage handled. The organic material that constitutes the bulk of our urban garbage and our residential garbage, however, is a rich source of potential energy. Energy can be recovered by direct combustion, by pyrolysis, by hydro-gassification and by methane generation, which uses anaerobic bacteria. We could make our trash into fertilizer. Our annual production of 700 million tons of organic waste could profitably be made into one quadrillion BTU's or about one-seventh of our nation's total energy budget. More than one quadrillion BTU's are contained in urban garbage alone.

There's been a lot of talk lately about recovering fuel from rotting waste (refuse, manure, sewage) to power small generators or, even, to produce fuel for industry. The basic idea behind this proposal comes from the fact that when waste rots, it produces, among other things, a natural fuel—methane. The system to recover this methane includes the construction of huge digesting tanks which process shredded and sorted refuse. As of yet, however, the costs of recovering energy are relatively high. Assuming that all garbage is at least 50% organic, 659 lbs. of methane per ton of garbage can be recovered. The profits from selling the methane, however, is not high enough to pay for the cost of garbage processing. Moreover, the energy needs of the system are about 35% of the energy it produces. Hopefully, more efficient, less expensive techniques are on the way.

A number of cities have constructed successful means of recovering energy from solid waste. As Denis Hayes at the World Watch Institute reports:

Milwaukee has begun construction of a plant to handle the entire city's garbage. The plant will collect aluminum, steel and glass, and provide supplemental boiler fuel. St. Louis, which has been experimenting with energy recovery from garbage since 1972, has committed itself to a new 70 million dollar plant to burn shredded garbage and pulverized coal to produce energy. Connecticut has begun a 250 million dollar, ten-plant project to convert 84% of the solid waste into 10% of the state's electricity. Baltimore's pyrolysis plant can handle 1000 tons of garbage daily and produce enough gas to heat and air condition about half the high-rise buildings in downtown Baltimore. Even the mammoth Tennessee Valley Authority is studying a means of obtaining about 7% of its power from garbage. A 35 million dollar plant at Saugus, Massachusetts burns garbage from about 12 towns producing steam that is then sold to a nearby G.E. plant, (where the company hopes this way to save 73,000 gallons of fuel oil per day).

Although methane production does not yet seem like an efficient means of resource recovery, a number of other means of using energy from refuse are being put into use by many cities. One of the major obstacles to present proposals for resource recovery is lack of cooperation between private entrepreneurs and municipalities. However, with the rising cost of garbage collection and disposal combined with the increasing scarcity of landfill sites, one hopes that the urgency of the situation will expedite cooperation.
Whales:

Whales, the largest mammals in the world, are being systematically hunted to extinction by Japanese and Soviet whalers. Their vast whaling fleets use airplanes, helicopters, sonar, and high-speed boats to chase down the terror-stricken whales. Then grenade-tipped harpoons blow up the whales in agonizing death. Every fourteen minutes another of these gentle, intelligent animals dies.

The Japanese whaling companies are owned and controlled by the great manufacturing and trading companies that produce and market the vast array of Japanese products sold in America. For example, Nissan Motor Co., the maker of Datsun cars and trucks, has major whaling interests. Nissan's insurance affiliate, Nissan Fire and Marine Insurance, is the largest stockholder in Nippon Suisan, Japan's biggest whaling company. Other Japanese corporate giants with substantial whaling interests include Mitsubishi, Mitsui and Marubeni. The Japanese business community has done nothing to halt the whale slaughter. Between them, the Japanese and Soviet whalers account for more than 85% of the 40,000 whales killed each year.

You can help to save the whales by refusing to purchase any Japanese and Russian products until Japan and the Soviet Union agree to stop whaling.

Why are the whales still hunted? To make mink food, transmission oil, soap, cosmetics, petfood, chicken feed, even delicacies on the Japanese table. There are cheap, plentiful substitutes available for all these whale products. How "civilized" is modern man willing to allow the extinction of these magnificent mammals for such selfish purposes? The rapacity of the whalers was recently explained away by Iwao Fujita, the president of the Japan Whaling Association, with this comment: "I believe all animals were provided by God to help keep man alive."

More than 2,000,000 whales have been killed in the past fifty years, so many that all species of great whales have been placed on the Endangered Species List. The economics of whaling are the economics of extinction. Species after species have been driven to commercial extinction, one step from biological extinction. First the humpback, right, and bowhead whales were wiped out. Then the blue whale, the greatest creature ever to live on earth, was so overhunted that scientists now believe it will never regenerate. Now the fin, sei, minke and sperm whales face the same fate.

There are presently two bills in the United States Congress designed to bring economic pressure to bear against the whalers. The bills call for the immediate embargo of the products of all foreign enterprises engaged in commercial whaling. The House bill (H.J. Res. 448) is presently in the Subcommittee on Fisheries, Wildlife Conservation and Environment of the House Merchant Marine and Fisheries committee. Write to the Committee Chairman Robert L. Leggett or to John D. Dingell, congressman from Dearborn, Michigan, urging them to take action now on the bill, preserving its original strength. You should also write to L. Metcalf, Chairman of the Senate Committee on Minerals and Fuels, regarding the similar bill, S.J. Res. 81.

Also please support the boycott. If a product says MADE IN JAPAN or MADE IN U.S.S.R., don't buy it. Purchase goods made elsewhere. Be sure to tell the merchants why you are boycotting Japanese and Russian products and urge them to stock goods made in other countries. Please write to the presidents of big Japanese companies telling them why you are boycotting their goods. Urge them to use their influence on their country's whaling industry to stop whaling. Following are some of the major names and addresses:

<table>
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<tr>
<th>Automobiles</th>
<th>Cameras</th>
<th>Motorcycles &amp; Bicycles</th>
<th>TV &amp; Stereo</th>
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<td>SONY</td>
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That sea beast
Leviathan, which God of all his works
Created hugest that swim the ocean stream.

Milton's *Paradise Lost*

In the free element beneath me swam,
Floundered and dived, in play, in chace, in battle,
Fishes of every color, form, and kind;
Which language cannot paint, and mariner
Had never seen; from dread Leviathan
To insect millions peopling every wave:
Gather'd in shoals immense, like floating islands,
Led by mysterious instincts through that waste
And trackless region, though on every side
Assaulted by voracious enemies,
Whales, sharks, and monsters, arm'd in front or jaw
With swords, saws, spiral horns, or hooked fangs.

Montgomery's *World Before the Flood*

All the whales in the wider deeps, hot are they, as they urge
on and on, and dive beneath the ice-bergs
The right whales, the sperm-whales, the hammer-heads, the killers
there they blow, there they blow, hot wild white breath out
of the sea!

And they rock and they rock, through the sensual ageless ages
on the depths of the seven seas,
and through the salt they reel with drunk delight
and in the tropics tremble they with love
and roll with massive, strong desire, like gods.

And over the bridge of the whale's strong phallus, linking
the wonder of whales
the burning archangels under the sea keep passing, back
and forth,
keep passing archangels of bliss
from him to her, from her to him, great Cherubim
that wait on whales in mid-ocean, suspended in the waves
of the sea
great heaven of whales, old hierarchies.

—"Whales Weep Not!," D. H. Lawrence.

Now the Lord had prepared a great fish to swallow up
Jonah.

Oh, the rare old Whale, mid storm-and gale
In his ocean home will be
A giant in might, where might is right.
And King of the boundless sea.

The whale is a
mammiferous animal
without hind feet.
Baron Cuvier.
Recycle Unlimited

Recycle Unlimited is an organization, founded by Calvin professor of Engineering, James P. Bosscher, which is based on the idea that much of the garbage we throw away each day can be reused. As a matter of fact, they claim that Kent County generates $10,000 of reusable refuse every day. When this much of our natural resources are being wasted every day, Bosscher feels that it becomes a matter of Christian stewardship to try to recover it.

Recycle Unlimited’s purposes are basically threefold: 1) to conduct research on and to develop and test the feasibility of methods of recycling and reclaiming glass and metals, 2) to provide employment for Neighborhood Youth Corps, and 3) to promote concern for the environment.

In line with these purposes, a number of interesting and encouraging things have happened at Recycle Unlimited. Calvin students have constructed a number of devices for densifying and rendering cans ready for recycling—a glass smasher, a reworked baler, a bi-metallic can “de-topper,” and a can sorting belt—all aimed at providing the technology for low-cost recycling.

The governments of Kent County and other institutions have been helpful. Kent County provided a site and building for Recycle Unlimited, as well as $2,500 for start-up costs. With support from a variety of other institutions, Recycle Unlimited has begun a plastics reclamation program, as well as pickup services consisting of two converted beverage trucks and a three-quarter ton pick-up truck. A new processing site, recently donated to them, is at 1241 Madison, where they treat bottles, cans, and newspaper. Thanks to some recent grants, Recycle Unlimited now has plans to develop a “recycling trailer” which would carry the recycling apparatus to the pickup site and thus save on collection costs.

ENVIRONMENTAL AND CONSERVATION GROUPS (LOCAL)
For those interested in regular talks about birds and various scenic areas of the world: the Audobon Club, contact Dr. Grace Eldering 364-4737.
For those interested in hikes and outings: The Sierra Club, contact John Will 774-2203.
For those interested in fishing: Trout, Unlimited, contact Terry Moran 459-4186.
For those interested in keeping up on the latest environmental news, and being involved in environmental concerns: The West Michigan Environmental Action Council.
For those interested in hunting: The MUCC, 2101 Wood St., Lansing, MI 48911.
Whom to Contact:

Local:
- Air Pollution Control: 456-3158
- City Commission Offices: 456-3000
- Environmental Protection Dep't: 456-3206
- Kent County Road Commission: 451-2724
- Noise Pollution Control: 456-3206
- Recycling Information: 456-3246
- Recycle, Unlimited: 245-7781
- Water Pollution Control: 456-3633
- West Michigan Environmental Action Council: 451-3051

State:
- Governor’s Office
  - The Honorable William Milliken
  - Governor’s Office
  - Lansing, MI 48901
  - Phone: (517) 373-3400
- Michigan Representative
  - The Honorable
  - House of Representatives
  - Lansing, MI 48901
- Michigan Senator
  - The Honorable
  - Michigan Senate
  - Lansing, MI 48903
- Pollution Emergency Call System
  - (517) 373-7660

National:
- Executive Branch
  - Presidential Office in Grand Rapids
  - 110 Michigan N.E.
  - 456-9607
  - The Honorable Gerald R. Ford
  - 1600 Pennsylvania Ave.
  - Washington, D.C.
- U.S. Senator
  - The Honorable Robert P. Griffin
  - 353 Old State Office Building
  - Washington, D.C. 20510
  - G.R. phone 456-2534
  - The Honorable Philip A. Hart
  - 252 Old State Office Building
  - Washington, D.C. 20510
  - G.R. phone 456-2218
- U.S. Representative
  - The Honorable Richard Vander Veen
  - House of Representatives
  - Washington, D.C. 20510
  - G.R. phone 451-2614

A Final Proposition

With this issue, Dialogue has attempted to bring out general assumptions which are inherent in an interest in environmental quality. We believe, moreover, that it is possible for individuals to affect the quality of their environment. Dialogue is, therefore, working with the West Michigan Environmental Action Council to organize a Calvin College Environmental Action Council. We urge all persons interested in improving their environment or in discovering ways to enjoy it more fully to contact the Dialogue staff in Bolt Hall Basement. We can be reached by phone at 949-4000, ext. 2899.
Gary Snyder, winner of the 1975 Pulitzer Prize in Poetry, is being brought to Calvin by the Writer's Guild. He will give a public reading at 8:00 P.M. in the Gezon Auditorium on May 12, 1976.


All books reviewed in *Dialogue* will be placed in the reserve reading room for the remainder of the academic year.

David Westendorp

A culture that alienates itself from the very ground of its own being—from the wilderness outside... and from the other wilderness, the wilderness within—is doomed to a very destructive behavior, ultimately perhaps self-destructive behavior.

G. Synder
*Turtle Island*

Mankind's mother is Nature and Nature should be tenderly respected... Man's life and destiny is growth and enlightenment and self-disciplined freedom... The divine has been made flesh... and flesh is divine...

These values seem almost biologically essential to the survival of humanity.

G. Synder
*Earth House Hold*
The various members of the San Francisco Renaissance of poetry are perhaps still too charged with historical significance to be honestly evaluated. One wonders whether or not their names and poems would be so familiar to us without the emotional, cultural response their various personalities once evoked by being in the right place at the right time. Anything said in response to this question would be highly speculative, but Gary Snyder stands out among the group as the one whose poetry has the most depth and substance. Even so, the body of Snyder’s work is problematical in such a way as to necessitate a religious/cultural context in which the poems can be read. Snyder has pursued the problem of the relation of poetry and life in a way that relatively unique among contemporary American poets. It is in this light that Turtle Island must be read, but, in order to better understand the implications of this book, some earlier poems must be considered.

Riprap and Cold Mountain Poems begins with the poem “Mid-August at Sourdough Mountain Lookout:”

Down valley a smoke haze
Three days heat, after five days rain
Pitch glows on the fir-cones
Across rocks and meadows
Swarms of new flies.

I cannot remember things I once read
A few friends, but they are in cities.
Drinking cold snow-water from a tin cup
Looking down for miles
Through high still air.

The poem is disarmingly simple, lacks tension, and is static; it assumes nothing of the reader and demands nothing. Yet is ten short lines Snyder manages to portray both an exterior and an interior “landscape.” The picture is of a man, alone, high in the mountains, who is aware—with a hint of sadness—of his isolation, yet profoundly accepting of it. This acceptance is at once the source and result of the man’s unity with his setting—there is no difference between the exterior landscape and the interior landscape.

A comparison of this poem and “Running Water Music” from Regarding Wave is of some use to the discussion:

under the trees
under the clouds
by the river
on the beach,

“sea roads.”
whales great sea-path beasts—

steam, cereal,
stone, wood boards.

bone awl, pelts,
bamboo pins and spoons.

unglazed bowl.
a band around the hair

beyond wounds.
sat on a rock in the sun
watched the old pine
wave
over blinding fine white
river sand.

If “Mid-August at Sourdough Mountain Lookout” is a poem both of and about an enlightened man (in the Buddhist sense of the word; this seem a reasonable claim since there should be no quibble with the assertion that Snyder’s poems are about himself), then “Running Water Music” describes something more closely resembling the satori experience itself. The material of the poem is made up of fragments, bits and pieces fused together in meditation on the pine tree and the river sand. The fragments are held together by a calm energy whose source is the magic inherent in the rock, the sun, the pine tree, and the river sand. The poet calls this particular juxtaposition to our attention, but he is not needed for it to remain unified or even for it to exist.

The piecing together of fragments to make a poem has grown increasingly characteristic of Snyder, and perhaps comes to its best expression in another poem from Regarding Wave, “The Way is Not a Way:”

scattered leaves
sheets of running
water.
unbound hair. loose
planks on shed roofs.
stumbling down wood stairs
shirts un done.
children pissing in the roadside grass

Here there is no dependence whatsoever on surrealistic or intuited connections between images. It is a pure and simple celebration of the perception of unity and the transcendence of paradox that comes to a man who follows the Buddha’s path.

Snyder’s Buddhist beliefs must not be treated lightly. His religion has taught him a reverence for man, animals, and the soil, a reverence that far surpasses that of most Christians. It is this reverence that is perhaps the single most important element that went into the writing of Turtle Island.

The quality of material in Snyder’s books could best be described as uneven. Each book is a solid piece of work that
contains several poems of striking excellence. At the same
time, they are flawed by embarrassingly bad poems, poems
which may be important to Snyder as a record of his
emotional/spiritual development but which a more disci­
niplined craftsman would have refrained from publishing.
The poems quoted thus far are examples of some of his
finer short poems. Longer pieces such as “The Elwha
River” and “Journeys” in Six Sections from Mountains and
Rivers Without Ends, “Migration of Birds” in Riprap
and Cold Mountain Poems, and “Burning Island” and “Rainbow
Body” in Regarding Wave are especially worthy of note but
are outside the scope of this article. Also, his translation of
Han-Shan’s Cold Mountain poems is one of Snyder’s most
valuable contributions to American poetry.

Snyder’s predilection for publishing weak material is
very much in evidence in Turtle Island. To say that in this
book Snyder has an axe to grind is perhaps unfair, but there
is a message to be had, one which he felt obligated to make
painfully obvious.

“Turtle Island” is a name for the Northern American
continent derived from various Indian creation myths. The
title is just one of many indications that Snyder’s concern
in Turtle Island is, as it always has been, with the oldest
values known to man—i.e. the care of the soil, the
maintenance of the delicate cycles of birth, death, and
rebirth, and love for the soul of man. But in this book, the
Teaching is done less by a spiritual quality in the poems and
done more by straightforward lecturing. Consider these
lines from “Mother Earth: Her Whales:"

How can the head-heavy power-hungry politic scientist
Government two-world Capitalist-Imperialist
Third-world Communist paper-shuffling male
non-farmer jet-set bureaucrat
Speak for the green of the leaf? Speak for the soil?

This may be an excellent question, but it in no way
qualifies as poetry. Disappointment with the book is
intensified by the limited number of very fine poems. The
simple grace and beauty of lines such as these from
“Tomorrow’s Song:”

At work and in our place:

in the service
of the wilderness
of life
of death
of the Mother’s breasts!

implicitly add as much to Snyder’s theme as does any of his
lecturing. Interestingly enough, the prose pieces on ecology
included at the end of the book contain some of the best
writing to be found in Turtle Island, as well as being the
most disturbing and provocative essays on ecology that I
have seen.

Ecology, for Snyder, is not an issue but the issue, and he
always discusses it in terms of survival. His statement of the
deep-rooted conviction that survival is literally what is at
stake with regards to ecology makes Snyder both more
perceptive and honest than most of us. The violation “of
the Mother’s breasts,” the sin of rejecting the religion of
our origins, is fast reaching suicidal proportions. This
realization is at the very heart of Turtle Island, and gives it
an urgency not found in Snyder’s earlier books. Unfortu­
nately this realization also, in some sense, is responsible
for giving us some of his worst poetry.

Even so, from an aesthetic point of view, the book is of
some value. Those familiar with Snyder’s work will find
much in it that is worthy of attention. A notable example is
the poem “Hemp:"

Gravel-bars, riverbanks, scars
of the glaciers,
healing and nursing moraine—
tall hemp plants followed man

Midden dump heap roadway slash
To bind his loads and ease his mind
Moor to Spain, Spain in horse-manure
and straw, across the sea
& up from Mexico

—a tiny puff of white cloud far away.
we sit and wait, for days,
and pray for rain.

This, while remaining true to the theme, transcends the
limitations of the majority of the poems. It is an example
of what Snyder is saying rather than a doctrinal for­
mulation of it.

The poem “The Bath” must also be mentioned, as
indicative of Snyder’s evolution as an artist. The subject
matter is quite simply that of Snyder taking a bath with his
wife and two children. The extensive details included
portray his intense awareness of the physical, and the
complexity of the poem, a formal complexity that is rare in
Snyder’s work, is enhancing rather than detracting.

Turtle Island, in the final analysis, must be considered as
no more than an impressive failure. Snyder’s call for a
return to a reverence for the land, however timely and vital
it may be, is not justification for the dissemination of
largely inferior poetry. The importance of his basic theme
cannot be over-emphasized, but neither can it redeem
poorly executed content. Those who are not familiar with
Snyder will find Regarding Wave, his best book to date, and
Jack Kerouac’s The Dharma Bums, in which a thinly
disguised Snyder is one of the main characters, to be of
more value as an introduction to this important American
poet.