Conclusions

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The examples of environmental destruction mentioned in this book are only a few of the more celebrated of the almost countless occasions upon which Japan's environment has been seriously compromised during one hundred years of modernization. The situations covered by the materials contained in these pages represent only the tip of the iceberg of Japan's environmental history. However, from all of this destruction of life and life-support systems, the following conclusions are to be reached—these are the main lessons to be learned from Japan's century of devastation.

I. Basic Human Rights

Even when very similar problems of environmental destruction are brought to the fore, the resulting societal disruption often varies according to the differing environmental conditions, historical contexts, and locations. Therefore, problems caused by a ravaged human environment are not solvable through the mere application of a technical "fix" or the introduction of new legal structures which ignore fundamental local differences and the need for the participation of pollution victims in the problem-solving process. This is a very important *political* process within the widest framework.

The most important factor for the prevention of pollution problems is the development in the general population of an appreciation for basic human rights and the need always to remain free from oppression. During the long period of modernization in Japan, the prevention of pollution rested almost entirely on the autonomous movements of the victims, aided in part by victim-support groups made up of people who have come under the influence of those victims. In this respect, it can be said that even the pollution-control laws and their attendant technical policies resulted from these citizens' movements that were centred on the victims' groups. The most effective movement orientations were derived from direct non-violent action. Very often

women were central to their efforts to bring about meaningful social change. It is interesting to note that these aspects are common to citizens' movements all over the world.

In short, when there is a sense of strong local autonomy, and when decision-making is based on enlightened action by citizens, pollution problems almost never occur. In this sense the importance of political power for the local community is not to be underestimated. Without the involvement of the people in decision-making processes related to pollution, activities affecting the environment are unilaterally initiated by powerful industrial polluters, and the problems involved in maintaining a viable human environment are never solved. Fishermen and farmers who, in the context of industrial societies, are in weaker social strata, are always more dependent on the natural environment than are the powerful and economically well-to-do. When an environment is destroyed and thereby loses its productive viability, the economically, socially, and politically weakest members of society are the ones who suffer most radically from the destruction. Once there is a loss of environmental viability, a new round of poverty and related suffering is generated.

With this basic understanding in mind, priorities should be established so that the voices of the weak are heard and their participation in decision-making processes guaranteed. If this is not the case, then wealth and power will continue to concentrate in fewer and fewer hands, and those who have that power will use up all our limited natural resources and destroy the viability of the environment out of either ignorance or arrogance or both. Then the powerless in society will struggle against each other for control of the meagre resources that are left, and in the process destroy all that remains of the environment. Because of this increased competition for dwindling resources, social tension and fear increase and military power is used to suppress conflicts, thereby exacerbating the problems of the weak. These are phenomena common to all the world's peoples.

1. The Role of Industrial Corporations and Governmental Organizations

The Ashio copper-mine conglomerate, the Morinaga Milk Company, and the Chisso Corporation were profit-oriented industrial organizations that developed rapidly during Japan's high-economic-growth period after the end of the Second World War. These corporations neglected to invest in safety and pollution-prevention equipment so as not to short-circuit profit maximization. However, the causes of the pollution problems created by these corporations were revealed and monetary compensation had to be paid to the pollution victims, which drastically increased the economic burden on those organizations. Moreover, these companies experienced in the process a worsening of their management orientations because of other sequentially related factors. Since these corporations were among those with the least economic viability, once the pollution-related cause-and-effect relationships

had been established the effects on corporate viability were devastating. Therefore, corporate activities that destroy natural ecosystems should be countered at the outset; otherwise pollution problems become a significant problem for the offending corporate body. The Minamata disease and the Morinaga arsenic milk poisoning cases did a great deal of damage to the public image of the chemical and food products industries. As a result these two environmental poisoning cases adversely affected the entire economy of Japan.

The political élites and related organizations, as well as governmental bureaux and agencies, treated these pollution problems purely as issues of occupational safety, and for a very long time paid little attention to the severity of the situation. The ineffectual and time-consuming negotiation processes established by government agencies that were purportedly "problem-solving" simply made things worse by extending the time period during which environmental destruction was allowed to continue. When a government lacks the political will that is needed for the realization of basic human rights, environmental destruction is exacerbated to such an extent that, finally, solving the problem is beyond human capability.

Organized industrial power is incomparably greater than any power held by the victims of ecological duress. Unless the government has a clear mandate from the people and the related political will to ensure continued environmental health and viability, as well as the protection of human rights, the implementation of effective policies that will contribute to a sound environment will never be realized. In order that environmental viability be maintained, there must be a well-organized movement of pollution victims, as well as popular involvement in this movement; in addition, social conditions conducive to true democracy must be established, so as to guarantee citizens' participation in the political decision-making processes in order that an adequate understanding of human rights may be fostered and maintained.

Through the study of past experience, it has been learned that pollution problems adversely affect primary industries such as farming, forestry, fishing, and related occupations. Throughout human history, these primary industries have been oppressed by exploitative structures that prevent the voices of their members from ever being heard, let alone influencing the decisions of those in power. As a result of this, environmental damage is simply allowed to worsen until it begins to encroach even on the urban situation. The deterioration of primary industries in Japan has been allowed to continue to an intolerable degree. As an example of this, it is to be noted that Japan's domestic production of primary food calories has dropped to 40 per cent of total caloric consumption. This damage to primary industries has been slowed to some extent, but if political action had been taken earlier, these industries could have been revitalized and pollution-related destruction halted. This is an important factor that should be taken into consideration by other nations of Asia as they head inexorably toward industrialization.

As can be deduced from the massive carbon monoxide poisonings that resulted from the Miike coal-mine explosion, occupational diseases or indus-

trial accidents are recognized as valid human rights issues in situations where the needs of labouring people are protected by active union organization. Where labour unions are strong, the incidences of occupational diseases and industrial disasters are reduced. The majority of Japan's labour unions are organized as adjuncts to their related corporations and therefore tend to be no more than supplemental to the administrative organs of industry. The initial tasks facing the first labour unions were, therefore, the prevention of occupational diseases and industrial disasters. Other tasks have been those of discovering the cause-and-effect relationships that are involved in pollution problems and the collection of valuable data and information that will prevent potential disasters from occurring in the work environment. The protection of the human rights of working people is directly related to health problems in general.

Not only is the strengthening of labour unions essential—it is even more important to increase individual workers' consciousness of human rights issues. If this is made possible, the production of poisonous materials can be stopped and workers can be protected from occupational disasters. As an example of this, in 1970 the production of certain lead-based organometallic compounds was stopped through just this kind of action. It is important that the labour unions increase their efforts in relation to educational programmes that will increase awareness of human rights as well as willingness to take action in this regard.

II. Issues Arising out of Court Struggles

In their attempts to solve environmental problems in the farming villages, the victims were unable to appeal on the basis of basic human rights, but were forced to accept the form of mediation determined by the polluters. However, after the Second World War the people of Japan learned that the option of taking their complaints to court had been opened up to them, and in this forum the debates regarding responsibility and cause-and-effect relationships could be exposed to public debate and scrutiny. Industries brought to court because of their anti-social activities gained a bad reputation from these encounters. In the courtroom situation the victims and the polluters were and are on an equal footing in the struggle over rights and responsibilities. Through the co-operation of lawyers, scientists, and other concerned citizens and professionals, the court struggles ended by handing down rulings that favoured the victims of pollution, together with compensation for damage inflicted. With members of active mass movements in support of the victims always waiting outside the courtroom, public opinion, through the mass media, was directed towards a position that generally supported the victims of environmental destruction; this also contributed to verdicts favouring the victims.

Around 1970, in conjunction with four major court battles that were raging over pollution rights and limits, the activities of the anti-pollution groups

reached a peak. Through these activities it was possible to look back over the history of environmental destruction in Japan, and especially to examine the successes and failures of past movements, especially those revolving around the Ashio copper-mine problem. Because of the pressures brought to bear by the anti-pollution movements, industrial organizations that were causing extensive pollution began to limit more carefully their range of activities, and, with this, pollution-control methods were improved to the extent that even the Ashio, Hitachi, and Besshi copper mines abandoned certain of their more dangerous production processes. It also became clear that the act of demanding compensation alone is of limited value for the victims of pollution. The only real hope of restoring environmental sanity lay in court confrontations that ruled against further corporate activities where damaged environments were at issue. Because of these court battles, the government and supporting industries were forced to alter plans for further rapid economic growth, and were thereby compelled to undertake actions to limit corporate activities. Because of this the government was very much against these victim-generated court actions. The courts involved were in certain respects very conservative in outlook; they had no knowledge of pollution problems, were reluctant to accept on a formal basis the informational and ideational inputs of the citizens' movements, and often limited courtroom interpolations to matters that concerned only the issue at hand, thereby preventing an exploration of the many far-reaching issues involved. In many situations, cases were thrown out of court before they could be fully examined because of these and other problems of a technical and legal nature.

In certain recent cases, lawyers accustomed to pollution trials have tried to bring matters to a speedy conclusion without the benefit of legal and technical research or citizen co-operation, in the hope of saving themselves a good deal of effort. Generally speaking the results of such short-cut trials are to the disadvantage of pollution victims. Good results from legal efforts cannot be expected without mass action and co-operation. The same phenomenon can be seen with regard to the professionalism that holds sway within legislative organizations, in which citizen co-operation is simply not considered. Professionalism which excludes the people makes pollution problems even more difficult to deal with.

Public hearings have provided an opportunity to apportion responsibility for environmental damage and have been useful in winning compensation that is related to damage liability. However, in the court cases centring around pollution problems, the professionalism practised by legal personnel becomes a barrier rather than an aid to success. It is essential that pollution victims understand the limitations of narrow-minded professionalism based on authoritarianism so that genuine co-operation with legal professionals can be nurtured. Court-based procedures are a step in the right direction when compared with authority-oriented face-to-face negotiations within the context of other social situations, but legal procedures have their own authoritarian orientations and structures which contain inherent drawbacks. It is therefore essential that citizens' movements come to the fore and demand limita-

tions on professional authoritarianism. Japan's pollution laws, which are, on a formal level, among the most advanced in the world, have no real effect in helping to solve the problems faced by the pollution victims. In order to bring the four celebrated pollution cases of Japan to a legal conclusion, it was not the new pollution laws that were applied in the court proceedings, but rather the older civil codes and mining laws. In spite of the use of the older legal structures, certain progressive results were seen in the designation of communal action illegality, non-fault liability, and illegal actions without reference to a legal standard. The older pollution laws that were well established did have some effect in the prevention of environmental destruction. However, these court cases continue to broadcast a warning as to the seriousness of environmental destruction.

III. The Role of Science and Technology

Environmental science standards in Japan are still not very high. Environmental sciences seek to deal with pollution problems within the traditional, narrowly defined constructs of the natural and social sciences rather than by grasping the fact that pollution generation and environmental destruction are too complicated to fit within such constructs. It is next to impossible for scientists of the traditional persuasion to understand problems of environmental destruction in their totality without co-operative interaction with the victims of pollution, who have experienced the destruction first-hand within the context of a particular community. Many, if not most, problems generated from a loss of environmental viability are brought to public awareness only after the damage has become overwhelming. Since this is the case, research in the environmental sciences should begin with an explication of damage parameters and end with an attempt to reduce or prevent the damage. Many writers in the environmental field have come to the conclusion that new methodologies in the environmental sciences can only come into being within a context of study where meaningful interaction exists between the scientist-observer and the pollution disease victims as they interact with their support community. In order that this may come about, the environmental scientist must learn humility with respect to the reality of human interactions. In Japan, as in most other countries in the world, environmental scientists do not possess the humility needed to grasp the central realities of the phenomenon they seek to study.

In the same way, it is essential that environmental administrators, within government and without, pay much more careful attention to nature and society. It is an error of the gravest kind to believe that science and technology can provide all the answers to administrative problems and concerns. This is to say that the bureaucratization of science and technology works to maintain environmental policies at a very low level of effectiveness. When this tendency to seek a "technological fix," together with its attendant overemphasis on more complicated regulations, is allowed free rein, it simply

serves to increase pollution-control costs without producing any meaningful benefits. When these kinds of regulations are invoked, the energy and vitality of citizens' movements are circumvented. The effects of pollution-prevention laws and regulations are very limited unless these same regulations are supported by the people themselves and the movements that they create. Environmental assessment is also subject to the same dangers as present assess ment methods, which rely heavily upon the same kind of science and technology, based on a limited understanding of nature, and this works to the detriment of environmental sanity.

On the international level, Japan's pollution regulations and technological finesse are highly overrated, while the contributions made toward environmental viability by the activities of the citizens' movements enjoy almost no publicity. This is because the government's public information sector is able to circulate its own propaganda so as to generate the impression that the government is the author of all measures taken to protect the human environment. In this regard, the information provided by the Japanese government is highly technical without any significant references to historical and social factors.

Government information highlights only the successes but fails to indicate the failures or the situations in which industrial power was allowed to ride roughshod over environmental considerations. Government policies to control pollution, such as airborne sulphur dioxide (SO_2) and the heavy-metal destruction of aquatic environments by factory effluents, have seen some measure of success because of the technical ease with which these poisons can be controlled. But in relation to the control of nitrous oxides (NO_x), which are much less amenable to control through simple technological fixes, the government took the easy way out by relaxing control standards. As a result, air pollution by nitrous oxide has got much worse. Policies related to sewage treatment are still based on stubborn attempts to find answers in technological fixes; as such, they have not allowed adequate controls but instead have created an environmental backlash. Sewage systems should be constructed by private concerns and engineered on the local level as small-scale projects. But government plans call for huge centralized construction and processing systems, which have become so cumbersome that completion within a meaningful time-frame, not to mention useful dispersion, becomes impossible. The present level of technological expertise is not up to all challenges, as is seen in the substitution for polychlorinated biphenyls (PCBs) of other more subtle chemicals, which are more difficult to detect within the hydrological cycle and therefore permeate much more easily into the natural environment. This situation has also been seen in the mixing of certain highly toxic liquid industrial wastes with mud as a means of disposal, to the extreme detriment of the environment. Ignoring these situations, the government makes exaggerated propaganda claims as to the effectiveness of its technology, and in the process shifts public attention away from the real problems. Ever since the government called the Ashio copper-mine problem one of hydrological control, the rulers of the nation have been using similar, sleight-

of-hand methods to mislead the public. If pollution problems are understood within a historical perspective, these tricks of evasion can be shown up for what they are.

The people of Japan believe that problems of environmental destruction can be solved on the basis of a so-called almighty science and technology, without reference to the sensitivities of nature. The government administrators and industrial capitalists have used their propaganda to create an illusion whereby the people are led to believe that all the problems of the environment have been solved. However, the national problems of environmental destruction have taken on an international dimension with the rapid exportation of polluting technologies; the destruction is now shared with others far from Japan's shores. Policies dedicated to pollution control are not to be taken literally—they should be seen, rather, as window-dressing, an attempt to gloss over an ugly situation.

IV. The Mass Media

The mass media played a tremendous role in focusing national attention on the problems of pollution and in creating an enlightened public opinion. But the mass media in Japan are supported by private capital and industrial wealth, or otherwise are under government control in terms of the licensing of broadcast systems and manipulative interference in journalists' organizations. In this situation the maintenance of journalistic integrity is very difficult indeed. In spite of this, individual journalists were able to provide relatively unbiased reports on the problems of environmental destruction, while citizens' movements made every effort to bring journalists into their activities. People thought that the problems of pollution were only local issues, but in fact each problem had a counterpart in several other areas of the country. Under the influence of the media, the anti-pollution movements were supported by the public and efforts became national in scope. The government and industrial circles are fully aware of the power of the mass media and as a result there were various pressures exerted to circumscribe freedom of speech and expression. But in spite of these efforts to suppress the truth, the facts became generally known. Even before the beginning of the Second World War, when freedom of expression was strictly limited, journalists played a very important role in focusing public attention on the Ashio copper-mine problem. In the post-war period up to the 1960s, the mass media were not able to give full and continued attention to problems of the human environment. But in the late 1960s citizens' movements became more fully aware of the power of the media, and were able to make use of it through various forms of co-operation.

Determined not to rely totally on mass media outlets, the pollution victims and their supporters created their own unique methods of informing the public, and were able to make themselves heard nationwide. In the case of the Minamata disease, individual journalists made anonymous connections with

victims' networks. The cost of maintaining a private non-profit news system is not small, but news about the Minamata disease situation had continued to be provided periodically; this activity is a form of moral support for the victims of the disease, as well as for the related support movements. There are also other support organizations besides those generated by the Minamata situation, and these groups form networks of communication for mutual support and information.

The most underdeveloped aspect of the communication media is related to the problem of international communication. Since Japan is an island nation, the problems of linguistic and cultural isolation are both great and inevitable. As a result, attempts to share the experiences of Japan in the environmental arena with other nations and peoples are out of proportion to the magnitude of Japan's environmental destruction. Japanese understanding of international environmental issues is also extremely limited. A good example of this is the media distortions generated in relation to the worldwide anti-whaling movement. The Japanese media tend to divide news artificially into domestic and international segments. This reflects the geographical and historical isolation that Japan continues to foster, as well as a slightly masked but significant degree of nascent nationalism in news reporting. However, with the increased internationalization of Japan's economy, as well as its sheer size, it is essential that anti-pollution movements become more effective in communicating on an international level. In order that Japan may avoid the pitfalls of self-righteousness, it is urgent that anti-pollution movements co-operate with their counterparts in other countries so as to strengthen fellowship and interaction on a worldwide scale.

V. The Future of Japan

Besides the celebrated environmental destruction cases outlined in this work, many other pollution problems and issues contribute to the complexity of the situation in Japan, among them the widespread use of highly toxic agricultural chemicals for pest control, the use of chemical fertilizers that compromise the future viability of the food production system, and the resulting contaminants contained in agricultural products. Further, there is to be found an overdependence on highly questionable medicines in a seriously faulted medical delivery system, and the heavy use of food additives and preservatives in the mass-consumption-oriented food-processing industry. The ever-increasing number of atomic power plants contributes to the burden of radioactivity placed on the whole population, and intensified urbanization of the city centres and the attendant depopulation of rural areas increases the problems in both city and country, especially in terms of environmental contamination. The situation is so complicated that explication of cause-and-effect relationships becomes almost impossible. These combinations of environmental problems will inevitably work to erode the general health of the population, causing an overall deterioration in the standard of living and an

increase in the number of unknown sicknesses. This is the price that will have to be paid for a nation that was, and still is, bent on modernization and industrialization as it reaches for an ever-higher gross national product.

At the present juncture in world history, environmental destruction has progressed extensively in both the northern and southern hemispheres and more and more people are becoming aware that development does not of necessity bring with it environmental health, and that a ravaged environment does not foster stable development. The experience of Japan in this regard should be a lesson for the rest of the developing world, and, if this lesson is learned, it will give a more positive meaning to the suffering of the Japanese pollution victims. In order to ensure a development pattern that will bring about genuine improvement in the quality of human life, it is essential that the abidingly negative experiences of the Japanese situation should become useful object lessons in what to avoid in respect to developmental processes.

Environmental destruction does not allow for recovery—it causes irreversible damage. This damage is absolute in that it cannot be redeemed through the payment of money, for loss of environmental viability results in a negation of the total universe of interactions attendant upon human health and life. It gives rise to an ever-expanding circle of victims and an ever-increasing loss of community infrastructure, with the related loss of mental and physical health. Because of this, any attempt to reverse the damage, once it has been done, will, in the final analysis, end in failure. An example of this is the fact that for thousands of the Minamata disease victims their illness is incurable. Therefore a careful examination of the situation in all of its historical ramifications is essential in order that these mistakes are not repeated elsewhere in the world.

Often budgets dedicated to environmental preservation are seen to be extremely small compared to the real costs of environmental damage. The Chisso Company budget for treatment of the methylated mercury effluents from the Minamata acetaldehyde production unit was only 1,500,000 yen (about $4,160). This is an exceedingly small amount of money compared with the vast sums that are having to be paid (several hundred million yen) in compensation to the victims of mercury poisoning. This lesson should be learned in other parts of the world, for it is likely that the same problem will rear its ugly head in other countries if the citizenry is not fully and meaningfully involved in development planning. If these concerns are neglected, then the same problems will expand to engulf the entire world.

Japan's multi-faceted problems with environmental destruction began with the advent of modernization, led by nascent militarism. Human rights were therefore ignored as militarization gained a hold and took over all aspects of civil life. After the Second World War a consumer-based mass-production economy was developed that had its ideational fountainhead in a military mode of social organization and production; this led to Japan's present degree of economic development. On the surface it looked as if these industrialization processes were taking place peacefully, but the environmental destruction will attest to the extent to which Japan's economic growth was

based on massive aggression in all areas of life. The resistance of the people to these problems of a destroyed environment came to flower only very slowly; gradually, however, people became aware of the importance of concepts of human rights, bringing a slow but sure improvement in the situation. This would not have come about but for the enormous efforts made by the pollution victims in conjunction with the citizens' movements.

Japan's remilitarization and the crises of potential and actual nuclear war are issues of infinite importance at a time when the combined efforts of the citizens' movements are experiencing a loss of momentum. The terrible environmental destruction experienced by the Japanese and the creation of countless pollution victims should be avoided at all costs in other parts of the world. In order for this to happen it is essential to create a world without nuclear weapons, through genuine participation of the people in political processes in which the first principle is a genuine respect for, and nurture of, human rights. This is because, it goes without saying, war is the ultimate environmental destroyer.