

ART AND CONSERVATION

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CHAPTER I. MAN AND NATURE

There can be no doubt that population increase and environmental pollution are the world's biggest problems today. These pose serious threats to the quality of life and art. They can only be remedied by an efficient system of birth-control and sound compulsory education, in order to regain spiritual enlightenment.

We know that a higher standard of living will reduce the birth-rate, and that this can only be achieved in a healthy environment. A truly healthy landscape is the rule rather than the exception in nature, and provides a model for our own use of the land.

Unscientific people of simple ways have been known to follow this model intuitively, often safeguarding its stability by religious belief and taboo. This is true of the hill people of Baguio, who protect their terraced fields with wedges of forest, and who believe that the destruction of these forests will call down the wrath of their ancestors.

More sophisticated cultures often ignore the model of nature and pay the penalty of a disrupted and depleted environment.

Man's survival now depends on his attitude to nature and to the land. With the growth of cities and the mass-production of cars, he is rapidly losing touch with it. False values creep in and seriously affect the quality of life, and therefore of art. Ancient taboos

and religion have fallen away, and our faith in the future has been undermined by doubt. To ensure his own survival, man must demonstrate that he is capable of recognizing danger-signals, admitting his mistakes, and living according to this awareness.

These danger-signals are evident in certain aspects of modern art, such as the work of Francis Bacon, where the content of a painting no longer reflects nature, but portrays some limited feeling or emotion. It is just the image that remains. Bacon has been described as ¹"a man haunted by the appearances, the exterior of the human body. What is visible about a person fascinates and horrifies him. What is invisible is beyond him, precisely because he is a painter who lives intensely and almost exclusively through his eyes. The flesh of a face is no different from paint; it is no more than an outer dressing, like a layer of colour or a bandage."

Man's appreciation and interpretation of landscape also depends on this awareness. We tend to view landscape as something to be enjoyed, which pleases the eye, instead of realizing that it is now a matter of life and death, for our survival is inextricably bound up with it. The farmer prospers only insofar as he understands the land, and by his management maintains its bounty. The same applies to the artist, the designer or the builder. If he is perceptive to the processes of nature, to materials and forms, his creations will be appropriate to the place; they will satisfy the needs of social process and shelter, be expressive and endure. Not only is there an appropriate community of creatures for any

environment, but the community is in fact, expressive of its appropriateness, its fitness. The fact that things and creatures exist is the evidence that they are fit and represent meaningful form.

²"If I have something to say, I say it in the way that seems most natural", said Picasso. Lesser artists, who are out of touch with the environment can only pretend to be natural. They revel in the use of unnatural materials, such as synthetic paint and junk, and then take mean advantage of the fashion-conscious public by passing it off as art. A general insensitivity must develop as a result, and people lose sight of true values, for ³"you cannot go against nature. She is stronger than the strongest of men! It is in our own interest to be on good terms with her. We can allow ourselves a few liberties; but only in details." ⁴"One must seek out something that develops all by itself, something natural, not manufactured, displayed just as it is, in the form taken by nature, not assumed by art. Grass is grass, the tree as the tree is, the nude as the nude is." That is why Picasso said, ⁵"I do not work from nature, but in front of nature, with nature".

⁶"Nature is so much richer than culture; one very quickly exhausts the range of manufactured objects as compared with the fantastic diversity of the animal, vegetable and mineral worlds; in short, the novel character of the 'ready-made' presents a kind of last resort, before the return to the main source."

The conservation of man's environment involves artistic appreciation and sensitivity to false values. It requires an attitude of humility

towards nature and a conscience about human behaviour on a personal level. It aims to achieve a state of harmony between man and nature. That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics. We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect. Individual thinkers since Biblical times have realized that the devastation of land is not only wasteful but wrong. Society, however, has not yet proved that it believes them. The present conservation movement may be regarded as the beginning of such a conviction.

Our concept of what is fitting, or appropriate, or beautiful is thus being influenced by an evolving ecological conscience : a thing is good when it contributes to the integrity, beauty and survival of the biotic community; it is bad when it does not.

It is only five hundred years ago that man discovered the earth was round and limited in size. By that time his remarkable powers of adaptation had increased his numbers and given him superiority over all other creatures. He soon developed an inflated opinion of himself. His attitude to nature and the land was influenced by the great western religions, which emphasized his exclusive divinity and God-given dominion over all things, licensing him to subdue the earth.

This encouraged the most destructive exploitation of the environment, rather than developing his creative instincts and deference for life. It was particularly evident during the Renaissance, and the poverty

of the Mediterranean today is a product of the land mismanagement which occurred during that fantastic ego-trip, when man's powers over nature were increased.

Our failure is that of the western world, and lies in prevailing values. In places where people believe that man and nature are indivisible, and that survival and health depend upon an understanding of nature and her processes, these societies will be very different from ours, as will their cities and landscapes. The oriental harmony of man-nature, as seen in the traditional society of Japan, was achieved at the expense of man's individuality, but the western assumption of superiority has been achieved at the expense of nature. It emphasizes conquest and exploitation rather than unity, and we need this unity with nature to survive.

CHAPTER II.

CONQUEST AND HUMANISM

The early American colonists were determined to conquer nature. Their whole inheritance had seemed a war against it. They were unaware that the same depredations and the same ignorance had impoverished their historic homelands. The native inhabitants whom they confronted bore no such resentment. They had other views of human destiny and fulfilment which blended with the natural environment.

The immediate cause of conflict rose from completely different forms of land-use. Almost all North American Indians lived in a fragile symbiosis with the primeval wilderness. The first European settlers had no experience of this, and could not have survived had they not learned about it from the tribes that received them with the hospitality reserved for distant travellers. Once established, however, they were compelled to attack and destroy the wilderness in order to create civilization as they knew it, by remaking nature. They felled trees, made roads, put up fences and erected permanent buildings; they carved out fields and made smoke rise from a thousand raw clearings. Just a few industrious white men in an area soon changed the face and nature of the land for ever, ruining it for the ancient purposes of the Indians. The effect was demoralizing.

Yet history repeats itself, because the world will not take lessons from the past. The same thing is happening in Brazil today, though on a much bigger and more drastic scale, this time with the

use of modern tools and heavy machinery. In spite of urgent and vital warnings, the Amazon jungle, reputed to produce one fifth of the oxygen in the atmosphere, is being opened up and colonized, with all the usual side-effects. The thirst of bankers, speculators, international companies, and the odd privateer, is being slaked, whilst Indians are being killed and literally blasted off their ancestral land. Pilots drop sticks of dynamite from the air, driving them off the rivers towards an area where the game is not so good or the fish are scarcer, and where the tribe will begin to die. Just a change of height, 200 feet, can upset them and kick off the tiny chain reaction to extinction. The weather differs, the type of malaria differs. There is so little understanding of the indigenous people and their particular sentiments, that in one instance they wanted to call three night clubs after Indian chiefs but could think of only one. Even the language has gone.

The real development is not, as the government claims, for the starving population of north-east Brazil, but for wealthy foreigners who can afford to open up a thousand square miles or so.

Much of the Amazon is desperately thin, poor soil. There is no real jungle undergrowth, just the great trees with foliage at the top. This is easy to clear - an Amazon tree of 100 foot seldom needs more than five axe-blows, and you don't have to cut them all down to get a good fire started. After the trees have been cut, the soil humus, which for thousands of years has been sheltered from the tropical sun, dries, and becomes mineralized very rapidly.

Within one or two years of burning, the nutrients are leached out into the laterite. When the tree canopy goes, the rains fall with full violence on the soil, and it bleeds off, darkening the rivers. Rain already claims one kilo of soil per hectare per year from the forest. Cut the trees and the figure shoots to 34 tons! A disaster could be in the making.

But tropical forests have always been treated extractively. The trees are so monumental and give such a sense of permanence that the fragility of this oldest form of life is seldom realized.

South Africa is no exception to such short-sighted exploitation. Annual floods and silted rivers are an indication of similar neglect. Having overcome the tribal inhabitants by force of arms, white colonists acquired the best land along fertile valleys and open plains, forcing the people into the hills, where the soil is often poor and subject to erosion. Had there been any respect for the country, these tribesmen might have been left where they could do least damage. The white man could then have applied his superior knowledge and technology to the hills. River banks should be protected and small inexpensive dams constructed at intervals, making use of natural gravity, instead of the spectacular monstrosities we pay for today. These are built too far downstream to effectively check the loss of soil from above. They soon become silt-traps, rendered useless for their initial purpose of water-storage against drought, and form an illusion of prosperity.

Peasant-farmers cannot afford irrigation equipment, and are compelled to cultivate river banks, where water is easily accessible. The natural vegetation is removed, and the soil left unprotected. Severe droughts, followed by late summer storms, soon carry it away, together with the run-off from the hills, and it ends up at the bottom of a dam or is finally lost to sea. The ocean is so discoloured and polluted by mud in this way, that the life-giving rays of the sun can no longer penetrate the depths, and the balance of nature is upset, threatening our survival once again.

And yet we, in South Africa, spend more money on the defence of the country than we do on the land that must continue to support a population whose doubling rate is one of the highest in the world, and only a small percentage of which enjoys the privilege of compulsory education. Our cabinet even includes a minister of sport and recreation, but none of conservation. In the meantime, good land is being used up for more buildings and highways, whilst the Kalahari desert encroaches at a rate of something like three miles each year. The quality of Life is at stake.

African art is also being exploited in this country. We buy "black art" to appease our social conscience, whether it is good or bad. Art provides common ground between all men, whether they be rich or poor, privileged or not, and should never be abused by such false sentiment.

We have but one explicit model of the world and that is built upon economics. Money is our measure, convenience is its cohort, the

short-term is its span, and the devil may take the hindmost is the morality. Neither love nor compassion, health nor beauty, dignity nor freedom, grace nor delight are important unless they can be priced. It is their ethos, with our consent, that sustains the slumlord, the land rapist, the polluters of rivers and atmosphere, - and of art.

CHAPTER III. WILDERNESS AND DIVERSITY

The conception of man - exclusively divine, given dominion over all life and non-life, enjoined to subdue the earth - contained in the creation myth of Genesis, represents the total antithesis of the pantheist view, in which the whole environment contains god-like attributes : the relations of man to this world are sacramental. It is believed that the actions of man in nature can affect his own fate, and that whatever he does will be fitly rewarded. If there is such a thing as divinity, then everything is divine, and if that is so, then all the acts of man in nature are sacramental.

The attitude to the prey in a hunting society illustrates this point of view. Among the Iroquois Indians for example, the bear was highly esteemed. It provided not only an excellent hide and meat, but also oil that was used for cooking and could be stored. When the hunted bear was confronted, the kill was preceded by a long speech in which the needs of the hunter were fully explained and assurances were given that the killing was motivated by need and not the wish to dishonour.

Such views provide stability in a hunting society. The hunter who believes that all matter and actions are sacramental and consequential will bring deference and understanding to his relations with the environment. He will achieve a steady state with this environment - he will live in harmony with nature and survive because of it.

It is deep in history that we abandoned such a view. These primitive societies could promise their children the inheritance of a physical environment at least as good as had been inherited, which is a claim few of us can make today. They wielded much the same scale of power over nature as Australian aborigines, Central African Pygmies and Kalahari Bushmen do now. They were the first occupants and managed their resources well. They tried to understand the environment, and through behaviour, placation and sacrifice, reduce adversity and increase beneficence.

Man's origins remain unknown, but he was moulded by an environment and way of life different to that of the last few hundred generations. We have a natural yearning for those surroundings to which we are primarily adapted. People who look for true wilderness, like true art, are those who are undeterred by encounters with nature in its most threatening aspects, who appreciate the sense of awe and wonder that goes with it, for nature which is not controlled by man is against man and has destructive power. Deserts, mountains, oceans testify the power of nature. The relative insignificance of man compared with the vastness of the universe cannot appal such people. Like the Bushmen of Africa they are prepared to accept a lesser role on earth and concede first place in the scheme of things to the lion or the elephant.

A taste for wilderness probably cannot be acquired late in life as one might develop a taste for martinis or wine, unless there is some predisposition towards it. The percentage of people who really care for wilderness must always be small, along with those who care for great

art or vintage wine. It can be increased by education but probably cannot be indefinitely extended. This is fortunate, since there is not enough great art, vintage wine or wilderness to go round, and none of it can be mass-produced.

If education is sound, more people will in time understand that relics of the old add meaning and value to the new. Wilderness assumes importance as a laboratory for the study of healthy landscape, where reference can be made to the balance of nature when this has been disturbed or destroyed in other areas by man. The preservation of places that are unusual and relatively unchanged by man should now be a subject of international and personal concern.

We need some places that are not crowded, where solitude in contact with nature can still be found. The great philosophers and religious leaders of the past, all needed it for inspiration and refreshment: Sophocles, Aristotle, Plotinus, Christ. More recent philosophers like Goethe and Neitsche, and great artists like Goya, Beethoven and Picasso had to consciously isolate themselves from the world outside by destroying all about them in order to create a wilderness within themselves, from which they could become what they really were.

Art today, on the contrary, consists of shouting your head off about what is truth and what is Art, instead of becoming and creating Art. Wilderness enables one to descend into this Hades, which is so relevant to life and Art, especially today. But man has lost touch with nature and the wilderness. If we had more wilderness, art would

not be trying to reflect what man imagines himself to be. Everything these days is for kicks: flourescent lighting, horror-films, television mesmerism, and pornography are man-made sensations, contrived as a superficial substitute for the genuine experience of wilderness. 'Environmental art', tries to revive our dormant reflexes and response to chills and shock. Feelings of insecurity can be reproduced by paying to see Frankenstein. City life and noise has dulled our senses and we are confused between myth and reality. Life has been fragmented. Art and love and intellect are all split up, instead of being one thing. During the descent into Hades man dissolves into the blackness of his Self. The experience of wilderness is one of self-renewal.

The environment of wilderness has been described as ⁷"the raw material out of which man has hammered the artifact called civilization. It was never a homogeneous raw material. It was very diverse, and the resulting artifacts are very diverse. These differences in the end-product are the cultures we know. The rich diversity of the world's cultures reflects a corresponding diversity in the wilds that gave them birth." At a time when the preservation of the human environment, with all its diversity, is our most important need, we give full support only to a process of technological change that will erode variety in both nature and man.

Uniformity through mass-production is creeping in. The balance of nature depends on diversity and art is also diverse. The eastern forests of North America lost the chestnut to blight but are still rich, varied and beautiful. What if there had been only chestnuts, cultivated for the sake of man? Uniformity is death! A natural

forest contains a closed circuit of life in which the tree falls and nourishes another. Nothing is wasted or removed. The wide spectrum of plants provides ample food for a variety of birds and animals, and forms a resistance to invasion by foreign species and epidemics such as blight.

A plantation of pine trees or gum trees, on the other hand, lacks this diversity and cannot have the same resilliance. Few birds or animals can survive there, because the variety of food is both limited and seasonal. Moreover, constant felling and removal of timber drains the soil of fertility until it can no longer sustain the same quality of life.

Today wild lands may be in greater danger than we realize because of confused thinking and conflicting attitudes toward them. Unless we straighten out our feelings and emotions about these places, clarify our thinking about what we hope to preserve and why, the men with slide-rule minds and computerized souls may well manage them out of existence, using our own confused reasoning for their justification.

The very scarcity of wild places, reacting with the forms of advertising and promotion, tends to defeat any effort to prevent their growing still more scarce. Wilderness is a resource which can shrink but not grow. Natural diversity must be preserved in order to create man-made diversity, in the hope that the prevailing trend toward uniformity can be arrested, and the world kept a fit place for the greatest possible human variety.

Without wilderness there can be no art. Everyone has an inherent harmony with nature. It is our destiny to use that harmony or destroy it. When this is lost, it kills art and culture, and the human in us which makes our species so unique. Man's primitive affinity with the wilderness, the wilderness within us, must be recognized. When we deny this affinity, we make room for fear, which is destructive. The pioneer attitude to wilderness is based on fear, which accounts for so much prejudice and short-sighted decisions in the world today.

Rare wild animals like the tiger and the cheetah are almost extinct because of man's failure to appreciate their importance. Yet they acquire a poetic image, for we sing songs in praise of their beauty when they are gone. The few remaining are kept behind caged doors, whilst the elephant is taught circus tricks to amuse the public. All that remains of the wilderness is a travesty for entertaining the masses.

The primitive in man is what wilderness really is. Wilderness does not need man. It is man who needs the wilderness. The natural wilderness within identifies with the natural wilderness without, and only that can be used to make art, or, in other words, to make something natural from nature. Primitive people create magic in the same way. Our attitude to the wilderness must change : ⁸"To the labourer in the sweat of his labour, the raw stuff on his anvil is an adversary to be conquered. So was wilderness an adversary to the pioneer. But to the labourer in repose, able for the moment to cast a philosophical eye on his world, that same raw stuff is something to be loved and cherished, because it gives meaning and definition to his life."

Isolation is absolutely necessary for art. It is only in isolation that art is made, and isolation is the essence of wilderness experience. Goya, Picasso and Jung all demanded isolation for their work. Marlon Brando actually bought an island, where he could provide his family with this experience. Before the development of the car, time was no object, and people lived in relative isolation. Farms and villages were remote, and craftwork and farm produce had a quality and individuality of its own. People were resourceful and made their own clothing, furniture and tools. There was variety and pride in their work. But as cars became popular and more numerous, improved roads provided greater access to places which were hardly accessible before. Isolation gave way to tourism.

CHAPTER IV. TOURISM AND UNIFORMITY

Tourism increases the demand for art through advertisement and promotion, and encourages mass-production. This is accelerated by mechanized industry, which soon puts the old-time craftsman out of business. The quality of the product goes down as the price goes up. Big syndicates take over, and employ managers, to sell their goods all over the country. These salaried people cannot be expected to have the same personal interest in the product. The gullible public is taken for a ride, for it is easy to sit back and be a sheep. On the other hand, the wilderness produces black sheep, who can see what we stand to lose.

When economic interests creep in, everything is standardized and stereotyped. Uniformity robs the village and the artist of character and individuality. Just as connecting roads put everything within easy reach, and eventually destroy the unique identity of the village, intellectual roadways penetrate the life of the individual person until he is no longer himself. Places and people all begin to look the same, as priority is given to outside appearances. The workshop can no longer live up to the shop-front advertisement.

The village and the countryside is now at the disposal of bus-loads of visitors, including sketching-parties, who have no real affinity with the landscape. Convoys of motorists go in search of week-end pleasure-grounds. Few even bother to get out of their cars when they arrive there, preferring to be served from road-houses overlooking the beach. Business looks up as they stuff themselves with synthetic

food, which has no nutritional value whatsoever, and willingly pay through the nose for it. Parking-lots grow along with new highways, for cars need more space than people.

Wildlife sanctuaries and nature reserves in particular, do not escape the congestion. There are not enough of them to satisfy the demand, but instead of funds being used to acquire more land for conservation, the money is spent on improving accommodation and providing extravagant facilities within existing parks, in order to attract wealthy tourists. The emphasis is on recreation rather than conservation, and the inevitable consequences are ignored. Rest camps are turned into pleasure-resorts for careless people who know nothing of art or wilderness, and seldom show any real concern for wildlife or the problems confronting conservationists. The network of roads within the park becomes more complex to cope with the traffic and a disturbance factor builds up to compete with that outside.

These places are now providing city-people with the very conditions they should all be going there to get away from. Being already out of touch with nature, only a wilderness experience can get them back to it. The primitive arts of wilderness travel, such as canoeing and back-packing, are an important means to this end. Moving under one's own steam develops an awareness and appreciation of the dangers of superficiality and false values. It cuts everyone down to size. The wilderness cannot possibly be experienced from a car. In fact, there are no roads in a true wilderness area, and there is only one way of fully understanding its importance to life and to art. Its recreational carrying capacity compared with a golf-links or tourist

camp is small, but recreation is valuable in proportion to the intensity of its experiences, and to the degree to which it differs from and contrasts with workaday life. Besides, the philosophy of mass-production cannot be applied to what is intended to counteract mass-production.

A popular feature in a game-reserve these days is the hide overlooking a water-hole, where visitors can sit in comfort and seclusion and watch wild animals at close quarters. With easier access to the reserves, the demand for this experience has grown until there are not enough water-holes to satisfy the public! But there is always a limit to the number of holes such areas can afford, because the vegetation within a wide radius of the water is soon grazed out or trampled under foot by animals coming down to drink. As they use the holes more in the dry season, the grass can seldom recover, and the carrying capacity of the reserve is thereby reduced. This defeats the purpose of building more hides of course, but priority is still given to such tourist facilities over conservation measures. Excavation machinery and pumping equipment is brought in regardless, even going so far as to extend the disturbance into the night, exposing the new water-holes to artificial moonlight by flood-lighting!

Economic interests eventually destroy true values, and affect both art and conservation. And yet, the money accrued from the sale of 'wildlife paintings' is often put to good use in upholding conservation principles. As a form of Popular Art they invoke the sentiments of wealthy 'clients' who will pay vast sums of money for such souvenirs. There is little variety in this type of painting, and uniformity

inevitably sets in. The trophy-recreationist has peculiarities that contribute in subtle ways to his own undoing. To enjoy he must possess, invade, appropriate. Hence the wilderness that he cannot personally see has no value to him.

CHAPTER V. PLANNING AND COMPROMISE

⁹"Anything to do with the making of landscape entails planning, which requires a defensive attitude. Cities, for instance, decay because of their unplanned extensions and expansions, and their inadequate systems and congestions, the self-destruction of the needs of space. Control over rural and urban environment has produced no solution against disintegration and human destruction involving a crude utilitarianism."

Attitudes to the land had national associations. Historic, humanized landscape, as opposed to original natural landscape or wilderness, is best seen in Europe, which is more interesting for this reason. It has the substantial remains of a peasant landscape and a gentry landscape.

The great release of Renaissance humanism originated in Italy during the sixteenth century, where the authority of man was made visible by the imposition of a simple geometry upon the landscape. The garden was offered as proof of man's superiority over nature. By the following century the focus of this expression had moved to France, where it was applied on a larger scale. In the western tradition, landscape architecture has been identified with garden-making. The garden symbolizes domesticated nature, the wilderness lies beyond the wall. It is only the person who believes himself apart from nature who needs such a garden, whereas for the pantheist, in harmony with his environment, nature itself best serves this role.

However, in the eighteenth century, man's power over nature found new expression in England. The concept of an ideal nature had

developed from the paintings of the Roman Campagna by Claude Lorraine, Poussin and Salvator Rosa, together with the poets and writers of that period. Ornamental horticulture within garden walls was disdained and nature itself provided the inspiration. The simple-minded geometry of the Renaissance was abandoned.

Starting with a denuded landscape, a backward agriculture and a medieval pattern of attenuated land-holdings, this landscape tradition restored an entire countryside, and the results can still be seen today. The English evolved a romantic landscape as opposed to the formal one. Without any knowledge of ecology, they instinctively used native plant materials to create communities that reflected natural processes so well that they have lasted, and are self-perpetuating. The functional objective was a productive working landscape.

Hilltops and hillsides were planted to forest; great meadows, supporting cattle, horses and sheep, occupied the valley bottoms, in which lakes were constructed and streams meandered. The forests provided valuable timber and supported game, while free-standing copses in the meadows provided shade and shelter for grazing animals.

Never has any society accomplished such a valuable and dramatic transformation of an entire landscape. It is probably the greatest creation of perception and art of the western world. Developed through observation and experiment - not on theory, by a few landscape architects, it presumes a unity of man and nature, and it has endured.

Unfortunately, it is a lesson still largely unlearned. In fact, eighteenth century England was also the cradle of the Industrial Revolution, becoming the leader in the conquest and devastation of nature, after being the leading agricultural country in Europe. The age-old attitude of conquest was powered by larger and ever larger tools. Man's invention of tools has enabled him to make changes of unexpected violence, rapidity and scope, whereas evolutionary changes are usually slow and local. A great cultural antagonism built up towards nature, especially during the nineteenth and twentieth centuries.

Such is our inheritance. A ragbag of ancient views, most of them breeding fear and hostility, based on ignorance, certain to destroy, incapable of creation. Man has become the destroyer, atomic demolition expert, clear feller of forests, careless miner, he who fouls the air and the water, destroys whole species of wildlife; the gratified driver of bulldozers, the uglifier.

The answer lies in wise planning, with a view to disturbing the environment as little as possible. McHarg describes how this can be applied to the selection of a modern highway route. It should be located and designed in relation to the economy, way of life, health and visual experience of the whole population within its sphere of influence. His method is ingenious, and requires that the most benefit be obtained for the least cost, and that social process, natural resources and beauty all be considered as values. These can be ranked as the most valuable land and the least, the most valuable water resources and the least, the most and least productive agricultural

land, the richest wildlife habitats and those of no value, the areas of great and little scenic beauty, historic buildings and their absence, etc. The critical factors affecting the construction of the highway can then be ranked from least to greatest cost, and the social values can be identified and ranked from high to low. Maps are then made of these factors so that the darker the tone, the greater the cost; and of social values so that the darker the tone, the higher the value. The maps, being transparent, are superimposed, whereupon the least-social-cost areas are revealed by the lightest tone. Obviously, the best route is not the shortest distance between two points; nor is the shortest distance over the cheapest land.

¹⁰"A plumber is a most important member of society - our civilization could not endure long without his services : but we do not ask plumbers to design cities or buildings. So too with highways : the engineer is most competent when considering the automobile as a projectile that responds to the laws of dynamics and statics. He understands structures and pavements very well indeed and his services are indispensable. But the matter of the man in the automobile as a creature with senses is outside his ken; the nature of the land as interacting biophysical processes is unknown to him. His competence is not the design of highways, merely of the structures that compose them - but only after they have been designed by persons more knowing of man and the land."



CHAPTER VI.

POLLUTION AND POSTERITY

Man can learn to tolerate ugly surroundings, dirty skies, and polluted streams. He can survive even though he completely disregards the cosmic ordering of biological rhythms. He can live without the fragrance of flowers, the song of birds, the exhilaration of natural scenery and other biological stimuli of the natural world. But air, water, soil, fire, the rhythms of nature and the variety of living things, are of interest not only as chemical mixtures, physical forces, or biological phenomena; they are the very influences that have shaped human life and thereby created deep human needs that will not change in the foreseeable future. The pathetic weekend exodus to the country or the beaches, the fireplaces in overheated city apartments, the sentimental attachment to animal pets or even to plants, testify to the persistence in man of biological and emotional hungers that developed during his evolutionary past and that he cannot outgrow.

It is now recognized that what man sees, is as important as what he breathes or hears. A good deal of progress has been made since the attitude that art had to be preserved first and foremost against the onslaughts of people. Nowadays, this approach has changed. The past is regarded as part and parcel of the present, art is deemed essential to the art of living.

¹¹"Each year Venice loses 6 per cent of its marble works, 5 per cent of its frescoes, 3 per cent of its paintings on canvas and 2 per cent of its paintings on wood. At this rate, in thirty years' time, there will remain barely half of what makes present day Venice a peerless gem!" Apart from the two major physical threats to the city - the subsiding land on which it stands and the increasingly frequent floods

caused by high water driven in by wind from the Adriatic, Venice is subject to industrial pollution from Marghera and neighbouring communes. Every year 15 000 tons of sulphurous products are absorbed into the atmosphere where it remains until the rain brings it back down onto Venice. This is hard on the old structures of the city, already in mortal danger from the natural corrosive salt in the waters of the lagoon and the winds of the Adriatic.

The decay of the core city is causing people to move out because of bad housing, and Venice is losing the craftsmen and the seamen who made the city famous. Consequently, some 12 000 workers who prefer to live elsewhere must get in and out of Venice every day, which gives rise to a serious problem of urban transit. Venice was built for gondoliers and pedestrians; trouble starts as soon as one tries to move around any faster. The speedboats and water-buses undermine the buildings along the Grand Canal with their wakes. The city is no longer the wealthy port it used to be, and money must be found elsewhere to prevent further damage.

The Parthenon is also threatened by pollution and tourism. The horizontal flagstones on the floor of the temple are being worn down and out by thousands of shuffling feet. What makes this serious is that the floor is not really horizontal at all; it bulges upward to maintain the optical illusion of looking straight because it is deliberately curved. Iron clamps used to reinforce the building have now rusted to a point where they are worse than useless. Instead of holding the stones together, they rend them. The marble of the temple is flaking and chipping away as a result of this.

The deterioration is now aggravated by industrial fumes from the many factories going up around Athens, and the vibrations from jet aircraft and helicopters which were causing fragments of marble to come loose, until jet flights were re-routed in order to protect the Acropolis.

Venice and the Parthenon are two examples of a worldwide epidemic. But more than the air is being polluted. Old deep-rooted ways of life are going. It is not enough to try to preserve them artificially, one cannot put a protective film over people.

Warfare is a conspicuous cause of destruction, but more insidious, and equally if not more dangerous to our cultural heritage are all the many elements which contribute to material progress. The roar of bulldozers, the crash of wreckers, mark the disappearance of many historically or artistically important buildings as they remove old neighbourhoods to be replaced by an impounded lake, a broad highway or the impersonal frontage of a glass-sheathed multistoreyed office building or hotel.

Monuments and sites, officially protected by the State, may survive as lonely archaisms within a complex of modern buildings with all sense of their scale and importance lost. Squares which were once designed to set off public buildings or served to enhance the prestige of important families and trading firms are now filled with motor cars and serve as car parks. The rumble of lorries, the passage of trams or large buses provoke vibrations which also contribute towards the deterioration of old buildings.

The problem is not mastery of the environment. The problem is whether nature can be preserved in some semblance of order and whether Art and civilization can survive its own impact on nature.

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