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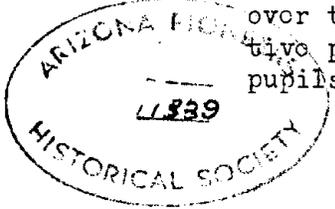
LAND MANAGEMENT IN RELATION  
TO THE HEALTH OF THE NAVAJOS

By Dr. W. W. Peter

The definition of "health" I shall use is a very simple one, - physical and mental well-being. I am thinking not merely in terms of physical health, but also of the wider area of mental health. My application of the term "health" covers both the individual and the group.

Many current incidents to which our attention is drawn from time to time are but focal points, back of which lie etiological factors covering a wide area and a long period of time. An illustration: in July 1936, two young people were married on the summit of Window Rock, Arizona. They had purchased an automobile in which they went away on their honeymoon. One day in August, on a road north of Santa Fe, while crossing a wide wash, a roaring wall of turbulent water appeared suddenly around the bend. It hit them broadside. Hastily they escaped from their car. Clinging to each to retain their footing they succeeded in scrambling to the bank. There they stood watching their car with many of their prized belongings being swept down stream. While discussing what to do next, a Mexican appeared. He took them to his village where they telephoned friends in Santa Fe of their plight. While waiting for transportation they returned to the scene of the accident. The flood waters had subsided. But only the roof of their car was in sight. On the spot, they sold their car and everything in it that he could recover, to the Mexican for \$5.00. Many are the stories of similar losses in our soil eroded southwest desert. What causes are back of such stories? Here trees are cut down. There a field is overploughed. Over grazing becomes widespread. Eventually lowered standards of living obtain. Cause and effect are interwoven.

On the night of February 8, 1937, Superintendent Fryer telephoned me that our Indian Agency at Leupp was in danger of flooding by the Little Colorado River. Our buildings at Leupp represent a federal investment of about \$450,000. Some \$180,000 has been spent on protective dykes. As in the past, so on the occasion of this flood, engineers and workmen were being concentrated to protect these dykes. From a wide radius, trucks of every description were being ordered in to stand by for a possible evacuation of some 300 inhabitants if the waters should continue to rise to endanger the bridge over the river which was the only avenue of escape. Tentative plans were made for distributing the 200 boarding school pupils. The Sanatorium at Winslow was made ready to receive



the 32 sick from our Leupp hospital. Orderly continuance of work at Leupp was disrupted. Everybody was on pins and needles. At the height of anxiety over the flood menace an Indian mother in the hospital gave birth to a child. This Leupp episode is but another instance of a result which can be traced to the operation of ~~many~~ causes over many years. But results don't just happen. They are caused.

I was introduced as Dr. Peter. But I was born on a farm. My boyhood days were spent there and in a little country village where life still centers on land. As I reflect on why my thinking in subsequent years has moved in certain directions, I am becoming increasingly aware of the fact that regardless of my exposure to various influences in prep school, college, medical school and professional work, many of the impressions which registered on my mind through those 50 years while others faded away, and many of my attitudes on a variety of subjects are all closely related to my origin. I find that my roots are still in the soil.

In the past 30 years I have been in 36 different countries. In the latter years my travels were those of a physician interested in medicine and public health. Many of the provocative things that I saw and remember, however, are related to the environment of my birth and boyhood days on the land.

In China, India, Siam, Japan, in several European countries, in the Balkan States and particularly in the Near East, in Palestine, and in Africa, I have encountered land conditions surprisingly similar in many respects to Navajo land of today.

For many hundreds of years it appears that the people in some of those countries that I have visited have misjudged nature. They went on the assumption that the resources of the land on which they lived were inexhaustible, self-rejuvenating, self-perpetuating. Slowly, so slowly, as to be almost imperceptible from one generation to another, nature decreased her annual yield. Then more drastically, she issued her warnings in terms of flood, drouth, dust, epidemics, and deaths. She caused abandonment of vast areas through migration of populations. She changed the course of history, of culture, of civilization.

Ancient China, where I lived and traveled extensively for 15 years, is an outstanding example of the stupendous changes which can manifest themselves in the life of a nation when its people fail through the centuries to learn how to maintain a proper balance of land use.

Chinese history records that several thousand years ago the population was generally distributed in hills as well as in valleys. The hills and mountains were covered with forests and vegetation. The valleys received an evenly distributed flow-off of snow and rain. Gradually, however, and because man cannot live without fire, the trees in the uplands were cut down and not replaced. Slowly, insidiously, but inevitably, the people in the uplands were crowded into the valleys. The lowlands were called upon to sustain increasing numbers of people. More than one crop a year became necessary. Increasingly the soil had to be fertilized. Eventually came the time when even human body wastes were so employed. When I reached China in 1911 this practice had become nationwide.

We foreigners who came to China to reside found it necessary to adjust ourselves to this situation. Nowhere in China were flush toilets prevalent. In Shanghai the collection and disposal of human excreta to farmers was a big business. Human excreta was sold by weight. Shanghai excreta was considered especially valuable and much more highly prized than that from Chinese sources because the farmers said foreigners ate much more meat. The municipal government of Shanghai held a monopoly for the collection and disposal of human excreta. Of the total revenue, \$100,000 gold was set aside annually to run the city's health department. When an enterprising business man announced his plans for constructing a modern office building with flush toilets, the municipal authorities refused to give him a building permit. He instituted suit in the local courts and lost. An appreciation of the national air of China is gained not through the ears by singing, but through the nose by smelling. It consists of decomposing human excreta in the pits of every field.

Nature will not be cheated. Nature bids her time. Mr. Fryer said one significant thing in his address this morning: "For every action there is a compensatory reaction." If in man's ignorance one generation ruthlessly destroys forests and vegetation in the uplands of China, then those of subsequent generations must stand in the valleys with human excreta buckets in their hands.

This mismanagement of land brought other consequences inimical to the health of the people. Among sanitarians of the world, China became known as "the fountain-head of epidemic diseases." With continuous soil and water pollution, obviously, intestinal diseases were particularly prevalent. Physicians were constantly encountering typhoid fever, a variety of dysentery, and the most extraordinary assortment of intestinal worms. Cholera is endemic in many parts of China.

In my little book, "Broadcasting Health in China" there occurs the following account of a cholera epidemic in the city of Foochow, on the eastern coast of Fukien province,

"In 1919 a cholera epidemic of unusual severity devastated the city. There was no health department, consequently no morbidity or mortality statistics, but estimates give the number of cases as 19,000. The onset of this disease is sudden. The symptoms are spectacular. Death often supervenes in from 6 to 36 hours after onset. When the number of cases reached into the thousands the life of the city was paralyzed.

"People fell stricken in the streets. Shops were closed because the proprietor and all his apprentices died within a few hours of each other. At first there were the usual long funeral processions, but soon unattended coffins were carried through the streets. Occasionally these never reached their destination because the carrying coolies were overtaken by the same disease. The coffin supply became exhausted. Many were used over and over again, especially among the poor. As the epidemic progressed, the graves on the nearest hills outside the city were dug with increasing haste and shallowness. Every watershed was polluted and the number of cases increased after each rain. Scavenger dogs could be heard howling and fighting at night. Many merchant ships no longer ventured to call at that port. The isolated city festered in the intense summer heat under this pall of indescribable misery and sudden death."

But there are other consequences to improper land management through the centuries. Flood. Serious as it is to us, our flood menace at Loupp involves only some 300 people and a half million dollars of property. I have been through one flood experience in China which involved 30,000,000 people and billions of dollars of property loss. No one in America can say, "Those floods in China are no concern of ours. They are too far away." The people of America did make flood and consequent famine in China a concern of theirs. I happened to be Honorary Secretary of the American Red Cross of China when the generous people of this country sent over a million and a quarter dollars in gold for flood and famine relief. Recently we have had our own floods closer home in the Ohio and Mississippi valleys. In turn, through Finance Minister H. H. Kung, China contributed to flood relief in this country. No matter where these floods occur nature exacts a penalty very often in accordance with the old saying that the sins of the fathers shall be visited upon the children.

The biggest price that has to be paid for mismanagement of land is not one which can be measured by money. It is of no moment, intrinsically, that a young couple lost an automobile. Nor would the orbits of the heavenly bodies be twisted all out of shape or the destiny of this country be deviated one iota if we were to lose all Federal property at Loupp through another flood which covered the tops of trees. Nor is the loss of hundreds of lives and untold millions of dollars of property the most serious phase of recurrent floods and famine and epidemics. The most appalling losses to mankind the world over through continued mismanagement of land, the one fundamental source of his living on earth, are not material losses however great these may be. The greatest losses are those which can be measured only by invisible yard sticks of the spirit. The thought and customs and spiritual structure of a people are gradually changed downward.

Let me take China and India as examples. There the three immediate physical needs of mankind, food clothing, and shelter, are greatly lacking, not sporadically but continuously. As many as a fourth of the populations in these countries are constantly in want. If you wish to see, as I have seen, a stark exemplification of what it means actually to lead a hand to mouth existence day by day, then go to China and India. There you will find, no matter where you go, people who continuously never have enough to eat.

And when you have this state of affairs involving millions of people over long periods of time what are some of the end results?

There is first of all an extraordinary wastage of human life. I do not refer only to the thousands who may be drowned in a flood lasting a month or two. Nor to those who die in ensuing epidemics. I include the continuously high death rate. The death rates in China and India vary between 30 and 40 per thousand as against a little over 10 per thousand in this country at the present time. Most of these deaths occur among infants and the younger age groups.

In compensation for this high death rate, there is an exceedingly high birth rate. In its struggle to survive racially, it seems that that part of mankind most subject to an adverse environment, even though it be brought on by themselves through the centuries, takes blind recourse to excessive breeding. This merely makes matters worse in the long run. Excessive offspring throws a heavy load on parents and community because for the first five, ten or even fifteen years of a child's life it consumes but does not produce. To the extent that large numbers in a population die before or during the transition from consumers to producers, the net result is an economic, social and spiritual loss which cannot be replaced.

In this country the expectancy of life at birth is approximately 59 years. In China and India it is estimated to be 25 or 30 years. The end result of having a large part of the population in the younger aged group die before they can return to the social order an equivalent with interest of what they consumed, spells a very low per capita wealth, low standards of living, and retarded growth of the spirit. In countries where the expectancy of life at birth is 40, 45, 50 or more years, there is obviously a greater chance to increase group wealth and group well being, through productivity and gradually accumulated assets, both material and otherwise.

I have already referred to disease, so prevalent in these countries where the land is sick. The subject of disease is as good as any to venture forth over the border line between things material and things of the spirit to point out the degree of retardation of spirit in terms of fear and superstition which develop in those poor land people. Some years ago in India, I encountered the strangest distortions of the human spirit in arriving at a philosophy of life. In the closing address of a biennial medical conference in Shanghai, China, February, 1933, I reported on this phenomenon as follows:

"The atmosphere of India, social, educational, political, is surcharged with religion. I found more religion to the square inch than in any country I ever visited, and of a more pronouncedly disagreeable type from the public health workers standpoint. The Hindu and Mohammedan are both so debout that they would like to kill each other. This often happens, because their devotions conflict. The Hindu holds that the cow is sacred, and in consequence, never kills the animal.. Instead, he endures all sorts of nuisances and inconveniences on account of the cow. The Mohammedan holds that the cow is good eating, so he kills the cow, sometimes in front of the Hindu temple, and smacks his lips as he eats. Then the police have to take a hand.

"One of the chief dangers of the Hindu religion to public health is the belief that there exist 8,400,000 animal species through which the transmigrating soul of man may pass. One of them is the rat which is the attendant of Ganesh, the god of luck and success. The killing of rats by public health men trying to combat plague has led to riots. No matter how small the insect, it is not to be killed lest it be in the sacred list of the 8,400,000. This has led to some strange customs. Certain religionists will not eat their food in a dark place lest by accident he eat some insect and thus disturb the well being of some soul in transition. Others will not walk out on the street at night lest by accident he step

on the present abode of his grandmother's sister's soul. The depredations of flies, mosquitoes, and fleas are endured as being in the proper order of things. I confess to a certain degree of satisfaction on seeing a high classed Brahmin scratching himself surreptitiously. It is called for by religion that water from sacred sources, however dirty and polluted, shall be used for both bathing and drinking. Thereby the soul is elevated and the body is laid low."

Travel where you will, wherever you find the people living on land which Nature herself or preceding generations of men have mismanaged somehow, you will also find distorted, confused, illogical group concepts of the nature and solution of a swarm of related group problems of enormous magnitude. You will find an apathetic acceptance of fate in the form of flood, drouth, crop failure, disease, death, high birth rates, high death rates. You will find strange outcroppings in prevailing customs such as ancestor worship and superstitious rites. You will find a stagnant culture and widespread illiteracy. You will find changes in the social organization being made much more slowly than in more fortunately situated racial groups: You will find the people on this poor land susceptible to losses of various kinds through the exercising of pressure by adjacent aggressive populations. You will find a lack of interest in or an opposition to change. You will find little devotion to modern science or in the applications of its benefits. You will find the saddened eyes of the people turned longingly toward the past and not expectantly to the future.

Have I talked too much about China, India and the far places of the earth? If so, it has been only by way of illustration. The very same forces which have been at work on a large scale in these countries over a long period of years are at work on a smaller scale in Navajo Land. If sought, the same end results are to be found in varying degree close and urgently at hand.

The future health of the Navajo tribe does not depend alone upon our securing more physicians, nurses, and hospitals, although an increase in quantity and quality in each of these three categories would not be out of order. Even if there were to be no increase in the number of physicians, nurses, and hospitals for the next 50 years, much more effective health service could be rendered if the facilities available, their potential help, as well as the present limitations of modern medical science, were better understood and accepted by our people.

Our hospitals are still too generally considered as places in which to die, rather than places where assistance is available to help the sick get well. When sickness occurs the custom is still too prevalent of attempting cure by means

of appeasing or appealing to a variety of spirits through the medicine men. All too often the sick are brought to our hospitals only after the medicine man has failed. Time and again patients die enroute to the hospital or within a few hours after admission. This dilatory practice places the hospital under a great handicap.

Modern medical science is still in its infancy. If its benefits are applied early, before the natural resources of the individual are exhausted, much more can be done than when the patient is brought in half dead. It might be a much more effective arrangement if we could reverse this procedure with our friends, the medicine men. Instead of our receiving so many of their hopeless cases, let some arrangement be made whereby out of every 100 who become sick, 50 will enter the hospital in the early stages of their sickness and 50 will go likewise to the medicine men. Perhaps our showing would be much better. We might even suggest that after we fail and give up hope we turn our desperate dying cases over to the medicine man as they so often do to us. Perhaps, also, we might close our hospital doors to the medicine men when they themselves become sick! But, of course, we shall do none of these things. We must be content to wait until through the exercising of a great variety of factors, the Navajos arrive at a better understanding of what a hospital is for--what it can do, and what it cannot do!

If I only had the facts, this would be the place to present you with an array of statistics on the mortality and morbidity of the Navajos. Unfortunately, such statistics are practically non-existent. I can tell you neither the birth rate nor the death rate of the Navajos. I cannot give you specific death rates for tuberculosis, pneumonia, or measles. I do not know the infant mortality. In spite of the emphasis which has been placed upon trachoma, through having in our midst a number of special eye physicians and nurses, no one as yet knows the exact incidence of trachoma. It is commonly said that about one-third of the people have this disease. The same is true about tuberculosis. I have heard it said that our Navajos have about fourteen times more tuberculosis than is found in the general population of these two states, Arizona and New Mexico.

There is a direct relationship between the incidence of trachoma and tuberculosis and the low standards of living necessitated by the condition of the land on the Navajo Reservation. Both of these diseases are communicable from the afflicted to the well. In trachoma, the cause is a filterable virus; in tuberculosis, the tubercle bacillus. Trachoma disables. Tuberculosis kills. These two and all other communicable diseases are decreased in incidence through cleanliness and through health education whereby the people

water and vegetation? The standard of living and the per capita wealth would gradually rise to the point where Navajos could pass into that group of people whose standards of living make the achievement of health more possible.

No matter in what particular phase of Indian life and its problems we may be interested, medical, educational, religious, cultural, or artistic, land is the one supporting base on which prospects for improvement in all these directions must rest. In particular, every phase of the diversified medical problem at some point or another is related to land. Tuberculosis and land, trachoma - land, water. Infant care - land, water. Hospitals and care of the sick will need to be continued, of course. No modern racial group anywhere, even with the highest degree of acceptance of modern medical science, has yet reached the point whereby sickness is entirely eliminated. But the great advances which lie in store for the Navajo tribe to make in the next fifty years, and specifically in the field of health, depend in very large part upon increasing the fruitfulness of the land. We must achieve better Navajo health by better land management. Both the farmer's boy and the physician in me are at one in making this statement.

I have read and reread the thrilling account by Carl Gorman in our last Navajo Service News, reporting the speech Mr. Choo Dodge gave at Pinon. I hope that all of you have read it. I can do no better than allow myself the privilege of quoting it in full:

"Sixty-eight years ago we came back from Fort Sumner. At that time we were just a small band. We also owned a very small band of stock. But, up to this day, we are told we have increased to 50,000. Also, our stock increased tremendously with us.

"At that time we had plenty of grass for our stock. We just kept increasing our stock, thinking nothing about the grass our stock eats, thinking nothing about the soil the grass grew from, thinking nothing about our Mother Earth.

"Years back a person could almost see the grass sprouting right after the rains. And after it rained you could walk on the soil and it would sound like you were walking in the snow -- cracking under your soles. But now the ground is just like cement. The only thing a person hears cracking are his knee-joints from walking on the hard ground.

"Now what do you hear after it rains? You hear nothing but roaring of water down these gullies. We are told, and if you just do a little thinking you will also realize that these gullies are made from

"We have killed the grass with our stock, running them all over the reservation. Every time we herd our sheep we have a small dust-storm following our herd. Maybe all these small dust-storms from our herd form together and make a big dust-storm east of us.

"We have nobody to blame but ourselves. The government did not help us kill the richness of our soil. Washing-down never did herd any sheep or cattle on our reservation.

"My dear people, after 68 years we have enjoyed everything from our stock -- we've got plenty of jewels we like, we've got everything to our heart's content. We never thought of all these good times, of all this good turquoise we have now as coming from our Mother Earth -- by feeding our stock with grass. We are slowly killing what's left of the grass by running our stock over it, giving no chance for the grass to resuscitate.

"Now all of us old-timers have enjoyed the fruits of the earth; but what do you think of the coming generation? What do you think of those babies some of you are holding now? Will they enjoy the same things that we have enjoyed?

"My people, let me tell you right here, they could if we give our Mother Earth the proper treatment she needs now. She is slowly dying, and I have already told you the reasons why.

"Let's get behind the government and help treat our soil so grass of all kinds may be rehabilitated for our stock.

"We will have to learn how to regulate our stock. We will have to learn about range management.

"Now, old-timers! Have pity on these youngsters, the coming Navajos who will take our place. They have no place to go. This is their reservation. If we had two or three reservations, it would probably be different.

"If we have increased in 68 years from a handful to 50,000 what will the population of the Navajos be 30 years hence?

"So let's do something for our reservation so the coming generation can again enjoy what we have enjoyed. How? Simply by helping the government in their reclamation of our only land."

Some months ago at a meeting in the Tribal Council Hall at Window Rock, some of you heard me say that if the land is sick, the people on it are sick. In this address I have tried to elaborate this theme. All my observations in many countries over a period of years bear out this conviction most emphatically. If you want to effect a lasting cure and deal with things fundamental, you cannot achieve this improvement in the health of the Navajo by means of merely more surgery, more medicine, more hospitals, or more of anything that deals merely with effects. We must get at some of the causes; one of them is the land. Take the land into your prophetic visions, into your plans, and into your work.