

DENTISTRY AND RACE DESTINY ★ W167

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Civilizations and cultures have risen and fallen through many millenniums. Their history at times has been written, chiefly in the skeletons and buried arts. Few riddles have been more obscure than the nature of the forces that have determined their rise and fall. The rate at which these cultures have risen to their zenith and the nature of their decline strongly indicate that in many cases the disintegrating force has been from within rather than from without. When a culture is overwhelmed by a stronger force it is not usually destroyed, but is absorbed.

An important new light has been thrown on the nature of the forces at work by the investigations of anthropologists and archeologists working on the sites of ancient burials. An outstanding illustration is the superb field work done by Professor Earnest Hooton of Harvard in the Pecos Pueblo of New Mexico. This Indian tribe had lived continually in the same environment for over a thousand years. During that period the refuse from the colony was thrown over an embankment thus producing a continuing deposit showing the nature of their arts and crafts. The burials in this midden revealed the physical excellence of the skeletons. For several hundreds of years the evidence indicated a progressive rise in the development of their arts and crafts and a continuing excellence of their skeletal structures including the teeth. This was followed by a period of very evident decline both in their physical bodily perfection and their arts. The decline was at an accelerating rate. The last living remnants of the colony were removed from the habitat in about 1835. According to the records they were a physically degenerated group. When a study is made of the environment there is disclosed a continued cropping of the same fields associated with a progressive exhaustion of the mineral contents through the years amounting to a marked depletion of the soil. In the early part of their history as evidenced by the excellence of their skeletons they had much less need for dentistry than in the later period. Doubtless the migrating instinct was present but tribal limitations held them to their exhausted area.

My studies of primitive races in different parts of the world have included an examination of the skeletal material of cultures that have lived many centu-

ries ago. In Rome, I was privileged to examine large numbers of skulls of inhabitants of Italy of a period preceding the Caesars. A striking condition of these skulls was the breadth of the dental arches and the excellence of the teeth with freedom of dental caries. This was in striking contrast with the skulls of individuals who lived there during the last fifty years. These latter had not only a high percentage of deformed dental arches but large numbers of the teeth were either carious or had been removed. In Switzerland in the Rhone valley an examination of many hundreds of skulls revealed that those from the old burials were of people with very excellently formed teeth and arches with exceedingly little dental caries. I was told by an official that the grave-diggers could state with confidence whether a skull belonged to the period prior to modernizing influence ranging from fifty to one hundred years for different areas, or to the more recent period, on the basis of whether teeth had caries. In one of my contacts near Lake Constance the government examination of the teeth of the modernized district had revealed that one hundred per cent of the population had suffered from dental caries. Similarly in North America and South America the Indian burials have revealed in many districts the superb excellence of both the teeth and dental arches.

In my studies of living primitive races in various parts of the world, for comparison of groups that are still isolated with groups of that same stock that are in contact with our modernizing influence, I have found everywhere an immediate breakdown of the dental organs with the development of dental caries and change in facial and dental arch form wherever these primitives had departed from living in accordance with the tradition of their tribes by utilizing the foods of the white civilization that was encroaching upon them. Similarly, their skeletons revealed a very high incidence of physical excellence and such as would rarely be seen in our modern culture. The difference in the number of teeth attacked by caries would average approximately a 30 fold increase in the modernized groups.

If we think of dentists as being an expression of the need for dental repair, it is very clear that a race that is supporting a large profession trained and equipped for serving in this one capacity of repair will have established striking evidence of the severity of their degeneration. Such an organized profession will of necessity be a bad sign in the history of that race. While dentistry is serving a noble purpose through its relief of suffering it is an acknowledgment that the group which has need for it has progressively lost the art of living successfully with Nature.

When we study comparatively the history of the nations that have survived through succeeding millenniums, we learn at once that some essential factors have been utilized in the social organization that have made a continuing existence on the same land possible. A striking illustration is the history of the Chinese race. They have not been wasteful of their limited minerals in the soil but have returned them to the vast acreage with exceedingly great care. In

Nature's management of the animal and plant life, each animal and plant borrows enough of the various minerals to build its body, and when it is through with the loan returns these chemicals to the soil. This has been the policy of the surviving primitive races. There is accordingly no depletion associated with this usage. Our modern civilization returns exceedingly little of what it borrows. Vast fleets are busy carrying the limited minerals of far flung districts to distance markets. Nature has only put into the earth's surface one part in a thousand of phosphorus, averaging only sufficient in the top seven inches, in the depth to which a plow will go, for one hundred moderate crops of cereal grains, or fifty excellent crops. It is accordingly no wonder that much of our land, in even so young a civilization as the American, already has been depleted of available body building minerals to a point below which physical degeneration must increase. This tragic decline of most of our modern civilizations is going on at a fast pace and no adequate explanation for the forces at work has been available nor has a program for checking them been provided.

Dentistry as most of medicine, busies itself from day to day and year to year almost entirely with repair. Dentistry now is a symbol of degeneration in a decaying race. As a profession it is situated uniquely at the point of earliest and most severe expression of that degeneration. It would be fitting indeed if it might become a symbol of regeneration, through revealing to the people the nature of the degenerative processes and the means whereby they can be controlled and our civilization saved. This is the highest type of prevention. Fortunately, we have splendid access to the essential procedures provided by the primitive races, who prior to their contact with our degenerating civilization were practically without the need of dental service but who rapidly arrived in the same state of degeneration after meeting the white civilization and adopting its methods of nutrition. Since many of the earliest and most severe expressions of degeneration make their appearance in the oral cavity and adjoining structures, the dentist of all specialists is in a position to observe the onset of this progressive decadence in its earliest stages. The dentist will be in a position to render an important service through prevention not only of the problems of the oral cavity but when he has done this he will have provided the key that will similarly prevent serious disturbances in other parts of the body.

We are at the threshold of a new era in the history of the white race. Information is now available that will make it possible to check not only the progressive speed of degeneration but degeneration itself, through the application of the knowledge obtained through a study of Nature's laws of biology as applied by the primitive races. Our civilization will have no choice other than between two alternatives; one, to proceed on the toboggan slide it is now traveling and repeat the history of other civilizations by disappearing through progressive degeneration, or the other of revamping our whole system of building efficient bodies and of maintaining them in high efficiency in accordance with Nature's laws. Our most serious error has been failure to correctly interpret the nature

of the forces responsible for physical, mental and moral degeneration. These forces have been variously interpreted as belonging to an unknown and impenetrable realm; by one school as a metaphysical third dimensional phase of life, and by another the incompatibility of racial blood mixtures. The evidence now indicates that the forces are all biological, and that all the expressions of life are directly related to the laws of biology, and that life in all its phases is an expression of past and present environment. The controlling forces lie within the zone of the environment and are primarily related to factors that are controllable, the chief of which lies in the nutrition; first, of the parents before conception, second, in the prenatal formative period, third, in the growth period and fourth, in the body maintenance period.

Whether dentists are to be symbols of degeneration of the race and therefore a bad omen, or the source of escape from the impending racial doom largely lies within the choice of the members of the dental profession itself. The first fact to recognize is that we are not living in the world that we thought we were in. Efficient human life in all of its highest expressions has been the result of wise adaptation to Nature's environment through an understanding of and through obeying her laws. (Deficient life means broken laws.) By these means our degenerating race that is moving toward extinction may check that decline and again proceed toward higher levels of physical perfection through adequate knowledge of Nature's laws and an adequate character to obey them.

These convictions have been borne in upon me as I have consolidated the data obtained from my studies of many primitive racial groups and noted the rapidity with which they have acquired the expressions of degeneration of the modern white race. I have assembled these data with their interpretations and applications to our modern problems in book form under the title "Primitive Keys to Modern Degeneration."

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