

7
Please return - the only copy I have
C.H.R.

RESUME OF STUDIES IN NUTRITION BY MARTHA R. JONES, Ph.D.

My interest in nutrition was the outgrowth of my own physical disabilities as a child - susceptibility to respiratory ills and rampant tooth decay, especially. The necessary extraction of decayed teeth, prematurely, resulted in marked malocclusion and abnormal development of facial bones which started a train of ills which persist to this day. As womanhood approached, I determined to find out WHY.

My quest took me through my home town schools (Nashville, Tennessee) Peabody College and Vanderbilt University, followed by three years of graduate study at Yale where I received the Ph.D. degree in physiological chemistry and Sigma Xi key for scholarship. During my years at Yale, I was awarded a scholarship, a fellowship and three assistantships, and enjoyed the distinction of being the first woman to be appointed assistant in the Department of Physiological Chemistry. During my third year at Yale, I was awarded a fellowship by the American Association of University Women which enabled me to complete my studies there, debt free, with train fare to San Francisco where arrangements had been made for me to continue my studies in the Department of Pediatrics of the University of California Medical School. Puppies fed mineral-rich, growth promoting diets containing a preponderance of fixed acids or alkalies (within limits) developed strikingly different skeletal and dental abnormalities. An acid imbalance simulating that I myself had probably suffered as a child resulted in rampant tooth decay. It differed from dental caries as commonly known and was given the name "odontoclasia." It was thought to be peculiar to the dog and to have no clinical significance.

At a meeting of the International Association for Dental Research where I was invited to present my findings, I learned that "odontoclasia" was wide-spread in the Orient and endemic in the teeth of the preschool children of the laboring population in Hawaii. Soon, a diet-teeth survey was under way under the auspices of The Queen's Hospital, Honolulu, with the co-operation of the Palama Settlement Dental Clinic. There, I found what I was looking for. The findings on the puppies and children were in complete agreement. The mouths of many begged description. Often, teeth disintegrated as they erupted leaving two rows of abscessed roots. Associated were marked malocclusion, "angel wings", "pot bellies" and high susceptibility to disease. The solution of the problem as indicated by the dog experiments and the fine physiques, broad dental arches with their near perfect alignment and decay-free teeth of the native people adhering to their ancient food habits was obvious - return to native foods. This meant the elimination of refined grains and white sugar from the diet and restoration of home-grown taro, sweet potatoes and sugar cane - an impracticable, and indeed, impossible undertaking, it was generally agreed.

During my studies around the island (Oahu), I ran onto an isolated village (Pipeline, ~~the~~ Plantation) of Filipino laborers and their families who were newcomers to Hawaii. The adults still enjoyed sound teeth as their ancestors probably had for generations, but their Hawaiian-born babies already had odontoclasia. Morbidity was high. One in three died before its first birthday. It seemed too good a place to pass up to stage a demonstration, and on my own, I asked the permission of the plantation manager to undertake it. Though skeptical of the success of the proposed infant feeding clinic, he granted me the permission to undertake it with the understanding that "it would cost the plantation exactly nothing." The use of a long vacant, "haunted" house was offered and accepted for clinic purposes. It was designated as "No. 4" and was on the outskirts of the village and all but obscured from view by years of growth of tropical vegetation.

The grounds cleared, a garden planted, and the "clinic" equipped - thanks to generous donations, rummage sales, and the valiant help of the village scout master (Salvation Army) and others - "No. 4 House" was still (after four weeks of work) given a wide berth by the villagers. Convinced that her "No. 5" Hawaiian born baby was going to die as had the four preceding him, a frantic mother was emboldened to bring her baby to the "haunted" house daily to be fed, on a "take" but "no pay" basis. He LIVED and THROVE and odontoclasia in his newly erupted teeth was arrested. Four months later, there were 55 enrollees (all eligible) in the feeding clinic, now on a part pay basis. **NONE HAD DIED!** At the end of 16 months the infant death rate still stood at zero. Parents displayed their healthy children and their growth charts with pride. Ghosts had vanished and traditional tribal enemies had become friends. "Mama" to all, I found myself artiter of justice in the village. The "impossible" had obviously become a reality and skepticism and opposition to it changed into enthusiastic support. The project was sponsored and financed by the Hawaiian Sugar Planters Association, the Ewa Plantation Company and the Castle Foundation and extended to cover the entire plantation. With the cooperation of the plantation management, medical and nursing services, school principal and staff, parents and others, the success of "No. 4 House" was duplicated. Within a year there were four "Health Centers", in which the voluntary enrollment of babies gradually increased to 320, and the number of "graduates" and others, 3 to 6 years of age, to some 200. A towering infant death rate tobogganed to zero. Resistance to disease in clinic fed babies was so high that not one succumbed in a plantation-wide "flu" epidemic. The project became a demonstration - teaching center which attracted doctors, dentists, nutritionists, welfare workers and others from far and near. Many invitations to me to speak before school, civic and scientific groups in Hawaii and on the U.S. mainland were received. I had the distinction of sharing the lecture platform with Dr. Charles Mayo at the centennial meeting of the New York Dental Society. At the request of the American Association of University Women, I wrote an account of my researches entitled "Babbits, Puppies and Little Brown Babies" which was used as a feature story in their drive to raise an endowment of \$1,000,000.00 for fellowships.

On the occasion of President Roosevelt's visit to Hawaii, arrangements were made by the dental department of the U. S. Navy for the dental officer attending him to visit the clinic. His personal physician visited it also. At the request of Captain H. E. Harvey, senior dental officer of the Navy and assistant to the Surgeon General, Lt. George Crosland was permitted to study at the clinic for four months. During that time we made an analysis of the diet and incidence of dental caries in the enlisted men stationed at the Pearl Harbor Submarine Base, Hawaii. On my return to the mainland, Captain Harvey and I made a similar study at the U. S. Naval Academy at Annapolis.

The milk-cane syrup-poi (taro) blend originally prepared as a formula for the babies and "cocktail" for older children attracted the attention of a large mainland milk company which considered canning it for nation-wide distribution. Unfortunately the mixture curdled when canned and no satisfactory way was found to prevent it, so the idea was abandoned. Because of his interest in the plantation health project, Mr. Hamilton Agee, Director of the Hawaiian Sugar Planters' Association Experiment Station, offered the facilities of the Station and provided freshly expressed juice from UNBURNED cane for me to make the syrup for the babies and to use in the development of other cane products. There were a number of the latter which were thought to have commercial possibilities - two, especially - a delicious carbonated cane-ginger bottled drink, and a "meal in a chew" - formulated to be a complete food for

a mountain-climbing expedition undertaken by the Hawaiian Academy of Science. Its taste appeal and "pick-up" value to the climbers was enthusiastically acclaimed.

In San Francisco in 1941, I succumbed to the "flu" which left me incapacitated for work. This attack was followed by a succession of illnesses - "virus" pneumonia, boils, acute rheumatoid arthritis, two major operations for removal of recurrent tumors, chronic cough, throat infections, etc. The announcement in December, 1955 of the discovery of a substance called bioflavonoids in the pulp and peel of citrus fruits which was said to be synergistic with vitamin C and to exert beneficial effect upon the circulatory system, explained, in part, the role the sugar cane-lemon syrup had played in building up the resistance of the children in the nutrition clinic in Hawaii to disease, and in nurturing the spark of life into flame in a few whose life expectancy was practically nil. Weeks of effort to find some old-fashioned cane syrup - nothing added, nothing removed, no adulterants as charcoal, tar (from field-burned cane) or residues of chemical fertilizers and insecticides - was rewarded with success. With it, I duplicated as nearly as possible in my home kitchen, the cane-lemon blend fed the plantation babies. It proved to be a "magic elixir" to me as it seemingly had to them. My cough and sluggish elimination responded immediately, and the "virus", as manifested repeatedly in my many ailments was quickly and permanently (so far) routed. The syrup has since been the No. 1 item in my diet. Demand for it by my friends and their friends became more than I could supply. It is now blended, packaged and handled for me by a near-by syrup mill. What to name it? My studies in nutrition should conclusively that a certain greens-grains (G - G) diet balance is essential for optimal health. Two little imps, a perky green one representing the greens and greens-like foods (alkaline ash) and a spindly red one, the grains and grains-like varieties (acid-formers) had been found to be highly successful in teaching diet balance, and the name BIG GEE GEE SUPER-SYRUP - identified by the perky green fellow carrying a bundle of sugar cane and a basket of lemons - was adopted. Children love Big Gee Gee and his antics (the syrup too). His skill in building health houses makes lasting impressions on "youngsters" of all ages.

In the early twenties, Sir Robert McCarrison, British Medical Officer in India, noted the widely different physical states of the people resident in the seven provinces under his jurisdiction. They varied from near perfection in the Hunzakuts to every known human malady in groups of people living only a few miles away. To find out the "whys", he fed rats of a common heritage living in the same room in adjoining cages the diets of the various groups of people, and the rats developed the same diseases or freedom from disease the people had. Healthy rats living in close proximity to diseased ones did not contract the latter's diseases. Dr. McCarrison concluded that all disease has its beginning in nutritional deficiencies. In confirmation, Charles Northern, M.D., is quoted in Senate Document No. 264 as saying: "It is bad news to learn from our leading authorities that 98% of the American people are deficient in these minerals, and that a marked deficiency in any one of the more important minerals actually results in disease." Rat experiments similar to Dr. McCarrison's were conducted for teaching purposes in the plantation Health Center in Hawaii. Rats fed the native Hawaiian foods (Health Center diet) were large, sleek coated, healthy and friendly, while their littermates fed the diet of the plantation laborers (largely refined grains) were stunted in growth, rough coated, irritable and diseased.

Sugar cane is a grass. Grass rates next to air, water and light as a life essential for warm blooded animals, it is said. It is a principal food of some of earth's largest and strongest beasts of burden. The sap of the cane is rich in many "grass" nutrients. Throughout the ages until the turn of the present century, cane juice, sucked from the freshly cut stalk and/or concentrated into a syrup, had been a staple food for untold millions of people, including our own pioneer ancestors. Stories of sugar cane related by the native "oldsters" in Hawaii - the use of the juice in infant feeding, medicinal concoctions, etc. - interested me greatly. According to legend, freshly cut stalks supplied the only food and drink of their runners as they carried their messages over rough mountain trails sometimes 30 - 40 miles without rest or fatigue. Even the little we know today about the composition of the cane sap lends credence to such feats. Sucked from the cane stalks as they ran, it supplied water, sugar for energy with its natural synergists - steroids, colloids, chlorophyll, amino acids, vitamins, enzymes, minerals, trace elements, etc. - needed to keep the billions of tissue cells in their bodies in top operational form.

Dr. Forbes Ross, a British surgeon working in the West Indies some 50-60 years ago noted the "peculiar immunity" of the native people to cancer. He attributed it to the high potassium content of the sugar cane which they chewed prodigiously, he said. At the University of Oregon it was found that an "antistiffness factor" in molasses from sugar manufacture prevented and resolved abnormal calcium deposits in the muscles and joints of guinea pigs, and that this factor was one hundred times more abundant in the fresh cane juice than in the molasses. At Harvard School of Dental Medicine was found an unknown factor in molasses which inhibited tooth decay in rats. These and other reports lend credence to the "common knowledge" claim that cane-chewing people do enjoy an immunity to certain of our own most prevalent and baffling diseases. To find out the truth, if possible, I constituted myself a "one woman safari" into a cane-growing area of Mexico, a few months ago and found what I was looking for, and more than I even hoped for - a large community of native people whose foods and diseases - "American style" - are rare; a community which needs sanitation, principally to convert it into a "Shangri La" of preventive medicine.

We in the United States rate high, if not "tops" in refined sugar consumption - more than 100 pounds per person per year. We have the highest incidences of cancer, arthritis, strokes, coronary and other circulatory diseases of any nation in the world - diseases which are conspicuous by their absence in certain "undeveloped" countries, it is reported. Half of our youth are disqualified for military service because of physical and/or mental disability. Pediatricians deplore that so many "bouncing babies and whopping children" are weak and anemic. "They grow too fast", the doctors say. "WHY?" Too much counterfeit food (demineralized and devitalized) with its synthetic "enrichments" and artificial stimulents. Add to this the "contamination in cereals, baked foods, macaroni, beverages, butter and churning cream, fruits, nuts, seafood, oleo, vegetables and chocolates including Easter eggs and candy Santas" - 828 seizures of "tainted" food by the FDA in the first half of 1959, it is reported. It seems we are lucky to be alive.

Thanks to recent advances in food technology, unrefined sugar cane juice can be prepared in dry or syrup form with a minimum loss in its health promoting nutrients, and made into diet staples, as well as a variety of tasty products which would undoubtedly make a contribution of the first magnitude to our national health. When that happens, I shall say - "MISSION ACCOMPLISHED."