Health and elimination

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Introduction

"Natural Health" has become popular during the past several years. Not too long ago health was a term associated solely with a medical connotation the opposite of disease. Today's great concern for health in a preventitive sense has led to the development of various, natural and health maintenance programs. These include dietary programs based on garlic, ginseng, shiitake, aloe, pickled ume, herbal teas and other health foods.

It is ofen believed that by merely taking such nutrients as garlic, ginseng, etc. the desired effect on health will be achieved. However, a crucial point is being overlooked. If one supplies the body with such healthful nutrients, will these actually remain in sequence with the natural processes of decomposition, absorption, synthesis and excretion? In general one leaves these processes to the normal bodily functions without taking into account any possible abnormal consequences, except when ensuing complications arise. Should this be the accepted procedure? Those who prescribe these natural health programs do not take into account their effect on proper excretion.

If one is not aware of the possible adverse effects of these natural methods upon one's excretory system, one may develop harmful by-products within the system. And instead of realizing the actual cause of these maladies, one may mistakenly blame it upon such factors as physical constitution, neglect of health, intemperance and environment. An individual must be totally educated as to the overall effects, beneficial as well as adverse, of an natural health program.

In a similar vein, new, malignant disease are constantly being discovered incurable. It has been found that most of these diseases are caused by viruses. It is generally believed that cancer which accounted for the highest deathrate in Japan in 1982 is virus-induced. In the case of breast cancer in rats as well as a

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specific leukemia in man, a virus has been positively identified as the cause. From a bilogical point of view the author would now like to shed new light on the theory of improper maintenance of excretory system as being directly related to virus-induced diseases.

The three most essential elements of nutrition are carbo-hydrates, fats and proteins. It has been believed that these three fundamental nutrients had to be assimilated into the body for optimum maintenance of health. The necessary amount of each nutrient was and is calculated according to specific calory content. Later it was discovered that deficiencies of hormones, vitamins, and minerals, though valueless as calory sources, produced various diseases in the human body. Finally research concerning fermented nutrients and their catalytic function made considerable progress. And with it the existence of enzymes attracted the attention of researchers.

The enzymes which were first discovered were the digestive enzymes. The names diastase and pepsin were already well-known as far back as 50 years ago. The fact that the enzymes aid in digestion is today considered common knowledge.

Through progress in biochemistry it has become quite evident that the catalytic action of enzymes is necessary for all biochemical reactions not only in man but also in all living things. Today in genetics a genetic code states the hereditary relationship of 'one gene to one enzyme', or the gene gives the command of which enzyme is to be synthesized in the body. Through catalytic action of the synthesized enzymes result the various characteristic traits such as eye color, skin color, taste preferences, behavior, etc..

Because the enzyme itself is a catalyst, only a small amount need be present at body temperature for a reaction to occur. If one were to induce similar biochemical reactions in the laboratory without the aid of enzymes, one would have to em-

Table 1. Enzymes classified upon reaction type

international number system	name of enzyme system
1	oxyreductase
2	transferase
3	hydrolase
4	lyase
5	isomerase
6	lygase

ploy extremely high temperatures and strong alkalis or strong acids.

According to an international numbering agreenent, enzymes have been grouped into 6 categories according to their reaction type.

Enzymes are protein itself. However, the enzymeprotein has specific catalytic reactions which differ from the ones of the normally known proteins of meat, eggs, etc.. Just as there is a definite relationship between specific enzymes and the catalytic reactions they perform with specific substances For example, amylase with starch, lipase with fats, and pepsin with protein.

Protein is constructed of various kinds of amino acids bonded into chains (peptide bonding). Frequently various molecules or metals are bound to these chained aminno acids. If these molecules are Vitamins or metals, the bonding is in most cases reversible dissociation equilibrium (i.e. sometimes bonded and other times dissociated depending upon environment). These types of molecules are referred to as coenzymes. Thus many vitamins are known by their enzyme and/or coenzyme nales.

Table 2. Important vitamins and their coenzyme (enzyme) names

names of vitamins	names of substances	names of coenzymes (enzymes)
A_1	axerophtol	unknown
B_1	thiamine	TPP (carboxylase)
B_2	riboflavin	FMN, FAD (flavin-enzyme, dehydrogenase)
B_3	nicotinic acid amide	DPN, TPN(pyridine-enzyme dehydrogenase)
	pantothenic acid	coenzyme A (transferase)
C	ascorbic acid	oxyreductase
D	ca[ciferol	unknown
E	tocopherol	electron transferase
H	biotin	biotin enzyme

As for metals, iron, manganese, magnesium, molybdenum, copper, etc., are also known as coenzymes. As more kinds of vitamins and metals are detected and they too shall be acknowledged as coenzymes.

If someone were to ask, "why are fresh vegetables and fruits good for your health ?", the answer would surely be, "because fresh vegetables and fruit contain many vitamins and minerals." But as the nature and the action of enzymes becomes clearer, there shall arise a new answer, "because fresh vegetables and fruit contain many enzymes."

The number of active enzyme types within the human body is over 1000. Among these are 200-300 of which the biochemical reactions have already been elucidated. All of these enzyme types can be classified within the international number system of 1-6 (table 1.) according to their catalytic reactions.

When we refer to the action of enzymes, we are speaking of either catalyzers for synthetic reactions. For instance, when we examine the various cydles concerning our human metabolism such as the TCA cycle, EMP route, Calvin's cycle, ornithine cycle, Coli cycle, etc. one finds that in each reaction a certain enzyme is active. Each chemical reaction progresses through the catalysis of a specific enzyme. In the course of a metabolic process, if any enzyme is deficient or completely missing, the reaction at that point will be blocked, and an intermediate products will accumulate there. Most of these intermediate products are harmful to the body, attack healthy cells and form the cause of inflammations and irritated nerves. If only one could discover which of the enzymes does not fulfil its function or is missing; and if one could then supply the body with the needed enzyme, the blocking would be eliminated and the body would return to its normal, healthy state. In gemeral it is very difficult to identfy the missing enzymes.

If one has eaten too much with resulting indigestion, one may take diastase as a remedy to aid the stomach. But does diastase include all sorts of the enzymes necessary for later decomposition and/or synthesis reactions? To eliminate this uncertain factor it would make much more sense to take an enzyme complex containing the complete series of known and unknown enzymes necessary for the smooth completion of the digestion process to the end product of carbon dioxide, urea and water. Such an enzyme program will aid the task of the enzymes within the body which are possible not up to par, and help to unblock the digestive process. The average enzymes which are not needed are eliminated by the body in average within 8 hours.

Lately various enzyme preparations have become available on the market. Taking into consideration the preceding points regarding the optimum usage of enzymes, we are now able to judge which are most suitable for an overall, beneficial effect within the human body.

Characterristics of enzymes

1. Raw material for enzyme preparations

It is best to obtain enzymes from as many, diverse, edible plants as possible. These may include herbs, vegetables, fruit, seeds, kelp, etc. . According to the method of enzymology generally used until now, it was normal to extract enzymes from the internal organs of animals with water via a precipitation using alcohol. The types of enzymes available from animal organs are limited ; and furthermore, they themselves originate in plants after all. Therefore it makes more sense to obtain enzymes directly from the plants.

2. Prerequisites for obtaining enzymes

The first condition is the availability of pure water free from chemicals. The air must be free of any kind of industrial pollution. The soil fur growing the plants m must not come into contact with any kind of artificial fertilizers. Buildings and production facilities must not be made from synthetic materials such as plastic, etc..

3. Containers for enzymes

If the enzyme preparation is produced in a liquid form, a glass bottle is the most appropriate storage container. The liquid type is the best form of enzyme for use in the living body since it is most active in a aquatic environment (protoplasm body fluids, etc.. In a liquid environment of suitable acidity (e.g. pH= 2−3) and of natural sugar (e.g. 50-60% solution of natural glucose), the enzymes will maintain their activity for many years. Inded, through extended storage the enzymes ripen and their activity increases markedly.

One can accept this fact concerning nutrients if one looks at the healthful preservation methods of our ancestors who did not have the faintest idea of enzymes.

There is, for example, the salted plum (ume), which the longer it is stored in this condition, the better it tastes and the more intensively it heals certain diseases. Therefore it becomes more valuable for the maintenance of health. Also the older nukamiso (fermented mixture of ricebran and salt) becomes for pickling, the better is its taste. The enzymes of miso (boiled and fermented soybeans) are preser ved by salt and its activity greatly increases. In the case of honey, the enzymes of flowers are fixed by natural glucose and fructose. So if honey spoils during storage it is because of foreign substances that have been added on purpose. Vegetables, fruit, and kelps pickled in salt, sugar or vinegar are therefore protected from spoilage. Yet the significance of this process is much increased in that the enzymes are thereby preserved.

4. Harmful enzymes do not exist.

There was once a report that a housewife's hands were roughened through the use of a detergent to which an enzyme had been added. The cause of this skin irritation was probably due to the fact that only one sort of enzyme was added to the cleanser. Thus this one enzyme was not sufficient to carry out a total reaction with the intermediate products catalyzed by this one kind of enzyme; and was apparently blocked at the stage of irritation to the skin. The natural way is to have sufficient different kinds of enzymes, so the reaction may be brought to completion and not be stopped at a certain phase by lack of certain kinds of enzyme with a resulting, harmful intermediate product. In short, an enzyme complex catalyzes sequentially like a chain all the way to the end products.

5. Dosage

There is no specific dosage indicated when using enzymes. The amount is limited only by the capacity of the stomach.

6. Side effects

Enzymes cannot produce detrimental or negative side effffects. In some cases, what are called enzyme reactions (e.g. diarrhea, stomach ache, vomiting, eruption of the skin, or nausea) appear. But these are merely restoring actions in which the harmful by-products of blockage and decomposition are eliminated from the body. They usually disappear within 20-30 minutes. More precisely these enzyme reac tions are the proof that the enzymes have indeed started the healing action.

7. Enzymes and diagnosis

A diseased part or a disease which cannot be ascertained or found by means and methods of today's medical examinations can be reached by the enzymes introduced into the blood stream. The enzymes will decompose the block and the disturbance to the metabolic process will be eliminated.

8. Enzymes do not compromise

If one has drunk a lot of alcohol, one can take enzymes to protect the internal organs which are exposed to damage. If, however, an excessive alcohol intake is maintained, enzymes may not be able to handle this task. In other words, if enzymes are not effective under these excessive conditions, the fault does not lie with the enzymes, but with the individual. The enzyme is of nature and acts according to its strictest laws.

Most of the enzyme preparations available on the market today are dry and in tablet forms. The drying process tends to lower the active power of the enzyme

but in spite of this, these preparations are still effective and useful especially for the digestive process.

The enzymes of living matter retain their vitality even outside of the body if the environment is favorable. They live and change according to the changes brought on by the four seasons.

Our general view of the importance of a balanced diet must change considerable when lookd at from the point of view of enzymes. It is often said that the ideal balance of vegetables to meat is in a 3 : 1 ratio. Also it is recommended to include vegetables of different colors to add balance to meals. It does not necessarily follow that even though we seem to be valancing our meals with diverse vegetables. The enzymes therein may not be suitable for the time of the year. This has come about through the development of greenhouse caltivation from which we may partake of vegetables that have been grown out of sequence from their natural seasons. If in the winter one puts together a meal consisting of tomatoes, cucumbers, lettuce, paprika, etc., it would be a mistake to maintain that one had eaten a healthy meal. Thus we are eating vegetables which have not grown in accordance with the laws of nature, and whose enzymes may not be suitable for the particular time of year and/or climate. In the following 3 sections the author would like to look more closely at the problem of nutritional balance in relationship to nature.

Nutritional balance outlook and enzymes

Nutritional balance outlook 1

It is good to eat whatever foods are grown in a particular season and harvested in the particular area where one lives. This is quite natural. The reasoning for this is that the foods are fresh and will contain many vitamins and minerals in this state. But today we can not take food with much confidence in view of the fact that much of the fresh vegetables sold at the market come from greenhouses. In other words summer vegetables are sold as fresh in the winter. We often hear people say that it is getting more difficult to actually feel the change of the seasons because of such methods of greenhouse cultivation.

With this problem in mind we must ask ourselves why the nature does give us fundamentally different sorts of vegetables or fruit depending on the particular season.

WINTER The long, bright days of summer, filled with extended activities, are over. The harvest is in. Now there are long evenings of inactivity, holidays, festivals, Christmas, New Year feasts till deep into the winter. The richness of the winter fare stimulates the appetite with holiday meals consisting primarily of meat, fat, butter, cream, etc. which are high in calories. Because of this so-called winter menu the body fluid, normally slightly alkaline (pH=7.4−7.8), changes slightly to the direction of acid. The residues of the food accumulate in the body and are not eliminated.

Then along comes spring, and with it the Easter feast, It is about this time in Japan that people celebrate a particular holiday on which only the first of the green vegetables of the season are to be taken cooked with the poridge of rice. Considerable importance was given to these young herbs that had hardly matured from seeds and were only partly growing under the snow. This custom can be seen also in the very old folk stories and in all religions. The founders of religions were not only wise men of philosophy but also with their dietary laws hygenists of their people.

Enzymology today takes into account that the fisst spring vegetables contain certain enzyme groups which will adjust the metabolism that was put out of balance due to the heavy winter food intake. Not only the fibers in the vegetables but also their other constituents work together to initiate a thorough cleansing of the body. Food residuums and incomplete products of the digestive process will be decomposed by the enzymes. It is when carbohwcrates and fats are decomposed into carbon dioxide and water, and when protein is decomposed into urea, carbonic acid gas and water, the elimination is most harmless.

Herbal medicines or traditional folk remedies containing volatile oils have blood purifying action in many cases, but they are still not as powerful as the decomposing and composing action of enzymes. Cleaning the bowels by using a laxative is not enough for removing the waste matter accumulated and hidden within the wrinkles of the intestinal walls during many years. Also eating fiber-rich foods which had become popular is not really that useful because the intestine is essentially purely mechanical in its peristaltic structure.

As written in a Japanese poem the Hyakunin-isshu, by the Emperor Koko in the 9th century :

I go into the field at the beginning of spring
so as to pluck for you the green herbs,

and snow flakes fall on my sleaves.

As one can see from this poem the young, green vegetable at spring time has had significant importance in the cycle of good health even in old historhcal times. Many spring herbs such as coltsfoot, camomille, Japanese parsley, mugwart blossom, and other such sprouts contain bitters which combine with the residues accumulated during the winter and cause their excretion.

The climate in Japan changes regularly in three-month intervals creating 4 distinct seasons: January - March (winter), April - June (spring), July - September (summer), and October - December (autumn). With the general popularity of greenhouse agriculture there is now a general consensus of opinion that one can no longer exclusively relish nature's generous bounty in their proper season. But more important than this is indeed a technical interference with the natural growth of events which will lead to a conflict on enzymes and also on visus which is induced through the unnatural cultivation. In other words enzymes circulate throughout the year adjusting to the seasonal changes. In winter they facilitate a cleansing of the body through decomposition of residues and their elimination. In the spring time enzymes are employed to build up the rejuvenated body and to maintain health. In the summer the enzymes act as diuretics through urine, perspiration, etc., and there is the elimination of toxic matters, residues and viruses from the body. Also enzyme induced perspiration aids in body temperature regulation. Finally in the autumn enzymes cause the appetite to become stimulated in order to build up the body's resistance to the climatic hardships of winter.

SPRING During the vernal equinox the sun begins to shine intensely. This causes the green vegetables to lose their soft leafness and become hard and fibrous like straw. Even green onions lose their sap and exhibit a dry, hard texture. When the vernal equinox has passed and the later warm, spring days arrive, it is extremely interesting to behold the differences between the winter and spring vegetables. In spring time we have butterburs, bamboo shoot, peas peapods, broad beans, kidney beans, cowpeas, pumtkin, green soybeans, etc.. Among the vegetables of the spring peas and beans are the most significant. These legumes contain a considerable amount of plant proteins which are necessary to build up the body's resistance to the summer's heat. In addition to the required enzyme group this plant protein

also contains a great amount of vitamin E. Vitamin E is referred to as the vitamin of procreation and is also known as the enzyme of electron transmission. This is necessary for the rejuvenation of life following a long, dormant winter. In order to take full advantage of an enzymic reaction, the body must experience a total cleansing process. If it is clean and residue free, it will readily extract and absorb the necessary nutrients from even the most simple foods, elimination will proceed normally.

SUMMER This is the season which extends from July through September (in Japan). Among representative vegetables are the diverse melon types, such as cucumbers, pumpkins, water melons, etc.. They appear on the market with vegetables of the eggplant family, such as tomatoes, paprika, etc..

During the summer the melon type of vegetables act in the capacity of diuretics and perspiration promoters. Impurities such as viruses are eliminated via perspiration and urine excretion. In case of a cold one should remain in bed warmly covered and partake of hot drinks. This is highly desirable because it results in excessive perspiration through which the viruses causing the illness are eliminated. It is also advisable to wash immediately any perspiration soaked bed clothing. If these items dry in the air without being washed, the viruses will float in the air and case infection once again. When wshed in water the viruses are unsheathed and separate the core molecules from protein, polysaccharides and lipoids that previously encapsulated the core of nucleic acid. Now unsheathed and inactive the viruses will be discarded all together.

Each serious cold is accompanied by a slimy excretion (phlegm). Phlegm consists mostly of polysaccharides and combines with residues and viruses. The amount of the saliva mucus is an indication of the severity of the disturbance within the body. Elemnts of the on-going elimination process are not only urine and feces but also perspiration, mucus and saliva. They are important in the fact that they combine with residues and viruses and facilitates the elimination. Thus it is not only rude but also very unhealthy to spit on the street or anywhere in public. When it dries it again enters the air, is inhaled and causes new infections. Under certain circumstances these could bring about diseases of epidemic proportion.

In general, physical strength is diminished during the summer due to excessive heat, and it is easy for viruses to increase. However, if it is possible to eliminate

these viruses quickly then the body can retain much of its strength. Through the diuretic action of the melon family the kidneys can be purified. This type of purification can be easily confirmed as the urine becomes more and more odorless. In the laboratory the hydrochloric acid is used for the chromatogram to break the cohesion of viruses and to isolate the viruses. It is understandable that the cucumber salad is a favorit menu especially in summer, or generally that the salad is an important dish in meals to break the cohesion of viruses by acid (vinegar) and to excrete. Finally vegetables of the eggplant family have an action which strongly inhibits the activity of viruses.

Toward the end of summer freshly harvested figs become available. They contain a high degree of protein decomposing enzymes (proteinase). Through them the digestive force, which was diminished by the summer's heat, is activated; and the accumulated residues are decomposed and eliminated.

AUTUMN Following the summer heat, the cool days of autumn are stimulating to the body and thereby increase the appetite. Fresh, green vegetables are amply available and can be eaten together with foods of high calorie content to increase phys sical strength for the coming cold season. It will also be noted that the green vegetables of autumn will not be much different in taste than those of the impending winter.

Thus it can be seen that there is much to take into consideration when planning meals with vegetables which change every season. Yet it is with greater appreciation that one should relish these seasonal vegetables. If they are eaten in accordance with the proper laws of nature they can be enjoyed only for 2-3 months out of the year.

It has often been mentioned that eating habits of farmers tend to be unbalanced, since they may partake of only those ccrops which tiey harvest in season. For instance eating only beans when there are bean crops. Eventhough their eating habits seem less refined than those of city dwellers, they are in fact more in tune with the cycmes of enzymes. Thus from a nutritional point of view it is senseless to disrupt the seasonal sequence of foods just to satisfy the cravings of the palate. It is senseless in the fact that it is proven to be unhealthy; for it harbors a serious source of danger namely the virus.

In 1967 the author worked in the Institute of Genetics at the University of Tübin-

gen in Germany on a research project conducted by Prof. Dr. W. Seyffert The subject of this research was "Inheritance of the white color of the *Matthiola incana*" (a white flower). The summers in Germany are rather short. Around the 10th of August it suddenly becomes cool in the mornings and evenings; and the sun begins to set more quickly as in the autumn. It is at this time that the blossom of the *Matthiola incana* begins to change. The snow white flower developes pinkish red stripes. Such striped flowers, though very beautiful, were completely useless to my research. The reddish stripes were caused by the actions of viruses.

The activity of viruses is influenced by temperature. Apart from temperature the factors which activate viruses are chemicals, radiation, ultra violet lighting, etc.. In greenhouse cultivation of vegetables one uses chemical fertilizers to stimulate growth and also chemical pesticides and herbicides to protect the plants from harmful external influences. Finally in greenhouse cultiuation the temperature does not vary like those of the seasons. The reaction and change of the virus due to the complicated and unnatural environment of the greenhouse has not yet been totally clarified. An in depth study of the reaction of each virus to this type of environment is not always possible. However, eventhough there is not yet irrefutable proof of the overall action of viruses in a greenhouse environment, that does not mean that we should remain oblivious to the possibilities of imminent danger in this area.

There are some types of vegetables which may be taken regardless of the seasonal cycles in which they fall. These are the types of foods which can be properly stored for long periods of time, e. g. corn, beans, potatoes, edible roots, pumpkins, cabbages, fruit, seeds, nuts, sesame, poppy, wheat, barley, rye, rice, lentils, carrots, turnips, celery, mushrooms, raisins, dates, figs, plums, and all types of pickled vegetables. Within pickled vegetables there are living active enzymes. They adjust to the climatic changes and to the seasonal environment. These vegetables therefore retain their nutritional value throughout all of the seasonal cycles.

In Japan each meal is ended with a dessert consisting of rice with green tea accompanied by salt-pickled vegetables. Green tea which is alkaline controls the constitution of the body fluid if it tends to be acid. The Japanese diet, low in meats and fats, can be balanced by the green tea and the active enzymes contained in the satled vegetables. In Europe, however, where the diet emphasizes meats and fats, the custom has developed where the meal is ended with a cheese dessert. Cheese contains en-

zymes which tend to balance the European diet.

Nutritional balance outlook 2:

For proper daily nutrition one should consume more than 10 different kinds of foods consisting of vegetables, kelp, fish, etc.. It is easy to find more than 10 kinds of these foods which are always obtainable through out the year. They can be radishes, carrots, turnips, leaves of them, cabbages, onions, garlic, parsley, sesame, sea kelp, mushrooms, bean sprouts, scallions, devil's tongue, small fish, dried bonito, etc.. It is also advisable to add fresh vegetables of the season corresponding with each type of previously mentioned foods.

The bonito fish undergoes fermentation during its drying process. Thus the meat of the bonito, a source of protein, is rich in enzymes and a most healthful nutrient. Also dried bonito does not contain those amino acids on which DNA viruses can increase. Thus if possible it is highly advisable to ingest this type of protein.

When using the above mentioned food groups, it is easy to prepare numerous recipes. As a suggestion, it is desirable to cut each of the above mentioned vegetbales into fine stripes, mix them together with the kelps, fish, seeds etc. and store them in the refrigerator for 1-2 days use. They can be served along with the main meal. As a seasoning for the mixture one can use either salt, soy sauce, dressing, mayonnaise, etc.. Fermented soy (moromi) is highly recommended. Also as a dietary aid this mixture in a unseasoned state can be taken in conjunction with boiled rice.

It is said that the Emperor Butei (China) desired immortality and sent messengers throughout the world to find an elixir to life. Perhaps with the aforementioned diet modern man has actually found that elixir to a long, healthy life. If one eats the proper foods in moderation and insequence with the laws of nature, then one shall possess that which Emperor Butei so tediously sought.

When the author walks through her garden and closely examines the various plants therein she realizes that there are many edible species to be found. If we ignore these plants which nature has proffered to us as food and turn to those which are artificially grown in greenhouses with chemicals and prone to virus, are we not turning our backs on God and nature? After this revelation the author was struck with the actual beauty of God's earth. She realized the saying, "God is Love" is indeed true. Through the bountifulness of nature God has given mankind his actual love. Thus cornucopia is actually God's way of saying, "Live well and prosper!" Thus the words from the prayer, "Thy kingdom come, Thy will be done on earth as it is in

Heaven" can be interpreted as God's kingdom on earth and is presented to humankind through nature; and to deviate from nature is in essence to deviate from the way of God.

Nutritional balance outlook 3:

Ideally any plant should be consumed in its entirety. Not just the root, stem and leaves but also the blossoms, fruit and seeds. However, it is evident that the stem and the leaves of some plants (i. e. tomato) don't taste that good. So we must use our imagination when preparing meals from plants. A traditional Japanese dish is spinach with sesame (root, stem, leaves of spinach combined with sesame seeds). Another dish, tomato salad, is always prepared with onion slices and parsley containing fruit, seeds, root and leaves.

The Japanese are visual people. Nearly all cultural phenomena are directed toward the aye. All complimentary remarks concerning a meal are usually offered in regards to visual perspective. Thus one can see how important the outer appearance of food can be in stimulating the appetite.

Looked at from the point of view of enzymes, a visual appreciation of food is more relevant since all facets of the plant are taken into consideration. However, today creativity in food preparation as well as our eating habits have deviated greatly due to greenhouse cultivation.

The author would now like to turn her attention to the subject of viruses since they are so closely associated with improper eating habits. Though the nature of viruses is not fully understood, one should give them one's utmost attention. Through experience we realize the effect which viruses can have upon us. Medical science has not as yet developed a medication or method of sterilization to destroy the viruses. In order to destroy viruses one may either use heat, specific decomposition enzymes, or immunization. Heat is not practical for living bodies, as yet specific decomposition enzymes have not been discovered, thus immunization is the only feasible way. So what we can do to comply with immunotherapy is to simply wash our hands and gargle.

A virus does not consist of a nucleus and cytoplasm like a bacteria. A virus is the molecular material of nucleic acid. Thus a virus is much smaller than a bacilli (bacilli are over 500 millimicrons while viruses are between 10-450 millimicrons). When viruses are airborne they take much longer to land than the bacille. Thus it is much easier to come into contact with viruses. In Japan each temple provides a foun-

tain in which the visitor can wash his hands and rinse his mouth. At first one would not think that this traditional fountain would have anything to do with viruses. However, when more closely examined in a medical light, viruses are molecules which are partially washed away by water. Perhaps this cultural trait may have some hidden meaning in regards to hygiene to viruses.

Even if viruses do enter the human body they will be eliminated via the metabolic process if the body is in a healthy state. Viruses are easily bonded to diseased areas of the body (cuts, abscesses, inflammations, etc.). A virus is an inanimate entity; yet, in a way, it is living. If a virus enters a living entity under suitable conditions (wounds, abscesses, pus, chemicals, radio active rays, ultraviolet light rays) it will multiply like a living entity. Thus we must indeed keep the body in a healthful state to fend off the attacs of viruses.

When one carefully considers the prementioned three nutritional balance outlooks it is easy to realize the dangers of an unbalanced diet in our eating habits.

In Chinese herbal medicine one finds ingredients containing animal, vegetable and mineral materials; however, none of these ingredients will give relief to an ailment solely on its own. When they are combined and cooked together in water the healing action can take place. Arrowroot starch gruel (Kakkonto) is a Chinese herbal remedy for colds. This recipe contains 7 raw materials (arrowroot, cinnamon, Chinese dates, mahuangs, peonies, licorice, ginger). Individually these ingredients would have no resulting effectiveness on a cold; but mixed together they are most effective as a fever reducer, for relieving stiffness in the shoulders, and for alleviating high blood pressure.

In another herbal remedy (Makyoyokukanto) for a pain killer are the raw materials mahuangs, apricot stones, adlays and licorice). None of these particular raw materials produces an analgesic effect on its own. But when combined they are most effective for rheumatism and neuralgia from flu. Combination of ingredients must also be seriously taken into consideration of food stuffs to obtain maximum, nutritional effectiveness.

The three, vital nutrients (carbohydrates, fats, proteins) as well as vitamins, hormones and minerals are all understood as to their individual actions or purposes. But research has not yet fully made clear the effect these matters have when combined in different ratios with each other. Even so we can still seek guidance from our ancestral past, which was probably more in touch with the natural ways of living than modern man.

Progress in science began with classification and has become more and more directed towards analysis. One should, therefore, do well to stop and look back at all of one's garnered knowledge, and try to bring it into focus as a clear, meaningful whole.

SUMMARY

If one perceives the study of health from the point of view of enzymes and viruses one will discover certain points which differ from established, medical, dietary concepts. The present methods of treating or preventing illnesses are usually obtained by introducing synthetic, medicinal substances into the human body. Little account is given to such important aspects as decomposition and elimination of waste matters or intermediate matters from living bodies by cleansing organs, muscle, blood and otehr body fluids. To date natural methods of elimination given any serious consideration have been laxatives, fasting cures, or blood purifying drugs via Chinese herbal recipes. Compared with these so-called natural methods, enzymes introduced into the body in their natural, liquid state are far superior and much more effective than anything yet discovered.

The virus is said to be the cause of many of today's incurable diseases. Many facts concerning viruses are still unknown. When Dr. Robert Koch discovered the tuberculosis bacillus long ago nobody believed what he had discovered. Today most bacterial diseases are curable. Yet many diseases caused by viruses are difficult to cure, especially those diseases whose activator is the DNA virus (bacterio-phage, or tumor virus). Also there is no way to sterilize against viruses; and a vaccine is difficult to produce. In this situation there is no other way than to practice natural nutrition; and to make certain that the viruses which surround us will not be able to take advantage of weakened bodies, but can be properly eliminated by our healthy metabolisms.

Nutrition builds the body, but it cannot create life. What is life? It is the harmonious interplay of natural forces. Disharmony leads to death.

In conclusion the author would like to extend her deepest thanks to Prof. Dr. Wilhelm Seyffert, Prof. Dr. Koichi Kimura, Mrs. Chikako Kimura, and Mrs. Fumi Murakami for their support, conduct and invaluable advice.

LITERATURE

AKABORI, S. 1960 Forschungamethode der Enzyme

Verlag Asakura, Tokyo, Japan

ASHIDA, K. 1972 Einleitung zur diätetischen Chemie,
Verlag Yokendo, Tokyo, Japan

DÖRFLER, F. 1970 Unsere Heilpflanzen,
Urania-Verlag, Leipzig-Jena-Berlin, Germany

FÜLLER, H. 1975 Zellen Bausteine des Lebens,
Urania-Verlag, Leipzig-Jena-Berlin, Germany

GRAUMANN, W., NEUMANN, K.
1959 Handbuch der Histochemie,
Gustav Fischer Verlag, Stuttgart, Germany

GREEN-WINDISCH, W. 1901 Die Enzyme,
Verlagsbuchhandlung Paul Parley, Berlin, Germany

HASHITANI, Y. 1965 Studium der Hefe,
Iwanami Shoten Verlag, Tokyo, Japan

HASUMI, K. 1980 Cancer has been conquered,
Maruzen, Tokyo, Japan

HIRATSUKA, N. 1973 Gesammelte Abhandlungen von
Dr. Naohide Hiratsuka, erschienen zur Feier seines 70.
Geburtstags, Japan

ISSELS, J. 1931 Mein Kampf gegen den Krebs,
C. Bertelsmann, München, Germany

KAPPERT, H. 1953 Die Vererbungswissenschaftliche Grundlage
der Züchtung,
Paul Parley, in Berlin und Hamburg, Germany

KATASE, T. 1950 Gleichgewichtstheorie der Azidität und
ALkalität des Blutes, Universität Osaka, Japan

KIHARA, H 1980 Select Papers of Dr. Hitoshi Kihara,
Kihara Institut for Biological Research,
Yokohama, Japan

KIMURA, K. 1981 Gute Freunde und gute Lehrer,
Apotheker Zeitung Verlag, Kyoto, Japan

MIKI, Y., NAKAGAWA, N.
1974 Ausführliche Eklärung der hundert
Gedichte von den hundert Dichtern,

Kyotoshobo Verlag, Tokyo, Japan

OGAWA, G., SHIGSNO, T.
1965 Forschung über die Widerstandsfähigkeit gegen Krebs und Bakterien der speziellen Substanz, Pflanzenextrakt O.E., Zeitschrift der Obstetrik und Gynäkologie, Japan, Vol. 7. Nr.3

OGIWARA, R. 1980 Biologie von heute, Kyogakusha Verlag, Tokyo, Japan

PISCHINGER, A. 1975 Das System der Grundregulation, Hang Verlag, Germany

SEYFFERT, W. 1960 Über die Wirkung von Blütenfarbgenen bei der Levkoie, Zeitschrift für Pflanzenzüchtung, Band 44, Heft 1, 4-29, Germany

SEYFFERT, W. 1962 Genetische Untersuchungen *Matthiola incana*, Biologisches Zentralblatt, Band 81, Heft 1/2, 253-265, Germany

SEYFFERT, W. 1962 Über Geninteraktion bei der Ausbildung von Blütenfarben, XVth International Horticultural Congress, Germany

SHIGENO, T. 1963 Untersuchung über die Widerstandsfähigkeit des Präparates von Hefen-Komplex, Stoff O.E., gegen Krebs, Zeitschrift der Obstetrik und Gynäkologie, Japan

TOMPKINS, P. 1974 Das geheime Leben der Pflanzen, Scherz Verlag Bern und München, Germany

WERSUHN, G. 1975 Ererbte Vielfalt, Urania Verlag, Leipzig-Jena, Germany

WILLWEBER, En 1960 Der zytologische Einfluss von Paraoxybenzoesäure Äthylester auf MTK-Aszites II, III und V, The Japanese Journal of Genetics, Vol. 35, No. 3 : 89-94 March 1960, Japan

WILLWEBER, En 1962 Interspecific relationships in the Genus *Setaria*, Contributions from the Biologeical Laboratory Kyoto University No. 14, Japan

WILLWEBER, En 1968 Untersuchungen über die Biosynthese der Anthocyane und der Flavonoide bei der Levkoie, *Matthiola incana*, The Journal of Otemae Women's University No. 2, Japan