

WHAT IS FOOD?

An Interesting Discussion of This All Important Subject. Read It and Get Ready for That Picnic Dinner

From preceding issues we learned that the nitrogen containing crystalline products found in certain foods are of primary importance since without them no growth is obtained and the animal or human attempting to live on NON-Vitamine foods will quickly develop symptoms of mal-nutrition, low vitality and become susceptible to disease. Furthermore, we read that the immediate food value of these vitamins, as they are called, is greater than their calarific, or heat-energy value, and we no doubt concluded that it is this fact which determines them as food essentials—since it is well known that carbohydrates and fats may supply the ENERGY needed to carry on building and normal health maintaining processes in the body.

The human body, which we know is composed of highly developed cells emmeshed in tissues of equal character, no doubt required many thousands of years to reach its present stability. In all probability the continued struggle in environments, which afforded subsistence products similar to those available today, did much to establish a cell identity so stable that we are dependent, literally, on but one vital food form—namely the vitamins which are found in milk, eggs, lean-meats, liver, kidneys, beans, glutenin of wheat, and certain other natural foods.

These mysterious substances, no doubt, have always existed—at least we have benefited by them—and while there are few who can explain the actual relationship of these substances to growth, yet enough is known to characterize them as absolutely essential to "anaolism" (growth) under economic system of subsistence particular to humans and allied organisms of today.

During the ages gone by certain types of animals became extinct mainly because they evolved only in special directions—thus being un-

able to revert and adapt themselves to other conditions when necessary. Here we come face to face with the fact, that subsistence products represent possibly the greatest reason for animate evolution—since each plant controls the destiny of all animals subsisting upon it. But we see, by general observation, that persistent types ranging over but few species are characterized from the rapidly reverting types by long-livety. It is also true that these persistent types may nourish on widely different subsistence products. WHY? The answer may be found in adaptive selection, a characteristic property of healthy body-cells, during the process of change necessary in food form before it may be assimilated by the said body cells. This breaking down of food protein and subsequent growth is sponsored by vitamins which operate in conjunction with the said widely different subsistence products.

It has been determined that plants also develop highly stable cells whose identity is transmitted thru like cells in seeds: we conclude that there must be a reason for this similarity.

"It has been positively determined that like causes produce like effects in the animate as well as in the inanimate world: it becomes obvious, then, that similar organs must develop in plant and animal forms whenever they are subjected to similar external conditions."—Zittel Book on Palaeontology, page 13.

Under the existing economic conditions organic forms develop by reason of energy transformations which characterize the evolution of the original chemical forms: namely, action, reaction and interaction, these co-ordinating throughout the evolution of the four great complexes of energy environment from the inorganic to organic and finally thru cell identity-stabilizers (bacteria) to the ultimate life forms of today."

Osborn.

We wonder, at times, at the extreme persistency of various life forms and their origin all forgetful of the fact, that evolution concerns the actual progress of control of energy, the "first efforts" of life forms being directed towards the capture of energy together with a storage of the same, subsequently to be directed not only physico-chemically but through nervous reaction so as to get the greatest amount of work from them.

No two elements are the same—thus given time and proximity parts of two differing forms break down to a new identity whose action, in turn, on the original two develops the products necessary to maintain its continued stability. Of such order are Bacteria."

But why mention bacteria? How did they originate? By what law or action may we expect them to form; especially in a manner as specified—which, though obviously inanimate, must still be recognized as an association physomorphic in nature and stable only in the act of growth.

As a first consideration we must recognize the "barren" aspect of the primordial earth as limiting not only the nature of the form, whether it be physico-chemical or organic, but also limiting the range as a possible store of inorganic life isomers, (forms developed thru mental reaction), such as the stabilizing growth product previously mentioned. Thus, we may assume the first appearance of physicochemical life forms as isomeric, (at the same time), with the dissolution of the existing elements into co-relative forms whose stability is limited to the imputus of relativity; that is to say, the energy release may become greater than the energy received; this excess energy tending to stimulate local transformations into orders increasingly complex with reference to the inorganic source. Literally, these formations tend to store energy in a form stable within themselves but latent only in the absence of a tendency to change.

Perhaps you would ask, what maintains the life-balance and the equilibrium of energy environment? A good illustration would be, "the den-

itrifying bacteria which rob ocean waters of the energy needed for the lower forms of plants, and these plants in turn not being available for the lower forms of animal life."

This explains why, "in the colder waters of the oceans, where no such bacteria exist, the numbers of living forms is far greater though their variety is less."—Osborn. Thus it becomes plain, that with the development of inorganic feeders, isomers—which may be useful to other forms, obtain. Yet these only enhance reactivity—since life forms increasingly remote from the physico-chemical feeders are correspondingly more stable.

We may safely assume characterized life-cells of forms now extant as directly resultant of continued vital relationship of chromatin and protoplasm in early organisms. Protoplasm being the "expression" or character of life energy—it remains for the heredity chromatin of the life cells to direct the selective proportioning of the life elements and their more or less complex compounds and derivatives under the influence of the "expression" dominating power constant in stable body cells of today. See X2 below.

We know that the complex life cells of our body are stable only in growth, and since growth takes place only under conditions of proper nourishment we determine immediately on certain compounds as responsible—since what others are taken into the digestive system are utilized mainly to provide energy and heat. Since a SURPLUS of non-nitrogenous material tends to prevent the breaking down of body protein—the extent to which any given food protein diminished the loss of body protein fixes its maintainance and building value.

"It requires four parts of food protein"—this, to all appearances—fixes the percentage availability of protein,—yet conditions may exist, even during high protein feeding, when this percentage availability tends towards the zero mark. It is this shift of the availability gradient which first started the search for the mysterious cause,—now distinctly recognized and attributed to vitamins. It was obvious that vitamins

do not exist in all foods; tests were made and the assumption verified, thus accounting for the observed fluxations of the availability gradient.

Thus, it is obvious that the normal stability of the life cell may be greatly promoted by partaking of such subsistence products as contain the all essential vitamins together with as many differing forms of both nitrous and non-nitrous characteristics as possible. Again—the normal stability of the life cell allows not only body protein maintainance but also growth when one vitamine product and others altogether non-nitrous are consumed. The relative cost of these products at once fixes the importance of selective rationing.

X1. Thus, food, which we now can recognize as comprised only of elements vital directly, or indirectly thru their disintegration products, may be considered as merely an association of those elements which are known to be necessary to promote health, together with the forms resulting from such association. The known life-elements are: oxygen, nitrogen, hydrogen, carbon, sodium, calcium, phosphorous, potassium, chlorine, sulphur, iron, magnesium, manganese, silicon and bromine. See X2 below.

Inorganic substances, such as those listed just above, then, do not assume such utterly remote relationship to the organic as one might at first conceive—and these in turn are but obvious necessities to the animate world.

X2 These 15 elements comprise one-sixth of all the inorganic elements KNOWN to exist and only nine of them are considered as vital to our existence. 1323

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