Nutrition: American Fads, Intricate Facts

The well-intentioned cook has two principal aims in preparing a meal: to nourish and to give pleasure. Preceding chapters have dealt with particular foods, the ways in which we manipulate them, their nutritional and gustatory characteristics. This chapter and the next are devoted entirely to our nature as beings that eat: what materials we need, why we need them, how we extract and absorb them, what flavor is, and how we are affected by it. These questions fall into the three general and intimately related subjects of nutrition, digestion, and sensation.

Because these subjects are extensive ones, our treatment of them will necessarily be brief and incomplete, limited to information that might illuminate our everyday experience.

NUTRITIONAL FADS IN THE UNITED STATES

Why We Are So Gullible

Nutrition and diet are inescapable subjects today. Newspapers, supermarket tabloids, magazines, radio and television, and ever-expanding book racks bring us the latest word on macrobiotics, organic foods, virtuous vitamins, magic minerals, fiber, high-carbohydrate diets, high-protein diets, and on, and on. Mental Health Through Nutrition, Nutrition for a Better Life, A Diet for One Hundred Healthy Happy Years, and Mega-Nutrients for Your Nerves are only a few recent titles that promise to solve our problems with food. Americans looking for a path to healthful nutrition are offered a wilderness of choices.

It is worth asking why this should be: why, in this relatively sophisticated age, we should be spending billions of dollars a year on largely worthless dietary supplements and the latest revolutionary way to ward off cellulite or cancer. The answer, if there really is one, seems to lie deep in our national character, reflecting both its peculiar virtues and defects. No other country has been so fast and willing to experiment with its health on a large scale. And Americans are genuine pioneers in this regard. The nutritional fads of recent years actually mark the second such flowering in our history, the first having begun around 150 years ago. Sylvester Graham and his whole-grain flour, James Salisbury and his chopped steaks, and John Harvey Kellogg and his breakfast cereals are the best-known survivors of the first movement.

Our Knowledge Is Recent

Perhaps we can claim general ignorance as an extenuating factor for 19th-century fads. Solid knowledge of human nutritional needs is barely a century old. From the time of Hippocrates, around 300 B.C., down to the 18th century, it was generally believed that all foods supply one basic nutrient. The science of nutrition begins late in that century with the French chemist Lavoisier, who was the first to assert that "Life is a chemical function," and who demonstrated that animal heat results from the process of oxidation (in fact, he gave oxygen its name). Around
1825 William Prout recognized three "staminal principles" in food, the "saccharina" (carbohydrates), "oleosa" (fats), and "albuminosa" (proteins), though how their roles differed remained a mystery. In the first comprehensive theory of nutrition, the great German chemist Justus von Liebig (1803-73) asserted that nitrogen-containing proteins form tissues and are consumed in mental, emotional, and muscular activity, while sugars and fats are oxidized to provide body heat. Liebig's student Carl Voit proved his mentor wrong about protein as a source of energy, and gradually the functions of the three chemical groups were clarified.

By the turn of the century, around 16 different amino acids were known as the building blocks of proteins. By 1910 Frederick G. Hopkins in England, and Thomas Osborne and Lafayette Mendel in Connecticut, had demonstrated that different proteins have different nutritional value depending on their amino acid contents. And at the same time, Hopkins, the Dutch physician Christian Eijkman, and the American E. V. McCollum were isolating "accessory factors," or vitamins, for the first time, and showing that some severe diseases were in fact vitamin deficiencies. It was not until the mid-seventies that roughage, or fiber, attracted serious scientific interest.

So the foundations for an informed view of human nutrition are very new. For this reason alone, it's not surprising that our ancestors should have had peculiar ideas on the subject. Nor do we yet know the whole story, as the persistent debates about cholesterol, fiber, and vitamin C demonstrate. And ignorance, or half-knowledge, certainly does affect the gimmick of a fad. The pattern is predictable: scientists open up a new area of knowledge, and before it has been entirely explored and understood, the popular theorists exploit it as the long-awaited Answer. When proteins, carbohydrates, and fats were the only known nutrients, fads centered on each of them. Vitamins are discovered, and out come Vitamin Bibles. Along comes fiber, and along comes the life-saving high-fiber diet. So ignorance may well determine the content of fads. But it really doesn't account for the impulse to develop them, or believe in them.

**Optimism and Feverish Ardor**

In the 1830s, just as Sylvester Graham's dietary ideas were catching on (see page 283), the French aristocrat Alexis de Tocqueville toured the country. His classic *Democracy in America* pays little attention to food habits themselves, but does give us a suggestive perspective on the subject. Tocqueville thought that the American insistence on the idea of equality had a massive effect on the general attitudes of citizens toward the conduct of life. In a society where all are equal, individuals will find the ultimate authority in matters of opinion and belief not in anyone else, or in the traditional values of class or nation, but in themselves. Corollary to this idea is a general optimism which this observer from the Old World found unwarranted. Americans, he said, have an exaggerated sense of the individual's control over his own destiny, and an equally mistaken sense of the perfectibility of human nature.

This begins to explain why Americans might ignore the advice of experts on one hand, and yet put their faith in the inexorable progress of "scientific" nutrition on the other. Tocqueville's analysis also suggests why it is that we should be especially interested in our diet. He described a distinctly American materialism, now long taken for granted, and argued that it too springs from the root idea of equality. In class societies, the rich take material well-being for granted, and the poor take its impossibility for granted. Only the middle class, because it is within reach of prosperity but not guaranteed it, must be obsessed with the struggle for wealth. The "classless" because "equal" Americans are blessed and cursed, by default, with the position of the middle class. Said Tocqueville, "It is strange to see with what feverish ardor the Americans pursue their
own welfare, and to watch the vague dread that torments them lest they should not have chosen the shortest path which may lead to it." This is precisely what dietary fads offer: an easy shortcut to health and long life, which are the chief of material goods because the prerequisites for enjoying all others.

The desire for a more radical shortcut to happiness surfaces in the religious revivalism of the times. Various Adventist groups in the 1830s and 1840s proclaimed the imminent return of Christ, leading Tocqueville to observe dryly that "Religious insanity is very common in the United States." It is worth noting that Sylvester Graham was a Presbyterian preacher who was influenced by English Swedenborgians and became a cult figure himself, while John Harvey Kellogg ran a sanitarium for the Seventh Day Adventists (see pages 247-48). America's peculiar hospitality to dietary and religious revisionism might be explained by the fact that we have not had a single, strong, national tradition in either cuisine or belief. By contrast, the countries of the Old World have been much more resistant to change, much less willing to credit vitamin pills or bran flakes with the power of transforming their lives. American dietary gullibility, then, may in part be an unfortunate consequence of cultural pluralism.

The origins of American faddism are certainly more complicated and more noble than this. The toll in human misery taken by slavery, industrialization, and the rapid growth of the cities, gave rise to several important reform movements early in the 19th century, including abolition, suffrage, temperance, and the labor movement. The aim of dietary reform was to reduce the very high consumption of alcohol, meat (often salt pork), sugar, coffee, and tea, and to establish more balanced, moderate habits. This praiseworthy effort lives on today. But some prominent reformers were given at times to programmatic and rhetorical excesses — irrational and extreme prejudices against certain foods; promises of ideal health — which quickly became the mainstay of faddism. There is a line between prudent concern for the way one and one's fellows live, and the "feverish ardor" of self-interest that caught Tocqueville's eye. It is the latter that seems to animate the devotion to the strange prescriptions of the last 150 years.

**Nutritional Fads, Past and Present**

Enough of generalities. The point can be made more vividly by looking at a handful of examples, past and present, and realizing how little has changed in the last 100 years. Listen for the common notes struck by these writers, three from before the age of vitamins, and one from the enlightened seventies.

**Salisbury Steak**

Dr. James H. Salisbury, in *The Relation of Alimentation and Disease* (1888), proclaimed the discovery that bodily disorders of all sorts are largely caused by starchy foods. And why should bread and vegetables be bad for us? Because "By structure, man is about two-thirds carnivorous and one-third herbivorous." According to Salisbury, most of our teeth are "meat teeth," and our stomach is designed to digest lean meat; only the small intestine works on plant foods. It follows, then, that "healthy alimentation would consist in a diet of about one part of vegetables, fats, and fruits, to about two parts of lean meat." The trouble with even this amount of starch is that, since our digestive enzymes work only gradually on it, it "ferments" in the stomach and intestine to produce acid, vinegar, alcohol, and yeast: all substances which poison and paralyze the tissues and can cause heart disease, tumors, mental derangement, and especially tuberculosis. Salisbury's cure for all these ills, naturally, is a diet low in starch and high in lean meat, together with lots of hot water to rinse out the products of fermentation. Here is his prescription, or recipe.
Eat the muscle pulp of lean beef made into cakes and broiled. This pulp should be as free as possible from connective or glue tissue, fat and cartilage.... The pulp should not be pressed too firmly together before broiling, or it will taste livery. Simply press it sufficiently to hold it together. Make the cakes from half an inch to an inch thick. Broil slowly and moderately well over a fire free from blaze and smoke. When cooked, put it on a hot plate and season to taste with butter, pepper, and salt; also use either Worcestershire or Halford sauce, mustard, horseradish, or lemon juice on the meat if desired.

So is born the Salisbury Steak, which in its contemporary manifestations often seems to be more glue tissue than muscle pulp.

**Kellogg against Meat**

Forty years later, one of the pioneers in breakfast cereals, Dr. John Harvey Kellogg, remarked that "Salisbury steaks' are now seldom seen or heard of": a fact for which Kellogg himself was partly responsible, he being a strong advocate of the vegetarian diet. He did share with Salisbury the belief, first made popular by Sylvester Graham, that diet was the determining factor in health, and said, "dyspepsia is unquestionably the foundation of the greater share of all chronic maladies," among which he included rheumatism, gout, tuberculosis, typhoid fever, "organic diseases of the spine and brain, and even insanity... This is how he put the argument for vegetarianism in *The New Dietetics: A Guide to Scientific Feeding in Health and Disease* (3rd edition, 1927).

Flesh foods are not the best nourishment for human beings and were not the foods of our primitive ancestors. They are secondary or second-hand products, since all foods come originally from the vegetable kingdom, being the product of the magic of the chlorophyll grain. There is nothing necessary or desirable for human nutrition to be found in meats or flesh foods, which is not found in and derived from vegetable products.

Meats are especially unappealing because they necessarily contain the waste products of the animal's last muscular activity, so that "in the words of Professor Halliburton, the English Chemist, 'beef tea bouillon is simply an ox's urine in a tea cup." And muscle tissue itself, once inside the human intestine, encourages the growth of "putrefactive and other poison-forming bacteria" which can cause "auto-intoxication," or self-poisoning. The remedy, once more, is obvious: change your diet, this time by eliminating all meat.

**Hay's Menus: Don't Mix**

Striking a balance between Salisbury and Kellogg was Dr. William Howard Hay, who wrote an influential book called *Health Via Food* (1929). Hay thought, with Salisbury, that the fermentation of undigested starch caused poisoning from within, but agreed with Kellogg that meat is not a desirable food. As he put it, "ideal health cannot be attained with any other line of foods than those outlined by God to Adam and Eve in the Garden of Eden." Hay's gimmick was to assert that the digestion of starch "requires alkaline conditions throughout the digestive tract" — an unwarranted extrapolation from the fact that human saliva, which contains a starch-digesting enzyme, is alkaline — and that "acid at any stage [of starch digestion] will permanently arrest this... The arrest of digestion means the onset of fermentation, with disease..."
not far behind. The solution to this dilemma is to avoid acid fruits, and acid-producing meats, in any meal that includes starchy foods: in other words, "scientific" menu planning.

All of the foregoing is the result of 24 years of experience in the application to every sort of disease condition of the simple plan of treatment founded on the right selection and combination of foods, wholly without remedies of any kind whatever, the entire object being to arrest the formation of acids of adventitious character in the body.

Don't eat starchy foods with anything else, and you'll have no need for medicine of any kind. The last two chapter titles in Hay's book indicate the drift of his appeal: "Everyone His Own Physician" and "A Medical Millennium." Hay's theory was quite popular for a while, and several menu books were put out by his disciples.

The Common Fallacies

Notice what the theories of Salisbury, Kellogg, and Hay have in common, aside from being wrong — even laughably so. First, each claims that most chronic diseases are caused by a diet that is faulty in one way or another. Second, each finds its justification in a religious or quasi-rational view of man's "natural" or proper diet. Hay refers to the biblical Eden, Kellogg to a "scientific" version of Eden, our primate ancestors, and Salisbury to the numerology of teeth and digestive organs. Finally, the key to health each claims to have found turns out to be a very simple one, a single aspect of diet. A contemporary observer, Alexander Bryce, described this tactic as "the elevation of some minor detail of eating and drinking into a cult." Avoid starch, says Salisbury; avoid meat, says Kellogg; avoid mixing starch and meat, says Hay. A simple rationale, a simple prescription, and the promise of a disease-free life: verily a Medical Millennium.

The fallacies of this kind of thinking are fairly obvious. First, while it is true that malnutrition can cause various diseases, it is by no means true that all, or even most diseases are caused by malnutrition. In fact, many necessary nutrients can be harmful when eaten in excessive amounts. Second, the appeal to the distant past for an indication of our "natural" diet presupposes that at some point the human body and human diet were in perfect coordination, and that over time we have deviated from this ideal state. As the three examples indicate, the choice of this point is more a matter of individual taste than of reasoned argument. And the very notion of such a point is an idealization. Human evolution, like all evolution, is a process of continual adaptation to a continually changing environment, more like compromise than a series of outright victories over circumstance. (More about this issue in a few pages.) Third, common sense should tell us that the existence of a panacea — a single substance which will prevent or cure all major diseases highly unlikely. Both history, which records many claims but no confirmation of any, and our steadily improving knowledge of how the human body works — that is, in an extremely complicated way — are our best guides on this point. Proper nutrition is a matter of the inclusion and balance of many different substances, some of which, notably the vitamins, these early faddists were ignorant of. And no doubt we remain ignorant of some.

So we have come a long way since these Dark and Amusing Ages? Not really. Take a look at one of the more influential books of the seventies.
Linus Pauling and Vitamin C

In 1970 Linus Pauling, who had won Nobel Prizes for his efforts in both chemistry and the cause of peace, published a little book called Vitamin C and the Common Cold. This viral infection which "causes a tremendous amount of human suffering" can, Pauling believed, "be controlled almost entirely in the United States and some other countries within a few years, through improvement of the nutrition of the people by an adequate intake of ascorbic acid. I look forward to witnessing this step toward a better world." Pauling's evidence included personal experience and several reports in the medical literature, though there were and continue to be contradictory reports as well. And like Kellogg, he found an evolutionary rationale for his theory. Among animals, only primates, the guinea pig, a certain bat, and several birds require vitamin C in their diet; all others are able to synthesize the compound themselves from other food materials. Pauling postulated that these few animals suffered genetic mutations that prevented them from synthesizing the vitamin, but were able to survive because their plant diet was rich in ascorbic acid. The mutants then gradually replaced the normal stock because they lived more efficiently, dispensing with the enzymatic machinery necessary for production of vitamin C. Pauling then calculates the amount of vitamin C present in a mixed plant diet that would satisfy a human's caloric needs, and comes up with a figure of 2.3 grams, or nearly 40 times the recommended daily allowance. Because we no longer get most of our calories from fresh fruits and vegetables, we need to compensate by taking large daily supplements of vitamin C. Thanks largely to Pauling, taking extra vitamin C for a cold has become a standard home remedy in the United States, despite little clinical evidence in its favor.

Here, then, is a familiar strategy applied to a modern dietary detail: we can cure a great deal of human suffering by being careful about our intake of a nutrient singled out by an evolutionary fluke. And the resemblance to the fads of 50 or 100 years ago becomes stronger if we consider how Pauling's theory has developed. In 1976, on the eve of a predicted influenza epidemic, an updated edition of the book appeared, now called Vitamin C, the Common Cold, and the Flu. In its final chapter, called "Ascorbic Acid and Other Diseases," Pauling strongly suggests that vitamin C can be effective in combating heart disease and cancer. Again, we feel a tug toward the promise of a panacea.

Similarly strong and broad claims have been made for a variety of substances, ranging from fiber (Dr. David Reuben's 1975 Save Your Life Diet) to DNA and RNA (Dr. Benjamin J. Frank's 1976 No-Aging Diet). And in 1981, a book called The Beverly Hills Diet reached the top of the best-seller lists. It was based on the proposition that carbohydrates and proteins must never be eaten together; proteins acidify, carbohydrates cannot be digested in acid conditions, and undigested carbohydrates are turned into fat. Sound familiar? This is Dr. Hay's 50-year-old combination theory, jazzed up for the eighties, and if anything more absurd now than it was when fewer people knew less about nutrition.

So to this day there continue to be doctors and scientists (and others) who discover various, previously neglected dietary keys to avoiding fearsome disease (or unfashionable figures). And to this day people buy books of this kind by the millions. Now to point out the similarities between modern fads on the one hand and the theories of Salisbury, Kellogg, and Hay on the other, is not to deny that vitamin C and fiber are important elements of the diet. It is to recommend a strong skepticism toward the suggestion that anything is a miracle nutrient. We should be ready to consider new ideas and information about diet and health, but we should be wary when they are accompanied by extravagant promises. Good nutrition is not a matter of finding the single key, but of a balance among all the materials we need to live: water, proteins, fats, carbohydrates, vitamins, minerals, fiber. And good health is not determined merely by diet. One's innate
constitution, smoking and drinking habits, physical exercise, exposure to environmental pollution, and exposure to disease organisms are all important parts of the whole situation that determines health. So do eat wisely and well, but don't make nutrition into a fetish.

"Natural" Foods

The idea of so-called natural diets or foods deserves special attention. It is attractive in its suggestion of a fundamental harmony between the individual and the world at large, a condition of purity and simplicity. And it is hardly new. Our word physician has its root in the Greek word for "nature" or "origin," and there have been many people down through the centuries who have argued that a return to our original, proper way of life is the best guarantee of health. The modern lineage of this attitude goes back to Jean Jacques Rousseau, who said in his Emile (1762), "The more we depart from the state of nature, the more we lose our natural tastes," and "All is good coming from the hands of the Author of things; all degenerates in the hands' of man." The first notable application of this idea to nutrition is the English poet Percy Bysshe Shelley's pamphlet A Vindication of Natural Diet (itself based on a friend's tract, The Return to Nature), which appeared in 1813. Its first sentence is unequivocal. "I hold that the depravity of the physical and moral nature of man originated in his unnatural habits of life." Greek and biblical legend, and comparative anatomy of the digestive tract, both indicate that man was originally an herbivore, not a meat-eater. "There is no disease, bodily or mental, which adoption of a vegetable diet and pure water has not infallibly mitigated, wherever the experiment has been fairly tried." In the United States, Sylvester Graham popularized similar views, and in the countercultural currents of the sixties, they received new life and new forms. Perhaps most influential was the growing preference for foods that were relatively unprocessed, free of preservatives and other additives, and produced without artificial fertilizers and pesticides. Moral objections to eating meat received a newly sympathetic hearing. And interest in Eastern thought helped propel Georges Ohsawa's "Zen macrobiotic diet" into the attention of a wide public. Based on the classification of foods according to their balance of yin and yang, the macrobiotic diet offers several programs, the most advanced — because most elementary and "natural" — consisting entirely of whole grains.

"Nature" Is Usually an Idealization

In his prescient book of 1959, Mirage of Health, René Dubos pointed out that there is really no such thing as "Nature" in the sense of a single, stable, static entity, and that disease-causing microbes are no less a part of nature than we are. Beliefs to the contrary are our modern version of the Golden Age of the Greeks or the Hebraic Garden of Eden. All life is characterized by continual adaptation to particular, local conditions of climate, food availability, and predation, and these conditions change. Man has been a successful species largely because he is capable of adaptation to the most extreme variations in environment, and has covered the globe from the equator to the poles. At various stages, his ancestors have been fruit-eaters, more general herbivores, and hunters. It was only with the advent around 10,000 years ago of agriculture, which transformed wild plants into more productive crops with fewer toxic side effects, that we became largely dependent on grain. Is any one of these diets more natural than the others? The evidence indicates that human beings are omnivores, capable of thriving on a wide range of foods. It is certainly not true that all substances are equally good for us in all amounts, or that some foods may not cause more trouble than they are worth. On the other hand, such issues should be decided not by intuition or arcane cosmologies, but by patient and objective study. Otherwise, "Nature" becomes simply a convenient rationale for whatever code of life one happens to be attracted to.

Benjamin Franklin made this point wittily in his posthumously published Autobiography. In 1722, as a boy of 16, Franklin read Thomas Tryon's The Way to Heath, Long Life and
Happiness, or A Discourse of Temperance (1691), which advocated a vegetarian diet. He was convinced, and stopped eating meat of any kind. Then, a few years later, Franklin found himself on a ship becalmed off Block Island, and watched the crew haul in some cod and begin to fry them.

On this Occasion, I consider'd with my Master Tryon, the taking every Fish as a kind of unprovok'd Murder, since none of them had or ever could do us any Injury that might justify the Slaughter. All this seem'd very reasonable. But I had formerly been a great Lover of Fish, and when this came hot out of the Frying Pan, it smelt admirably well. I balanc'd some time between Principle and Inclination: till I recollected, that when the Fish were opened, I saw smaller Fish taken out of their Stomachs: Then thought I, if you eat one another, I don't see why we may'n't eat you. So I din'd upon Cod very heartily and continu'd to eat with other People, returning only now and then occasionally to a vegetable Diet. So convenient a thing it is to be a reasonable Creature, since it enables one to find or make a Reason for every thing one has a mind to do.

The Original Macrobiotics

Such arbitrary reason making can be a very serious matter. The Zen macrobiotic diet, for example, has resulted in a rash of cases of severe malnutrition, ranging from scurvy to anemia. While a pure grain diet may do wonders for the yin-yang balance, it wreaks havoc with the body's biochemistry. Grains cannot supply complete proteins, and are deficient in several crucial vitamins and minerals.

In fact, it is worth recalling how the word macrobiotic — from the Greek for "long life" — originated. Christoph Wilhelm Hufeland, a German physician and educator, published a book in 1796 called The Art of Prolonging Life. It was very popular, immediately translated into most European languages, and from the third edition on was titled Makrobiotik, a word Hufeland coined in order to distinguish between prolonging life and curing disease, the latter being the primary role of medicine. Hufeland insisted that long life was to be obtained only by cultivation of the whole man. Good hygiene and moderate diet are important, but so are tranquility of mind, genuineness of character, and goodness: "physical and moral health are as nearly related as the body and the soul." In this view, the improvement of life is not to be measured by regression to a supposititious past when man was in perfect harmony with a benign and static universe, but rather by advances in knowledge and in wisdom about the human condition. A healthy antidote to much modern nonsense.