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A Study of Vegetarianism and Meat Analogs

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FOOD

A Study of Vegetarianism
and Meat Analogs

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A Study of Vegetarianism and Meat Analogs

Introduction

- I. Vegetarianism
 - A. Description of Vegetarianism
 - B. Reasons for Vegetarianism
 - 1. Religious/Ethical
 - 2. Aesthetical
 - 3. Nutritional
 - 4. Physiological
 - 5. Economical
 - C. History of Vegetarianism
 - D. Famous Vegetarians

- II. Meat Analogs
 - A. Description of Analogs
 - B. Advantages and Disadvantages of Analogs
 - C. Manufacturing processes of Analogs
 - D. Leading Analog Companies
 - 1. Worthington Foods, Inc.
 - 2. Other Companies
 - E. The Future of Analogs

Conclusion

A Study of Vegetarianism
and Meat Analogs

Food is the structure of society's structure. It shows the values, customs, and habits of the people. For many years now we have applauded the frozen foods, packaged foods, TV dinners, fast food franchises, preservatives, additives, and anything else that would save time. Our values are slowly changing. In our new culture we have time for growing gardens and things like baking bread. Our eating and cooking has become more of a ceremony.¹ The variety of foods is endless but some people will prefer some foods over others.

A vegetarian is one who does not use meat in his diet for various reasons. These main reasons may be grouped into religious/ethical, aesthetical, nutritional, physiological, and economical.

Some vegetarians use no meat, fish, or fowl or any meat or dairy products. Most, however, do allow eggs, cheese, milk, and other dairy products in their diet.

There are complexities and subgroups of vegetarianism. These include such groups as fruitarians who only eat fruits, those who eat only plant life that has been organically grown, those who eat only nuts, those who eat only raw plant food, and those who eat only foods grown in the sun--they don't eat tubers or root vegetables.

¹"The Kosher of the Counterculture," Time, 96 (November 16, 1970), p. 60.

There are a wide variety of reasons for being a vegetarian. Some are related while others are very different. The following encompass most of the major reasons.

One of the main reasons for vegetarianism is religious or ethical. There have been various churches throughout time who were vegetarian. They include ancient religions of the East like Buddhists, some Hindu sects, Zoroastrians, Jains, Brahmanism. In Orphic societies, the doctrine of transmigration of the soul ties closely with vegetarianism.²

There are also groups that are not part of an organized religion who believe it is wrong to eat meat. Often the beliefs against eating meat are based on interpretation of the Bible, usually the Old Testament. To many meat eaters, these scriptures are not regarded in the same light. There is also a lot of ambiguity when taking the Bible literally.

Meat was not a regular part of the diet in the Old Testament. This might have been due, however, to the scarcity of cattle that made it uneconomical to kill the animal that could be used for milk and dairy products. Meat was usually eaten on ceremonious days and when an honored guest was present.³

Fish was common in the New Testament. Mainly, though, the diets consisted largely of cereal with a few fruits like olives and grapes, and only a few vegetables.⁴

²Gerald Carson, "Vegetables for Breakfast and Lunch. . . and Supper," Natural History, 77 (December, 1968), pp. 18-20, 24, 78-9, 80-1.

³"Food," The Interpreter's Dictionary of the Bible, vol. E-J, 1962 ed., p. 304.

⁴Ibid.

Many people believe that all life is sacred and that all living creatures have the right to enjoy life without being exploited or hurt.⁵ This is evidenced in the "Be Kind to Animal Week" and "World Day for Animals" that is dedicated to the memory of St. Francis of Assisi.⁶

The true spiritual vegetarian, distinct from the stomach vegetarian, believes that each animal has its place in the evolutionary order, its own life to live and its own joy and vivacity and it is unethical to consume any product of animal origin. They use no meat products and consider those who eat eggs and dairy products as demi-vegetarians.⁷

Some of the "Woodstock" youth groups are turning to vegetarianism and use only food that is organically grown without chemical fertilizers and pesticides. They feel DDT and other chemicals have contaminated meat. Spiritually, many feel that meat makes man greedy and that this is a determining factor in the biological conditions that make men start wars, lead to brutality, and stunt his thinking. The young people have a Hindu-like regard for all life. They also feel that vegetarianism is more conducive to meditation and higher awareness. Many are finished with drugs and have turned to diet for "increased awareness."⁸

⁵"Vegetarianism," Encyclopedia Britannica, 1965 ed., vol, 23, p. 29.

⁶Carson, p. 77.

⁷Ibid., p. 24

⁸"Kosher of the Counterculture," Time, p. 59.

Some people are vegetarians on aesthetic grounds. They feel the process of slaughter and the eating of flesh on its way to decomposition is revolting and barbaric. Killing of animals and handling of flesh can only bring callousness and an unconcern for life.⁹

Some suggest that more would be vegetarians if we had to kill our own animal and eviscerate it. We would also be more reluctant about all the parasites and disease that inhabit the flesh of animals, like the tapeworm, trichina worm, and tuberculosis. Some feel this is best expressed by Mel Morse, the president of the Human Society of the United States when he remarked that "If every one of our slaughterhouses were constructed of glass, this would be a nation of vegetarians."¹⁰

Some vegetarians feel that their diet promotes world peace. Meat makes man want to fight. This is part of the erroneous belief that we are what we eat; therefore, to be smart you eat brains, to be a killer, you eat a carnivorous animal.¹¹

From the nutritional standpoint, vegetarians can be healthy if ~~they~~ get their protein and necessary amino acids from sources other than meat. This protein can be obtained from eggs, milk, cheese, and other dairy products and/or supplements.

Wokes made a study of vegetarians in England who did not use meat or dairy products and who were deficient in vitamin B₁₂ because of this. They had been on a restricted diet for 5-6 years and showed these symptoms of B₁₂ deficiency: The commonest and earliest symptom

⁹Encyclopedia Britannica, p. 29.

¹⁰Carson, p. 20.

¹¹Ibid., p. 24.

was in the mouth--usually sore tongues. This cleared after 1-2 months of the vitamin. Parasthesia, another fairly common symptom developed slowly and persisted longer. Amenorrhea and menstrual disorders were found in 8 of 22 women of the ages 15-45. Nervous symptoms were common. Twenty percent had pains in their back and spine. These symptoms were ended by taking B₁₂.¹²

Protein from dead animals has its disadvantages. Toxic wastes, like uric acid, are present from the blood and tissues, dead and virulent bacteria from putrefactory processes, and animal diseases such as tuberculosis, foot and mouth, swine fever, and cancer are also present.

Protein from nuts, grains and dairy sources are relatively pure as compared with beef. The vegetable kingdom is the richest source of all necessary elements--minerals, carbohydrates, and vitamins--and are the source of food for herbivorous animals of enormous strength.¹³

M. Gautier studied the advantages of being a vegetarian who did use milk, grain, butter, cheese, etc. He found that it alkalizes the blood, regulates circulation and preserves the elasticity of arteries, and lessens the liability of maladies of skin and joints and to congestions of the internal organs. He found it softens the disposition and that the vegetarians were more calm and less agitated and aggressive.¹⁴

¹²Henry C. Sherman and Caroline Sherman Langford, Essentials of Nutrition (New York, Macmillan Company, 1957), p. 264.

¹³Encyclopedia Britannica, p. 29.

¹⁴"Vegetarianism," Encyclopedia Americana, 1970 ed., vol, 27, p. 934.

Some vegetarians believe that man is closely related to the apes who are exclusively frugivores and widely different from carnivores, herbivores, and omnivores.¹⁵

The physiological characteristics that are common to all carnivores are lacking in man. These include a short bowel for rapid expulsion of highly toxic materials, a lack of sweat pores, and lack of specially developed teeth and claws for bringing down living prey.¹⁶

Another reason for being a vegetarian is one of economics. This is one area that is expected to have an even greater effect in the future. Vegetarian meat substitutes, analogs, are comparable or less than meat on a bulk basis but analogs from vegetables, soy and wheat, do not shrink like meat; they also have no bone, fat, or gristle. This makes analogs considerably less than meat per edible pound.

The world population is growing at an enormous rate and food is a problem that will continue to worsen. An acre of land will produce about 43 pounds of animal protein if it is grazed. If it is planted in soybean, the vegetable protein yield is about 450 pounds per acre. So an acre of land could be made to produce 10 times more vegetable protein than meat protein.¹⁷

The belief ^{of} ~~that~~ vegetarianism goes all the way back to mythology. Supposedly there were people, the Hyperboreans, who were supermen who lived beyond the North Wind. In this mythical land of

¹⁵Encyclopedia Americana, p. 334.

¹⁶Encyclopedia Britannica, p. 29.

¹⁷Worthington Foods, Inc.

continuous sunshine, crops grew without rain and the produce was gathered without labor. Meat was only used as an offering to Apollo but was never eaten.¹⁸

Vegetarianism was practiced thousands of years ago in the religions of the East. These included Jains, some Hindu sects, Zoroastrians, and Buddhists.¹⁹

Pythagoreas was a famous teacher of ancient times. One of his beliefs was vegetarianism. Closer to modern times was George Cheyne, eighteenth century, ~~who was a~~ Scottish doctor. He was one of the oldest pioneers of the movement in Great Britain. The vegetarian belief was also strong in Germany at this time. The leaders included Edward Baltzer, Gustav von Strusse, and Theodore Hahn. There was some vegetarian influence in France but not nearly as much as in England and Germany.²⁰

In Britain in 1809 near Manchester, members of the Bible Christian Church of Salford pledged to abstain from meat. The first secular vegetarian group was the Vegetarian Society established in 1847 in Manchester, England. For the first time the name vegetarian was used as "one who abstains from the use as food of flesh, fish, and fowl, with or without the addition of eggs and dairy produce." The word comes from the Latin vegus.²¹

¹⁸Frederic Damrau, "The Folly of Vegetarianism," Hygeia, 5 (September, 1927), p. 440.

¹⁹Encyclopedia Britannica, p. 28.

²⁰Encyclopedia Americana, p. 934.

²¹Carson, p. 78.

The first organized vegetarian group came to the United States in 1817. A group left Manchester searching for a Heavenly City and found Philadelphia. They established the "Bible Christian" church that practiced the vegetarian spirit of the Psalmist that said "He causeth the grass to grow for the cattle and herb for the service of man."²²

The London Vegetarian Society became independent from the Manchester society in 1888 and formed the second national society in Britain. These two societies now have 45 affiliated societies in Britain.²³ During World War II, over 120,000 people in Great Britain registered with the Ministry of Food as vegetarians. The International Vegetarian Union was founded in 1908 and has 30 affiliated national societies (as of 1965) who meet at a biannual congress in different countries.

In 1944, a small minority of vegetarian purists formed the Vegan Society and called themselves Vegans. They believe that no animal products should be used in the diet. They live solely on fruit, nuts, grain, and vegetables.

Today there are more vegetarians in the United States than ever before. They patronize such havens as the Shangri-La Health Resort at Bonita Springs, Florida. They offer many physical and social activities and serve only organically grown plant foods with no meat or dairy products.²⁴

²²Carson, p. 78.

²³Encyclopedia Britannica, p. 28.

²⁴Encyclopedia Americana, p. 934.

There are still organized religions like the Order of the Cross, the Magdaznans, the Seventh-day Adventists, the Trappist Order of the Catholic Church and the Dadupanthi Sadus of Hindu. There are also many splinter groups and bands who are part of no organized group.

Vegetarians are not a close group of similar people and beliefs but rather include people from many walks of life. They are reformers, poets, crochety individuals and persons of sensitivity.

Some of the ancient vegetarians are Socrates, Plato, Plutarch Buddha, Asoha, Pythagoras, Ovid, Seneca, Diogenes, Origen.

Later on such prominent ^{men} as Leonardo da Vinci, St. Francis of Assisi, Milton, Pope, Issac Newton, Rousseau, John Wesley-founder of Methodism, and the poets Cowper, Thomson, Burns, Wordsworth, Shelley, Voltaire and Count Tolstoy, Richard Wagner-composer/conductor, and George Bernard Shaw.

In the 19th Century in New England, Bronson Alcott formed a transcendentalist commune "Fruitlands" that was a vegetarian farm. They prohibited woolen clothing because it deprived the sheep of its coat. They did not cultivate by oxen and horse slave labor that violated the natural rights of animals. Most of the rest of Emerson's circle, including Thoreau, Horace Greeley, Oliver Wendell Holmes and Victoria Woodhull were other vegetarians of this century.

In the present century we have Henry Morgenthau, John D. Rockefeller, Lucy Gaston--nemesi s of the Cigarette, Gifford Pinchot--conservationist, John H. Patterson--inventor of high pressure

salesmanship, Horace Fletcher, the Great Masticator, Henry Ford, Johnny Weismuller of the Tarzan movies, Gandhi, Oliver Goldsmith, and F. B. Kellogg-- dynamic health reformer and founder of Battle Creek Sanitarium and inventor of 80 ready-to-eat cereal foods,²⁵

Meat analogs are products made from vegetable protein like soybean and wheat flour that are analogous to meat. There are, of course, differences in analogs and real meat. Manufacturers have prepared these analogs to have the taste, look, texture, and protein values of meat with^x the disadvantages of meat. Meat analogs may also be made of various strains of yeast.

There are many advantages to meat analogs. One of the most commonly set forth is the cost. Some people even feel that the time is coming when meat will be so rare and expensive that only the rich will eat cattle beef.²⁶ The price per edible pound of analog is considerably less than meat.

Analogues are all precooked and easy to prepare. Dehydrated granules can be used in place of ground beef. Other products are canned and frozen and merely need to be heated and/or browned.

Analogues are becoming especially popular in hospitals, nursing homes, cafeterias, and other institutions. Westerville Convalescent and Nursing Center in Westerville, Ohio, is a good example. At first the cooks were reluctant to try the analogs but they soon changed their minds. The analog dishes were enthusiastically accepted by

²⁵All the names came from various pages of Carson and Encyclopedia Britannica.

²⁶Diane K. Shah, "Meatless Meats," The National Observer, February 23, 1970.

nearly all 116 patients. They found the food easier to digest, less greasy, and no gristle. The granules used in dishes in place of ground beef were the most popular. The dieticians and other staff members were pleased because the patients were getting extra nutrition, the cost was lower, and there was no worry about small bones or improperly chewed meat. The convenience of pre-cooked foods also saved time and effort in preparing time.²⁷ For example, analogs do not require hand trimming, inspection and supervision in processing meat, fish, and poultry, and the composition of the analogs is controllable and always the same.²⁸

Meat analogs are much lower than meat in calories and contain no cholesterol.²⁹

Analogues have found use in eating establishments but usually as a supplement to meat and not a substitute. In New York City a number of complaints were registered with the Department of Consumer Affairs about suspected wide use of vegetable protein in hamburger restaurants and luncheonettes. The Department inspected 421 eating places and found evidence that 156 were serving hamburgers that were not all meat.²⁹

Some possible disadvantages, depending on the person's view, would be the inconvenience of using foods strange to most people. Many people resist change and this would involve a change in cooking

²⁷Eleanor Roman, "New Foods to Serve," Nursing Homes, February, 1971, pp. 14-15.

²⁸Jane Hartman, "Versatile Meat Analogs will Satisfy Individual Needs," Modern Hospital, October, 1969.

²⁹Shah, p. 14.

and eating habits. It is often difficult to find places who serve vegetarian foods in strange towns. There is a limitation of 'nice' restaurants also. Most places merely have cheese sandwiches. The vegetarian cannot sample different foods, including national dishes, without a careful analysis of ingredients. And finally, analogs are still relatively hard to obtain in most areas.

Analog from vegetable protein are made by several processes. One of the best known analogs, General Mills' BacOs is of spun soybean. They are also working on the no-egg egg and breads and pastries that are enriched with soy protein.³⁰

Several companies have copied their process from the textile industry by using a similar fiber-spinning process. They extract the vegetable protein, often soy, and spin it into very fine fibers that are bonded with fats, flavor, and colors. This process is used by Worthington, General Mills, and Ralston Purina.³¹

Stripples, a bacon-like product of Worthington is made by a laminating process. The vegetable protein fibers are randomly layered to simulate bacon. They are held together with a binder and flavor is added. Some parts are colored and others are not to resemble fat. Finally the layers are laminated together.³²

Swift and Archer-Daniels-Midland Co. of Decatur, Illinois, have another method--the extrusion technique. First the soy is reduced

³⁰Shah.

³¹Ibid.

³²"Vegetable 'Meats' Look Good for 70's," Food Engineering, May, 1969.

to grit and flour, then these particles are rebuilt into cubes, chunks, chips, granules, and rolls. In this dehydrated form, they can be used in place of ground beef with or without rehydration.

According to Worthington who has produced some 60 analogs, they can duplicate almost all meat products. Many of the flavors are obtained by various types of yeast strains. All are not faithful reproductions ^{but} ~~are~~ are desirable on their own merits

The major company of the field of analogs is Worthington Foods, Inc. of Worthington, Ohio, who are a subsidiary of Miles Laboratories, Inc. They were first organized in 1939 under the name "Special Foods Company," In 1945 they were incorporated under "Worthington Foods." In March 1970 they were acquired by Miles. The company was founded by the Seventh-day Adventist to meet their vegetarian needs. Worthington products are becoming a staple food item for non-vegetarians as well.³⁴

The vegetable protein industry sold about \$10 million in 1969. The projected volume for 1980 is \$1.5 to \$2 billion.

Besides Worthington, the pioneer in the field, there are also General Mills, Archer-Daniels-Midland, Swift and Company, Ralston Purina, A. E. Stanley and Loma Linda.

Meat analogs are still primarily a food of the future but it may not be the too distant future.

A major problem of analogs is the lack of acceptance on the part of the general public. They often do not notice the difference

³³Shah.

³⁴Worthington Foods, Inc.

if they are unaware of what they're eating. But if they know they're not getting the real thing, they object. The products are acceptable but the concept is not. Many people associate soy products with health fanatics. A major problem, therefore, is consumer education. It must be overcome.

Even though the cost is less for analogs than meat, the companies feel the price must come down farther to compete more readily.

Another headache for analog companies is labeling. General Mills had a suit filed against them by the Food and Drug Administration because the BacOs label did not make it clear that it was imitation bacon. The label has since been changed. The federal government has not agreed upon a standard for soybean products. One label will be approved if soy goes into the ingredients statement. Another must have 'soy' in the name.³⁵

Vegetarianism and meat analogs are strange to many people but there are many events that point that that may have to be the way to feed the huge population of the world. There are many things to iron out but analogs are definitely here to stay and probably in greater and greater quantities.

³³Shah.

³⁴Worthington Foods, Inc.

³⁵Shah.

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