

A REVIEW OF PROGRESSING TERMINOLOGY 'ENTOMOPHAGY'

Chanchal Chawla*

*Associate Professor,
Department of Account & Taxation,
Teerthanker Mahaveer Institute of Management and Technology,
Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, INDIA
Email id: chanchal.management@tmu.ac.in

DOI: 10.5958/2249-877X.2021.00105.3

ABSTRACT

In academics, the food and agricultural sectors, governmental organizations, and the general public, there is increasing interest in insects as a source of human nutrition. The terms and ideas employed to describe these creatures and the human activities that surround them are, however, elementary in comparison to the variety of these organisms themselves, and to the current complexity and fast development of the practices that they are intended to describe. The objectives of this paper are to: (1) demonstrate how the roots of the term 'entomophagy' and its uses have evolved over time; (2) illustrate some of the problems associated with the term that necessitate its review; and (3) make recommendations for the term's use in future research and other practice. A brief historical review of insect eating as described by certain Western cultural sources is presented, followed by an examination of some of the taxonomic ambiguities and challenges associated with the term 'insects,' and finally an argument for more precise and contextual terminology in this both richly traditional and rapidly developing field.

KEYWORDS: *Consumer, Entomophagy, Insects, Nutrition, Organism.*

1. INTRODUCTION

According to the Oxford Dictionaries Online, 'entomophagy' is defined as "the practice of consuming insects, particularly by humans." This attention has been drawn to the widespread normality of eating insects in many parts of the world as a result of the construction of "entomophagy" as a practice uniting otherwise disparate groups. This has been particularly true among people who do not typically consume insects but who are becoming more interested in these foods, such as some westerners. This increase in worldwide interest has contributed to the formation of an international movement dedicated to exploring the possibilities of entomophagy in the development of more sustainable food systems and the valorization of traditional diets.

However, there are certain ambiguities in the phrase that may be deceptive, which we will discuss below. First, the presentation will provide an overview of some of the historical foundations and origins of the word 'entomophagy' in the Western tradition, as well as some of the contemporary applications of the term. In the next section, it will discuss some of the taxonomic difficulties posed by the many registers of the category 'insect,' followed by some examples of these differences in a cultural context[1].

The presentation will finish with considerations of some of the ramifications of terminological insufficiency in many areas, as well as suggestions for the future usage of the term 'entomophagy' in various fields. It is our hope that by publishing this paper, we will be able to

kick off further research into the cultural, linguistic, and conceptual categories that inform our understanding of different classifications of insects and their edibility, as well as the implications of these categories for different fields of human activity.

1.1 Term Definitions and Methodology:

In this article, we provide the results of a preliminary research based on the expertise of the author group as well as relevant literature. In this paper, the primary method used is a search of the literature, which covers a wide range of disciplines, including entomology and its subfields, anthropology, biology, ecology, human nutrition, consumer behavioral science, psychology, primatology (including primatology in food), sociology, sensory science, and others. The search for literature was not comprehensive due to language and cultural considerations that will be discussed more below[2].

Along with a review of the literature, part 3 includes analyses of historical texts, dictionaries, and data gleaned from Google N-gram viewer and Web of Science searches; part 4 includes analyses of dictionaries and observational case studies from some of the co-authors; part 5 outlines current and potential implications of the terminological issues for various fields of research; and part 6 makes recommendations.

In no way does this article purport to be an exhaustive assessment of every area from which it takes its inspiration, or of every culture across the globe where particular insects are consumed or not eaten, or where relevant research has been conducted. Instead, this article serves as a collection of illustrative beginning points, which are mainly based on the co-authors' cultural and linguistic origins, as well as their study locations[3].

As a result, the majority of the materials are written in, transcribed in, or translated into English, with a strong emphasis on Western histories and civilizations. Although the writers acknowledge the absence of many significant pieces of research, they also acknowledge that some of these pieces are in languages and from areas other than those covered by the group of co-authors.

Some of the concepts used in the article could be defined more explicitly. "Insects" and "Insecta" are used to differentiate between various lay and scientific classifications of insects, which will be discussed in more detail in part 3 of this article. Unless otherwise specified, the pronoun "we" refers to the group of co-authors. In general, civilizations of European, Mediterranean, and/or Levantine origin are referred to as 'Western,' but we easily recognize that most modern Western societies are made up of a variety of cultural and ethnic groupings that overlap and intermix.

1.2 Changing Lexicon:

We can trace our ancestors' habit of consuming insects back thousands of years and across many different species. It was especially prevalent among our monkey predecessors, who are all 'to some degree insectivorous'. Insect eating is important for all primates in terms of nutrition, and it has been proposed that, based on the insectivory seen in chimpanzees, our closest living relatives, edible insects may have played an important role in the development of humans. As the name implies, insectivory refers to the eating of insects by nonhuman animals.

The word derives from the Latin Linnaean class 'Insecta' and is used to describe the feeding of insects by nonhuman animals. In the case of insect eating by humans, it is unclear why the Greek-derived word "entomophagy," which has a more modern lexical history, was chosen as the proper phrase – maybe ironically, to prevent the othering of particular human people and groups that we are dealing with here[4].

One of the first recorded instances of insects being used as food can be found in the Old Testament, which allows for the consumption of 'the locust of any type, the bald locust of any kind, the cricket of any kind, and the grasshopper of any kind,' among other insects, including ants. There is also an allusion to insects in the New Testament, namely, when John the Baptist is shown as "preaching in the desert of Judea," with "a robe of camel hair and a leather belt around his waist," as well as "eating locusts and wild honey." In later Western accounts, Aristotle describes cicadas (particularly the nymphs) as a delicacy in Ancient Greece in the 4th century BCE, a sentiment that was repeated by Athenaeus of Alexandria in the early 3rd century CE, as well as Pliny the Elder's account in the 1st century CE of Romans fattening 'cossus' larvae on flour and wine in the 1st century CE. Researchers provide a satisfactory derivation of the identification of the 'cossus'.

However, for the sake of tracing the origins of the word 'entomophagy,' the earliest documented etic interactions may be more relevant than later etic encounters. According to Herodotus of Halicarnassus, who lived in the 5th century CE, the Nasamonians hunted wingless locusts, dried them in the sun, pound them up, and then sprinkled them over milk to consume them in addition to collecting palm dates. Several centuries later, in the early 3rd century CE, Aelian of Rome recounts a dessert made of larvae from the tawny palm that was given to a party of Greek guests by a King of India, which the Greeks did not like for. The evidence for people consuming and delighting in some bug species dates back at least a couple of millennia, according to these few historical sources; and each behaviour recorded had its own specific context, species, and criteria of appropriateness to be considered[5].

1.3 Roots of Entomophagy:

The word 'entomophagy' itself is rather recent, at least in the English language and several other European languages. In fact, the word is not even included in Aldrovandi's 'De animalibus insectis', which was published at the beginning of the 17th century and which contains information on the use of insects as food and which marks the beginning of the 'new age of entomology.' It is mentioned in the Oxford English Dictionary, but no information on when it was first used is provided.

In 1871, the term 'entomophagy' was first published in a volume entitled 'Sixth annual report on the noxious, beneficial, and other insects of the state of Missouri' by Charles V. Riley, state entomologist, which itself refers to a paper by W.R. Gerard entitled 'Entomophagy,' which 'in the same year had brought together all the facts read before the Poughkeepsie Society of Natural History,' according Unfortunately, the authors were unable to locate Gerard's eponymous article in its original form[6].

Published records of the term continue to appear throughout the 1870s and 1880s including the notable publication of Vincent Holt's *Why not eat insects*, which is widely regarded as the first document to introduce the concept of entomophagy to the general public in England before declining for a few decades and then rising steadily until today. For the earliest documented occurrences of the term "entomophagy," as well as equivalents in a few other languages. Bodenheimer's landmark book in 1951 who himself suggests honey eating as a form of entomophagy marks the beginning of this twentieth-century revival in the areas of anthropology and ethnology, in particular ethno-entomology and cultural entomology.

Even while it is not the most popular stance today, it is somewhat similar to veganism's categorizing the eating of animals and their products together, which is what the vegan

movement does. Also worth noting is the fact that some of the articles from this time period do not seem to make the distinction between the terms 'entomophagy' and 'insectivory' as previously stated. Furthermore, this difference may not necessarily exist outside of English, even within the romance languages; French, for example, seems to have used the terms interchangeably, especially in light of the recent inclusion of the term "entomophagy" to Le Petit Robert's novel in 2015.

Even contemporary definitions of 'entomophagy' do not always establish such a clear difference between the two concepts. While the Oxford Dictionaries Online definition of the word, as stated in the introduction, is 'the practice of eating insects, particularly by humans,' the more discipline-specific definition is 'the practice of consuming insects by animals' The term 'entomophagy' is defined as 'the eating of insects by other creatures' in 'A lexicon of entomology'; however, there is some ambiguity here since 'other organisms' may be interpreted to imply either the set of all organisms including or excluding insects. "Insectivore" is defined as "an organism that consumes insects," which could include consumption by all organisms including insects; and "insectivorous" is defined as "insect-eating; pertaining to organisms that subsist on insects."

The same book also defines "insectivore" as "an organism that consumes insects," which could include consumption by all organisms including insects. – this is the only instance in which there is a clearer distinction between the terms "entomophagy" and "insectivory," where the former could describe a behaviour of eating insects in a specific situation, and the latter could describe a behavioral pattern or habit of eating primarily or exclusively insects on a regular basis (*italics added*). A similar difference may apply to other consumed things that have both '-phagy' and "-vory" suffixed terms in their names. As a result, we may use the word 'insectivory' in this sense to compare it to other terms of similar construction that describe broad dietary trends rather than particular instances of food choice[7].

When we looked into Web of Science, we saw an intriguing trend in the use of the word 'entomophagy' as a search term for scientific articles written in English throughout time. From 1900 to 1980, just two papers were discovered (1930 and 1938), and both of these studies were about insects who engaged in a practice known as 'entomophagy.' The period 1981-1990 saw the publication of just one paper, which was a review of a book about the eating of insects by aboriginal people in Australia.

From 1991 to 2000 and 2001 to 2010, there are 15 and 16 publications that use the term 'entomophagy,' with some using the definition of 'human eating of insects' and others using the definition of 'insect ingestion by other animals' as a starting point. A large number of articles have been submitted since then, with 49 total submissions between 2011 and mid-2015, the vast majority dealing with human eating of insects and many placing a strong emphasis on traditional foraging of insects (ethno-entomology).

1.4 Insect-Eating Habits:

The fact that not all 'entomophagists' consume all insects, just as not all meat eaters consume all kinds of meat from all animals, should be self-evident to everyone. The type of bug deemed edible and the manner in which they should be cooked and consumed are well defined and localized in cultures where insects are eaten as a food source. We believe it is appropriate to illustrate this point with a few real-world instances.

Consumer perceptions and acceptability of insects as food were investigated in two countries (the Netherlands and Thailand), where the degree and type of encounters with insects as food

differed significantly. Those from the Netherlands were most concerned with sustainability, while participants from Thailand were more concerned with flavor and culinary familiarity. Among the insects eaten by the Thai were ant larvae, grasshoppers, and gigantic water bugs, whereas mealworms, which show no similarity to any of the insects used in Thai cuisine and are linked most closely with putrefaction, were highly despised. As a result of their recent availability on the market and appearances at public events, the Dutch were more acquainted with mealworms as a potential 'sustainable' food source and were thus more ready to experiment with them[8].

2. DISCUSSION

Because the Food and Agriculture Organization of the United Nations has been using the word "entomophagy" in its official publications since 2012, it is possible that the phrase has assisted in spreading the message about the value of insects as food sources.

However, the phrase does serve to simplify the plethora of problems that exist in the industry. This process may be likened to the introduction of the phrase "non-timber/wood forest products" in the early 1990s, which was a similar approach. While this term had a significant impact on drawing attention to funding, policy, legal frameworks, and development for the forest sector in areas other than timber, it has lost relevance after 25 years as consumers' preferences have shifted to product names that are more descriptive of what they are buying (honey, berries, mushrooms, game, tree grubs etc.) From this broad terminology experience, we may make the following conclusions: it is beneficial to use a "generic" technical phrase during the launch phase; but, after attention has been garnered, more precise language is needed.

Current ambiguity in language used to characterize insect eating may act as a barrier to developing laws governing the use of insects for human food in many nations, particularly in developing countries. A particular regulatory framework does not currently exist in most Western nations since insects have not been a common component of most Western diets in recent history, and as a result, the language used to describe insects is extremely broad in nature, if it exists at all[9].

The debate over whether edible insects should be included in European food safety regulations is still continuing. When it comes to food safety, there are certain societies where insects have historically been eaten and where particular language for the practice is missing, such as Thailand, where insects are regarded no differently from other kinds of food when it comes to food safety regulations. Additionally, the Food and Drug Administration (FDA) in the United States seems to be treating frozen crickets in the same manner as any other food-grade frozen product – which, when combined with more precise language, may aid in the development of constructive laws in the future[10].

3. CONCLUSION

When compared to the lengthy history of people consuming insects, the word 'entomophagy' is a comparatively recent invention. Over the course of the word's brief existence, the meaning of the term has evolved in at least a few European languages, becoming less synonymous with the general consumption of insects and various other arthropods by any creature and more specifically referring to human insect-eating habits. While this shift is positive, it does not lessen the term's implicit condemnation of human insect-eating from a Western, non-insect-eating paradigm as being an animalistic, inappropriate, and/or pathological eating/feeding behaviour –

an attitude that may be contributing to the decline of cultural insect-eating in certain parts of the world.

Using the phrase may be extended to other members of insect-eating societies, homogenizing their varied behaviors and preventing them from being investigated in depth and evolving in their own unique way. This variety of behaviors also reflects the diversity of insect species, which may be obscured by the use of erroneous taxonomic classification systems. The term 'insect' is used in various settings by different cultural traditions, which informs distinct methods to categorization, as well as edibility and cultural appropriateness of meals.

REFERENCES:

1. R. Caparros Megido *et al.*, "Consumer acceptance of insect-based alternative meat products in Western countries," *Food Qual. Prefer.*, 2016, doi: 10.1016/j.foodqual.2016.05.004.
2. A. L. Yen, "Edible insects: Traditional knowledge or western phobia?," *Entomological Research*. 2009, doi: 10.1111/j.1748-5967.2009.00239.x.
3. J. Ramos-Elorduy, "Anthropo-entomophagy: Cultures, evolution and sustainability," *Entomological Research*. 2009, doi: 10.1111/j.1748-5967.2009.00238.x.
4. R. Caparros Megido *et al.*, "Edible insects acceptance by belgian consumers: Promising attitude for entomophagy development," *J. Sens. Stud.*, 2014, doi: 10.1111/joss.12077.
5. S. Niassy, H. D. Affognon, K. K. M. Fiaboe, K. S. Akutse, C. M. Tanga, and S. Ekesi, "Some key elements on entomophagy in Africa: Culture, gender and belief," *J. Insects as Food Feed*, 2016, doi: 10.3920/JIFF2015.0084.
6. A. L. Yen, "Entomophagy and insect conservation: Some thoughts for digestion," *J. Insect Conserv.*, 2009, doi: 10.1007/s10841-008-9208-8.
7. N. Katayama *et al.*, "Entomophagy: A key to space agriculture," *Adv. Sp. Res.*, 2008, doi: 10.1016/j.asr.2007.01.027.
8. D. Raubenheimer and J. M. Rothman, "Nutritional ecology of entomophagy in humans and other primates," *Annu. Rev. Entomol.*, 2013, doi: 10.1146/annurev-ento-120710-100713.
9. L. Nadeau, I. Nadeau, F. Franklin, and F. Dunkel, "The Potential for Entomophagy to Address Undernutrition," *Ecol. Food Nutr.*, 2015, doi: 10.1080/03670244.2014.930032.
10. J. Schrader, D. G. A. B. Oonincx, and M. P. Ferreira, "North American entomophagy," *Journal of Insects as Food and Feed*. 2016, doi: 10.3920/JIFF2016.0003.