

## 3. Culture, religion and the history of entomophagy

Disgust is one of our most basic emotions – the only one that we have to learn – and nothing triggers it more reliably than the strange food of others. (Herz, 2012)

### 3.1 WHY ARE INSECTS NOT EATEN IN WESTERN COUNTRIES?

The Fertile Crescent, a region comprising fertile lands in western Asia and the Nile Valley and Nile Delta in northeast Africa is believed to be one of the regions in which agriculture originated. From there, food production (i.e. plant and animal domestication) spread swiftly throughout Europe (Diamond, 2005). The most valuable wild animal species to be domesticated were large terrestrial mammalian herbivores and omnivores. There are 14 such domesticated mammals worldwide, each weighing at least 45 kg. Remarkably, Eurasia boasted 13 of these animals, and the 14th (the llama) was in the Americas. These animals not only yielded considerable amounts of meat (making them the main providers of animal-based foods), but also warmth, milk products, leather, wool, plough traction and means of transport. It is thought that it was because of the utility of these animals that the use of insects – besides honeybees, silkworms and scale insects – failed to gain much traction in the West. Insects simply could not offer the same benefits. In contrast, the Western Shoshoni of the Central Great Basin in the United States probably relied more on small game (e.g. rodents, lizards and insects) because large game was scarce and did not move in herds (Steward, 1938, cited in Dyson-Hudson and Smith, 1978).

Food production in the Fertile Crescent and Europe led to the domestication of an increasingly wide variety of plants and animals. In turn, agriculture witnessed incredible gains in productivity and efficiency. Food could now be stored, food supplies became more stable, and the hunter-gatherer lifestyle eventually took a back seat to sedentary ways of life that were dependent on farming. This pivotal change in lifestyle combined with the uncertain nature of insects as a staple food because of their seasonality, possibly contributed to the loss of interest in insects as food (DeFoliart, 1999). Although there are records of locusts being consumed in the Fertile Crescent (e.g. Israel) (Amar, 2003), they probably were of minor importance due to the unpredictability of outbreaks.

The importance of sedentary agriculture may have also resulted in the perception of insects as a nuisance and threat to food production. In short, undomesticated food sources in general became less important (DeFoliart, 1999). In modern agriculture, agro-ecosystems are greatly simplified: biodiversity is minimal and the potential to harvest from nature is generally low. Urbanization, which is more extensive in Western countries, has left people out of touch with nature, contrary to many tropical settings where people live a more rural life, although this is changing (UN, 2012). Increasing urbanization will change insect consumption in developing regions of the world if supply to cities remains small and unreliable and urban areas westernize. For example, locust consumption in the Fertile Crescent has disappeared in areas characterized by strong westernization (Amar, 2003).

People in most Western countries view entomophagy with feelings of disgust (Rozin and Fallon, 1987). It is safe to say that most are reluctant to even consider eating insects and, moreover, that they perceive the practice to be associated with primitive behaviour (Vane-Wright, 1991; Ramos Elorduy, 1997; Tommaseo Ponzetta and Paoletti, 1997). Disgust forms a basis of moral judgement and plays a major role in people's rejection

of food (Fessler and Navarette, 2003), although it is an innate reaction (Rozin and Vollmecke, 1986; Herz, 2012). Feelings of disgust are mostly triggered by questions such as: *What is it?* or *Where has it been?* (Rozin and Vollmecke, 1986). Aside from basic human emotions, the origins of disgust are rooted in culture (i.e. “taste is culture”), which undoubtedly has a major effect on food habits. Culture, under the influence of environment, history, community structure, human endeavour, mobility and politico-economic systems, defines the rules on what is edible and what is not (Mela, 1999). In short, the acceptance or rejection of entomophagy is a question of culture (Mignon, 2002) (Box 3.1).

#### BOX 3.1

##### Sky prawns and sea crickets

Native Americans, such as those who lived freely in what today is called the state of Utah, were very accustomed to eating grasshoppers, locusts and crickets. On their first tasting of shrimp, the Goshute Indians are reported to have named the creatures “sea crickets” (Lockwood, 2004).

Recently in Australia, Christopher Carr and Edward Joshua of the New South Wales Department of Primary Industries proposed the renaming of locusts as “sky prawns”, a more acceptable description in Western countries, and compiled recipes in a cookbook, *Cooking with Sky-prawns* (BBC, 2004).

### 3.1.1 Why are insects consumed in the tropics more than in temperate areas of the world?

It is generally assumed that the practice of eating insects takes place exclusively in tropical countries. This is not entirely true, as insects are also consumed in countries partially or fully in temperate zones, such as China (Feng and Chen, 2003), Japan (Mitsuhashi, 2005) and Mexico (Ramos Elorduy, 1997). Even between and within countries in the tropical zone, there can be large differences among ethnic groups on which insects are considered edible (Meyer-Rochow, 2005). Generally, however, insect consumption is commonplace in the tropics, while in temperate zones it is often absent. A number of trends in favour of entomophagy are recognized in the tropics, although some are admittedly hard to support with literature:

- **Insects tend to be larger in the tropics, which facilitates harvesting.** Although a larger insect body size is often observed in the tropics compared with temperate regions, this trend cannot be generalized (Janzen and Schoener, 1968; Gaston and Chown, 1999). Body size is related to insect metabolism, but how different body sizes occur is not completely clear (Gaston and Chown, 1999). However, nearly all exceptionally large insects are tropical species, and this may be due to some extent to the way in which insects breathe. Like humans, insects require oxygen and produce carbon dioxide (CO<sub>2</sub>) as a waste product. Instead of lungs, however, insects use a series of tubes called a tracheal system. The gases are mainly exchanged throughout the body by diffusion, which happens faster at higher temperatures, allowing for the production of bigger insects in warmer climates (Kirkpatrick, 1957). As fossil evidence shows, insects had much larger body sizes during the late Palaeozoic period (Shear and Kukalová-Peck, 1990), some as large as 1 metre, because of higher atmospheric temperatures.
- **In the tropics, insects often congregate in significant numbers, so large quantities can be collected during a single harvest.** Locust swarms settle for the night, making harvesting very easy in the evening and early morning. Winged termites, which take their nuptial flights when the first rains fall after the dry season, emerge from

termite mounds in large numbers. Caterpillars in forests congregate *en masse* by nature. Some insects also congregate in temperate regions, such as the Mormon cricket (*Anabrus simplex*) and the oak processionary caterpillar (*Thaumetopoea processionea*). Native Americans likely ate the Mormon cricket (Madsen and Kirkman, 1988); however, the oak processionary caterpillar has hairs that can cause lepidopterism (dermatitis, conjunctivitis and pulmonary affection) (Gottschling and Meyer, 2006) and should not be eaten.

- **A variety of edible insect species can be found year-round in the tropics.** In temperature zones, insects hibernate to survive cold winters. During this period, no active insect species can be found, and their development comes to a standstill.
- **For many insect species in the tropics, harvests are predictable.** This may not be true for locust swarms, for example, but many locals know where and when to collect a wide range of insect species. Such knowledge has disappeared or is disappearing in temperate and westernizing regions.
- **Location.** Palm weevils, for example, are found in palms that have fallen (e.g. often in typhoons in Asia) or that have been felled deliberately to trigger beetles to lay eggs (Choo, Zent and Simpson, 2009). Bamboo caterpillars can be found in stems of bamboo, dung beetles under dung heaps, soldier termites in termite mounds, and so on. Many insects also have preferred plants or tree species.
- **Time of abundance.** This may be seasonal (often depending on rains) or a preferred time of day. For example, grasshoppers are collected early in the morning when it is too cold for them to fly.

### 3.2 WHY WERE INSECTS NEVER DOMESTICATED FOR FOOD?

Insects are considered delicacies in many parts of the world, particularly in the tropics. For example, the 1992 *Malawi Cookbook* features many insect-based recipes under the heading “traditional delicacies”. It states that a number of insect species are highly sought-after, including barbecued palm weevil larvae and roasted termites. Why then have insect species – with the exception of honeybees, cochineal and silkworms – never been domesticated?

The domestication of animals and plants took place thousands of years ago, with different forms springing up independently in different parts of the world at different times. The Fertile Crescent, China, India, Mesoamerica (central and southern Mexico and adjacent areas), the Andes of South America and the eastern United States all boasted food production from a very early time (Diamond, 2005). A notable case is that of Mesoamerica, where the Aztecs managed to develop a complex society with a high population density without large domesticable animals. One of their prime sources of protein is believed to have been insects and insect eggs, the latter semi-cultivated in marshes and ponds in the Mexican Mesa Central (Parsons, 2010) (see Chapter 4).

Activities surrounding the management of a variety of non-domesticated resources can be witnessed today in tropical forests (Perez, 1995). Recently domesticated tropical plant and animal species include macademia nuts (*Macademia integrifolia*), star fruit (*Averrhoa carambola*), paca (*Agouti paca*) and iguanas (*Iguana iguana*) (Vantomme, Gazza and Lescuyer, 2010). Other instances of the semi-cultivation of edible insects exist (Van Itterbeeck and van Huis, 2012), a well-known example being that of the palm weevil, *Rhynchophorus palmarum*, in Latin America (Choo, Zent and Simpson, 2009). Taming and managing species are stepping stones to domestication (Barker, 2009), yet semi-cultivated and other edible insects – with the exception of honeybees, cochineal and silkworms – were never domesticated. While a simple explanation is not possible here, some important factors can be described.

There are 148 species of large terrestrial mammalian herbivores and omnivores weighing at least 45 kg. The fact that a mere 14 of these have been domesticated is due neither to human ignorance nor human incapacity but is a direct result of the intrinsic

biological features of the animals. Diamond (2005) identified six characteristics that a species must have to allow for domestication:

- adequate diet (herbivores are easiest and most efficient to keep as a source of food);
- high growth rate (it is cheaper and more worthwhile to invest in fast-growing animals);
- capacity to breed in captivity (some animals simply refuse to do so);
- a domesticable disposition (e.g. the domestication of horses succeeded but the domestication of zebras failed because of their aggressiveness and tendency to bite relentlessly);
- relatively calm behaviour (animals with tendencies to panic create dangerous situations);
- a clear hierarchical social structure (allowing human to assume the role of leader).

As with mammals, not all edible insect species render themselves to domestication. However, because insects are *not* mammals, the above-mentioned characteristics cannot be assumed to be foolproof in assessing the potential domestication of insect species. Gon and Price (1984) compiled a list of favourable characteristics that can be used to select candidates for insect domestication (these are discussed further in Chapter 7).

The historical contexts in which plant and animal domestication have taken place should also be taken into account. The domestication of large animals (and plants) gave Europeans a considerable advantage over other regions, as evidenced by their worldwide conquests (Diamond, 2005). These conquests enabled Europeans to exert a major influence on food production, with habits, knowledge, techniques and organisms exported worldwide. Perhaps the aforementioned negative attitudes to eating insects formed part of this package, as in more recent times (Box 3.2). It is conceivable that with more time and without European colonialization and imports, the semi-cultivation of edible insects (or even domestication) would be more widespread and involve more species.

#### BOX 3.2

##### Examples from Mali and the United States<sup>8</sup>

Western cultures have an embarrassing history of physical, emotional and cultural suppression of indigenous peoples. In 25–50 percent of Native American tribes, for example, there existed a long history of insect eating; yet because Western cultures lacked strong cultural experience with the practice and considered it primitive, they discouraged and suppressed it among Native American tribes when these two cultural groups began to interact in the eighteenth and nineteenth centuries. Western cultures inflicted similar damage on other indigenous groups, including many in sub-Saharan Africa, with the goal of modernizing or westernizing them. This cultural suppression was still prevalent at the end of the twentieth century. As a result, entomophagy has almost disappeared from Canada and the United States and is showing signs of abating in West Africa.

**Mali.** Traditionally, children in Mali hunt and eat grasshoppers as a snack food. In the village of Sanambele they can be seen harvesting the insects in cotton fields. Since 2010, however, cotton has been grown as a cash crop closer to villages to maintain a high cotton yield in the very fields where children harvest grasshoppers. Western advisors advised farmers to use pesticides to bring more economic stability to the area, an attitude based on zero tolerance for insects in any crop. The fact that grasshoppers form part of this agro-ecosystem and are essential for the nutritional health of the children of Sanambele was not considered. Recent data from Sanambele revealed that 23 percent of these children were already at risk of or had protein energy malnutrition (a condition known as kwashiorkor). Grasshoppers, although a seasonal protein source, supply significant protein to bridge the gap. Mothers in Sanambele, concerned about pesticide

*Continues*

*Box 3.2 continued*

exposure, now warn their children not to collect and eat grasshoppers. Western attitudes towards entomophagy have thus resulted in practices detrimental to the people and fragile environments of West Africa.

**United States.** The Ute, closely related to the eastern Shoshone, are a Native American tribe that lived in what is today Utah in the United States, especially surrounding the Great Salt Lake. In the late 1800s, white settlers arrived from the east in covered wagons, bearing much hope but little or no local or traditional knowledge. Their crops failed, due to low rainfall and grasshopper attack, and it became clear that the reserves of stored food would not sustain the families through the harsh winter. The settlers turned to the Ute to give them food. The Ute prepared their traditional high-protein nutritious snack, called prairie cakes, made from service berries, local nuts and other local materials. The white settlers found them tasty and made it through the winter. Their descendents state that when the settlers later discovered that one of the main ingredients in the prairie cakes was an insect (katydid) that was abundant on the shores of the Great Salt Lake, they refused to consume them – evidence of an existing aversion among Western cultures to food insects 150 years ago. The katydid that saved the lives of these Mormon settlers is now called the Mormon cricket.

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<sup>8</sup> This box was contributed by Florence Dunkel.

### 3.3. NEGATIVE ATTITUDES TOWARDS INSECTS

It is safe to say that, by and large, negative perceptions surrounding insects are fully entrenched in Western societies (Kellert, 1993). Insect harvesting has been associated with the hunter-gatherer era and in turn with “primitive” forms of food acquisition. With the advent of agriculture and the rise of sedentary lifestyles, insects have come to be seen as mere pests (Pimentel *et al.*, 1975; Pimentel, 1991). This is in stark contrast to many tropical regions of the world, where insects have decorative purposes, are used for entertainment and in medicine and sorcery, and are present in myth, legend and dance (Meyer-Rochow, 1979; Yen *et al.*, 2013).

In Western societies – where protein is still largely derived from domesticated animals – insects are virtually synonymous with nuisance: mosquitoes and flies invade homes, the former leaving behind unwanted bites; termites destroy wood possessions; and some insects end up in meals (triggering the disgust factor). Certain insects are also transmitters of disease (Kellert, 1993): a mechanical vector like a housefly, for example, can pick up an infectious agent on the outside of its body and transmit it to food prior to consumption. Biological vectors such as mosquitoes, ticks, fleas and lice harbour pathogens in and are often responsible for serious blood-borne diseases such as malaria, viral encephalitis, Chagas disease, Lyme disease and African sleeping sickness. Arthropods such as spiders have been associated with disease and infection, particularly in Europe, since the tenth century (Davey, 1994). Butterflies and ladybugs are among the few insects that do not evoke aversion, avoidance, disgust and disdain (Kellert, 1993; Looy and Wood, 2006). Few people realize that most insects are beneficial and that very few are damaging.

Western attitudes of disgust towards eating insects have arguably also influenced the preference of people in tropical countries. According to Silow (1983): “It is known that some missionaries have condemned winged termite eating as a heathen custom” and for that reason a Christian person told him that “he would never taste such things, valuing them as highly non-Christian”. In Malawi, research has shown that people living in urban areas and devout Christians react with disdain to eating insects (Morris, 2004). As a result of these Western influences, particularly in Africa, research on the contribution of edible insects to nutrition and economy, and into insect species’ biology and ecology, has been sporadic (Kenis *et al.*, 2006). Yet insect use in diets may persist, though this

may sometimes be admitted only reluctantly by consumers (Tommaseo Ponzetta and Paoletti, 1997). According to DeFoliart (1999), “Westerners should become aware of the fact that their bias against insects as food has an adverse impact, resulting in a gradual reduction in the use of insects without replacement of lost nutrition and other benefits”.

However, Western attitudes are changing, as noted by some researchers: “Insects have long been a significant dietary factor in the poorer regions of the world, and it is high time that scientists recognize this fact and begin to build on it, rather than discouraging or ignoring the practice” (Ramos Elorduy, 1990).

### 3.4 HISTORY OF ENTOMOPHAGY

#### 3.4.1 Entomophagy and religion

Food practices are influenced by culture(s), which have been influenced historically by religious beliefs. The practice of eating insects is cited throughout religious literature in the Christian (Box 3.3), Jewish and Islamic faiths. The Bible speaks of locusts as food in the book of Leviticus, most probably in reference to the desert locust, *Schistocerca gregaria*.<sup>9</sup>

Yet these may ye eat of every flying creeping thing that goeth upon all four, which have legs above their feet, to leap withal upon the earth (Leviticus XI: 21)

Even these of them ye may eat; the locust after his kind, and the bald locust after his kind, and the beetle after his kind, and the grasshopper after his kind (Leviticus XI: 22)

#### BOX 3.3

##### Entomophagy and modern-day Christianity

In 2012, a Danish priest used entomophagy to demonstrate to his assembly the story of John the Baptist. The New Testament explicitly describes Saint John’s source of protein:

And John was clothed with camel’s hair, and with a girdle of a skin about his loins; and he did eat locusts and wild honey (Mark I: 6)

This demonstration was not well received by one of the churchgoers, who complained. According to a Danish bishop, however, the priest had committed no sin because he was demonstrating the word of the Bible. The complainant left the church due to the priest’s stunt of eating grasshoppers.

Source: Rohde, 2012.

There are several references in Islamic tradition to insect eating – including locusts, bees, ants, lice and termites (El-Mallakh and El-Mallakh, 1994). The large majority of references are to locusts, specifically mentioning permission to consume the creatures:

It is permissible to eat locusts (Sahih Muslim, 21.4801)

Locusts are game of the sea; you may eat them (Sunaan ibn Majah, 4.3222)

Locusts are Allah’s troops, you may eat them (Sunaan ibn Majah, 4.3219, 3220)

<sup>9</sup> Biblical citations provided by Jørgen Eilenberg.

Entomophagy is also present in Jewish literature. Amar (2003) suggested that eating certain species of kosher locusts was largely accepted in ancient times. The practice, however, declined among a considerable part of the Jewish diaspora due to a lack of knowledge about the various types of “winged swarming things” mentioned in the Torah. The tradition was only preserved among Jews of Yemen and in parts of northern Africa. Amar (2003) argued that westernization caused Jews who previously ate locusts to reverse their habits.

### 3.4.2 Entomophagy in ancient times

The history of entomophagy is well documented by Bodenheimer (1951). In the Middle East, as far back as the eighth century BCE, servants were thought to have carried locusts arranged on sticks to royal banquets in the palace of Asurbanipal (Ninivé). The first reference to entomophagy in Europe was in Greece, where eating cicadas was considered a delicacy. Aristotle (384–322 BCE) wrote in his *Historia Animalium*: “The larva of the cicada on attaining full size in the ground becomes a nymph; then it tastes best, before the husk is broken [i.e. before the last moult]”. He also mentioned that, of the adults, females taste best after copulation because they are full of eggs.

References to entomophagy continued throughout the region and the centuries (Box 3.4). In the second century BCE, Diodorus of Sicily called people from Ethiopia *Acridophagi*, or “eaters of locusts and grasshoppers” (*Acrididae* family, Orthoptera order). In Ancient Rome, author, natural philosopher and naturalist Pliny the Elder – author of the encyclopedia *Historia Naturalis* – spoke of cossus, a dish highly coveted by Romans. According to Bodenheimer (1951), cossus is the larva of the longhorn beetle *Cerambyx cerdo*, which lives on oak trees.

Literature from ancient China also cites the practice of entomophagy. Li Shizhen’s *Compendium of Materia Medica*, one of the largest and most comprehensive books on Chinese medicine during the Ming Dynasty in China (1368–1644), displays an impressive record of all foods, including a large number of insects. The compendium also highlights the medicinal benefits of the insects.

#### BOX 3.4

#### Edible insects through the centuries

Nomads of Arabia and of Libya greet the appearance of locust swarms with joy. They boil and eat them, dry others in the sun and pound them into flour for future consumption – Leo Africanus from Morocco in 1550.

German soldiers in Italy repeatedly and with obvious delight eat fried silkworms – Ulysse Aldrovandi in his 1602 treatise, *De Animalibus Insectis Libri Septem*.

We could perhaps in time overcome our repugnance at eating insects and accept them as part of our diet, and then realize that there is nothing terrible about them and that they may perhaps even offer us agreeable sensations. We have grown accustomed to eating frogs, snakes, lizards, shellfish, oysters, etc. in the various provinces of France. Perhaps the first urge to eat them was hunger – René Antoine Ferchault de Réaumur in *Mémoires pour servir à l’Histoire des Insectes*, 1737.

Locusts are eaten by most Africans, some Asiatics and especially the Arabs. On their market they appear roasted or grilled in great quantities. When salted, they keep for some time in storage. They are used for supplying ships, when they may be served as dessert or with coffee. This food is in no way repugnant to look at or by association. It tastes like prawn, and is perhaps more delicately flavoured, especially the females when filled with eggs – Foucher d’Obsonville in the 1783 *Philosophic essays on the manners of various foreign animals; with observations on the laws and customs of several eastern nations*.

### 3.4.3 Modern-day entomophagy

The Italian entomologist and naturalist Ulysse Aldovandi, born in 1522, is considered the founder of the modern-day study of insects. Aldovandi's *De Animalibus Insectis Libri Septem*, published in 1602, is rich in references and concepts derived from his studies as well as original observations. Aldovandi, a specialist in cicadas, suggested that insects were important food items in ancient Far Eastern civilizations, namely China, as far back as several centuries BCE.

Yet it was not until the nineteenth century, when explorers brought back observations from tropical countries, that the Western world grew familiar with the practice of entomophagy. Explorers' accounts of Africa, such as those of David Livingstone and Henry Morton Stanley, which featured stories of insect eating, were instrumental in introducing the practice to the West. In 1857, German explorer Barth Heinrich, for example, wrote in his book *Travels and Discoveries in North and Central Africa* that people who ate insects "enjoy not only the agreeable flavour of the dish, but also take a pleasant revenge on the ravagers of their fields", an interesting take on agricultural pests.

In the United States, swarms of Rocky Mountain locusts (*Melanoplus spretus*) regularly swept across the western half of the country (as far north as Canada) in the nineteenth century, devastating farming communities (Lockwood, 2004). One famed sighting estimated that the locusts spanned 198 000 square miles. This swarm weighed an estimated 27.5 million tonnes and consisted of some 12.5 trillion insects, which according to *The Guinness Book of Records* was the greatest concentration of animals ever recorded.

Leading American entomologist Charles Valentine Riley, appointed in 1868 as the first State Entomologist for the state of Missouri, studied the plague of Rocky Mountain locusts that invaded many western states between 1873 and 1877. He advocated controlling the locusts by simply eating them (Lockwood, 2004):

Whenever the occasion presented I partook of locusts prepared in different ways, and one day, ate of no other kind of food, and must have consumed, in one form and another, the substance of several thousand half-grown locusts. Commencing the experiments with some misgivings, and fully expecting to have to overcome disagreeable flavor, I was soon most agreeably surprised to find that the insects were quite palatable, in whatever way prepared. The flavor of the raw locust is most strong and disagreeable, but that of the cooked insects is agreeable, and sufficiently mild to be easily neutralized by anything with which they may be mixed, and to admit of easy disguise, according to taste or fancy. But the great point I would make in their favor is that they need no elaborate preparation or seasoning ...

Yet British entomologist V.M. Holt arguably had the most clout in bringing insects to a larger audience through his small booklet published in 1885 titled *Why Not Eat Insects?* The book begged his fellow Englishmen to consider the idea of consuming insects:

One of the constant questions of the day is, How can the farmer most successfully battle with the insect devourers of his crops? I suggest that these insect devourers should be collected by the poor as food. Why not? (Holt, 1885: 14–15)

Holt's arguments were founded on high moral Victorian values, which included feeding the poor and conserving resources (Friedland, 2007). Holt was greatly puzzled over the lack of acceptance of insects as food, when the composition of other animals that were considered delicacies, like lobster, was nearly the same. However, he did differentiate between insects that he considered unclean and therefore inedible (such as the common fly and the carrion beetle) and clean insects (like cockshafers and grasshoppers). Holt also had an awareness of entomophagy in other cultures:



If I bring forward examples from ancient times, or from among those nations, in modern times, which are called uncivilized, I foresee that I shall be met with the argument, "Why should we imitate these uncivilized races?" But upon examination it will be found that, though uncivilized, most of these peoples are more particular as to the fitness of their food than we are, and look on us with far greater horror for using, as food, the unclean pig or the raw oyster, than we do upon them for relishing a properly cooked dish of clean-feeding locusts or palm-grubs. (Holt, 1885)

Holding such an opinion in 1885, Holt was clearly ahead of his time and entomophagy was never widely adopted into English food culture.