

## LOCUSTS AS FOOD FOR MAN.

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In the few words I have to communicate under this head, it is not my purpose to inflict a long dissertation on edible insects. The subject has been sufficiently treated of by various authors, and especially by Kirby and Spence in their admirable Introduction to Entomology; while, within the year, Mr. W. R. Gerard has brought together most of the facts in a paper entitled "Entomophagy," in a paper read before the Poughkeepsie Society of Natural History. It is my desire, rather, to demonstrate the availability of locusts as food for man, and their value, as such, whenever, as not unfrequently happens, they deprive him of all other sources of nourishment.

With the exception of locusts, most other insects that have been used as food for men, are obtained in small quantities, and their use is more a matter of curiosity than of interest. They have been employed either by exceptional individuals with perverted tastes, or else as dainty tit-bits to tickle some abnormal and epicurean palate. Not so with locusts, which have from time immemorial formed a staple article of diet with many peoples, and are used to-day in large quantities in many parts of the globe.

Any one at all familiar with the treasures on exhibition at the British Museum, must have noticed among its Nineveh sculptures, one in which are represented men carrying different kinds of meat to some festival, and among them some who carry long sticks to which are tied locusts—thus indicating that in those early days, represented by the sculpture, locusts were sufficiently esteemed to make part of a public feast. They are counted among the "clean meats" in Leviticus (xi: 22), and are referred to in other parts of the Bible, as food for man. In most parts of Europe, Asia, and Africa, subject to locust ravages, these insects have been, and are yet, extensively used as food. Herodotus mentions a tribe of Ethiopians "which fed on locusts which came in swarms from the southern and unknown districts," and Livingston has made us familiar with the fact that the custom yet prevails among many African tribes. Indeed, some tribes have been called *Aeridophagi*, from the almost exclusive preference they give to this diet. We have it from Pliat that locusts were in high esteem among the Parthians, and the records of their use, in ancient times, as food, in southern Europe and Asia, are abundant. This use continues in those parts of the world to the present day.

In Morocco, where, as I am informed by one (Mr. Trovey Blackmore, of London) who has spent some time in that country, they do more or less damage every year and are used extensively for food whenever they abound so as to diminish the ordinary food supply, while they are habitually roasted for eating and brought into Tangier and other towns by the country people, and sold in the market places and on the streets; the Jews, who form a large proportion of the population, collect the females only for this purpose—having an idea that the male is unclean, but that under the body of the females there are some Hebrew characters which make them lawful food. In reality there are, under the thorax, certain dark markings—the species used, and which is so injurious to crops, being the *Acridium perigrinum*. Radoszkowski, president of the Russian Entomological Society, tells me that they are also, to this day, extensively used as food in southern Russia; while many of our North American Indian tribes, and notably the Snake and Digger Indians of California, are known to feed upon them. No further evidence need be cited to prove the present extensive use of these insects as articles of food. Let us then briefly consider the nature of this locust food and the different methods of preparing it.

The records show us that in ancient times these insects were cooked in a variety of ways, *Edipoda migratoria* and *Acridium perigrinum*, which are the more common devastating locusts of the "Old World," are both of large size, and they are generally prepared by first detaching the legs and wings. The bodies are then either boiled, roasted, stewed, fried or broiled.

The Romans are said to have used them by carefully roasting them to a bright golden yellow. At the present day, in most parts of Africa, and especially in Russia, they are either salted or smoked like red herrings. Chaucer, in his account of the Empire of Morocco, (London, 1788) says that thus cured they are brought into the market in prodigious quantities, but that they have "an oily and rancid taste, which habit only can render agreeable." The Moors use them to the present day, in the manner described by Jackson in his "Travels in Morocco," viz.: by first boiling and then frying them; but the Jews, in that country—more provident than the Moors—salt them and keep them for using with the dish called *Dafina*, which forms the Saturday's dinner of the Jewish population. The dish is made by placing meat, fish, eggs, tomatoes—in fact, almost anything edible—in a jar which is placed in the oven on Friday night, and taken out hot on the Sabbath, so that the people get a hot meal without the sin of lighting a fire on that day. In the Abbe Godard's "Description et Histoire de Maroc," (Paris, 1869) he tells us that "they are placed in bags, salted, and either baked or boiled. They are then dried on the terraced roofs of the houses. Fried in oil they are not bad." The Hilt Damaras collect locusts by lighting fires in the direct path of the devouring swarms. In roasting the wings and legs crisp up and are separated, the bodies are then eaten fresh or dried in hot ashes and put away for future use. Our Digger Indians roast them, and grind or pound them to a kind of flour, which they mix with pounded acorns, or with different kinds of berries, make into cakes and dry in the sun for future use.

The species employed by the ancients were doubtless the same as those employed at the present day, viz.: the two already mentioned, and to a less degree the smaller *Caloptenus italicus*. We have no records of any extended use of our own Rocky Mountain species, (*Caloptenus spretus*), unless, which is not improbable, the species employed by the Indians on the Pacific coast, should prove to be the same, or a geographical race of the same.

Whenever the occasion presented I partook of locusts prepared in different ways, and, one day, ate of no other kind of food, 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. They require no disguise, and herein lies their value in exceptional emergencies; for when people are driven to the point of starvation by these ravenous pests, it follows that all other food is either very scarce or unattainable. A broth, made by boiling the unfledged *Caloptenus* for two hours in the proper quantity of water, and seasoned with nothing in the world but pepper and salt, is quite palatable and can scarcely be distinguished from beef broth, though it has a slight flavor peculiar to it and not easily described. The addition of a little butter improves it, and the flavor can, of course, be modified with mint, sage and other spices, *ad libitum*. Fried or roasted in nothing but their own oil, with the addition of a little salt, and they are by no means unpleasant eating, and have quite a nutty flavor. In fact, it is a flavor, like most peculiar and not unpleasant flavors, that one can soon learn to get fond of. Prepared in this manner, ground and compressed, they would doubtless keep for a long time. Yet their consumption in large quantities in this form would not, I think, prove as wholesome as when made into soup or broth; for I found the chitinous covering and the corneous parts, especially the spines on the tibia, dry and chippy, and somewhat irritating to the throat. This objection would not apply, with the same

force, to the mature individuals, especially of larger species, where the heads, legs and wings are carefully separated before cooking; and, in fact, some of the mature insects prepared in this way, then boiled and afterwards stewed with a few vegetables, and a little butter, pepper, salt and vinegar, made an excellent fricassee.

Lest it be presumed that these opinions result from an unnatural palate, or from mere individual taste, let me add, that I took pains to get the opinions of many other persons. Indeed, I shall not soon forget the experience of my first culinary effort in this line—so fraught with fear and so forcibly illustrating the power of example in overcoming prejudice. This attempt was made at an hotel. At first it was impossible to get any assistance from the followers of the *ars coquinaria*. They could not more flatly have refused to touch, taste or handle, had it been a question of cooking vipers. Nor love nor money could induce them to do either, and in this respect the folks of the kitchen were all alike, without distinction of color. There was no other recourse than to turn cook myself, and operations once commenced, the interest and aid of a brother naturalist and two intelligent ladies were soon enlisted. It was most amusing to note how, as the rather savory and pleasant odor went up from the cooking dishes, the expression of horror and disgust gradually vanished from the faces of the curious lookers-on, and how, at last, the head cook—a stout and jolly negress—took part in the operations; how, when the different dishes were neatly served upon the table and were freely partaken of with evident relish and many expressions of surprise and satisfaction by the ladies and gentlemen interested, this same cook was actually induced to try them and soon grew eloquent in their favor; how, finally, a prominent banker, as also one of the editors of the town, joined in the meal. The soup soon vanished and banished silly prejudice; then cakes, with batter enough to hold the locusts together, disappeared and were pronounced good; then baked locusts with or without condiments; and when the meal was completed with dessert of baked locusts and honey *ala John the Baptist*, the opinion was unanimous that that distinguished prophet no longer deserved our sympathy, and that he had not fared badly on his diet in the wilderness.

Prof. H. H. Straight, of the Warrensburg (Mo.) Normal School, who made some experiments for me in this line, wrote:

"We boiled them rather slowly for three or four hours, seasoned the fluid with a little butter, salt and pepper, and it made an excellent soup, actually; would like to have it even in prosperous times. Mrs. Johnson, who is sick, and Prof. Johnson pronounced it excellent."

It had long been a desire with me to test the value of this species (the Rocky Mountain locusts) as food, and I did not lose the opportunity to gratify that desire which the recent locust invasion into some of the Mississippi Valley states offered. I knew well enough that the attempt would provoke to ridicule and mirth, or even disgust the vast majority of our people, unaccustomed to anything of the sort, and associating with the word insect or "bug," everything horrid and repulsive. Yet I was governed by weightier reasons than mere curiosity; for many a family in Kansas and Nebraska was last year brought to the brink of the grave by sheer lack of food, while the St. Louis papers reported cases of actual death from starvation in some sections of Missouri, where the insects abounded and ate up every green thing, the past spring.

I sent a bushel of the scalded insects to Mr. Jno. Bonnet, one of the oldest and best known caterers of St. Louis. Master of the mysteries of the cuisine, he made a soup which was really delicious and was so pronounced by dozens of prominent St. Louisians who tried it. Shaw, in his *Travels in Barbary*, (Oxford, England, 1728), in which two pages are devoted to a description of the ravages of locusts, mentions that they are sprinkled with salt and fried, when they taste like crawfish; and Mr. Bonnet declared that this locust soup reminded him of nothing so much as crawfish bisque, which is so highly esteemed by connoisseurs. He also declared that he would gladly have it

on his bill of fare every day if he could get the insects. His method of preparation was to boil on a brisk fire, having previously seasoned them with salt, pepper, and grated nutmeg, the whole being occasionally stirred. When cooked they are pounded in a mortar with bread fried brown, or a puree of rice. They are then replaced in the saucepan and thickened to a broth by placing on a warm part of the stove, but not allowed to boil. For use, the broth is passed through a strainer and a few croutons are added. I have had a small box of fried ones with me for the past two months, and they have been tasted by numerous persons, including the members of the London Entomological Society and of the *Société Entomologique de France*. Without exception they have been pronounced far better than was expected, and those fried in their own oil with a little salt are yet good and fresh; others fried in butter have become slightly rancid—a fault of the butter. Mr. C. Horne, F. Z. S., writing to *Science Gossip* about swarms of locusts which visited parts of India in 1863 says: "In the evening I had asked two gentlemen to dinner and gave them a curry and croquet of locusts. They passed for Cabul shrimps, which in flavor they much resembled, but the cook having inadvertently left a hind leg in a croquet, they were found out, to the infinite disgust of one of the party and amusement of the other."

This testimony as to the past and present use of locusts as human food might be multiplied almost indefinitely; and I hope that I have said enough to prove that the nature of that food is by no means disagreeable. In short, not to waste the time of the association in further details I can safely assert, from my own personal experience, that our Rocky Mountain locust is more palatable when cooked than many animals that we habitually use on our tables. I mention the species more particularly, because the flavor will doubtless differ according to the species or even according to the nature of the vegetation the insects were nourished on. I have made no chemical analysis of this locust food, but that it is highly nourishing may be gathered from the fact that all animals fed upon the insects thrive when they are abundant; and the further fact that our locust-eating Indians, and all other locust-eating people, grow fat upon them.

Locusts will hardly come into general use for food except where they are annually abundant, and our Western farmers who occasionally suffer from them will not easily be brought to a due appreciation of them for this purpose. Prejudiced against them, fighting to overcome them, killing them in large quantities, until the stench from their decomposing bodies becomes at times most offensive—they find little that is attractive in the pests. For these reasons, as long as other food is attainable, the locust will be apt to be rejected by most persons. Yet the fact remains that they do make very good food. When freshly caught in large quantities, the mangled mass presents a not very appealing appearance, and emits a rather strong and not over pleasant odor; but rinsed and scalded, they turn a brownish red, look much more inviting, and give no disagreeable smell.

The experiments here recorded have given rise to many sensational newspaper paragraphs, and I consider the matter of sufficient importance to record the actual facts, which are here given for the first time.

Like or dislike of many kinds of food are very much matters of individual taste or national custom. Every nation has some special and favorite dish which the people of other nations will scarcely touch, while the very animal that is highly esteemed in one part of a country is not unfrequently rejected as poisonous in another section. We use many things to-day that were considered worthless and even poisonous by our forefathers. Prejudice wields a most powerful influence in all our actions. It is said that the Irish during the famine of 1847, would rather starve than eat corn bread; and if what I have here written shall, in the future, induce some of our Western people to profit by the hint, and avoid suffering from hunger or actual starvation, I shall not have written in vain.—*Prairie Farmer*.

## An Unpleasant Contrast—English and American Courts.

In the course of some very able comments on the case of Col. Valentine Baker, the current number of the *Galaxy* calls special attention to the swiftness with which the punishment followed the crime—

"The event itself had hardly ceased to be the subject of conversation here—among men only, of course—when the London papers arrived with a full report of the trial which ended with the conviction of Colonel Baker; a conviction which brought upon him not only a sentence of fine and imprisonment, but utter ruin as an officer and a gentleman. There is something very impressive in this sureness and swiftness of English justice. Law thus administered is a terror to evildoers. Administered in an uncertain, halting fashion, it becomes their scorn, almost their laughing stock."

This is a point which cannot be dwelt upon too earnestly for the benefit of American readers. How great the contrast with our criminal jurisprudence! There is not a reader of our daily papers but well knows the course that would have been pursued in this country by an accused of such influence and command of money as Colonel Baker possessed. There would have been a long legal quarrel over the indictment, with the chances decidedly in favor of its being quashed, the case continued to another term, and the criminal released upon bail to circulate among his friends, to work up public influence in his favor, and to create the desired sentiment in the minds of all likely to be called upon the coming jury. At the next term of court, if matters were not arranged, through our foolish rules of jury-making, to suit the prisoner, there would be the thousand exceptions, the appeal, and the order for a new trial, the accused meantime going at large for another half year. Change of venue would also be granted him if he wanted it, and upon grounds utterly insufficient. And, finally, when trial should be reached, if ever, the memory of the offense would so have died out, and counter-sentiment had been so industriously created, that a conviction would have been almost impossible.

Such would, undoubtedly, have been the course of the Baker trial in America, instead of the most admirable one witnessed in England. The causes of the difference are not difficult to point out. They lie very largely in the debasement of our judiciary through the mixture of two things which should be for ever separate—politics and law. Much of the evil is owing, also, to the rapid lessening of the influence of judge over jury, an influence which is now almost nothing in criminal cases of great interest—the judge is a mere figurehead, availing little for good, but an immense engine for evil, in that any one of the errors constantly committed is ground for a new trial. But the great source of the evil, and one that involves all others, is the constant and ignorant tampering of State Legislatures with existing law. We have rejoiced amazingly here in America, over our improvements upon English law. Something we have, unquestionably, accomplished in civil practice by the Howard "code" (all others are founded on that), which did away with the "special pleading" of the English courts; but even that advantage has been greatly overrated. But in our amendment of criminal practice we have blundered outrageously. Law is a science—a great one—and shaped by the experience of ages; yet every little pettifogging lawyer, scarcely competent to conduct a case before a Justice of the Peace, who gets into our Legislatures, rushes in some new law, for the benefit of a constituent or two—often for the benefit of the worst class of our population—which upsets every principle of jurisprudence established from "time whereof the memory of man runneth not to the contrary." And the result is an atrocious bungle which makes the prompt conviction of crime almost an impossibility.

One more extract from the *Galaxy's* account of the Baker trial—

"And then what dignity and calmness in all the proceedings. They were simply the result of common sense in its highest form applied to the case before the court."