XV. Observations on spiders, and their supposed poison

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of wool and grease, held down by a plate of metal fastened by screws. *i* is a plate of copper, concave, or rather conical below, stretching almost to the side of the still; *m* a large hole in the centre of this plate, through which the steam generated at the bottom of the still escapes into the head. This plate, being made of quick ascent, facilitates the escape of the steam, which might otherwise be partially accumulated under the shoulder of the still, and, by its re-action on the subcumbent liquor, cause the still to run foul, or boil over. *k k* the head of the still. To the scraping-machine *f* are attached chains, which, by the rotary motion of the scraper, are dragged with rapidity over the whole of the bottom, by which means the wash is prevented from burning to the bottom, and thereby generating any new compound injurious to the flavour or quality of the spirit. These stills are usually of from 40 to 50 gallons contents.

The principle of the improvement seems to centre in this simple point—The greater the quantity of heat that can be made to pass through the body of the still in a given time, the greater will be the quantity of vapour, and consequently of spirits, produced in that time: and certainly it is not easy to conceive how this can be attained in any way so effectually as by making the still *all bottom*, as it were, and applying the heat to every part of that bottom.

XV. *Observations on Spiders, and their supposed Poison.*

By M. AMOREUX jun. M. D.*

THIS genus of insects is as numerous in species as the latter are varied. France contains almost the half of the species known. M. Geoffroy has mentioned only sixteen; but Dr. Lister, who made observations of the same kind in England, and M. Clerk, who carried them as far as any one in Sweden, have given a more complete history of them. Scopoli, so commendable in other respects for his useful labours, does not appear to have done right in changing entirely the denomination of forty-four species of spiders, which he saw

* From *Notice des Insectes de la France réputés venimeux.*

in Carniola, merely that he might have the pleasure of giving to each the name of some illustrious person who has promoted the science of entomology. This mark of honour is of little consequence to such great Mecenas, and the inconvenience of increasing and confusing the received nomenclature is very great.

The public care little also for the exact descriptions of naturalists, and their methodic classifications. They require facts; something wonderful and extraordinary. They wish that every natural being should present some new phenomenon; an object of immediate utility, or a subject of reprobation: and when their prejudices are once established, nothing can destroy them. Sometimes, for the truth must be confessed, naturalists in their writings have been the source of errors and prejudices. Were we to correct the assertions of Pliny, Johnston, Mouffet, and Aldrovandi, authors still quoted, and which one cannot read with patience, respecting insects only, we should make a large book of controversies, which would serve neither to instruct the learned, nor to undeceive the people, always wedded to their ignorance.

The history of spiders, and that of the effects of their venom, were it properly treated, would alone furnish matter for an ample chapter. What variety in the sensations of man! Some have an invincible aversion to spiders; and there are women who faint at the bare mention of their name*: others treat them with familiarity, and think it an act

* This antipathy is no less strong, though often more reasonable, among the men. M. Zimmerman relates the following singular instance of it, to which he was a witness:—"Being one day in an English company," says he, "consisting of persons of distinction, the conversation happened to fall upon antipathies. The greater part of the company denied the reality of them, and treated them as old women's tales; but I told them that antipathy was a real disease. Mr. William Matthew, son of the governor of Barbadoes, was of my opinion; and, as he added that he had himself an extreme antipathy to spiders, he was laughed at by the whole company. I shewed them, however, that this was a real impression in his mind, resulting from a mechanical effect. Mr. John Murray, afterwards Duke of Athol, took it into his head to make, in Mr. Matthew's presence, a spider of black wax, to try whether this antipathy would appear merely on a sight of the insect. He went out of the room, therefore, and returned with

act of prowels to eat them. So many things have been related for and against the assertion of spiders being venomous, that we cannot but be cautious in regard to what has been said on the subject by different authors; we must therefore request those who relate such stories in future, to give a correct description of the kind of spider or other insect which they believe to be poisonous, together with their common and scientific names, which will remove all doubt and confusion.

Our spiders in France are in general rather ugly than formidable. If there are any suspected of being poisonous, it ought not to be the domestic spider with long claws, *aranea parientina* and *aranea phalangiodes* Linn. nor the mower of the fields, *phalangium opilio* Linn. the only kinds of the phalangia mentioned by Geoffroy; nor the mason spider, with which perhaps this author was unacquainted, because it inhabits the southern provinces; nor the orange-coloured spider, and that entirely white *aranea viatica*, and the *aranea citrina* Linn. found commonly among vegetables and fruit, and chiefly grapes; nor so many others which we see daily,

a bit of black wax in his hand, which he kept shut. Mr. Matthew, who in other respects was a sedate and amiable man, imagining that his friend really held a spider, immediately drew his sword in a great fury, retired with precipitation to the wall, leaned against it as if to run him through, and sent forth horrible cries. All the muscles of his face were swelled, his eye-balls rolled in their sockets, and his whole body was as stiff as a post. We immediately ran to him in great alarm, and took his sword from him, assuring him at the same time that Mr. Murray had nothing in his hand but a little wax, and that he might himself see it on the table, where it was placed.

He remained some time in this spasmodic state, and I was really afraid of the consequences. He however gradually recovered, and deplored the dreadful passion into which he had been thrown, and from which he still suffered. His pulse was exceedingly quick and full, and his whole body was covered with a cold sweat. After taking a sedative he was restored to his former tranquillity, and his fear was attended with no other bad consequences. We must not be surprised at this antipathy: the largest and most hideous spiders are found in Barbadoes, and Mr. Matthew was born in that island. Some one of the company having formed of the same wax, in his presence, a small spider, he looked at it while making with the utmost tranquillity, but it would have been impossible to induce him to touch it. He was not, however, of a timid disposition."

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and of which we have no cause to complain. If all our spiders were noxious, how many accidents would daily happen in houses which are not kept clean, and to those people who labour in the fields? In that case it would be highly proper to destroy them.

The brown, black, and hairy spiders, which reside in vaults and cellars, as they inspire the contagious air of dirty and uninhabited places, may have juices capable of doing hurt when they are bruised by accident on any naked part of the body, or introduced into the stomach. Of this, however, we have no well-attested proofs, though we know that the hairy spider is mischievous, and that it attacks even wasps, the scales of which it breaks with its strong forceps. But what shall we think of the popular opinion, that spiders lose their venom in certain privileged places? This is related of the old tower of Pariset at a league from Grenoble, situated on a mountain, and called by the populace *Tour Saint Verain*, to express the tower without poison*; where, as is said, no serpent, spider, or venomous animal is to be found: we are even assured, that those carried thither immediately die.

Spiders have often attracted the attention of the curious by their manœuvres, their amours, and singular mode of copulation, as well as by their address in spinning their webs, and forming cots, in which they inclose their eggs; on account of their art in repairing the accidents which happen to their webs, and the breaches they make in them on purpose to deliver themselves from too strong a captive they have entangled; and of their perpetual wars, and the carnage they occasion, &c. These are the actions not of mere au-

* John Tardif, a physician, who wrote in 1618, speaks very seriously of the tower without venom, as one of the wonders of Dauphiny. M. Lancelot, who reduced all the wonders of this province to their just value in a memoir upon this subject inserted among those of the Academy of Inscriptions and Belles Lettres, Vol. VI. says, that the tower without venom is no longer worthy of that name. It is false that no venomous animals live near it; serpents and spiders are found there, as well as in other places. "I have seen some carried thither," says M. Lancelot, "for the sake of experiment, and it did not appear that they found themselves incommoded by the change."

tomata, and which must astonish those who view them with the eye of a philosopher.

A worthy magistrate, M. Bon, who was fond of natural history, at a time when it was necessary to surmount many prejudices, found means to breed spiders, and to extract silk from their cods, which he opened. All spiders are not weavers, but they are spinners, and all live by hunting. This hunting, for the most part, is only stationary, like that by decoy. These hunters display considerable cunning and address to make their prey fall into the snares which they have laid. One kind, the *aranea domestica*, extends its net horizontally in a corner, hooks itself to it, and in that manner lies in wait for its prey; another, the *aranea dumetorum*, places its net in a vertical position across an alley in a garden, to intercept the passing insects; one conceals itself in its cavern, and darts forth on the smallest noise; and another suspends itself from the branch of a tree by a long thread, and acts the tumbler, to attract stupid spectators. There are some which cover their cave on the outside with a kind of white silk, as if to announce, by a beautiful entrance, that there will be no danger to proceed farther: this is merely a decoy. Such is their occupation, their resources, and their industry. As in every numerous race there are vagabonds, some spiders employ themselves only in running about, and in jumping. Such are the habits of the wolf spider. There are some also exceedingly cruel, which employ their arms with great force and activity.

The structure of spiders is no less remarkable than their habits. They have always eight eyes, but differently disposed; and this has enabled naturalists to divide them into different classes, in order that they may be better distinguished. M. Fabricius, however, has made known five species with only six eyes. This is denied by M. Geoffroy, who apparently had not seen these species. But the most interesting organ in these insects is their mouth, since it is with this alone that they are able to hurt us. The mouth of the spider consists of two strong forceps, terminated by a kind of very sharp claws, the points of which are bent
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downwards*. These forceps or claws are moveable, and can easily be turned upwards or downwards, and even from right to left. It is with these instruments that the spider seizes, pinches, and kills its prey. The points also serve it as a mouth: though their extremity is very sharp, it is pierced towards the end; and the inside of the forceps is hollow; so that the spider by these means sucks up the moisture of flies, or of other insects which it seizes.

Swammerdam says, that what might be taken for teeth in the spider are real stings or darts with which it pierces those animals the blood of which it sucks: but this observer did not believe that the spider emitted from these darts a venomous liquor. Lister, who says he had certain proofs of spiders being venomous, expressed the poison from these instruments. Leuwenhoek also advances, that the venom of the spiders is contained in the cavity of the sharp pincers which proceed from the mouth of the insect. Others have said that these forceps are not hollow, but that the venom proceeds from a small trunk which issues from the mouth at the moment when the insect seizes its prey. It is possible, and even probable, that different kinds of spiders have a different organisation; and it is a certain fact, that many spiders, and perhaps all of them, throw out from their mouth a certain liquor, with which they moisten their prey. We may rest assured, however, that our spiders have nothing in them of a venomous nature; and this is proved by our so often touching them without danger. They are often between our teeth when we eat fruit and certain kinds of vegetables, yet we perceive no other bad consequences from them than those which may arise from fear and the idea of dirtiness. There are even spider-eaters, who make a sport of swallowing them: some do it through whim, others through a depraved taste, and some to shew their courage, or to gain a wager†. Redi

* This description is according to Geoffroy, Vol. III. p. 631. Those of Linneus and Fabricius are as follows: *Aranea. Os unguibus s. retinaculis duobus. Palpi duo articulati*, Linn. *Aranea. Labium breve, apice rotundatum. Palpi duo incurvi, maris clavati*, Fabric.

† Instances of spider-eaters may be found in the Ephemerides of the Searches into Nature, the Philosophical Transactions, and in Vanderwiel, who has collected a great many from different authors.

saw people who ate spiders, and, from the experiments which he made, he does not believe them to be poisonous. Dr. Fairfax is of the same opinion. Clerk and Roëfel maintain, that spiders are not so venomous as is supposed, since many persons swallow them. It is related by the *Peintre Naturaliste*, that a man pretty far advanced in life ate all the spiders which he found, and that they served him as a purgative. He spread them on a slice of bread, as if they had been excellent marmalade. The same naturalist confutes the popular error, that the spider is able, by its pricking, to kill the toad. He saw nothing of the kind, though he made various experiments on that subject.

[To be concluded in the next Number.]

XVI. *Some Account of the late* MARK ELEAZAR BLOCH,
of Berlin.

MARK ELEAZAR BLOCH, a Jewish physician established at Berlin, and well known by his *Natural History of Fishes*, was born at Anspach, in Franconia, of very poor parents. His father, who was exceedingly devout, spent his whole time in reading the Bible and the Talmud; while his mother, by selling old clothes, and other things of the like kind, gained enough to maintain her husband and children. M. Bloch, at the age of nineteen, could not read German, and did not know a single word of Latin. He had read only a few Rabbinical books, and spoke a kind of Franconian gibberish mixed with the Judaic jargon. A Jewish surgeon, settled at Hamburg, having taken him into his house to instruct his children, he learned good German by hearing the gazettes read, and afterwards by studying the language. He lived so economically that he saved from his scanty salary as much as enabled him to pay for instruction in the Latin, which he was taught by a student as poor as himself. He acquired, at the same time, some knowledge of surgery; and, as he had relations at Berlin, he repaired to that city to study anatomy. Having surmounted various difficulties, and got himself admitted as Doctor in the University of Francfort,