
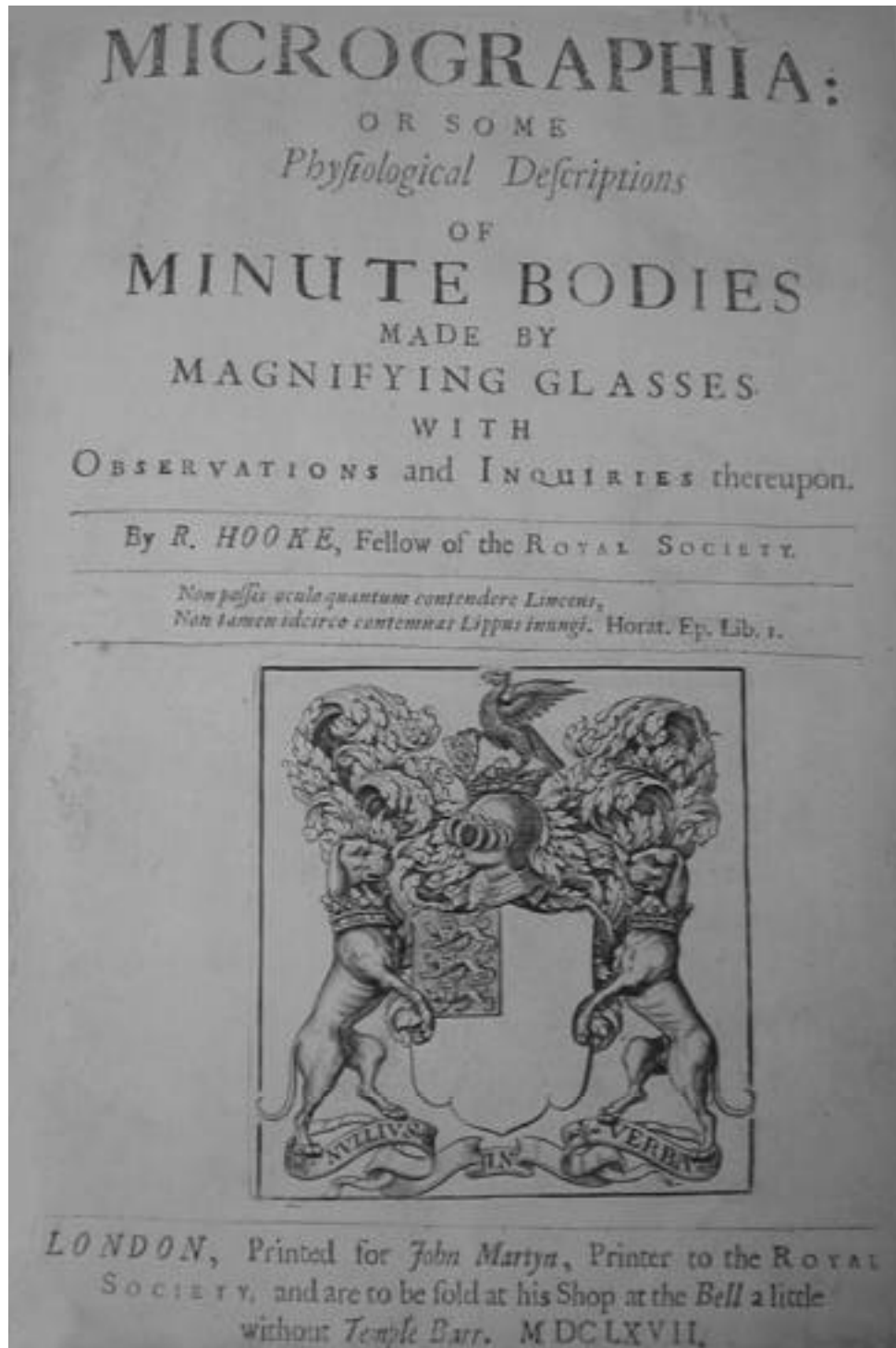


AMERICAN MUSEUM OF NATURAL HISTORY 
Seminars on Science: Study of Spiders

Hooke, R., 1665. *Micrographia: or Some Physiological Descriptions of Minute Bodies made by Magnifying Glasses with Observations and Inquiries Thereupon*. London: Martyn & Allestry. Pp 198-202 + Pl. 31.



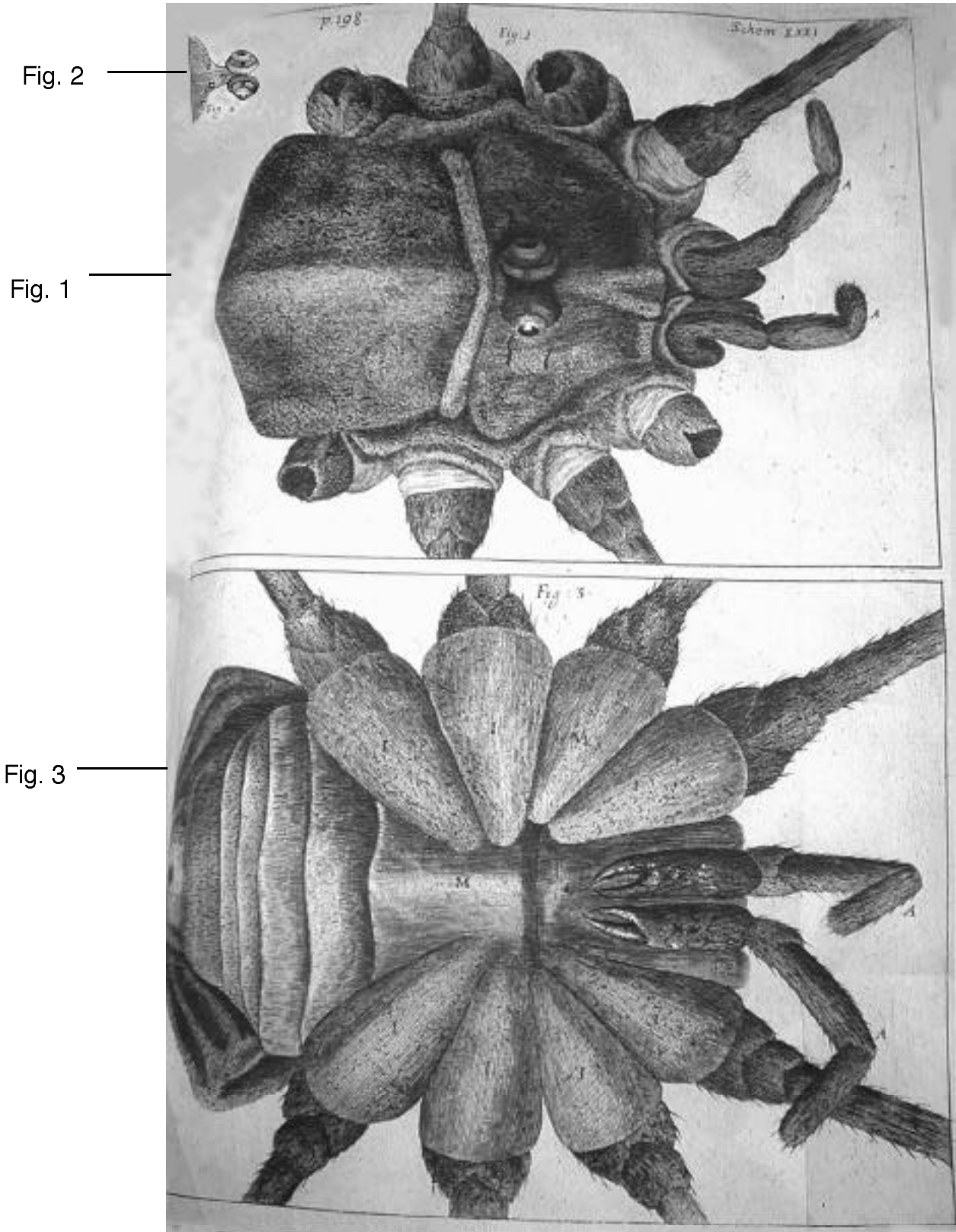
Observ. XLVII. Of the Shepherd Spider, or long legg'd Spider.

The Carter, Shepherd Spider, or long legg'd Spider, has, for two particularities, very few similar creatures that I have met with; the first, which is discoverable onely by the *Microscope*, and is in the first and second *Figures* of the 31. *Scheme*, plainly describ'd, is the curious contrivance of his eyes, of which (differing from most other Spiders) he has onely two, and those plac'd upon the top of a small pillar or hillock, rising our of the middle of the top of its back, or rather the crown of its head, for they were fix'd on the very top of this pillar (which is about the heighth of one of the trasverse Diameters of the eye, and look'd on in another posture, appear d much of the shape, B C D) The two eyes, B B, were placed back to back, with the transparent parts, or the pupils, looking towards either side, but somewhat more forward then backwards. C was the column or neck on which they stood, and D the crown of the head out of which that neck sprung.

These eyes, to appearance, seem'd to be of the very same sturcture with that of larger *binocular* creatures, seeming to have a very smooth and very protuberant *Cornea*, and in the midst of it to have a very black pupil, incompass'd about with a kind of grey *Iris*, as appears by the *Figure*; whether it were able to move these eyes to and fro, I have not observ'd, bu 'tis not very likely he should, the pillar or neck C, seeming to be cover'd and stiffen'd with a crusty shell; but Nature, in probability, has supply'd that defect, by making the *Cornea* so very protuberant, and setting it so cleer above the shadowing or obstructing of its prospect by the body, that 'tis likely each eye may perceive, though not see distinctly, almost a *Hemisphere*, whence having so small and round a body plac'd upon such long leggs, it is quickly able so to wind, and turn it, as to see any thing distinct. This creature, as do all other Spiders I have yet examin'd, does very much differ from most other Insects in the *Figure* of its eyes; for I cannot, with my best *Microscope*, discover its eyes to be any ways knobb'd or pearl'd like those of other Insects.

The second Peculiarity which is obvious to the eye, is also very remarkable, and that is the prodigious length of its leggs, in proportion to its small round body, each legg of this I drew, being above sixteen times the length of its whole body, and there are some which have them yet onger, and others that seem of the same kind, that have them a great deal shorter; the eight leggs are each of them jointed, just like those of a Crab, but every of the parts are spun out prodigiously longer in proportion; each of these leggs are terminated in a small case or shell, shap'd almost like that of a Musle-shell, as is evident in the third *Figure* of the same *Scheme* (that represents the appearance of the under part or belly of the creature) by the shape of the protuberant conical body, I I I, etc. There are as 'twere plac'd or fasten'd on to the protuberant body of the Insect, which is to be suppos'd very hight at M, making a kind of blunt cone whereof M is to be suppos'd the Apex, about which greater cone of the body, the smaller cones of the leggs are plac'd, each of them almost reaching to the top in so admirable a manner, as does not a little maifest the wisdom of

Scheme 31



Nature in the contrivance, for these long Leavers (as I may so call them) of the legs, having not the advantage of a long end on the other side of the *hypomochlion* or centers on which the parts of the leggs move, must necessarily require a vast strenght to move them, and keep the body ballanc'd and suspended, in so much, htat if we should suppose a man't body suspended by such a contrivance, an hundred and fifty times the strength of a man would not keep the body from falling on the breast. To supply therefore each of these leggs with its proper strength, Nature has allow'd to each a large Chest or Cell, in which is included a very large and strong Muscle, and thereby this little Animal is not onely able to suspend its body upon less then these eight, but to move it very swiftly over the tops of grass and leaves.

Nor are these eight leggs so prodigiously long, but the ninth, and tenth, which are the two claws, K K, are as short, and serve in steed of a *proboscis*, for those seem'd very little longer then his mouth; each of them had three parts, but very short, the joints K K, which represented the third, being longer then both the other. This creature, seems (which I have several times with pleasure observ'd) to throw its body upon the prey, instead of its hands, not unlike a hunting Spider, which leaps like a Cat at a Mouse. The whole Fabrick was a very pretty one, and could I have dissected it, I doubt not but I should have found as many singularities within it as without, perhaps, for the most part, not unlike the parts of a Crab, which this little creature does in many things, very much resemble; the curiosity of whose contrivance, I have in another place examin'd. I omit the descriptions of the horns, A A, of the mouth, L L, which seem'd like that of a Crab; the speckledness of his shell, which proceeded from a kind of feathers or hairs, and the hairiness of his leggs, his larg *thorax* and little belly, and the like, they being manifested by the Figure; and shall onely take notice that the three parts of the body, namely, the head, brest, and belly, are in this creature strangely confus'd, so that 'tis difficlut to determine which is which, as they are also in a Crab; and indeed, this seems to be nothing else, but an Air-crab, being made more light and nimble, proportionable to the *medium* wherin it resides; and as Air seems to have but one thousandth part of the body of Water, so does this Spider seem not to be a thousandth part of the bulk of a Crab.

Observ. XLVIII. Of the hunting Spider, and severall other sorts of Spiders.

The hunting Spider is a small grey Spider, prettily bespeck'd with black spots all over its body, which the *Microscope* discovers to be a kind of feathers like those on Butterflies wings, or the body of the white Moth I lately describ'd. Its gate is very nimble by fits, sometimes running, and sometimes leaping, like a Grashopper almost, then standing still, and setting it self on its hinder leggs, it will very nimbly turn its body, and look round it self every way: It has six very conspicuous eyes, two looking directly forwards, plac'd just before; two other, on either side of those, looking forward and side-ways; and two other about the middle of the top of its back or head, which look

backwards and side-wards; these seem'd to be the biggest. The surface of them all was very black, sphaerical, purely polish'd, reflecting a very clear and distinct Image of all the ambient objects, such as a window, a man's hand, a white Paper, or the like. Some other properties of the Spider, observ'd by the most accomplish'd Mr. *Evelyn*, in his travels in *Italy*, are most emphatically set forth in the History hereunto annexed, which he was pleas'd upon my desire to send me in writing.

Of all the sorts of Insects, there is none has afforded me more diversions than the *Venatores*, which are a sort of *Lupi* that have their Dens in the rugged walls, and crevices of our houses; a small brown and delicately spotted kind of Spiders, whose hinder legs are longer than the rest.

Such I did frequently observe at *Rome*, which espying a Fly at three or four yards distance, upon the Balcony (where I stood_ would not make directly to her, but crawl under the Rail, till being arriv'd to the *Antipodes*, it would steal up, seldom missing its aim; but if it chanced to want any thing of being perfectly opposite, would at first peep, immediately slide down again, till taking better notice, it would come the next time exactly upon the Fly's back: But, if this hapn'd not to be within a competent leap, then would this Insect move so softly, as the very shadow of the Gnomon seem'd not to be more imperceptible, unless the fly mov'd; and then would the Spider move also in the same proportion, keeping that just time with her motion, as if the same Soul had animated both those little bodies; and whether it were forwards, backwards, or to either side, without at all turning her body, like a well manag'd Horse: But, if the capricious Fly took wing, and pitch'd upon another place behind our Huntress, then would the Spider whirl its body so nimbly about, as nothing could be imagined more swift; by which means, she always kept the head towards her prey, though to appearance, as immovable, as if it had been a Nail driven into the Wood, till by that indiscernable progress (being arriv'd within the sphere of her reach) she made a fatal leap (swift as Lightning) upon the Fly, catching him in the pole, where she never quitted hold till her belly was full, and then carried the remainder home. I have beheld them instructing their young ones, how to hunt, which they would sometimes discipline for not well observing; but, when any of the old ones did (as sometimes) miss a leap, they would run out of the field, and hide them in their crannies, as ashamed, and haply not be seen abroad for four or five hours after; for so long have I watched the nature of this strange Insect, the contemplation of whose so wonderful sagacity and address has amaz'd me; nor do I find in any chase whatsoever, more cunning and Strategem observ'd: I have found some of these Spiders in my Garder, when the weather (towards the Spring) is very hot, but they are nothing so eager of hunting as they are in *Italy*.

There are multitudes of other sorts of Spiders, whose eyes, and most other parts and properties, are so exceedingly different both from those I have describ'd, and from one another, that it would be almost endless, at least too long for my present Essay, to describe them, as some with six eyes, plac'd in quite another order; others with eight eyes; others with fewer, and some with more. They all seem to be creatures of prey, and to feed on other small Insects, but their ways of

catching them seem very differing: the Shepherd Spider by running on his prey; the Hunting Spider by leaping on it, other sorts weave Nets, or Cobwebs, whereby they ensnare them, Nature having both fitted them with materials and tools, and taught them how to work and weave their Nets, and to lie perdue, and to watch diligently to run on any Fly, as soon as ever entangled.

Their thread or web seems to be spun out of some viscous kind of excrement, lying in their belly, which, though soft when drawn out, is, presently by reason of its smallness, hardened (sic) and dried by the ambient Air. Examining several of which with my *Microscope*, I found them to appear much like white Hors-hair, or some such transparent horny substance, and to be of very differing magnitudes; some appearing as bigg as a Pigg's bristle, others equal to a Hors-hair; other no bigger than a man's hair; others yet smaller and finer. I observ'd further, that the radiating chords of the web were much bigger, and smoother then those that were woven round, which seem'd smaller, and all over knotted or pearl'd, with small transparent Globules, not unlike small Crystal Beads or seed Pearls, then strung on a Clew of Silk; which, whether they were so spun by the spider, or by the adventitious moisture of a fogg (which I have observ'd to cover all these filaments with such Crystalline Beads) I will not now dispute.

These threads were some of them so small, that I could very plainly, with the *Microscope*, discover the same consecutions of colours as in a *Prisme*, and they seem'd to proceed from the same cause with those colours which I have already describ'd in thin plated bodies.

Much resembling a Cobweb, or a confus'd lock of these Cylinders, is a certain white substance which, after a fogg, may be observ'd to fly up and down the Air; catching several of these, and examining them with my *Microscope*, I found them to be much the same form, looking most like to a flake of Worsted prepar'd to be spun, though by what means they should be generated, or produc'd, is not easily imagined: they were of the same weight, or very little heavier then the Air; and 'tis not unlikely, but that those great white clouds, that appear all the Summer time, may be of the same substance.

A Note on this reproduction of *Micrographia*:

The above text was transcribed verbatim from *Micrographia*.

Scheme 31 was digitally photographed from a 1667 edition of *Micrographia*.