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BOOK REVIEW

Martin Lister's English Spiders, 1678. Translated by Malcolm Davies and Basil Harley, edited by John Parker and Basil Harley. Harley Books, Colchester, England. 160 pp.; Hardbound £49.95 [$87.65], paperback £24.95 [$43.80], + shipping overseas £3.50 [$6.15].

Some years ago a student, well versed in arachnid literature, told me that it was Martin Lister (1638–1712) who first separated species by palpal morphology. As no English translation was available, I never checked Lister's Latin volume to see whether the story was correct. This is the first time Lister has been translated into English. Only the spider part is included, not the second part, which is on freshwater and marine mollusks. There is, however, a 1778 translation of Lister's work into German.

Lister described molting, courtship and copulation of spiders, and also feeding of its young by *Theridion sisyphium*. Lister correctly separated males from females by the swollen palpi of the males. He observed that spiders have no penis but use their swollen palpi to touch the females abdomen, while "two-eyed spiders" (opilionids) have a penis. He counted eyes and legs and leg articles, and described eight-eyed spiders with anal appendages, a six-eyed spider (*Dysdera*), and two-eyed spiders (now called Opiliones and Acari) that lacked a pedicel. He differentiated eggs and eggsacs and generalized that small spiders produce few eggs, large spiders produce many, that some spiders carry egg sacs around with them, and that spiders have no larvae. He observed that spiders produce numerous threads at the same time from the anal appendages, and can ascend by submitting themselves to a gentle breeze or can attach a bridge of airborne silk to an object some distance away. This observation is correct although some present day spider books have misinformation, stating that the spider walks down one stem and up another to make the bridge (impossible according to W. Eberhard, pers. commun.). Lister recognized that the spider's skills are innate, not learned. Lister speculates that skins of all later molts may be present in spiderlings from the start. Spiders feed on insects or each other and wasps prey on spiders.

Lister described how orb-webs are made: the radii constructed first, from the middle to the periphery; the first spiral laid from the center out, the final spiral laid from outside in; sometimes a hole in the hub made at the end; the use of knots or glue to tie threads together.

He contradicts 23 traditional views held by Aristotle, Pliny and his own contemporary, Mouffet. According to the editors, Lister's citations of old literature are not always correct.

As Lister practiced medicine and published papers on medical matters, (although he must have spent all of his spare time watching spiders and snails), his comments on the use of spiders and webs as medicines might be of interest. However, he provides only an unconvincing list without comments. He lists macerations for warding off fevers; spiders steeped in olive-oil or rosewater for earache; a wax salve from spiders applied to the navel for hysteria, swelling of the spleen and boils; spiders from rosewater for cessation of lactation, gout, ringworm and other spreading skin diseases; cobwebs or their ash for stanching the flow of blood and for healing open sores and inflammations; spiders' eggs from oil of spikenard applied to an aching tooth or for tertian fever. Lister wrote before double blind experiments were used to demonstrate efficacy. Lister tried to investigate venoms, and noted that spiders are not noxious when eaten.

Each of the thirty-eight spiders he recorded for England and Wales (and considered to be all there were) is illustrated and described in about two pages, including habitat and life history information. The spiders are also grouped in a table according to the type of web made and the number of eyes. The editors have matched Lister's spiders with species known from the area, and have assigned them their present day Linnaean binomials. The editors comment on how they matched the name to each of the Lister species, but if Lister differentiated only one species of a genus (e.g., *Tetragnatha*), I wonder whether he might have mixed observations from several species he did not differentiate. Was the spider fauna in Lister's time the same as today when the population of England is nearly 10 times larger?

Lister's detailed descriptions and numbering

of spiders are in marked contrast to the skimpy work of some authors of the 18th and early 19th century, who gave names accompanied by one sentence descriptions. These later works have led to subjective interpretation of species names, which is the reason that strict priority of names in spiders and other invertebrates does not necessarily lead to stable nomenclature.

Lister was a friend of John Ray and other notables of the era, and these friendships were maintained partly through correspondence. The editors looked through surviving correspondence in British archives and reproduced excerpts dealing with spiders. The letters, written in English with inconsistent 17th century spelling, are here produced in readable modern English, with a plate showing a reproduction of an original letter.

Even in the 17th century there were nasty disputes. Did Martin Lister or Edward Hulse make the first observation of spiders emitting gossamer and sailing through the air? It seems that Lister was the first to make the observation, but Hulse got ahead to publish.

Unlike later authors, Lister used alcohol as a preservative and he reports that green coloration washed out. In England as late as the 1870's spiders were still speared and dried on insect pins.

This translation into modern English uses modern anatomical terms. The editing is superb. Present day ethologists should check this volume before making statements on who made a first spider observation.

Nowhere did I find that he used palpi to differentiate species. The repeated statement that males are distinguished by their palpi refers to differentiating males from females.

This was the first time that I examined the 1778 German translation in the Harvard University Library. It differs by having a list of pre-1778 publications about spiders. Names have been attached to the species for which Lister had assigned numbers, and these binomial names are preceded by "List." or "Lister"; reference is made to Linnaeus in footnotes. Also, additional information and plates are provided; such additional information is followed by the abbreviation G., (for the junior editor). In Roewer's catalog (1942) and in Bonnet (1955) some of these names are assigned to Lister rather than to the editors Martini & Goeze; some I could not find. These old names are probably all synonyms and homonyms; the less said about them, the better.

LITERATURE CITED

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