The Structure and Habits of Spiders

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PREFACE.

The object of this book is to give a plain account of the best known habits of spiders, and as much of their anatomy and classification as is necessary to understand these habits. The portion on the spinning and flying habits is copied chiefly from Blackwall and Menge; that on the trap-door spiders from Moggridge; and the habits of Nephila and Hyptiotes, from Wilder. The observations of these authors have been repeated as far as possible, and some changes and additions made to their accounts of them. The numerous stories of deadly poison, supernatural wisdom, and enormous size and strength of spiders, have been omitted as doubtful. Several cuts from the papers of Professor Wilder have been repeated by favor of the author and publishers. Most of the figures are, however, new, and engraved by photography from my own drawings.

CHAPTER I.ANATOMY AND CLASSIFICATION.

The spiders form a small and distinct group of animals, related to the scorpions, the daddy-long-legs, and the mites, and less closely to the insects and crabs. They are distinguished by the more complete separation of the body into two parts; by their two-jointed mandibles, discharging a poisonous secretion at the tip; and by their spinning-organs, and habits of making cobwebs and silk cocoons for their eggs.

The common round-web spider, *Epeira vulgaris* of Hentz, will serve as well as any species to show the anatomy of spiders in general. Fig. 1 shows the under side of this spider; Fig. 4 , the upper side; and Fig. 5 , an imaginary section through the body, to show the arrangement of the internal organs. To begin with Fig. 1 : the body is seen to be divided into two parts, connected only by the narrow joint, A, just behind the last pair of legs. The front half of the body, called the thorax, contains the stomach, the central part of the nervous system, and the large muscles which work the legs and jaws. The hinder half, the abdomen, contains the intestine, the breathing-organs, the principal circulating-vessels, the organs of reproduction, and the spinning-organs. Connected with the thorax are six pairs of limbs, four pairs of legs, B B B B, a pair of palpi, C, and a pair of mandibles, D.

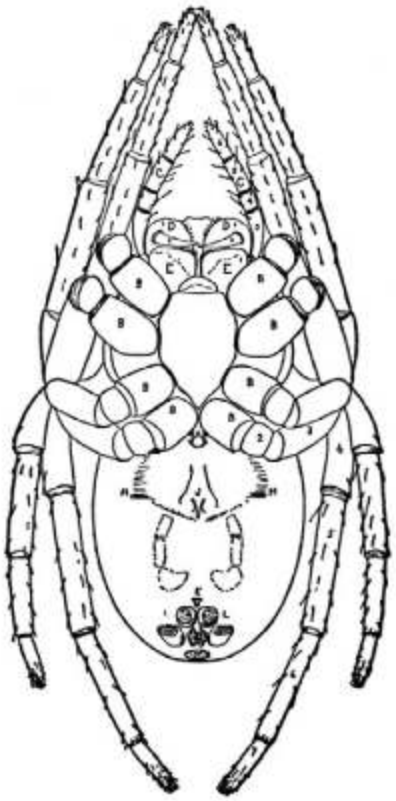

Fig. 1.

LEGS.

The legs are used chiefly for running, jumping, and climbing; but the front pair serve often as feelers, being held up before the body while the spider walks steadily enough on the other six. One or both of the hinder legs are used to guide the thread in spinning; the spider at the same time walking or climbing about with the other six or seven. The legs are seven-jointed; and on the terminal joint are three claws, Fig. 2 , A, B, C, and various hair and spines. In many spiders a brush of hairs takes the place of the middle claw, as in the jumping spiders, Fig. 3 . Spiders with these brushes on their feet can walk up a steep surface, or under a horizontal one, better than those who have three claws. The legs of most spiders have among the hairs movable

spines, which, when the spider is running about, extend outward at a right angle with the leg, and, when it is resting, are closed down against the skin.

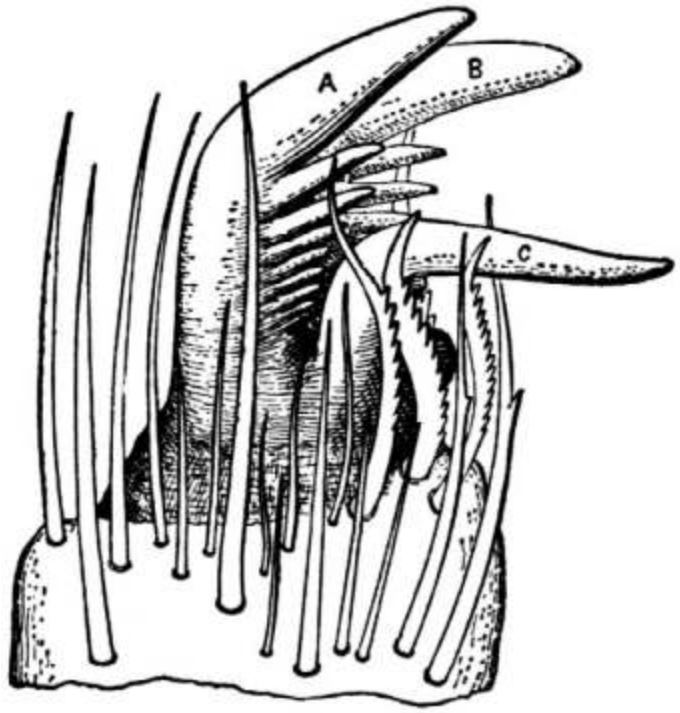

Fig. 2.
PALPI.

In front of the legs are the palpi, Fig. 1 , C, C,—a smaller pair of limbs, with six joints and only one claw or none. They are used as feelers, and for handling food, and, in the males, carry the curious palpal organs, which will be described farther on. The basal joints, Fig. 1 , E, of the palpi are flattened out, and serve as chewing-organs, called “maxillæ.”