



THE LIFE OF THE
SPIDER

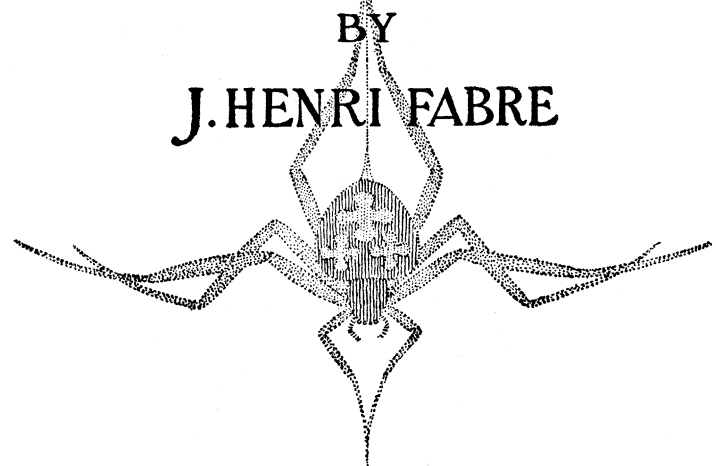
by J. Henri Fabre

Purple House
NATURE STUDY
LIBRARY



THE LIFE OF THE
SPIDER

BY
J. HENRI FABRE



TRANSLATED BY
ALEXANDER TEIXEIRA DE MATTOS
FELLOW OF THE ZOOLOGICAL SOCIETY OF LONDON

ILLUSTRATIONS BY
CLEMENT B. DAVIS

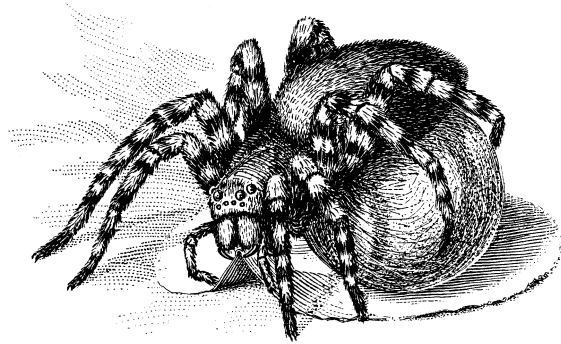
PURPLE HOUSE PRESS
KENTUCKY

Published by
Purple House Press
PO Box 787
Cynthiana, Kentucky 41031

Classic Books for Kids and Young Adults
purplehousepress.com

Written in 1912 by J. Henri Fabre
Illustrated by Clement B. Davis in 1919
Text is unabridged. Translator's note has been condensed.
Cover art and arrangement © copyright 2021 by Purple House Press
All rights reserved

ISBN 9781948959643 hardcover
ISBN 9781948959650 paperback



CONTENTS

CHAPTER		PAGE
	List of Illustrations	4
	Translator's Note	6
I	The Black-Bellied Tarantula	7
II	The Banded Epeira	32
III	The Narbonne Lycosa	50
IV	The Narbonne Lycosa: The Burrow	63
V	The Narbonne Lycosa: The Family	81
VI	The Narbonne Lycosa: The Climbing-Instinct	93
VII	The Spider's Exodus	104
VIII	The Crab Spider	121
IX	The Garden Spiders: Building the Web	132
X	The Garden Spiders: My Neighbour	146
XI	The Garden Spiders: The Lime-Snare	162
XII	The Garden Spiders: The Telegraph-Wire	170
XIII	The Garden Spiders: Pairing and Hunting	180
XIV	The Garden Spiders: The Question of Property	194
XV	The Labyrinth Spider	203
XVI	The Clotho Spider	223
	Appendix: The Geometry of the Epeira's Web	238
	Index	250

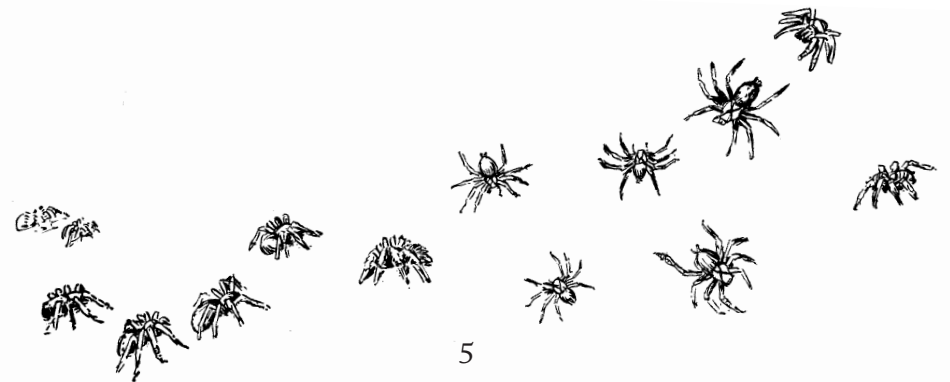
ILLUSTRATIONS

PAGE	
19	Gripping the spikelet, she is thrown some inches away from the burrow
38	The mantis...adopts the spectral attitude which she employs when delivering battle
55	The fangs grip this sheet...tear it from its base and fold it over upon the globe of the eggs
55	The Epeira...turns on her back and rolls on the ground in the manner of a monkey
74	The spiders meet at night...they romp together, they eat the beloved shortly after the wedding
87	She makes a meal off the mother and adopts the orphans
87	Long siestas on the threshold in the sun are the order of the day
94	The emigrants, off and away, clinging to their thread
116	The disk becomes unstuck, lifts and allows the new-born spiders to pass through
116	The balloons of the Banded Epeira...burst under the rays of a torrid sun



ILLUSTRATIONS

	PAGE
The bee appears, seeking no quarrel	123
She gently lets herself die, hugging her nest	123
Steps in the construction of an orb web	136
All agleam in the lantern-light the work becomes a fairy orb, which seems woven of moonbeams	147
Lens and microscope can now play their part	163
The spider is in her day manor, a resort easily discovered by following the telegraph-wire	177
Cosily ensconced in the hollow of her cup	177
Panic-stricken he takes a header	182
The Cross Spider hastens down	200
Heavy with the tears of the night	205
Nest of the Clotho Spider, covered with the remains of the feast	231
Capsules of eggs in the bottom of Clotho's nest	231



TRANSLATOR'S NOTE

The following essays have been selected from the ten volumes composing the *Souvenirs Entomologiques*. Although a good deal of Henri Fabre's masterpiece has been published in English, none of the articles treating of spiders has been issued before, with the exception of that forming Chapter II of the present volume. The rest are new to England and America.

The Fabre books already published are *Insect Life*, translated by the author of Mademoiselle Mori in 1901; *The Life and Love of the Insect*, translated by myself in 1911; and *Social Life in the Insect World*, translated by Mr. Bernard Miall in 1912. References to the above volumes will be found, whenever necessary, in the foot-notes to the present edition.

For the rest, I have tried not to overburden my version with notes; and, in view of this, I have, as far as possible, simplified the scientific terms that occur in the text. In so doing I know that I have but followed the wishes of the author, who never wearied of protesting against 'the barbarous terminology' favoured by naturalists. The matter became even more urgent in English than in any of the Latin languages; and I readily agreed that in a work intended for general reading, there was no purpose in speaking of a Coleopteron when the word 'beetle' was to hand. In cases where an insect had inevitably to be mentioned by its Greek or Latin name, a note is given explaining, in the fewest words, the nature of the insect in question.

Alexander Teixeira de Mattos
Chelsea, 10 October, 1912

CHAPTER I

THE BLACK-BELLIED TARANTULA

THE Spider has a bad name: to most of us, she represents an odious, noxious animal, which every one hastens to crush under foot. Against this summary verdict the observer sets the beast's industry, its talent as a weaver, its wiliness in the chase, its tragic nuptials and other characteristics of great interest. Yes, the Spider is well worth studying, apart from any scientific reasons; but she is said to be poisonous and that is her crime and the primary cause of the repugnance wherewith she inspires us. Poisonous, I agree, if by that we understand that the animal is armed with two fangs which cause the immediate death of the little victims which it catches; but there is a wide difference between killing a Midge and harming a man. However immediate in its effects upon the insect entangled in the fatal web, the Spider's poison is not serious for us and causes less inconvenience than a Gnat-bite. That, at least, is what we can safely say as regards the great majority of the Spiders of our regions.

Nevertheless, a few are to be feared; and foremost among these is the Malmignatte, the terror of the Corsican peasantry. I have seen her settle in the furrows, lay out her web and rush boldly at insects larger than herself; I have admired her garb of black velvet speckled with carmine-red; above all, I have heard most disquieting stories told about her. Around Ajaccio and Bonifacio, her bite is reputed very dangerous, sometimes mortal. The countryman declares this for a fact and the doctor

does not always dare deny it. In the neighbourhood of Pujaud, not far from Avignon, the harvesters speak with dread of *Theridion lugubre*,¹ first observed by Léon Dufour in the Catalanian mountains; according to them, her bite would lead to serious accidents. The Italians have bestowed a bad reputation on the Tarantula, who produces convulsions and frenzied dances in the person stung by her. To cope with ‘tarantism,’ the name given to the disease that follows on the bite of the Italian Spider, you must have recourse to music, the only efficacious remedy, so they tell us. Special tunes have been noted, those quickest to afford relief. There is medical choreography, medical music. And have we not the tarantella, a lively and nimble dance, bequeathed to us perhaps by the healing art of the Calabrian peasant?

Must we take these queer things seriously or laugh at them? From the little that I have seen, I hesitate to pronounce an opinion. Nothing tells us that the bite of the Tarantula may not provoke, in weak and very impressionable people, a nervous disorder which music will relieve; nothing tells us that a profuse perspiration, resulting from a very energetic dance, is not likely to diminish the discomfort by diminishing the cause of the ailment. So far from laughing, I reflect and enquire, when the Calabrian peasant talks to me of his Tarantula, the Pujaud reaper of his *Theridion lugubre*, the Corsican husbandman of his Malmignatte. Those Spiders might easily deserve, at least partly, their terrible reputation.

The most powerful Spider in my district, the Black-bellied Tarantula, will presently give us something to think about, in this connection. It is not my business to discuss a medical point, I interest myself especially in matters of instinct; but, as the

poison-fangs play a leading part in the huntress’ manoeuvres of war, I shall speak of their effects by the way. The habits of the Tarantula, her ambushes, her artifices, her methods of killing her prey: these constitute my subject. I will preface it with an account by Léon Dufour,¹ one of those accounts in which I used to delight and which did much to bring me into closer touch with the insect. The Wizard of the Landes tells us of the ordinary Tarantula, that of the Calabrias, observed by him in Spain:

‘*Lycosa tarantula* by preference inhabits open places, dry, arid, uncultivated places, exposed to the sun. She lives generally—at least when full-grown—in underground passages, regular burrows, which she digs for herself. These burrows are cylindrical; they are often an inch in diameter and run into the ground to a depth of more than a foot; but they are not perpendicular. The inhabitant of this gut proves that she is at the same time a skillful hunter and an able engineer. It was a question for her not only of constructing a deep retreat that could hide her from the pursuit of her foes: she also had to set up her observatory whence to watch for her prey and dart out upon it. The Tarantula provides for every contingency: the underground passage, in fact, begins by being vertical, but, at four or five inches from the surface, it bends at an obtuse angle, forms a horizontal turning and then becomes perpendicular once more. It is at the elbow of this tunnel that the Tarantula posts herself as a vigilant sentry and does not for a moment lose sight of the door of her dwelling; it was there that, at the period when I was hunting her, I used to see those eyes gleaming like diamonds, bright as a cat’s eyes in the dark.

¹ Léon Dufour (1780–1865) was an army surgeon who served with distinction in several campaigns and subsequently practised as a doctor in the Landes. He attained great eminence as a naturalist.—*Translator’s Note.*

¹ A small or moderate-sized spider found among foliage.—*Translator’s Note.*

‘The outer orifice of the Tarantula’s burrow is usually surmounted by a shaft constructed throughout by herself. It is a genuine work of architecture, standing as much as an inch above the ground and sometimes two inches in diameter, so that it is wider than the burrow itself. This last circumstance, which seems to have been calculated by the industrious Spider, lends itself admirably to the necessary extension of the legs at the moment when the prey is to be seized. The shaft is composed mainly of bits of dry wood joined by a little clay and so artistically laid, one above the other, that they form the scaffolding of a straight column, the inside of which is a hollow cylinder. The solidity of this tubular building, of this outwork, is ensured above all by the fact that it is lined, upholstered within, with a texture woven by the *Lycosa*’s¹ spinnerets and continued throughout the interior of the burrow. It is easy to imagine how useful this cleverly-manufactured lining must be for preventing landslip or warping, for maintaining cleanliness and for helping her claws to scale the fortress.

‘I hinted that this outwork of the burrow was not there invariably; as a matter of fact, I have often come across Tarantulas’ holes without a trace of it, perhaps because it had been accidentally destroyed by the weather, or because the *Lycosa* may not always light upon the proper building-materials, or, lastly, because architectural talent is possibly declared only in individuals that have reached the final stage, the period of perfection of their physical and intellectual development.

‘One thing is certain, that I have had numerous opportunities of seeing these shafts, these out-works of the Tarantula’s

¹The Tarantula is a *Lycosa*, or Wolf-spider. Fabre’s Tarantula, the Black-bellied Tarantula, is identical with the Narbonne *Lycosa*, under which name the description is continued in Chapters III to VI, all of which were written at a considerably later date than the present chapter.—*Translator’s Note*.

abode; they remind me, on a larger scale, of the tubes of certain Caddis-worms. The Arachnid had more than one object in view in constructing them: she shelters her retreat from the floods; she protects it from the fall of foreign bodies which, swept by the wind, might end by obstructing it; lastly, she uses it as a snare by offering the Flies and other insects whereon she feeds a projecting point to settle on. Who shall tell us all the wiles employed by this clever and daring huntress?

‘Let us now say something about my rather diverting Tarantula-hunts. The best season for them is the months of May and June. The first time that I lighted on this Spider’s burrows and discovered that they were inhabited by seeing her come to a point on the first floor of her dwelling—the elbow which I have mentioned—I thought that I must attack her by main force and pursue her relentlessly in order to capture her; I spent whole hours in opening up the trench with a knife a foot long by two inches wide, without meeting the Tarantula. I renewed the operation in other burrows, always with the same want of success; I really wanted a pickaxe to achieve my object, but I was too far from any kind of house. I was obliged to change my plan of attack and I resorted to craft. Necessity, they say, is the mother of invention.

‘It occurred to me to take a stalk, topped with its spikelet, by way of a bait, and to rub and move it gently at the orifice of the burrow. I soon saw that the *Lycosa*’s attention and desires were roused. Attracted by the bait, she came with measured steps towards the spikelet. I withdrew it in good time a little outside the hole, so as not to leave the animal time for reflexion; and the Spider suddenly, with a rush, darted out of her dwelling, of which I hastened to close the entrance. The Tarantula, bewildered by her unaccustomed liberty, was very awkward in

evading my attempts at capture; and I compelled her to enter a paper bag, which I closed without delay.

‘Sometimes, suspecting the trap, or perhaps less pressed by hunger, she would remain coy and motionless, at a slight distance from the threshold, which she did not think it opportune to cross. Her patience outlasted mine. In that case, I employed the following tactics: after making sure of the *Lycosa*’s position and the direction of the tunnel, I drove a knife into it on the slant, so as to take the animal in the rear and cut off its retreat by stopping up the burrow. I seldom failed in my attempt, especially in soil that was not stony. In these critical circumstances, either the Tarantula took fright and deserted her lair for the open, or else she stubbornly remained with her back to the blade. I would then give a sudden jerk to the knife, which flung both the earth and the *Lycosa* to a distance, enabling me to capture her. By employing this hunting-method, I sometimes caught as many as fifteen Tarantulæ within the space of an hour.

‘In a few cases, in which the Tarantula was under no misapprehension as to the trap which I was setting for her, I was not a little surprised, when I pushed the stalk far enough down to twist it round her hiding-place, to see her play with the spikelet more or less contemptuously and push it away with her legs, without troubling to retreat to the back of her lair.

‘The Apulian peasants, according to Baglivi’s¹ account, also hunt the Tarantula by imitating the humming of an insect with an oat-stalk at the entrance to her burrow. I quote the passage:

‘*Ruricolæ nostri quando eas captare volunt, ad illorum latibula accedunt, tenuisque avenacæ fistulæ sonum, apum murmuri non absimilem, modulantur. Quo audito, ferox exit Tarentula ut muscas*

¹Giorgio Baglivi (1669-1707), professor of anatomy and medicine at Rome. —*Translator’s Note.*

vel alia hujus modi insecta, quorum murmur esse putat, captat; captatur tamen ista a rustico insidiatore.”¹

‘The Tarantula, so dreadful at first sight, especially when we are filled with the idea that her bite is dangerous, so fierce in appearance, is nevertheless quite easy to tame, as I have often found by experiment.

‘On the 7th of May 1812, while at Valencia, in Spain, I caught a fair-sized male Tarantula, without hurting him, and imprisoned him in a glass jar, with a paper cover in which I cut a trap-door. At the bottom of the jar I put a paper bag, to serve as his habitual residence. I placed the jar on a table in my bedroom, so as to have him under frequent observation. He soon grew accustomed to captivity and ended by becoming so familiar that he would come and take from my fingers the live Fly which I gave him. After killing his victim with the fangs of his mandibles, he was not satisfied, like most Spiders, to suck her head: he chewed her whole body, shoving it piecemeal into his mouth with his palpi, after which he threw up the masticated teguments and swept them away from his lodging.

‘Having finished his meal, he nearly always made his toilet, which consisted in brushing his palpi and mandibles, both inside and out, with his front tarsi. After that, he resumed his air of motionless gravity. The evening and the night were his time for taking his walks abroad. I often heard him scratching the paper of the bag. These habits confirm the opinion, which I have already expressed elsewhere, that most Spiders have the faculty of seeing by day and night, like cats.

¹ ‘When our husbandmen wish to catch them, they approach their hiding-places, and play on a thin grass pipe, making a sound not unlike the humming of bees. Hearing which, the Tarantula rushes out fiercely that she may catch the flies or other insects of this kind, whose buzzing she thinks it to be; but she herself is caught by her rustic trapper.’ —*Translator’s Note.*

'On the 28th of June, my Tarantula cast his skin. It was his last moult and did not perceptibly alter either the colour of his attire or the dimensions of his body. On the 14th of July, I had to leave Valencia; and I stayed away until the 23rd. During this time, the Tarantula fasted; I found him looking quite well on my return. On the 20th of August, I again left for a nine days' absence, which my prisoner bore without food and without detriment to his health. On the 1st of October, I once more deserted the Tarantula, leaving him without provisions. On the 21st, I was fifty miles from Valencia and, as I intended to remain there, I sent a servant to fetch him. I was sorry to learn that he was not found in the jar, and I never heard what became of him.

I will end my observations on the Tarantulæ with a short description of a curious fight between those animals. One day, when I had had a successful hunt after these Lycosæ, I picked out two full-grown and very powerful males and brought them together in a wide jar, in order to enjoy the sight of a combat to the death. After walking round the arena several times, to try and avoid each other, they were not slow in placing themselves in a warlike attitude, as though at a given signal. I saw them, to my surprise, take their distances and sit up solemnly on their hind-legs, so as mutually to present the shield of their chests to each other. After watching them face to face like that for two minutes, during which they had doubtless provoked each other by glances that escaped my own, I saw them fling themselves upon each other at the same time, twisting their legs round each other and obstinately struggling to bite each other with the fangs of the mandibles. Whether from fatigue or from convention, the combat was suspended; there was a few seconds' truce; and each athlete moved away and resumed his threatening posture. This circumstance reminded me that, in

the strange fights between cats, there are also suspensions of hostilities. But the contest was soon renewed between my two Tarantulæ with increased fierceness. One of them, after holding victory in the balance for a while, was at last thrown and received a mortal wound in the head. He became the prey of the conqueror, who tore open his skull and devoured it. After this curious duel, I kept the victorious Tarantula alive for several weeks.'

My district does not boast the ordinary Tarantula, the Spider whose habits have been described above by the Wizard of the Landes; but it possesses an equivalent in the shape of the Black-bellied Tarantula, or Narbonne Lycosa, half the size of the other, clad in black velvet on the lower surface, especially under the belly, with brown chevrons on the abdomen and grey and white rings around the legs. Her favourite home is the dry, pebbly ground, covered with sun-scorched thyme. In my *harmas*¹ laboratory there are quite twenty of this Spider's burrows. Rarely do I pass by one of these haunts without giving a glance down the pit where gleam, like diamonds, the four great eyes, the four telescopes, of the hermit. The four others, which are much smaller, are not visible at that depth.

Would I have greater riches, I have but to walk a hundred yards from my house, on the neighbouring plateau, once a shady forest, to-day a dreary solitude where the Cricket browses and the Wheat-ear flits from stone to stone. The love of lucre has laid waste the land. Because wine paid handsomely, they pulled up the forest to plant the vine. Then came the Phylloxera, the vine-stocks perished and the once green table-land is now no

¹Provençal for the bit of waste ground on which the author studies his insects in the natural state.—*Translator's Note.*

more than a desolate stretch where a few tufts of hardy grasses sprout among the pebbles. This waste-land is the *Lycosa's* paradise: in an hour's time, if need were, I should discover a hundred burrows within a limited range.

These dwellings are pits about a foot deep, perpendicular at first and then bent elbow-wise. The average diameter is an inch. On the edge of the hole stands a kerb, formed of straw, bits and scraps of all sorts and even small pebbles, the size of a hazel-nut. The whole is kept in place and cemented with silk. Often, the Spider confines herself to drawing together the dry blades of the nearest grass, which she ties down with the straps from her spinnerets, without removing the blades from the stems; often, also, she rejects this scaffolding in favour of a masonry constructed of small stones. The nature of the kerb is decided by the nature of the materials within the *Lycosa's* reach, in the close neighbourhood of the building-yard. There is no selection: everything meets with approval, provided that it be near at hand.

Economy of time, therefore, causes the defensive wall to vary greatly as regards its constituent elements. The height varies also. One enclosure is a turret an inch high; another amounts to a mere rim. All have their parts bound firmly together with silk; and all have the same width as the subterranean channel, of which they are the extension. There is here no difference in diameter between the underground manor and its outwork, nor do we behold, at the opening, the platform which the turret leaves to give free play to the Italian Tarantula's legs. The Black-bellied Tarantula's work takes the form of a well surmounted by its kerb.

When the soil is earthy and homogeneous, the architectural type is free from obstructions and the Spider's dwelling is a

cylindrical tube; but, when the site is pebbly, the shape is modified according to the exigencies of the digging. In the second case, the lair is often a rough, winding cave, at intervals along whose inner wall stick blocks of stone avoided in the process of excavation. Whether regular or irregular, the house is plastered to a certain depth with a coat of silk, which prevents earth-slips and facilitates scaling when a prompt exit is required.

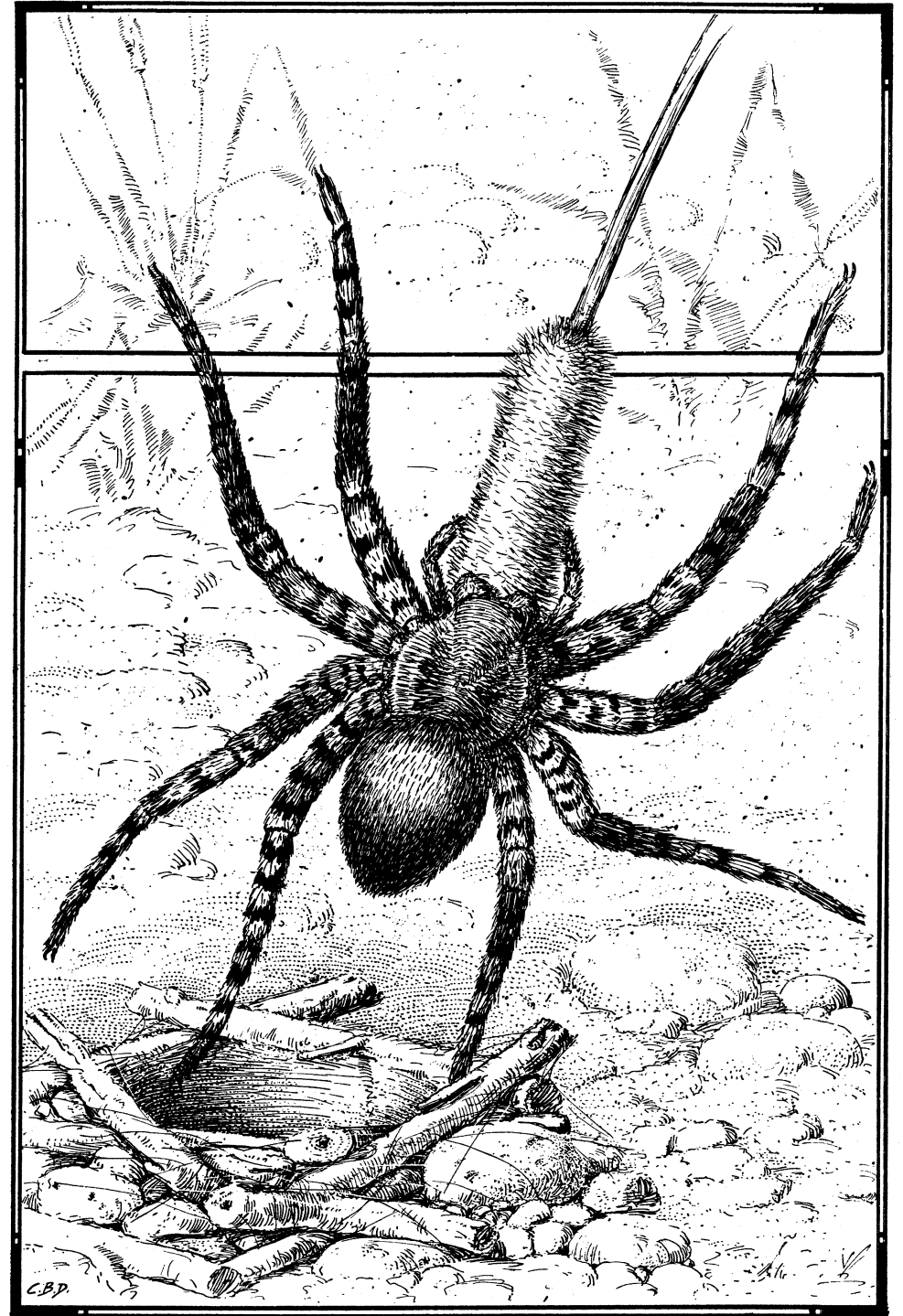
Baglivi, in his unsophisticated Latin, teaches us how to catch the Tarantula. I became his *rusticus insidiator*; I waved a spikelet at the entrance of the burrow to imitate the humming of a Bee and attract the attention of the *Lycosa*, who rushes out, thinking that she is capturing a prey. This method did not succeed with me. The Spider, it is true, leaves her remote apartments and comes a little way up the vertical tube to enquire into the sounds at her door; but the wily animal soon scents a trap; it remains motionless at mid-height and, at the least alarm, goes down again to the branch gallery, where it is invisible.

Léon Dufour's appears to me a better method if it were only practicable in the conditions wherein I find myself. To drive a knife quickly into the ground, across the burrow, so as to cut off the Tarantula's retreat when she is attracted by the spikelet and standing on the upper floor, would be a manoeuvre certain of success, if the soil were favourable. Unfortunately, this is not so in my case: you might as well try to dig a knife into a block of tufa.

Other stratagems become necessary. Here are two which were successful: I recommend them to future Tarantula-hunters. I insert into the burrow, as far down as I can, a stalk with a fleshy spikelet, which the Spider can bite into. I move and turn and twist my bait. The Tarantula, when touched by the intruding body, contemplates self-defence and bites the

spikelet. A slight resistance informs my fingers that the animal has fallen into the trap and seized the tip of the stalk in its fangs. I draw it to me, slowly, carefully; the Spider hauls from below, planting her legs against the wall. It comes, it rises. I hide as best I may, when the Spider enters the perpendicular tunnel: if she saw me, she would let go the bait and slip down again. I thus bring her, by degrees, to the orifice. This is the difficult moment. If I continue the gentle movement, the Spider, feeling herself dragged out of her home, would at once run back indoors. It is impossible to get the suspicious animal out by this means. Therefore, when it appears at the level of the ground, I give a sudden pull. Surprised by this foul play, the Tarantula has no time to release her hold; gripping the spikelet, she is thrown some inches away from the burrow. Her capture now becomes an easy matter. Outside her own house, the Lycosa is timid, as though scared, and hardly capable of running away. To push her with a straw into a paper bag is the affair of a second.

It requires some patience to bring the Tarantula who has bitten into the insidious spikelet to the entrance of the burrow. The following method is quicker: I procure a supply of live Bumble-bees. I put one into a little bottle with a mouth just wide enough to cover the opening of the burrow; and I turn the apparatus thus baited over the said opening. The powerful Bee at first flutters and hums about her glass prison; then, perceiving a burrow similar to that of her family, she enters it without much hesitation. She is extremely ill-advised: while she goes down, the Spider comes up; and the meeting takes place in the perpendicular passage. For a few moments, the ear perceives a sort of death-song: it is the humming of the Bumble-bee, protesting against the reception given her. This is



GRIPPING THE SPIKELET, SHE IS THROWN SOME INCHES
AWAY FROM THE BURROW