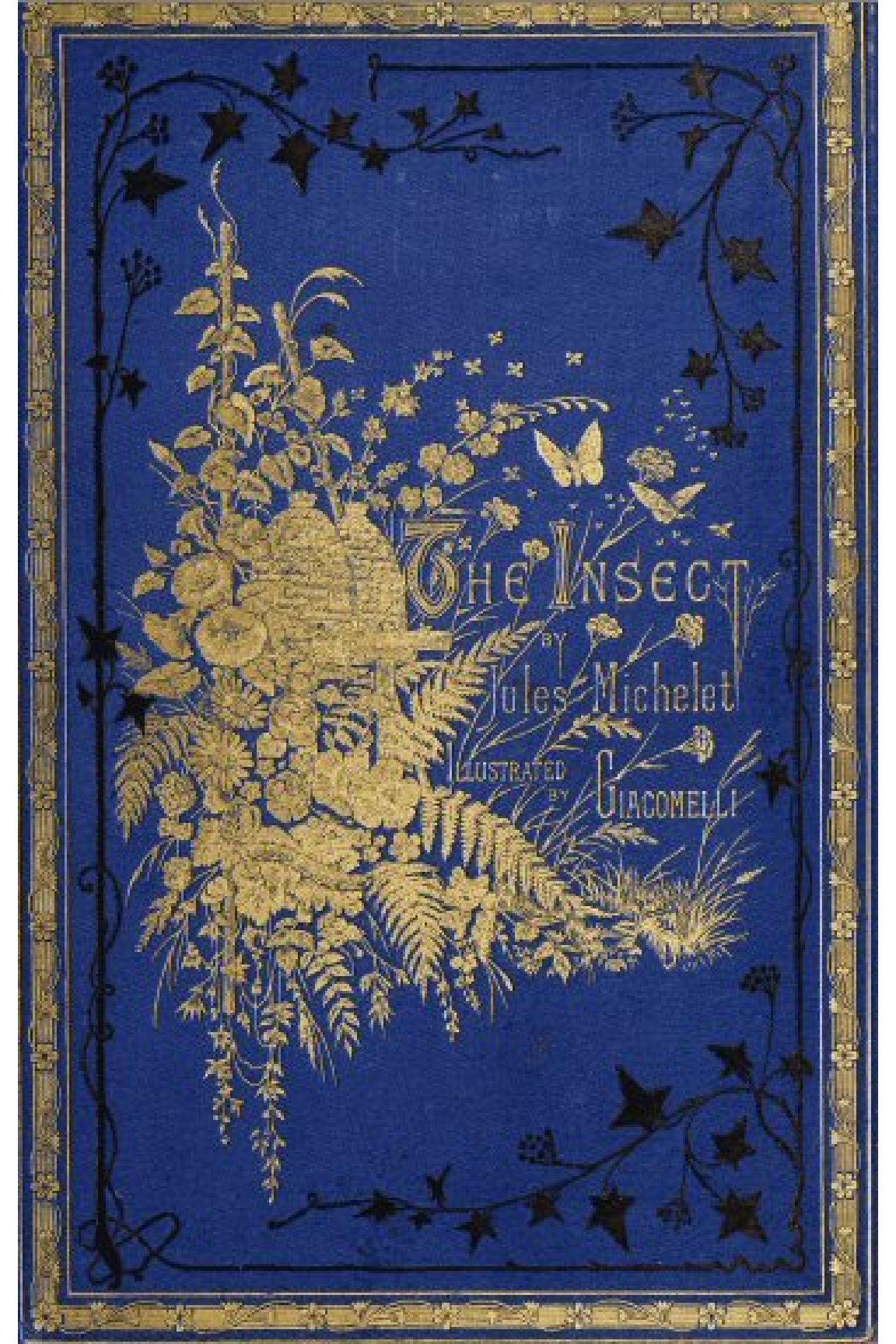

The Insect
By
Jules Michelet
Illustrated by
Giacomelli

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THE INSECT ***



Г.

HE INSECT

BY

LES MICHELET.

STRATIONS BY GIACOMELLI,

TOR OF "THE BIRD."



LONDON:

SONS, PATERNOSTER ROW;

GH; AND NEW YORK.

1875.



Preface.

ı which the late M. Michelet embodied the results of a loving
re absolutely unique; the poetry of Science was never before
vividness of fancy, or in so eloquent a style. The aspects of
g an enthusiasm or so definite an individuality,—with so eager
, and aspirations of humanity. Michelet approached his subject
ı something of the spirit of both. His philosophy and poetry,
ınpathy with what he conceived to be the soul, the personality
ed to the life of ocean, the bird, the insect, or the mountain-
ecial and distinct existence, with thoughts and emotions, as it
st as if he saw in Nature a likeness to, and a kinship with,
he was occasionally led into a certain extravagance, and his
ered his judgment. He lacked the profound insight and sober
was often sacrificed for the sake of a brilliant generalization.
arable, perhaps, from a genius rather passionate and impulsive
ıitted that the lover of Nature has cause to be grateful for the
logies crowded into the books we speak of.

:ed upon them an animated eulogium:—"Scientific men may
l exaggerations; but, in spite of all, they have shown that the
ıering the soul, and robbing Nature of poetry and life of

and varied poetry, that never loses its charm, because it is not
ɔut has its source in the unchangeable reality of things. Many
and poetry; Michelet finds in every branch of science the
harmony till then unperceived, centred in the supreme unity of

:2.

um or not, he will certainly, in "The Insect," as in "The Bird,"
a fresh proof of the power and fancy of one of the greatest of

ɔnly to say that it has been executed with a conscientious
ɔreserve, as far as possible, its peculiarities of style. If it should
dom and fluency has been sacrificed, it is hoped the critic will
been gained. The author of "The Insect" took much interest in
English reader in an English dress, and was pleased to express
ɔr had accomplished his task.

ıstrations, by M. H. Giacomelli, have all been specially drawn





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G THE MOUNTAINS.

I.

LIVING INFINITE.

of flight, and space, and light; but the Earth which we quitted
ged world could not prevent us from hearing the murmur of an
anting the speech of man, expresses itself, nevertheless, with
es.

ly by all Nature, from the depths of Earth and Sea, from the
breathe.

the Insect, of its powers of love so vividly manifested through
with which it enkindles our nights.

umber of those who make it. What is the little tribe of Birds, or
e animal species, all the various forms of life, brought face to
othing. Put the world on one side, and on the other the Insect

ousand species. But taking into consideration that every plant
, according to the number of known plants, of three hundred
e it remembered, of prodigious fecundity.

s other creatures on its surface, in the thickness of its solids, in
little world inhabited by insects; and that these again have

sed to be mineral or inorganic, animals are now revealed to us
m one inch in thickness,—the which do not the less present us
ave a right to be spoken of as *insects commenced*. And what are
es the Apennines out of its *débris*, and with its atoms has raised
illeras.

view is ended. Patience! The molluscs, which in the Southern
lly pave, as recent soundings have shown, the twelve hundred
hese molluscs are qualified by many naturalists with the name
as it were, a dependency of the higher race,—candidates, one

s, makes me regret the little world of Birds,—those charming
ıot long ago,—is not their harmonious concerts, is not even the
ıse they understood me!

; we interchanged our languages. I spoke for the Bird, and the

of the sombre kingdom, and in the presence of the mute and nvent, and what signs of intelligence? How am I to exercise my hem? My voice and gestures do but drive them away. There is on visible on their inscrutable mask. Under its warrior-cuirass –for it has one—beat after the fashion of mine? Its senses are s? It seems as if they still remained apart, unknown, ay, and

respect to man, a perpetual *alibi*. If she reveals it to us for a
or years in the depths of the shadowy earth or in the discreet
captured, opened, dissected, and examined by a microscope in

character,—whose singularity almost scandalizes, while it so
; which breathes through its side and flanks? of a paradoxical
resents its back to the earth and its belly to the sky? In many
re of contradictions.

to the misunderstanding. Every organ appears to us fantastic
ee it with sufficient clearness to be able to explain its structure
lexes; and therefore provisionally, we kill it! And it is so little,
wards it.

lingly accept the definitive decree of a German dreamer, who
od made the world; but the devil made the insect!"

tself as vanquished. To the systems of the philosopher and the ame thing), this is its answer:—

at size has nothing to do with Right; that if one could suppose e Universal Love to incline the balance, it would be on the side

he figure, to condemn organs of whose uses we are ignorant, ions, the instruments of a hundred trades; that it, the insect, is trious of artisans, the energetic workman of life.

aps appear most arrogant), that if we judge by visible signs, by

which loves most truly. Love endows it with wings, with a flames. Love is for *it* the instantaneous or approaching death, hich continues over the orphan an ingenious superintendence. hat, surpassing and eclipsing the rare associations of birds and publics and establish cities!

pression on me.

may be thy aspect, I cannot separate myself from thee. We are
worker? What has been my greatest happiness in this world?

open my heart, and give me a new sense with which to
which circulates in all things, like an universal soul—is the
ourse and understand each other without speech.



II.

' PARIS AND IN SWITZERLAND.

ıvellers by which we prepared ourselves for writing "The Bird," he patience of a solitary woman, we gathered on the way a : Insect to our eyes under the most varied aspects. The Insect Bird,—here like a harmony, there as an antagonism,—but too

and while engaged for about three years in historical studies, / means of extracts, readings, and conversations every evening. ed through the medium of a soul eminently gentle towards the e the weak; whose loyal and patient affection, indefinitely he ant, and as so many grains of sand, the materials which we s than in an infinity of memoirs and scattered dissertations.

vhich renders weak spirits strong. Such a perseverance of taste vishes to put aside one's books, and enter upon a course of I am not surprised that Mademoiselle Jurine contributed so ıecting bees, nor that Madame Mérian, as the fruit of her far-off beautiful book of drawings of the Insects of Guiana. The eyes ed for dealing with tiny objects, are eminently appropriate for : respect for, attention to, and condescension towards trifling hey are less poets, and impose less upon the Real the tyranny :, do not dominate over it, submit themselves to it, and do not ı disdainful glance of the higher life. And when, with all this, llent observers, and miniature Réaumurs.

nicroscopical studies. To succeed in these, one must become ng at a first hasty glance; but if one would make a serious use patient tact, and especially leisure,—considerable leisure,—full ely repeat the same observations, and examine the same object n the warm ray of noon, and occasionally even at a later hour. hole are best seen through a single lens; others only through a nirror of the microscope. Others, insignificant or commonplace ne focus of the instrument concentrates the light. To conclude: e least possesses—an isolation from the world, a point beyond a constant and reverent love of these imperceptible existences.

: terrible sixteenth century until the spring of 1856. "The Bird"
ıl of rest, and established myself at Montreux, near Clarens, on
:ality, awakening in me a keen perception of Nature, did not
:ted by the bloody story I had been narrating. A flame burned
mbled along the roads, with my cup of fir-wood, tasting the
:e!—and demanding of them if any possessed the property of
ınd which, out of so many springs, might prove to me a Lethe.

ı Lucerne, an old convent transformed into a hostelry, where I
s apartment, which, through its seven windows opening on the
prospect—afforded me a magnificent light at all hours. From
me, and revolved around my microscope, set in the middle of
and on every side, is not that which afterwards, when hemmed
l be called the Lake of Uri. But the firs which everywhere
too much reliance on the season,—inform you that you are
ıoreover, you find a certain barbarous savagery prevailing. It is
:. In front of me, and my constant companion, arose, on the
ntain with keen razor-like edges; and over its black shoulder
ïrgin and the *Silver Peak* (the Jungfrau and the Silberhorn).

ı in July, but frequently, in September, is already cold. You
ıs elevation, an ocean of water suspended. This is the main
ervoirs; the mass of St. Gothard, a table-land measuring ten
nity pours out the Rhine, from another the Rhone, from a third
do not *see* this reservoir—except a little of its outline—but you
:; it is the grandest cup which quenches the thirst of humanity.

ummer the nights were cold, the mornings and evenings fresh.
ly and with insatiable eyes, purified me, it seemed, from the
sublime, but also sometimes miry, revolutions of history. I
ma of the world and the eternal epopea.

ewhere I have called them "the common altar of Europe." And
little higher, or a little lower, one is no nearer heaven,—but
palpable here. The solidarity of life, the circulation of nature,
ible. It kindles a glorious illumination.

ation of the inaccessible zone, a torrent which, concentrated,
nslated into pure and azure water,—emerges as a great river,

rom these innumerable waters reascend to the mountains the

ectives are so noble, that the lakes and their rivers still reflect
ıblage of the mountains, the upper snows, the sublime virgin

ize with and love one another. But in what austerity! In their
ngest contrasts,—fixity and fluidity, rapidity and eternity, the
ı summer.

gacity in the things themselves. One enjoys without forgetting
on. But the heart is not the less moved by a world of such
this austerity takes one captive. From the gleaming snows to
fresh emerald meads, a sovereign virginity predominates over

Old age grows strengthened by its association with nature, and
alling from the mountains. And hearts still young, which feel
harming joys of religious tenderness,—tenderness for the Soul

ısual studio, was a small grove of firs situated at a tolerable
ock of Seeberg. We ascended thither by two routes doubly
d mirror in which the four cantons are reflected. No landscape
none more serious or solemn, in the direction of St. Gothard
grandeur and brightness terminated suddenly at the first step
ached the end of the world. The light lessened; sounds seemed

effect of the woods. But at the second all is changed. The
ɔy the fir upon all those plants which would fain grow in its
yes have become accustomed to this kind of gloaming, we see
: clearly, than in the inextricable labyrinth of ordinary forests

ıoble funereal pillars—the pillars, may we not say? of a stately
ning death, but of a death rich, adorned, and graceful, such as
y step the old trunks of trees, felled but not uprooted, were
ssue superbly woven of fine mosses soft to the touch, which
reflexes, and their shifting gleams.

Our ears soon grew accustomed to recognize and divine its
its, or the strange laughter of the woodpecker, the evident lord
gainst whom the birds wage war.

o drown the noise of a brook, warned us that the forest was
eir fort, whence more than one endeavoured to lead us astray,
wards us.

vasps, light, hoarse, internal rustlings seemed to issue from the
ryads? No, indeed; but of their mysterious enemies, the mighty
e veins of the trunk and penetrating its entire extent, work out
ways and channels and galleries. Sometimes nearly a hundred
und in a single tree. The sickly fir is at length reduced by their
e-work. Yet the bark remains intact, and deludes us with the

y its sap, which, while preserving its strength, asphyxiates the
friend, a physician, from without—the woodpecker—which
s strong hammer, and with persevering ardour watches for and

s, the animal and the vegetable, really understood? Of this I
myself deceived.

hing—I know not what—assured us that the dead forest was in
nto speech. We entered it full of hope, and believing that we
t to our inquiring spirit a great manifold Spirit was about to
nfirm state of health, I felt great pleasure in the search I had
before me a person deeply moved, and enthusiastically smitten
ced into this fantastic twilight, interrogating the sombre forest,
gh."

rself in a sunny opening, when at length a more successful
light a world whose existence no one would have suspected.

oot of the ground, you could very easily distinguish the works

er inhabitants of the tree, in conformity to the concentric
› ancient history; a different condition of things now existed.
ergone, like their tree, the energetic action of a great chemical

onsuming and burned-up life, it seems—the life of those beings
. one might have readily concluded that a black flame, shining
reserved only what was spiritual.

nse swarming had its effect. A vivid and unwonted joy agitated
py discovery; and in proportion to the full revelation of its
ed people to the author of this great ruin. The walls of the city
; innumerable halls and galleries were laid bare; generally four
height,—a height certainly quite sufficient, and even majestic,
the community.

y; limited in breadth, but to what depth may it not penetrate
which, perseveringly excavated, have numbered no fewer than
insignificant! Babylon and Babel alone might have sustained,
with these shadowy Babels which continually expanded in the

ıe interior aspect of these habitations: without, all damp, and
ithin, an astonishing dryness, and an admirable cleanliness—
ɔeen tapestried with cotton velvet, very heavy and lustreless. Is
, after undergoing powerful modification, or by an extremely
ıave been established in the tree while it was still moist, and
The agent of the transformation betrayed itself directly: each
ɛnt odour of formic acid, by means of which the busy race had
ned it and purified it with its flame, had dried it and rendered

ccelerated and assisted the enormous and colossal labour, had ıtigable sculptors whose chisels are their teeth. Yet even in this .ave occupied a considerable time. Successive generations had king always on the same plan and in the same direction. The ope of creating a secure fortress, a noble and massive acropolis ıe courageous citizens. Ah, what would life be worth if one :o the future. The first-comers who spent their lives in the tree, ısted the juices that excavated it, could have enjoyed but for a so steeped, as yet, in pestiferous damps and protracted rains; ɛnced posterity.

am is ended! It is not that a child's stick, held by a young and
n of the structure carried so deeply into the earth; but that the
p the whole, and kept off the rains, have been removed and
oods pouring down from the Rhigi, Mont Pilate, and the St.
forests in heavy mists or descending in torrents,—will swamp
, or what burning life, can the inhabitants oppose to these
palace and purify it again?

gazed I dreamed. Though accustomed to the fall of empires and
ight. A wave, and then another wave rose, and throbbed in my

alf-ruined city? What for this great laborious insect race, which and which nevertheless reveals to us the strongest images of sense in its keenest energy? One thing: to comprehend it,—to upply it with a generous interpretation.

nd understanding one another without speaking. What had study, thenceforth became a Book.



III.

IES AT FONTAINEBLEAU.

the Insect World, Swammerdam, recoiled in affright when the

ıfinite.

laboured, simplifying in one direction, and complicating in s subject leave, among a multitude of partial illuminations, a ession which their study for some time produced upon us.

it clearer than my masters have done? By no means. But I e at Lucerne, and others of later date, that our enthusiastic and erhaps, into the meaning of the insect life than has been the lot

but I could not verify any experiment at Paris; it was only at e formula about to be submitted to the reader, and obtained as concerned.

tion of my soul. All the painful circumstances of the time, by
entration. We constituted for ourselves a perfect solitude. Our
le there was nothing but a ring of wood, then tolerably small,

heats, when the sun shone reflected on the sandstone. But in
feebled. I could follow up and investigate mine with sequence

h in life—a grand harmonious unity of ideas and sentiments, her to deepen.

ome distance into the dull, dumb, and sandy forest, which was her my theme, and trusted to attain its meaning in that infinite how much vaster that infinite of animated life, the abyss of descend!

ue so far as relates to the vague dreamer who brings with him
ıerally on a small scale, dull, low, and solitary without being
a few kids whose number is easily counted. Birds are not
apparent absence of water has a specially depressing effect on
s of the innumerable fountains of the Alps, and still has before
me mirrors—their lakes. There, all is clear and luminous in the
ıall angle, sequestered as it were from the rest of France, is an
ut a trace of life; it shows you, particularly to-day, the newly-
their shade. To discover what lies concealed beneath this outer
d, the hazel-wand. Revolve it, and you shall find. But what is

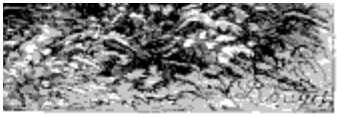
*w*hich lights up the inner world.

storical, any more than in its artistic associations.[C]

ne magnificent, the Hall of Henry II.; one marvellous, the Little Gallery
ncomparable relics of a lost art, that of sculpture in sandstone.

forest by its abundant variety of memories and epochs; but it
fairy in this strange, sombre, fantastic, and sterile region.





AINEBLEAU.

aspect of grandeur, either through the extent of its vista or the
. The truly magnificent towering beeches of Bas-Bréau seem to
h shining bark, a thing I have seen elsewhere. The place is
it bears evidence of the struggle of the sandstone, the twisted
us effort of the oak.

and enthralled. Coming only for a month, they have lingered
ldressed the lover's speech to his beloved:—"Let me live, let me
libens.

ls here what he most delights in: Saint Louis, the Thébaïd of
or nothing but pleasure, exclaimed, "My delicious deserts!" The
tion of his Lithuanian forests, and here took root. A man of
re the image of his native Brittany, and built up, stone upon
nebleau.

d to secure his country's freedom, but was crushed by the power of

er with impunity. Some persons lose in it their wits, undergo a
ndsor Forest, see themselves adorned with ass's ears. For the
—some curse it, others bless it. A foolish dreamer wrote of it,
el stepmother!" And her lover, the old soldier Denecourt, who
ed her "My adored!"[E]

l that M. Denecourt has done; he has rendered the place accessible by
eed of guides.—AUTHOR.

of Shakespeare, with her dubious but always charming aspect;
g page, Rosalind, after she appears as a laughing damsel?" No:

s the cold Alpine plants, and yet she shelters the most delicate
s you with the rugged rocks which, in autumn, she conceals
er disposal, for a daily change, the delicate tissue of floating
in all his pictures. With her belt of forest she arrests on every
eils, and scarfs, and girdles; into all kinds of delicate disguises.
invariable; yet they change their aspects, their colours—I was
ain, for example, known as the Rock of Avon, had saluted us in
cheeriest ray of the dawn, an enchanting aurora which tinted
d to smile, and to harmonize with the innocent studies of a
in the evening, the capricious fairy had changed everything.
heir airy canopy, had suddenly grown wild and fierce, and
s of sinister augury. Those shrubs, which in the morning had

de them and gather their berries or flowers, now seemed to
of ill omen—robbers, it might be, or sorcerers! But greater still
rteously received us, and bidden us be seated. Is it the evening,
? I know not; but there they are, metamorphosed into gloomy
into mammoths, and other monsters of the old worlds which
rue; but are they not about to rise? However this may be, the
presses close to my arm.

ıakespearian comedy, "As You Like It"?

its entertaining metamorphosis, and all its changes to the eye,
l mists, fugitive in its shifting sands, it has a firmer foundation
ixity which communicates itself to the soul, and invites it to
n nature whatever it possesses of the inscrutable. Do not linger
/s, "As You Like It;" *within*, "Ever and for ever."

l tender heart, which does not the less vary its exquisite grace,
'Orléans:

seated upon Mont Ussy, I looked across Fontainebleau. I
ıary region—in this apparent chaos of rocks, and trees, and
, which necessarily concealed within it a mystery not obvious

rests, all dry on the surface; but the sandstone is very pervious,
e unseen waters, descend in all directions to a great reservoir

very far. We may nearly always expect them, for the forest
wealth of suspended waters, transmitting them to the lower
eaves, the woods, and the sands. All this occurs below, without

loci.

ı of fixity, and that of "fairy" is more appropriate. Who shall in? this simple and attractive delusion, which, while promising treasure of its waters?

to it in the paintings which adorn the Hall of Henry II. It is the wild-flowers, hiding beneath a rugged rock, but subdued and

ı days when fell a fine soft rain, we frequently appreciated this ration of nature. In the deep silence we could hear only our

occasional cry of the swallow passing above our heads.

ain and keener eye than before, we penetrated further into the
al nature; the light, and especially the love, which is the true
ue, the eloquent voice, by which it appeals to the upper world.



IV.

IES AT FONTAINEBLEAU.
(*Continued.*)

nally finds a voice, a sound, or a murmur, which recalls to you

usly toiling at its task of excavating the oak, cheers itself with



yman, falling and falling on the sandstone, resounds in the

ch a significant hum, and see, at your feet, legions of ants,—
place, speeding over the withered and falling leaves.

hich blend with the fanciful a serious gravity. Each in his own
ork, and exhume and stir up thy thought.

eat malady of the day—its shiftiness, its empty agitation. The
that they are clogged and cloyed, when they have scarcely
elusive notion that the best of everything is superficial and
o the cup. But the surface is frequently froth. Lower down, and
deeper, and mingle more intimately with things, willingly and
ich lies true happiness and strength. The real misfortune, the

field of thought. Here, in this narrow circle of hill and wood,
cal. With so many points of shelter, the winds, necessarily, do
rnishes us with a moral basis. I am not certain that our ideas

comes with them fully aroused may long preserve and cherish
ıy seize and relish all the outer accidents, as well as the inner
and find that the true, the exquisite sense of life, is not to skim
e depth.

e, fixed and motionless beneath the mobility of the leaves, is
has it been planted here? Ah, what ages ago, since, despite its
No other force has prevailed against it. Such as it was, even so
ere!"

lude all vegetable life. But the heroic oaks will not be denied,
led in defiance of every obstacle. With their twisted roots, and
the rock, they too, after their fashion, eloquently exclaim,
e more bravely the greater the resistance they meet with, have,
nore deeply into the bowels of the earth, and drawn from it
giant named *Charlemagne*, worn-out, undermined, thunder-
ials, is still so vigorous in its loins, that in a solitary branch it
h outstretched arms.

ıay profit largely. Nor is man, if you find him here at work, a
om I encountered battling against the rock with monstrous
f man, I could willingly believe to possess the resistant force of
l this is undoubtedly true, so far as concerns the soul and the
Few quarrymen live beyond forty years of age; and those first
ent at their work.

ıen and the ants. Formerly it had the bees also. They were very
:tion of Franchart. But they have greatly decreased in numbers
rn trees, which kill everything with their shade, and in many
wers. On the other hand, the yellow ants, which prefer for their
ppear to prosper. No forest, perhaps, is richer in every species

soul of the desert; the ants toiling in the sand, the quarrymen
race; the men are ants on the surface, and the ants are men

their laborious patience, in their admirable perseverance. The

stance, and often splitting badly, subjects the poor workmen to
e forced by a protracted winter to return to the quarry before
et porous blocks excessively damp and half frozen. As a result,
nass of waste. However, they do not lose their courage; and
l.

ence. The breeders of birds and game incessantly damage,
which have occupied them for a whole season. Incessantly they

ed to sympathize with them more and more. Their patient
is, in truth, more like that of the artisan than the winged
our attention. That free inheritor of the day, that favourite of
I compare my long laborious career? I have, indeed, caught
ongs of the birds above; but, on the whole, my existence, the
, much more nearly resembles the modest communities of the

ne quarrymen, are not very agreeable to contemplate. So many
nents, so much dust and sand, have in them nothing attractive.
ore you. But what does Nature think of it? To judge by the

of the sand, mingle with it, and convert it into a soil for their
ɔstance, which, while for thousands of years retained in the
ıg into the mobility of the Universal Life. That fortunate battle
captive element from its long enchantment. The grass seizes
ːe upon it. All this sand, in which the rock never fails to end
a vast subterranean world.

er of dreams, no spectacle threw me back more directly upon
verty or sluggishness, I have long been rebellious like this
make an impression, or which, splitting cross-wise, yields but
It needed History, with its weighty iron hammer, to disengage
tacles, to shatter and release me.

st of myself, in return for the few stones I have contributed to
loubly stricken by the past and the present, I have felt as if I
owder, into dust; and at times I have seen myself, as I see the
ish.

ough an undefinable sap hidden in the bosom of the flint, that
n. With a little grass and heather binding up what History and
ou creature, you are Time. I am Nature, the everlasting."

ling with the *débris* of ages, which grows green, once more
iage as it never knew before man applied the iron to it. "A wild
rees!" But with all the gloominess mingles the white hawthorn

or, in my long years of silence, when I was as an arid block and
and its capacity of expansion. My tardy youth longed to dilate
"The Bird," an impulse of the heart towards light. To-day, the
scend below the earth, and embark along with you on the great
ries and gloom, it is true; but where, nevertheless, the most
treasures of the soul—Immortality and Love.









UGNANCE OF CHILDHOOD.

CHAPTER I.

DHOOD.[F]

riginally intended for insertion in "The Bird." [It is from the pen of

s of the year, had passed since the departure of my father for
. Our country-house had remained deserted. My mother, full of
it, sent me there, one afternoon, with my brothers, to gather

l of illusion, and almost believing I should be received on the

ıe domain, and with a spring arrived opposite the door which
smile I still can see.

hat age of the imagination when dreams are so powerful, I
ertain fact. I waited a moment on the threshold with a strange
onquered the sad reality. But the door remained closed.

nyself to find at least his shadow within. But that, too, had light, had glided into that asylum, and I was, so to speak,

ıd the shelves of his bookcase creaked at intervals beneath the on an air of antiquity. Great motionless spiders,—guardians, as estried the empty alcove. Woodlice and millipeds ran and der the panelings.

the place afflicted me so keenly that I fell back upon myself, ks,—'O my father! where are you?'

ɔut the desolateness of the scene; and everywhere, in the court, who had taken possession of our places.

ed with the last rays of the sun, and the slugs, tempted by the ves which strewed the garden-walks. They fared forth, slowly vasps revelled in audacious pillage, tearing to pieces with their rapes.

e covered with network woven by the caterpillars, and offered they had grown aged.





MADAME MICHELET.

with a world like this. My father's vigilance, and still more
l preserved us from it. So, in my experience, and with a heart
:sed those whom one ought not to curse, because all creatures

designs of Providence. When man is absent the insect ought to
gh the great crucible, to be renewed or purified."

–

ıce of the child. But we are all children, and even Philosophy,
:annot guard against similar impressions. The apparatus of
armed seems to it a menace against man.

ıt the insect should be born in mail of proof, and the insects of

; weapons, pincers, hooks, saws, pikes, augers, screws, rollers,
ıich gives them the appearance of veterans setting out for the
to be the pacific tools with which they gain their livelihood,
work. Here the artisan carries his workshop with him. He is at
should we say of our human operatives, if they marched ever
ıse of in their labours? They would appear to us very strange
:h fear.

arrior through circumstances, through the necessities of self-
l and above all industrial. There is not a single species which
anged under the banner of a guild of trades.

the language of our [62] ancient corporations, the test-work of
e a master, is the cradle. In the Insect World, as the mother
mportant to provide an ingenious asylum which shall protect

place. So difficult a work requires tools and implements which
e to a medieval poignard, to the subtly treacherous weapon of
nt of love and maternity.

our prejudices, dislikes, and childish apprehensions, that she
ng species which injuriously interfere with the economy of our
ther hand, lend valuable assistance in maintaining the balance
cumulation of certain climates. She preserves with watchful
case of the oak-grub, she is mindful to glaze over or varnish its
f, and beaten by winds and rains, they may safely brave the
rance clothed in and defended by a thick furry garb, which
noths, they fly to and fro in happy freedom under cover of the

s. Essential agents, undoubtedly, in the transformation of life,
of existence which secure them, infallibly, an immortality of

s and oviparous, spring into full life in the summer, that they
ced in autumn in the shape of an egg, that they may the better
mother reserves for this beloved species an unheard-of gift,—
ity of forty generations!

some task to execute, some great and important mission which
essential part of the harmony of the world. Suns are necessary,
Milky [63] Way, and no less so that of the bee-hive. Who knows
nportance? I see that some of them vanish, and God dispenses
er fails to answer to the summons. If a single species of ants
cause a dangerous gap in the universal economy.







[PASSION.

CHAPTER II.

COMPASSION.

ıtered a pupil of his, a handsome and careless young man, who
utiful butterfly, which, having just been captured, was still
out into a violent passion. "What, wretch!" he cried, "is this
site creature, and can make no better use of it than to crucify
urn here no more! Never again make your appearance in my

acquainted with the great master's vivid sensibility, and his
hing is that an anatomist, a man living with the scalpel always
ne sense, and so speak in reference to insects which are to
and patient man has opened up, as we know, an entirely new
of the willow-grub, from which we learn that the muscular
the higher animals. Lyonnet congratulates himself that he was
ion without killing more than eight or nine individuals of the

this persevering toil, far from growing coldly indifferent, he
details of the infinitely little had revealed to him the sources of
rywhere. He had found it existing at the bottom of the animal
very form of life.

dismayed by insects exactly in proportion to our ignorance.
ur European climates, is perfectly harmless. But we suspect the
we are not acquainted, by way of acquiring knowledge.

four o'clock, when the sun was already high in the heavens, I
h fatigued and very sleepy. I was living in the country, and my
curtain nor shutter, the sun's rays fell full upon my bed. A
e its way into the room, and joyously fluttered and buzzed in
and thinking he wished to sally forth, threw open the window.
, though beautiful, was very fresh and damp: he preferred to
nich dried and warmed him. Without, it was four A.M.; within,
uld [69] have done, and would not depart. Willing to give him
bed; but I could not sleep. The fresh air from without entering
further, and buzzed about and around. The obstinate and
g, and I started up, determined to expel him by main force. A
I made use of it very unskilfully. I stunned, confused, and
nd in a dizzy fit, but thought less than ever of quitting the
im with greater, with too great impetuosity. He fell on the

ne window, thinking that in the latter case the air might revive

means satisfied with what I had done, I threw myself on my
l he not escape? Such was my first reflection; but afterwards I
my impatience. So great is the tyranny of man, he can endure
npetuous, and at the slightest contradiction breaks out into a

yet, by degrees, growing almost warm; a happy mixture of
ıd that season of the year: it was Normandy, and the month of
istinguishing it from all those that follow, is, that it gives birth
food, but to none of the murderous races which need a living
has not yet begun, and love reigns everywhere. All these ideas
le; for at this blessed, sacred time, when a universal confidence
en the peace of God. The thought was very bitter. Whether the
ıe dead was always the dead. And it was without any serious
utally disturbed the sweet harmony of Spring, and spoiled the

ɔccasionally from my bed towards the window, and watched if
ıd. Unhappily he gave not a sign: his immobility was complete.

quarters; then suddenly—without, so far as I could see, the
ɜe with a strong and steady flight, and without the slightest
ıssed out into the garden, which by that time was thoroughly

ss and a relief; but as for my drone, he had never lost heart. I
ɜnce that if, by the least sign, he had betrayed his returning
im. Accordingly, he imitated death with wonderful fidelity,
and breath,—until his wings, dry and warm, were fully ready
off, without saying *adieu*.

—

he land of the Hallers, the Hubers, and the Bonnets,—that we
ırselves with collections which only displayed the exterior, but
ɲ microscope and scalpel. Then also we committed our first

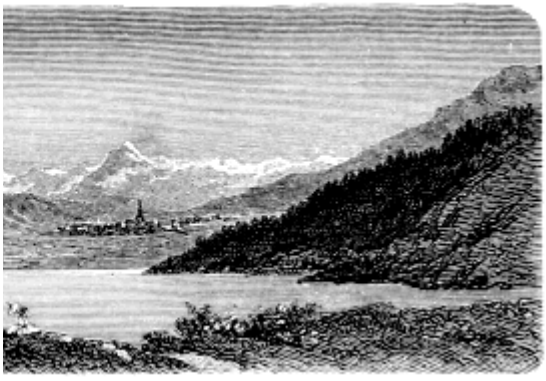
ion, this emotion—far more dramatic than one would have

ɔlime, enchanting, and solemn scenes of Switzerland lost, no g life (and we were compelled to make it suffer)—diverted our e infinitely great could scarcely vie with the drama of our Alps; the agony of a beetle, which was ten days dying, veiled ınt we forgot the Jungfrau.

e what is really great or little? Everything is great, everything ıre and the impartiality of universal love. And where is it more :le organic world on which our eyes were fixed? To lift them .e insects, was one and the same thing.

ΜADAME MICHELET'S JOURNAL.

hened nevertheless by the morning breeze which disported on for a walk alone, my husband remaining indoors to write. The d, and poured his full splendour on the opposite mountains of e sharp ridges of the rocks, whose base, clothed in pastures,



ŋged. A warm ray of light penetrated beyond Chillon, the long du Midi, and coloured in vapour the summit of the remote St. : morning hour, when our Montreux reposed in shadow. It was hose terrace, half-way down the slope, propped up by sharp s out the crystal waters on the thirsty vineyards lying below.

ttering with stalactites, preserves [72] a delightful feeling of able wooden seats; a small library (a second temple), whence ɔretty fountain, combine in a graceful little picture, austerely ɣ veil which foretokens a day of heat, this beautiful spot has all ɪ itself, and yet extended over that immense panorama which

rst slope of the mountain, solitary, and enriched with flowers. I prospect was too absorbing. Whether the eye ranged afar over llerie, with their forests, meadows, and precipices; or hovered ow towers of Chillon; or, finally, returned to the pretty villas, ıysician and the pastor,[G] in whose company my husband ı, and my heart, deeply moved, felt the sweetness of a holy

t Montreux—the most beautiful spot on the wide earth—with a very e thought of Italian or Spanish birth, if I had not known her to be a c historian of Geneva. Next door lived an eminent physician, of simple s.

lone. Bees, or drones, which had also risen early, were already ıe honey distilled beneath the dew, penetrating into the depths mysterious corolla of the charming Venus's Slipper. Brilliant more unwieldy tribes sought their livelihood at the bottom of

my glance to fall mechanically at my feet, and withdrawing my re, I saw with astonishment a scene which vividly contrasted warlike struggle. The insect-giant which we call the stag-beetle, shining mass, whose horns bristle with superb crescent-wise ze. Nevertheless, the two enemies being equally provided with he corselets, armlets, and cuisses of our ancient knights, the e murderous race which prey on little insects,—were powerful chever had fallen victim in the fray, the Lilliputian people had ive movement which leads us, in such cases, to separate the the point of my umbrella, skilfully, delicately, and without ronger of the two to release its grasp."

f trial, adjudged to undergo our investigations as a punishment
r, is not to impale the insect,—a horrible punishment and a
ı afterwards, ay, and more, you will see the poor transfixed
ills them rapidly, and apparently painlessly. Well, then, we
pun round and fell: we thought him finished. An hour or two
ore upright on trembling feet, and attempting to walk; he fell,
was like that of a drunken man. A child would have laughed at
oison him a second time. [74] A stronger dose was accordingly
nself. It was a curious circumstance; but it certainly seemed as
d almost paralyzing the faculties of motion, had all the more
all the amorous faculties. The use he sought to make of his
ıale of his species which we had found lying dead, and placed
nbling arms. He contrived to turn her over, and tumbled about
self whether she was alive. He would not part from her: one
gh dying, to resuscitate the dead. It was a fantastic, a gloomy,
:e is identical, a touching spectacle.

ı it by the help of the ether, and to separate this Juliet from her
our poisons, and dismally dragged himself along. We shut him
after a considerable period, and incredibly large doses. His
urs—endured for fully fifteen days.

ıishable flame of life, threw us into a prolonged reverie.

d wished to show us, and with a master's hand, the strange and
owed life. "Love is strong as death." Where do we find this
al Bible. For what more powerfully consecrates existence, and
ınd how great a pity it is, then, to cut it short at the divine

:t, which lives six years in a single night, could have spread its
,—just long enough to perpetuate its race. We deprived it,
ı or seven years.

ll its life had tended. [75] Previously it had only vegetated; but
verful and joyous. Long an insect, in that hour it would have
elled earth and the genial light. We had acted like the Parcæ,
the very moment of happiness!







LD-BUILDERS.

CHAPTER III.

ORLD-BUILDERS.

w, and all around it, of which we have no suspicion.

ır, a sound, and thereupon we say, "It is a trifle, it is nothing."

fe, the world of night and of the inner earth, of the shadowy
e breathe, or which, mingling in the fluids we drink, circulate

details we scorn, but which at intervals affrights us, when it
l unforeseen manifestations.

s the ocean shimmering with lustre and wreathing garlands of
ten leagues; the garland is indefinitely prolonged; it stirs, and
ɔtions of the wave; it becomes [80] a monstrous serpent ever
forty leagues. Yet all this is but a dance of imperceptible
ıestion the imagination starts back aghast; it perceives in the
lth, but possessing little relation to the other, the well-ordered,
e higher life.

cs without naming these animalcules, which seem to be their
their organism already foretoken, indicate, and prepare for
these miniatures of the insect, which simulate their organism,
to distinguish the *Rotifers*, you think that in the aggregations
gnize them as little polypes. The *Rhizopods*, though almost
ood solid carapaces, which are equally as good a protection for
e oyster and the snail. The microscopic *Tardigradæ* are, in fact,
ith worms.

ırchitects or builders of the globe which we inhabit. With their
soil now echoing under our feet. Whether their tiny shells be
lecomposed into chalk, they are not the less the foundation of
his chalk stretches from Paris to Tours; that is, for fifty miles.
l Champagne. Pure chalk, or Spanish white, which we find

hich have wrought the grandest of works. The imperceptible
than the Pyramids; nothing less than Central Italy, a notable
ı this was too insignificant: the colossal masses of Chili, the
ıe world at their feet, are the funeral monument [81] wherein

ıism has interred the remains of its vanished race.

and upper world in the profundities of life or the obscurity of

t speech, and permit it to recall all that it has done or is doing
ary plants, the imperfect animals whose dust has fashioned for
ɛ theatre of life, address to us! "While you were still asleep,"
g and purifying the previously irrespirable air, created after
w blooming with the corn and the rose! We accumulated that
ıich warms your hearth; and that one mass, among others, a
forge of the world from London to Newcastle."

ɜcure and unnamed animalcules despised or ignored by man,
ɬlds, and built thy dwelling-places. It is not the great fossil
thy soil; it is *our* work—or rather, it is ourselves. Thy cities, thy
ır *débris*. Life itself in its essence, in that sparkling beverage by
ıence comes it? From arid hills where the vine thrives in the
cealed warmth of our prior existences."

ıened one; restitution impossible. These dead myriads, having
t form our sustenance, have passed into our very being. Others
ɛ hard flint, once lived, and now nourishes life.

a Berlin professor—Ehrenberg—informed us that the silicious
ɦ which metals are polished, is neither more nor less than an
on of the shells of infusoria of a terrible diminutiveness. So
ıundred and eighty-seven millions to weigh a grain.

ıbe, admired by our men of science in extinct species, travellers y have surprised, in our own day, immense laboratories in lves, or apparently powerless, but really of boundless capacity ɔmplishes for life, life itself relates. Numbers of tiny organisms ıd historians of their vanished predecessors.

their *débris*, build up islands in the sea, and construct immense will become new lands. Without going further than Sicily, we torn by volcanic fires, a little animal, the zoophyte, which has l to undertake. He contrives to move forward by protecting his ssantly secretes. Continuously developing the tubes which in the empty spaces left by the madrepores or corals, bridges over ıem with one another; finally, he creates a passage in defiles ler will have accomplished the colossal task of a causeway all ɛd and eighty leagues.

rn Ocean that these works are prosecuted on a grand scale by nadrepores of every kind; an animal vegetation worthy of peat-moor, which continue to flourish in their upper growth ɛd. Exactly like these vegetables, the polypes, and even their frequently become the nourishment of worms and fishes which e their sustenance from them, and return them in the shape of ɔus existence! Recently English seamen have discovered at the hich is incessantly passing from the living into the inorganic

: the polypes from imperturbably carrying on their gigantic id barriers which are so skilfully adapted to resist the oceanic

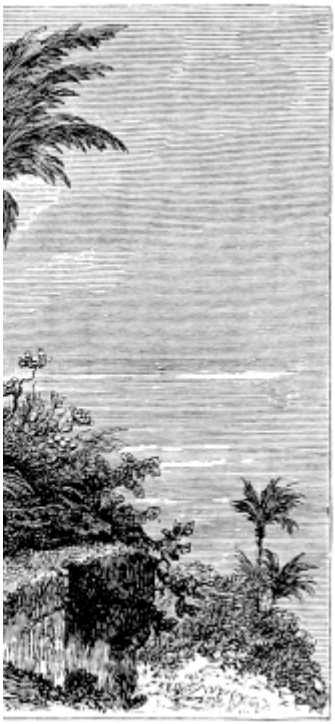
ccording to their species. The idlest execute their share in the from the light; others, under the sunshine, among the very sters.

port, the stony and porous mass; they deaden the fury of the and split the rock into fragments.

n the tropic climates, the sea would uniformly flow with a ramparts, which force it back upon itself, scatter its waves in

ate. But they inflict no injury upon them; and in truth it is on ar *them*, but it wears the reef, and detaches in atoms the lime This lime, absorbed by them and *animalized*, changes into a ch are identical with our polypes, and form quite an analogous

nerally circular, like a ring,—accumulates a layer of vegetable ishes itself with the only tree that can endure salt-water, the which will for ever continue to develop. The fresh springs and l and fed by the vegetation.



ich in due time will be inhabited. The cocoa-palm will have its
en will gather its fruit. Wrecked ships and floating timbers,
tenants of every kind.

ged, and solidified, measure not less than twenty-five miles in
bited, and populous, like the Maldives.

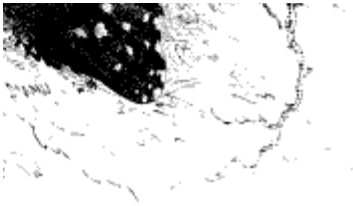
contented, you would think, with these vast creations. But to
extent. The buttresses by which they strengthen their work at
ted, expand into banks, which link the isles to each other over
in the tropic zone, these indefatigable builders have daringly
ts, and already are arresting the courses of our navigators.

of 145 leagues in length. The chain of the Maldive Islands
Holland stretches a bank of polypes over 360 leagues, 127 of
Ocean the mass known as the Dangerous Archipelago is about

connecting their various piles of submarine masonry, they will
rned in the coral isles and reefs the possibility of a new world
of centuries may accomplish the formation of a causeway, an







E AND DEATH.

CHAPTER IV.

)VE AND DEATH.

asi-vegetable life in which generation is but, as it were, a-
nplete organism whose strongly centralized electric network of
id energy of its acts and resolutions.

pearance, it is from the first independent of the immovable,
)orn entirely free from that communistic fatalism which merges
)endently; it moves, goes, comes, advances or returns, changes
n obedience to its wants, appetites, and caprices. It suffices for
)nfronts the most unexpected chances.

irst glimpse of personality?

He shows himself all at once admirably provided with the
tenance of the individual existence. He is born greedy and
the service which Nature expects of him. It is his mission to
morbid or extinct animal matter, which acts as an obstacle to
e consequences of its excessive fecundity, the danger of its

) great an influence upon our globe; no other throws itself into
ı energy. But this extraordinary strength, in such disproportion
ect to a severe law; the rapid, absolute, and complete renewal,

: to die. He who is born, by the very act of his birth kills.

arried out upon none more literally than upon the insect.

)ve. It is indispensable that he should surrender all his powers,
: should perish in himself, to revive in him to whom he shall

ct species, the condemnation is the same. She will love, give
ave its prize and recompense. She shall not see her sons. She
; herself survive in her image.

ther and the mothers of superior animals! The woman—or the
· own body her beloved treasure, warms it with her own flame,
be the insect-mother, if she knew of this supreme maternal
ture, must demand of some other being—tree, plant, fruit, or
o continue the work of her maternity. This is rigorous, but it is
arate the mother and the child, it is because they cannot live
he opposite conditions of life and nutrition. The child, at first a
concealed nocturnal worker, must for a long time continue to
even on death itself. She, the mother, who, winged and
lives solely on the honied sweets of flowers,—how could she
ut abject circumstances in which her offspring grows strong?
child of the earth would be fatal to an aërial mother, who has
f heaven.



ıild that its mother should provide it with a triple or quadruple and without succour, but furnished with its first aliment—an it can find on its waking up into life. This done, she closes the licts herself from returning thither. Thenceforth she must cede ace her—Nature.

ıмodiously,—that from its own body it should draw out a silky
y, when sufficiently strong, it should issue forth under the
ıd we admire without being astonished. But what really excites
perhaps a beetle,—after the numerous changes through which
ransitory slumbers, and metamorphoses, should remember, for
formerly she herself was nourished, and grew, and took her
ls the mind. Those creatures apparently the most heedless—the
hen approaching death brightens them with the radiance of
to revive their recollections. Then, without lapse or error, they
ı early residence, their birthplace, and their cradle, shall again

eseeing, and skilful. [93] To obtain an entrance to this asylum,
ible address. How is this? What happens? Sometimes their
instruments of love; sometimes new and hitherto concealed
character,—make their appearance; and yet all for this solitary

anism and infinitely varied instrumentation with which insects
ıty. Their implements are often charming from their precision,
ılarize that of the rose-bush aphis,—so well described by
erse direction, and whose teeth are each a set of teeth.

ine workman prepares for them their tiny tools, or whether he
and vehemency of the burning maternal desire, it matters not:
anted in a wholly unexpected manner.

insects which labour with the assistance and protection of a
and painful for the solitary mothers, who, without auxiliary,

s, and frequently raise constructions which might be the work
. One is lost in astonishment at the amount of patience and
.

w days. She wears herself out, yet does not enjoy the fruit.
r. Too frequently a usurping stranger seizes upon it, profits by
progeny, which will not only consume the provision of the
enant himself!

reat work, and a result of such uncertain character?

w belt of forests surrounding [94] Fontainebleau concentrated
: the incessant and continuous labour, despite the indolence of
ıg and coming. Her indefatigable journeys always brought her
r her, still fair and shapely, of a beautiful brown mingled with
five minutes, with woven fragments of leaves, which she
of the vase where she had made her nest.

ed ardour. There were no signs that she took the least food:
ady abandoned all care for her own life.

vity so eager that we were able to approach her very closely.
sh ourselves at our ease near her little nest, and observe her
er work.

closed, and we saw her no more. She had completed her task.
ıad retired undoubtedly to some obscure recess to await her

ound the sides of the vase, in order to examine into what she

f thimbles, lay two cradles, and in these cradles two little ones.
o many cells.

nts of leaves. Réaumur, in a similar nest, counted but sixteen.
ance, were perfectly round,—a remarkable fact, if we bear in
work was by no means appropriate to it. Yet they were as

carefully placed one upon another in due accordance with the signed by the indefatigable mother as a protection [95] against y; the last and tender legacy of the mother, bequeathed by her

m weave their winter shelter. It will be pleasanter for them The mother's intentions will be carefully carried out. Adopted, ntainebleau will take, one fine morning in spring, their flight able to gather, if not the honey of the heather, at least that of









HAN: ITS FEEBLENESS.

CHAPTER V.

AN: ITS FEEBLENESS.[H]

ry to relate, the story of the privileged creature for whom its
l and clothed by her efforts. But many—in truth, the greatest
y fall naked into the great world.

ıs, the severe internal travail of hunger and desire, stimulate
heir assistance.

martyr of patience, was the first to distinguish them. With a
—that dubious foundation!—he seized the opening lineaments
cisive characters which make the mystery of the insect. He saw
ı forward [100] its mandible or jaws,—a distinct and complete
ıtended to nourish and protect the still feeble being.

ıe sides of the body a passive apparatus, a series of tiny mouths
›pen to receive it.

pletely naked, and launched into life unprotected to undergo
›mpetent for the task only by eating greedily from the moment
t eat always and everywhere, even in the least respirable
It is for this reason nature has endowed it with a slower, and,
and respiration, than that of the superior creatures which live
e blood continually flows to meet the air and be vivified by it.
›aratus which guards its lateral mouths are disposed in such a
, and, if need be, exclude, the invading atmosphere. One is
of the combinations designed for this end, the numerous
›licated character. To receive and yet not receive, to breathe
hat must nevertheless be a passive function, to trust and yet
cult problem which life here proposed to itself, and of which it
a grub! Behold, arrogant humanity, which callest thyself the
has engrossed the powers of nature!

n the bosom of its mother. But how much less favourable the

te contact with the world through the soft maternal medium.
e the other, in a sea of milk. It is cradled in the rude mould of
on the rude earth, from shock to shock.

: *insect is an embryo*. But who would suppose that this very
a contradiction! An embryo launched into the thick of the fray,
ects. An embryo armed, it is true; and nothing is stranger than
ing jaws, while their feeble body, deprived of all defence, is

t protection is night. And therefore they shun the light,—they
, or at least beneath the leaf. If this be true of the larvæ, the
me of the insect. For its first period (that of the larva) endures
)h, and finally its third period, last but a very brief while.
he like) have three to six years of a tenebrous existence, and

n, like the bees and the ants, work willingly in obscurity; are

is the child of night.

ıvoid the air? Even in hot countries, the contact of the variable
ermis is not yet hardened, becomes infinitely painful. In our
the sensation of piercing arrows, of a million of fine needles.
fœtus to issue, after a week or a fortnight, from its mother's
transformations which strengthen it, to be subjected to them in
l be its sensations on quitting its soft asylum, and falling into
, when, soft, feeble, assailable, and penetrable everywhere, still
periences the cold, and the wind, and the shock of so many

cted. Some are [102] lodged in the heart of a fruit. Others (bees
mmense majority are born solitary and naked.

l warmed, will say, I am sure, that cold is an excellent thing,
the frame. But those who have been poor will very well

art, recollections of my childhood convince me that cold is, in
ıed to it; its prolongation does not render its effect less severe.
ach thaw which released me from my agitated, terrified, and
lishment of the internal harmony!

a powerful tonic, which sharpens and braces up the mind, and
well as hunger—and perhaps hunger especially—is the great
hens.

f those chilly creatures which seek before all things, as soon as
They are not in want of food; nature has everywhere prepared
gdom, and a great part of the animal, are at their disposal; they
eps at its ease on the maternal placenta which nourishes its
damp air deadens and paralyzes their entrails; finally, the light
they have secured a shelter. In the lowest grade of life the
, and spinning, and carving has soon contrived a robe, and, as
nis, has covered her suffering nakedness. Happy she who finds
cloth of warm wool, a fine fur: she does not fail to make in hot
paletot fitted to her figure; which, nevertheless, she leaves a
ıng growing children, in whose case the garb too large to-day

ith chill green leaves, and their lustrous glaze, are still more
ne observer. Some raise enormous masses with imperceptible
to those which were employed in removing and rearing the
ut figures purposedly irregular, which the seam afterwards fits

presented in this little world: tailors, weavers, felters, spinners,
u meet with species working each after its peculiar fashion, by

out on the leaf a suitable piece; which they remove, and lay
ne first model, and stitch them together. This done, with their
r smooths down the seams with his iron. Then they line this
very finest silk.

nd veneering. After having woven the robe, they disguise it by
materials. The aquatic insects, for example, embellish theirs

of leaves, and roam about in them, constructing places of exit

an admirable justice prevails. Whoso works hard while a child,
which in the larva state is richly fed by its parents, and always
an exceedingly laborious life.

ub, has toiled, and woven, and spun, will having nothing to do
e. I am speaking of Sir Butterfly.

ıcy, for the larva or the grub; work twofold and excessive. On
search after the food craved for by an [104] immense internal
ts energies, of restoring the inherited organs, and developing

res is divided between two severe conditions: toil, and growth

ct, a disease.

ttle creature to change its clothing, a clothing which clings to
, and creeps languidly to some solitary asylum. If you saw it in
erent from its natural state, you would say it was on the point
aborious crisis.

until nature shall complete its work,—until its epidermis be
it to all the energies of life.

merly so brilliant, dry up and harden like a thenceforth useless

lid, despite of its weakness, must twist in every direction, and
ıe efforts of a being in its strongest moments.

ent; and I see the insect free, but bathed in sweat.

will wound. Of this it is aware, and lies perfectly motionless. It

ıtly, before beginning to move, till its skin is less sensitive and
ill be invigorated by its food; it feels a terrible hunger, which
sloughing. Such is its destiny. It is condemned to deliver itself
nally attains its latest transformation.

th a transient gleam of thought, it would say, on each painful
k; I will rest in peace; this is my last change." To which Nature
[105] yet engendered. What art thou? Nothing but a larva, a

es and suffers, and sometimes seems more advanced than will
and skill imprisoned in a skin which will immediately dry up

ing by an undefinable kind of irritability and disquiet,—by a
ke a new task. You would say that within itself another self
istinct purpose, and yearning to become—what? does it know?
ee it acting, and acting sagaciously, as if inspired by a perfect
ı will shortly seize upon it, paralyze its forces, and surrender it
den display of a novel activity. "Let us work well! Let us work





'MPH, OR CHRYSALIS.

CHAPTER VI.

LARVA, NYMPH, OR CHRYSALIS.

us pardon the early ages for the consolations and hopes which
oy the Insect, the thoughts of immortality which grave Egypt
hearts and wiped away more tears than all the mysteries of

ever reproducing herself in eternal anguish, was snatched from
re reunion on the sacred beetle, and hushed her sobs.

tening, or what the slumber? Do you not see this little miracle,
kes us the mock of destiny? It sleeps in the egg, and afterwards
l it dies thrice—as larva, nymph, and beetle. In each of these
t of the succeeding existence. It prepares, begets, and hatches
es sparkling. On the dust it shines; on the gray Egyptian plain,
everything. Its jewelled wing mirrors the all-powerful sun.

d death. A deity has summoned it forth, and will yet do much
e hope was surely founded upon justice, on the impartial love

. the brilliant pledge of the future, and gives utterance to this
band and for me what thou hast done for the insect. Do not
l less than thou accordest to this brother of the gnat!"

–

ıt poesy? Has it completely eliminated the miraculous from

m, has discovered that the grub already contains the nymph;
detected the rudiment of the wing and proboscis of the future

the silkworm in its virgin slumber, *already furnished with the*
ggs which, as a butterfly, it would fecundate.

oak-grub, *in a grub scarcely a few hours old, found the eggs of the*
at that very stage when the grub itself, as Harvey points out, is
hildren.

s if there could be no intermediary deaths; one single life is

mystery has perished? Man has discovered, in its fulness, the

f, who has guided us so far. In recording his observations he
still leave very much to be desired."[I]

51.

o terrify the imagination, to think that a grub, at the outset no
ll the elements of its moultings and metamorphoses; should
ıay more, the sheath or case of its *nympha* and its complete
ı immense apparatus of vessels, respiratory and digestive, of
digious system of anatomy! first traced out in complete detail
he twofold monster, endowed with a strong grub-stomach for
possess ere long a light and delicate apparatus for extracting

e, which contains in its organism a complete silk-manufactory,
system.

nature conducts the young of the higher animals from the
ting the old organs to new functions. Here, this is not done. It
nation is not merely different, but contrary, with a violent
ntirely novel existence are required, and the abolition and

so well concealed, is here entirely thrown open. And we are
ing *tour de force* in numerous grubs which undergo the great
h of a tree by a silken cable.

y. To see yonder nymph, short and feeble, soft and gelatinous,
h which it expands and contracts its rings, [112] to escape from
first, flinging aside its limbs, setting free its head, and—one
ody, and rejecting many of its principal internal organs!

·om its long heavy mask (living, nevertheless, but a moment ·ow dry, and skilfully ascend to its silken fastening. There it ı, while its former "Me," tossed about by the wind, is speedily

not again be the legs. It will need lighter organs. What can the ɔf a blade of grass, do with those coarse short feet, armed with s?

rmous apparatus of mandibles will disappear, and also that of ıoved. All is thrown aside with the mask. A colossal change! A flexible proboscis emerges.

ıental character, it was the digestive apparatus. Ah, well! this throat—the powerful stomach—the greedy entrails,—all are would they avail the new being which, in certain species of no mouth but by agreement, and is so completely freed from ɔr orifice? It abandons without difficulty its thenceforth useless ı!

ıs grander! For life at such a point to change, to dominate over f the ancient *Ego*! To those who have revealed to us such a · heart I say, "Thanks!"

·hich abandons everything, which unhesitatingly dismisses its ıism which just now was *itself*, its own individuality! We call it ns at least as energetic in the vigorous grub as in the delicate ts individual being which it courageously leaves to shrivel up

, nothing but a little, soft, whitish substance.

coon: in its shroud you shall find nothing but a kind of milky dubious lineaments. After awhile you may, with a fine needle, o yourself that they are the limbs of the future butterfly. A rs when nothing of the old any longer appears, and nothing of es, was thrown, in order to rejuvenate him, into the caldron of the limbs of *Æson*. But here there is nothing parallel.

ls its body with its bands, docilely accepting the shadows, the els in itself a force, a *raison d'être*, a *causa vivendi*,—a reason for e vitality accumulated by its previous toil. All that, like a le to death,—its incapability of perishing,—the reason why it but with a light and tender existence, whose facility is [114] s in its anterior condition of life.

o deep down into life, I expected to encounter certain physical ope.

is right. It is death, and yet it is not death; let us call it if you ot a new birth?

ach day I died and was born again; I have undergone many . One more does not astonish me. Many and many times I have into a more complete condition; the which, after awhile, ne way of accomplishing a new circle of metamorphoses.

o those who were *still*
ved, whom I made.
oses. Sometimes, a certain intonation or gesture which I detect ne of my father." I had not foreseen it, and if I had foreseen it, ed all; but, not thinking of it, I employed it. A tender emotion, hus living in myself. Are we two? Were we one? Oh! it was my e who shall follow me, my children, or the children of my which I derived from my father, my ancestors and masters, shall bequeath to others, germs existed within me which were r, man was within me, who has not arisen. Why were not the and the powerful wings of which I have sometimes felt myself

; too late for expansion in this life, perhaps, but in another,—

f the human embryo, while imprisoned in the maternal bosom,
ed with organs of which here I can make no use,—limbs which
eat. Patience! these organs convince me that nature calls me
nother residence, a life in which all these implements will find
ting. I am but the chrysalis of a man!"





HŒNIX.

HAPTER VII.

THE PHŒNIX.

blackish mummy which just now lay before you dried and ated, the phœnix, blithely escaping, to shine resplendent in all

g with bright and butterfly days, in later life we crawl and
s of gloom, and from a long life of obscurity emerges into the

breath of spring [120] has awakened the plants; its banquet is
cretes its honey. It delays, because to-day that impenetrable
a moment its obstacle. Enfeebled and fatigued by so great a
o solid cradle which threatens to suffocate it?

erience so great a difficulty, that the captive, probably, would
stance of some power which, from without, hastens to extricate
m the trammels of its swaddling-clothes. Fortunate difficulty!
taches the liberator to the child she has delivered, and herself

tor is no other than Nature. This mother, inexhaustible in
the key which will open the barrier, pierce the prison, and

nis soft and fluid being contrive to seize upon a firm, compact
luvial accumulation of a protracted winter?"

Nature is not troubled. Means of the utmost simplicity suffice
. The butterfly of the silkworm, for instance, at the critical
e, with numerous facets, has a fine diamond point, which files

ıd, suddenly discovers that it is a perfect mechanician. Of its
mity furnishes it with a strong-pointed auger. It sinks solidly,
i it derives an enormous force, and with its robust shoulders
ds at length the light, extends its unwieldy apparatus of wings

ıole-cricket, would never reach the surface if, to reascend from
mous hands, or rather two powerful rakes, which open up its
to the influence of spring, but it takes the precaution of never
ays of the moon. Its plaintive cry singularly affects the female;
to return again into the night and confide to the protecting

:ant day assumes the daring mission of the navigator. It makes
nto a bark. In this it stands upright, extends its new wings for
without shipwreck reaches the shore; where, when dried, the
ɔursuit of pleasure. In an hour it appears a complete master of
know without having been taught.

the right. This is verified in the proper sense and without
ys a restless anxiety to fly towards the beloved object. All
owards the light, on the pinions of desire. The internal fire is
ates his person, every one wishes to please.

the great velvety eyes which adorn its wings. Beetles of every
liant reflexes, their burning vivacities. Finally, from the bosom
d unveiled, in flashing stars!

gest transformations, and from the humblest masks issue, in

by stratagem, becomes the brilliant amazon, the agile winged
ly creature of its tribe which expresses the complete liberty of
ıe swallow among birds. Who has not followed with attentive

ınd returns, and the infinite [122] circles which it makes with
r the waters? A flight apparently capricious; but not really so,
on of myriads of insects. What seems to you a pastime, is the
ıre of war feeds its season of love.



ıe gifts of genial climates; that these glittering festal garments
ıe sheen of the sun, the all-powerful, decorator, which with its
ɛ upon their wings. Another sun—a sun which shines for the
–profits them far more considerably. It exalts in them the inner
ay, calls forth the supreme flower. Yonder scintillating colours
and eloquent. It is the pride of a complete life, which, having
ı, wishes to expand and diffuse; it is the tradition of desire, the
d objects.

t with those brilliant liveries which one would think belonged
le sky, has not seen the sparkling Spanish fly? Even in the fatal
as if in despite of the sun,—in despite of the poor and naked
s splendour, of opulent raiment and rich decoration. Miserable
Insect World simultaneously displaying their grandeur. The
mous beetles, pitiless hunters, fiercer than Ivan the Terrible,
blue morocco, shaded with purple sapphires. While some,
ars and the porphyrogeniti, stalk to and fro in robes of purple,

ofty mountains,—under the hailstorms, for instance, of the
y their rude blows, fly noble insects, of exquisite appearance,
l with black velvet.

ne formidable descent where that glacier comes to us, and you
es you—I once admired a timid but touching protestation of
es, which undergo an eternal chastisement, a poor little plant,
a rose-hued blossom, but a violet rose, not unworthy of the
e is a very tiny insect which, all feeble as it is, mounts higher
nong the lofty snows of Mont Blanc. There, above you, is only
The poetic creature has assumed exactly two tints: the celestial
tly kindled with the white [124] powder of the hoar-frost. The
s awaken in it no sensations of terror. Under the breath of the
dable frown, it, the little one, flies daringly, as if conscious that
e to destroy the last winged flower of love which, in his realm



D ARTS OF THE INSECT.


JAN SWAMMERDAM



/MERDAM.

CHAPTER I.

WAMMERDAM.

? Nothing whatever. Nothing of the infinitely great; nothing of ıscal, very frequently cited upon this subject, is the frank ⁄oung, which begins to be aware of its prodigious ignorance, :wo abysses.

g received from Holland a magnifying lens, constructed the irmament. But it is less generally known that Swammerdam, rfect microscope, directed it to the lower world, and was the imated atoms! These great men succeeded one another. At the ›rn the Hollander, the Galileo of the infinitely little (1637).

was unfolded in its profundity with myriads upon myriads of
nich men had not even dared to dream. But the most surprising
nces underwent a total change. Hitherto men had relied upon
eir testimony, and they thought that no appeal could lie from
he senses themselves, rectified by a powerful auxiliary, confess
eater part of things, but that, in those they have laid bare, they

very opposite impressions produced by these two revolutions
of heaven, where all appeared harmonious and marvellously
nnounced his discoveries to Europe in a style of the greatest
of the microscopic world, seemed overcome with terror. He
evouring her very self. He grew perturbed; he seemed to fear
vn: a melancholy and singular condition, which, added to his
e awhile to dwell upon this creator of science, who was also its

ındred years after Swammerdam's time, published with pious
prising observation, which sets one a-dreaming:—

melancholy, which raised him to the sublime."

of patient inquiry, this insatiable observer of the most minute
ceptible, was a poetic soul, a man of imagination, one of those
ı the infinite, and die because they fail to conquer it.

endowments which, at the first glance, seem opposed to one
subtlest researches; a sublimity of aim, and that obstinacy of
et never cry, "Hold, enough!" But, in reality, are these qualities
vhose hearts are filled with the love of Nature will declare that
othing little. For the lover a simple hair is worth as much as,

and his birth decided his destiny. The cabinet, formed by his
mell, a chaos. The child wished to arrange it, and drew up a

ı point to point, until he became the greatest naturalist of the

ho then became common in Holland—insatiable treasurers of Rembrandt was then in his glory—it was not with antiquities, ıght back from the two Indies of minerals, plants, fantastic and ınd heaped up in piles. These marvels of the unknown world, ificence with the gloomy climate which received them and the llander's mind a lively curiosity and a passionate devotion to

ıing picture of the young Grotius: a universal scholar at twelve , and all the appliances of learning. How much I should have all-powerful magician, Rembrandt—had revealed to us the ee kingdoms, and the young Swammerdam endeavouring to

sterdam favoured his solitude. The Babylons of commerce are ɔcean of men of mercantile activity, on the border of sluggish his [132] island. Isolated even in the midst of his family, who ed from his cabinet, and descended on the fewest possible



cts in the little soil which Holland offers above the waters. The herds, possess, in the moist warmth of the summer, a great ınpressed when he sees the crane, the stork, and the crow,

ınce of their food, which they frequently hunt in company on
cquires a peculiar charm. The cattle assume an air of placid
ıe summer is short, and early assumes the gravity of autumn.
cter, harmonized in a great moral sweetness and remarkable

ieved to see the youth of Swammerdam thus employed. It had
ɛd minister who should shine in controversy, and an eloquent
ɛ dumb. The chagrined father lowered his views from glory to
eased, no career is more lucrative than that of a physician. But
ɛw himself heartily into his medical studies; but on condition
Therefore, the basis on which he desired to rest them was the
s. How cure the sick man unless you understood the healthy?
side by side the inferior animals which translate and explain
ries with the eye alone? Does not the feebleness of the sense of
ɛnce would suppose a reform of our senses and the creation of

ɛ. Is it a simple spy-glass? To the eyes which the instrument
ɔf which bears the glass and the other the object. He himself
ons, "that he had attempted to obtain the assistance of another
an obstacle." It was for this reason that he organized a dumb
work; thanks to whom the observer disposes of supplementary
f power. In the same manner as the birds expand or contract
hole or to scrutinize with searching glance the smallest detail,
ɛnlargement; the art of employing lenses of different sizes and
ɜee *en masse*, and to study each separate portion, and finally to
acing the details and reconstituting the general harmony.

me is required; but then time robs us of them. Death, which
is deceitful; it fixes the mask for a moment, and the object
f Swammerdam's. He not only taught us to see and investigate,
tigation. By preservative injections he fixed these ephemeral
eath to endure. The Czar Peter, who, a long time afterwards,
am's disciples the beautiful body, supple and fresh, of a little
that the rose was living, and could not be prevented from

w many attempts! [134] What miracles of patience, of delicacy,
e descends the scale of littleness, the insufficiency of our means
ıch nothing without breaking it. Our large fingers will hold no
ın our way. Our instruments are too coarse to seize upon such
ɛan we put the invisible point in an invisible object? The two
—the unconquerable love of life and Nature, the undefinable,
lirected by a masculine, scientific genius—could succeed in so
ɛures. He dreaded wounding them so much that he spared the
and preferred the firm but nevertheless the delicate ivory. He
ened by aid of the microscope, which would not work rapidly,
ns with due patience.

ward. While still a youth, and a simple student at Leyden
her highest and lowest manifestations. He was the first to see
he human maternity. The latter subject, so delicate and yet so
master at Leyden—I put aside: let us dwell upon the former.
: found them in the pretended "king;" and proved that she was
explained the maternity of the ant; an all-important discovery,
nsect, and initiated us into the real character of these societies,
and vast public nurseries, each of which raises up a people.

and the great law of their existence, is the Metamorphosis.
e in them exceedingly conspicuous. The three ages of the insect
dared to assert that the grub, with its heavy luxuriance of
identical with a winged and ethereal being, the butterfly?

anatomy he demonstrated, that the larva, the pupa, and the
e individual, three natural and legitimate evolutions of its life.

ıovel science of metamorphoses? That was the question.
thout any position in the academy or university, lived in his
shed during his life, nor even fifty years afterwards, so that his
her than himself and his fame.

sors in the University of Leyden were opposed to him; and took
himself by his discoveries on a level with them, or even above

hich his father left him was not calculated to recommend him labours he was supported by the generosity of his friends. At r, who defrayed all his expenses.

founded,—the Royal Society of London and the *Académie des* ed by the genius of Harvey, a pupil of Padua, turned its gaze ıe distinguished and very accurate observer, Malpighi, who kworm. I know not why the Englishmen turned aside from ıf Swammerdam.

, in the neighbourhood of Paris, that he made the first public enot, the famous traveller and publisher of travels, collected linguists, orientalists, and, before all, inquiring students of *les Sciences*. One might justly say that the revelation of the

nquisition the last manuscripts of Galileo. A Frenchman also— se and credit. He was desirous of establishing him at Paris. On ted him to Florence. But the fate of Galileo was too strong a he mystic Morin was burned at Paris in 1664; the very year in tuffe." Swammerdam, who was then residing there, might have

howed very singular tendencies towards mysticism. The more did he long to reascend to the general source of love and life; , at the age of thirty-two, excessive toil, chagrin, and religious s early years he had suffered from the fevers so common in had not paid due attention to them. He studied with his emainder of the day he wrote. And for his studies he preferred ning sunshine. Then he would remain, with his head bare that il deluged and bathed in sweat. His eyesight grew very weak.

1669, he published in a preliminary essay the principle of the mmortal; but so much the more in danger of dying of hunger. sistance. Swammerdam by his discoveries (as of the lymphatic oted the progress of medicine, and even of surgery; but he was d attempted to practise: he could not continue, and fell ill. He

› his house, retired to live with his son-in-law, and bade
/here he would. A wealthy friend had often solicited him to
nal [137] roof, he made an effort to seek out this friend and
longer.

l. Poor and infirm, and dragging himself along the streets of
w not where to store away, he received another terrible shock
is feet.

seemed crushed by the invasion of Louis XIV. Assuredly his
/ertheless it was the native home of science, of free reason, the
ulfed by the hosts of the French; engulfed in the ocean which
d only by committing suicide. Did she live? Yes; but to be
er greatness.



s had its painter and its poet in Ruysdaël, who was born and
ı, at the age of forty. When I contemplate in the Louvre the
s of him, the one leads me to think of the other. The little man
ne approach of the storm reminds me of my insect-hunter; and
e red-brown waters, chafing so terribly, and electrified by the
›ral tempests which poor Swammerdam experienced when he

lie, living a single hour of love.

d it seems as if he spent his too brief life in a state of complete
drawing near his end. The depths of imagination and universal
by the barren controversies of the age. In this condition there
—a woman's book. This sweet voice spoke to his very soul, and
a of a celebrated mystic of that age, Mademoiselle Bourignon.

ilgrimage to Germany, where she resided, and went to see his
sistance in escaping at the least from his contention with the
d in remitting to God alone his defence and his discoveries.

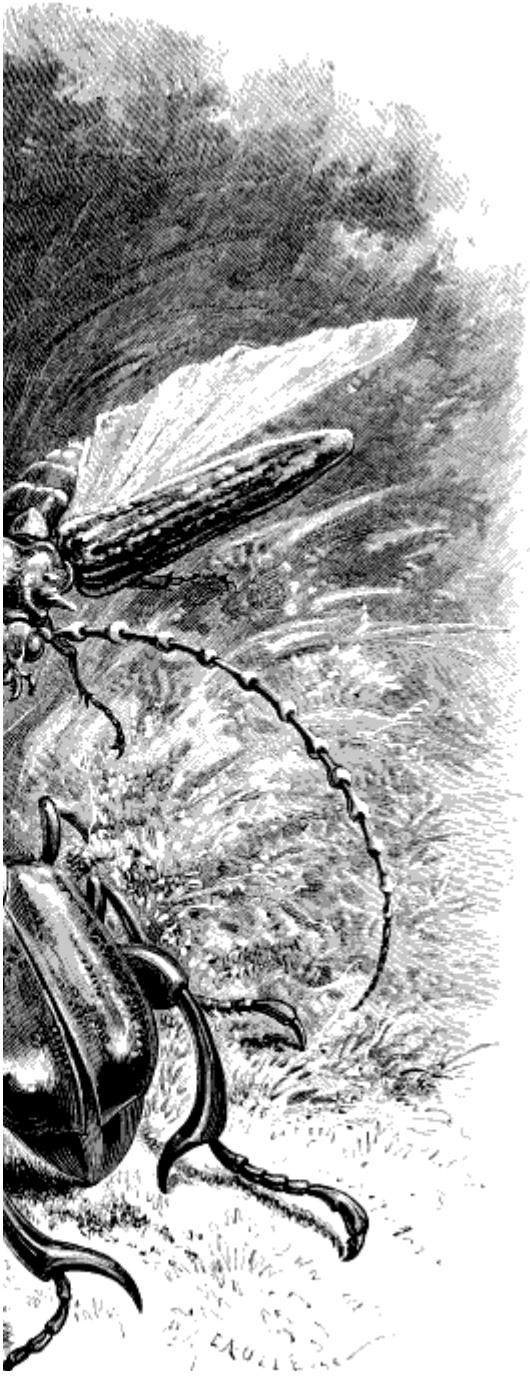
d solitude. For this purpose it was necessary he should dispose
ad spent his days, in which he had enshrined his heart, and
He must tear himself from it. At this cost he calculated that he
but the very loss and separation he longed for he could not
uyers be found for the cabinet. Perhaps the wealthy amateurs,
nd in it the glittering species which give us a child's pleasure.
e serious: the logical order and arrangement of his discoveries;
ed his genius to new achievements. Alas! it perished, scattered

her through weakness, or a disgust for life and men, he shut
bequeathed his manuscripts to his faithful and life-long friend,
arable,"—the Frenchman Thévenot. He died aged forty-three.

too abrupt revelation [139] wounded and seized upon him. If
m, what would happen to this Dutch Pascal, who saw the real
ted world? It was not a matter of a decreasing scale of abstract
uccessive envelopment and prodigious movements of beings
see, each animal is a tiny planet, a small world inhabited by
rn are inhabited by others very much smaller. And this, too,
s of our senses and the imperfection of optical science.

ly toil in, that infinity which the hand of Swammerdam had
oured therein with diverse aims. Leuwenhoek, precipitating
worlds. The Italian positivist, Malpighi, showed perhaps the
heart—a heart which beats like man's. One has not far to go to
o was living then, was terrified by the fact. He drew back
is footing, and was fain to doubt the existence of the heart.

ıe had given the first impulse, which he had launched on the
omething great and terrible which he shrank from seeing: like
water which dashes headlong in the Niagara Falls, perceives
ghty movement—whither? He will not, and he dare not, think!





MICROSCOPE.

CHAPTER II.

HAS THE INSECT A PHYSIOGNOMY?

achieved for himself, I can move forward, at pleasure, in any
, to compute the spheres, and gravitate with them in their vast
wards the other abyss—that of the infinitely little. In its atoms
ıd astounds me. And I myself, what am I but an atom? Neither

eat a distance from, and possessing so little sympathy with me,
:se, on the contrary, surround and press upon me, injure me or
n kind, they are at all events associated with me.

nt the very air which I breathe,—what do I say? float in the
m. But my sovereign interest is to escape from my deplorable
d until I have peered into the infinite.

e of the philosophers of the present day who have made the
ɔe,—the celebrated Dr. Robin. Under his direction, I purchased
ɪstrument, and planted myself before my window on a very

than a mere magnifying glass. It is an aid, a servant who has
ɔle eyes, which by their changes enable you to see an object at
whole. One perfectly understands the all-absorbing attraction
ɛauses, one cannot separate one's-self from it. Its *début*, as we
eator, Swammerdam. How many workmen has it not since
of the two Hubers became blind at a comparatively early age.
ockchafer, M. Strauss, is nearly so. Our pallid but enthusiastic
ɛs his studies without pause. The seduction is too potent. Who
Who can willingly return into the world of errors wherein men
hings falsely.

ɪan of copper. I lost not an instant in interrogating the oracle.
; the two objects I presented was:—

e,—the left hand, the idler, and that of a person who did no

agreeable enough; the other, a tiny, obscure blade, of a dirty

e opposite. In the spider's foot, easily cleansed of a few downy
t beautiful shell, which, far from being dirty, by its extreme
everything glided off it. This object would seem to serve two
the spinner, in rising or descending, suffers its thread to glide;
pourer holds its stuff, while at work, in the required position,
w firm and strong, are dried by the air, and no longer fall back

er the microscope seemed, even with the smallest lens, a vague
gh its very coarseness.

fifteen times magnifying power, it seemed to be a yellowish,
of wiry taffeta, in which each mesh was irregularly puffed up.

ent of the flowers, behaves with terrible severity towards the
will act wisely in not attempting the experiment. She would
nto abysses! The light down of the peach which crowns her
how like rough thickets, or rather like savage forests.

ruthful oracle not only altered our ideas of proportion, but of
hing, in fact, from the false to the true.

ruth may tell us, I thank it, and I will welcome it though it
ase. If it change with some severity our notions of the surface,
y unbounded beauty beneath it. A hundred things in anatomy
uire a touching and impressive [146] delicacy, and a poetical
ot the place for discussing such a subject. But a mere drop of
to the naked eye, heavy, thick, and opaque, if you look at it

s to you a delicious rose-bloom arborescence, with delicate
ral are coarse and dull.

t the most miserable—the wonderfully little butterfly of the
ems the lowest of created beings. Take only his wing. Nay, far
covers his wing. You are astounded at seeing that Nature,
that this offcast of creation may fly at his ease, and without
ut a multitude of tiny balloons. Or, if you prefer it, so many
ght, which, when opened, sustain the little aeronaut without
hey are more or less expanded, enable it to rise or sink; and
ıe least of the butterflies, thus supported, has a faculty of flight

apparatus, which have anticipated our human inventions. One
tion, as one would observe the inhabitants of another planet, if
hat one most yearns to see, what one burns to detect, is some
hich is concealed in their inner existence, some appearance of
e in their strange visage any trace of an intelligence which,
own? Of the expression which touches me in the eye of the
detect nothing in the bee, the ant, in those ingenious beings,
the dog cannot accomplish?

ıs very partial to insects; I searched about for caterpillars, and
curious to look in their faces, but never succeeded. All that I
This discouraged me. I left off making collections."

s, I was fresh to it, and curious. My special anxiety was to
world, and to surprise there, in default of voice, the silent
e and floating instinct.

ıg in form and colour, but endowed with a prodigious amount
; not to speak of its quickness of resource, of the promptitude
mbarrassments.

–a neutral ant—one of the workers who are relieved from the
minished to a minimum for the advantage of labour, develops
tinct; who alone perform all the diverse trades of the little
, and inventors.

day—not luminous with the glare of summer, but the calm
s alone, in a state of perfect silence and repose, and in that
rarely obtained. After the manifold agitations of the past and

es which do not address themselves to the ear, to penetrate in
e little world which on every side surrounds us, and yet has
n our communications.

good lens, with a magnifying power of twelve, I placed it
ich covered nearly the whole table.

art and not the whole. A very considerable enlargement would
ary details—such as the scanty hairs with which the ant is
uffered me to keep it in the focus of the microscope; but the
s motions.

lively, alert, disquieted, and impatient to quit the table. I was
was already nearly at the edge. I was obliged to *etherize* it a
.

Though a neuter, and not a female, its belly was rather large,
ings. From the chest the head, which was strong and nearly

d a bird's. But instead of a beak it had a circular prolongation,
e reunion of two tiny crescents joined at the point. These were
ours, from above to below, but horizontally and sideways. The
lely different purposes; they are not only its weapons and
es for every art, supplying the place of hands in masonry,
g burdens which are frequently of enormous weight.

a complete coat of mail. The ether affected it but slightly, and
partly recovered, and made a few movements like those of an
vith a fit of vertigo. It seemed to say, "Where am I?" and
as walking, the great sheet of white paper. It attempted a few
hen on the other. It carried before it a couple of instruments
on more careful inspection, were wholly different.

nd, like the eyes, were evidently instruments of observation. delicate, yet robust, and vibrating at the slightest touch, are l one in another. They form an instrument admirably adapted other ways: by means of it the ants transmit in a second very y change their course and retire, or suddenly take a wholly ike that of the telegraph. This supposed marvellous organ of ratus, and so mobile that it quivers at the slightest vibrations of

delicate and subtle tactile and telegraphic apparatus, the strong l the illusion. Its attitudes, its gropings, its efforts to obtain a what we should have been under similar circumstances. riot, occurred to my mind. And more, the chronicles of the arratives which would lead us to believe that the ants are far

dreaded to see its persecutor. It looked upon me as a horrible , made constant and energetic efforts to escape me, and place

But I could not make it show me its face. Its antipathy and its e decided to take hold of it with a small pair of pincers, and to ssible. The pressure, though light, acting on the small lateral was infinitely painful, to judge from the resistance it offered. pincers so firmly that I could hear the air vibrate with every n which I had placed my ant; I looked it in the face.

it a peculiar appearance, are the teeth or mandibles placed ht side, the other on the left, in a horizontal direction, so as to teeth seem to offer battle, though, as I have said, they are also

threads or palpi at the entrance of the mouth; which are, in handling, and turning over whatever is brought there.

; but these are set externally, are mobile and susceptible to an

paws or feet, two in front of great dexterity, and rightly named

e fore part of the body, cannot fail to obscure and overcloud its
r own, if from our eyes and mouth six hands started, to say
rs, and of four others placed lower down?

The face which the insect shows is its resisting skull, its bony
s, and fixes the eyes, which are also immovable; but, being
those of the ant are divided into fifty facets, which reveal
ı, its sight is admirable, but it cannot *look*. No external muscle
physiognomy.

extremely expressive,—I may even say, very pathetic. On
of walking, it did exactly what prudent and sagacious man
nergies by the very means which we should have employed. It
ly, from above to below. Seated like a little monkey, it skilfully
unner as to rub its back and side. Occasionally it returned to its
would fain have shaken it clear of the fatal intoxication which
afety. One would have said it was questioning itself, collecting
am, "Is it true, or is it false?—Poor head!—Alas! what ails thee,

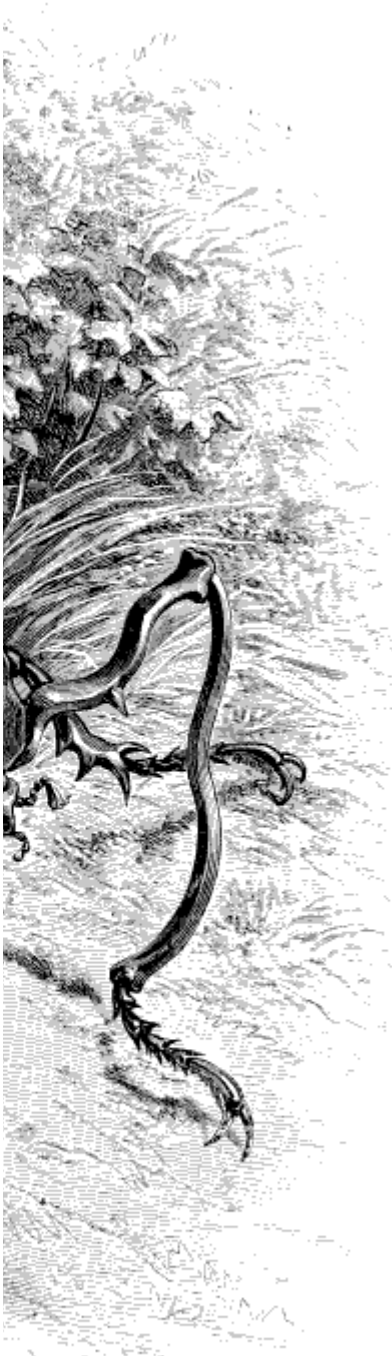
two worlds, and that there were no means of understanding
ge, that of the voice; its, that of the antennæ. Not one of my
h which served as its organ of hearing.

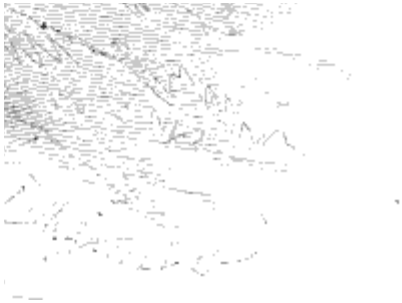
s body isolates the insect from us, and conceals us from the
we cannot see its pulsations beneath its thick coat of mail. It
which touches us in so many dumb beings. It is wholly wrapped

the sides, not through the face or head. No palpitation or
efore, how should it speak, how complain? Of all our languages
sess a voice.

mned to perpetual silence, that of a monster or a spectre? No. ions indicative of reflection, its arts so much more advanced lling to believe that in this head exists a personality. And from cognize the identity of the soul.







IE AGENT OF NATURE.

CHAPTER III.

URE IN THE ACCELERATION OF DEATH AND LIFE.

speaks by voice nor physiognomy. In what manner, then, does

e exercises on the superabundance of Nature, on a swarm of ep away.

especially in the moment of love, his colours, his fires, his ic agents).

late our human inventions.

ıds us most, and seems the auxiliary of death: his immense,
.et us contemplate him in history, and begin at the remotest

ır terrors, to the narrow and egotistical judgments which we
he great and necessary reactions of Nature.

tinuous flood, but with refluxes and recoils back upon itself,
mony. Our short-sighted survey, frequently arrested by these
l, takes fright, and misconceives the character of the whole.

ıtinuously creating, to raise every created thing to the Infinite.
of antagonisms which shall reduce the extent of the preceding.
e that they are destined, as a remedy and a repression, to check

f keeping under the alarming vegetable accumulations of the

reason, the insectivorous insects were created to confine them

creation by their weapons and their wings, would have been
ven to extremities the feebler species, if, above all the insect
sen on mighty wing a superior tyrant—the Bird. The haughty

however, production has not been suppressed, but restrained,
ndure and live. The more a species is pruned, the more [157]
he superabundance is equilibrized by the new fecundity which

lean and sober West—brought up in the little, close, carefully
all "wide cultivation,"—enlarge, I pray you, your conceptions;

ng greater than these petty corners, if you would comprehend abundance and superabundance which she displayed when, the glow of her first youth.

ll show something of this profusion, though in a pale decay. has lost its waters, preserves as a souvenir in its happier zones ree, the baobab. The inextricable forests of Guiana and Brazil, lants which, without rule or measure, envelop and choke the eir *débris*, are but imperfect images of the great ancient Chaos. mpurity and breathe its deadly exhalations, are great-bellied ents swollen with filth and venom. And such would have been in the horrible suffocation, she could never have given forth

e bird, and, plunging into the gulf, carried back to the sky on nsters. But its incessant struggle would have been vain against iads of nibblers had not lightened the accumulation, cleansed ws of the sun the filth under which earth was panting. The which made earth inhabitable: they devoured chaos.

w could these little beings come to the aid of an infinity?" You r a witness of the awakening of the silkworms, [158] when, one er no abundance of leaves can satisfy. Their proprietor has with a rich and beautiful plantation of mulberry-trees; but it , and they still ask for more. At a distance of twenty or thirty ng; a murmur like that of brooks incessantly flowing, and s. Nor are you mistaken: it is a brook, a torrent, a boundless chanism of so many minute instruments, sounds, and resounds, to that of insects, and softly but invincibly bases itself on

le destroyers, the most implacable assailants, which penetrated ch at a higher level delivered the tree from the pressure of its s, and brightened up the livid shadows,—these were the errupted work of unconquerable destruction reduced within almost lost. They opened up splendid, free, and unencumbered where they swarmed, grew more and more barren, and by that child of Light,—the Bird.

were established between the latter and his protagonist, the
n the abyss, and delivered into his power the enemy. Consider,
urishment fortified and exalted the insect, when its blood was
ty previously unknown prevailed, and the fiercer and bolder
ing the *retreats* of the monsters, but attacked the *monsters* also.
harpened pincers, an arsenal of unknown and as yet unnamed
whetted for assault upon the living matter. They were needed.
escent [159] sore of the rising world. This latter had nourished
torpid worms and pale-blooded larvæ, a ghastly and also the
burning crucible of keen existence, the superior insect-race.

ɔnger, firmer, more durable, and more formidable than those
ɛrse earth as quickly as the great mammal traverses it heavily
ʒ-beetles, which carry with so much ease armour far more
ʿe us only by their size. Here strength is relatively formidable.
in his arms the obelisk of Luxor.

hese insects enormous foci of forces, translated themselves into
ı species where life was more elevated, succeeded the moral
arabæi, were exterminated by the modest citizen-species, the
ıarmony.

ıatever height our inquiries may conduct us, let us not mistake
niners, which have elaborated and prepared the globe.

mense zones remain in what may still be called an ancient some fecundity. In the centre of America the richest forests of ın, who enters them only to die. His arms, enfeebled by fever, ir treasures. If a tree fall across his path, it becomes an urer. He turns aside, and you may trace his circuit through the ɔil so easily. If they find themselves confronted by a tree, they k it bravely in the front, set to work as many labourers as are s the tree is devoured, and the road open.

–

ries the law of safety, is the rapid destruction of everything jurious; its ardent purification in the crucible of life. And that t not blame its fury of absorption. Who thinks of accusing the ıen it does not burn. And, in like manner, that living fire, the that it should be eager, cruel, blind, and of an implacable no pity. All the virtues of man and of superior beings would be ou conceive of an insect with the sensibility and tenderness of ? which should nourish the aspirations and poetry of the man? Such an insect would be incapable; thoroughly unfit for estroyer—we may say, more justly, the universal medium of ıg long periods of decay, in this way accelerates the brilliant ays, with a savage pleasure, "No maladies, no old age! Shame ery creature die which lives beyond a day!"

–

ged insects, which seem to be the agents of death, is frequently he sick flocks, enfeebled by hot damp airs, they ensure their resigned, and hour after hour grow less capable of motion, r, until they could rise no more. The inexorable spur knows, s; though with trembling limbs, they take to flight; the insect conducts them, bleeding, to the wholesome regions of the dry ɔntented, their furious guide abandons them, and returns to the

ım fly, directs with a sovereign authority the migrations of the

nel; it audaciously ventures into the ear of the elephant. The
l shepherds, to escape the fires of the south, and to seek the
oxen, through its management, remain with their Arab master

ants—are valued precisely for their devouring power. Without
ly cleansing the homes of man of all the obscure broods which
l framework, in the most imperceptible crevices. One morning
e: an army of sanitary inspectors. Man retires, gives place to
come and go at your pleasure; make yourselves quite at home."
ice it is a law with these scrupulous visitors to leave no living
e, every insect,—the largest as well as the minutest,—and their
smaller animals—frogs, adders, field-mice;—none escape. The
t remains are conscientiously devoured.

quing themselves on accomplishing a work of purification so
y industriously to secure the cleanliness of human habitations.
st. They are excellent servants—much cleaner than the slaves.
as indispensable domestics. Markets exist where spiders are

to which it can everywhere put forward so many claims. That
summer is not the less infested with gnats and flies, finds a
usly hunts the swarms for man's advantage. Its consummate
mospheric variations and climatic phases, have so exalted the
nany of their tribes refer the creation of the world to a gigantic







AS MAN'S AUXILIARY.

CHAPTER IV.

CT AS MAN'S AUXILIARY.

mical memoir, gives utterance to the following paradox: "Their

ı the vine and the potato."

broke out in September 1845, is produced, says the author, by
tion previously destroyed by the insects. But these insect-
irds, in 1844. The fatal law passed in the May of that year, for
ed them to such a degree, that the insects, driven out and
plants the succour which defended them against their invisible

ıd ability, and apparently grounded on facts and dates, rests
e ground.

ısly protected by the law, and that, in twelve years, they have
f the field, the tyrants and exterminators of the useful insect-
ately almost disappeared.

not go for the truth to the *Bulletin des Lois* (the Statute-book),
—"So many birds have been destroyed since the enactment of
ɛs sport has actually become impossible, because there are no

he gnats are insupportable (and the birds, therefore, most
n default of edible birds, now kill the swallows. They place
winged legions pass in files, and slaughter several victims at

troyed by the birds. Ask of the agriculturists what species has

d they will not find that a solitary species has diminished. On
n them increase, and grow, and flourish, and nothing prevents
visible animalcules.

e contrary, some careful observers tell us, in their books on
s of birds will soon become extinct.

—

ɔir calls them, "unintelligent assassins." Far from this, they kill
e at which they carry on a really murderous war is when they
.67] them with? With very few insectivorous insects; the latter,
ered with metallic scales, equipped with hooks and pincers, of
ɔd for the young of the warbler, who, before such a provision,
ıd of aliment the sagacious mother seeks for her offspring; but
culent larvæ, fine little tender caterpillars,—all herbivorous,
tly those which do the greatest mischief in our fields and

gainst the insect precisely coincides with the labour of the

ıthor referred to makes us say, that the bird is the sole purifier
less, not to see that he shares this mission with the insect. The
ficacious in the pursuit of a world of living atoms, which the
ɔounces upon in numerous obscure corners, inaccessible to the
al purifier of everything demanding long-sightedness and the
ouds of invisible animalcules which float and swim in the air,

·able. All are more or less useful. We willingly join with the
: those insects which prey upon the smaller species might be
ıt destroys them indiscriminately, without knowing that by
-the brilliant murderess which slays a thousand insects daily—
the insects, the preserver and propagator of the enemies which
not fly so high, but with its crossed daggers, or rather the two
. swift and almost incredible havoc among the smaller insects.
the child who is dazzled by the beauty of its wings, nor, to
our admirable insect-hunter, the efficacious auxiliary of the

› the very teeth, and displaying an ardent activity beneath their
f your fields; and day and night, without holiday or repose,
the smallest blade or seed. Their sole occupation is to capture
ɛ thieves' bodies.

vorm, which pierces and stirs up the soil, gets ready in a
clayey earths which are deficient in evaporation. Others, in
depths the cruel enemy of agriculture, the horribly voracious
ee years, has been preying on the roots beneath the surface.

.e claims to the protection of man, whose allies they are. But
royers of harmful plants. The useless, pungent, and in every
le quadruped will deign to touch, fifty species of insects, in

ı outward garb, and others in intelligence, are the *Necrophori*,
; away all dead matter from the soil. Nature, which finds them
ourites, honouring them with splendid costumes, and making
harge of their functions. It is a remarkable circumstance that,
from being wild, but are very sociable if the need arises, and
their energies, and act in concert. In brief,—these honest
istocracy of the insect nation.

me as ours. She loads the most useful with rewards, whatever
rupes, which clears away the dung, is clothed in sapphire in
eron of Egypt, the sacred *Ateuchus* of the tombs,[J] appears

ıe Egyptians.

by these scavengers? Yet we are not just in our dealings with
ıs about to transplant to my garden some dahlias which had
hat the humidity of the air of Nantes, and the compact and
vy of insects were at work upon them, and usefully engaged in
gardener was very indignant, and ready enough to accuse them
edy.

is pursued by an insect,[K] the *Drylus*, which lies in wait for it,
, and makes it carry him, seizes a favourable opportunity, and
s with it and upon it. A snail lasts him about a fortnight. Then
a third still larger. He requires three in all. In the third, as he
es the place clean, and, to sleep conveniently, seizes on the
ıed him.

nlighten the peasant on the distinction that ought to be made
which are noxious; or those which may be turned to advantage
,—which, it is probable, will yet discover unexpected resources
ı vitality. In this respect, a very honourable work of initiation
who has so skilfully organized the museum at Rouen. All his
their teacher; and it is to one of them I owe the following
the Insect as Food.

culous fastidiousness, has debarred our Western peoples from nourishment. What right have they who devour tainted game, of the oyster, that slimy mollusc, to reject the nourishment

out any feeling of silly disgust, by the excellent mollusc which is very good with butter and salads, and a dish as wholesome rofitable to the stomach.

a step further in advance, and to venture upon the caterpillar, s to him we owe our knowledge of the fact that the caterpillar uts. He addicted himself to the latter, which he found more pider is a superior being.

at they have been specially selected by ladies as a diet likely to ns of the Later Empire recovered the ample outlines of the e *Cossus*.[L] The sultanas of the East, of those voluptuous lands gure, make their slaves bring them a supply of *Blaps*,[M] and ng fountains, imbibe from the succulent insect an eternal

sulcata cooked with butter.

alalis of the bamboo, when the tree wears its nuptial flower, a s in sweetmeats, at the moment that their wings uplift them on

al value, has been hunted by the peasants whose tillage it l, in revenge, they themselves have fed upon *it*. The terrible ed the East, has been, on that very account, the more eagerly y runs that the Caliph Omar, when seated at his family table, ıpon its wing:—'We hatch nine and ninety eggs; if we laid a

Who does not know that the prophets, musing in the caves of ıchorites adopted the same *régime*. One day a person said to l fain have a basketful.' Soon afterwards the supply failed him. nsect; whereupon he, delighted and grateful, exclaimed, 'Allah

ɔughout the East, and are eaten in the café as a dessert and a
e bought and sold by the cask.

tritious and substantial. What prevents us from making use of
ɜeful reprisals against them?"

his audience, consisting mainly of intelligent Norman peasants,
:he debates of the British Parliament when the accustomed cry

ʒ loaded his table with some of the insects most dreaded by
d swallowed them gravely, with this strong speech, which will
eat them!"







IA OF LIGHT AND COLOUR.

CHAPTER V.

ORIA OF LIGHT AND COLOUR.

us, are we to suppose that it does not express the burning

though only from itself to its kind, from insect to insect. They which has no outward expression, and no language except for

h exists in their antennæ. But the great, the eloquent language their existence,—for one brief moment, it is true,—a moment festival of love.

which they are invested,—through the wing, the flight, the airy ses them (says good Du Tertre) of becoming birds. They speak and fantastic designs, their strange coquetry of extraordinary species reveal their inner flame by a visible torch.

days. And wherefore should they economize, when to-morrow
parkle, ye gold and emeralds, and sapphires and rubies! And let
nce, that cataract of profuse radiance, be poured out in one

proper display of the prodigious, the unbounded variety of
ought to glorify the hymeneal of the insect and to emparadise
the patience to show me in due succession genus after genus,
collection, I was astounded—in truth, I was stupefied—almost
ing to say fury—of invention which Nature displayed. I was
uce; my brain was dizzied and blinded, and became confused.
d and overwhelmed me with beautiful beings, with fantastic
f fire, and cuirasses of emerald, clad in a hundred kinds of
[177] brilliant than formidable; some in embrowned steel, shot
d with black velvet; these with fine dashes of tawny silk on a
oured velvet lit up with gold; others in luminous, indescribable
ain, bright in metallic streaks alternating with heavy velvet.

she perishes, we shall enact a drama, and personate all her
nold us here in mantles such as a Russian czarina never wore.
umage which the humming-bird cannot equal; or if you prefer
ur eye. Even wood—in fact, all kinds of substances—there is
u, this little twig, and hold it in your hand,—it is an insect!"

e reverence to a people so redoubtable; with a burning brain I
fterwards the sparkling scintillating masks danced and whirled
retina their wild, strange revel.

oxes, as dead as in nature they were ardent and restless. What
them alive, and in motion,—especially in the burning climes
erything is in harmony with them,—where the air, the water,

the keen ardour of the animal hosts in the madness of love, of by impatient death?

the formidable furnaces in which the great exchange of life is the vegetable kingdom is in accord with that of the animated ıgs—form the woodland concert. Strange voices of birds, in the oarse and vibrating, but regular, as if to mark the hours. They thers by night; and perfectly distinct also at each of the three g. They disquiet the traveller, inasmuch as they reproduce our ocking. One cries, another whistles, another sighs. This strikes l imitates the tones of a bagpipe. The vast plains re-echo the erpent-conqueror, the courageous kamichi, harsh and strong, ble, for he thinks he hears the spirits passing.

rs, the croaking of the frogs, the shriek of the owls, and the of the apes; until a hiss, which seems drawn from a wounded rror, because it indicates the presence of the sharp-clawed

ou. Yonder green and peaceful waters, whence ever and anon ıce your foot upon them, and with terror discover that they are tors, with their greenish backs resembling breadths of moss or d immediately they raise their heads and put themselves in from the slime in all their horror! But is this all?—Even these tyrants over them. The piranha, or razor-fish, as swift as the h the latter's tail, and carries it off before it can wheel round. ıner, would perish, if its cuirass did not prevent its enemy from flash of its scalpel, cuts down as it passes the bird which skims unded by it are frequently caught. And what, then, of the horrible combat is waged without pause in the deep waters,— ıt with death also,—where is realized to the letter a rapid and rder to re-create itself!

his scene. The exalted vitality, revealed among the gadflies and
ı in other species by their enchanting colours, their caprices of
stonish us or terrify. The *Buprestis imperialis*, proud of its green
s to have passed through the bowels of the metalliferous earth,
chrysochlorus, of a yellower green, flutters to and fro like a
c mower, armed with tremendous antennæ and prodigious legs
the tall herbage,—is marked with black commas on a yellow
doubly strange and doubly enigmatic. It singularly reminds us
e of harmonizing colours not usually brought side by side, the
which soften and blend them into complete accord.

:s, covering the banks with their winged tribes, transform the
The butterfly of butterflies, the glorious butterfly of Brazil, of a
in the warm hours, above the waters crowned by the imperial
endid creature, it seems the innocent king of all the puissant
ow in its train; and ever and ever more the glorious host, in

: boundless rainbow of all these colours is simply its varied
ght to appear without an intermediary?

vorm, motionless under the hedgerow, suffers its little lamp to
: love.

acquired wings. I was much struck by it, at the hot springs of
revails; the wild dance of the tiny lights seemed stimulated by
Brazil the very leaves overflow with phosphorus. How should
idal-joy of the insect? That marvel, under the tropics, glitters
ed species are known, which Nature has gifted with the poetic

eir great festival with the poesy of light.

n, having been transplanted to these zones of fire, has related
ced on seeing their insect wonders. The daughter and grand-
rself an artist and of well-informed mind, she has produced, in
resque work on the Insects of Surinam. The learned lady, in an
ut one weakness (who has not one?)—the love of Nature. She
que and brilliant collections of the treasures of the two worlds.
iana, where she painted for several years. She combined in the
the plant on which it lives, and the reptile which lives on the
and posed her formidable models, of which, nevertheless, she
had brought her a basket of insects, she was sleeping after her
ed by a strange dream. She [181] thought she heard a harp, a
as no longer a song, but an intoxication. All the room seemed
was true. The basket was the lyre, the basket was the volcano.
n. The captives were fire-flies (*fulgores*); their song was an

—

y travels by night to avoid the heat. But he would not dare to
were he not reassured by the luminous insects which he sees
ı planted on the neighbouring bushes. He takes them for his
› show him the path, and partly to keep off serpents. And when
replaces them among the thickets, and restores them to their
"Carry away the fire-fly, but return it to the place from which

t follows the movement of life, it flares and wanes in cadence
s in exact accord with the rhythm of our heart. It expands or
ts emotion agitates also that tremendous torch.

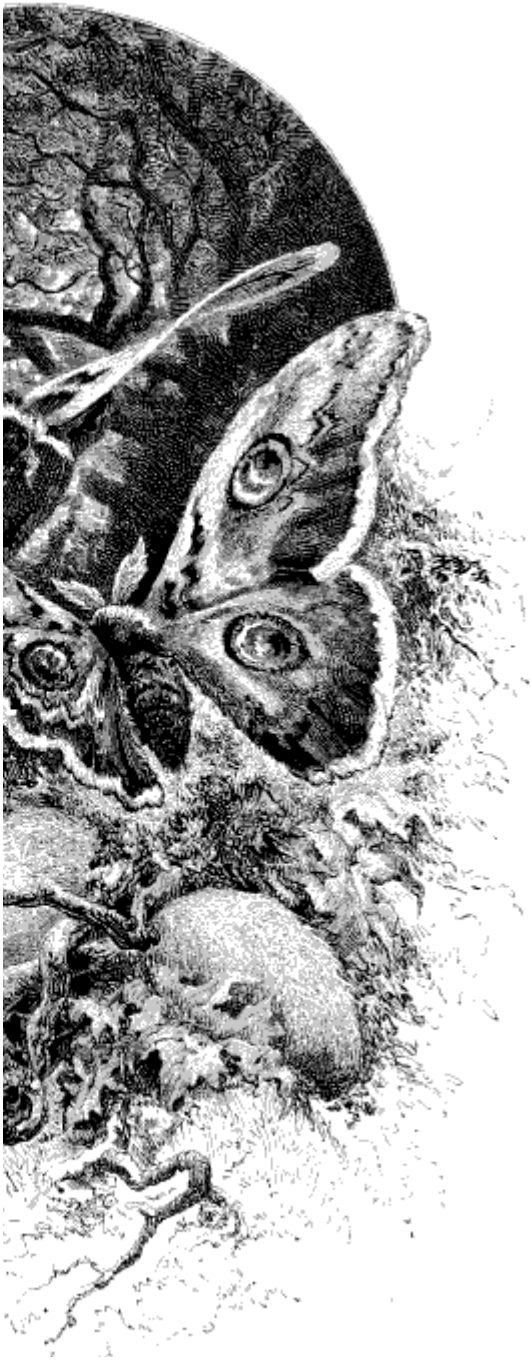
the effort to please and to be loved, translated in a hundred
, of an unrivalled blue, with a head of rubies, outvies with its
melancholy cast, plunges into a sombre red. A third, of flame-
eems to express the languors, swoons, and storms of the violent

re impassioned by the American sky, puts her hand on the

vn. She makes it a talisman, a jewel, and a victim. Burning, she ɔn perish.

ırn it. By a triumph of audacious coquetry, linking the insects ɛ wreathes the animated flames in glowing necklaces, and rolls ɛens of the ball are crowned with an infernal diadem of living ɾ gleam (through suffering or love?). A brilliant but funereal is enhanced by a sentiment of death. They dance; the waning ɯishing glances of a deep black eye. They dance; without end ɛe of the amorous light dying and fading on their bosom, and ɛaptured me!"







SILKWORM.

CHAPTER VI.

THE SILKWORM.

weaving,"—said to me one day a Southerner (a manufacturer, always follow is a woman's beautiful hair! Oh, how far are the ! At what an enormous distance does all, and ever will all, our long, long way in the rear, and enviously regard that supreme natter of pastime.

vibrating with an exquisite sonority which goes from the ear to , and electrical—is the flower of the human flower.

ts of colour. What [186] does it matter? The brilliant black plays it with the splendours of the Golden Fleece. The sunny of it, blends it with its mirages, floats, and undulates, and smiles with light, now deepens into gloom, always deceives, ghtfully.

ıdustry, has combined all possible means for the improvement e rare agreement of capital, machinery, the arts of design, and did Indian products of Alsace, to which England herself does ot disguise the original poverty of the ungrateful tissue which ıo in her vanity clothes her form in these materials, and thinks er tresses about her, and unroll their waves over the indigent occur? How they would be humiliated!

thing worthy of being placed side by side with woman's hair. at manufacturer is an insect,—the modest silkworm."

ıe silkworm; it ennobles everything which surrounds it. In

ıe Ardèche, where all is rocky,—where the mulberry and the
ı air and pebbles,—where low stone houses sadden the eyes by
ınder a kind of arcade, two or three charming brunettes, with
tinued spinning their silken gold. The wayfarer said to them in
'hat a pity, innocent fairies, that the gold may not be for you!
ɔlour, and disfigured by art, it does not retain its natural hue,
s! How [187] much better the royal tissue would become you

u that it is no more a native of Europe than any other sweet
ıe East. Our West, that hardy soldier, blacksmith, and miner, is
ed by her rude son, who has bestowed upon him the treasures
ɔe. With the Arab horse and the nightingale, she has given him
ɜtence and the true ornament of love.

ɛs felt that previously they had been no better than plebeians.
ɔconcerned, to the pearls of the Orient, paying for it, without

ɔ preserve the monopoly, she inflicted the penalty of death on
: was only at the utmost peril, and by concealing it in a hollow
ium, whence it passed to the West.

ɔarren disputes, when wool was the luxury of the rich, and the
to silk, and its manufacture was exclusively confined to Italy.

ı, in Giorgione, at the mighty outcome of the Venetian art, and
es with a ruddy radiance their beautiful blondes and brunettes,

hen Spain and Flanders had waned, the melancholy artist who
marked,—the fading flower,—the fruit too early pierced and
hite silk, like a consoling beam of moonlight, his languishing
ir satins they still trouble hearts with vain dreams and regrets.

erving her charms to [188] the last decline of old age, whose
e can conquer Time, Diana de Poitiers, in her profound art, did
es do, who, incessantly changing, as if to amuse the passer-by,
permanent impression. She permitted the Irises to delectate
e the celestial Dian, always wore the same costume, black or

irst pair of silk stockings, and the fine silken close-fitting vest,
r yet slender figure. We know how ardent an enthusiasm Henry
he growth of the silk-manufacture, planting mulberry-trees
places, in the courts of his palaces, and even in the gardens of
urniture, and silks with flowered designs, were soon afterwards
e with them.

ornamented silks do not by any means produce a great and
even tinted, is in much more intimate sympathy with woman
yellow, with rich falls of lace, the latter not too yellow, are the

ttire, which lends a subdued charm to the exuberant liveliness
ost tender and touching radiance.

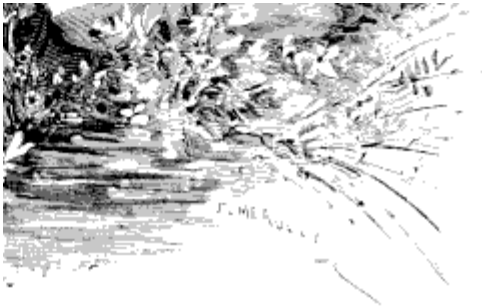
thout attraction. Colour or gloss? Cotton has its peculiar gloss, able freshness. Silk is not properly glossy, but luminous,—with with the electricity of the woman. A living tissue, it embraces

–

our Western customs, wore but two kinds of stuff: underneath, large shawl might be passed through a ring); and above, a straw colour, with a gleam or flash of magnetic amber.

friends,—gentle slaves,—supple and charming flatterers: the the bather lovingly when she emerged from her bath; the silk too diaphanous. Its blonde whiteness agreed most admirably ve very justly said that it had imbibed that colour through its nferior to the skin, undoubtedly, yet it seemed related to it; or nd, as it were, melted into it, like a dream which informs our





NTS OF THE INSECT.

HAPTER VII.

) ITS CHEMICAL ENERGIES, AS IN THE COCHINEAL HE CANTHARIDES.

I have reached its very depths, its most important details.

ıspect of it, for nearly every insect produces silk.

of silk,—that of the bombyx, and indeed that of a species of t the meritorious Society of Acclimatization will introduce here ıe dwarf oak, whose strong and cheap silk might be used as ıt wear a material warm, light, impervious, solid; and not only change would be equivalent, in my eyes, to the general

ysalides would furnish a beautiful silk. The spider would yield
ness the admirable veil of spider's silk preserved in the Paris

embles a fleecy cloud,—which is nevertheless so strong, as it
inently the spinner. But, as a general rule, the insect is the
I was about to say, the insect is a woman.

ıt in the Insect World it is the synonym of strength and energy.
–it is for the purpose of defending and nourishing the child, of
remain alone,—it is for this purpose specially that the insect is
s.

ce, and cut, and saw, the insect, in spite of all our progress, is
instinct of maternity, the need of providing for its child—the
rdest bodies, has evidently inspired it to make extraordinary
ts tools. A few, in their fantastical character, have as yet no

mometer, the ants, for the protection of their delicate,
r habitations into a series of thirty or forty stories,—lowering
rmth, dryness, or humidity, which the temperature of the day
ıus they formed an infallible thermometer, on which one might
ɔsophers.

industry, the differences [195] which we remark belong not so
wants and situation. The insect aptly varies the application of
work-trap, improvised every day, lightens its work by a mixture
process in the important labour of fabricating the soft, warm,
ve its young. The nest would seem to be partly spun and partly

ived the idea of the diving-bell; but it is *not* generally known
led in imitating perfectly the operations of the larva of the
ged respiratory apparatus, preserves a communication with the
ne bottom of the most putrid waters.

t a complete pharmacy, chemistry, and perfumery. Have our
The potent vitality which gives an extraordinary force to the
dow their liquids with active properties and burning energies
r defensive purposes, are gifted with caustic secretions—which
lminating powders. Others with poison, which flows as soon as
ddition, an art of magnetizing or etherizing their enemy; and
oody places, season their abodes by burning them, as it were,

rned Beetle) exhale a strong, rose-like odour, which is smelt at
ature's death. Even among the Carnivora, ay, and among the
, at all events, with insects which, when in danger of being
ity, by emitting agreeable odours.

› reds of the Nopal Coccus have furnished the purple of kings.

cochineal the pre-eminently gay and radiant colour, carmine,

n its sting, and concentrate at a particular point, the liquids
s the very art of irritation. Its applications are innumerable in
naments, a hundred fantastic and beautiful things come to us
ibbosities which they so skilfully raise.

ıcting by this process from exotic vegetables the envelope of
period of rest, furnishes us with the red of reds, the scarlet of
multitude of objects.

on the living flesh are violent irritants for disturbing or re-
s nothing mediocre. A few, without sting, burn you by their

the thirsty harvest, the cantharides, with its emerald enamel,
agitated movement! Burning elixir of existence, where love
impunity that we make use of it medicinally. That medieval
ot without peril, it seems, for the animals themselves. A very

ept for a long time, among its other caprices of violence loved
e acridity of the beautiful insect, as the moth is by the flame. It
ugh the flowers, she had seized and crushed her dangerous

the fiery sting, broke out in cries, in excesses of fury, in strange
y terrible sufferings.

ɔoo-worm, or *malalis*, [197] provides you, if you first remove its
te cream, the sweet and soporific influence of which, say the
and nights, the young maiden who has tasted of it, crouching
werfully in her soul the depth of the virgin forests, and the
seen the sun, nor echoed to the step of man, nor known any
l yet she is not alone: love quenches her thirst with the most





)Y OF THE INSECT.

HAPTER VIII.

)UR ARTS BY THE STUDY OF THE INSECT.

hould profit much more than the Industrial, by the study of) well to seek in them models and instruction. The soft insects, ical irises, with which no casket of gems can bear comparison. ven, if I mistake not, from one individual to another, new ne flies with brilliant wings are not always the most richly erned. Take the dull, gray, dusty, odious horse-fly, which lives offers the strange faëry spectacle of a mosaic of jewels, such as ed.

ot live, like this fly, upon living but upon dead matter, ordure, of their reflections, which our enamel ought to endeavour to ack insect if we look only at the upper part of its body, is, igly diadem ever equalled! And what shall we say of the son of merald, but far superior to that jewel in the gravity, opulence, essed, and one does not feel astonished that a people so tender e dreams of eternity, took for a symbol the little miraculous grave!

day and of light, are necessary. You cannot properly study the es on the same day or at the same hour. The former should be ure sky and a strong sun,—a vivid and genial ray, analogous to other, frequently uninteresting to the naked eye, but of great and illuminating effects for the evening, or for artificial light. so coarse and prosaic in appearance. Yet its scaly wing, when well lighted up beneath the little mirror, so that it is seen by d leaf, where meander veins of a very beautiful brown. And in ellowish part of the scale has got the best of it, and in the light e strange, magical gold of paradise, which we dream of for the s of light worn by saints and spirits before the Throne! A sun which, we know not why, charms and affects the heart.

:hafer's wing!

ıer by day nor night, neither to the naked eye nor under the
t if you take the trouble to lift up, with a delicate and patient
ss of its scaly wing, you will find there, in most instances, a
ɔle curves,—sometimes airy ramifications,—sometimes angular
d you of certain Oriental languages; and compose, in truth, a
referred to, nor compared with, any known form.

ıcting the eye and disquieting the mind, are fully worthy of the
utterance to, in their emphatic language, is the circulation of
the wing, and distends it for flight; others are tiny veins where
erceptible organism with its colours and its energy.

ke a drop of blood, and submit it to the microscope. This drop,
orescence,—with the delicacy and lightness of certain winter
› longer encumbered with leaves.

not limited to the surface, as antiquity supposed. It does not
for its own behoof, and on its own work. From the surface to
ın depth. It invests with surpassing loveliness things which are
ıveil. Sometimes, as if to contradict and confound our ideas, it
om our point of view, accomplish the vilest functions. I am
lerness of that coral-tree which incessantly pours out the chyle

ıem both externally and internally. One need not search far in
rare, which I constantly meet with on the sandy soil of
. Take—but not without precaution, for it is well armed—the
ı agreeable object; but under the microscope it appears to be
art could study. These are truly surprising creatures! Each
ted to an excess, without resembling one another. In each, if
y be made.

r insects, and endowed with formidable weapons,—having for
hich close in upon one another, and transfix deeply, on both
aliment apparently communicates to the cicindela its glowing
. On the wings, a changeful besprinkling of peacock's eyes. On
d softly shaded, are trailed over a dark ground. Abdomen and
nel can sustain a comparison with them; the eye can scarcely
beside these enamels you find the dead tones of flowers and the
d some singularities, which you would suppose to be the work
Turkish, or as in the Indian shawl, where the colours, slightly
ving gradually lent a grave tone to their sweet harmony.

gree of excellence in our human arts? How great the necessity
ondition, they should gain life and strength from these living

e, to the inexhaustible fountain of beauty and invention, they
, and the antiquity of man.

ıose of the barbarous peoples which first procured them from
es and the stuffs of our ancestors. We have copied, especially,
, whose colours and forms have been selected hap-hazard, and
uitable,—as, for instance, to shawls!

ehabilitating these ancient windows, we might have taken a
ı beneath the microscope, they present very analogous effects,

of beauty. The thirteenth century glass-windows (you may see
f that city) were double. The light therefore remained in them,
ical effects of precious stones. And of a similar character are
es, between which you may detect, with the microscope, a

vants or our ideas, has passed out of our furniture, but it still
ly industry, which, having once adopted the fantastic method
se transparency was their special merit, can hardly emancipate

veave complex designs, heap up a medley of arches and oriels,
their backs, men have provided a heavy groundwork of the
ı London and Paris to be servilely woven by the Indians who

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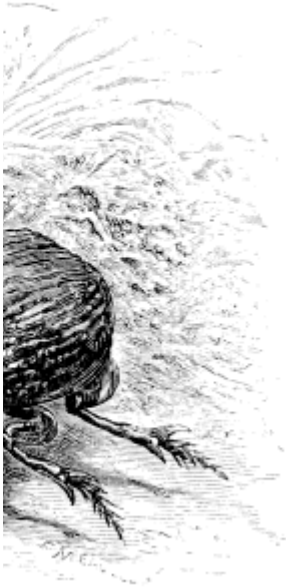
e reluctantly followed in the path traced out for them by the
rich and heavy styles. Let some one lose patience, and turning
go to Nature herself in search of advice,—to the great insect
es Plantes.

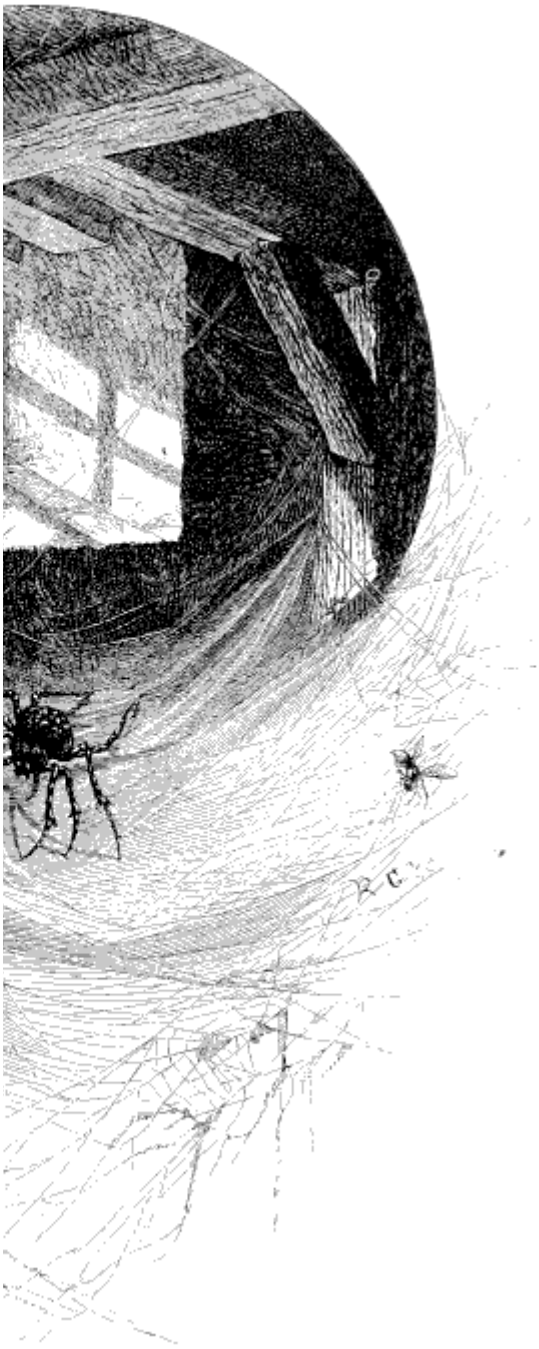
–

would fitly decorate his sister in the soft and airy tissue of the
—not the towers of Notre-Dame,[N] but a hundred charming
on marvel of the cicindela, in which all styles are combined;—
r the emerald chrysomela, which this very morning I found

Paris.

t all. I should call these living creatures, in their robe of love,
ated aureola, which cannot be translated. We must be content
iration from them, to convert them into ideal forms, and new
oms. Thus transformed, [207] they will become, not what they
the child who pants for them sees them in its slumber, or the
e young pregnant wife when dreaming of them in her hours of







HE SPIDER.

CHAPTER IX.

INDUSTRY—THE STOPPAGE.

s with which the latter portion of this volume will be occupied,

der is separated from it by its organization, but connected with

s, it is excluded from the great classes of the animal kingdom,

ame abounds, it lives with its fellows. Some are said to weave
, whose avenues they guard in perfect agreement. Nay more:
insects, and even little birds, they co-operate in the hour of
and.

xceptional, confined to certain species, and peculiarly favoured
organism and the fatality of its life, assumes the character of
tain prey, remains envious, mistrustful, exclusive, and solitary.

rdinary hunter, who gets quit with his journeys, his exertions,
, if I may venture to say so, and demands an incessant outlay.
n substance the essential element of the network which is to
cordingly, it starves in order to nourish, and exhausts in order
e of afterwards growing fat. Its life is a lottery, remitted to the
Hence, it cannot fail to develop into an unquiet creature,
sees possible competitors,—in a word, it is a fatally egotistical

is concerned, that it is profoundly ugly. It is not one of those
the microscope. The overwhelming speciality of its career has

ʒ one limb, exaggerating another, and prevents anything like
ack. In the same manner the spider is pot-bellied. Nature has
ıd the industrial apparatus which will satisfy those wants. It is
'. Do not look at its figure, but at the product of its art. It is not

round its body, and eight vigilant eyes in its head, it causes
ts enormous belly. An ignoble feature, wherein the careless
it is just the [213] contrary! This big belly is its workshop, its
es in front of it the material of the thread which it winds and
ɔut its very substance, it enlarges only at the expense of itself,
ften see it, though emaciated in every limb, retaining full and
e element of its labour, the hope of its industry, and its only
ustry! "If I fast to-day," it says, "I shall eat perhaps to-morrow;
mach must rest and fast for ever!"

g less than agreeable. In my poverty-blighted childhood, while
People") in the then ruinous and desolate printing-office of my
l of cellar, sufficiently well lighted,—being a cellar in the
round-floor so far as concerned the adjoining street. Through a
ghted up the sombre case where I put together my little leaden
ıctly perceived a prudent spider, which, supposing the stray
breakfast, drew near my case. This sunbeam, falling not in its
to invite its closer approach. In spite of my innate disgust, I
l prudent experiment by which it ascertained the character of
y existence. It watched me closely with all its eight eyes, and
ıot, an enemy?"

listinguishing its eyes, I felt that I was observed and watched;
ı, proved favourable to me. By the instinct of work, perhaps
hat I was really a peaceful labourer, and that I was busy, like
be, it abandoned its stratagems and precautions with a quick
somewhat perilous step. Not without grace it descended upon
respective frontier—the edge of my case, favoured, at that

fess that I did not relish so close an intimacy,—the figure of
and, this prudent and observant being, which certainly did not

erefore should I not enjoy a little of thy sun? So different in
m our necessitous toil and cold obscurity at this sweet banquet
ray which you permit me to share, receive it from me, and
up your winter."

language, whispering low, very low—in fact, it could not be
d the effect of it vaguely, and it slumbered in my mind. The
while some years ago; and again, after a long interval, it has
ime I record and explain it.

iction, I was spending my holidays in Paris, and I went daily
'ostes. My family were in the country. Mechanically I remarked
s had woven round my trees, and which they repaired and
ing themselves immense trouble to preserve my small stock of
mportunity of flies and the stings of gnats. They reminded me
ood, had entered into conversation with me. These latter were
exposed, always before the eyes of men, without other shelter
sily be captured, they are unable to cultivate the reserve or
k, is visible, all their little mystery open to the wind, and their
no other protection than what may be afforded them through
ood interest in the positive services which they render.

ches of trees, like those which suspend them to our windows,
the wind, where a current of air may waft the insects to them,
nay float and whirl. The web does not fall vertically, for such a
der, like an able seaman, gives it a great obliquity, and thus

w-plates or tubercles, which can be drawn in or out (like
cloud, that increases in size from minute to minute. This cloud
ach tubercle secretes a thousand, and the four, by combining
nique and tolerably strong thread of which the web is woven.

manufacturer are not all alike, but of different strength and
dry for warping, others viscous for gluing. The tissues of the
are of a cottony material, while those which will enwrap the
nt power necessary for the safety of the latter.

antity of thread to undertake a web, it voluntarily glides from
remains suspended, and afterwards reascending to its starting-
towards another point; and continues to trace in this manner a

ving the woof by crossing the thread. Running from radius to
fasten to it the circular border. The whole is not a compact
proportioned that all the meshes of the circle are invariably of

.ting, is much more than an instrument; it is a part of its being. nd within this circle, and prolong the filaments of its nerves to :re of its web lies its greatest force for attack or defence. Out of .e web is its electric telegraph, responding to the lightest touch, nd almost imponderable victim; while, at the same time, being ›r delays and entangles a dangerous enemy.

:he web prevents it from giving an account of what transpires, sually it keeps near its machinery, hidden under a leaf, that it ' its numerous foes.

e, are its characteristics. Its experience is too great, it has s, it is too much accustomed to the severities of fate, to indulge ı ant. The latter, often a mischievous individual, a restless and persists in exploring the strange woof, of which it can make it,—whether it fears the acid of the ant, which burns like :ulates that a long and obstinate struggle will cost it more time ore, without yielding to the slightest susceptibility of self-love, ost a little further off.

—

ever devouring itself; but the prey is not always sought and ct. No being, however, is so much the plaything of fate as the ld value: in its work and its person. An infinity of insects—the

d splendid assassin—have only their bodies and their weapons, possess secure and easily defended asylums, where they have either the one nor the other advantage. It is in the position of all and ill-guaranteed fortune, attracts or tempts cupidity or m above, hunt the feeble hunter. The inert frog darts at it the novable. It is the felicity of the swallow, in her graceful circle, web; and all birds look upon it as a great dainty or an excellent at singers, to a certain hygiene, prescribes for herself, as an

instrument of her trade is destroyed, the consequences are the w, a somewhat protracted fast renders it unable to secrete a ger. It is constantly confined in this vicious circle:—

at of destiny.

ree times running a spider's web. Three times, in six hours, it abating one jot of hope. The experiment was a cruel one, and too many poor unfortunates, whom accidents of this kind have exhausted to resume their industry. One sees them, like living in which they succeed but poorly, and mournfully envying the ng by incessant travelling.

e spider, they forget that it must either eat a double quantity, renew its thread.

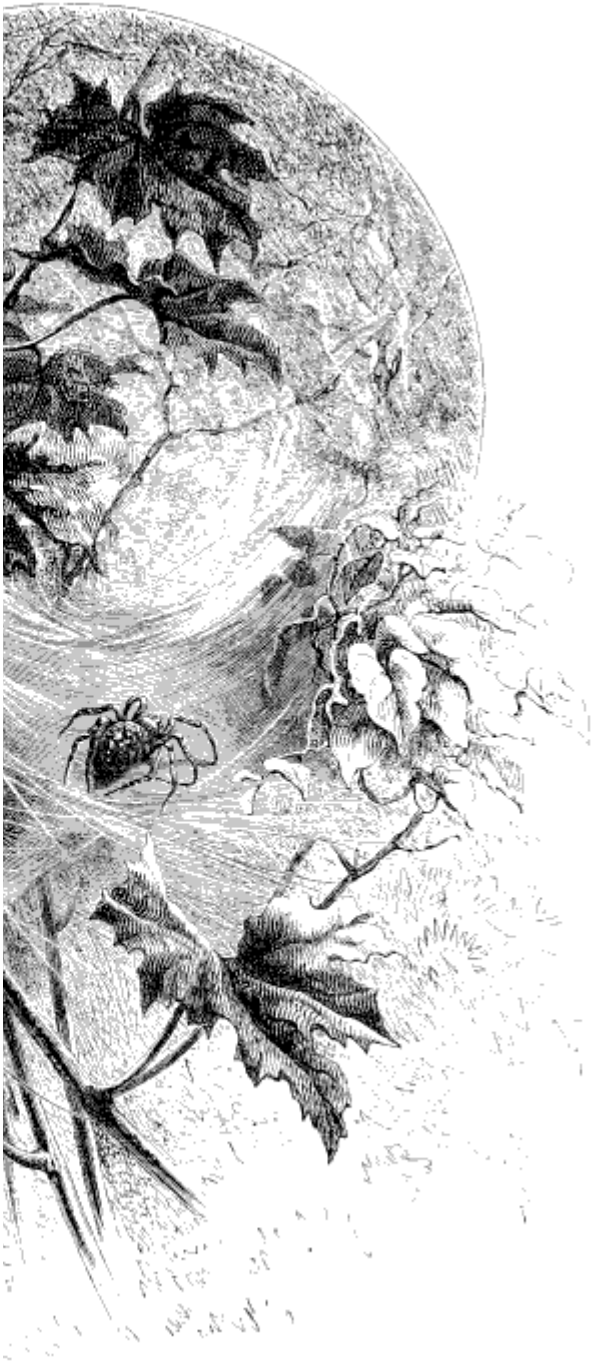
ut: the ardour of incessant work, its nervous susceptibility—espiratory system.

the insect, which receives, or submits to, the air introduced respiration, analogous to the play of the lungs in the higher ns and decomposes it, and incessantly renews it. If you do but ing more than an insect; the vital glow traverses its frame in a from what it does in the fly or butterfly.

es with impunity the strongest odours and mephitic miasmas. l by them, it falls into convulsions, struggles, [219] and expires. m, whose action the stag-beetle had endured for fourteen days ntact—overpowered the spider. Yet the victim was a large one, to experiment, and poured on it a single drop. The effect was ase of human asphyxia. It tumbled over, raised itself, and then appeared disjointed. One thing was very pathetic—that in this ame apparent; in its agony, its tubercles sent forth their little o be working even in death.

air would perhaps revive it, I placed it on my window-sill; but was produced; but it seemed to have melted away, and nothing ostance had left but its shadow, which the wind bore away to







ND LOVES OF THE SPIDER.

HAPTER X.

D LOVES OF THE SPIDER.

y-living insects. It not only possesses its nest, its ambush, its rtain species have) a regular house, a house of a very complex and a mode of egress in the rear; and, finally, a door which is back by its own weight.

in the grand cities of the bees and the ants; these industrial
a climax.

h most of our African tribes have halted. Every evening they
ur—renewed daily—and by a little, unsubstantial lattice-work,
y of planting sentinels. It is true, however, that these great,
nvasion, and, like Lacedæmon, need neither walls nor ditches.
ıstry.

ves by itself, and is always exhausted by the incessant toil of
ır. It has need, in certain countries and under certain alarming
›vered this little miracle of prudence and combination, which
efer to the great animals, none of which, except the beaver, are

rst time saw the house of the spider (the *Agelena*). It was a kind
facing the south, which expanded outward like a funnel. This
vas the snare and the citadel. The lady of the house stationed
ehind this very bottom, at the lower extremity of the case or
l and very secure, in a white substantial cocoon. In this she
silken cables which moored the entire edifice to the bush, she

royed nor damaged, but simply detached the dwelling, and on
red to the bush on every side. The exposure was no longer so
an advanced season of the year (in September, and under the
ıcing this grand summer-work.

case suspended exactly in the centre of its web; and thither it
has no sooner entered, says Swainson, than the door suddenly

cially in Corsica, in the laborious *Mygale*. Its residence is a kind
ı and polished sides, and a double tapestry,—a coarse strong
y hanging in the interior. The orifice of the well is closed by a
han at the bottom, and let into a groove in such a manner as to
than three lines thick, contains, nevertheless, thirty double
e number of coats or layers of earth,—so that the entire door is
is a miracle of patience; but observe, too, the ingenuity,—all
e another. The thread-doors at one point are prolonged to the
ge. This door opens outwardly when the spider raises it to go
nemy might eventually succeed in opening it. This has been
small holes are worked in the door; to these the spider clings,

ın, placed in peculiar and trying circumstances (like the bees
› vary its art and devise a novelty? Could it do so? Has it the
›wer of innovation which the superior insects display under
make the experiment. This, at all events, is certain, that the
'ell, when deprived of the necessary space for extending their
:egular design, decreasing in proportion to the restrictions of

er is so nervous, that the fear which makes it an artist can also
ives it courage. Out of its web, everything makes it tremble. In
ts prey, and has not the resolution to confront a fly.

/ fully explains its character. To wait, while acting, running,
to remain there immovable, to be unable to stir from fear of
ıd nearer but eventually escaping, and to suffer from an empty
dances of the fly, which, in the sunbeam, amuses and balances
·ayers of the tempter which whispers, "Come, little one! Come,
ıopes and disappointments.

of the sufferer.

lacerates its bowels. Then comes the more ominous reflection:
ess, then, may I hope to dine to-morrow!"

prodigiously wary and attentive being, which detects not only
spider is only too sensitive. A very little disturbance seems to
u see it suddenly fall from its position, struck down by fear.

–

ve, is especially displayed in the spider's maternal condition.
t is tender, liberal, and generous [227] towards its young. While
ve so many resources—drive away their young at a very early
d force them by blows of their beaks to dwell afar from the
er is not contented with carrying its eggs in the cocoon, but, in
greedy, guards them, bears them on its back; or else she makes
hreatens, she draws in the thread, they leap upon her, and she
ome there are which, rather than abandon their offspring, will
of the ant-lion. Others, of a slow species, which, when unable
themselves to be captured also.

terlaken, in Switzerland, I have admired their long soft tubes,
disguised with much skill by an artistic pell-mell of small bits
, so as to melt perfectly into the colour of the wall supporting
work of art which I have here at Fontainebleau.

n outhouse a very pretty round basket, about an inch across,
ing to fear from rain, without any cover. It was very gracefully
eads, which I should call little hands, such as are possessed by
s with a constant incubation, might be seen a spider. It never
in quest of food. Never was there any animal so timid. At the
fall. Once when we disturbed it a little abruptly, it was seized
over for an entire day. It sat for six weeks, and, but for these
h longer.

cate artist,—before all things a female,—a female nervous and
ensitive creature explained to me perfectly the very opposite
ose of repulsion and attraction. We start away from it, and yet
same time, so prodigiously sensitive! It breathes as we do. And
e a milky cloud (as the microscope shows us), is the most

s) in which the father renders some assistance to the mother, it

ve, becomes, indeed, an enemy. Cruel consequences of misery! ıishing it with food. But the mother, who is bigger than he, is eatable,—and frequently crunches her spouse.

nfident, in climates where ease and abundance do not deprave ł countries, with game very rare, and competition of extreme her like the wretched castaways on the raft of the *Medusa*.

ll nature, and vanquishes even love. Passion, in an anxious and At the height of his devotion, the lean and feeble male dares everence and the utmost reserve. He advances, he retires, he succeeded in subduing the haughty creature. He resorts to the ly to an extreme patience. He puts little faith in the first signs, , finally, when the adored object shows herself sensible of his ɔul, he does not so wholly trust in her but what he will escape, e, and under the influence of an indescribable panic.

–

ɔf our ceilings. Among [229] our garden-spiders less suspicion industrialism itself grows smoother in rustic life. We see some ːheir husbands, and do not too often remember that they are ɛside in the same locality, although a little apart, and keeping ɛm. The princess consents that he may live under her roof, and ory,—keeping him below and in subjection, so that he may not *ince consort*, and the *husband of the queen*.

–

race? So some authorities have asserted, and I believe it. They . They live in our houses, have an interest in knowing us, and oices and sounds, and have a marvellous perception of them. If ch would seem to be the antennæ), it is because they are *all* us irradiation which makes itself felt everywhere among them,

–

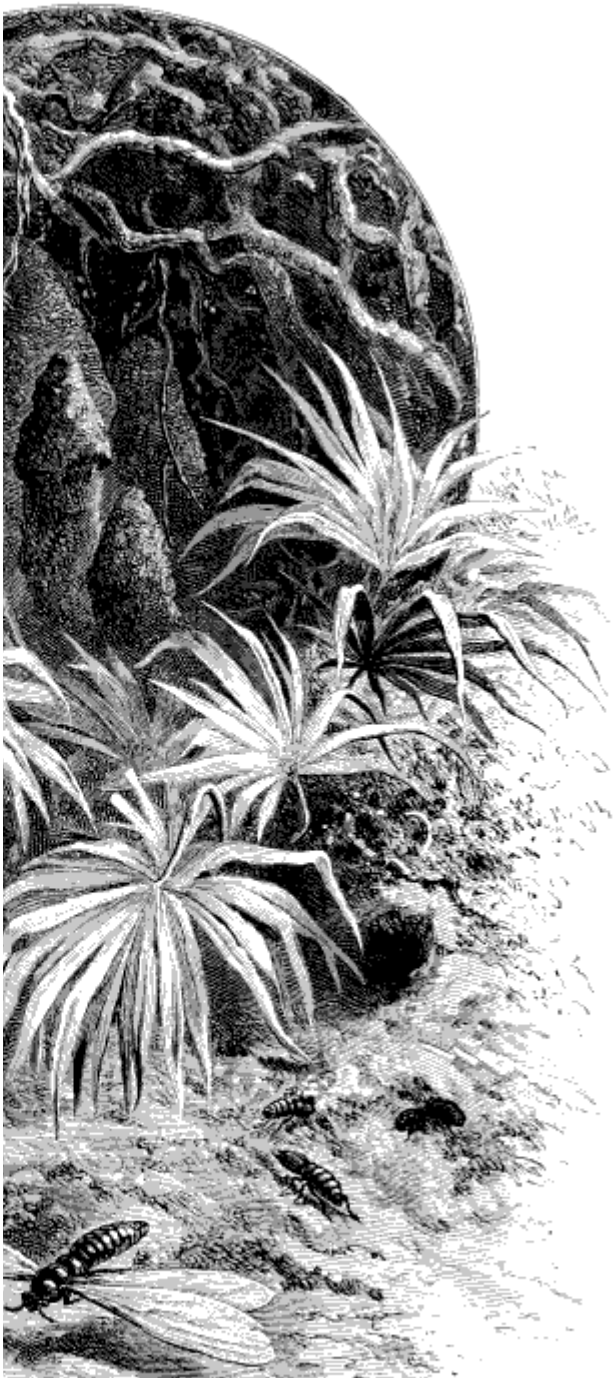
er of Pellisson. Another and less-known anecdote is not less ːrained into virtuosi before they are ripe of age,—Berthome, ses to the savage confinement in which he was forced to work.

oy his mastery of the violin. In his perpetual solitude he had a
'as lodged at first in a quiet corner, but it gave itself license to
n the music-stand to the child, even climbing upon the mobile
l breathless amateur, it paused and listened. It was an audience
n with inspiration and double his energy.

o, one day, introducing an amateur into the sanctuary, saw the
pper annihilated the auditory. The child fell swooning to the
tbroken!



UNITIES OF INSECTS.





MITES, OR WHITE ANTS.

CHAPTER I.

)WS: THE TERMITES, OR WHITE ANTS.

ɛ on "The Ants") relates that, when travelling in Guiana, he saw ifices which he calls ant-hills. They did not venture to attack ;; having first taken the precaution, moreover, to dig a little ess of the beleaguered army and drown its battalions, if they

but of Termites,—quite a different species of insect; which are and, and in the prairies of North America.

But the standard and most instructive authority is that of with excellent plates. The drawings are taken from the termite-

elve feet high (some have been discovered measuring twenty), for a negro's hut. Approach it, and you will at once detect that n is that of a pointed dome; or, if you like, of an obtuse and obelisk has four, five, or six cupolas from five to six feet high; all bell-like structures, nearly two feet in elevation. The whole ıedral, the principal spire of which had a double cincture of being of extreme solidity, and composed of a compact clay, ıly may several men stand upon it without injury, but even the ıtinels to watch, through the high grasses of the plain, that the

ferior platform which supports it is itself supported by a semi- four arches (two to three feet in span),—arches of a very ı kind of Gothic style. Lower still extends a number of passages call saloons, and finally, convenient, spacious, and healthy in brief, quite a subterranean city.

ally in the thickness of the edifice, which has no opening, no d at a distance, terminating afar in the plain.

ork which displays the genius of insects; a labour of infinite forget that these walls, which time has hardened, were very his Titanic edifice to such a height, a continuity of effort was ɔnal constructions, demolished one after the other when they ɐd with the exterior pyramids, a foot and a foot and a half in ıe latter being solid and indurated, they intrepidly undermined ıdows, and the spiral staircase. The same operation was carried th great labour, and in such a manner that the great hollow ted on the narrow vaults of the four arches forming the centre

l that its substructions, strictly speaking, would amply suffice y its not indispensable auxiliaries. Here, then, we find the t, which, relying on itself and its calculations, requires no neither props nor buttresses. It is exactly the system of

must own that it is the supreme of usefulness. The sharpened nged so as to resist the terrible rain-storms of the tropics. The way rapidly. If it cracked, the platform on which it leans would or *enceinte*, which would carry it to the ground. Hollow like a t; duly communicating it to the subterranean passages to hatch h, being wholly naked, prefers an elevated temperature.

—

it is a masterpiece of utility. The beautiful and the useful ow who *are* these astonishing artists: we hardly dare to confess

; among others, that of termites: and again, that of wood-ants, are their enemies, and their body, being exceedingly soft, is nt.

ey seem, in truth, a soft and feeble kind of vermin, which are od, who loves to exalt his humblest creatures! The Memphis, ilt—by whom? By lice! Though their luxury of jaws, and their ts, nevertheless, if we except their *élite*, the soldiers, they have , are powerless in combat. The destiny of the termites is plain; iven to their species (*bellicosus*, *mordax*, *atrox*), they are simply

at least harder, better protected, and more completely armed. em by myriads. Birds greedily pursue them; the poultry-yards n, who cooks them) find them of an agreeable taste; and the

ave no eyes, at least none which are visible. Very probably, the r organs, as is the case with a species of duck found in the s of termites which venture forth into the daylight have very

ey are exposed under the light, seem to have developed their h shows them so bitter a hostility, they have built, as they have ich they exercise their arts. They issue forth only in search of

they make their magazines.

darkness. They defend them obstinately. The first blow that is
nen plastering the interior with a kind of [239] mortar which
ailants and drawing blood with their sharp pincers, clinging to
ied rather than let go. A naked man (like the negro) shrinks
uered.

ire the palace, its circuits, its corridors, its aërial bridges, the
nurseries for the eggs, the caves, cellars, or magazines. But,
mystery of this little world; there is its palladium, its idol,
siastic crowd. A strange and shocking object, which is not the

ly fecund, from whose body issues an uninterrupted flood of
ggs per day!

These strange creatures, which we compare to vermin, have
ieir hour of love; for a moment their wings uplift them, and
bereft, having neither refuge nor strength, and no means of
a upon which they straightway throw themselves. The working
eavour to save a couple of the victims, welcome them,—weak,
them monarchs.

and establish them in the saloon on which all the apartments
uited, and nourished day and night; and the female gradually
stomach she is two thousand times larger than her natural
ead does not increase. For the rest, immovable, and therefore
e become infinitely too narrow to admit of the egress of such a
ring out, until she splits asunder, that torrent of living matter
ch, to-morrow, will be the People.

nach rather than a being, is at least of the size of the human
rge as a crab.

e inexhaustible, this terrible mother of lice seems the more
iin. She appears to be their ideal, their poetry, their ecstasy. If

e city, you may see them, under a glass shade, instantly set to ɔther's venerated head, to reconstruct her royal hall, which will ınd basis of the resuscitated community.

travagant love which they show towards this instrument of ɔur to destroy them, this truly prodigious mother would make ?—its only inhabitants. The fish alone would survive; but the ber that the queen-bee takes a year to accomplish what the her means they would swallow up Everybody; but they are allows up them.

and dwell in the woods unfortunately approach near our avages. They work with a truly incredible vigour and rapidity. way through the leg of a table, then through the thickness of opposite side.

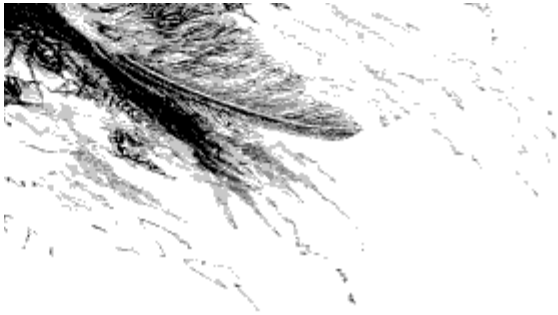
ɔduced by such toil as this on the joists and framework of a elapse before their ravages are detected. We continue to rely ıg, crumble away; we sleep peacefully under roofs which to-

ndermined by the subterranean galleries these insects have upon their dangerous catacombs.

midable beginnings of [241] the ravages they executed in the were introduced by foreign ships. Whole buildings are found vood hollowed and tunnelled, even to the banisters of the ld and give way under your hand. These terrible nibblers seem strict of the town, and not to invade the remainder. Otherwise, ırine and its commerce, would be reduced to the condition of







SECTS AT WORK.

CHAPTER II.

MESTIC ECONOMY—THEIR NUPTIALS.

ısects, inasmuch as they are less specialized by their mode of
eir industry. Generally, they adapt themselves to all conditions,
ıore energetic agents in purification and cleansing exist. They

ork in the darkness, under the earth; the ants both above and

pical countries, the most remarkable edifices,—domes under
f the sun without being injured by its scorching rays. But these
; for in the tropical regions they are the sovereigns and tyrants
invading *necrophori*, which play among us, as insects, the *rôle*
make their appearance in the burning latitudes where the ants
surface they immediately devour. Lund, in his *Mémoire sur les*
› a bird which he had seen drop. The ants were already on the
ice is performed by them with an implacable and energetic

e savage than our European species; and feeling themselves
g none, they march forward imperturbably, without suffering
ıd in their way, they enter, and all that is alive within it—even
s, ay, and small mammiferous animals also—is devoured. Men
›ur house, you have reason to fear their invasion. Once, at
several days in formidable numbers. All the earth was black
aight in the direction of the houses. They were crushed by
were destroyed, but they continued to advance. No wall, no
arrest their progress: for it is known that they construct living
:rs and garlands. Fortunately, the plan was adopted of sowing
iny volcanoes, small heaps of gunpowder, which were fired at
ay whole files, and dispersed the rest,—covering them with fire

heme proved successful. At least, the ants turned aside a little,

ıe two Indies; and we [247] might equally well bestow this
havoc they commit among the labours and cultivation of man.
ding it of every leaf. In a single night they devastate a field of
s! Their virtues? they destroy to a still greater extent all things
ı certain countries would be uninhabitable.

t they do the slightest harm, either to man, or to the plants he
ı infinity of little insects. I have frequently seen long files of
nall grub as a contribution to the food stores of the republic.
ns of every honourable agriculturist.

under the earth, are difficult to observe. But the "carpenters"
of their constructions. The cupola of their edifice being subject
ssity of repairing and re-excavating it. With the small amount
ıves and spines of the fir, and the catkins of the pine. If they
a treasure; they employ it as an arcade, or, better still, as an
ıe numerous avenues which lead to the surface spread out in
ıt, and extend to the circumference. The mass of the edifice is
ırgest is in the centre and under the dome; it is also the most
nmunications. There, at all hours, you will find a knot of busy
næ (a kind of electric telegraph) seem to relate to one another
ions. It is a kind of forum.

e the various occupations and movements of this great people.
s, hunt insects, or collect materials, others, sedentary [248] in
ıd the education of the young. An immense and an incessant
movement of the nurses round the cradles. Let but a raindrop
ıl stir takes place, a general removal of all the children of the
ıries. You may see them tenderly taking up the big children—
erring them from stage to stage, to rest them in a convenient

s, what is it but a thermometer?

of what one might call "suckling," are much more complicated
ıourishing humidity from the mouth of the nurses. The larvæ
worn through its husk and become a nymph, would not have
guardians were not at hand to open the husk, release the little
icial ant-hills, which we have procured for the sake of closer
ng a circumstance which Huber regrets he had been unable to

ınunicates to its swaddling-clothes give warning that its hour is
rses seated upon their hind limbs like little motionless, upright
first yearning for liberty.

ıto the world weak, and frail, and incapable of effort. Its first
ls upon its knees. It requires, as it were, to be kept in leading-
ssant demand for food. Therefore, when the heat is great, and
the new-born are all lodged in the same part of the city.





.USSET ANTS.

forth its head, still somewhat pale, at a gate of the city, then summit of the ant-hill. The escapade, however, was not long ;ed it by the top of its head, and conducted it gently towards a

;ed along, and on the way coming in contact with a small piece haust its conductor's strength. The latter, always keeping its ıovement, and then returned to the charge, until its nursling,

/ have to be brought acquainted with the interior labyrinth of the outer world, and the neighbouring roads. Then they are themselves, to live hap-hazard and upon little or any kind of onwealth.

l descriptions of food, is from this very cause the less anxious, *ıiser*. Far from being so, it seems solely intent upon multiplying nerous maternal care of those whom it has not begotten, in its to-day become young citizens, originates a feeling quite novel (See the works of Latreille and Huber.)

r education is, undoubtedly, the communication of language, reemasonry. It enables them to transmit really complicated ıoment the march of a whole column, the action of an entire

ı of the antennæ, or in a light collision of the mandibles. They
ad against the thorax. Finally, they sometimes carry off the
: him to some designated place or object. In this case, which
.in, the convinced auditor unites with [252] the other, and both
turn perform upon others—the number continually increasing
, "to carry away the crowd," "to transport the hearer," are by no

›ther scarcely explicable movements,—such as cavalcades, in
:changing gay defiances and light blows upon the cheeks. Then
ples, seizing upon a leg, a mandible, or an antenna. Naturalists
›w not what to think. Among so busy, and obviously serious a
ienic object which we do not understand.

–

:hey had become habituated to their new domicile, and toiled
heir own city. They rebuilt for themselves a small town in
lly augmented, especially on very hot days, for the purpose of
e to place near the openings.

l, according to their invariable custom, to shut up the gates, as
e vagabonds. A spectacle of deep interest, which we frequently
ıing ant-hills.

all sides, and at great distances, you might see them coming in
long straw, another a pretty pine nut-cup, or (according to the
'hese, like little woodcutters returning at close of day, brought
ich seemed empty-handed, were but the more heavily loaded,
h they carried home for the evening meal of the little ones.

:re the ascent commenced, it was a pleasure to see the vigour,
agged up such heavy materials. If one let go, exhausted, two or
ll of animation, and apparently alive, gradually ascended. Skill
ıecked at any particular point, they turned and advanced in a
higher than was necessary; then they let down the weight
›nceal; a quick light movement made the mass pirouette, and it



were solved by a felicitous audacity and with a great economy
me, embracing with a soft and delicate curve a great nation of
ıe sight, neither door nor window, and appeared to be a simple
slumbered in full confidence? It would be wrong to think so. A
st touch of a switch, or the rustle of a leaf, the guards would
ty, and when reassured would re-enter, but, undoubtedly, to

–

ın be present is a marriage of ants.

:st are those of the wise. The honourable, economical, and
ingle day yearly, it is true) a prodigious spectacle—of love?
y of vertigo, and to speak plainly, of terror. M. Huber saw in it
iday! And what a scene of intoxication! But no; nothing human

l seven o'clock in the evening. The day had been one of heavy
vas lowering, and yet the air calm. It was Nature's pause before

a deluge of winged insects, which seemed stunned, confused,
lerly movements, their somersaults and shocks to arrive more
ested, and loved. The greater number whirled round and round

their very eagerness proved an obstacle. This feverish desire

ed. Were they enjoying a festival of love? Were they devouring
titude of *fiancés* who had lost their senses passed other and
mercy on the most embarrassed individuals, bit them, and
ld see them crunching the lovers. But no! They wanted nothing
ıem to their senses. Their vivid pantomime was the counsel of
ıts were the wise and irreproachable nurses, who, having no
l the burden of the toil and management of the city.

–

the amorous and slothful, and rigidly inspected the marriage-
the nation. Their natural fear was lest the winged fools should
ibes, without any thought of the parent community.

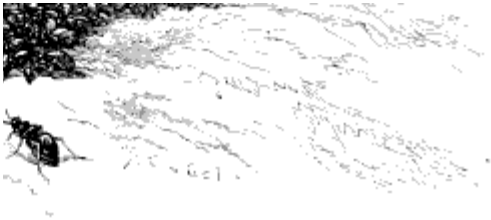
allowed themselves to [255] be carried below towards their
way, and flew afar, obedient only to the dictates of love and

, which can never be forgotten.

norial of the excesses of the preceding evening, except the
e could have divined the trace of a unique *soirée d'amour*.







'LOCKS AND THEIR SLAVES.

CHAPTER III.

IR FLOCKS AND THEIR SLAVES.

ges of Huber, the strange and prodigious fact that certain ants
ody has been by this singular revelation—but I was especially

n search of innocence. I hope at least to discover among the
, the primitive rectitude of the plan of creation. I seek in this
ned for their laboriousness and temperateness, the severe and
among them this thing without a name!

f slavery, for all the friends of evil! Hell and tyranny, laugh ye,
rightness of Nature.

seemed to me more hateful. Pardon, illustrious observer! your
charmed me. The first of the clan—Huber, the great historian

religion of man, and lifted up his heart. But Huber of the ants

usal of his work, and examine it more attentively. An immoral,
of investigation.

ı. A portion of these pretended slaves may only be cattle.

excess, brilliant, and varnished, to conclude that they are the
ar acridity has been established by chemical researches, and
nic acid from their bodies. Sometimes, when they are in peril,
t a few species employ it in drying, blackening, and almost
es. Is not a substance so corrosive for others equally dangerous
nd to this extreme acridity should attribute their greediness for
my hypothesis to the consideration of the scientific.

climate, have two classes of workmen,—one charged with the
d sedentary, entrusted with the work of elaborating them, and
ıon nourishment.

most part incapable of making honey, satisfy their imperative
certain grubs, which, without labour, by the mere fact of their
ecies [261] of plants. The transmission of this honey to the ants
eement.

action, such as we exercise upon the cow. These grubs, placed
n summer, oviparous in autumn—are very humble creatures,
ants. The magnifying-glass reveals them to the observer as
eir attitude is that of the cattle. They are, in truth, the milch-
by them, the latter frequently transport them to their ant-hill,
rms. The ants take great care of the grubs, superintend the
urite vegetables.

experienced in transporting and installing them, they empark
r field of pasture a fence of twigs and cylinders of earth. This
t of the ants; which repair to it at certain hours to milk their
or the easier distribution of the food. I am frequently present,
nes, which have hitherto found no Paul Potter among the ants

l to the ant-hill or emparked on their favourite feeding-ground,
ir safety guaranteed by the redoubtable republic. The "lion of
wild beasts, if they dared approach the herd, would feel very
: acid.

e grubs are cattle, and not slaves. The ants do exactly what we
›eings, but exercise it with more gentleness and management

eration. There are two kinds of ants, of a tolerable size, but
:h employ as servants, nurses, and cooks, certain small ants

change our ideas of animal morality, was discovered early in
celebrated observer of the manners and habits of bees, walking
ıd a strong detachment of reddish-coloured ants on the march,
e flanks of the column, as if to dress its ranks, a few speed to
a quarter of an hour, they halt before an ant-hill belonging to
s place at its gates.

sistance; but the great majority of the people thus assailed flee
nbat, carrying away their young. It was just these which were
justly feared was the theft of their offspring. And soon the
to, the city, might be seen emerging from it loaded with the
e of a descent of slave-dealers on the coast of Africa.

›oty, left the unfortunate city in the desolation of its great loss,
ıither their astonished and almost breathless observer followed
1 when, at the-threshold of the red ants' community, a small
the plunder, welcoming with visible joy these children of their
it in the foreign land.

warrior-ants live in a perfectly good understanding with the
dily discovered that, in effect, they do everything. They alone
ıd the captives of their own species; they alone administer the
food, wait upon and nourish their red masters, who, like great
tendants to feed them at the mouth. No other occupations are
movements in the intervals than to wander about lazily, and

civilized helots really love their great barbarous warriors, and
lly perform their tasks of servitude, and, more, encourage the
ıe little blacks. Does not all this wear the appearance of a free

governing the strong and tyrannizing over their tyrants, may
isite and sovereign freedom—far superior to any pleasure they
ve country?

s of observing what would be the result if the great red ants
would know how to supply their own wants. He thought,
inspired and uplifted by the maternal love which is so strong

n some *nymphs*. Instinctively they began to move them about
liscovered (big and robust as they, nevertheless, were) that the
left them on the ground, and coolly abandoned them. In truth,
ıey for them in a corner, so that they had nothing to do but to
shment with which slavery afflicts the enslavers! They did not
l become so grossly ignorant and indolent that they could no
starvation, with food before them!

ıtroduced into the case one black ant. The presence of this
e-established life and order. He went straight to the honey; he
he ground, [264] placed in it the eggs, prepared the incubation,
tored to life and happiness the little people, who, becoming
their nurse. Felicitous influence of genius! A single individual

a superiority of intelligence these helots might, in reality, wear
govern their masters. A persevering study proved to him that
ıny things carry a moral authority whose signs are very visible;
ıts to go out alone on useless expeditions, and compel them to
to go out in a body, if their wise little helots do not think the
e day is far advanced. When an excursion proves unsuccessful,
ts are stationed at the gates of the city to forbid their ingress,

u may see them take the cowards by the collar, and force them

are, they were seen by our illustrious observer. He could not t naturalists of Sweden—M. Jurine—to his side, to make new leceived. This witness, and others who afterwards pursued the eries were entirely accurate.

e weighty testimonies I still doubted. Let me say, I *hoped* that been correctly observed. But on a certain occasion I saw it— nebleau. I was accompanied by an illustrious philosopher, an saw.

y warm day. From a pile of stones emerged a column of from y the same colour as the wing-cases of the gnat. They marched y their [265] sergeants or "pivot-men," whom we saw on the raggle. (This is a circumstance known to everybody who has nd astonishing thing to me was, that gradually those who were nced only by turning; they passed and repassed the whirling e evidently fit to produce enthusiasm, and to augment energy, ardour of all.

and disappear. There was no sign of ant-hills in the turf; but e orifice, through which we saw them vanish in less time than selves if it was an entrance to their domicile; if they had re- gave us a reply, and showed us our mistake. They issued in a

ident that they had a previous knowledge of the localities, the hen they were to assemble, and the degree of resistance they ey.

e this *razzia* sallied out in considerable numbers; and I truly y seemed frightened and stunned. They only endeavoured to was thus arrested; but another red one, who was free, relieved relaxed his grasp. In fine, it was a pitiful scene for the blacks. dred red ants succeeded in carrying off nearly three hundred the blacks ceased to pursue them, abandoned all hope, and

occupy ten minutes between the departure and the return. The
r a facile abuse of strength,—very probably an outrage often
ibute of children from their poor little neighbours.

cking and hideous fact. It is peculiar to certain species; it is a ed on the whole to a general law of the life of the ants. Their *sion of labour*, and the *speciality of functions*. The ant-hill, in its ısses:—

ous virgins, who confine themselves to the love of the children of the community;

ntelligent; and,

ı only to die.

ople. But in this people you find two industrial divisions, two the more arduous tasks, such as the transportation of heavy sions,—and, at need, carry on war. The other, nearly always at domestic economy, and undertakes the principal duty of the

and warriors,—that of the nurses and tutors,—are, in every our, and organization.

rials the moral [267] equality seems perfect. If there were any tle ants, who build up the city and train up the people, is the e state; the one which of itself could, at need, constitute the

d-brown and red) who do not possess this essential class, this would not surprise us if the accessory or warrior class were we find deficient,—the vital foundation,—the *raison d'être*. We lepraved resource by which these red ants subsist, as at the

t.

nnot at present explain, but which would probably be cleared
al history of the species, its changes, and migrations. Who does
oth externally and internally, in their forms and their manners,
ample, would recognize the brother of our bull-dog—of the St.
l strangle lions—in that abortion, the Havannah dog, so weak
s clothed it with a thick fleece, which conceals it, and converts

a monster.

their moral and physical changes, in proportion, as the globe,
their migrations. Several species, in the beautiful American
ustry; our own are ignorant of it, and are compelled to have
rogress,—the art of breeding, preserving, and pasturing cattle.

ograded. And it is thus I should explain the kidnapping habits
xpatriated and demoralized classes—fragments of decayed
ich could not live but for this barbarous and desperate method
rtistic and teaching class, without which all peoples perish.
two days if they did not take unto themselves *souls*. Therefore,
black souls, which tend them, it is true, but also govern them.
ernal relations,—deciding or adjourning their expeditions, and
from regulating the affairs of peace, do not seem even to

wer of genius!







N OF THE COMMUNITY.

CHAPTER IV.

EXTERMINATION OF THE COMMUNITY.

ot, even if he would, easily deliver his captive. So long as my his cage, and I bear his captivity lightly; but when the time of the question again and again recurs to my mind, "How can I n truth, is almost without wings. If I set him free, he would ies which he takes at Paris in a large chamber, and here, at ut little importance. He does not profit by them; almost always g and listening.

he warblers, the voices of love and, maternity,—augment, I
ıe open air, under the blue sky, enjoying a relative degree of
ger.

ıral diet, and of feeding him with the insects on which he lives
ho would not shrink from hunting after and carrying living
him insects *in futuro*, the eggs of insects, and inert sleeping
tainebleau, where our aristocratic pheasants, a feudal race, do

›rought to me from the forest a great clod of earth, mixed with
Northern trees, such as the needles of the firs, or little prickly

ery size and grade, eggs, larvæ, nymphæ, diminutive artisans,
efenders; finally, a few females which had just assumed their
r the moment of love. Thus it turned out to be a very complete
inguished by one identical sign,—all this brownish-coloured
. As for the classes and professions of the ants, they were easily
anding the general confusion. They were carpenter-ants, of the
lings with timber framework.

red, my ants were in no wise prostrated. They continued their
otect the eggs and nymphæ from the action of a too powerful

f their subterranean cradles, and exposed them on the surface.
fying the disorder. The great ones went and came, and circled
273] dismembered fragment of the republic. They marched with
We could not frighten them. If we placed in their way any
crouched upon their loins, manœuvred with great address their

ountered upon the sand some ashy-black ants which had taken
rneath its soil a large establishment. The latter do not have
enting the earth with their saliva, and drying and seasoning it

them by its rose trees, apple and peach trees, which furnished ht extract honey-dew for themselves and their little ones.

h among the big carpenters were some ants of a sufficiently ıe black through their long legs and the red-spotted corselet. acks had been sent out as spies, to explore the ground, and lay en disembarked. At all events, the big carpenters slew the little

ınexpected results. Our vase was unfortunately placed near an h are the despair of the gardener and the joy of the ants. Our sugary herd, and encamped themselves in the very roots of the e they were, under the ground, a complete nation, an infinite

. At a quarter past eleven, or a little later, all the black legions m their subterraneous habitations, poured out through every k columns; our paths were all alive. The sun, shining full upon ıultitude, which only quickened [274] their pace. Living always ɔtible brain. The furious heat, and especially their fear lest the s, impelled them to confront death unflinchingly.

ɔf the big carpenters, as far as size and thews were concerned, At the first collision we saw a big ant fall upon a brown dwarf,

f numbers. But what of that? Suppose the front ranks were second, then the third,—if the army, still advancing, did but ır apprehension. All our fear was for the little aborigines of our ople which we had brought upon them,—a people ill-bred and ırked their first arrival by slaughtering the inhabitants of the

ıpared only the material forces of the two armies, and had not

ing amount of skill and intelligence on the part of the little

igantic opponents, each holding and neutralizing a claw; then tennæ, until the giant, bound in every limb, was reduced to an v dull and stupid; no longer to be conscious of its enormous attack, and, without incurring any danger, stabbed him above

, was frightful. Whatever admiration the little ones merited for r. It was impossible to see without a feeling of pity these poor red at from right and left,—floating as in an open sea on these ss, [275] and incapable of resistance,—like lambs beneath the

–

it to be done? We were in the presence of infinity. A man's multitudes. We might have proceeded to the extremity of a en this would have proved insufficient. They would not have ad flowed by, the massacre would have continued. The sole he evil—would have been to have burned alive, with a wisp of uerors and the conquered.

ce at Lyons during the Reign of Terror were known as *noyades*.—

, after all, it was only a very few of the big ants that were emained free had fallen upon the assailants, they might easily eing so rapid, and one blow inflicting death. But no such idea a panic of fear, and rushed into the very throes of danger, into ey were not only vanquished, but seemed to have lost their at home, on their native soil, showed so firm a front, the round,—a desperate fragment of an annihilated city,—wholly transplanted,—recognized that everything was antagonistic to hat no refuge was open to their scattered forces. Ah, woful ed, and who have lost their gods!

–

nost terrified at the sight of those legions of death,—that ad all escaladed the earthen vase, and in that confined region, mounted one upon another. As the discomfiture of the giants

revealed among the blacks. An opportune moment arrived. It
eloquent pantomime, we heard this cry: "Their young ones are

elves on the children. The latter, belonging to a superior race,
nymph-like envelope, round and smooth, offered no points of
ning their efforts, succeeded, though not without difficulty, in
es of the earthen vase. Then they came abruptly to a terrible
e naked children. It was no easy matter, for the little one clung
ık, soldered together; in such wise that this violent and sudden
unds,—in fact, by quartering them. The black ants then carried

ıildren, we had expected to see some such spectacle as a *razzia*
ı men and ants. But we now understood that something more
ıeir outer coat, which is to them the very necessity of life, it
little whether they lived or did not live. It was for their flesh
ones they had left at home, the fat children being delivered up

must know the true nature of the large eggs of the ants,—
ɔhs or chrysalides,—diminutive organized ants which, under a
ill soft existence. They remain in this envelope for the purpose
:ation and colouring.

:h they weave for themselves is, as we know, of a dull white,
hen stronger, turns into a nankeen tint. Open [277] it shortly
ɔu find a being of exactly the same colour, all folded and rolled
r's womb. When stretched out, the aspect of the future ant is
t in character: the head is quite innocent; lift up the antennæ,
young white head reminds you of that of a little white rabbit.
:h sufficient prominency, indicate the next stage of colouring.
ıat this little, weak, and denuded animal, so touching and so
being so full of energy, so keen with life, so fierce in blood,
nd burning activity.

nce the milky and succulent nymphs of the ants will prove a
ıite number of creatures which hunt them greedily.

lays of its nymph-period, and when near its time of hatching. gh a lens of twelve times magnifying power) was very painful. r black on the belly, yellow on the corselet. The head was d changing from yellow to black. Still weak and heavy, and right to left, and from left to right, with a singular effect of it to be saying: "Ah me! so soon! Why hast thou called me so dle to the harsh drudgery of life? But it is all at end for me!" It chances of its novel situation, and to disengage its trammelled nd stirred about in their anxiety to discern the new world; this etude and agitation of the brain. Its greatest perplexity arose r limbs). It laboured violently to do so. They were glued to the might be called a pale blood, and one sweated to see the poor ble to complete its offensive arrangements, and to extricate ding arms.

to make the reader understand the passionate interest felt by m so insignificant. Beneath its soft and transparent tissue they forms,—the creature, denuded and innocent, which dreameth nt, perceiving everything, but incapable of self-defence, and, and agitations of existence.

—

nsects is the sudden cold; at least, the nudity, the exposure to ful to them, that in certain species it is the source of their arts nymphs of the ants in their tiny transparent swaddling-robe,— of it,—feel with an excessive sensibility every atmospheric ntions of their nurses in carrying them from place to place, in ll-contrived steps of their thirty or forty stories, in protecting or excessive heat. A degree more or less means for it life or

ldren of love, spoiled hitherto with excessive indulgence, and n they are abruptly deprived of their garments,—stripped, with oiled by the hands of the executioner. Suddenly exposed to the led over all the roughnesses of a coarse sandy soil,—sensible, edness, to the shocks, blows, and rude somersaults which their

has happened that the [279] tombs of the dead have been
ı of the living,—the despoiling of innocent and all vulnerable
very lightest touch had been a sufficient agony!

ı and their young was hurried over so rapidly, that at three
he city was sacked and depopulated in every corner, and its

ɛ lurking in concealment; that perhaps the conquerors would
the destroyed city, into a paved coach-yard outside the garden;
ɛ of their family, to whom, moreover, they could carry nothing
ɛd.

ɾ them scattered along all the roads which led towards their
But the destiny of the vanquished seemed accomplished. The
where, with the exception of a few scattered bodies, could only
rthern trees, and their gloomy *aiguilles* (pines and once-green

ionate to the act which was its cause or pretext, excited in me
anging sides, was completely alienated from those little black

able, were promenading among the ruins, I sent them rudely
). In vain it was gently pointed out to me that these blacks had
courage, having braved so great a peril that their destruction
uel and savage but heroic tribes, like the Iroquois, the Hurons,
orests of the Mississippi and Canada. These reasons were good,
ity of the crime. Without wishing to annihilate them, I confess
come under my foot I should not have turned aside.

nded me of what had occurred, and held me as by a spell. On
the ground before it, with our chin in our hand, completely
epths. We persisted in longing for a sign of life to appear upon
still say that all was not finished. This firm resolve seemed to
desires had recalled to daylight some miserable spirit of the
ped made its appearance, and hurried headlong away from the
cradle.

ıge locality, surrounded by enemies. A few holes, which one ;ely the mouths opening into the Inferno of the blacks. The l by the burden of its infant, ran distractedly, and without heart, until the darkness concealed it from me.







HE WASPS.

CHAPTER V.

EIR FURY OF IMPROVISATION.

the window, with its loud, aggressive, and menacing *zou! zou!*
les, the mother suspends her work, even the husband lifts his
himself with a handkerchief.

to every corner, and cast around the room a rapid and scornful
nding to notice the unfriendly welcome accorded to him. His
: a fruit, not a spider, not a fly, not the smallest bit of meat!"

ountry butcher: "Butcher, my custom is yours. I am desirous of
Cut me a good slice of meat, and I will pay you for it; I will kill
are both born to kill."

uch scandalized at the proceedings of the wasp. It acts, it does
ould be simple. A word would suffice. It is the being on whom
g time. We speak of the ephemera which lives a few hours: the
hing. The true ephemera is the wasp. In a brief six months'
/ity) it has to accomplish, not only the cycle of the individual
at is far more onerous, the cycle of a prolonged social life, the
o perform. What the bee leisurely elaborates in several years,
:e than the bee! For the latter makes its honeycombs in a
x, the trunk of a tree); but the wasp must improvise without as
ity itself.

l unmake a people, and a people of lofty organization!

rscore years ye have no time, learn to despise it. It is a purely
flat-bellied snail, were it to crawl through centuries. There is
olute energy.

uls, improvised by a revolution, as by a thundering stroke of

labours. Solid, eminently substantial, conscientiously wrought,

d the destruction of its race, issues all a-dust from its hiding-
Does it seek to enjoy the sun? No, it will not allow itself a day's
d and burning love, to go straight to its goal, to seize and take
e an entire people. Love on the wing,—no delay,—everything

, this mother of the future commonwealth creates in the first
ds of labourers. You have already learned that among insects
s, but the harsh necessities of toil suppress in them their sex.
n looks for no other spouse than the community.

the mother to her daughters. Her task was to beget: it is theirs
ı them, however, as it was in her. According to the region and
vary. Here they will excavate underground the cave in which
soil, and preserving it from damp. There they suspend it in the
efy the heaviest rains. To make this paper or pasteboard, they
oughly prepared wood, which has been long soaking, and has
flax. Then within, with a strong sharp tooth (for theirs are not
s flowers), they gnaw, and tear, and loosen, and sever the
do the linen rags, and knead them with a heavy tongue. After
esive saliva, it is spread out into thin layers. With teeth closed
ry substance of the pasteboard is prepared.

ɔer manufacturer is transformed into a mason. It has not the
American wasp a sort of palette on the leg serves the same
in Guiana. [286] The mason of Cayenne, having built up the
f floors or platforms, following in that dry hot land the type of
, working with pasteboard, in a damp climate, where even in
fferent plan: *a house within a house*, a hive completely isolated
most successful device for an ardent and chilly people, whose

use, so too the inhabitant. We men are not yet sufficiently
ur moral dispositions by our habitations. This duplication of
ompletely shut up under its strong twofold enclosure, largely

trivial one? No; to the serious observer it is of importance. The
nd pass out by the other, so that no confusion can take place,
egressing crowds. This plan is adopted by all people who
ıess expeditiously. In London, the rule is the same as with the
the other those who are going; each person keeps to the right;
impediment is met with in the Strand as the idlers of our Rue
ıto a serious obstacle, and swim laboriously in the confusion

–

ıis robust being, endowed with such an intensity of vital force,
insects,—than the nervous spider, which has only a house of
the lofty mystery of life for the higher insect. It is this which
above ground or under ground. It is this which inspires the
] of the bee. What, then, is it? The *love of the future*,—the
ıe loves. All their love centres in their offspring.

iew of time and of that which as yet is not; to exhaust their
ve less cause to labour,—a noble ideal, assuredly, of society,
n those who have time before them, and a life to make use of,
s no time, which perishes in the evening, should love the time
tle life for the sake of the life that is to come, should devote to
ce peculiar to the wasp: it is original and sublime!

incessantly increases the burden. Besides the female workers,
, whose little and very brief function scarcely prevails as an
al and serious insect-races, Nature, as if to divert herself a
poor little males ordinarily squat and obese, innocent little
portant servants. The caricature is complete in the case of the
how to glean abroad nor to build at home, passes the time in
r-smoking idlers).

d keen, that the very males, slothful as they may be, dare not
Yonder ladies, who do not jest, and who have stings of which
dleness sourly, and stir them up with dagger-thrusts. So they
k; they have the air of doing something,—a small part of the
one dies, the ceremony of interment provides them with a
eight they sweat and groan, and several put their shoulders
I am confident that their terrible companions laugh at them.

enty or thirty thousand mouths to feed, is a very extensive
lent activity of bees, their community would perish of famine.
apidity,—all the appearances of an immense gluttony,—all the
of thieving. But the secret of their power, which is plainly
ment, is their magnificent insolence, their superb contempt for
he whole world is their inheritance. If we consider, it is true,

ons and tigers are mere races of sheep,—and their prodigious
absolute devotion to the public welfare,—we shall not find in
or which possess a clearer right to value themselves highly.

ılty in admiring the violence of the antique virtues. Their
to an almost criminal excess. Who has not marked with how
in species of wasps can make honey; but only in fine climates,
ıterval of peaceful labour. Here the case is different. Their life,
t to measures of cruel simplicity. Honey is needed for their
ke it prisoner; with their pliable body, whose waist is a mere
e prisoner underneath with their deadly sting; [289] when thus
s teeth, and leaves the head and corselet to palpitate for some
e barbarian carries off as a gift for its young.

ently does not cause a pang to this creature, which knows that

lays upon them her heavy hand and the ignoble leaden shroud
lie by the sword. The republic ends in a general massacre. The
; dilatory children whom cold and want would kill to-morrow;
ng them at least the advantage of dying by the hands of those
ı, is freely bestowed on numerous unfortunates who had no
ven on young workers who were born late, and cannot boast of
er.

ısps is ever seen to request the humiliating hospitality of the
little longer, to expose its melancholy remains in the shambles
! The republic is immortal. Some one of us, favoured by the
e called upon to recommence the entire work. And if but one
single true heart would suffice to re-create it.







MB AT PÈRE-LACHAISE.

CHAPTER VI.

E BEES" OF VIRGIL.

gnorance displayed by the poet Virgil in his fable of Aristæus,
uses his bees to spring from the entrails of immolated bulls.[Q]
, I feel, that every word of this great sacred poet has a weighty

that of an augur and a pontiff. And the fourth book of the
from the inmost recesses of the heart. It was a pious homage
gium on the proscribed Gallus, Virgil's dearest friend. This
udent Mæcenas; and Virgil then substituted his Resurrection of
he mystery of Nature's transformations, embodies our highest
of a new life.

d in the fourth book of the *Georgics*, and is thus translated by Dryden:—

/ method lies:
ulls for sacrifice,
ze, without a guide;
yet in yoke untried:
in their temple rear,
/oodland powers with prayer.
s pour the streaming blood,
s in the shady wood:
e, Lethean poppy bring,
of the poet's king:

; offended pride,
ack ewe provide:
ormer woods repair.
; he performs with care;
d adores with prayer.
m his herds he calls,
e fairest of his bulls;
female store he took,
owing of the yoke.
e, with sacrifice and prayers,
ıe to the grove repairs.
, from within
ınd the bloated skin,
es his ears alarms,
ı the sides assaulting swarms;
make a wheeling flight,
ing tree, descending light:
f black grapes they show,
pendence from the bough."

ure of inserting a popular fable in that consecrated portion of
l's name? I will never believe it. The fable, if it be one, must
a truthful side. We are not dealing here with the worldly poet,
rite of Rome. It is not the charming improvisatore of the court
trays the loves of the gods. Virgil is the child of Earth, the pure
religious interrogator, the reverently simple interpreter of the
n his words,—that he may have ill-applied the names,—this is
ned, it is an entirely different matter: whatever he describes, I

tanding the poet's intention. On a certain memorable day, my
aise, to visit before winter the burial-places of my family, the
on. This latter had been born to me in the very year which
, and I had named him Lazarus in my devout hope of the
I saw upon his countenance a gleam, as it were, of the strong
rt at that last moment of my teaching. Oh, vanity of human
d to animate with the potent vitality that had been of too tardy
act of birth. And there was no help but to deposit my child at
ır years dead. Two cypresses which I then planted in that ill-
interval an extraordinary growth. Two, nay, three times taller
with a young, rich foliage which ever points towards heaven.

ıselves again, in all their pride and strength, flourishing with a .rth where I planted them the precious treasure of my past and

ɛ hill, and before arriving at the tomb, which is situated in the ;h I had on so many occasions frequented this melancholy and ɔst assiduous visitor of the dead, I had scarcely ever seen any great epoch of the flowers, when everything is covered with ɛs are embowered in roses, I had not remarked that animal life ν birds, and very few insects. Why? I could not say.

ɨ climbing the hill; we stood in front of the tomb. And there, t, I found a surprising contradiction of what I had just been

above the little garden-plot,—which was narrow as a shroud, dened by the influence of the season. In the whole cemetery withering and half-leafless Bengal roses. The spot where we er, was an Arabia Deserta. Finally, on the tomb, towards the sickly white asters, and over my child the cypresses. It must clayey soil, nourished either by the whispers of the air or the ıney, since the little gleaners resorted thither for their harvest.

–

miracle, the constant miracle of the Providence of Nature. I nd may be affected by a lively surprise of the heart. I felt an erious little creatures animating this solitude, whither, alas! I ı of my work, in which day pressed upon day,—the palpitating ɔre quickly, in the doubt whether one will be living to-morrow, the days of our dreamy youth. I was much affected by seeing ɔled and vivified the spot, consoled, and perhaps rejoiced my kindly indulgence; they may have been the happiness and first

er; there was so little for them to take. Nevertheless, when we *immortelles* we had brought with us, they were curious enough ν [297] flowers. The hard, prickly corolla soon repulsed them,

ery sad, and said to them:—"Late, very late, my friends, you
ɔt able to recompense you with a banquet of friendship, which
d breezes, already blowing on these icy heights, so exposed to

ıts afforded an exact reply. Some I saw, with their little limbs
sun; they longed to absorb into every vein its genial radiance.
e sun revolves too quickly; one scarcely feels it before it has
, what a cold morning we have had! Let us make haste! In less
evening, the frozen night,—nay, who knows? the winter! and

ously trim and bright,—I may even say radiant,—under their
aw more beautiful insects; insects more clearly inspired by a
that they were too handsome, and too shining, inasmuch as
velvety coat, their pincers, and their brushes. And, finally, I
ot the four wings of the bee, but only two.

which had deceived Virgil. Like myself, he thought them bees,
esses that for a moment even he was deceived by them.

. We can understand how keenly it would impress the minds of
pe of resurrection. They seem the daughters of death. Of the
in morbid and deadly waters, fatal to all other creatures, which
ution; with ingenious tenderness, Nature there preserves them,
e in the very midst of death.

arth,—in the shades,—where they sleep their chrysalis-like

of sepulture, they are fully compensated for their previous
ɔee's incessant toil, and glorified by golden wings, such as the
th the gift, moreover, of gentle manners. Innocent, and without
ın and among the flowers. Far from blushing at their origin,—
he flowers of the cemetery, they keep company with the dead,
-the hope of the future!





IN THE FIELDS.

HAPTER VII.

BEE IN THE FIELDS.

ıax of its existence,—when it assumes its symmetrical outlines, animal irritability,—it emerges from its condition of isolation, at Whole. But it remains fixed in one place, without any

ary, is movement itself, and manifests its joy in living by its sts a glance of amicable confidence on the animal's life of ance, and for sole reward expects that it will achieve its

nimal assists the plant, and affords it in its dependent state the al must be completely free, I would say winged, bound up with ehold the insect, love's messenger and mediator to the plants, neir fertilization.

ace in its own body where the insect's egg may be developed. It npable of action, but which, in due time, emerging from its o, and seek its own sustenance. The creative fecundity of the racted from it; and thus both animal and plant harmoniously

rises to a more elevated sphere, the pure need of motion, and soar so high; but its flower is a bright dream of a higher state eeds, by means of its fruits, to secure the conservation of the insect reach, as if by concert, an analogous development, symmetrical forms, and their refinement of substance.

t be called insects-become-plants.

th the same rhythm as the moments of the day. Each flower to hour when its life is most intense, and shuts at the hour of its ıem one towards the other. Here the plant plays the part of the nature. The insect resembles the tiny male who frees himself heless, by the plant to the oneness of the terrestrial whole. It is ɔwers."[R]

ging abroad in capricious showers the generative elements, the of its species, the *in*direct and confused love of the amiable h will hereafter nourish also its eggs and continue its maternal ıperficial, like that of the wind; it is internal and penetrating. to be checked by the light and trivial obstacles with which mysteries; it boldly dashes aside the veil, and enters into the s, and it carries away, assured that all it does will be approved. only too keenly in the deeds of these thievish liberators, who ınsport itself. "Take," she says, "and take yet more!" The insect becomes a tiny magnetic dart, which attracts and wishes to e points, and over all its surface (like the lightning conductor) ! Such is its aspiration. An aspiration realized in the higher ith a magnetic apparatus,—the bee, predestined by the tools ıstry of honey-making, and to the grand, general, universal

at physiologist has just said of the loves of the flower and the otable distinction on the part of the bee, that it robs the flower vishes upon love. The bee does not establish its cradle in the ıstenance, and gradually devour its nurse. Instead of depositing table existence, as the butterfly does with its future caterpillar, cking it, borrows from it the precious materials which its art old, where its children will in due time repose.

ıttributes, no less than its miraculous art. Its sting is simply a man-with whom, of its own accord, it does not wage war—but bee, on the other hand, injures none. It does not live by death; of other lives. It stimulates innumerable existences; it vivifies sert, no wild, bare region which it does not animate,—where it ng vegetation, urging the plants to bud, watching over and lothfulness; and as soon as they open to the influence of love- them the requisite interpreters, carries off in its murmurs their which are their blossoms of thought.

hen an uncertain but already potent sun reawakes the sleeping , the Easter-daisy of the sward, the buttercup of the hedgerow, ıe air. But their expansion lasts only for a moment. Barely open again, and veil their shivering stamens. In this brief interval of ature, completely clad but very chilly, which also ventures to wledge that the manna is ready for it and its little ones.

es are empty at this epoch. The great fecundity of the mother ar and rapid incubation, which might suffice to create a world, e sunny time of May.

shivering flowers, like the shivering bee, wait a more equable oo delicate to endure the caprices of April.

een these charming creatures. The docile flower inclines and The shrine which it had closed against the winds, and the which, impregnated by it, speeds afar on her message of love. n to veil from profane eyes the mysteries enacted therein, do ıo is completely at home, so to speak, and has no fear of being , is protected by a couple of petals which join together in the border of the waters, which in this manner defends from the veet-pea, dons a kind of helmet, whose vizor must be lifted by

ıese recesses worthy of the fairies, covered with the softest topaz, and roofs of sapphire. Paltry comparisons these, for they live, and feel, and desire, and wait. And if the happy conqueror s violator of their innocent barriers, the insect, mingles and lon, overwhelm it with their sweetnesses, and load it with their

happy hours, where and when the bee, while gathering its f marriages. On the coasts, for example, and in the immediate uld [306] hardly expect to meet with such pacific idyls, should ss, Nature never fails, in the warm and humid mildness of that and there the flower distils to the bee its sweetest nectar,— the flower.

cedes the evening. Caressed by the last rays of the sun, whose l in its corolla by the light and already radiant mist, the flower lectricity; it is urged to love, and it loves! The stamens blaze Then at that charming and sacred hour let the mediatrix come; sweet odours dispersed by the evening breeze; let her redivide king there! The blossoms are no longer solitary; through the ed into a society where all understand and all love each other, little high-priest.

rise at an early hour and be present at the moment when the ting dew (exhaled by its divine master, father, and lover, the ruck by the sympathetic beam, it no longer resists; it gives up becomes, as it were, a tiny fountain, which distils honey drop e is very nearly completed: the sweet treasure, finely prepared

abour. It bears it off to its children: "Eat; it is the soul of the

ıactive? The burning sun and dry air have withered up the
ıeltered by the fresh cool shades, present their cups brimming
and deep marshes, are then instinct with vitality. The forget-
Even the white water-lily, in her pale virginity, yields a rare

:emely harmful. Such is her conscientiousness, that, in order to
she takes too little heed of the sudden returns of winter, of the
:s visit us on the finest days. Insects of inferior intelligence, but
:ret of escaping its influence. In their prudent idleness they say
' And they patiently wait for one, or two, or more days, until
; evil mood. But those who have charge of souls, and a large
nild winter may chance to keep their offering awake, and,
ıke a single day's repose.

ıne not less bleak than March, they do not fear to rush boldly
ɔust; the cold catches them, and I have known them drag their
ed. They have made no attempt to escape; they have suffered
a scared condition; still bearing the signs of their courageous
ust of flowers, and their little, baskets loaded and overloaded
uggards. On the contrary, in the cold hours of morning, when
l a day's work. But, alas, the times are so hard, and the north
's hospitality, I pray you.'

ch blameless and over-eager workers? I lent them not only a
the wind and open to the sun, but immediately improvised for
ı sugar-basin.

al beam their lost warmth, and restored to a good condition all
bristle, began the exploration of their temporary prison, and
ıing-hall. [308] With a good appetite, seating themselves at the
:ked up with their proboscis all the sweetness they could find.
ompletely restored, were fluttering to and fro, demanding the
ɔ lose one moment of a day already far advanced. With a rapid

urned to their occupations, distinctly humming:—'Farewell,







S AS ARCHITECTS.

HAPTER VIII.

S ARCHITECTS: THE CITY.

ve is the veritable Athens of the Insect World. There, all is art.
antly create two things; on the one hand, the City, the country,

it is not only to perpetuate the race, but to become its idol, its

ıd all the sociable insects, the disinterested life of aunts and
s entirely to an adoptive maternity.

fers in the necessity it is under of creating a national idol, the

t first supposed that this State was a monarchy, *that it possessed*
ı one is driven to say, *This female is a queen*. Another error. Not
ıt in certain conjunctions she is governed, and sometimes even
ıething more and something less than a queen. She is an object
nd constitutional, for this adoration is not so blind but that the
d very severely.

ɛmocratic?" Yes; if we take into consideration the unanimous
of everybody. No one commands. But, nevertheless, you can
ıt body of the *élite*, an aristocracy of artists, takes the lead. The
e, but by a special class, a kind of guild or corporation. While
abroad, certain much larger bees, the wax-makers, elaborate
ke use of it. Like the medieval freemasons, this respectable
principles of a profound geometry. Like those of the old days,
vorthy bees are far more deserving of the title! The materials
ted by their vital action, and vivified with their internal juices.

le substance. Those little light bees which go in quest of the
sformed and enriched by their virginal life. Sweet and pure, it
lder sisters. These, the grave wax-makers, having received the
sweetness which is, as it were, the soul of the race, elaborate it
peculiar life,—solidity. Wise and sedentary, they work up the
econd quality, a kind of reflected honey. This is not all: the
l with animal juice, they incessantly moisten with their saliva,
, but more tenacious afterwards.

ction is truly one of "the living stones"? There is not an atom of
ed with life. Who shall say of yonder hive whether the flower
latter has certainly contributed an important share. Here, the
d visible soul; from themselves they have extracted their city,
e, it is one and the same thing.

to be created hive, the learned wax-maker advances. From
of wax, and conveys it to its mouth, where it is well kneaded
a ribbon. Eight strips are in this wise furnished, wrought, and
ich the bee lays down as the first beams of the future edifice,

o far from the place where it was begun. If any unintelligent
mistress-bees, experienced and accomplished, are on the spot

uared, where such numbers have harmoniously deposited their
made, and some degree of form attained. A single bee again
orny tongue, teeth, and paws, she contrives to hollow out the
ed she retires, and others take up the work of modelling. In
nly point to be remembered is a skilful management of their
o or what warns them the moment a stroke too much would
e the trouble to make a tour of their work and examine it from
they judge of everything by their antennæ, which are their
an infinitely delicate touch recognize the elasticity of the wax,
ine whether it is safe to excavate it, or whether they must stop

ɛr.

l to serve two ends. The cells are generally used in summer as ɔney,—a granary of abundance for the republic. Each vessel is religiously respected by all the people, who take for their comb is finished pass on to another, but always with extreme

uction is absolutely uniform. Buffon goes so far as to pretend which posts itself in the wax, and by the friction of its body, a ɹollow, an identical cell. A baseless hypothesis, which the least ɔbservation did not contradict it.

l diversified in numerous different ways.

e centre by corridors or little tunnels, which do away with the ɹerything, the bees are specially economical of time.

ɪs identical. They prefer the hexagon,—the form which is best of cells in the smallest area. But they do not slavishly bind ɪey attach to the framework would cling to it very insecurely, ɔosed of six-sided cells. They therefore make it with five sides ɔad bases, which attach themselves solidly to the wood on a aled, not with wax, but with their gum, or *propolis*, which, as it

ɪre mothers, which may be seen by the side of the combs, are —which secures the royal favourites considerable ease, and a

ɛct important differences [315] among the ordinary hexagonal ɹke. They are small for the industrious gleaners, larger for the This size is generally obtained by means of a little rounded l renders it slightly circular,—I was about to say pot-bellied ɹill come into the world a squat, obese figure,—predestined to

ɹfiguration and extent of the cellules. And they vary them yet If room be denied them, they reduce the size of their hexagons

This fact Huber verified by some ingenious experiments. He
by placing, instead of wood, a plate of glass against the wall of
s. From the distance they saw this smooth shining crystal, to
measures accordingly, they curved their cake in such a manner
wood. But, to carry out the alteration, it became necessary to
t of the convex portion, and diminish that of the concave. A
the skilful architects.

ason of inertia, an over-heavy slab of wax fell away, but was
anche seemed imminent! But the bees invented buttresses and
allen cake and propping up the sides of the hive, prevented the
difice. Then, to prevent the occurrence of similar misfortunes,
the shape of flying buttresses, bulwarks, pillars, cross-beams,

uffon's theory. That machines or automata could invent, is a
uthority of this great dictator of natural history would have
tion, if, [316] towards the close of the last century, the bees
nitively cut the Gordian knot.

ad shortly before the outbreak of the French Revolution. An
er all Europe,—of a frightful figure,—a great strong nocturnal
th a hideous death's head. This sinister being, which none had
med an omen of the most terrible misfortunes. Yet, in truth,
Europe. It had come in the grub condition with its natal plant,
which Parmentier extolled, Louis XVI. protected, and which
insect with a somewhat horrifying name—the *Sphinx Atropos*.

only for the honey. Of this it was remorselessly greedy, and to
ty thousand bees could not daunt it. In the depths of night, the
the approaches to the city are less carefully guarded, with a
soft down which covers it (and all other nocturnal insects),
devoured and plundered, gutted and destroyed the magazines,
l flew to arms; their sting could not penetrate through the soft
he cotton armour worn by the Mexicans in the days of Cortez,

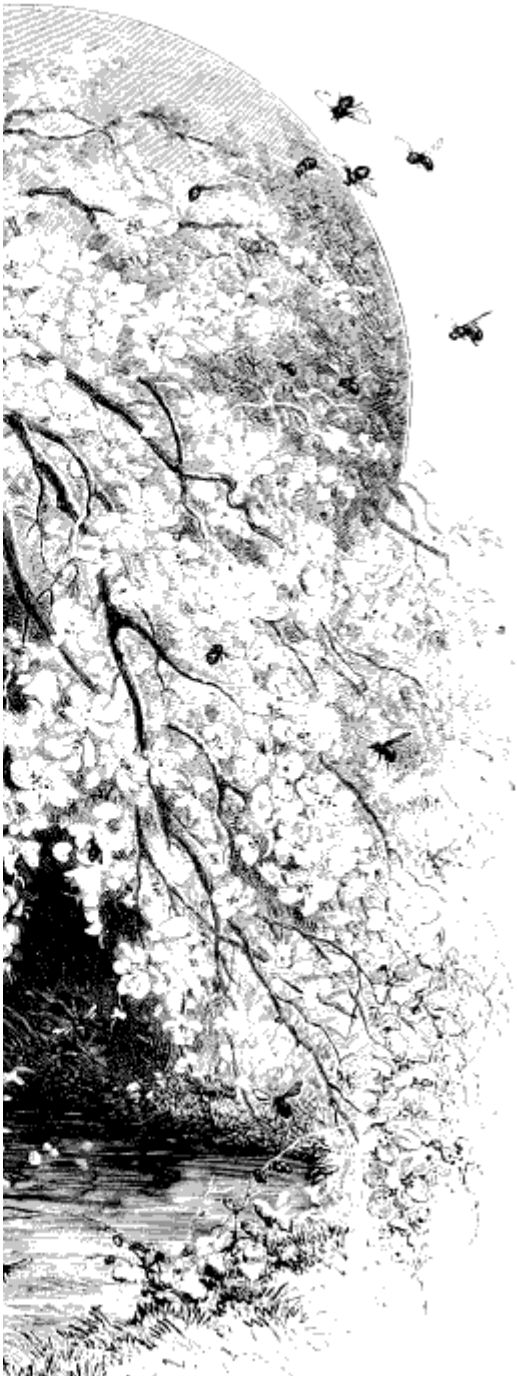
cting his bees against this shameless brigand. Should it be by

termine. The most skilfully devised barriers have always the
of ingress and egress, which takes place at the threshold of the
he obstructions, which could not fail to embarrass them, and

seconded him in his experiments, brought information that the
n. In different hives they had conceived and attempted [317]
ere they constructed a wall of wax, with narrow loopholes,
here, by a more ingenious expedient, without creating a single
rcades at the gates, or tiny cloisters one behind the other, but
o the void left by the first corresponded the substance of the
for the impatient buzzing crowd, which might go in and out as
ing in a slightly zigzag fashion. At the same time, a complete
nemy, which could no longer enter with expanded wings, nor
s.

the revolution of the insects, executed by the bees, not only
ators who had denied their intelligence. The theorists who had
Buffons, were compelled to own themselves beaten. They had
Swammerdam and Réaumur, who, far from questioning the
in proof of its flexibility, of its rising to the measure of great
o make unexpected progress under certain circumstances.







S: ON THE WING.

CHAPTER IX.

HE PEOPLE AND THE COMMON MOTHER.

o bear on the welfare of the infant. Let us see, then, this object he cell; her who has just been created, the little virgin of toil.

so much so that she is not even provided with the organ of the oney and flower dust, which is constantly renewed, you see But she already lives, is organized, and active; so that on the network of metamorphosis.

pose at the sacred moment, take the precaution to close up her f a tawny colour. For ten days she is a nymph, enveloped in a cy, through which you can discern a miniature of mouth, eyes, development. Then she scratches an opening in the little dome, fore-feet resting on the rim, she strenuously endeavours to t the honey is close at hand to recruit her energies. At the first scis, and initiates herself into life.

e hastens to get dry in the sun, to harden her soft and rumpled sinswomen, who stroke and lick her amorously, and bestow on

implements, or more obviously intended for an industrial forms her what she has to do. Lighted by five eyes and guided ecting beyond her mouth, an unique and marvellous instrument —which is of peculiar delicacy, and partly hairy that it may the at rest, by a beautiful scaly sheath, the proboscis puts forth its , draws it back into its mouth, where lies the internal tongue, a

ttributes which indicate their own uses: hairs on every side to highs to sweep together the scattered harvest, and panniers to e conjoined form the insignia of her trade.—Go, my daughter,

t be fit for nothing else. The fairy virgins who prepared thy

o be what they have been. Sober, laborious, and sterile, they y maintain the pure flame of virginity by fasting, or at least by lendidly the future mother, though [323] still a child, and are art, useless tribe of males.

he City, the aristocracy of devotion and intelligence. The wax- vishes of the living queen, would never train up an heiress to the successor is born would have her put to death. They do not we all die, take counsel on the necessity of perpetuating the , or close little cradles which receive all the children of the ifteen, nay, twenty times larger, in which the ordinary egg, may enlarge and develop at will all its natural faculties. The the chosen egg, they prodigalize upon it a stronger and more sex, and endow it with fecundity. Such is the efficacy of this fall a drop or two on the neighbouring cradles, the little bees, nother's fecundity, although in an inferior degree.

ver willed to be one.
, et n'ai pas voulu l'être.]

disinterestedness of these prudent nurses. They bestow all the l ample habitation, a superior regimen, and that paradise of

ters, who are born resembling them,—narrow cradles, coarse nto the fields to sweat for the people and the mother; those, end to the young. No recreation is allowed to them; I do not stic games. Their entire feast will be labour (from which the give love, and for themselves preserve nothing but wisdom.

race, of whom the whole multitude is enamoured, is certain nt amber, of a gilded yellow. This rich colour lends nobility to dorsal rings. Elegant, *svelte*, and noble, she is freed from the nich overloads the worker,—brushes and panniers. Like all the it never uses it except in a personal combat; nor has she many helmed with an excess of love.

ent to terrify her; at the slightest danger she takes to flight, and
r head is not very large, and the unique function which so
d to expand the brain. The others have more opportunity of
ishments. The little gleaners gather a wide experience Of the
reover, attend to a thousand unforeseen domestic affairs, are
. The mother has but two duties to fulfil.

ıfter noon, she issues forth, and out of a myriad males or more
on her wings, and then rejects him, mutilated; he does not
is ended. She is impregnated for four years, the ordinary term
e chaste. All her toil, by day and night, without distinction of
ı rigorous winters,—is to lay eggs everywhere, and without
each deposits an egg. Nothing more is required of her. She was
in proportion to her fecundity. If she fell barren, all would
and the love which [325] every one bestows upon her. The
f a personal character as the idea of utility, of the preservation
revails.

t giddy head. Like all individuals who have nothing to do, she
ncubation and sedentary life in the depths of the hive, a desire
world, to visit new countries. She has, nevertheless, a more
us chambers which are being built for the young mothers who
ealed there, and grows fiercely jealous. Incessantly she prowls
protects them, and keeps her away, she would dart her sting
t must be her rage when the young captives, ignorant of her
to escape from their cradles, hum and sing aloud their little
ıe bees, and so clearly announces to the queen the presence of
, to guard against all accidents, has thus reared up the young
ghtful combat impends, a wholesale massacre; the old queen-
of those odious females. Separation is preferable to civil war.
everywhere, and seems to say: "Let those who love me, follow
r is suspended.

es make the necessary preparations, and eat a supply of food
e agitation is manifested by a sudden change of temperature;
0° or 32°,—a condition of things intolerable to the bees, for to
anization. In the extreme heat they are all bathed in sweat.

ɔther sallies forth, and they rush headlong after her. They buzz
ɹme, and then dart a [326] little further away, describing in the
e air is darkened with them. At length some settle upon the
hers take their places, along with the queen. They cling to one
er. Tranquillity is re-established. The other bee communities
of the fugitives, have guarded their gates, and reinforced their
breathe freely, and return to their occupations.

ssengers are despatched from the cluster to examine the tablishment. M. Debeauvoys was the first to observe this act of pection for the information and guidance of the new colony. A d from the north wind, and near a brook where they can gh most with our prudent emigrants. A hive fully prepared and with indifference. They are very decisive in their movements,

t regret the native land where they toiled so successfully? And more? By no means. The [327] mother especially,—"giddy" as ice—nay, thrice—persists in going back, carrying with her the

found herself face to face with the new queen whom the non-? There would be a combat. And this, too, happens without made to prevent her, a young mother, having forced her way ıe old queen the detested object of her jealousy. A duel then e other to be armed with a mortal dart, their natural cowardice e to a few harmless shocks, and an innocent wrestle, like the who gather round and look on from a near point of view are in the community would be the greatest of all evils. Moreover, ıemselves, so parsimonious for others, that they take into t would result from the establishment of a couple of queens. is a serious trouble to the republic. The State would be ruined ne of them must die. And hence arises a strange spectacle, of this people: the object of adoration, recently gorged, and

to the combat, is impelled and driven into it, until one of the
:, and from its bended and superjacent abdomen plunges into

conquered, would have been flung aside without regret, now
ıg deity of the commonwealth; but let her remember, on the
proving continuously prolific.

hat every mother has perished. What then becomes of the
asserted, into complete demoralization? Does such a calamity
the people by the people themselves? By no means, says M.
ı, and apparent delirium follow. The bees flutter to and fro in
oment they even neglect the nurslings. But a people so grave
y, and remember what they owe to themselves. The mother is
ate another. What we were yesterday, so are we to-day.

est child of the people, who has barely opened her shell, who
ı narrow cradle, who has not yet grown lean on the scanty fare
he dust of flowers which naturalists call *bees' bread*. Those who
will remain little; they no longer possess the faculty of

become whatever you will; and in order that she may develop
ıother, what is necessary? Liberty. Let them provide her with a
gitate, and develop, at ease. It will cost three cradles destroyed
who will perish before birth; but what matter, if in a year she

le is that living nourishment which the people extract from
ɜweetness with the balmy essence of the flowers. A strong and
me of aromatic herbs, richer in the virginal love concentrated
ɔf the marvellous child who belongs to them all.

:xtended by an ornament intended to make it still freer,—a
l it up, to the intent that she may sleep peacefully, and [329]
en the anxiety increases. They guard the beloved sleeper who
ɒire by her love the labours of the people. They guard her, and
/ of a people who adore only their own handiwork, chosen by

o be unmade by them. It is their pride that at need they know







ɛLUSION.

nony of the insect.

or rank as artists, architects, and the like. The bee is more, a ducator.

ving no need of a living and visible symbol of the community, rudeness the soft and feeble females who perpetuate the race. ently, or less reasoning and more imaginative, finds a moral r her community of virgins it is, so to speak, a religion of love.

e social principle; but fraternity also takes root, flourishes, and

inates in a fulness of light.

1 must examine and estimate their achievements and their as been said, so much the more are they to be admired for r organs.



ecuted by those (as, for example, the ants) who have no special
e want by skill and invention.

ion we should extend to their arts and labours! Comparing the
negro, the subterranean galleries of the ants with the little
ow we should dwell on the superior skill of the insects! Is it
ts? What are the proportions which will merit your esteem?

–

e opinion of the reader, it has greatly modified our own. This,
nsiderable change. We thought we were going to study things,

ir ways and habits, developed in our minds a sentiment which
pect for their persons and lives.

olds them cheaply, renews them incessantly, prodigalizes lives,

ws life and withdraws it; has the secret of their destinies, and
le progress. But as for us, we have no power over them, except

–

ng here of any childish sensibility. On the contrary, neither
ling. But a man—man accustomed to reason with himself and
eature of that gift of life which it is utterly out of his power to
on impressed us strongly. And at first a person, a woman, more
, who had come hither with the design of making a collection
ed the task; and then, having interrogated her conscience, felt
rd of censure upon scientific collections, which are absolutely
find a pastime in death. Note that many of these creatures are
n by attitude and movement, which cannot be preserved at the

ence to the fate of a very remarkable butterfly (a sphinx, if I
ıe for a moment. I had admired it for several days, coming and
ace, flying hap-hazard, but choosing them discreetly, and then,
is, sucking by small sips, and very quickly withdrawing, as if
one of incomparable grace, of coquettish sobriety; just as if it
w!" I have never seen anything more graceful.

arkable. Who that sees it dead would divine that, in charming
she has exhausted all her grace?

ve had the pleasure of seeing the same butterfly, which, in bad us, and found a resting-place in our chamber. In the morning,

–

recked unfortunates of the latter end of autumn, guided by a me to our house,—some on a temporary visit, others to remain and who had evidently met with more than one adventure, ate from our hands. The same thing happened with a still more ad been barbarously deprived of its head-feathers that it might ated by men, which might justly have been afraid of them, not s and lips, but would not sleep except on the mistress's finger.

le. But many, nevertheless, [337] seem able to live with man, to acter. Last winter, two pretty red lady-birds had taken up their pers, which were being constantly moved about. What to give son without eating, or appearing to receive any injury. The m.

–

and, this very day, has cast in upon us a beautiful reddish- f her own accord, but in spite of herself, we felt that we ought at plant she had been torn, but supposed from her motions that d begun to spin. We presented her with a variety of leaves; but id fro, displaying an extraordinary agitation. We supposed she rain fell in torrents. As many caterpillars and larvæ work s, too, was useless. Thinking she might like a web at a time r on the lace-work of a cushion which lay in the window; but her. Moreover, the wind, the little wind which entered, would Finally, by a feminine marvel of intuition, we concluded that, the silk-velvet lining of our microscope.

uld have chosen. Installed in the evening, by the morning she d sheltered place. She had already spun, and hastily extended ght be disturbed. Then, during the day, her work having been her measurements, and that her cocoon was too short; she that point on better proportions.

l our instruments expelled. What could we do? The confiding and would not withdraw from it. Life had driven out Science. During the winter we respected the sleep of the chrysalis.







tive Notes.

NOTE 1.

lly from the heart. Nothing has been given up to the intellect,
ring into scientific disputes.

too systematic, pass over it. We have not sought to embody a
le, the point of view, and place it in the reader's power to

ntic and necessary war waged by the insect upon all morbid or
life. A terrible war, an infernal toil, which, ensures the safety

ssage should destroy like fire. But to secure the sharpness of

at its own transformations be accelerated, its life compressed;
volve in a burning circle. However brief may be this circle, it
metamorphoses, which resemble a series of successive deaths.

th of the father; maternity, the death of the mother. Thus the
ıother. The mother loves her daughter, anticipates her birth,
ɐr see her.

hich Nature opposes to the most pathetic aspirations of love,
'thing unreservedly, knowing that it is for death. It draws from
of light and colour, ravishing phantasmagorias, in which love is
fires, and torches, and burning sparks. It is the appeal to the
ıppiness. But the love of the to come, the foreseeing tenderness
fashion by the astonishingly complex and ingenious creation of
anical arts have derived their most perfect models. Usually this
it enables them at the moment they forsake the orphan to
ɔther, shall perpetuate the incubation when the mother ceases

be no exception to the pitiless law? In hot climates, especially,
ɛrs united together to deceive destiny, by associating so many
which their children should find an eternal mother?

ety.

tially a female and a mother. The male is an exception, a
, a caricature of an insect.

safety of her child—the preservation of the future—leads her
safety.

ring its existence against the season of sterility. Hence results a
economy.

-I was going to say, the virtue,—does not lose its rights. Beaten
ɔmmonwealth, and grievously oppresses it. This self-protecting
ɹ death and prolonging the common existence, multiplies the
members would not die of famine, they must live on a very

ımber of fertile females, and condemn the majority, or nearly
irginity and labour, sterilized from the cradle in their maternal
:t. The extinction of certain faculties seems to strengthen the

f aunts or adoptive mothers. With too little sexual feeling to
lren, to love and adopt them. They are both less than mothers,
befall the hive or the ant-hill, the true mothers consult their
:now no other thought but that of saving the children.

isinterested love above itself, the insect surpasses all other
ls, are evidently superior in organization. It teaches us that
potency in life which acts strongly beyond the range and in
ıe ants, have no special instruments to facilitate their work, are

ated goal to which its inhabitants tend, is the community,—by
he only being, besides Man, who seems to reach this goal, is

blime and charming, the Bird, is, through these very qualities,
; its community, the nest; its associations are only collocations
s which, approach us so nearly, and impress us so strongly by
,—show wonderful powers of combination for the execution of
etire to their own houses and families, isolated by the very
embly of the beavers is, as it were, a colony of builders and
e not citizens, and it is not a city.

–

orld. Separated from man by many degrees in organism, the
er being in the supreme work of his life,—which is, to live for
ıs of close relationship which render the higher animals so
. But I recognize it as akin by one loftier attribute: it has the

–

: the very perfection of these insect-societies depended on their
that if the conditions are varied, and unforeseen obstacles and

em with vigour and calm sense, and with the resources of an

ɔw itself *unrestrained*.

ɔn of combat and destruction, seemed to us an atrociously fatal
ɨf its maternal devotion, became a world of social harmony,

ɛ introduces the insect to the threshold of a still higher rank of
ıted—among the necrophori, for example, and the pilulary
. They render mutual services, and fly to the assistance of one
the sociable insects the feeling is carried to a considerable
ːh, and stint themselves to supply their sisters. A very safe, and
ʃsing the wound of another ant which had lost an antenna, by
ɔrotect it from the air.

our starting-point, where the insect appeared to us a pure

ˈvellous than that of the moultings and transformations which
ıption of wings.

ly parallel to our own, though having no mutual mode of
ich has not previously—though for a long time unknown to us

ɔthing. Apparently their warmth of life, and their red blood,

ı heavy apparatus of flesh and blood intoxication, more subtly
ms a frightful world of spirits.

science, safety is found in its *penetralia*. At the first glance the
*w*ith a shudder of alarm we may contemplate in the animalcule
ılity, or a certain undefinable something which seems like a

ammerdam, and made him recoil with dread, are precisely the
all see, all feel, and all love: a miracle truly religious! In the

es, I recognize, for my reassurance, a moral infinite. The
the pride of the chosen species, I see generously extended to
f life would have seemed to me deserted, desolate, barren, and
mth and tenderness of the Universal Love in the universality of

NOTE 2.

ırd no scientific pretensions, the book of an unlearned writer te to confess that our method of study was very indirect. If we ıte anatomists, or with dry manuals of instruction, perhaps we ve approached this science on its attractive side—through the he delineation of its habits with the description of its organs. v (if we may [346] so speak) from the hooks of the two Hubers great, that thereafter we read with interest what one does not volumes of *Mémoires*—an immortal book, which must always ɔus reaction of Buffon, nor the anatomical works, of superior n produced, should cause it to be forgotten. Réaumur was, as it ıim we went back to the illustrious masters of the seventeenth escended to those of the eighteenth, the Lyonnets, Bonnets, and

Duméril, Lepelletier, Blanchard,—to the fertile and audacious udouins, gloriously supported by Ampère and Goethe. While main results of the science, like those of Lacordaire, we by no he present, century,—those of Léon Dufour (scattered through llections), the grand work of Walckenaër on the Spiders, the monument of the first class, which can only be compared to s drawn from travellers, we shall hereafter have an opportunity our debt to foreign writers,—to Kirby, Smeathman, Lund, and ral anatomy, we cannot too strongly recommend the admirable excellent master, Dr. Auzoux.

3.—Book i., Chap. iii.

orias as the Predecessors or Forerunners of the Insect, &c.—The y, by M. de Quatrefages.—As for the microscopic fossils, the en Ehrenberg's discovery. See his *Mémoires* in the *Annales des* 7] vi., vii., viii. In volume i., p. 134, for 1834, he specifies the uch his discovery has added to it.

present in operation for the creation of little spheres, on those hings, we owe all our information to the English voyagers, the minute and very simple observers, generally timid in their ter, they having seen the very heart of the mystery, and caught es have been most ably summed up by Sir Charles Lyell) for halk, divided alternately between the fishes and the polypes, on construct continents.

ux Nelson, aux Darwin," etc.

ms enfold the earth, and who incessantly *feels* and examines it,
s, where at its ease it continues its everlasting procreation. The
of the cataclysms, epochs, and revolutions of the earth, will
we know now that everything is in a state of constant change.

erature has sprung from Great Britain in the last twenty years?
ry into the condition of the globe, undertaken by the English.
ther nations *travel*, but only the English *reside*. They daily
study of a Robinson Crusoe: and this is done by a crowd of
peculation, and hence so much the less systematical in their

4.—Book i., Chap. iv.

éaumur,—and, in fact, every writer,—has admired the manner
ents of maternal love. M. Lacase, in a very beautiful thesis, the
nuation of the analogous works of an eminent master, Léon
nical preciseness. An original and important point of his labour
to the views of Geoffroy Saint-Hilaire, Serres, Audouin, and
ong the abdomen imply the modification, or even the sacrifice,

e apparently operates upon a fixed, amount of substance, only h are shortened or transformed.



5.—Book i., Chap. v.

e reader will exclaim, "what labour! How terrible a law of gs, as yet but ill provided with tools, and without, that superb admire in the insect. How protracted are the means devised for omplished [349] if they were born less soft, a little firmer, and

ar unfitted for the essential circumstance which ensures their and very soft, that they may more easily undergo the moultings n them,—which moultings, if the insect-substance were hard, instinct they are aware of this, and dread extremely lest their llars, for example, though covered thickly with hair, conceal And they are also mindful to issue forth only in the evening, salutary humidity.

ɔ.—Book i., Chap. vii.

ıtomy of the insect has been the theme of one of the greatest oethe, soon after the French Revolution of July 1830:—"Well, ettled the question?" And as the traveller seemed to think he ething of far greater importance!" said Goethe; "I refer to the

remained faithful to Cuvier. The great physicist Ampère, in an ɔf the *Annales des Sciences Naturelles*, adopted the opinions of :d them with a juvenile audacity that these anatomists, in their

ad been extracted and prepared [by Madame Michelet] for the g love such as could be inspired only by a true and tender :rifice this arduous labour, which, perhaps, would not be much

ıimal creation is very clearly defined in Lacordaire's excellent :gy of its muscular fibre, scarcely inferior to them in the to the bird by the quantity of its respiration, it falls below the ɔf circulation. Its nervous system is less concentrated than that 2.)

ɜtion. The nervous apparatus which, in the molluscs, has not ect, towards centralization. Two longitudinal strings of nerves, abut on the nerves of the head, which are not massed as in the discovered a firm, whitish substance, strongly resembling the the head of insects remarkable for their intelligence, you will in any respect from those which compose the two threads.

ıder more surprising the superiority of the insect in art and cipal mammals (with a single exception). Here at the highest ɛs, on the whole, a middle place; and is, as it were, in the scale nd death.

7.—Book ii., Chap. i.

nd martyr of our science, the creator of the instrument which
great inventor in many senses,—specially for the preparation
ly his *Biblia Naturæ*, in Boerhaave's edition, ornamented with
incomplete French abridgment, published in the *Mémoires* of
esults, but no trace of the man.

ntomology. A good abridgment will be found at the end of M.

3.—Book ii., Chap. iv.

work which I here confute, and which, assuredly, cannot be
ou *Réflexions d'un amateur de la chasse aux petits oiseaux*, par E.
cember 1856).

n, in reference to the necessity of a popular teaching of natural
th and morality of the world would be doubled if this teaching
nt work, *Zoologie Agricole* (in folio, 1854), gives the very useful
ordinary or ornamental plants. M. Pouchet, in his excellent
cipal authors who have described the destructive insects. The
s the preparation of a history of them.

9.—Book ii., Chap. v.

l climates is borrowed from a large number of travellers,—
neau, Weddell, Charles Waterton, and others. For Brazil and
exceeding courtesy of M. Ferdinand Denis, whose knowledge

sects, besides that of the Museum. One of the best-known is
ent exclusively devoted to the sale of insects may be found at
llection to which I refer on page 176, is that of M. Douë, who
h infinite complaisance.

The Ornament of Living Flames) is related, in reference to the
accurate Dr. Weddell. The Indian phrase, "Replace it whence

).—Book ii., Chap. viii.

t.—Who has not seen that for a long time the art of decoration
at itself? When a particular subject has lasted ten years, men
life of half a century I have several times seen this rotation of
›nous if we did not possess in so high a degree the gift of

vation in the things of old, would profit greatly by drawing its
:d throughout Nature. They abound and superabound:—

lants. Ours only produce their effect in masses, and on a grand

:r animals, radiata, and others; in many of the little floating
design of which, when enlarged, might suggest some very

:ures; as, for example, in the eyes of the fly.

etects in the thickness of the living tissue; as, for example, on
sheath of the beetles. Nature, which has so embellished the
the depth. Nothing is finer than the vital fluids, when seen in
ate canals where that circulation is accomplished and defined.
s less forcibly by the splendour of the glittering leaves among

ıs in which we divine the mystery of their life. These are their

Book ii., Chaps. ix. and x.

ıe result of our own observations. We have profited, however, ıd classical work, the grand labour of Walckenaër,—which is of ., and moral history of the Spiders.

n the cocoon of a great orange-coloured spider fully an inch in ısador to China, in his "Travels in Java" (vol. i., p. 343) informs ›s that they can only be cut with a sharp-edged instrument; at ıg the progress of a bird as big as a thrush (Richard Stafford,

has lent to me (from his personal collection) a rare and very ·ical sensibility of spiders, on their prescience of variations of to advantage—and on the skilful exposure of their webs.

autumn-webs, which are [354] called *Virgin's Threads*, is very *e la Société Agricole de Troyes*, for 1839.

.y, the ichneumon, some curious details are given in the fourth . In order to preserve it for its little ones, it does not kill its ›y pricking it, and distilling into the wound a venom which

is amorous advances are based upon those of De Geer, and

ıilomathique, pt. 67, p. 257.

ɡeniously constructed house and door of the *Mygale* of Corsica,
observer whom one can trust implicitly,—Audouin (followed

l2.-Book iii., Chap. i.

neathman would merit reproduction, and the translation of his
: to be reprinted. The interesting additional details collected by
ıers, might be added, so as to make a complete monograph.

recognize that the true and [355] grand principle of art, so long
ays followed to the very letter by creatures of so low an order,

terranean mining of Valencia by the termites, will be found in

r in M. de Quatrefages' *Souvenirs d'un Naturaliste*.

3.—Book iii., Chap. ii.

s, say Azara and Lacordaire, sometimes last over two or three
: and frightful numbers only to the clouds of pigeons which, in
ys in succession (see Audubon). Lund (*Annales des Sciences*
ous picture of these ant-migrations. They are terribly warlike,
g in a duel the *visiting ant* (Atta) to the *Araraa* ant. The latter,
of its poison.

M. Hippolyte Mialaret, transmits to me a curious fact, which, I
nem a medley of various kinds of grain,—wheat, barley, rye,—
pened the ant-hill, he found the grains carefully classified, and
nple, on the second, barley on the third,—the different kinds

ppe Gené would induce one to believe Huber mistaken in his
self found a community. After her fecundation she retires into
its. There some prowling ants discover, feel, and recognize her,
h prudence and even visible mistrust. Afterwards they explore
pection, always coming back to the mother, and hesitating long
easing, they definitively adopt her, and set to work.

celebrated in a beautiful Oriental legend of I know not what
defeated several times in one campaign, he was seated, almost
nted the side. Several times he made it drop, but it invariably
would persevere, and twenty-four times threw it to the ground
l, and moreover he was full of admiration. The ant conquered.
: as the ant has done." But for the ant, the hero had missed the

4.—Book iii., Chap. iii.

shes grubs, which are embellished with the most varied, and
ee aphis, when I examined it through a microscope, seemed to
s back, it displayed a very big belly, and a very small ungainly
s than a sucker, while it agitated all its limbs. On the whole, I
inspire no repugnant feeling. One can understand how the ants
and others, in reference to their prodigious fecundity.)

5.—Book iii., Chap. v.

ɔecies, in which, perhaps, we see revealed the loftiest energy of
hbour, the drone. Réaumur, who is not sufficiently known as a
of style, says, very pleasingly, that the poor drones, in their
oyal communities of the wasps and bees, are mere rustics or
but that we find a pleasure, even after having visited great
ɔf villages and villagers. (Réaumur, *Mémoires*, vol. vi., p. iii.

ir simplicity, the drones are industrious, and have their
es, so despised elsewhere, are more happily employed here in a
being so strikingly developed in the females, proves less
spouses, who do not massacre them, as the wasps and bees do

.—Book iii., Chap. viii.

.—I here follow, in the main, the authority of M. Debeauvoys,
nual"), ed. 1853. In this little but important book he has made
r's notice, and separated the great wax-making architects from
ssion to trust rather to M. Dujardin on the general character of
of a very dry temperament; the liqueurs and perfumes of the
to quench their thirst. But in themselves they are sufficiently
aving renewed every day the provisions of a poor hive, was
him, and ran over his hands without stinging him. The annual
males is a common law with them; the wasps, and other
the epoch when the flowers disappear. In America they are
ns see in the bee the type of the white race, and in the buffalo
ır in the Prairies.")

f the Germany of Tacitus:—"The aunt is there held in higher
a country of bees.

eral times, has been good enough to furnish me with a very

few months ago, these hymenoptera and their buildings are so
d those of some hypogea are entirely covered with them, and
phics. These nests frequently form there a succession of layers;
one upon another in sufficient numbers to form a kind of
onuments. In their construction the bee makes use of Nile mud
progeny, she seals them up with a delicately wrought cover,
various metamorphoses, lifts off and flies away. But these nests
, by means of its singularly sharp nails, climbs to the ceilings.
-bees while they are building their nests, or rather it may be
oung progeny."

'.—Conclusion, p. 337.

hod which the future will clear up, is, to know how far woman
what extent the study of these sciences will be shared between
and patient tenderness, the persevering observation of the
his study demanded, it would seem as if woman ought to make
ther and a far gloomier aspect, which repels and affrights; and
nces of death.

ıd leading discovery, all-important for the knowledge of the
of a scientific naturalist of French Switzerland, Mademoiselle
were thought to be *neuters* (of neither the one nor the other
ceedingly [359] narrow cradles and inferior regimen. Now, as
cept five or six bred as queens, and a few hundred males), it
ıd bees is female. Thus the predominance of the feminine sex,
ıpreme confirmation. There are *no neuters*; neither among the

ısects. The males are a small exception, a secondary accident. I *female*.

ealed to us the true character of the maternity of adoption, an and the elevated law of disinterestedness and sacrifice which

ed merit to that of accomplishing great discoveries, is that of ıeir true forms, their movements, and the general harmony of ırt seems to belong more naturally to woman. A woman has

ıiration for his representation of the bird in its complete the plants which feed, near the enemy which assails it. But it of his harmonious paintings, which present us with so true a e de Mérian. Her handsome volume (*Métamorphose des Insectes* was the first in which this admirable method was invented and

narried. The name of "*dame*" was in her time still restricted to noiselle;" is never cited except under her maiden name. Her rance, give one the idea of a person lifted above the world of

hout speaking of her life. A native of Bâle, the daughter, sister, an excellent painter of flowers upon velvet, she long resided at misfortunes, her husband being ruined and having separated al society, analogous to that which had formerly consoled ience, *the theology of insects*, as a contemporary terms it, here was acquainted with Swammerdam's great idea, the unity of ıad flung in the face of astonished Europe in his book on the

ours, throbs and stirs at [360] the impulse of their desires, their How well adapted to influence a woman!—But is this a fact? ible since the truth was demonstrated in 1824 in M. Strauss's

silkworm. But her curiosity and artistic eagerness embraced

ɔre Germany, Holland, with its rich American and Oriental ɹm of the tropics. There she established herself, and with her ɛemeteries, glittering with the beauty of the dead, did but whet *w*here it most luxuriates. At the age of fifty-four she set out for dangerous climate, collected the drawings and paintings which

of the artist, who is an artist and nothing more, is that he may l the pretty to the beautiful, and flourish those graces and ɹse the favour of fashionable ladies. Nothing of this kind is but on every page a noble vigour, a masculine gravity, a inspection, especially of the illustrations coloured by her own lness of the plants, their lustrous and velvety freshness,—the flowered, which the insects offer,—the tender, conscientious ɔle with a reverence inspired by love.

Fire-Flies, the astonishment of the timid German in a world so ɹaterials,—venomous herbs, lizards, and snakes, and fantastic the emotions of the painter trembling before her models, the ɛ the changeful physiognomy and mysterious manners, while ɛr genius. Never satisfied by her representations of fugitive ʂect properly known only by painting it under all its forms ɛnting her, she placed beneath it the vegetable on which it fed, h fed upon *it*. Thus, the mutuality and exchange of nature was rculation, which, in tropical climates, is so rapid. Each of those ɛructs not only by its truthful details, but inspires a profound much more valuable teaching.

ve explains. She has painted [361] side by side those creatures her, each faces its antagonist, and you conclude that a frightful l the tragic struggle. She has shrunk from painting death.

r task had she advanced further, had she opened and dissected lugubrious painting of anatomical detail!

hich women are arrested in the study of the natural sciences. ʂ. Michael Angelo has finely said:—"Death and life are but one. me hand." But women do not submit. Between them and death

tood; they themselves *are* life in all its prolific charm. They are
a horror to them. Death, and especially pain, are not only
eel that only happiness and joy should attend upon woman.
ı very justly as a horrible contradiction.

they may master, the three things of life: the *incubation* of the
t care; the *education*, the *nourishment* (to speak as our fathers
n of manners, and the subtle intelligence of means of inter-
these three woman's arts, man may conciliate and gradually
y of the insect species. To them belong entirely the arts of
at least not harshly insensible, it might share these womanly
of pity, is the mediator of all nature.

.ts which science draws from them, do not speak of them to
nd will go no further forward.

some real weight, even to the sedatest minds—that science, of
n the one hand, demonstrating by the study of manners and of
more like ourselves than had been generally supposed; and on
at resemblance, and consequently their capacity of suffering, it
:xquisite and most cruelly protracted agonies.

ɔre and more against women. Nature, while inviting them to
:ir excessive tenderness of feeling, and by the reverence for life

thy of being trained (or domesticated). They were sought only
the pursuit nothing but a simple pleasure, will perhaps reflect
ısects frequently endure their torture for whole years! (See
n de la Société Protectrice des Animaux, September and October

–

ernal instincts of the creatures I have described, their infinite
objects of their love, it will become impossible for mothers to
ıre!

ıich this book is the outcome, is also that which induced their
ıd in Huber's revelation, in his vivid manifestation of the
e first glance had seemed so paradoxical and incredible, was
:ality. The spectacle of so many labours and efforts for the
existences, imposes a duty upon our conscience, and renders it
ıg which wills, and toils, and loves!



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