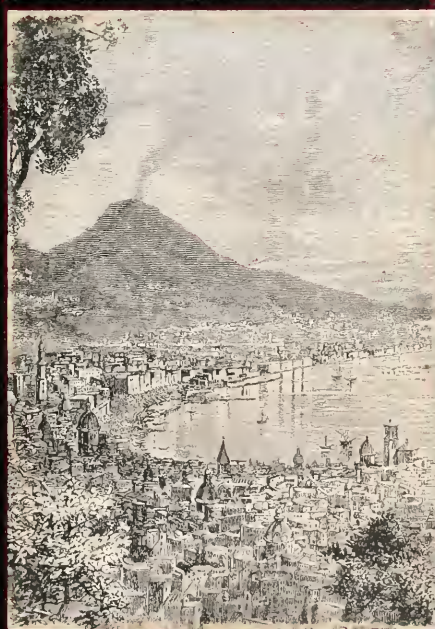


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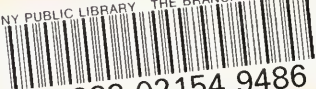
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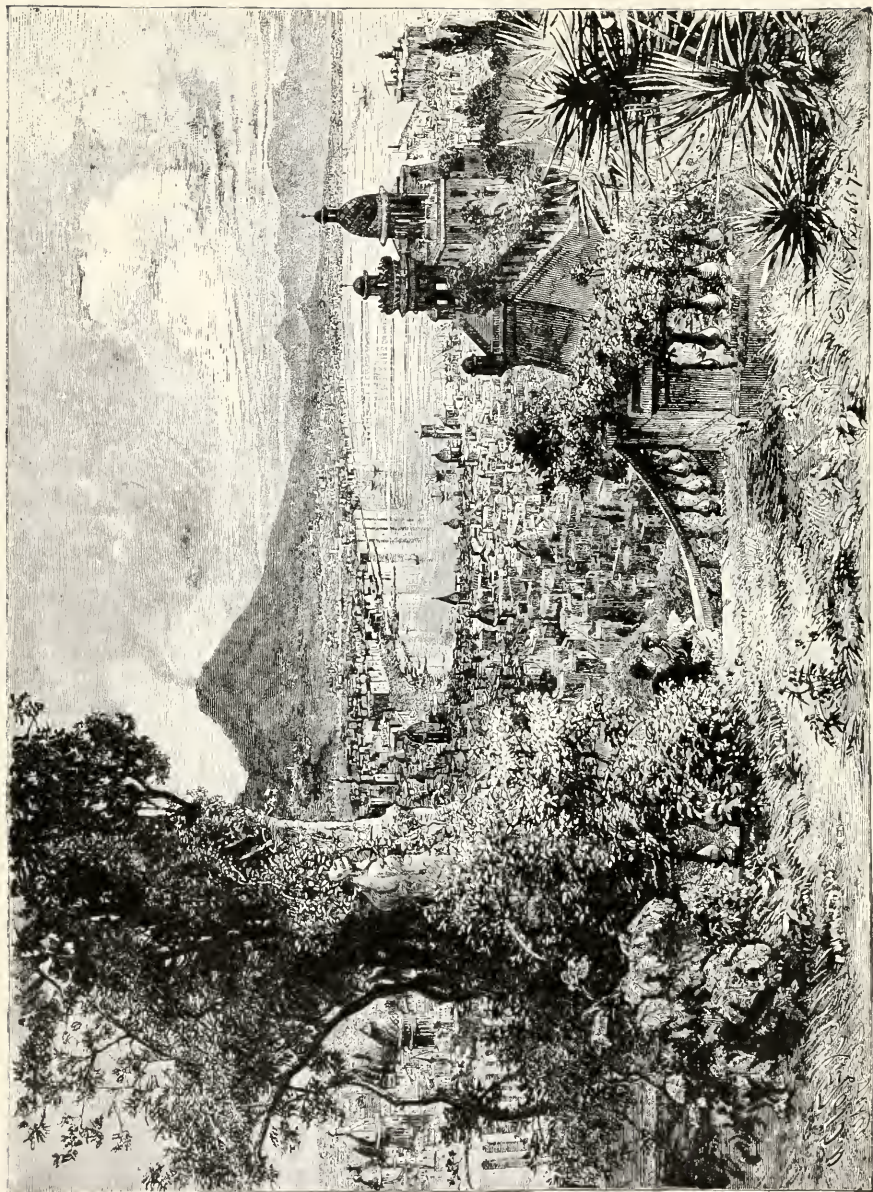
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VIEW OF NAPLES AND MT. VESUVIUS.

THE
BOYS' AND GIRLS'
P L I N Y

BEING PARTS OF PLINY'S "NATURAL HISTORY"

EDITED FOR BOYS AND GIRLS, WITH AN INTRODUCTION

BY

JOHN S. WHITE, LL.D.

HEAD-MASTER BERKELEY SCHOOL

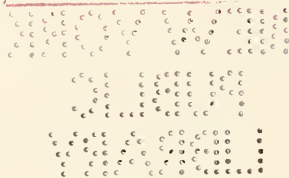
EDITOR OF "THE BOYS' AND GIRLS' PLUTARCH" AND "THE BOYS' AND GIRLS' HERODOTUS"

WITH FIFTY-TWO ILLUSTRATIONS

NEW YORK AND LONDON
G. P. PUTNAM'S SONS
The Knickerbocker Press

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CONTENTS.

BOOK I.

DEDICATION.

CAIUS PLINIUS SECUNDUS TO HIS FRIEND TITUS VESPASIAN	PAGE I
--	-----------

BOOK II.

AN ACCOUNT OF THE WORLD AND THE ELEMENTS.

<small>CHAP.</small>		
I.	THE CHARACTER AND FORM OF THE WORLD	9
II.	OF GOD	12
III.	THE DIMENSIONS OF THE WORLD	15
IV.	OF THE STARS WHICH APPEAR SUDDENLY, OR OF COMETS	16
V.	THE DOCTRINE OF HIPPARCHUS ABOUT THE STARS	17
VI.	OF THE STARS WHICH ARE NAMED CASTOR AND POLLUX	18
VII.	OF THUNDER AND LIGHTNING	19
VIII.	NATURE OF THE EARTH	20
IX.	ITALY	25
X.	THE HYPERBOREANS	27
XI.	BRITANNIA	29
XII.	MOUNT ATLAS	30
XIII.	THE ISLAND OF TAPROBANA	31

BOOK III.

MAN, HIS BIRTH AND HIS ORGANIZATION.

I.	MAN	37
II.	THE WONDERFUL FORMS OF DIFFERENT NATIONS	40
III.	INSTANCES OF EXTRAORDINARY STRENGTH	49
IV.	INSTANCES OF REMARKABLE AGILITY AND ACUTENESS OF SIGHT	50
V.	VIGOR OF MIND, AND COURAGE	51
VI.	MEN OF REMARKABLE GENIUS AND WISDOM	57

BOOK IV.

THE NATURE OF TERRESTRIAL ANIMALS.

CHAP.	PAGE
I. ELEPHANTS; THEIR CAPACITY	60
II. THE COMBATS OF ELEPHANTS	66
III. THE WAY IN WHICH ELEPHANTS ARE CAUGHT	68
IV. THE AGE OF THE ELEPHANT, AND OTHER PARTICULARS	69
V. THE LION.	71
VI. WONDERFUL FEATS PERFORMED BY LIONS	74
VII. PANTHERS AND TIGERS	78
VIII. THE CAMEL.	80
IX. THE RHINOCEROS AND THE CROCOTTA	82
X. THE ANIMALS OF ÆTHIOPIA; WILD BEASTS WHICH KILL WITH THEIR EYES.	84
XI. WOLVES; SERPENTS	85
XII. THE CROCODILE AND THE HIPPOPOTAMUS	88
XIII. PROGNOSTICS OF DANGER DERIVED FROM ANIMALS	92
XIV. THE HYÆNA	93
XV. DEER	94
XVI. THE CHAMELEON	97
XVII. BEARS AND THEIR CUBS	98
XVIII. HEDGEHOGS	100
XIX. THE WILD BOAR	101
XX. APES	102

BOOK V.

DOMESTIC ANIMALS.

I. THE DOG; EXAMPLES OF ITS ATTACHMENT TO ITS MASTER	104
II. THE HORSE	107
III. THE OX	112
IV. THE EGYPTIAN APIS	114
V. SHEEP AND THEIR WOOL	115
VI. DIFFERENT KINDS OF CLOTHS.	118
VII. GOATS.	120

BOOK VI.

THE NATURAL HISTORY OF FISHES.

I. WHY THE LARGEST ANIMALS ARE FOUND IN THE SEA	121
II. THE FORMS OF THE TRITONS AND NEREIDS	124

CHAP.	PAGE
III. THE BALÆNA AND THE ORCA	125
IV. DOLPHINS	127
V. THE VARIOUS KINDS OF TURTLES	133
VI. DISTRIBUTION OF AQUATIC ANIMALS INTO VARIOUS SPECIES .	134
VII. FISHES VALUED FOR THE TABLE	139
VIII. PECULIAR FISHES	142
IX. BLOODLESS FISHES	144
X. VARIOUS KINDS OF SHELL-FISH.	151
XI. PEARLS	153
XII. THE NATURE OF THE MUREX AND THE PURPLE	160
XIII. BODIES WHICH HAVE A THIRD NATURE, THAT OF THE ANIMAL AND VEGETABLE COMBINED.	164
XIV. THE SHARK	165
XV. OYSTER-BEDS, AND FISH-PRESERVES	167
XVI. LAND-FISHES	169
XVII. HOW THE FISH CALLED THE ANTHIAS IS TAKEN	170
XVIII. THE ECHENEIS AND THE TORPEDO.	172
XIX. THE INSTINCTS AND PECULIARITIES OF FISHES	174
XX. CORAL	176
XXI. THE VARIOUS KINDS OF OYSTERS	177

BOOK VII.

THE NATURAL HISTORY OF BIRDS.

I. THE OSTRICH	180
II. THE PHŒNIX.	181
III. THE EAGLE	182
IV. THE VULTURE AND THE HAWK	187
V. THE CROW, THE RAVEN, AND THE OWL	191
VI. THE WOODPECKER OF MARS	193
VII. THE PEACOCK AND THE ROOSTER	194
VIII. THE GOOSE	197
IX. CRANES	198
X. STORKS AND SWANS	199
XI. FOREIGN BIRDS WHICH VISIT US	201
XII. SWALLOWS	203
XIII. BIRDS WHICH TAKE THEIR DEPARTURE FROM US IN WINTER.	204
XIV. THE NIGHTINGALE	206
XV. THE HALCYONS: THE HALCYON DAYS THAT ARE FAVORABLE TO NAVIGATION	208

CHAP.	PAGE
XVI. THE INSTINCTIVE CLEVERNESS DISPLAYED BY BIRDS IN THE CONSTRUCTION OF THEIR NESTS	209
XVII. THE ACANTHYLLIS AND THE PARTRIDGE	210
XVIII. PIGEONS	213
XIX. DIFFERENT MODES OF FLIGHT AND PROGRESSION IN BIRDS	215
XX. STRANGE AND FABULOUS BIRDS	216
XXI. THE ART OF CRAMMING POULTRY.—AVIARIES.	224
XXII. PECULIARITIES OF ANIMALS	226

BOOK VIII.

THE VARIOUS KINDS OF INSECTS.

I. THE EXTREME SMALLNESS OF INSECTS.	232
II. WHETHER INSECTS BREATHE, AND WHETHER THEY HAVE BLOOD	234
III. BEES	236
IV. THE MODE IN WHICH BEES WORK	238
V. THE MODE OF GOVERNMENT OF THE BEES.	242
VI. WASPS AND HORNETS.	244
VII. THE SILK-WORM	245
VIII. SPIDERS	246
IX. LOCUSTS	248
X. ANTS.	250

BOOK IX.

THE NATURAL HISTORY OF METALS.

I. GOLD	252
II. THE ORIGIN OF GOLD RINGS	254
III. COINS OF GOLD.	256
IV. SILVER	260
V. MIRRORS	261
VI. INSTANCES OF IMMENSE WEALTH	263
VII. INSTANCES OF LUXURY IN SILVER PLATE.	265
VIII. BRONZE	268
IX. STATUES OF BRONZE	271
X. THE MOST CELEBRATED COLOSSAL STATUES IN THE CITY.	277
XI. OF THE MOST CELEBRATED WORKS IN BRONZE, AND OF THE ARTISTS WHO EXECUTED THEM.	280
XII. IRON	287
XIII. AN ACCOUNT OF PAINTINGS AND COLORS	289

CHAP.	PAGE
XIV. THE EARLIEST PAINTERS	292
XV. ARTISTS WHO PAINTED WITH THE PENCIL	296
XVI. VARIOUS OTHER KINDS OF PAINTING	311
XVII. THE INVENTORS OF THE ART OF MODELLING	313
XVIII. WORKS IN POTTERY	315
XIX. SCULPTURE	318
XX. OBELISKS	323
CONCLUSION.—ITALY	326



LIST OF ILLUSTRATIONS.

	PAGE
VIEW OF NAPLES AND MT. VESUVIUS	<i>Frontispiece.</i>
THE INDIAN ELEPHANT	43
AFRICAN ELEPHANT.— <i>Loxodonta Africana</i>	66
GAMBIAN LION.— <i>Leo Gambianus</i>	72
WILD CAT.— <i>Felis Catus</i>	75
MARGAY.— <i>Leopardus Tigrinus</i>	77
JAGUAR.— <i>Leopardus Onca</i>	78
TIGER.— <i>Tigris Regalis</i>	79
CAMEL.— <i>Camelus Arábicus</i>	80
GIRAFFE.— <i>Giraffa Camelopárdalis</i>	81
INDIAN RHINOCEROS.— <i>Rhinoceros Unicornis</i>	82
KEITTOA, OR SLOAN'S RHINOCEROS.— <i>Rhinóceros Keittoa</i>	83
VIPER, OR ADDER.— <i>Pelias Berus</i>	87
HIPPOTAMUS, OR ZEEKOE.— <i>Hippopotamus Amphibius</i>	91
COMMON MOUSE.— <i>Mus Músculus</i> (White, Brown and Pied Varieties)	92
CARIBOU.— <i>Larandus Rangifer</i>	95
SYRIAN BEAR, OR DUBB.— <i>Ursus Isabellinus</i>	99
HEDGEHOG.— <i>Erinaceus Europæus</i>	100
WILD BOAR.— <i>Sus Scrofa</i>	101
SILVERY GIBBON.— <i>Hylóbatés Leuciscus</i>	102
THE ORANG-OUTAN.— <i>Simia Sátyrus</i>	103
MALTESE DOG.— <i>Canis Familiáris</i>	105
THIBET DOG.— <i>Canis Familiáris</i>	106
MUSTANG	109
ZEBRA.— <i>Asinus Zebra</i>	110
ASS.— <i>Asinus Vulgáris</i>	111
MERINO, OR SPANISH SHEEP	116
MUSK OX.— <i>Ovibos Moschátus</i>	119
SEA-ELEPHANT.— <i>Morunga proboscidea</i>	122
RORQUAL.— <i>Physalus Böops</i>	126
SPERMACETI WHALE.— <i>Cátodon Macrocéphalus</i>	126
DOLPHIN.— <i>Delphinus Delphis</i>	130
GROUP OF SEALS	135

	PAGE
LONG-SPINED CHETODON.— <i>Heinochus Monoceros</i>	141
FILAMENTOUS GUNARD.— <i>Pelur filamentosum</i>	143
OTTER.— <i>Lutra Vulgaris</i>	171
BALD, OR WHITE-HEADED EAGLE.— <i>Haliaëtus Leucocephalus</i>	183
MARTIAL EAGLE.— <i>Spizáëtus bellicosus</i>	186
GROUP OF FALCONS	189
STORK.— <i>Ciconia Alba</i>	200
SPOTTED KING FISHER.— <i>Céryle Guttáta</i>	217
RHINOCEROS HORNBILL.— <i>Búceros Rhinoceros</i>	218
KING PENGUIN.— <i>Aptenodytes Pennantii</i>	222
GIGANTIC SALAMANDER.— <i>Sieboldia Maxima</i>	226
HEMIGALE.— <i>Hemigale Hardwickii</i>	227
GROUP OF RODENT ANIMALS.	229
THE CAT.— <i>Felis Domestica</i>	230
MERIAN'S OPOSSUM.— <i>Philander Dorsigerus</i>	251
PANDA, OR WAH.— <i>Aiúlrus Fulgens</i>	276
COLOSSUS AT RHODES	279

INTRODUCTION.

IN the little village of Como, in that province of Northern Italy called by the Romans "Gaul-this-side-the-Alps," was born, twenty-three years after the coming of our Lord, Caius Plinius Secundus, known to us by the shorter name of "Pliny." His boyhood was spent in his native province, but we find him in Rome in his sixteenth year attending the lectures of Apion, the grammarian. Like Herodotus he became a great traveller for those days, visiting Africa, Egypt and Greece, and in his twenty-third year he served in Germany under Pomponius Secundus, by whom he was greatly beloved, and was soon promoted to the command of a troop of cavalry. He appears to have remained in the army, journeying about extensively in Germany and Gaul, until he was twenty-eight years old, when he returned to Rome and devoted himself to the study of law. But his natural taste for literary work speedily developed itself, and, abandoning his forensic pursuits, he set to work upon a life of his friend Pomponius and an account of "The Wars in Germany," which filled twenty books when completed, no part of which is now extant. In the reign of Nero, Pliny was appointed procurator, or comptroller of the revenue, in Nearer Spain. During his absence upon this mission his brother-in-law, Caius Cæcilius, died, leaving one son, a boy ten years of age, Caius Plinius Cæcilius Secundus—afterwards a famous lawyer and the author of the "Letters"—whom he adopted immediately upon his return from Spain, A.D. 70. To this nephew we are indebted for nearly all we know of Pliny's personal character and mode of life, a very entertaining description of which he gives in a letter to his friend, Baebius Macer :

“It gives me great pleasure to find you such a reader of my uncle’s works as to wish to have a complete collection of them, and to ask me for the names of them all. I will act as index then, and you shall know the very order in which they were written, for the studious reader likes to know this. The first work of his was a treatise in one volume, ‘On the Use of the Dart by Cavalry;’ this he wrote when in command of one of the cavalry corps of our allied troops. It is drawn up with great care and ingenuity. Next came ‘The Life of Pomponius Secundus,’ in two volumes. Pomponius had a great affection for him, and my uncle thought he owed this tribute to his memory. ‘The History of the Wars in Germany’ was in twenty books, in which he gave an account of all the battles we were engaged in against that nation. A dream he had while serving in the army in Germany first suggested the design of this work to him. He imagined that Drusus Nero, who extended his conquests very far into that country, and there lost his life, appeared to him in his sleep, and entreated him to rescue his memory from oblivion. Next comes a work entitled ‘The Student,’ in three parts, which from their length spread into six volumes: a work in which is discussed the earliest training and subsequent education of the orator. His ‘Questions of Latin Grammar and Style,’ in eight books, was written in the latter part of Nero’s reign, when the tyranny of the times made it dangerous to engage in literary pursuits requiring freedom and elevation of tone. He completed the history which Aufidius Bassus left unfinished, and added to it thirty books. And lastly he has left thirty-seven books on *Natural History*, a work of great compass and learning, and as full of variety as nature herself. You will wonder how a man as busy as he was could find time to compose so many books, and some of them, too, involving such care and labor. But you will be still more surprised when you hear that he pleaded at the bar for some time, that he died in his fifty-sixth year, and that the inter-

vening time was employed partly in the execution of the highest official duties, and partly in attendance upon those emperors who honored him with their friendship. But he had a quick apprehension, marvellous power of application, and was of an exceedingly wakeful temperament. He always began to study at midnight at the time of the feast of Vulcan, not for the sake of good luck, but for learning's sake; in winter generally at one in the morning, but never later than two, and often at twelve. He was a most ready sleeper, insomuch that he would sometimes, whilst in the midst of his studies, fall off and then wake up again. Before day-break he used to wait upon Vespasian, who also used his nights for transacting business in, and then proceed to execute the orders he had received. As soon as he returned home, he gave what time was left to study. After a short and light refreshment at noon, agreeably to the good old custom of our ancestors, he would frequently in the summer, if he was disengaged from business, lie down and bask in the sun; during which time some author was read to him, while he took notes and made extracts, for out of every book he read he made extracts; indeed it was a maxim of his, that 'no book was so bad but some good might be got out of it.' When this was over, he generally took a cold bath, then some slight refreshment and a little nap. After this, as if it had been a new day, he studied till supper-time, when a book was again read to him, from which he would take down running notes. I remember once when his reader had mis-pronounced a word, one of my uncle's friends at the table made him go back to where the word was and repeat it; upon which my uncle said to his friend, 'You understood it, didn't you?' 'Yes,' said the other. 'Why then,' said he, 'did you make him go over it again? We have lost more than ten lines by this interruption.' Such an economist he was of time! In the summer he used to rise from supper by daylight, and in winter as soon as it was dark: a rule he observed as strictly as if it had

been a law of the state. Such was his manner of life amid the bustle and turmoil of the town: but in the country his whole time was devoted to study, except only when in the bath. When I say in the bath I mean while he was in the water, for all the while he was being rubbed and wiped, he was employed either in hearing some book read to him or in dictating himself. In going about anywhere, as though he were disengaged from all other business, he applied his mind wholly to that single pursuit. Always by his side was a short-hand * writer, with book and tablets, who, in the winter, wore a particular sort of warm gloves, that the sharpness of the weather might not occasion any interruption to my uncle's studies: and for the same reason, when in Rome, he was always carried in a chair. I recollect his once taking me to task for walking. 'You need not,' he said, 'lose these hours.' For he looked upon every hour as lost that was not given to study. Through this extraordinary application he found time to compose the several treatises I have mentioned, besides one hundred and sixty volumes of extracts which he left me in his will, consisting of a kind of common-place, written on both sides, in a very small hand, which renders the collection doubly voluminous. He used himself to tell us that when he was comptroller of the revenue in Spain, he could have sold these manuscripts to Largius Licinus for four hundred thousand sesterces (\$16,000), and then the collection was not so extensive as now. When you consider the books he has read, and the volumes he has written, are you not inclined to suspect that he never was engaged in public duties or was ever in the confidence of his prince? On the other hand,

* The Romans carried the art of short-hand to its highest perfection, as appears from the following epigram of Martial :

*"Currant verba licet, manus est velocius illis ;
Nondum lingua suum, dextra peregit opus."*

xiv. 208.

"Swift though the words, (the pen still swifter sped)
The hand has finished, ere the tongue has said."

when you are told how indefatigable he was in his studies, are you not inclined to wonder that he read and wrote no more than he did? For, on one side, what obstacles would not the business of a court throw in his way? and on the other, what might not such intense application effect? It amuses me when I hear myself called a studious man, who in comparison with him am the merest idler. But why do I mention myself, who am diverted from these pursuits by numberless affairs both public and private? Who among those whose whole lives are devoted to literary pursuits would not blush and feel himself the most confirmed of sluggards by the side of him? I see I have run out my letter farther than I had originally intended, which was only to let you know, as you asked me, what works he had left behind him. But I trust this will be no less acceptable to you than the books themselves, as it may, possibly, not only excite your curiosity to read his works, but also your emulation to copy his example, by some attempts of a similar nature. Farewell."

In his great work of thirty-seven books upon Natural History—the only one which has come down to us—Pliny has compiled a vast encyclopædia of all human knowledge of his time, comprising more than *twenty thousand subjects*, and necessitating, as he himself states, the perusal of two thousand volumes—almost all of which have perished—the works of five hundred authors, to which he has added countless matters derived from his personal enquiry, experience and observation. Among his enthusiastic admirers in modern times are the eminent naturalists, Cuvier and Buffon. The former in less extravagant but equally appreciative terms accords to Pliny a high place among the writers of classical antiquity. "The work of Pliny," he says, "is one of the most precious monuments that have come down to us from ancient times, and affords proof of an astonishing amount of erudition in one who was a warrior and a statesman. To appreciate with justice this vast and celebrated composition, it is necessary

to regard it in several points of view—with reference to the plan proposed, the facts stated, and the style employed. The plan proposed by the writer is of immense extent—it is his object to write not simply a Natural History in our restricted sense of the term, not an account merely, more or less detailed, of animals, plants, and minerals, but a work which embraces astronomy, physics, geography, agriculture, commerce, medicine, and the fine arts—and all these in addition to natural history properly so called; while at the same time he continually interweaves with his narrative information upon the arts which bear relation to man considered metaphysically, and the history of nations,—so much so indeed, that in many respects this work was the Encyclopædia of its age. It was impossible in running over, however cursorily, such a prodigious number of subjects, that the writer should not have made us acquainted with a multitude of facts, which, while remarkable in themselves, are the more precious from the circumstance that at the present day he is the only author extant who relates them. It is to be regretted however that the manner in which he has collected and grouped this mass of matter, has caused it to lose some portion of its value, from his mixture of fable with truth. But if Pliny possesses little merit as a critic, it is far otherwise with his talent as a writer, and the immense treasury which he opens to us of Latin terms and forms of expression: these, from the very abundance of the subjects upon which he treats, render his work one of the richest repositories of the Roman language. Wherever he finds it possible to give expression to general ideas or to philosophical views, his language assumes considerable energy and vivacity, and his thoughts present to us a certain novelty and boldness which tend in a very great degree to relieve the dryness of his enumerations, and, with the majority of his readers, excuse the insufficiency of his scientific indications. He is always noble and serious, full of the love of justice and virtue, detestation of cruelty and baseness,

of which he had such frightful instances before his eyes, and contempt for that unbridled luxury which in his time had so deeply corrupted the Roman people. For these great merits Pliny cannot be too highly praised, and despite the faults which we are obliged to admit in him when viewed as a naturalist, we are bound to regard him as one of the most meritorious of the Roman writers, and among those most worthy to be reckoned in the number of the classics who wrote after the reign of Augustus."

Among the later honors conferred upon Pliny was one which indirectly cost him his life—his appointment by Vespasian, A.D. 74, as prefect of the Roman fleet on the west coast of Italy. Three years later, in the great eruption of Mt. Vesuvius and the destruction of Herculaneum and Pompeii, he met his romantic end in the execution of his duty, the story of which is again graphically told by the younger Pliny in two letters to his friend Tacitus the historian:—

"Your request that I would send you an account of my uncle's death, in order to transmit a more exact relation of it to posterity, deserves my acknowledgments; for, if this accident shall be celebrated by your pen, the glory of it, I am well assured, will be rendered forever illustrious. And notwithstanding he perished by a misfortune, which, as it involved at the same time a most beautiful country in ruins, and destroyed so many populous cities, seems to promise him an everlasting remembrance, notwithstanding he has himself composed many and lasting works; yet I am persuaded, the mentioning of him in your immortal writings, will greatly contribute to render his name immortal. Happy I esteem those to be to whom by provision of the gods has been granted the ability either to do such actions as are worthy of being related or to relate them in a manner worthy of being read. My uncle was at that time with the fleet under his command at Misenum, in the Bay of Naples. On the 24th of August, about one in the afternoon, my mother desired

him to observe a cloud which appeared of a very unusual size and shape. He had just taken a turn in the sun, and, after bathing himself in cold water, and making a light luncheon, had gone back to his books : he immediately arose and went out upon a piece of rising ground, where he could get a better sight of this very uncommon appearance. A cloud was ascending from a mountain, afterwards found to be Vesuvius, the appearance of which I cannot more accurately describe than by likening it to that of a pine tree, for it shot up to a great height in the form of a very tall trunk, spreading itself out at the top into a sort of branch. It appeared sometimes bright and sometimes dark and spotted, according as it was either more or less impregnated with earth and cinders.* This phenomenon seemed to a man of such learning and research as my uncle extraordinary and worth further looking into. He accordingly ordered a light vessel to be got ready, and gave me leave, if I liked, to accompany him. I preferred to go on with my work ; and it so happened that he had himself given me something to write out. Just as he was coming out of the house, tablets in hand, he received a note from Rectina, the wife of Bassus, who was in the utmost alarm at the imminent danger which threatened her ; as her villa lay at the foot of Mount Vesuvius, there was no way of escape but by sea ; she earnestly entreated him therefore to come to her assistance. So he changed his first intention, and what he had begun from a philosophical, he now carried out in a noble and generous spirit. He ordered the galleys to put to sea, and went himself on board with an intention of assisting not only Rectina, but the several other towns which lay thickly strewn along that beautiful coast. Hastening then to the place from which others were fleeing in the

* It seems probable that this was the first eruption of Mount Vesuvius, at least of any consequence. Dio, indeed, and other ancient authors speak of it as burning before ; but still they describe it as covered with trees and vines, so that the eruptions must have been inconsiderable.

utmost terror, he steered his course direct to the point of danger, and with so much calmness and presence of mind as to be able to make and dictate his observations upon all the phenomena of that dreadful scene. He was now so close to the mountain that the cinders, which grew thicker and hotter the nearer he approached, fell into the ships, together with pumice-stones, and great black pieces of burning rock: they were in danger of getting aground by the sudden retreat of the sea, as well as from the vast fragments which rolled down from the mountain, and obstructed all the shore. Here for a moment he stopped to consider whether or not he should turn back; but when the pilot advised him to do so, he exclaimed, 'Fortune favors the brave; steer to Pomponianus.' Pomponianus was at Stabiae (now called Castellamare), separated by a bay, which the sea, after several insensible windings, forms with the shore. He had already sent his baggage on board the ships, for though he was not at that time in actual danger, yet being within sight of it, and extremely near, he determined, if it should in the least increase, to put to sea as soon as the wind, which was blowing dead in-shore, should go down. It was favorable, however, for carrying my uncle to Pomponianus, whom he found in the greatest consternation: he embraced him tenderly, encouraging and urging him to keep his spirits, and, the more effectually to soothe his fears by seeming unconcerned himself, ordered a bath to be got ready, bathed and sat down to supper with great cheerfulness, or at least, what is just as heroic, with every appearance of it. Meanwhile broad flames shone out in several places from Mount Vesuvius, which the darkness of the night contributed to render still brighter and clearer. My uncle, to soothe the apprehensions of his friend, assured him that it was only the burning of the villages, which the country people had abandoned to the flames: after this he retired to rest, and was so little disquieted as to fall into a sound sleep: for his breathing,

could not keep them steady, even by supporting them with large stones. The sea seemed to roll back upon itself, and to be driven from its banks by the convulsive motion of the earth ; it is certain at least that the shore was considerably enlarged, and several sea animals were left upon it. On the other side, a dreadful black cloud, broken with rapid, zigzag flashes, revealed behind it variously shaped masses of flame : these last were like sheet-lightning, but much larger. Upon this our Spanish friend, whom I mentioned above, addressing himself to my mother with great energy and urgency, said : ' If your brother be safe, he certainly wishes you may be so too : and if he has perished, it was his desire, no doubt, that you might both survive him : so why do you delay your escape a moment ? ' ' We could never think of our own safety,' said she, ' while we are uncertain of his.' Upon this our friend left us, and withdrew from the danger with the utmost precipitation. Soon afterwards, the cloud began to descend, and cover the sea. It had already surrounded and concealed the island of Capri and the promontory of Misenum. My mother now besought, urged, even commanded me to make my escape at any rate, which, as I was young, I might easily do ; as for herself, she said, her age and corpulency rendered all attempts of that sort impossible ; however, she would willingly meet death if she could have the satisfaction of seeing that she was not the occasion of mine. But I absolutely refused to leave her, and, taking her by the hand, compelled her to go with me. She complied with great reluctance, and not without many reproaches to herself for retarding my flight. The ashes now began to fall upon us, though in no great quantity. I looked back ; a dense, dark mist seemed to be following us, spreading itself over the country like a cloud. ' Let us turn out of the high-road,' I said, ' while we can still see, for fear that, should we fall in the road, we should be pressed to death in the dark, by the crowds that are following us.' We had scarcely sat down

when night came upon us, not such as we have when the sky is cloudy, or when there is no moon, but that of a room when it is shut up, and all the lights put out. You might hear the shrieks of women, the screams of children, and the shouts of men; some calling for their children, others for their parents, others for their husbands, and seeking to recognize each other by the voices that replied; one lamenting his own fate, another that of his family; some wishing to die, from the very fear of dying; some lifting their hands to the gods; but the greater part convinced that there were now no gods at all, and that the final, endless night of which we have heard had come upon the world.* Some augmented the real terrors by others imaginary or wilfully invented. I remember some who declared that one part of Misenum had fallen, and that another was on fire; it was false, but they found people to believe them. It now grew rather lighter, which we imagined to be not the forerunner of an approaching burst of flames, as in truth it was, but the return of day: however, the fire fell at a distance from us: then we were immersed again in thick darkness, and a heavy shower of ashes rained upon us, which we were obliged every now and then to stand up to shake off, otherwise we should have been crushed and buried in the heap. I might boast that, during all this scene of horror, not a sigh or expression of fear escaped me, for my support was grounded in that miserable, though mighty consolation, that all mankind were involved in the same calamity, and that I was perishing with the world itself. At last this dreadful darkness was dissipated by degrees, like a cloud or smoke; the real day returned, and even the sun shone out, though with a lurid light, as when an eclipse is coming on. Every object that presented itself to our eyes, now extremely

* The Stoic and Epicurean philosophers held that the world would eventually be destroyed by fire, and all things would fall into original chaos, not excepting even the national gods themselves from the destruction of this general conflagration.

weakened, seemed changed, being covered deep with ashes as with snow. We returned to Misenum, where we refreshed ourselves as well as we could, and passed an anxious night between hope and fear; though with a much larger share of the latter; for the earthquake still continued, and many frenzied persons ran up and down heightening their own and their friends' calamities by terrible predictions. However, my mother and I, notwithstanding the danger we had passed, and that which still threatened us, had no thoughts of leaving the place, till we could receive some news of my uncle.

“And now, please read this narrative without any view of inserting it in your history, of which it is not in the least worthy; indeed, you must lay it to your own request if my account does not appear worth even the trouble of a letter. Farewell.”

In the preparation of the most interesting parts of Pliny's Natural History for younger readers, I have had constant recourse for foot-notes to the annotations of those devoted students of Pliny—Cuvier, Bostock, and Ajasson, whose work can rarely be improved upon. The literal rendering of the original Latin text has been closely followed, and in all instances where the author's statements have proved in the light of modern science to be erroneous (unless evidently preposterous) attention has been called to the fact.

With this volume I reluctantly bring to completion the brief series of classical authors best adapted for the reading of boys and girls, in the preparation of which the greater part of my leisure hours during the past three years has been occupied. Plutarch, Herodotus, Pliny—a trio of illustrious names! Of how many can it be truly said, as of them, the world is wiser and better for their living?

NEW YORK CITY,

July 1, 1885.

Natural History of Pliny.

Book I.

DEDICATION.

CAIUS PLINIUS SECUNDUS TO HIS FRIEND TITUS VESPASIAN.

THIS treatise on Natural History, a novel work in Roman literature, which I have just completed, I have taken the liberty to dedicate to you, most gracious Emperor, an appellation peculiarly suitable to you, while, on account of his age, that of *great* is more appropriate to your Father;—

“For still thou ne’er wouldst quite despise
The trifles that I write;”

if I may be allowed to shelter myself under the example of Catullus, my fellow-countryman. For he, as you know, when his napkins* had been changed, expressed himself a little harshly, from his anxiety to show his friendship for his dear little Veranius and Fabius. At the same time this importunity of mine may effect, what you complained of my not having done in another too forward epistle of mine; it will put upon record, and let all the world know, with what kindness you exercise the imperial dignity. You have had the honor of a triumph, and of the censorship, have been six times consul, and have shared in the tribunate; and, what is still more

* The allusion, otherwise obscure, is to the fact that some friends of Catullus had filched a set of table-napkins, which had been given to him by Veranius and Fabius, and substituted others in their place.

honorable, whilst you have held them in conjunction with your Father, you have presided over the Equestrian order, and been the Prefect of the Prætorians: all this you have done for the service of the Republic, and, at the same time, have regarded me as a fellow-soldier and a messmate. Nor has the extent of your prosperity produced any change in you, except that it has given you the power of doing good to the utmost of your wishes. And whilst all these circumstances increase the veneration which other persons feel for you, with respect to myself, they have made me so bold, as to wish to become more familiar. You must, therefore, blame yourself for any fault of this kind that I may commit.

But, although I have laid aside my blushes, I have not gained my object; for you still awe me, and keep me at a distance, by the majesty of your understanding. In no one does the force of eloquence and of tribunitian oratory blaze out more powerfully! With what glowing language you thunder forth the praises of your Father! How dearly you love your Brother! How admirable is your talent for poetry! What a fertility of genius you possess, so as to enable you to imitate your Brother! But who is there that is bold enough to form an estimate on these points, if he is to be judged by you, and, more especially, if you are challenged to do so? For the case of those who merely publish their works is very different from that of those who expressly dedicate them to you. In the former case I might say, Emperor! why do you read these things? They are written only for the common people, for farmers or mechanics, or for those who have nothing else to do; why do you trouble yourself with them? Indeed, when I undertook this work, I did not expect that you would sit in judgment upon me; I considered your situation much too elevated for you to descend to such an office. Besides, we possess the right of openly rejecting the opinion of men of learning. Marcus Tullius Cicero himself, whose genius is beyond all competition, uses this privilege; and,

remarkable as it may appear, employs an advocate in his own defence:—"I do not write for very learned people; I do not wish my works to be read by Manius Persius, but by Junius Congus." And if Lucilius, who first introduced the satirical style, applied such a remark to himself, and if Cicero thought proper to borrow it, and that more especially in his treatise "De Republica," how much reason have I to do so, who have such a judge to defend myself against! And by this dedication I have deprived myself of the benefit of challenge; for it is a very different thing whether a person has a judge given him by lot, or whether he voluntarily selects one; and we always make more preparation for an invited guest, than for one that comes in unexpectedly.

I am well aware, that, placed as you are in the highest station, and gifted with the most splendid eloquence and the most accomplished mind, even those who come to pay their respects to you, do it with a kind of veneration: on this account I ought to be careful that what is dedicated to you should be worthy of you. But the country people, and, indeed, some whole nations offer milk to the Gods, and those who cannot procure frankincense substitute in its place salted cakes; for the Gods are not dissatisfied when they are worshipped by every one to the best of his ability. But my temerity will appear the greater by the consideration, that these volumes, which I dedicate to you, are of such inferior importance. For they do not admit of the display of genius, nor, indeed, is mine one of the highest order; they admit of no excursions, nor orations, nor discussions, nor of any wonderful adventures to tickle the fancy of the reader. The nature of things, and life as it actually exists, are described in them; and often the lowest department of it; so that, in very many cases, I am obliged to use rude and foreign, or even barbarous terms, and these often require to be introduced by a kind of preface. And, besides this, my road is not a beaten track, nor one which the mind is much disposed to travel over.

There is no one among us who has ever attempted it, nor is there any one individual among the Greeks who has treated of all the topics. Most of us seek for nothing but amusement in our studies, while others are fond of subjects that are of excessive subtilty, and completely involved in obscurity. My object is to treat of all those things which the Greeks include in the Encyclopædia, which, however, are either not generally known or are rendered dubious from our ingenious conceits. And there are other matters which many writers have given so much in detail that we quite loathe them. It is, indeed, no easy task to give novelty to what is old, and authority to what is new; brightness to what is become tarnished, and light to what is obscure; to render what is slighted acceptable, and what is doubtful worthy of our confidence; to give to all a natural manner, and to each its peculiar nature. It is sufficiently honorable and glorious to have been willing even to make the attempt, although it should prove unsuccessful.

I have included in thirty-six books twenty thousand topics, all worthy of attention, gained by the careful perusal of one hundred select authors, and of about two thousand volumes, of which a few only are in the hands of the studious, on account of the obscurity of the subjects. To these I have made considerable additions of things, which were either not known to my predecessors, or which have been lately discovered. Nor can I doubt but that there still remain many things which I have omitted; for I am a mere mortal, and one that has many occupations. I have, therefore, been obliged to compose this work at interrupted intervals, by night as well as by day, so that you will find that I have not been idle even during this period. The day I devote to you, exactly portioning out my sleep to the necessity of my health, and contenting myself with this reward, that while we are musing on these subjects, as Varro says, we are adding to the length of our lives; for life properly consists in being awake.

I consider it to be courteous and to indicate an ingenuous modesty, to acknowledge the sources whence we have derived assistance, and not to act as most of those have done whom I have examined. For I must inform you, that in comparing various authors with each other, I have discovered, that some of the latest and most dignified writers have transcribed, word for word, from former works, without making any acknowledgment; not avowedly rivalling them, in the manner of Virgil, or with the candor of Cicero, who, in his treatise “De Republica,” professes to coincide in opinion with Plato, and in his Essay on Consolation for his Daughter, says that he follows Crantor, and, in his Offices, Panæcius; volumes, which, as you well know, ought not merely to be always in our hands, but to be learned by heart. For it is surely the mark of a perverted mind and a bad disposition, to prefer being caught in a theft to returning what we have borrowed, especially when we have acquired capital, by usurious interest.

The Greeks were wonderfully happy in their titles. One work they called *Κηρίον*, which means that it was as sweet as a honeycomb; another *Κέρας Ἀμαλθείας*, or Cornu Copiæ, so that you might expect to get even a draft of pigeon’s milk from it. Then they have their Flowers, their Muses, Magazines, Manuals, Gardens, Pictures, and Sketches, all of them titles for which a man might be tempted even to forfeit his bail. But when you enter upon the works, O ye Gods and Goddesses! how full of emptiness! Our duller countrymen have merely their Antiquities, or their Examples, or their Arts. I think one of the most humorous of them has his Nocturnal Studies. Varro, indeed, is not much behind him, when he calls one of his satires A Trick and a Half,* and another, Turning the Tables. Diodorus was the first among the Greeks who laid aside this trifling manner and named his history The Library.

* “Sesculysse” and “Flextabula;” literally, Ulysses and a Half, and Bend-table.

Apion, the grammarian,—he whom Tiberius Cæsar called the Trumpeter of the World, but would rather seem to be the Bell of the Town-Crier,—supposed that every one to whom he inscribed any work would thence acquire immortality. I do not regret not having given my work a more fanciful title.

That I may not, however, appear to inveigh so completely against the Greeks, I should wish to be considered under the same point of view with those inventors of the arts of painting and sculpture, of whom you will find an account in these volumes, whose works, although they are so perfect that we are never satisfied with admiring them, are inscribed with a temporary title, such as “Apelles, or Polycleetus, was doing this;” implying that the work was only commenced and still imperfect, and that the artist might benefit by the criticisms that were made on it and alter any part that required it, if he had not been prevented by death. It is also a great mark of their modesty, that they inscribed their works as if they were the last which they had executed, and as still in hand at the time of their death. I think there are but three works of art which are inscribed positively with the words “such a one executed this;” of these I shall give an account in the proper place. In these cases it appears, that the artist felt the most perfect satisfaction with his work, and certainly these pieces have excited the envy of every one.

I freely admit, that much may be added to my works; not only to this, but to all which I have published. By this admission I hope to escape from the carping critics, and I have the more reason to say this, because I hear that there are certain Stoics and Logicians, and also Epicureans (from the Grammarians I expected as much), who are virulent against the little work I published on Grammar.* But I well know, that even a woman once wrote against Theophrastus, a man

* Pliny the younger, in one of his letters (iii. 5), where he enumerates all his uncle's publications, informs us, that he wrote “a piece of criticism in eight books, concerning ambiguity of expression.” Melmoth's Pliny, i. 136.

so eminent for his eloquence that he obtained from it his name, which signifies the Divine * Speaker.

Because the public good requires that you should be spared as much as possible from all trouble, I have subjoined to this epistle the contents of each of the following books, and have used my best endeavors to prevent your being obliged to read them all through. And this, which was done for your benefit, will also serve the same purpose for others, so that any one may search for what he wishes, and may know where to find it. This has been already done among us by Valerius Soranus, in his work which he entitled "On Mysteries."

The 1st book is the Preface of the Work, dedicated to Titus Vespasian Cæsar.

The 2d is on the World, the Elements, and the Heavenly Bodies.

The 3d, 4th, 5th and 6th books are on Geography, in which is contained an account of the situation of the different countries, the inhabitants, the seas, towns, harbors, mountains, rivers, and dimensions, and the various tribes, some of which still exist while others have disappeared.

The 7th is on Man, and the Inventions of Man.

The 8th on the various kinds of Land Animals.

The 9th on Aquatic Animals.

The 10th on the various kinds of Birds.

The 11th on Insects.

The 12th on Odoriferous Plants.

The 13th on Exotic Trees.

The 14th on Vines.

The 15th on Fruit Trees.

The 16th on Forest Trees.

* His real name was Tyrtamus, but in consequence of the beauty of his style, he acquired the appellation by which he is generally known from the words *θεῖος φράσις*. Cicero refers to him in Brutus, 121; Orator, 17; and on various other occasions.

- The 17th on Plants raised in nurseries or gardens.
- The 18th on the nature of Fruits and the Cerealia, and the pursuits of the Husbandman.
- The 19th on Flax, Broom,* and Gardening.
- The 20th on the Cultivated Plants that are proper for food and for medicine.
- The 21st on Flowers and Plants that are used for making Garlands.
- The 22d on Garlands, and Medicines made from Plants.
- The 23d on Medicines made from Wine and from cultivated Trees.
- The 24th on Medicines made from Forest Trees.
- The 25th on Medicines made from Wild Plants.
- The 26th on New Diseases, and Medicines made, for certain Diseases, from Plants.
- The 27th on some other Plants and Medicines.
- The 28th on Medicines procured from Man and from large Animals.
- The 29th on Medical Authors, and on Medicines from other Animals.
- The 30th on Magic, and Medicines for certain parts of the Body.
- The 31st on Medicines from Aquatic Animals.
- The 32d on the other properties of Aquatic Animals.
- The 33d on Gold and Silver.
- The 34th on Copper and Lead, and the workers of Copper.
- The 35th on Painting, Colors, and Painters.
- The 36th on Marbles and Stones.
- The 37th on Gems.

* "Spartum;" this plant was used to make bands for the vines and cables for ships.

Book II.

AN ACCOUNT OF THE WORLD AND THE ELEMENTS.

CHAPTER I.

THE CHARACTER AND FORM OF THE WORLD.

THE world,* and whatever that be which we otherwise call the heavens, by the vault of which all things are enclosed, we must conceive to be a Deity, to be eternal, without bounds, neither created, nor subject, at any time, to destruction. To inquire what is beyond it is no concern of man, nor can the human mind form any conjecture respecting it. It is sacred, eternal, and without bounds, all in all; indeed including everything in itself; finite, yet like what is infinite; the most certain of all things, yet like what is uncertain, externally and internally embracing all things in itself; it is the work of nature, and itself constitutes nature.

To go out of this world and to search for what is beyond it would be madness, perfect madness, as if one who is ignorant of his own dimensions could ascertain the measure of anything else, or as if the human mind could see what the world itself cannot contain.

That the universe has the form of a perfect globe we learn from the name which has been uniformly given to it, as well as

* The term *Mundus* is used by Pliny, sometimes to mean *the earth* and its immediate appendages, the visible solar system; and at other times *the universe*; while in some instances it is used in a rather vague manner, without any distinct reference to either one or other of the above designations. I have usually translated it by the term *world*, as approaching nearest to the sense of the original.

from numerous natural arguments. For not only does a figure of this kind return everywhere into itself* and sustain itself, also including itself, requiring no adjustments, not sensible of either end or beginning in any of its parts, and is best fitted for that motion, with which, as will appear hereafter, it is continually turning round; but still more, because we perceive it, by the evidence of the sight, to be, in every part, convex and central, which could not be the case were it of any other figure.

The rising and the setting of the sun clearly prove, that this globe is carried round in the space of twenty-four hours, in an eternal and never-ceasing circuit, and with incredible swiftness. I am not able to say, whether the sound caused by the whirling about of so great a mass be excessive, and, therefore, far beyond what our ears can perceive, nor, indeed, whether the resounding of so many stars, all carried along at the same time and revolving in their orbits, may not produce a kind of delightful harmony of incredible sweetness.† To us, who are in the interior, the world appears to glide silently along, both by day and by night.

Various circumstances in nature prove to us, that there are impressed on the heavens innumerable figures of animals and of all kinds of objects, and that its surface is not perfectly polished like the eggs of birds, as some celebrated authors assert. This is evident to the eye; for, in one part, we have the figure of a wain, in others of a bear, of a bull, and of a letter;‡ while, in the middle of them, over our heads, there is a white circle.

With respect to the name, I am influenced by the unani-

* The astronomy of our author is derived mainly from Aristotle.

† This theory of the "music of the spheres" was maintained by Pythagoras, but was derided by Aristotle.

‡ The letter Δ, in the constellation of the triangle; but except in this one case, the constellations have no visible resemblance to the objects of which they bear the name.

mous opinions of all nations. For what the Greeks, from its being ornamented, have termed *κόσμος*, we, from its perfect and complete elegance, have termed *mundus*. The name *cælum*, no doubt, refers to its being engraved, as it were, with the stars, as Varro suggests. In confirmation of this idea we may adduce the Zodiac, in which are twelve figures of animals; through them it is that the sun has continued his course for so many ages.

I do not find that any one has doubted that there are four elements. The highest of these is supposed to be fire, and hence proceed the eyes of so many glittering stars. The next is that spirit, which both the Greeks and ourselves call by the same name, air.

It is by the force of this vital principle, pervading all things and mingling with all, that the earth, together with the fourth element, water, is balanced in the middle of space. These are mutually bound together, each remaining in its appropriate place by the never-ceasing revolution of the world.

Between this body and the heavens there are suspended, in this aërial spirit, seven stars, separated by determinate spaces, which, on account of their motion, we call planets or wandering bodies, although, in reality, none are less so. The sun is carried along in the midst of these, a body of great size and power, the ruler, not only of the seasons and of the different climates, but also of the stars themselves and of the heavens. When we consider his operations, we must regard him as the life, or rather the mind of the universe, the chief regulator and the God of nature; he also lends his light to the other stars. He is most illustrious and excellent, beholding all things and hearing all things—qualities which are ascribed to him exclusively by the prince of poets, Homer.*

* Iliad, iii. 277, and Od. xii. 323.

CHAPTER II.

OF GOD.

I CONSIDER it, therefore, an indication of human weakness to inquire into the figure and form of God. For whatever God be, if there be any God distinct from the world, and wherever he exists, he is all sense, all sight, all hearing, all life, all mind, and all within himself. To believe that there are a number of Gods, derived from the virtues and vices of man, as Chastity, Concord, Understanding, Hope, Honor, Clemency, and Fidelity; or, according to the opinion of Democritus, that there are only two, Punishment and Reward, indicates still greater folly. Human nature, weak and frail as it is, mindful of its own infirmity, has made these divisions, so that every one might have recourse to that which he supposed himself to stand more particularly in need of. Hence we find different names employed by different nations; the inferior deities are arranged in classes, and diseases and plagues are deified, in consequence of our anxious wish to propitiate them. It was from this cause that a temple was dedicated to Fever, at the public expense, on the Palatine Hill, and that an altar was erected to Good Fortune on the Esquiline. Hence we may understand how it comes to pass that there is a greater population of the Celestials than of human beings, since each individual makes a separate God for himself, adopting his own Juno and his own Genius. To suppose that some gods should be old and always gray-headed and others young and like children, some of a dark complexion, winged, lame, produced from eggs, living and dying on alternate days, is puerile and foolish enough. But it is the height of impudence to imagine that they have contests and quarrels, and that there are Gods of theft and of various crimes. To assist man is to be a God; this is the path to eternal glory. This is the path which the Roman

nobles formerly pursued, and this is the path which is now pursued by the greatest ruler of our age, Vespasian Augustus, he who has come to the relief of an exhausted empire, as well as by his sons. The ancient mode of remunerating those who deserved it was to regard them as Gods. For the names of all the Gods, as well as of the stars that I have mentioned above, have been derived from their services to mankind. And with respect to Jupiter and Mercury, and the rest of the celestial nomenclature, who does not admit that they have reference to certain natural phenomena?

But it is ridiculous to suppose, that the great head of all things, whatever it be, pays any regard to human affairs. Can we believe, or rather can there be any doubt, that it is not polluted by such a disagreeable and complicated office? It is not easy to determine which opinion would be most for the advantage of mankind, since we observe some who have no respect for the Gods, and others who carry it to a scandalous excess. They are slaves to foreign ceremonies; they carry on their fingers the Gods and the monsters whom they worship;* they condemn and they lay great stress on certain kinds of food; they impose on themselves dreadful ordinances, not even sleeping quietly. They do not marry or adopt children, or indeed do anything else, without the sanction of their sacred rites. There are others, on the contrary, who will cheat in the very Capitol, and will forswear themselves even by Jupiter Tonans,† and while these thrive in their crimes, the others torment themselves with their superstitions to no purpose.

Among these discordant opinions mankind have discovered for themselves a kind of intermediate deity, by which our scepticism concerning God is still increased. For all over the world, in all places, and at all times, Fortune is the only god

* The author here alludes to the figures of the Egyptian deities that were engraved on rings.

† His specific office was to execute vengeance on the impious.

whom every one invokes ; she alone is spoken of, she alone is accused and is supposed to be guilty ; she alone is in our thoughts, is praised and blamed, and is loaded with reproaches ; wavering as she is, conceived by the generality of mankind to be blind, wandering, inconstant, uncertain, variable, and often favoring the unworthy. To her are referred all our losses and all our gains, and in casting up the accounts of mortals she alone balances the two pages of our sheet. We are so much in the power of chance, that change itself is considered as a God, and the existence of God becomes doubtful.

But there are others who reject this principle and assign events to the influence of the stars, and to the laws of our nativity ; they suppose that God, once for all, issues his decrees and never afterwards interferes. This opinion begins to gain ground, and both the learned and the unlearned vulgar are falling into it. Hence we have the admonitions of thunder, the warnings of oracles, the predictions of sooth-sayers, and things too trifling to be mentioned, as sneezing and stumbling with the feet reckoned among omens. The late Emperor Augustus relates, that he put the left shoe on the wrong foot, the day when he was near being assaulted by his soldiers. And such things as these so embarrass improvident mortals, that among all of them this alone is certain, that there is nothing certain, and that there is nothing more proud or more wretched than man. For other animals have no care but to provide for their subsistence, for which the spontaneous kindness of nature is all-sufficient ; and this one circumstance renders their lot more especially preferable, that they never think about glory, or money, or ambition, and, above all, that they never reflect on death.

The belief, however, that on these points the Gods superintend human affairs is useful to us, as well as that the punishment of crimes, although sometimes tardy, from the Deity being occupied with such a mass of business, is never entirely remitted. And indeed this constitutes the great comfort in

this imperfect state of man, that even the Deity cannot do everything. For he cannot procure death for himself, even if he wished it, which, so numerous are the evils of life, has been granted to man as our chief good. Nor can he make mortals immortal, or recall to life those who are dead; nor can he effect, that he who has once lived shall not have lived, or that he who has enjoyed honors shall not have enjoyed them; nor has he any influence over past events but to cause them to be forgotten. And, if we illustrate the nature of our connection with God by a less serious argument, he cannot make twice ten not to be twenty, and many other things of this kind.

CHAPTER III.

THE DIMENSIONS OF THE WORLD.

THE stadium is equal to one hundred and twenty-five of our Roman paces, or six hundred and twenty-five feet. Posidonius supposes that there is a space of not less than forty stadia around the earth, whence mists, winds and clouds proceed; beyond this he supposes that the air is pure and liquid, consisting of uninterrupted light; from the clouded region to the moon there is a space of two million of stadia, and thence to the sun of five hundred million. It is in consequence of this space that the sun, notwithstanding his immense magnitude, does not burn the earth. Many persons have imagined that the clouds rise to the height of nine hundred stadia. These points are not completely made out, and are difficult to explain; but we have given the best account of them that has been published.

CHAPTER IV.

OF THE STARS WHICH APPEAR SUDDENLY, OR OF COMETS.

A FEW things still remain to be said concerning the world ; for stars are suddenly formed in the heavens themselves ; of these there are various kinds.

The Greeks name these stars *comets*, we name them *Cri-nitæ*, as if shaggy with bloody locks, and surrounded with bristles like hair. Some of them have a mane hanging down from their lower part, like a long beard, some vibrate like a dart with a very quick motion. It was one of this kind which the Emperor Titus described in his very excellent poem, as having been seen in his fifth consulship ; and this was the last of these bodies which has been observed. Some are short and pointed, of a pale color, and shine like a sword without any rays ; others of an amber color emit a few rays from their margin only. One kind exhibits the figure of a cask, appearing convex and emitting a smoky light ; another has the appearance of a horn ; it is like the one which was visible when the Greeks fought at Salamis. Occasionally you see one like a burning torch ; and again one like a horse's mane ; the latter often has a very rapid motion, like a circle revolving on itself. There is also a white comet, with silver hair, so brilliant that it can scarcely be looked at, exhibiting, as it were, the aspect of the Deity in a human form. There are some also that are shaggy, having the appearance of a fleece, surrounded by a kind of crown. There was one, where the appearance of a mane was changed into that of a spear ; it happened in the 109th olympiad, in the 398th year of the City.* The shortest time during which any one of them has been observed to be visible is seven days, the longest one hundred and eighty days.

* According to the most approved modern chronology, the middle of the 109th olympiad corresponds to the 211th year of the City, or 542 B.C.

Rome is the only place in the whole world where there is a temple dedicated to a comet—the one which was thought by the late Emperor Augustus to be auspicious to him, from its appearing during the games which he was celebrating in honor of Venus, not long after the death of his father Cæsar. He expressed his joy in these terms: “During the very time of these games of mine, a hairy star was seen during seven days, in the part of the heavens which is under the Great Bear. It rose about the eleventh hour of the day, was very bright, and was conspicuous in all parts of the earth. The common people supposed the star to indicate, that the soul of Cæsar was admitted among the immortal Gods.” This is what he proclaimed in public, but, in secret, he rejoiced at this auspicious omen, interpreting it as produced for himself; and, to confess the truth, it really proved a salutary omen for the world at large.

Some persons suppose that these stars are permanent and that they move through their proper orbits, but that they are only visible when they recede from the sun. Others suppose that they are produced by an accidental vapor together with the force of fire, and that, from this circumstance, they are liable to be dissipated.

CHAPTER V.

THE DOCTRINE OF HIPPARCHUS ABOUT THE STARS.

HIPPARCHUS, who can never be sufficiently commended, as one who more especially proved the relation of the stars to man, and that our souls are a portion of heaven, discovered a new star that was produced in his own age, and, by observing its motions on the day in which it shone, he was led to doubt whether this does not often happen, that those stars have motion which we suppose to be fixed. And the same individ-

ual attempted, what might seem presumptuous even in a deity, to number the stars for posterity and to express their relations by appropriate names; having previously devised instruments,* by which he might mark the place and the magnitude of each individual star. In this way it might be easily discovered, not only whether they were destroyed or produced, but whether they changed their relative positions, and likewise, whether they were increased or diminished; the heavens being thus left as an inheritance to any one, who might be found competent to complete his plan.

CHAPTER VI.

OF THE STARS WHICH ARE NAMED CASTOR AND POLLUX.

I HAVE seen, during the night-watches of the soldiers, a luminous appearance, like a star, attached to the javelins on the ramparts. They also settle on the yard-arms and other parts of ships while sailing, producing a kind of vocal sound, like that of birds flitting about. When they occur singly they are mischievous, so as even to sink the vessels, and if they strike on the lower part of the keel, setting them on fire. When there are two of them they are considered auspicious, and are thought to predict a prosperous voyage, as it is said that they drive away that dreadful and terrific meteor named Helena. On this account their efficacy is ascribed to Castor and Pollux, and they are invoked as gods. They also occasionally shine round the heads of men in the evening,† which is considered as predicting something very important. But there is great uncertainty respecting the cause of all these things, and they are concealed in the majesty of nature.

* Nothing is known respecting the nature of these instruments.

† This is said by Livy to have occurred to Servius Tullius while he was a child; lib. i. cap. 39; and by Virgil to Ascanius, *Æn.* ii. 632-5.

CHAPTER VII.

OF THUNDER AND LIGHTNING.

IT cannot be denied, that fire proceeding from the stars which are above the clouds, may fall on them, as we frequently observe on serene evenings, and that the air is agitated by the impulse, as darts, when they are hurled, whiz through the air. And when it arrives at the cloud, a discordant kind of vapor is produced, as when hot iron is plunged into water, and a wreath of smoke is evolved. Hence arise squalls. And if wind or vapor be struggling in the cloud, thunder is discharged; if it bursts out with a flame, there is a thunderbolt; if it be long in forcing out its way, it is simply a flash of lightning. By the latter the cloud is simply rent, by the former it is shattered. Thunder is produced by the stroke given to the condensed air, and hence it is that the fire darts from the chinks of the clouds. It is possible also that the vapor, which has risen from the earth, being repelled by the stars, may produce thunder, when it is pent up in a cloud; nature restraining the sound whilst the vapor is struggling to escape; but when it does escape, the sound bursting forth, as is the case with bladders that are distended with air. It is possible also that the spirit, whatever it be, may be kindled by friction, when it is so violently projected. It is possible that, by the dashing of the two clouds, the lightning may flash out, as is the case when two stones are struck against each other.

We have accounts of many different kinds of thunderbolts. Those which are dry do not burn objects, but dissipate them; while those which are moist do not burn, but blacken them. There is a third kind, which is called bright lightning, of a very wonderful nature, by which casks are emptied, without the vessels themselves being injured, or there being any other trace left of their operation. Gold,

copper, and silver are melted, while the bags which contain them are not in the least burned, nor even the wax seal much defaced. Among the prognostics which took place at the time of Catiline's conspiracy, Marcus Herennius, a magistrate of the borough of Pompeii, was struck by lightning when the sky was without clouds.

CHAPTER VIII.

NATURE OF THE EARTH.

NEXT comes the earth, on which alone of all parts of nature we have bestowed the name that implies maternal veneration. It is appropriated to man as the heavens are to God. She receives us at our birth, nourishes us when born, and ever afterwards supports us; lastly, embracing us in her bosom when we are rejected by the rest of nature, she then covers us with especial tenderness; rendered sacred to us, inasmuch as she renders us sacred, bearing our monuments and titles, continuing our names, and extending our memory, in opposition to the shortness of life. In our anger we imprecate her on those who are now no more, as if we were ignorant that she is the only being who can never be angry with man. The water passes into showers, is concreted into hail, swells into rivers, is precipitated in torrents; the air is condensed into clouds, rages in squalls; but kind, mild, and indulgent earth, always ministering to the wants of mortals, how many things do we compel her to produce spontaneously! What odors and flowers, nutritive juices, forms and colors! With what good faith does she render back all that has been entrusted to her! It is the vital spirit which must bear the blame of producing noxious animals; for the earth is constrained to receive the seeds of them, and to support them when they are produced. The fault lies in the evil nature which generates

them. The earth will no longer harbor a serpent after it has attacked any one, and thus she even demands punishment in the name of those who are indifferent about it themselves. She pours forth a profusion of medicinal plants, and is always producing something for the use of man.

But it must be acknowledged, that everything which the earth has produced, as a remedy for our evils, we have converted into the poison of our lives. For do we not use iron, which we cannot do without, for this purpose? But although this cause of mischief has been produced, we ought not to complain; we ought not to be ungrateful to this one part of nature. How many luxuries and how many insults does she not bear for us! She is cast into the sea, and, in order that we may introduce seas into her bosom, she is washed away by the waves. She is continually tortured for her iron, her timber, stone, fire, corn, and is even much more subservient to our luxuries than to our mere support. What indeed she endures on her surface might be tolerated, but we penetrate also into her bowels, digging out the veins of gold and silver, and the ores of copper and lead; we also search for gems and certain small pebbles, driving our trenches to a great depth. We tear out her entrails in order to extract the gems with which we may load our fingers. How many hands are worn down that one little joint may be ornamented! If the infernal regions really existed, certainly these burrows of avarice and luxury would have penetrated into them. And truly we wonder that this same earth should have produced anything noxious! But, I suppose, the savage beasts protect her and keep off our sacrilegious hands. For do we not dig among serpents and handle poisonous plants along with those veins of gold? But the Goddess shows herself more propitious to us, inasmuch as all this wealth ends in crimes, slaughter, and war, and that, while we drench her with our blood, we cover her with unburied bones; and being covered with these and her anger being thus appeased, she conceals the crimes of

mortals. I consider the ignorance of her nature as one of the evil effects of an ungrateful mind.

Every one agrees that it has the most perfect figure. We always speak of the ball of the earth, and we admit it to be a globe bounded by the poles. It has not indeed the form of an absolute sphere, from the number of lofty mountains and flat plains ; but if the termination of the lines be bounded by a curve, this would compose a perfect sphere. And this we learn from arguments drawn from the nature of things, although not from the same considerations which we made use of with respect to the heavens. For in these the hollow convexity everywhere bends on itself, and leans upon the earth as its centre. Whereas the earth rises up solid and dense, like something that swells up and is protruded outwards. The heavens bend towards the centre, while the earth goes from the centre, the continual rolling of the heavens about it forcing its immense globe into the form of a sphere.

On the question whether there be antipodes there is a great contest between the learned and the vulgar. We maintain, that there are men dispersed over every part of the earth, that they stand with their feet turned towards each other, that the vault of the heavens appears alike to all of them, and that they, all of them, appear to tread equally on the middle of the earth. If any one should ask, why those situated opposite to us do not fall, we directly ask in return, whether those on the opposite side do not wonder that we do not fall. But I may make a remark, that will appear plausible even to the most unlearned, that if the earth were of the figure of an unequal globe, like the seed of a pine, still it may be inhabited in every part.

But of how little moment is this, when we have another miracle rising up to our notice ! The earth itself is pendent and does not fall with us ; it is doubtful whether this be from the force of the spirit which is contained in the universe, or whether it would fall did not nature resist, by allowing of no

place where it might fall. For as the seat of fire is nowhere but in fire, nor of water except in water, nor of air except in air, so there is no situation for the earth except in itself, everything else repelling it. It is indeed wonderful that it should form a globe, when there is so much flat surface of the sea and of the plains. And this was the opinion of Dicæarchus, a peculiarly learned man, who measured the heights of mountains, under the direction of the kings, and estimated Pelion, which was the highest, at one thousand two hundred and fifty paces perpendicular, and considered this as not affecting the round figure of the globe. But this appears to me to be doubtful, as I well know that the summits of some of the Alps rise up by a long space of not less than fifty thousand paces. But what the vulgar most strenuously contend against is, to be compelled to believe that the water is forced into a rounded figure; yet there is nothing more obvious to the sight among the phenomena of nature. For we see everywhere, that drops, when they hang down, assume the form of small globes, and when they are covered with dust, or have the down of leaves spread over them, they are observed to be completely round; and when a cup is filled, the liquid swells up in the middle. But on account of the subtile nature of the fluid and its inherent softness, the fact is more easily ascertained by our reason than by our sight. And it is even more wonderful, that if a very little fluid only be added to a cup when it is full, the superfluous quantity runs over, whereas the contrary happens if we add a solid body, even as much as would weigh twenty denarii. The reason of this is, that what is dropt in raises up the fluid at the top, while what is poured on it slides off from the projecting surface. It is from the same cause that the land is not visible from the body of a ship when it may be seen from the mast; and that when a vessel is receding, if any bright object be fixed to the mast, it seems gradually to descend and finally to become invisible. And the ocean, which we admit to be without

limits, if it had any other figure, could it cohere and exist without falling, there being no external margin to contain it?

We must believe, that the great artist, Nature, has so arranged it, that as the arid and dry earth cannot subsist by itself and without moisture, nor, on the other hand, can the water subsist unless it be supported by the earth, they are connected by a mutual union. The earth opens her harbors, while the water pervades the whole earth, within, without, and above; its veins running in all directions, like connecting links, and bursting out on even the highest ridges; where, forced up by the air, and pressed out by the weight of the earth, it shoots forth as from a pipe, and is so far from being in danger of falling, that it bounds up to the highest and most lofty places. Hence the reason is obvious, why the seas are not increased by the daily accession of so many rivers.

The earth has, therefore, the whole of its globe girt, on every side, by the sea flowing round it. And this is not a point to be investigated by arguments, but what has been ascertained by experience.

The globe is divided into five parts, termed zones, and all that portion is subject to severe cold and perpetual frost, which is under the two extremities, about each of the poles, the nearer of which is called the north, and the opposite the south, pole. The middle of the earth, over which is the orbit of the sun, is parched and burned by the flame, and is consumed by being so near the heat. There are only two of the zones which are temperate, those which lie between the torrid and the frigid zones, and these are separated from each other, in consequence of the scorching heat of the heavenly bodies. It appears, therefore, that the heavens take from us three parts of the earth; how much the ocean steals is uncertain. The curve of the globe both reveals and conceals different objects from the inhabitants of its different parts. If the earth had been flat, everything would have been seen

at the same time, from every part of it, and the nights would not have been unequal; while the equal intervals of twelve hours, which are now observed only in the middle of the earth, would in that case have been the same everywhere.

Hence it is that there is not any one night and day the same, in all parts of the earth, at the same time; the intervention of the globe producing night, and its turning round producing day.

CHAPTER IX.

ITALY.

I AM by no means unaware that I may be justly accused of ingratitude and indolence, if I describe briefly and in a cursory manner the land which is at once the foster-child and the parent of all lands; chosen by the providence of the Gods to render even heaven itself more glorious,* to unite the scattered empires of the earth, to bestow a polish upon men's manners, to unite the discordant and uncouth dialects of so many different nations by the powerful ties of one common language, to confer the enjoyments of discourse and of civilization upon mankind, to become, in short, the mother-country of all nations of the Earth.

But how shall I commence this undertaking? So vast is the number of celebrated places (what man living could enumerate them all?), and so great the renown attached to each individual nation and subject, that I feel myself quite at a loss. The city of Rome alone, which forms a portion of it, a face well worthy of shoulders so beauteous, how large a work would it require for an appropriate description! And then, too, the coast of Campania, taken singly by itself! so blest with natural beauties and opulence, that it is evident that

* By adding its deified emperors to the number of its divinities.

when nature formed it she took a delight in accumulating all her blessings in a single spot—how am I to do justice to it? And then the climate, with its eternal freshness and so replete with health and vitality, the serenity of the weather so enchanting, the fields so fertile, the hillsides so sunny, the thickets so free from every danger, the groves so cool and shady, the forests with a vegetation so varying and so luxuriant, the breezes descending from so many a mountain, the fruitfulness of its grain, its vines, and its olives so transcendent; its flocks with fleeces so noble, its bulls with necks so sinewy, its lakes recurring in never-ending succession, its numerous rivers and springs which refresh it with their waters on every side, its seas so many in number, its havens and the bosom of its lands opening everywhere to the commerce of all the world, and eagerly stretching forth into the very midst of the waves, for the purpose of aiding as it were the endeavors of mortals!

For the present I forbear to speak of its genius, its manners, its men, and the nations whom it has conquered by eloquence and force of arms. The very Greeks themselves, a race fond in the extreme of expatiating on their own praises, have amply given judgment in its favor, when they named but a small part of it 'Magna Græcia.' But we must be content to do on this occasion as we have done in our description of the heavens; we must only touch upon some of these points, and take notice of but a few of its stars. I only beg my readers to bear in mind that I am thus hastening on for the purpose of giving a general description of everything that is known to exist throughout the whole earth.

I may premise by observing that this land very much resembles in shape an oak leaf, being much longer than it is broad; towards the top it inclines to the left, while it terminates in the form of an Amazonian buckler, in which the spot at the central projection is the place called Cocinthos, while it sends forth two horns at the end of its crescent-shaped

bays, Leucopetra on the right and Lacinium on the left. It extends in length one thousand and twenty miles, if we measure from the foot of the Alps at Prætoria Augusta, through the city of Rome and Capua to the town of Rhegium, which is situated on the shoulder of the Peninsula, just at the bend of the neck as it were. Its breadth is variable, being four hundred and ten miles between the two seas of the far north. At about the middle, and in the vicinity of the city of Rome, from the spot where the river Aternus flows into the Adriatic sea, to the mouth of the Tiber, the distance is one hundred and thirty-six miles, and a little less from Castrum-novum on the Adriatic sea to Alsium on the Tuscan; but in no place does it exceed two hundred miles in breadth.

CHAPTER X.

THE HYPERBOREANS.

IN the far North, beyond the Riphæan* mountains, is the region known by the name of Pterophoros,† because of the perpetual fall of snow there, the flakes of which resemble feathers; a part of the world which has been condemned by the decree of nature to lie immersed in thick darkness; suited for nothing but the generation of cold, and to be the asylum of the chilling blasts of the northern winds.

Behind these mountains, and beyond the region of the northern winds, there dwells, if we choose to believe it, a happy race, known as the Hyperborei,‡ a race that lives to

* Probably these mountains were a western branch of the Ural chain.

† From the Greek *πτεροφόρος*, “wing-bearing” or “feather-bearing.”

‡ This legendary race was said to dwell in the regions beyond Boreas, or the northern wind, which issued from the Riphæan mountains, the name of which was derived from *ρῆπαι* or “hurricanes” issuing from a cavern, and which these heights warded off from the Hyperboreans and sent to more southern nations. Hence they never felt the northern blasts, and enjoyed a

an extreme old age, and which has been the subject of many marvellous stories.* At this spot are supposed to be the hinges upon which the world revolves, and the extreme limits of the revolutions of the stars. Here we find light for six months together, given by the sun in one continuous day. To these people there is but one rising of the sun for the year, and that at the summer solstice,† and but one setting, at the winter solstice. This region, warmed by the rays of the sun, is of a most delightful temperature, and exempt from every noxious blast. The abodes of the natives are the woods and groves; the gods receive their worship singly and in groups, while all discord and every kind of sickness are things utterly unknown. Death comes upon them only when satiated with life; after a career of feasting, in an old age sated with every luxury, they leap from a certain rock there into the sea; and this they deem the most desirable mode of ending existence. Some writers have placed these people, not in Europe, but at the very verge of the shores of Asia. Others again have placed them midway between the two suns, at the spot where it sets to the Antipodes and rises to us; a thing however that cannot possibly be, in consequence of the vast tract of sea which there intervenes. Those writers who place them nowhere but under a day which lasts for six months, state that in the morning they sow, at mid-day they

life of supreme happiness and undisturbed repose. "Here," says Humboldt, "are the first views of a natural science which explains the distribution of heat and the difference of climates by local causes—by the direction of the winds—the proximity of the sun, and the action of a moist or saline principle."

* Pindar says, in the "Pythia," x. 56, "The Muse is no stranger to their manners. The dances of girls and the sweet melody of the lyre and pipe resound on every side, and wreathing their locks with the glistening bay, they feast joyously. For this sacred race there is no doom of sickness or of disease; but they live apart from toil and battles, undisturbed by the exacting Nemesis."

† Pomponius Mela, who asserts that the sun rises here at the vernal and sets at the autumnal equinox, is right in his position, and Pliny is incorrect.

reap, at sunset they gather in the fruits of the trees, and during the night conceal themselves in caves. Nor are we at liberty to entertain any doubts as to the existence of this race; so many authors are there who assert that they were in the habit of sending their first-fruits to Delos to present them to Apollo, whom they especially worship. Virgins used to carry them, who for many years were held in high veneration, and received the rites of hospitality from the nations that lay on the route; until at last, in consequence of repeated violations of good faith, the Hyperboreans came to the determination to deposit these offerings upon the frontiers of the people who adjoined them, and they in their turn were to convey them on to their neighbors, and so from one to the other, till they should have arrived at Delos. However, this custom, even, in time fell into disuse.

CHAPTER XI.

BRITANNIA.

OPPOSITE to the west coast of Europe is the island called Britannia, so celebrated in the records of Greece* and of our own country. It is situate to the north-west, and, with a large tract of intervening sea, lies opposite to Germany, Gaul, and Spain, by far the greater part of Europe. Its former name was Albion.† This island is distant from the coast of the nation of the Morini,‡ at the spot where the passage

* Britain was spoken of by some of the Greek writers as superior to all other islands in the world. Dionysius, in his *Periegesis*, says, "that no other islands whatsoever can claim equality with those of Britain."

† Said to have been so called from the whiteness of its cliffs opposite the coast of Gaul.

‡ The distance here given by Pliny is far too great, the shortest distance, from Dover to Calais, being 21 miles.

across is the shortest, fifty miles. Pytheas and Isidorus say that its circumference is 4875 miles. It is barely thirty years since any extensive knowledge of it was gained by the successes of the Roman arms, and even as yet they have not penetrated beyond the vicinity of the Caledonian* forest. Agrippa believes its length to be 800 miles, and its breadth 300; he also thinks that the breadth of Hibernia is the same, but that its length is less by 200 miles. This last island is situated beyond Britannia, the passage across being the shortest from the territory of the Silures,† a distance of thirty miles. Of the remaining islands none is said to have a greater circumference than one hundred and twenty-five miles. Among these there are the Orcades,‡ forty in number, and situated within a short distance of each other, the seven islands called Acmodæ.§ The most remote of all that we find mentioned is Thule, || in which, there is no night at the summer solstice, when the sun is passing through the sign of Cancer, while on the other hand at the winter solstice there is no day. Some writers are of opinion that this state of things lasts for six whole months together.

CHAPTER XII.

MOUNT ATLAS.

THROUGH the nation of the Autololes lies the road to Mount Atlas, the most fabulous locality even in Africa.

From the midst of the sands, according to the story, this

* Probably the Grampian range is here referred to.

† The people of South Wales.

‡ The Orkney Islands.

§ Probably the islands now known as the Shetlands.

|| The opinions as to the identity of ancient Thule have been numerous in the extreme. The common, and apparently the best founded opinion, is that Thule is the island of Iceland.

mountain * raises its head to the heavens ; rugged and craggy on the side which looks toward the shores of the ocean to which it has given its name, while on that which faces the interior of Africa it is shaded by dense groves of trees, and refreshed by flowing streams ; fruits of all kinds springing up there spontaneously to such an extent, as more than to satiate every possible desire. Throughout the daytime, no inhabitant is to be seen ; all is silent, like that dreadful stillness which reigns in the desert. A religious horror steals imperceptibly over the feelings of those who approach, and they feel themselves smitten with awe at the stupendous aspect of its summit, which reaches beyond the clouds, and well nigh approaches the very orb of the moon. At night, they say, it gleams with fires innumerable lighted up ; it is then the scene of the gambols of the Satyr crew, while it re-echoes with the notes of the flute and the pipe, and the clash of drums and cymbals. All this is what authors of high character have stated, in addition to the labors which Hercules and Perseus there experienced. The space which intervenes before you arrive at this mountain is immense, and the country quite unknown.

CHAPTER XIII.

THE ISLAND OF TAPROBANA.

TAPROBANA,† under the name of the “land of the Antipodes,” was long looked upon as another world: the age and

* Like others of the ancient writers, Pliny falls into the error of considering Atlas, not as an extensive chain of mountains, but as an isolated mountain, surrounded by sands. With reference to its height, the whole range declines considerably from west to east ; the highest summits in Morocco reaching to nearly 13,000 feet, in Tunis not 5000.

† It is now universally agreed among the learned that the island of Taprobana is the modern Ceylon.

the arms of Alexander the Great were the first to give satisfactory proof that it was an island. Onesicritus, the commander of his fleet, has informed us that the elephants of this island are larger, and better adapted for warfare than those of India; and from Megasthenes we learn that it is divided by a river, and that their country is more productive of gold and pearls of great size than even India. Eratosthenes has also given the dimensions of this island, as being seven thousand stadia in length, and five thousand in breadth: he states also that there are no cities, but villages to the number of seven hundred. It begins at the Eastern sea, and lies extended opposite to India, east and west. In former times when the navigation was confined to vessels constructed of papyrus with the tackle peculiar to the Nile, this island was supposed to be twenty days' sail from the country of the Prasii,* but the distance has been estimated at no more than seven days' sail,† reckoned at the speed which can be attained by vessels of our construction. The sea that lies between the island and the mainland is full of shallows, not more than six paces in depth; but in certain channels it is of such extraordinary depth, that no anchor has ever found a bottom. For this reason it is that the vessels are constructed with prows at either end; so that there may be no necessity for tacking while navigating these extremely narrow channels. The tonnage of these vessels is three thousand amphoræ. In traversing their seas, the people of Taprobana take no observations of the stars, and indeed the Great Bear is not visible to them; but they carry birds out to sea, which they let go from time to time, and so follow their course as they make for the land. They devote only four months in the year to the pursuits of navigation, and are

* A general term, probably, for the great peninsula of India, below the Ganges.

† It is probable that the passage here referred to is from Cape Comorin to Ceylon, and not from Cape Ramanan Cor, the nearest part of the continent.

particularly careful not to trust themselves on the sea during the next hundred days after our summer solstice, for in those seas it is at that time the middle of winter.

So much we learn from the ancient writers ; it has fallen to our lot, however, to obtain a still more accurate knowledge of these people ; for, during the reign of the Emperor Claudius, an embassy came from even this distant island to Rome. The circumstances under which this took place were as follows : Annius Plocamus had farmed from the treasury the revenues arising from the Red Sea. A certain freedman of his, while sailing around Arabia, was carried away by a gale from the north beyond the coast of Carmania. In the course of fifteen days he had drifted to Hippuros, a port of Taprobana, where he was most kindly and most hospitably received by the king ; and having, after a study of six months, become well acquainted with the language, was enabled to answer all his enquiries relative to the Romans and their emperor. But of all that he heard, the king was more particularly struck with surprise at our rigid notions of justice, on ascertaining that among the coins found on the captive, the denarii were all of equal weight, although the different figures on them plainly showed that they had been struck in the reigns of several emperors. By this circumstance especially, the king was prompted to form an alliance with the Romans, and accordingly sent to Rome an embassy, consisting of four persons, the chief of whom was Rachias.*

From these persons we learned that in Taprobana there are five hundred towns, and that there is a harbor that lies facing the south, and adjoining the city of Palæsimundus, the most famous city in the isle, the king's place of residence, and containing a population of two hundred thousand. They also informed us that in the interior there is a lake called Megisba, three hundred and seventy-five miles in circumfer-

* Possibly the word "Radijah," or "Rajah," denoting the rank which he held, may have been here taken by Pliny for his name.

ence, and containing islands which are fertile, though for pasturage only. In this lake they informed us two rivers take their rise, one of which, called Palæsimundus, flows into the harbor near the city of that name, by three channels, the narrowest of which is five stadia in width, the largest fifteen: while the other, Cydara by name, takes a direction northward, towards the Indian coast. We learned also that the nearest point of the Indian coast is a promontory known as Coliacum,* distant from the island four days' sail, and that midway between them lies the island of the Sun. They stated also that those seas are of a deep green tint; besides which, there are numerous trees growing at the bottom, so much so, that the rudders of the vessels frequently break off portions of their foliage.† They were as much astonished at the constellations which are visible to us, the Great Bear and the Pleiades,‡ as though they had now beheld a new expanse of the heavens; and they declared that in their country the moon can only be seen above the horizon§ from the eighth to its sixteenth day. They also stated that Canopus, a large bright star, gives light to them by night. But what surprised them more than anything else, was that the shadow of their bodies was thrown towards our hemisphere.|| They also informed us that the side of their island which lies opposite to India is ten thousand stadia in length, and runs in a southeasterly direction—that beyond the Emodian Mountains they

* Probably Cape Ramanan Cor, which is in reality the nearest point to the coast of Ceylon.

† He alludes to coral reefs, no doubt.

‡ The Romans evidently misunderstood their language, for, as Gosselin remarks, it is quite impossible that the Pleiades should be a constellation unknown at that time to the people of Ceylon; but, on the other hand, it would be equally true that the Great Bear was concealed from them.

§ This also originated in misapprehension of their language on the part of the Romans.

|| In Ceylon seven months in the year the shadows fell to the north, and during the remaining five to the south.

look towards * the Seræ, whose acquaintance they had also made in the pursuits of commerce ; that the father of Rachias had frequently visited their country, and that the Seræ always came to meet them on their arrival. These people, they said, exceeded the ordinary human height, had flaxen hair, and blue eyes, and made an uncouth sort of noise by way of talking, having no language of their own for the purpose of communicating their thoughts. The rest of their information relative to the Seræ was of a similar nature to that communicated by our merchants. It was to the effect that the merchandise on sale was left by them upon the opposite bank of a river on their coast, and it was then removed by the natives, if they thought proper to deal on terms of exchange. On no grounds ought luxury with greater reason to be detested by us, than if we only transport our thoughts to these scenes, and then reflect, what are its demands, to what distant spots it sends in order to satisfy them, and for how mean and how unworthy an end !

But yet Taprobana even, isolated as it is by nature from the rest of the world, is not exempt from our vices. Gold and silver are held in esteem even there. They have a marble which resembles tortoise-shell in appearance ; this, as well as their pearls and precious stones, is highly valued ; all our luxuries in fact, those even of the most exquisite nature, are there carried to the very highest pitch. They asserted that their wealth was much greater than ours, but admitted that we knew better than they how to obtain real enjoyment from opulence.

In this island no slavery exists ; they do not prolong their sleep to day-break, nor do they sleep during any part of the day ; their buildings are only of a moderate height from the ground ; the price of corn is always the same ; they have no courts of law and no litigation. Hercules is the deity whom

* The Seræ here spoken of must not be taken for the Seres or supposed Chinese.

they worship; and their king is chosen by the people, an aged man always, distinguished for his mild and clement disposition, and without children. If after he has been elected king, he happens to become the father of children, his abdication is the consequence; this is done that there may be no danger of the sovereign power becoming hereditary. Thirty advisers are provided for him by the people, and it is only by the advice of the majority of them that any man is condemned to capital punishment. Even then, the person so condemned has a right of appealing to the people, in which case a jury consisting of seventy persons is appointed. Should these acquit the accused, the thirty counsellors are no longer held in any estimation, but are visited with the greatest disgrace. The king wears the costume of Father Liber,* while the rest of the people dress like the natives of Arabia. If the king is found guilty of any offence, he is condemned to death; but no one slays him; all turn their backs upon him, and refuse to hold any communication or even discourse with him. Their festivals are celebrated with the chase, the most valued sports being the pursuit of the tiger and the elephant. The lands are carefully tilled; the vine is not cultivated there, but of other fruits there is great abundance. They take great delight in fishing, and especially in catching turtles; beneath the shells of which whole families find an abode, of such vast size are they to be found. These people look upon a hundred years as a comparatively short life. So much have we learned respecting Taprobana.

* Or "Bacchus." This means that he wears a long robe with a train; much like the dress, in fact, which was worn on the stage by tragic actors.

Book III.

MAN, HIS BIRTH AND HIS ORGANIZATION.

CHAPTER I.

MAN.

REMARKABLE as is the present state of the world, and of the countries, nations, seas, islands, and cities which it contains, the nature of the animated beings which exist upon it, is hardly in any degree less worthy of our contemplation than its other features; if, indeed, the human mind is able to embrace the whole of so diversified a subject. Our first attention is justly due to Man, for whose sake all other things appear to have been produced by Nature; though, on the other hand, with so great and so severe penalties for the enjoyment of her bounteous gifts, that it is far from easy to determine, whether she has proved to him a kind parent, or a merciless step-mother.

In the first place, she obliges him alone, of all animated beings, to clothe himself with the spoils of the others; while, to all the rest, she has given various kinds of coverings, such as shells, crusts, spines, hides, fur, bristles, hair, down, feathers, scales, and fleeces. The very trunks of the trees even, she has protected against the effects of heat and cold by a bark, which is, in some cases, twofold. Man alone, at the very moment of his birth cast naked upon the naked earth, she abandons to cries, to lamentations, and, a thing that is the case with no other animal whatever, to tears: this, too, from the very moment that he enters upon existence. But as for

laughter, why, by Hercules!—to laugh, if but for an instant only, has never been granted to man before the fortieth day from his birth, and even then it is looked upon as a miracle of precocity. Introduced thus to the light, man has fetters and swathings instantly put upon all his limbs,* a thing that falls to the lot of none of the brutes even that are born among us. Born to such singular good fortune, there on his back lies the animal which is destined to command all the others, fast bound hand and foot, and weeping aloud! such being the penalty which he has to pay on beginning life, and that for the sole fault of having been born. Alas! for the folly of those who can think after such a beginning as this, that they have been born for the display of vanity!

The earliest presage of future strength, the earliest bounty of time, confers upon him naught but the resemblance to a quadruped.† How soon does man gain the power of walking? How soon does he gain the faculty of speech? How soon is his mouth fitted for mastication? How long are the pulsations of the crown of his head to proclaim him the weakest of all animated beings? And then, the diseases to which he is subject, the numerous remedies which he is obliged to devise against his maladies, and those thwarted every now and then by new forms and features of disease. While other animals have an instinctive knowledge of their natural powers; some, of their swiftness of pace, some of their rapidity of flight, and some again of their power of swimming; man is the only one that knows nothing, that can learn nothing without being taught; he can neither speak, nor walk, nor eat—in short,

* We may hence conclude, that the practice of swathing young infants in tight bandages prevailed at Rome, in the time of Pliny, as it still does in France.

† This reminds us of the terms of the riddle proposed to Œdipus by the Sphinx: "What being is that, which, with four feet, has two feet and three feet, and only one voice; but its feet vary, and when it has most it is weakest?" to which he answered, That it is man, who is a quadruped in childhood, two-footed in manhood, and moving with the aid of a staff in old age.

he can do nothing, at the prompting of nature only, but weep. For this it is, that many have been of opinion, that it were better not to have been born, or if born, to have been annihilated at the earliest possible moment.

To man alone, of all animated beings, has it been given, to grieve, to him alone to be guilty of luxury and excess; and that in modes innumerable. Man is the only being that is a prey to ambition, to avarice, to an immoderate desire of life, to superstition,—he is the only one that troubles himself about his burial, and even what is to become of him after death. By none is life held on a tenure more frail; none are more influenced by unbridled desires for all things; none are sensible of fears more bewildering; none are actuated by rage more frantic and violent. Other animals, in fine, live at peace with those of their own kind; we only see them unite to make a stand against those of a different species. The fierceness of the lion is not expended in fighting with its own kind; the sting of the serpent is not aimed at the serpent;* and the monsters of the sea even, and the fishes, vent their rage only on those of a different species. But with man,—by Hercules! most of *his* misfortunes are occasioned by man.†

What is there that does not appear marvellous, when it comes to our knowledge for the first time? How many things, too, are looked upon as quite impossible, until they have been actually effected? But it is the fact, that every moment of our existence we are distrusting the power and the majesty of Nature, if the mind, instead of grasping her in her entirety, considers her only in detail. Not to speak of peacocks, the spotted skins of tigers and panthers, and the rich colors of so many animals, a trifling thing apparently to speak of, but of inestimable importance, when we give it due

* This is contrary to facts now well known.

† It was this feeling that prompted the common saying among the ancients, “*Homo homini lupus*”—“Man to man is a wolf;” and most true it is, that
 “Man’s inhumanity to man makes countless thousands mourn.”

consideration, is the existence of so many languages among the various nations, so many modes of speech, so great a variety of expressions ; that to another, a man who is of a different country, is almost the same as no man at all. And then, too, the human features and countenance, although composed of but some ten parts or a little more, are so fashioned, that among so many thousands of men, there are no two in existence who cannot be distinguished from one another, a result which no art could possibly have produced, when confined to so limited a number of combinations. In most points, however, of this nature, I shall not be content to pledge my own credit only, but shall confirm it in preference by referring to my authorities, which shall be given on all subjects of a nature to inspire doubt. My readers, however, must make no objection to following the Greeks, who have proved themselves the most careful observers, as well as of the longest standing.

CHAPTER II.

THE WONDERFUL FORMS OF DIFFERENT NATIONS.

THERE are certain tribes of the Scythians, and, indeed, many other nations, which feed upon human flesh. This fact itself might, perhaps, appear incredible, did we not recollect, that in the very centre of the earth, in Italy and Sicily, nations formerly existed with these monstrous propensities, the Cyclopes, and the Læstrygones, for example ; and that, very recently, on the other side of the Alps, it was the custom to offer human sacrifices, after the manner of those nations ; and the difference is but small between sacrificing human beings and eating them.

In the vicinity also of those who dwell in the northern regions, and not far from the spot from which the north wind

arises, and the place which is called its cave, and is known by the name of Geskleithron, the Arimaspi are said to exist, a nation remarkable for having but one eye, and that placed in the middle of the forehead. This race is said to carry on a perpetual warfare with the Griffins, a kind of monster, with wings, as they are commonly* represented, for the gold which they dig out of the mines, and which these wild beasts retain and keep watch over with a singular degree of cupidity, while the Arimaspi are equally desirous to get possession of it. Many authors have corroborated this fact, among the most illustrious of whom are Herodotus and Aristæas of Proconnesus.†

Beyond the other Scythian Anthropophagi, there is a country called Abarimon, situated in a certain great valley of Mount Imaus, the inhabitants of which are a savage race, whose feet are turned backwards, relatively to their legs: they possess wonderful velocity, and wander about indiscriminately with the wild beasts. We learn from Beeton, whose duty it was to take the measurements of the routes of Alexander the

* The figures of the Gryphons or Griffins are found not uncommonly on the friezes and walls at Pompeii. In the East, where there were no safe places of deposit for money, it was the custom to bury it in the earth; hence, for the purpose of scaring depredators, the story was carefully circulated that hidden treasures were guarded by serpents and dragons. There can be little doubt that these stories, on arriving in the western world, combined with the knowledge of the existence of gold in the Uralian chain and other mountains of the East, gave rise to the stories of the Griffins and the Arimaspi. It has been suggested that the Arimaspi were no other than the modern Tsheremis, who dwelt on the left bank of the Middle Volga, not far from the gold districts of the Uralian range. It has been conjectured, that the fabulous tales of the combats of the Arimaspi with the Griffins, were invented by the neighboring tribes of the Essedones, who were anxious to throw a mystery over the origin of the gold, that they might preserve the traffic in their own hands. The Altai Mountains, in the north of Asia, contain many gold mines, which are still worked, as well as traces of former workings.

† We have an account of the Arimaspi, and of Aristæas, in Herodotus, B, iv,

Great, that this people cannot breathe in any climate except their own, for which reason it is impossible to take them before any of the neighboring kings; nor could any of them be brought before Alexander himself.

The Anthropophagi, whom we have previously mentioned as dwelling ten days' journey beyond the Borysthenes, according to the account of Isigonus of Nicæa, were in the habit of drinking out of human skulls,* and placing the scalps, with the hair attached, upon their breasts, like so many napkins. The same author relates, that there is, in Albania, a certain race of men (the Albinoes), whose eyes are of a sea-green color, and who have white hair from their earliest childhood, and that these people see better in the night than in the day. He states also that the Sauromatae, who dwell ten days' journey beyond the Borysthenes, take food only every other day. Isigonus says there are among the Triballi and the Illyrii, some persons who have the power of fascination with the eyes, and can even kill those on whom they fix their gaze for any length of time, especially if their look denotes anger.

A still more remarkable circumstance is, the fact that these persons have two pupils in each eye. Apollonides says, that there are certain females of this description in Scythia, who are known as Bythiæ, and Phylarchus states that a tribe of the Thibii in Pontus, and many other persons as well, have a double pupil in one eye, and in the other the figure of a horse.† He also remarks, that the bodies of these persons will not sink in water,‡ even though weighed down by their

* One of the pleasures promised to the Gothic warriors, in the paradise of Odin, was to drink out of the skulls of their enemies.

† It is well known that nothing of this kind was ever observed in any human eye.

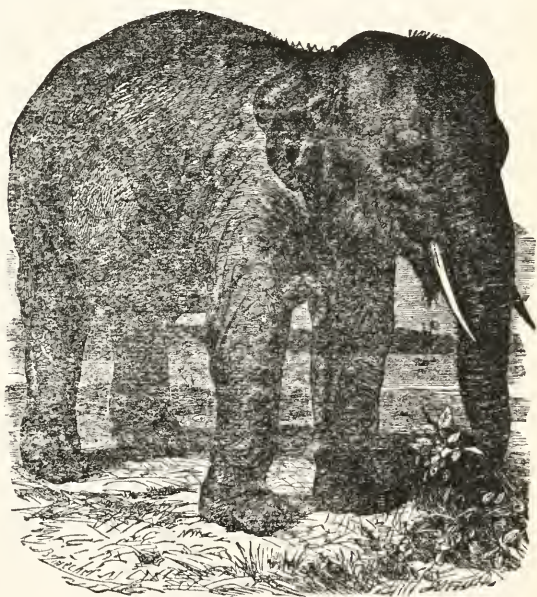
‡ In all ages, it has been a prevalent superstition, that those endowed with magical qualities will not sink in water, encouraged, no doubt, by the cunning of those who might wish to make the charge a means of wreaking their vengeance. If they sank, they were to be deemed innocent, but if they floated, they were deemed guilty, and handed over to the strong arm of the law.

garments. Cicero also, one of our own writers, makes the remark, that the glances of all women who have a double pupil is noxious.*

Not far from the city of Rome, in the territory of the Falisci, a few families are found, who are known by the name of Hirpi. These people perform a yearly sacrifice to Apollo, on Mount Soracte, on which occasion they walk over a burning pile of wood, without even being scorched. On this account, by virtue of a decree of the senate, they are always exempted from military service, and from all other public duties.†

Some individuals, again, are born with certain parts of the body endowed with properties of a marvellous nature. Such was the case with King Pyrrhus, the great toe of whose right foot cured diseases of the spleen, merely by touching the patient.‡

We are also informed, that this toe could not be reduced to ashes together with the other portions of his body;



THE INDIAN ELEPHANT.

* This remark is not contained in any of the works of Cicero now extant.

† Cuvier observes, that these people probably exercise some deception, analogous to that practised by a Spaniard, who exhibited himself in Paris, and professed to be incombustible, but who, eventually, was the dupe of his own quackery, and paid the penalty with his life.

‡ Plutarch relates these supposed facts in his life of Pyrrhus; they remind us of the supposed efficacy of the royal touch in curing the disease termed the "King's evil."

upon which it was placed in a coffer, and preserved in a temple.

India, and the region of *Æthiopia* more especially, abounds in wonders. In India the largest of animals are produced; their dogs, for example, are much bigger than those of any other country. The trees, too, are said to be of such vast height, that it is impossible to send an arrow over them. This is the result of the singular fertility of the soil, the equable temperature of the atmosphere, and the abundance of water; which, if we are to believe what is said, are such, that a single fig-tree* is capable of affording shelter to a whole troop of horse. The reeds here are also of such enormous length, that each portion of them, between the joints, forms a tube, of which a boat is made that is capable of holding three men.† It is a well-known fact, that many of the people here are more than five cubits in height.‡ These people never expectorate, are subject to no pains, either in the head, the teeth, or the eyes, and rarely in any other parts of the body; so well is the heat of the sun calculated to strengthen the constitution. Their philosophers, who are called *Gymnosophists*, remain in one posture, with their eyes immovably fixed upon the sun, from its rising to its setting, and, during the whole of the day, they are accustomed to stand in the burning sands on one foot, first one and then the other. According to the account of *Megasthenes*, dwelling upon a mountain called *Nulo*, there is a race of men who have their feet turned backwards, with eight toes on each foot.

On many of the mountains again, there is a tribe of men

* Popularly known as the "banyan tree."

† The *bambos arundinacea*, or bamboo cane, is a reed or plant of the grass kind, which frequently grows to the height of the tallest trees. The stem is hollow, and the parts of it between the joints are used by the natives to form their canoes. We have an account of them in *Herodotus*, B. iii.

‡ It does not appear that the stature of the Indians exceeds that of the inhabitants of the temperate zones.

who have the heads of dogs,* and clothe themselves with the skins of wild beasts. Instead of speaking, they bark; and, furnished with claws, they live by hunting and catching birds. According to the story, as given by Ctesias, the number of these people is more than a hundred and twenty thousand. He speaks also of another race of men, who are known as Monocoli, who have only one leg, but are able to leap with surprising agility. The same people are also called Sciapodæ, because they are in the habit of lying on their backs, during the time of the extreme heat, and protect themselves from the sun by the shade of their feet. These people, he says, dwell not very far from the Troglodytæ; to the west of whom again there is a tribe who are without necks, and have eyes in their shoulders.

Among the mountainous districts of the eastern parts of India, in what is called the country of the Catharcludi, we find the Satyr,† an animal of extraordinary swiftness. These go sometimes on four feet, and sometimes walk erect; they have also the features of a human being. On account of their swiftness, these creatures are never to be caught, except when they are either aged or sickly. Tauron gives the name of Choromandæ to a nation which dwell in the woods and have no proper voice. These people screech in a frightful manner; their bodies are covered with hair, their eyes are of a sea-green color, and their teeth like those of the dog. Eudoxus tells us, that in the southern parts of India, the men have feet a cubit in length; while those of the women

* This account probably originated in a species of monkey generally considered to be the baboon, with a projecting muzzle, called, from this circumstance, "cynocephalus," or the "Dog's head." This account of the cynocephali is repeated by Aulus Gellius. It is a pity that Pliny should have adopted so many ridiculous fables, on the doubtful authority of Ctesias.

† These are the great apes, which are found in some of the Oriental islands. We may suppose that this description is taken from some incorrect account of a large kind of ape; but it seems impossible to refer it to any particular species.

are so remarkably small, that they are called Struthopodes or sparrow-footed.*

Megasthenes places among the Nomades of India, a people who are called Scyritæ. These have merely holes in their faces instead of nostrils, and flexible feet, like the body of the serpent. At the very extremity of India, on the eastern side, near the source of the river Ganges, there is the nation of the Astomi, a people who have no mouths; their bodies are rough and hairy, and they cover themselves with a down † plucked from the leaves of trees. These people subsist only by breathing and by the odors which they inhale through the nostrils. They support themselves upon neither meat nor drink; when they go upon a long journey they only carry with them various odoriferous roots and flowers, and wild apples, that they may not be without something to smell at. But an odor, which is a little more powerful than usual, easily destroys them.‡

Beyond these people, and at the very extremity of the mountains, the Trispithami and the Pygmies are said to exist; two races which are but three spans in height, that is to say, twenty-seven inches only. They enjoy a salubrious atmosphere, and a perpetual spring, being sheltered by the mountains from the northern blasts; it is these people that Homer § has mentioned as being warred upon by cranes. It is said, that they are in the habit of going down every spring to the sea-shore, in a large body, seated on the backs of rams and goats, and armed with arrows, and there destroy the eggs and the young of those birds; that this expedition occupies them for the space of three months, and that otherwise it would be impossible for them to withstand the increas

* Can these be the Chinese?

† Either silk or cotton.

‡ Cuvier remarks, that these accounts are not capable of any explanation, being mere fables.

§ Iliad, B. iii. l. 3-6. Their story is also referred to by Ovid and Juvenal.

ing multitudes of the cranes. Their cabins, it is said, are built of mud, mixed with feathers and egg-shells. Aristotle says, that they dwell in caves; but, in all other respects, he gives the same details as other writers.

Isigonus informs us, that the Cyni, a people of India, live to their four hundredth year; and he is of opinion that the same is the case also with the Æthiopian Macrobiani, the Seræ, and the inhabitants of Mount Athos. In the case of these last, it is supposed to be owing to the flesh of vipers,* which they use as food; in consequence of which, they are free also from all noxious animals, both in their hair and their garments.

According to Onesicritus, in those parts of India where there is no shadow, the bodies of men attain a height of five cubits and two palms, and their life is prolonged to one hundred and thirty years; they die without any symptoms of old age, and just as if they were in the middle period of life. Ctesias mentions a tribe known by the name of Pandore, whose locality is in the valleys, and who live to their two hundredth year; their hair is white in youth, and becomes black in old age. On the other hand, there are some people joining up to the country of the Macrobiani, who never live beyond their fortieth year, and there is never more than one child in a family. This circumstance is also mentioned by Agatharchides, who states, in addition, that they live on locusts, and are very swift of foot. Clitarchus and Megasthenes give these people the name of Mandi, and enumerate as many as three hundred villages which belong to them.

* Pliny, elsewhere, speaks of the use of vipers' flesh as an article of diet, and gives some minute directions for its preparation. It was supposed to be peculiarly nutritive and restorative, and it has been prescribed for the same purpose by modern physicians. There is a medal in existence, probably struck by the Emperor Commodus, in order to commemorate the benefit which he was supposed to have derived from the use of the flesh of vipers.

Their women marry in the seventh year of their age, and become old at forty.

Artemidorus states that in the island of Taprobana, life is prolonged to an extreme length, while, at the same time, the body is exempt from weakness. Among the Calingæ, a nation also of India, the women marry at five years of age, and do not live beyond their eighth year. In other places again, there are men born with long hairy tails, and of remarkable swiftness of foot; while there are others that have ears so large as to cover the whole body.*

There is a tribe of Æthiopian Nomades dwelling on the banks of the river Astragus, towards the north, and about twenty days' journey from the ocean. These people are called Menismini; they live on the milk of the animal which we call cynocephalus,† and rear large flocks of these creatures. In the deserts of Africa, men are frequently seen to all appearance, and then vanish in an instant.

Nature, in her ingenuity, has created all these marvels in the human race, with others of a similar nature, as so many amusements to herself, though they appear miraculous to us. But who is there that can enumerate all the things that she brings to pass each day, I may almost say each hour? As a striking evidence of her power, let it be sufficient for me to have cited whole nations in the list of her prodigies.

Let us now proceed to mention some other particulars connected with Man, the truth of which is universally admitted.

It is a subject for pity, and even for a feeling of shame, when one reflects that the origin and life of the most vain of all animated beings is so frail: Thou man, who placest thy confidence in the strength of thy body, thou, who dost embrace the gifts of Fortune, and look upon thyself, not only as her fosterling, but even as her own born child, thou, whose

* Cuvier remarks that this story must have been originally told with reference to the race of large apes.

† The dog-faced ape—the baboon.

mind is ever thirsting for blood, thou who, puffed up with some success or other, dost think thyself a god—by how trifling a thing might thy life have been cut short! Even this very day, something still less even may have the same effect, the puncture, for instance, of the tiny sting of the serpent; or even, as befell the poet Anacreon, the swallowing of the stone of a raisin, or of a single hair in a draught of milk, by which the prætor and senator, Fabius, was choked, and so met his death. He only, in fact, will be able to form a just estimate of the value of life, who will always bear in mind the extreme frailty of its tenure.

CHAPTER III.

INSTANCES OF EXTRAORDINARY STRENGTH.

VARRO, speaking of persons remarkable for their strength, gives us an account of Tributanus, a celebrated gladiator, and skilled in the use of the Samnite arms; * he was a man of meagre person, but possessed of extraordinary strength. Varro makes mention of his son also, who served in the army of Pompey. He says, that in all parts of his body, even in the arms and hands, there was a network of sinews, extending across and across. The latter of these men, having been challenged by an enemy, vanquished him with a single finger of the right hand, and that unarmed, and then seized and dragged him to the camp. Vinnius Valens, who served as a centurion in the prætorian guard of Augustus, was in the habit of holding up wagons laden with casks, until they were emptied; and of stopping a carriage with one hand, and holding it back, against all the efforts of the horses to drag it

* The gladiators called Samnites, were armed with the peculiar "scutum," or oblong shield, used by the Samnites, a greave on the left leg, a sponger on the breast, and a helmet with a crest.

forward. He performed other wonderful feats also, an account of which may still be seen inscribed on his monument. Varro, also, gives the following statement: "Fusius, who used to be called the 'bumpkin Hercules,' was in the habit of carrying his own mule; while Salvius was able to mount a ladder, with a weight of two hundred pounds attached to his feet, the same to his hands, and two hundred pounds on each shoulder." I myself once saw,—a most marvellous display of strength,—a man of the name of Athanatus walk across the stage, wearing a leaden breast-plate of five hundred pounds weight, while shod with buskins of the same weight. When Milo, the wrestler, had once taken his stand, there was not a person who could move him from his position; and when he grasped an apple in his hand, no one could so much as open one of his fingers.

CHAPTER IV.

INSTANCES OF REMARKABLE AGILITY AND ACUTENESS OF SIGHT.

IT was considered a very great thing for Philippides to run one thousand one hundred and sixty stadia, the distance between Athens and Lacedæmon, in two days, until Amystis, the Lacedæmonian courier, and Philonides, the courier of Alexander the Great, ran from Sicyon to Elis in one day, a distance of thirteen hundred and five stadia.* In our own times, too, we are fully aware that there are men in the Circus, who are able to keep on running for a distance of one hundred and sixty miles; and that lately, in the consulship of Fonteius and Vipstanus, there was a child eight years of age, who, between morning and evening, ran a distance of seventy-

* Philippides must have gone one hundred and forty-two miles in two days, and the other one hundred and fifty miles in one day.

five miles. We become all the more sensible of these wonderful instances of swiftness, upon reflecting that Tiberius Nero, when he made all possible haste to reach his brother Drusus, who was then sick in Germany, reached him in three stages, travelling day and night on the road; the distance of each stage was two hundred miles.

Instances of acuteness of sight are to be found stated, which, indeed, exceed all belief. Cicero informs us, that the *Iliad** of Homer was written on a piece of parchment so small as to be enclosed in a nut-shell. He makes mention also of a man who could distinguish objects at a distance of one hundred and twenty-five miles. Marcus Varro says, that the name of this man was Strabo; and that, during the Punic war, from Lilybæum, the promontory of Sicily, he was in the habit of seeing the fleet come out of the harbor of Carthage, at a distance of over fifty miles, and could even count the number of the vessels. Callicrates used to carve ants and other small animals in ivory, so minute in size, that other persons were unable to distinguish their individual parts. Myrmecides also was famous in the same line;† this man made, of similar material, a chariot drawn by four horses, which a fly could cover with its wings; as well as a ship which might be covered by the wings of a tiny bee.

CHAPTER V.

VIGOR OF MIND, AND COURAGE.

THE most remarkable instance, I think, of vigor of mind in any man ever born, was that of Cæsar, the Dictator. I am not at present alluding to his valor and courage, nor yet his

* This statement must have been in some of his lost works.

† His works in ivory were said to have been so small, that they could scarcely be seen without placing them on a black surface.

exalted genius, which was capable of embracing everything under the face of heaven, but I am speaking of that innate vigor of mind, which was so peculiar to him, and that promptness which seemed to act like a flash of lightning. We find it stated that he was able to write or read, and, at the same time, to dictate and listen. He could dictate to his secretaries four letters at once, and those on the most important business; and, indeed, if he was busy about nothing else, as many as seven. He fought as many as fifty pitched battles, being the only commander who exceeded M. Marcellus in this respect, he having fought only thirty-nine. In addition, too, to the victories gained by him in the civil wars, one million one hundred and ninety-two thousand men were slain by him in his battles. For my own part, however, I am not going to set down as a subject for high renown what was really an outrage committed upon mankind, even though he may have been acting under the strong influence of necessity; and, indeed, he himself confesses as much, in his omission to state the number of persons who perished by the sword in the civil wars.

With much more justice we may award credit to Pompey the Great for having taken from the pirates no less than eight hundred and forty-six vessels: though at the same time, over and above the great qualities previously mentioned, we must with equal justice give Cæsar the peculiar credit of a remarkable degree of clemency, a quality, in the exercise of which, even to repentance, he excelled all other individuals whatsoever. The same person has left us one instance of magnanimity, to which there is nothing that can be at all compared. While one, who was an admirer of luxury, might perhaps on this occasion have enumerated the spectacles which he exhibited, the treasures which he lavished away, and the magnificence of his public works, I maintain that it was the great proof, and an incomparable one, of an elevated mind, for him to have burnt with the most scrupu-

lous carefulness the papers of Pompey, which were taken in his desk at the battle of Pharsalia, and those of Scipio, taken at Thapsus, without so much as reading them.

But now, as it belongs fully as much to the glorious renown of the Roman Empire, as to the victorious career of a single individual, I shall proceed on this occasion to make mention of all the triumphs and titles of Pompey: the splendor of his exploits having equalled not only that of those of Alexander the Great, but even of Hercules, and perhaps of Father Liber* even. After having recovered Sicily, where he first commenced his career as a partisan of Sylla, but in behalf of the republic, after having conquered the whole of Africa, and reduced it to subjection, and after having received for his share of the spoil the title of "Great,"† he was decreed the honors of a triumph; and he, though only of equestrian rank, a thing that had never occurred before, re-entered the city in the triumphal chariot; immediately after which, he hastened to the west, where he left it inscribed on the trophy which he raised upon the Pyrenees, that he had, by his victories, reduced to subjection eight hundred and seventy-six cities, from the Alps to the borders of Farther Spain. After having put an end to the civil war, which indeed was the primary cause of all the foreign ones, he, though still of only equestrian rank, again entered Rome in the triumphal chariot, having thus often proved himself a general before having been a common soldier. After this, he was despatched to the shores of all the various seas, and then to the East, whence he brought back to his country many titles of honor, resembling therein those who conquer at the sacred games—for, be it remembered, it is not they that are crowned, but their respect-

* Or Bacchus.—"Father Liber" is the name always given to him by Pliny.

† "Magnus." Plutarch states, that, on his return from Africa, Sylla saluted him with the name of "Magnus," which surname he ever afterwards retained. He also says that the law did not allow a triumph to be granted to any one who was not either consul or prætor.

ive countries. Upon the shrine in the temple of Minerva, which he consecrated from the spoils that he had gained, are these words:—"Cneius Pompeius Magnus, Imperator, having brought to an end a war of thirty years' duration, and having defeated, routed, put to the sword, or received the submission of, twelve millions two hundred and seventy-eight thousand men, having sunk or captured eight hundred and forty-six vessels, having received as allies one thousand five hundred and thirty-eight cities and fortresses, and having conquered all the country from the Mæotis to the Red Sea, dedicates this shrine as a votive offering due to Minerva." Such, in few words, is the sum of his exploits in the East. The following are the introductory words descriptive of the triumph which he celebrated on the 29th and 30th of September, in the consulship of M. Piso and M. Messala (B.C. 61): "After having delivered the sea-coast from the pirates, and restored the seas to the people of Rome, he enjoyed a triumph over Asia, Pontus, Armenia, Paphlagonia, Cappadocia, Cilicia, Syria, the Scythians, Judæa, the Albanians, Iberia, the island of Crete, the Basterni, and, in addition to all these, the kings Mithridates and Tigranes."

The most glorious, however, of all glories, resulting from these exploits, was, as he himself says, in the speech which he made in public relative to his previous career, that Asia Minor, which he received as the boundary of the empire, he left as its centre. If any one should wish, on the other hand, in a similar manner, to pass in review the exploits of Cæsar, who has shown himself greater still than Pompey, why then, he must enumerate all the countries in the world, a task, I may say, without an end!

A minute inquiry by whom the greatest valor has ever been exhibited, would lead to an endless discussion, especially if all the fables of the poets are to be taken for granted. Lucius Siccus Dentatus, who was tribune of the people in the consulship of Spurius Tarpeius and Aulus Aterius (B.C.

454), not long after the expulsion of the kings, has very numerous testimonies in his favor. This hero fought one hundred and twenty battles, was eight times victorious in single combat, and was graced with forty-five wounds in the front of the body, without one on the back. The same man also carried off thirty-four spoils, was eighteen times presented with the victor's spear,* and received twenty-five pendants, eighty-three torcs, or golden ornaments, one hundred and sixty bracelets, twenty-six crowns, a fisc or chest of money, ten prisoners, and twenty oxen. He followed in the triumphal processions of nine generals, who mainly owed their victories to his exertions; besides all which, a thing that I look upon as the most important of all his services, he denounced to the people Titus Romilius, one of the generals of the army, at the end of his consulship, and had him convicted of having made an improper use of his authority.

The military honors of Manlius Capitolinus would have been no less splendid than his, if they had not been all effaced at the close of his life. Before his seventeenth year, he had gained two spoils, and was the first of equestrian rank who received a mural crown; he also gained six civic crowns, thirty-seven donations, and had twenty-three scars on the fore-part of his body. He saved the life of P. Servilius, the master of the horse, receiving wounds on the same occasion in the shoulders and the thigh. Besides all this, unaided, he saved the Capitol, when it was attacked by the Gauls, and through that, the state itself; a thing that would have been the most glorious act of all, if he had not so saved it, in order that he might, as its king, become its master. But in all

* When a Roman overcame an enemy with whom he had been personally engaged, he took possession of some part of his armor and dress, which might bear testimony to the victory; this was termed the "spolium." The words "hasta pura," or victor's spear, signify a lance without an iron head. We are told that it was given to him who gained the first victory in a battle; it was also regarded as an emblem of supreme power, and as a mark of the authority which one nation claimed over another.

matters of this nature, although valor may effect much, fortune does still more.

No person living, in my opinion at least, ever excelled Marcus Sergius, although his great-grandson, Catiline, tarnished the honors of his name. In his second campaign he lost his right hand; and in two campaigns he was wounded three and twenty times—so severely that he could scarcely use either his hands or his feet; still, attended by a single slave, he afterwards served in many campaigns, though but an invalided soldier. He was twice taken prisoner by Hannibal, (for it was with no ordinary enemy that he would engage,) and twice did he escape from his captivity, after having been kept, without a single day's intermission, in chains and fetters for twenty months. On four occasions he fought with his left hand alone, two horses being slain under him. He had a right hand made of iron, and attached to the stump, after which he fought a battle, and raised the siege of Cremona, defended Placentia, and took twelve of the enemy's camps in Gaul. All this we learn from an oration of his, which he delivered when, in his prætorship, his colleagues attempted to exclude him from the sacred rites, on the ground of his infirmities.* What heaps upon heaps of crowns would he have piled up, if he had only had other enemies! For, in matters of this nature, it is of the first importance to consider in what times the valor of each man has fallen. What civic crowns did Trebia, what did the Ticinus, what did Lake Thrasymenus afford? What crown was there to be gained at Cannæ, where it was deemed the greatest effort of valor to have escaped from the enemy? Other persons have been conquerors of men, no doubt, but Sergius conquered even Fortune herself.

* Among the Jews and other nations of antiquity, it was considered an essential point for the priests to be without blemish, perfect and free from disease.

CHAPTER VI.

MEN OF REMARKABLE GENIUS AND WISDOM.

AMONG so many different pursuits, and so great a variety of works and objects, who can select the palm of glory for transcendent genius? Unless perchance we should agree in opinion that no more brilliant genius ever existed than the Greek poet Homer, whether we look at the happy subject of his work, or the excellence of its execution. For this reason it was that Alexander the Great, when he found among the spoils of Darius, the King of Persia, a casket for perfumes, enriched with gold, precious stones, and pearls, covered as he was with the dust of battle, deemed it beneath a warrior to make use of unguents, and, when his friends were pointing out to him its various uses, exclaimed, "Nay, but by Hercules! let the casket be used for preserving the poems of Homer;" that so the most precious work of the human mind might be placed in the keeping of the richest work of art. It was the same conqueror, too, who gave directions that the descendants and house of the poet Pindar should be spared, at the taking of Thebes. He likewise rebuilt Stagira, the native city of Aristotle, uniting to the extraordinary brilliancy of his exploits this speaking testimony of his kindliness of disposition.

Dionysius the tyrant, who otherwise manifested a natural propensity for cruelty and pride, sent a vessel crowned with garlands to meet Plato, that high-priest of wisdom; and on his disembarkation, received him on the shore, in a chariot drawn by four white horses. Isocrates was able to sell a single oration of his for twenty thousand dollars. When Æschines, the great Athenian orator, had read to the Rhodians the speech which he had made on the accusation of Demosthenes he then read the defence made by Demos-

thenes, through which he had been driven into exile among them. When they expressed their admiration of it, he exclaimed:—"How much more would you have admired it, if you had heard him deliver it himself;" a striking testimony, indeed, given in adversity, to the merit of an enemy!

The nobles of Rome have given their testimony in favor of foreigners, even. After Pompey had finished the war against Mithridates, he went to call at the house of Posidonius, the famous teacher of philosophy, but forbade the lictor to knock at the door, as was the usual custom; and he, to whom both the eastern and the western world had yielded submission, ordered the fasces to be lowered before the door of a learned man.

The elder Africanus ordered that the statue of Ennius should be placed in his tomb, and that the illustrious surname which he had acquired, I may say, as his share of the spoil on the conquest of the third part of the world, should be read over his ashes, along with the name of the poet. The Emperor Augustus, now deified, forbade the works of Virgil to be burnt, in opposition to the modest directions to that effect, which the poet had left in his will: a prohibition which was a greater compliment paid to his merit, than if he himself had recommended his works.

Marcus Varro is the only man, who, during his lifetime, saw his own statue erected. This was placed in the first public library that was ever built, and which was formed by Asinius Pollio with the spoils of our enemies. The fact of this distinction being conferred upon him by one who was in the first rank, both as an orator and a citizen, and at a time, too, when there was so great a number of men distinguished for their genius, was not less honorable to him, in my opinion, than the naval crown which Pompey bestowed upon him in the war against the pirates. The instances that follow among the Romans, if I were to attempt to reckon them, would be found to be innumerable; for it is the fact that this one

nation has furnished a greater number of distinguished men in every branch than all the countries of the world taken together.*

But what atonement could I offer to thee, Marcus Tullius Cicero, were I to be silent respecting thy name? or on what ground am I to pronounce thee especially præminent? On what, indeed, that can be more convincing than the most abundant testimony that was offered in thy favor by the whole Roman people? Thou speakest, and the tribes surrender the Agrarian law, or, in other words, their very subsistence; thou advisest them to do so, and they pardon Roscius, the author of the law for the regulation of the theatres, and, without any feelings of resentment, allow a mark to be put upon themselves by allotting them an inferior seat; thou entreatest, and the sons of proscribed men blush at having canvassed for public honors: before thy genius Catiline took to flight, and it was thou who didst proscribe Marcus Antonius. Hail, then, to thee, who wast the first of all to receive the title of Father of thy country, who wast the first of all, while wearing the toga, to merit a triumph, and who didst obtain the laurel for oratory. Great father, thou, of eloquence and of Latin literature! as the Dictator Cæsar, once thy enemy, wrote in testimony of thee,† thou didst require a laurel superior to every triumph! How far greater and more glorious to have enlarged so immeasurably the boundaries of the Roman genius, than those of its sway!

* Some of these are given by Valerius Maximus. It is very doubtful, however, if Greece did not greatly excel Rome in this respect.

† This remark is not found in any of Cæsar's works now extant.

Book IV.

THE NATURE OF TERRESTRIAL ANIMALS.

CHAPTER I.

ELEPHANTS; THEIR CAPACITY.

THE elephant is the largest of all the land animals, and in intelligence approaches the nearest to man. He understands the language of his country, obeys commands, and remembers all the duties which he has been taught. He is sensible alike of the pleasures of love and glory, and, to a degree that is rare among men even, possesses notions of honesty, prudence, and equity; he has a religious respect also for the stars, and a veneration for the sun and the moon.* It is said by some authors, that, at the first appearance of the new moon, herds of these animals come down from the forests of Mauritania to a river, the name of which is Amilo; and that they there purify themselves in solemn form by sprinkling their bodies with water; after which, having thus saluted the heavenly body, they return to the woods, carrying before them the young ones which are fatigued. They are sup-

* Cuvier remarks, that this account of the elephant's superior intelligence is exaggerated, it being no greater than that of the dog, if, indeed, equal to it. The opinion may perhaps have arisen from the dexterity with which the animal uses its trunk; but this is to be ascribed not to its own intelligence, but to the mechanical construction of the part. The Indians, from whom we presume that Pliny derived his account, have always regarded the elephant with a kind of superstitious veneration.

posed to have a notion, too, of the differences of religion; and when about to cross the sea, they cannot be prevailed upon to go on board the ship until their keeper has promised upon oath that they shall return home again. They have been seen, too, when worn out by disease, lying on their backs and throwing the grass up into the air, as if deputed the earth to intercede for them with its prayers. As a proof of their extreme docility, they pay homage to the king, fall upon their knees, and offer him the crown.

The first harnessed elephants that were seen at Rome, were in the triumph of Pompey the Great over Africa, when they drew his chariot; a thing that is said to have been done long before, at the triumph of Father Liber on the conquest of India. Procilius* says, that those which were used at the triumph of Pompey were unable to go in harness through the gate of the city. In the exhibition of gladiators which was given by Germanicus, the elephants performed a sort of dance with their uncouth and irregular movements. It was a common thing to see them throw arrows with such strength, that the wind was unable to turn them from their course, to imitate among themselves the combats of the gladiators, and to frolic through the steps of the Pyrrhic dance. After this, too, they walked upon the tight-rope,† and four of them would carry a litter in which lay a fifth, who pretended to be ill. They afterwards took their places at table, reclining upon couches which were filled with people; and so nicely did they manage their steps, that they did not so much as touch any of those who were drinking there.

* Plutarch informs us, that Pompey had resolved to have his chariot drawn by four elephants, but, finding the gate too narrow, he was obliged to use horses.

† However ill adapted the elephant may appear, from its size and form, for this feat, we have the testimony of Seneca, Suetonius, Dion Cassius, and Ælian, to the truth of the fact. Suetonius tells us that a horseman ascended a tight rope on an elephant's back.

It is a well-known fact,* that one of these animals, who was slower than usual in learning what was taught him, and had been frequently chastised with blows, was found conning over his lesson in the night-time. It is a most surprising thing also, that the elephant is able not only to walk up the tight-rope backwards, but to come down it as well, with the head foremost. Mutianus, who was three times consul, informs us that one of these animals had been taught to trace the Greek letters, and that he used to write in that language the following words: "I have myself written these words, and have dedicated the Celtic spoils."† Mutianus states also, that he himself was witness to the fact, that when some elephants were being landed at Puteoli and were compelled to leave the ship, being terrified at the length of the platform, which extended from the vessel to the shore, they walked backwards, in order to deceive themselves by forming a false estimate of the distance.

These animals are well aware that the only spoil that we are anxious to procure of them is the part which forms their weapon of defence, by Juba called their horns, but by Herodotus, a much older writer, as well as by general usage and more appropriately, their teeth. Hence it is that, when their tusks have fallen off, either by accident or from old age, they bury them in the earth.‡ These tusks form the only real ivory, and, even in these, the part which is covered by the flesh is merely common bone, and of no value whatever; though, indeed, of late, in consequence of the insufficient sup-

* Plutarch, in his treatise on the Shrewdness of Animals, tells us that this wonderful circumstance happened at Rome. But it would be curious to know in what way the elephant showed that he was "conning" over his lesson.

† Ælian informs us, that he had seen an elephant write Latin characters. Hardouin remarks, that the Greek would be *Αὐτὸς ἐγὼ τὰς ἐγραψα, λαφυρά τε Κελετὰ ἀνέθηκα.*

‡ Probably the great quantity of fossil ivory which has been found may have given rise to this tale.

ply of ivory, they have begun to cut the bones as well into thin plates. Large teeth, in fact, are now rarely found, except in India, the demands of luxury* having exhausted all those in our part of the world. The youthfulness of the animal is ascertained by the whiteness of the teeth. These animals take the greatest care of their teeth; they pay especial attention to the point of one of them, that it may not be found blunt when wanted for combat; the other they employ for various purposes, such as digging up roots and pushing forward heavy weights. When they are surrounded by the hunters, they place those in front which have the smallest teeth, that the enemy may think that the spoil is not worth the combat; and afterwards, when they are weary of resistance, they break off their teeth, by dashing them against a tree, and in this manner pay their ransom.†

It is a wonderful thing, that most animals are aware why it is that they are sought after, and what it is, that, under all circumstances, they have to guard against. When an elephant happens to meet a man in the desert, who is merely wandering about, the animal, it is said, shows himself both merciful and kind, and even points out the way. But the very same animal, if he meets with the traces of a man, before he meets the man himself, trembles in every limb, for fear of an ambush, stops short and scents the wind, looks around him, and snorts aloud with rage; and then, without trampling upon the object trodden upon, digs it up, and passes it to the next one, who again passes it to the one that follows, and so on from one to the other, till it comes to the very last. The herd then faces about, returns, and ranges itself in order of battle; so strongly does the odor, in all cases, attach itself to

* Tables and bedsteads were not only covered or veneered with ivory among the Romans, but, in the later times, made of the solid material, as we learn from Ælian and Athenæus.

† It is scarcely necessary to remark, that these statements respecting the sagacity of the elephant in connection with their teeth, are without foundation.

the human footstep, even though, as is most frequently the case, the foot itself is not naked. In the same way, too, the tigress, which is the dread of the other wild beasts, and which sees, without alarm, the traces even of the elephant itself, is said at once, upon seeing the footsteps of man, to carry off her whelps. How has the animal acquired this knowledge? And where has it seen him before, of whom it stands in such dread? Doubt there can be none, that forests such as it haunts are but little frequented by man! It is not to be wondered at, if they are astonished at the print of a footstep before unknown; but how should they know that there is anything that they ought to dread? And, what is still more, why should they dread even the very sight of man, seeing that they are so far superior to him in strength, size, and swiftness? No doubt, such is the law of Nature, such is the influence of her power—the most savage and the very largest of wild beasts have never seen that which they have reason to fear, and yet instantly have an instinctive feeling of dread, when the moment has come for them to fear.

Elephants always move in herds. The oldest takes the lead, and the next in age brings up the rear. When they are crossing a river, they first send over the smallest, for fear lest the weight of the larger ones may increase the depth of the channel, by working away the bed of the river. We learn from Antipater, that King Antiochus had two elephants, which he employed in his wars, and to which he had given the names of celebrated men; and that they were aware too of this mark of distinction. Cato, in his Annals, while he has passed over in silence the names of the generals, has given that of an elephant called Surus, which fought with the greatest valor in the Carthaginian army, and had lost one of its tusks. When Antiochus was sounding the ford of a river, an elephant named Ajax, which on other occasions had always led the van, refused to enter the stream; upon which proclamation was made, that the first rank should

belong to the one which should take the lead in passing over. One called Patroclus hazarded the attempt, and as a reward, the king presented it with some silver pendants, a kind of ornament with which these animals are particularly delighted, and assigned it all the other marks of command. Upon this, the elephant that had been degraded refused to take its food, and so preferred death to ignominy. Indeed their sense of shame is wonderful, and when one of them has been conquered, it flies at the voice of the conqueror, and presents him with earth and vervain.

Nor ought we to be surprised that such an animal should be sensible of affection: for Juba relates, that an elephant recognized, after the lapse of many years, an old man who had been its keeper in his youth. They would seem also to have an instinctive feeling of justice. King Bocchus once fastened thirty elephants to the stake, with the determination of wreaking his vengeance on them, by means of thirty others; but though men kept sallying forth among them to goad them on, he could not, with all his endeavors, force them to become the ministers of the cruelty of others.

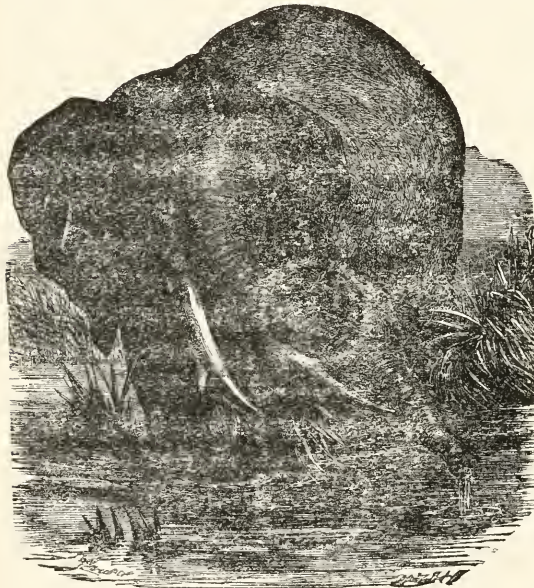
Elephants were seen in Italy, for the first time, in the war with King Pyrrhus, in the year of the City 472; they were called "Lucanian oxen," because they were first seen in Lucania. Seven years after this period, they appeared at Rome in a triumph. In the year 502 a great number of them were brought to Rome, which had been taken by the pontiff Metellus, in his victory gained in Sicily over the Carthaginians.* One hundred and forty-two of them were conveyed to our shores upon rafts, which were constructed on rows of hogsheads joined together. Verrius informs us, that they fought in the Circus, and that they were slain with javelins, for want of some better method of disposing of them; as the people neither liked to keep them nor yet to give them to the kings.

* There are coins extant struck to commemorate this victory, in which there is the figure of an elephant.

CHAPTER II.

THE COMBATS OF ELEPHANTS.

THERE is a famous combat mentioned of a Roman with an elephant, when Hannibal compelled our prisoners to fight against each other. The one who had survived all the others he placed before an elephant, and promised him his life if he should slay it; upon which the man advanced alone into the



AFRICAN ELEPHANT.—*Loxodonta Africana.*

arena, and, to the great regret of the Carthaginians, succeeded in doing so. Hannibal, however, thinking that the news of this victory might cause a feeling of contempt for these animals, sent some horsemen to kill the man on his way home. In our battles with Pyrrhus it was found, on making trial, that it was extremely easy to cut off the trunks of these animals. In the second

consulship of Pompey at the dedication of the temple of Venus Victrix, twenty elephants, or, as some say, seventeen, fought in the Circus against a number of Gætulians, who attacked them with javelins. One of these animals fought in a most astonishing manner; for, although pierced through the feet, it dragged itself on its knees towards the troop, and seizing their bucklers, tossed them aloft into the air: and as they came to the ground it greatly amused the spectators, for they whirled round and round in the air,

just as if they had been thrown up with a certain degree of skill, and not by the frantic fury of a wild beast. Another very wonderful circumstance happened ; an elephant was killed by a single blow. The weapon pierced the animal below the eye, and entered the vital part of the head. The elephants attempted, too, by their united efforts, to break down the enclosure, not without great confusion among the people who sat next to the iron gratings. It was in consequence of this circumstance, that Cæsar, the Dictator, when he was afterwards about to exhibit a similar spectacle, had the arena surrounded with trenches of water. These were lately filled up by the Emperor Nero, when he added the seats for the equestrian order. When, however, the elephants in the exhibition given by Pompey had lost all hopes of escaping, they implored the compassion of the multitude by attitudes which surpass all description, and with a kind of lamentation bewailed their unhappy fate. So greatly were the people affected by the scene, that, forgetting the general altogether, and his munificence displayed in their honor, the whole assembly rose up in tears, and showered curses on Pompey, of which he soon afterwards became the victim. They fought also in the third consulship of the Dictator Cæsar, twenty of them against five hundred foot soldiers. On another occasion twenty elephants, carrying towers, and each defended by sixty men, were opposed to the same number of foot soldiers as before, and an equal number of horsemen. Afterwards, under the Emperors Claudius and Nero, the last exploit that the gladiators performed was fighting single-handed with elephants.

The elephant is said to display such a merciful disposition towards animals that are weaker than itself, that, when it finds itself in a flock of sheep, it will remove with its trunk those that are in the way, lest it should unintentionally trample upon them. They will never do any mischief except when provoked, and they are of a disposition so sociable, that

they always move about in herds, no animal being less fond of a solitary life. When surrounded by a troop of horsemen, they place in the centre of the herd those that are weak, weary, or wounded, and then take the front rank each in its turn, just as though they acted under command and in accordance with discipline.

CHAPTER III.

THE WAY IN WHICH ELEPHANTS ARE CAUGHT.

IN India they are caught by the keeper guiding one of the tame elephants towards a wild one which he has found alone or has separated from the herd; upon which he beats it, and when it is fatigued mounts and manages it just the same way as the other. In Africa they take them in pit-falls; but as soon as an elephant gets into one, the others immediately collect boughs of trees and pile up heaps of earth, so as to form a mound, and then endeavor with all their might to drag him out. It was formerly the practice to tame them by driving the herds with horsemen into a narrow defile, artificially made in such a way as to deceive them by its length; and when thus enclosed by means of steep banks and trenches, they were rendered tame by the effects of hunger; as a proof of which, they would quietly take a branch that was extended to them by one of the men. At the present day, when we take them for the sake of their tusks, we throw darts at their feet, which are in general the most tender part of their body. The Troglodytæ, who inhabit the confines of Æthiopia, and who live entirely on the flesh of elephants procured by the chase, climb the trees which lie near the paths through which these animals usually pass. Here they keep a watch, and look out for the one which comes last in the train; leaping down upon its haunches, they seize its tail with the left hand,

and fix their feet firmly upon the left thigh. Hanging down in this manner, the man, with his right hand, hamstring the animal on one side, with a very sharp hatchet. The elephant's pace being retarded by the wound, he then cuts the tendons of the other ham, and makes his escape; all of which is done with the very greatest celerity.

Elephants of furious temper are tamed by hunger and blows, while other elephants are placed near to keep them quiet, when the violent fit is upon them, by means of chains. Elephants, when tamed, are employed in war, and carry into the ranks of the enemy towers filled with armed men; and on them, in a very great measure, depends the ultimate result of the battles that are fought in the East. They tread under foot whole companies, and crush the men in their armor. The very least sound, however, of the grunting of the hog terrifies them: when wounded and panic-stricken, they invariably fall back, and become no less formidable for the destruction which they deal to their own side, than to their opponents.

CHAPTER IV.

THE AGE OF THE ELEPHANT, AND OTHER PARTICULARS.

ARISTOTLE says that the elephant lives to the age of two hundred years, and in some instances the extraordinary age of three hundred years has been attained. The elephant is in his prime at his sixtieth year. They are especially fond of water, and wander much about streams, although they are unable to swim, in consequence of their bulk.* They are particularly sensitive to cold, which is really their greatest enemy. The trunks and foliage of trees are their favorite

* This remark is incorrect; when the water is sufficiently deep, they swim with ease; and if the end of the trunk remains exposed to the atmosphere, they can dive below the surface, or swim with the body immersed.

food. They throw down with a blow from their forehead, palms of exceedingly great height, and strip them of their fruit.

They eat with the mouth, but they breathe and smell with the proboscis which is not unaptly termed their "hand." This they use as a drinking cup, for they suck the fluid into the cavity of the trunk, and bend the trunk into the mouth, where the water is received and swallowed in the usual manner. They have the greatest aversion to the mouse of all animals, and quite loathe their food, as it lies in the manger, if they perceive that it has been touched by one of these. They experience the greatest torture if they happen to swallow, while drinking, a horseleech, an animal which people are beginning, I find, to call almost universally a "blood-sucker." The leech fastens upon the wind-pipe, and produces intolerable pain.

The skin of the back is extremely hard, that of the belly is softer. They are not covered with any kind of bristles, nor does the slender tail furnish them with any protection from the annoyance of flies; for vast as these animals are, they suffer greatly from them. Their skin is reticulated, and invites these insects by the odor it exhales. However, when a swarm of flies has settled on the skin, while it is extended and smooth, the elephant suddenly contracts it; and, in this way, the flies are crushed between the folds which are thus closed. This power serves them in place of tail, mane, and hair.

Luxury has discovered a curious recommendation in this animal, having found a particularly delicate flavor in the cartilaginous part of the trunk, for no other reason, in my belief, than because it fancies itself to be eating ivory. Tusks of enormous size are constantly to be seen in the temples; and in the extreme parts of Africa, on the confines of Æthiopia, they are employed as door-posts for houses.

CHAPTER V.

THE LION.

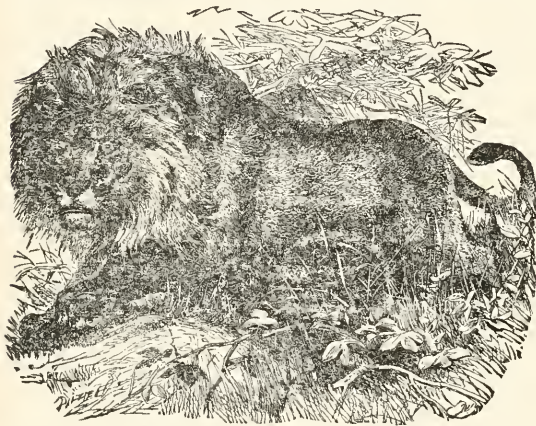
I THINK that I ought here to make some further mention of Aristotle, seeing that upon these subjects, I intend, in a great measure, to make him my guide. Alexander the Great, filled with a strong desire to become acquainted with the natures of animals, entrusted the prosecution of this design to Aristotle, a man who held the highest rank in every branch of learning; for which purpose he placed under his command some thousands of men in every region of Asia and Greece, comprising all those who followed the business of hunting, fowling, or fishing, or who had the care of parks, herds of cattle, the breeding of bees, fish-ponds, and aviaries, in order that no creature that was known to exist might escape his notice. By means of the information which he obtained from these persons, he was enabled to compose some fifty volumes, which are deservedly esteemed, on the subject of animals; of these I purpose to give an epitome, together with other facts with which Aristotle was unacquainted; and I beg the kind indulgence of my readers in their estimate of this work of mine, as by my aid they hastily travel through all the works of nature, and through the midst of subjects with which that most famous of all kings so ardently desired to be acquainted.

It is a remarkable fact, that pards, panthers, lions, and other animals of this kind have retractile claws, so that they can walk with the points of their nails concealed in a sheath in the paw, thus preventing them from becoming broken or blunted.

The noble appearance of the lion is especially to be seen in the male, who has the neck and shoulders covered with a mane.

The lion is the only one of all the wild beasts that shows

mercy to the suppliant; after it has conquered, it will spare, and when enraged, it will vent its fury rather upon men than women, and never upon children, unless when greatly pressed by hunger. It is the belief in Libya, that it fully understands the entreaties which are addressed to it. At all events, I have heard it asserted as a fact, that a female slave, who was returning from Gætulia, was attacked by a number of lions in the forests; upon which she summoned sufficient courage to address them, and said that she was a woman, a fugitive, helpless creature, that she implored the compassion of the most



GAMBIAN LION.—*Leo Gambianus.*

generous of animals, the one that has the command of all the others, and that she was a prey unworthy of their high repute—and by these means effectually soothed their ferocity.* There are various opinions on this point, as to whether it is through some peculiar disposition

of the animals, or merely by accident, that their fury is thus soothed by addressing them. As to what is alleged, too, about serpents, that they can be drawn from their holes by singing, and thus be made to yield themselves up to death, the truth or falsity of it has not by any means been satisfactorily ascertained.

The tail of the lion gives indication of the state of his feel-

* Although these stories of the generosity and clemency of the lion are in a great measure fabulous, still the accounts of those who have had the best opportunity of becoming acquainted with the character of different animals, agree in ascribing to the lion less ferocity and brutality, in proportion to its size and strength, than to other animals of the same family.

ings, just as the ears do in the horse; for these are the distinguishing signs which Nature has given to each of the most generous of animals. Hence it is that, when pleased, the tail is without motion, and the animal fawns upon those who caress him; a thing, however, that very rarely happens, for his usual state is that of rage. He begins by beating the earth with his tail; and as he becomes more furious, he lashes his sides, as if trying to excite himself. His greatest strength is situated in the breast. When his hunger is satisfied, he becomes harmless. The generous disposition of the lion is especially manifested in time of danger; at the moment when, despising all weapons, he long defends himself solely by the great terror which he inspires, starting up at last, not as though constrained by danger, but as if enraged by the mad folly of his adversaries. This, however, is a still more noble feature of his courage—however numerous the dogs and hunters may be that press upon him, as he makes his retreat he comes to a stand every now and then upon the level plain, while he is still in view, and scowls contemptuously upon them: but as soon as he has entered the thickets and dense forests, he scours away at the swiftest possible pace, as though aware that the place itself will shelter his shame. When in pursuit, the lion advances with a leap, but he does not do so when in flight. When wounded, he discovers, with wonderful sagacity, the person who struck the blow, and will find him out, however great may have been the multitude of his pursuers. If a person has thrown a dart at him, but has failed to inflict a wound, the animal seizes him, whirls him round and throws him to the ground, but without wounding him. When the lioness is defending her whelps, it is said that she fixes her eyes steadily on the ground, that she may not be frightened at the spears of the hunters. In all other respects, these animals are equally free from deceit and suspicion. They never look at an object obliquely, and they dislike being looked at themselves in such a manner. It is

generally believed, that, when the lion is dying, he bites at the earth, and sheds tears at his fate. Powerful, however, and fierce as this animal is, he is terrified by the motion of wheels or of an empty chariot, and still more on seeing the crest or hearing the crowing of a cock; but most of all, is he afraid of fire. The only malady to which the lion is subject, is loss of appetite; this, however, is cured by putting insults upon him, by means of the pranks of monkeys placed about him, a thing which rouses his anger; and as soon as he tastes their blood, he is relieved.

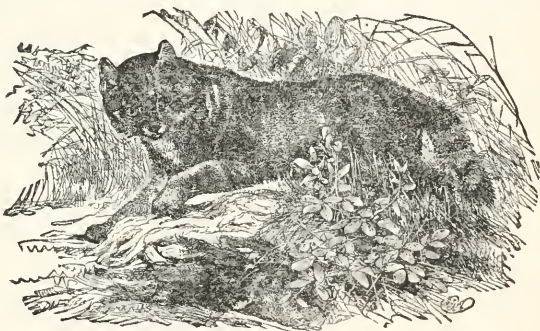
CHAPTER VI.

WONDERFUL FEATS PERFORMED BY LIONS.

IT was formerly a very difficult matter to catch the lion, and it was mostly done by means of pit-falls. In the reign, however, of the Emperor Claudius, accident disclosed a method which appears almost disgraceful to the name of such an animal; a Gætulian shepherd stopped a lion, that was rushing furiously upon him, by merely throwing his cloak over the animal; a circumstance which afterwards afforded an exhibition in the arena of the Circus, when the frantic fury of the animal was paralyzed in a manner almost incredible by a light covering being thrown over its head, so that it could be put into chains without the least resistance. This circumstance renders what was done by Lysimachus less wonderful, who strangled a lion, with which he had been shut up by command of Alexander.

Antony subjected lions to the yoke, and was the first at Rome to harness them to his chariot; and this during the civil war, after the battle on the plains of Pharsalia; not, indeed, without a kind of ominous presage, a prodigy that foretold at the time that generous spirits were about to be

subdued. But to have himself drawn along in this manner, in company with the actress Cytheris, was a thing that surpassed even the monstrous spectacles that were to be seen at that calamitous period. It is said that Hanno, one of the most illustrious of the Carthaginians, was the first who ventured to touch the lion with the hand, and to exhibit it in a tame state. It was on this account that he was banished; for it was supposed, that a man so talented and so ingenious would have it in his power to persuade the people to anything, and it was looked upon as unsafe to trust the liberties of the country to one who had so eminently triumphed over even ferocity itself. There have been some fortuitous occurrences cited which have given occasion to these animals to display their natural clemency. Mentor, a

WILD CAT.—*Felis Catus*.

native of Syracuse, was met in Syria by a lion, who rolled before him in a suppliant manner; though smitten with fear and desirous to escape, the wild beast on every side opposed his flight, and licked his feet with a fawning air. Upon this, Mentor observed on the paw of the lion a swelling and a wound; from which, after extracting a splinter, he relieved the creature's pain. There is a picture at Syracuse, which bears witness to the truth of this occurrence.

In the same manner, too, Elpis, a native of Samos, on landing from a vessel on the coast of Africa, observed a lion near the beach, opening his mouth in a threatening manner; upon which he climbed a tree, in the hope of escaping, while, at the same time, he invoked the aid of Father Liber; for it is the appropriate time for invocations when there is no room left for hope. The wild beast did not pursue him as he fled,

although he might easily have done so ; but, lying down at the foot of the tree, tried by the open mouth which had caused so much terror, to excite his compassion. It appeared that while he was devouring his food with too great avidity, a bone had stuck fast between his teeth, and he was perishing with hunger. Elpis, although he understood his mute entreaties, did not dare to risk trusting himself to so formidable a beast, so he remained stationary for some time, more from astonishment than from fear. At length, however, he descended from the tree and extracted the bone, the lion in the mean while extending his head, and aiding in the operation as far as it was necessary for him to do. The story goes on to say, that as long as the vessel remained off that coast, the lion showed his sense of gratitude by bringing to it whatever he had chanced to procure in the chase. In memory of this circumstance, Elpis consecrated a temple at Samos to Father Liber, which the Greeks, from the circumstance above related, called "the temple *κεχρηότος Διονύσου*," or "temple of the open-mouthed Bacchus." Can we wonder, after this, that the wild beasts should be able to recognize the footsteps of man, when of him alone of all animals they even hope for aid? For why should they not have recourse to others for assistance? Or how is it that they know that the hand of man has power to heal them? Unless, perhaps, it is that the violence of pain can force even wild beasts to risk everything to obtain relief.

Demetrius, the natural philosopher, relates an equally remarkable instance, in relation to a panther. The animal was lying in the middle of the road, waiting for some one to pass that way, when he was suddenly perceived by the father of one Philinus, an ardent lover of wisdom. Seized with fear, he immediately began to retreat ; while the beast rolled itself before him, evidently with the desire of caressing him, at the same time manifesting signs of grief, which could not be misunderstood even in a panther. The animal had young ones, which had happened to fall into a pit at some distance from

the place. The first dictates of compassion banished all fear, and the next prompted him to assist the animal. He accordingly followed her, as she gently drew him on by fixing her claws in his garment ; and as soon as he discovered what was the cause of her grief and the price of his own safety, he took the whelps out of the pit, and they followed her to the end of the desert ; whither he was escorted by her, frisking with joy and gladness, in order that she might more appropriately testify how grateful she was, and how little she had given him in return ; a mode of acting which is but rarely found even among men.

Facts such as these induce us to give some credit to what Democritus relates, who says that a man, called Thoas, was preserved in Arcadia by a dragon. When a boy, he had become much attached to it, and had reared it very tenderly ; but his father, being alarmed at the nature and monstrous size of the reptile, had it taken away and left in the desert. Thoas being here attacked by some robbers who lay in ambush, he was delivered from them by the dragon, which recognized his voice and came to his assistance. But as to what has been said respecting infants that have been exposed and nourished by the milk of wild beasts, as in the case of the founders of our city by a wolf, I am disposed to attribute such cases as these rather to the greatness of the destinies which have to be fulfilled, than to any peculiarity in the nature of the animals themselves.



MARGAY.—*Leopardus Tigrinus*.

CHAPTER VII.

PANTHERS AND TIGERS.

THE panther and the tiger are nearly the only animals that are remarkable for a skin distinguished by the variety of its spots; whereas others have them of a single color, appropriate to each species.



JAGUAR.—*Leopardus Onca.*

The lions of Syria alone are black. The spots of the panther are like small eyes, upon a white ground. It is said that all quadrupeds are terrified by the fierceness of their aspect; for which reason the creature conceals its head, and then springs unexpectedly upon its prey. It is said by some, that the panther has, on the shoulder, a spot which bears the form of the moon; and that, like it, it regularly increases

to full, and then diminishes to a crescent. At present we apply the general names of *varia* and *pard* to all the numerous species of this animal, which are very common in Africa and Syria. Some writers distinguish the panther as being remarkable for its whiteness: and as yet I have not observed any other difference between them.

There was an ancient decree of the senate, which prohibited animals being imported from Africa into Italy; but Cnæus

Aufidius, the tribune of the people, procured a law repealing this, which allowed of their being brought over for the games of the Circus. Scaurus, in his ædileship, was the first who sent over the parti-colored kind, one hundred and fifty in all; after which, Pompey sent four hundred and ten, and the late Emperor Augustus four hundred and twenty.

The same emperor was the first person who exhibited at Rome a tame tiger on the stage. This was in the consulship of Tubero and Fabius Maximus, at the dedication of the theatre of Marcellus, on the fourth day before the nones of May: the late Emperor Claudius exhibited four at one time.

Hyrkania and India produce the tiger, an animal of tremendous swiftness, a quality which is more especially tested when we deprive it of all its



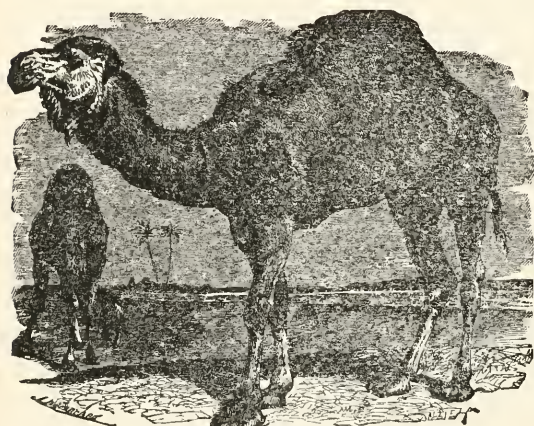
TIGER.—*Tigris Regalis.*

whelps, which are always very numerous. They are seized by the hunter, who lies in wait for them, being provided with the fleetest horse he can possibly obtain, and which he frequently changes for a fresh one. As soon as the female finds her lair empty—for the male takes no care whatever of his offspring—headlong she darts forth, and traces them by the smell. Her approach is made known by her cries, upon which the hunter throws down one of the whelps; this she snatches up with her teeth, and more swift, even, under the weight, returns to her lair, and sets out in pursuit again; this she continues to do, until the hunter has reached his vessel, while the animal vainly vents her fury upon the shore.

CHAPTER VIII.

THE CAMEL.

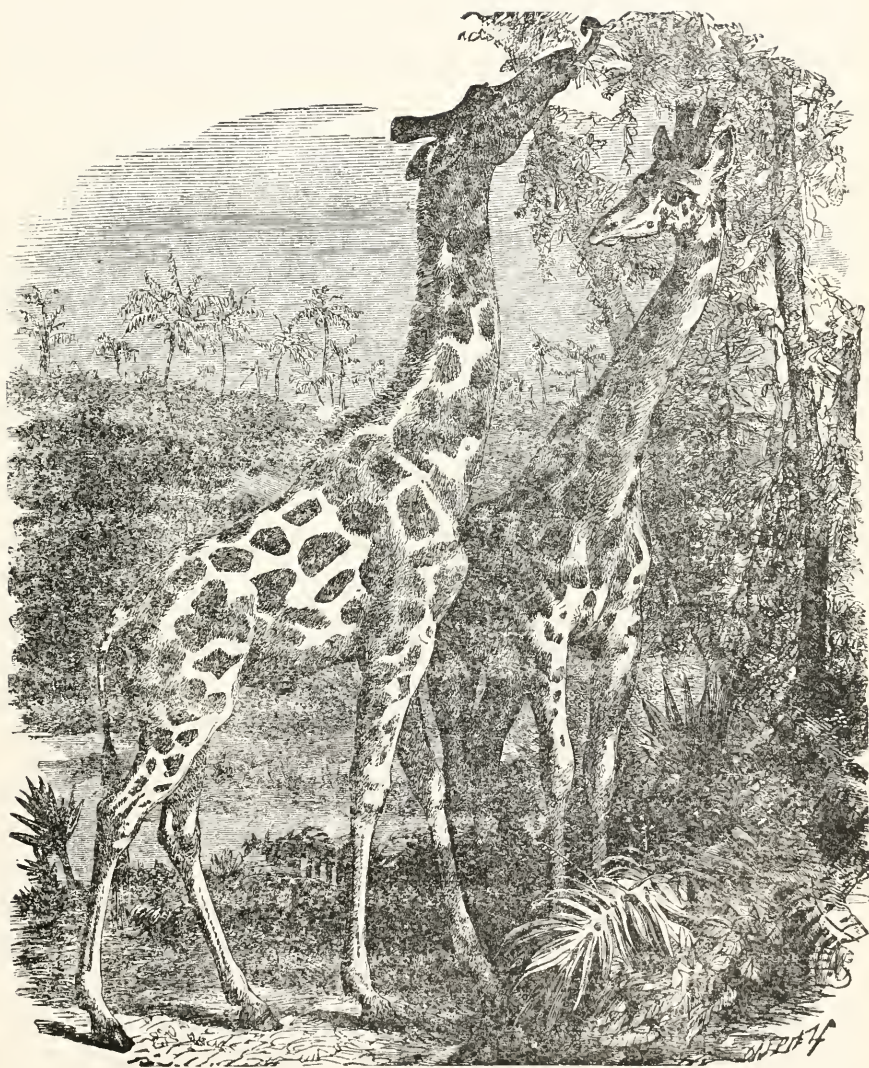
CAMELS are found feeding in herds in the East. Of these there are two different kinds, the Bactrian and the Arabian; the former kind having two humps on the back, the latter only one; they have also another hump under the breast, by means of which they support themselves when reclining.



CAMEL.—*Camelus Arabicus.*

Both of these species, like the ox, have no teeth in the upper jaw. They are all of them employed as beasts of burthen, in carrying loads on the back, and they answer the purpose of cavalry in battle. Their speed is the same with that of the horse, but their power of holding out in this respect is proportioned in each to its natural strength: it will never go beyond its accustomed distance, nor will it receive more than its usual load. The camel can endure thirst for four days, and when it has the opportunity of obtaining water, it drinks, as it were, both for past and future thirst, having first taken care to trouble the water by trampling in it; without doing which, it would find no pleasure in drinking. They live fifty years, some indeed as much as one hundred.

There are two other animals, which have some resemblance to the camel. One of these is called, by the Æthiopians, the nabun. It has a neck like that of the horse, feet and legs like those of the ox, a head like that of the camel, and is covered with white spots upon a red ground; from which peculiarities



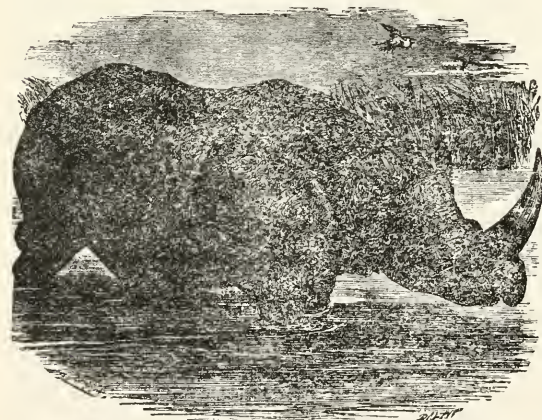
GIRAFFE.—*Giraffa Camelopardalis*.

it has been called the cameleopard.* It was first seen at Rome in the Circensian games held by Cæsar, the Dictator. Since that time too, it has been occasionally seen. It is remarkable for the singularity of its appearance, and from its very wild disposition it has obtained the name of the wild sheep.

CHAPTER IX.

THE RHINOCEROS AND THE CROCOTTA.

AT the games of Pompey the rhinoceros, an animal which has a single horn projecting from the nose, was also exhibited; it has been frequently seen since then. This is a natural-born enemy of the elephant.

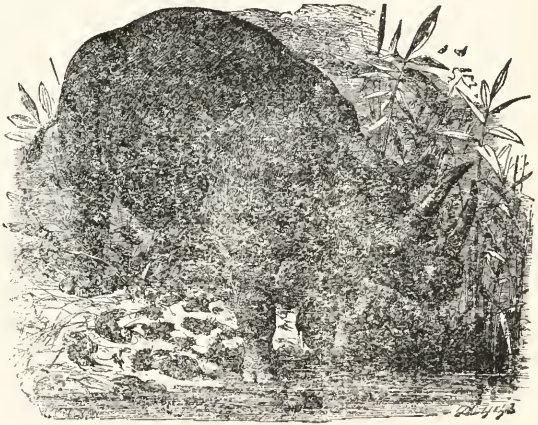


INDIAN RHINOCEROS.—*Rhinoceros Unicornis.*

It prepares itself for the combat by sharpening its horn against the rocks; and in fighting directs it chiefly against the belly of its adversary, which it knows to be the softest part. The two animals are of equal length, but the legs of the rhinoceros are much the shorter: its skin is the color of box-wood.

* The description of the giraffe, here given, is sufficiently correct, but we have a more minute account of it by Dion Cassius, B. xliii. In the time of the Emperor Gordian, ten of these animals were exhibited at Rome at once; a remarkable fact, when we bear in mind that so few have ever been imported into Europe or America. The Giraffe is figured in the mosaic at Præneste. and, under it, is inscribed its name—nabi. It has been found that the giraffe is unable to bear the winters of Europe and the United States.

Æthiopia produces the crocotta, an animal which looks as though it were a cross between the wolf and the dog, for it can break anything with its teeth, and instantly on swallowing it digest it with its stomach; monkeys, too, with black heads, the hair of the ass, and a voice quite unlike that of any other animal. And there are oxen, like those of India, some with one horn, and others with three; the leucrocotta, a wild beast of extraordinary swiftness, the size of the wild ass, with the legs of a stag, the neck, tail, and breast of a lion, the head of a badger, a cloven hoof, the mouth slit up as far as the ears, and one continuous bone instead of teeth;* it is said, too, that this animal can imitate the human voice. Among the same people, there is also found an animal called eale; it is the size of the river-horse, has the tail of the elephant, and is of a black or tawny color. It has



KEITTOA, OR SLOAN'S RHINOCEROS.—*Rhinoceros Keittoa*.

also the jaws of the wild boar, and horns that are movable, and more than a cubit in length, so that, in fighting, it can employ them alternately, and vary their position by presenting them directly or obliquely, according as necessity may dictate. But the wild bulls which this country produces are the fiercest of all; they are larger than our domestic bull, and exceed all the others in swiftness; are of a tawny color, with

* It seems impossible to identify Pliny's description with any known animal, and it is not unlikely that he has confused the accounts of authors who were speaking of different animals. Some of the characteristics of the leucrocotta agree with those of the Indian antelope, while others seem to resemble those of the hyæna.

azure eyes, and the hair turned the contrary way; while the jaws open as far as the ears, and the horns are as movable as those of the eale. The hide of this animal is as hard as flint, and effectually resists all wounds. These creatures pursue all the other wild beasts, while they themselves can only be taken in pitfalls, where they always perish from excess of rage. Ctesias informs us, that among these same Æthiopians, an animal is found, which he calls the *manti-chora*;* it has a triple row of teeth, which fit into each other like those of a comb, the face and ears of a man, and azure eyes, is of the color of blood, has the body of the lion, and a tail ending in a sting, like that of the scorpion. Its voice resembles the union of the sound of the flute and the trumpet; it is of excessive swiftness, and is particularly fond of human flesh.

CHAPTER X.

THE ANIMALS OF ÆTHIOPIA; WILD BEASTS WHICH KILL WITH THEIR EYES.

AMONG the Hesperian Æthiopians is the fountain of *Nigris*, by many, supposed to be the head of the Nile. Near this fountain, there is found a wild beast, which is called the *catoblepas*; an animal of moderate size, but its head is remarkably heavy, and it only carries it with the greatest difficulty, being always bent down towards the earth. Were it not for this circumstance, it would prove the destruction of the human race; for all who behold its eyes, fall dead upon the spot.

There is the same power also in the serpent called the *basi-*

* It has been conjectured, that Ctesias took his description from the hieroglyphic figures in his time, probably common in the East, and still found in the ruins of Nineveh and Persepolis.

lisk.* It is produced in the province of Cyrene, being not more than twelve fingers in length. It has a white spot on the head, strongly resembling a sort of a diadem. When it hisses, all the other serpents fly from it: and it does not advance its body, like the others, by a succession of folds, but moves along upright and erect upon the middle. It destroys all shrubs, not only by its contact, but those even that it has breathed upon; it burns up all the grass too, and breaks the stones, so tremendous is its noxious influence. It was formerly a general belief that if a man on horseback killed one of these animals with a spear, the poison would run up the weapon and kill, not only the rider, but the horse as well. To this dreadful monster the odor of the weasel is fatal, a thing that has been tried with success, for kings have often desired to see its body when killed; so true is it that it has pleased Nature that there should be nothing without its antidote. The animal is thrown into the hole of the basilisk, which is easily known from the soil around it being infected. The weasel destroys the basilisk by its odor, but dies itself in this struggle of nature against its own self.

CHAPTER XI.

WOLVES; SERPENTS.

IN Italy also it is believed that there is a noxious influence in the eye of a wolf; it is supposed that it will instantly take away the voice of a man, if it is the first to see him.† Africa and Egypt produce wolves of a sluggish and stunted nature;

* This account of the basilisk's eye, like that of the catoblepas, is entirely devoid of foundation.

† Hence the proverbial expression applied to a person who is suddenly silent upon the entrance of another; "*Lupus est tibi visus.*"—"You have seen a wolf."

those of the colder climates are fierce and savage. That men have been turned into wolves, and again restored to their original form, we must confidently look upon as untrue, unless, indeed, we are ready to believe all the tales, which, for so many ages, have been found to be fabulous. But, as the belief of it has become so firmly fixed in the minds of the common people, as to have caused the term “*Versipellis*” * to be used as a common form of imprecation, I will here point out its origin. Euanthes, a Grecian author of no mean reputation, informs us that the Arcadians assert that a member of the family of Anthus is chosen by lot, and then taken to a certain lake in that district, where, after suspending his clothes on an oak, he swims across the water and goes away into the desert, where he is changed into a wolf and associates with other animals of the same species for a space of nine years. If he has kept himself from beholding a man during the whole of that time, he returns to the same lake, and, after swimming across it, resumes his original form, only with the addition of nine years in age to his former appearance. To this Fabius adds, that he takes his former clothes as well. It is really wonderful to what a length the credulity † of the Greeks will go! There is no falsehood, if ever so barefaced, to which some of them cannot be found to bear testimony.

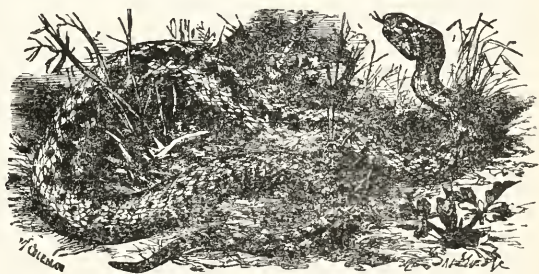
So, too, Agriopas informs us that Demænetus, the Parrhasian, during a sacrifice of human victims, which the Arcadians were offering up to the Lycæan Jupiter, tasted the entrails of a boy who had been slaughtered; upon which he was turned into a wolf, but, ten years afterwards, was

* This literally means “changing the skin;” it was applied by some ancient medical writers to a peculiar form of insanity, where the patient conceives himself changed into a wolf.

† It is rather curious to find Pliny censuring others for *credulity*; the fact is he loses no opportunity of a hit at the Greeks, to whom, after all, he is greatly indebted.

restored to his original shape and his calling of an athlete, and returned victorious in the pugilistic contests at the Olympic games.

With reference to serpents, it is generally known, that they assume the color of the soil in which they conceal themselves. The different species of them are innumerable. The cerastes has little horns, often four in number, projecting from the body, by the movement of which it attracts birds, while the rest of its body lies concealed. The amphisbæna has two heads, that is to say, it has a second one at the tail, as though one mouth were too little for the discharge of all its venom. Some serpents have scales, some a mottled skin, and they are all possessed of a deadly poison. The jaculus* darts from the branches of trees; and it is not only to our feet that



VIPER, OR ADDER.—*Pelias Berus*.

the serpent is formidable, for he even flies through the air just as though he were hurled from an engine. The neck of the asp puffs out, and there is no remedy whatever against its sting, except the instant excision of the affected part. This reptile, which is so deadly, is possessed of this one sense, or rather affection; the male and the female are generally found together, and the one cannot live without the other; hence it is that, if one of them happens to be killed, the other takes incredible pains to avenge its death. It

* Lucan mentions the jaculus, B. ix. l. 720, and l. 822. In the last passage he says: "Behold! afar, around the trunk of a barren tree, a fierce serpent—Africa calls it the jaculus—wreathes itself, and then darts forth, and through the head and pierced temples of Paulus it takes its flight: nothing does venom there affect, death seizes him through the wound. It was then understood how slowly fly the stones which the sling hurls, how sluggishly whizzes the flight of the Scythian arrow."

follows the slayer of its mate, and will single him out among never so large a number of people, by a sort of instinctive knowledge; with this object it overcomes all difficulties, travels any distance, and is only to be avoided by the intervention of rivers or an accelerated flight. It is really difficult to decide, whether Nature has altogether been more liberal of good or of evil. First of all, however, she has given to this pest but weak powers of sight, and has placed the eyes, not in the front of the head, so that it may see straight before it, but in the temples, so that it is more frequently put in motion by the approach of the footstep than through the sight. The ichneumon, however, is its enemy to the very death.

This hostility is the especial glory of this animal, which is also produced in Egypt. It plunges itself repeatedly into the mud, and then dries itself in the sun: as soon as, by these means, it has armed itself with a sufficient number of coatings, it proceeds to the combat. Raising its tail, and turning its back to the serpent, it receives its stings, which are inflicted to no purpose, until at last, turning its head sideways, and viewing its enemy, it seizes it by the throat. Not content, however, with this victory, it conquers another creature, the crocodile, which is no less dangerous.

CHAPTER XII.

THE CROCODILE AND THE HIPPOPOTAMUS.

THE Nile produces the crocodile, a destructive quadruped, and equally dangerous on land and in the water. This is the only land animal that does not enjoy the use of its tongue,*

* The tongue of the crocodile is flat, and adheres to the lower jaw. so as to be incapable of motion.

and the only one that has the upper jaw movable, and is capable of biting with it ; and terrible is its bite, for the rows of its teeth fit into each other, like those of a comb. Its length exceeds eighteen cubits. It produces eggs about the size of those of the goose, and, by a kind of instinctive foresight, always deposits them beyond the limit to which the river Nile rises, when at its greatest height. There is no animal that arrives at so great a bulk as this, from so small a beginning. It is armed also with claws, and has a skin, that is proof against all blows. It passes the day on land, and the night in the water, in both instances on account of the warmth. When it has glutted itself with fish, it goes to sleep on the banks of the river, a portion of the food always remaining in its mouth ; upon which, a little bird, which in Egypt is known as the trochilus, and, in Italy, as the king of the birds, for the purpose of obtaining food, invites the crocodile to open its jaws ; then, hopping to and fro, it first cleans the outside of its mouth, next the teeth, and then the inside, while the animal opens its jaws as wide as possible, in consequence of the pleasure which it experiences from the titillation.* It is at these moments that the ichneumon, seeing it fast asleep in consequence of the agreeable sensation thus produced, darts down its throat like an arrow, and eats away its intestines.†

Like the crocodile, but smaller even than the ichneumon, is the scincus, which is also produced in the Nile, and the flesh of which is the most effectual antidote against poisons. But so great a pest was the crocodile to prove, that Nature was not content with giving it one enemy only ; the dolphins, therefore, which enter the Nile, have the back armed with a

* The water of the Nile abounds with small leeches, which attach to the throat of the crocodile, and, as it has no means of removing them, it allows the trochilus to enter its mouth for this purpose also.

† Although this account is sanctioned by all the ancient naturalists, it is called in question by Cuvier and other modern writers.

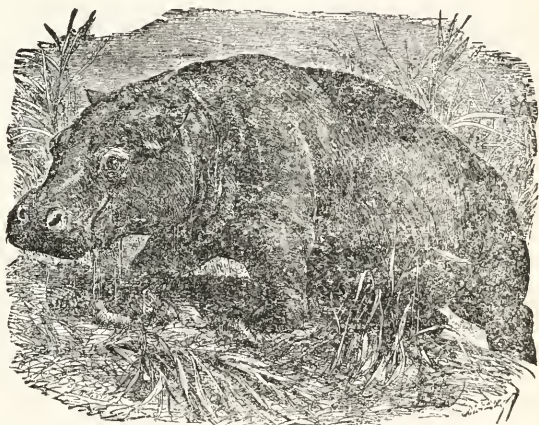
spine,* which is edged like a knife, as if for this very purpose; and although these animals are much inferior in strength, they contrive to destroy the crocodile by artifice, which on the other hand attempts to drive them from their prey, and would reign alone in its river as its peculiar domain. For all animals have an especial instinct in this respect, and are able to know not only what is for their own advantage, but also what is to the disadvantage of their enemies; they fully understand the use of their own weapons, they know their opportunity, and the weak parts of those with which they have to contend.

The skin of the belly of the crocodile is soft and thin; aware of this, the dolphins plunge into the water, as if in great alarm, and diving beneath its belly, tear it open with their spines. There is a race of men also, who are peculiarly hostile to the crocodile; they are known as the Tentyritæ, from an island in the Nile which they inhabit. These men are of small stature, but of wonderful presence of mind, though for this particular object only. The crocodile is a terrible animal to those who fly from it, while at the same time it will fly from those who pursue it; these, however, are the only people who dare to attack it. They even swim in the river after it, and mount its back like so many horsemen; and just as the animal turns up its head for the purpose of biting them, they insert a club into its mouth, holding which at each end, with the two hands, it acts like a bit, and by these means they drive the captured animal on shore. They also terrify the crocodile so much even by their voice alone, as to force it to disgorge the bodies which it has lately swallowed, for the purpose of burial. This island, therefore, is the only place near which the crocodile never swims; for it is repelled by the odor of this race of men. The sight of the animal is said to be dull when it is in the water, but, when

* The animal here referred to was not the dolphin but the *Squalus centrina*, or spinax of Linnæus.

out of the water, piercing in the extreme ; it always passes the four winter months in a cave, without taking food. Some persons say, that this is the only animal that continues to increase in size as long as it lives ; it is very long-lived.

The Nile produces the hippopotamus, another wild beast, of a still greater size. It has the cloven hoof of the ox ; the back, the mane, and the neighing of the horse ; and the turned-up snout, the tail, and the hooked teeth of the wild boar, but is not so dangerous. The hide is impenetrable, except when it has been soaked with water ; and it is used for making shields and helmets. This animal lays waste the standing corn, and determines beforehand what part it shall ravage on the following day ; it is said also, that it enters the field backwards, to prevent any ambush being laid for it on its return.



HIPPOPOTAMUS, OR ZEEKOE.—*Hippopotamus Amphibius.*

Marcus Scaurus was the first to exhibit this animal at Rome, together with five crocodiles, at the games which he gave in his ædileship, in a piece of water which had been temporarily prepared for the purpose. The hippopotamus has even been our instructor in one of the operations of medicine. When the animal has become too bulky by continued overfeeding, it goes down to the banks of the river, and examines the reeds which have been newly cut ; as soon as it has found a stump that is very sharp, it presses its body against it, and so wounds one of the veins in the thigh ; and, by the flow of blood thus produced, the body, which would otherwise have fallen into a morbid state, is relieved ; after which, it covers up the wound with mud.

CHAPTER XIII.

PROGNOSTICS OF DANGER DERIVED FROM ANIMALS.

NATURE has bestowed upon many animals the faculty of observing the heavens, and of presaging the winds, rains, and tempests, each in its own peculiar way. It would be an endless labor to enumerate them all; just as much as it would be to point out the relation of each to man. For, in fact, they warn us of danger, not only by their fibres and their



COMMON MOUSE.—*Mus Musculus* (White, Brown and Pied Varieties).

entrails, to which a large portion of mankind attach the greatest faith, but by other kinds of warnings as well. When a building is about to fall down, all the mice desert it, and the spiders with their webs are the first to drop. Divination from birds has been made a science among the Romans, and the college of its priests is looked upon as peculiarly sacred. In Thrace, when all parts are covered with ice, the foxes are consulted, an animal which, in other respects, is baneful from its craftiness. It has been observed, that this animal applies its ear to the ice, for the purpose of testing its thickness; and the inhabitants will never cross frozen rivers and lakes until the foxes have passed over them and returned.

We have accounts, too, no less remarkable, in reference even to the most contemptible of animals. Marcus Varro informs us, that a town in Spain was undermined by rabbits, and one in Thessaly, by mice; that the inhabitants of a district in Gaul were driven from their country by frogs, and a

place in Africa by locusts; that the inhabitants of Gyarus, one of the Cyclades, were driven away by mice; and the Amunclæ, in Italy, by serpents. There is a vast desert tract on this side of the Æthiopian Cynamolgi, the inhabitants of which were exterminated by scorpions and venomous ants, and Theophrastus informs us, that the people of Rhœteum were driven away by multipede insects. But we must now return to the other kinds of wild beasts.

CHAPTER XIV.

THE HYÆNA.

THE neck of the hyæna with the mane, runs continuously into the back-bone, so that the animal cannot bend this part without turning round the whole body. Many wonderful things are also related of this animal; and strangest of all, that it imitates the human voice among the stalls of the shepherds; and while there, learns the name of some one of them, and then calls him away, and devours him. It is said also, that it can imitate a man vomiting, and that, in this way, it attracts the dogs, and then falls upon them. It is the only animal that digs up graves, in order to obtain the bodies of the dead. The female is rarely caught: its eyes, it is said, are of a thousand various colors and changes of shade. It is said also, that on coming in contact with its shadow, dogs will lose their voice, and that, by certain magical influences, it can render any animal immovable, round which it has walked three times.

CHAPTER XV.

DEER.

THE deer, although the mildest of all animals, has still its own feelings of malignancy; when hard pressed by the hounds it flies of its own accord for refuge to man. The deer exercise the young ones in running, and teach them how to take to flight, leading them to precipices, and showing them how to leap. When the stags feel themselves becoming too fat, they seek some retired spot, thus acknowledging the inconvenience arising from their bulk. Besides this, they continually pause in their flight, stand still and look back, and then again resume their flight, when the enemy approaches. The barking of a dog instantly puts them to flight, and they always run with the wind, in order that no trace of them may be left. They are soothed by the shepherd's pipe and his song; when their ears are erect, their sense of hearing is very acute, but when dropped, they become deaf.

In other respects the deer is a simple animal, which regards everything as wonderful, and with a stupid astonishment; so much so, that if a horse or cow happens to approach it, it will not see the hunter, who may be close at hand, or, if it does see him, it only gazes upon his bow and arrow. Deer cross the sea in herds, swimming in a long line, the head of each resting on the haunches of the one that precedes it, each in its turn falling back to the rear. This has been particularly remarked when they pass over from Cilicia to the island of Cyprus. Though they do not see the land, they still are able to direct themselves by the smell. The males have horns, and are the only animals that shed them every year, at a stated time in the spring; at which period they seek out with the greatest care the most retired places, and after losing them, remain concealed, as though aware that they are unarmed. They also bear the marks of their



CARIBOU.—*Larandus Rangifer.*

age on the horns, every year, up to the sixth,* a fresh antler being added; after which period the horns are renewed in the same state, so that by means of them their age cannot be ascertained. Their old age, however, is indicated by their teeth, for then they have only a few, or none at all; and we then no longer perceive, at the base of their horns, antlers projecting from the front of the forehead, as is usually the case with the animal when young.

When the horns begin to be reproduced, two projections are to be seen, much resembling, at first, dry skin; they grow with tender shoots, having upon them a soft, velvety down like that on the head of a reed. So long as they are without horns, they go to feed during the night. As the horns grow, they harden by the heat of the sun, and the animal, from time to time, tries their strength upon the trees; when satisfied with their strength, it leaves its retreat.

Stags, too, have been occasionally caught with ivy, green and growing, on their horns,† the plant having taken root on them, as it would on any piece of wood, while the animal was rubbing them against the trees. The stag is sometimes found white, as is said to have been the case with the hind of Sertorius, which he persuaded the nations of Spain to look upon as having the gift of prophecy.

The stag is generally admitted to be very long lived; some were captured at the end of one hundred years with the golden collars which Alexander the Great had put upon them, and which were quite concealed by the folds of the skin, in consequence of the accumulation of fat.‡

* Cuvier says that no antlers are added after the eighth year.

† This is mentioned by Aristotle, but it is quite unfounded. Without doubt the story arose from the fact that the stag in September rubs the velvet off his horns against the trees, until it hangs in strings from the antlers. These are at first greenish in color, then brown as they grow dry and fall off.

‡ Buffon remarks, such tales are without foundation, the life of the stag being not more than thirty or forty years.

CHAPTER XVI.

THE CHAMELEON.

AFRICA is almost the only country that does not produce the stag, but it produces the chameleon, which, however, is much more commonly met with in India. Its figure and size are that of a lizard, only that its legs are straight and longer. Its sides unite under its belly, as in fishes, and its spine projects in a similar manner. Its muzzle is not unlike the snout of a small hog, so far as it can be in so small an animal. Its tail is very long, and becomes smaller towards the end, coiling up in folds like that of the viper. It has hooked claws, and a slow movement like that of the tortoise; its body is rough like that of the crocodile; its eyes are deep sunk in the orbits, placed very near each other, very large, and of the same color as the body. It never closes them, and when the animal looks round, it does so, not by the motion of the pupil, but of the white of the eye. It always holds the head upright and the mouth open, and is the only animal which receives nourishment neither by meat nor drink, nor anything else, but from the air alone.* Towards the end of the dog-days it is fierce, but at other times quite harmless. The nature of its color, too, is very remarkable, for it is continually changing; its eyes, its tail, and its whole body always assuming the color of whatever object is nearest, with the exception of white and red.† After death, it becomes of a

* One of those popular errors which have descended from the ancients to our times; the chameleon feeds on insects, which it seizes by means of its long flexible tongue; the quantity of food which it requires appears, however, to be small in proportion to its bulk.

† This is another of the erroneous opinions respecting the chameleon, which has been very generally adopted. It forms the basis of Merrick's poem of the Chameleon. The animal assumes various shades or tints, but the changes depend upon internal or constitutional causes, not upon any external object.

pale color. It has a little flesh about the head, the jaws, and the root of the tail, but none whatever on the rest of the body. It has no blood whatever, except in the heart and about the eyes, and its entrails are without a spleen. It conceals itself during the winter months, just like the lizard.

CHAPTER XVII.

BEARS AND THEIR CUBS.

THE cubs of bears when first born are shapeless masses of white flesh, a little larger than mice; their claws alone being prominent. The mother then licks them gradually into proper shape. Bears hibernate during three or four months of the winter season. If they happen to have no den, they construct a retreat with branches and shrubs, which is made impenetrable to the rain and is lined with soft leaves. During the first fourteen days they are overcome by so deep a sleep, that they cannot be aroused even by wounds. They become wonderfully fat, too, while in this lethargic state. This fat is much used in medicine; and it is very useful in preventing the hair from falling off. At the end of these fourteen days they sit up, and find nourishment by sucking their fore-paws. They warm their cubs, when cold, by pressing them to the breast, not unlike the way in which birds brood over their eggs. It is a very astonishing thing, but Theophrastus believes it that if we preserve the flesh of the bear, the animal being killed in its dormant state, it will increase in bulk, even though it may have been cooked. During this period no signs of food are to be found in the stomach of the animal, and only a very slight quantity of liquid; there are a few drops of blood only near the heart, but none whatever in any other part of the body. They leave their retreat in the

spring, the males being remarkably fat: of this circumstance, however, we cannot give any satisfactory explanation, for the sleep, during which they increase so much in bulk, lasts, as we have already stated, only fourteen days. When they come out, they sharpen the edges of their teeth against the young shoots of the trees. Their eye-sight is dull, for which reason they seek the combs of bees, in order that from the bees stinging them in the throat and drawing blood, the oppression in the head may be relieved.* The head of the bear is extremely weak, whereas, in the lion, it is remarkable for its strength: on this account probably when the bear, impelled by any alarm, is about to precipitate itself from a rock, it covers its head with its paws. In the arena of the Circus they are often to be seen killed by a blow on the head with the fist. These animals walk on two feet, and climb down trees backwards. They can overcome the bull, by suspending themselves, by all four legs, from its muzzle and horns, thus wearing out its powers by their weight. In no other animal is stupidity found more adroit in devising mischief. It is recorded in our Annals, that in the consulship of Piso and Messala, Domitius brought into the Circus one hundred Numidian bears, and as many Æthiopian hunters.



SYRIAN BEAR, OR DUBB.—*Ursus Isabellinus*.

The mice of Pontus also conceal themselves during the winter; but only the white ones. I wonder how those

* This is, of course, without foundation, the honey being the sole object sought.

authors, who have asserted that the sense of taste in these animals is very acute, found out that such is the fact. The Alpine mice (the marmot) which are the same size as badgers, also conceal themselves; but they first carry a store of provisions into their retreat. There is a similar animal also in Egypt, which sits in the same way, upon its haunches, and walks on two feet, using the fore feet as hands.

CHAPTER XVIII.

HEDGEHOGS.

HEDGEHOGS also lay up food for the winter; rolling themselves on apples as they lie on the ground, they pierce some with their quills, and then take up another in the mouth, and so carry them into the hollows of trees. These animals also, when they conceal themselves in their holes, afford a sure sign that the wind is about to change from north-east to



HEDGEHOG.—*Erinaceus Europæus.*

south. When they perceive the approach of the hunter, they draw in the head and feet, and all the lower part of the body, which is covered by a thin and defenceless down only, and then roll themselves up into the form of a ball, so that there is no way of taking hold of them but by their quills.

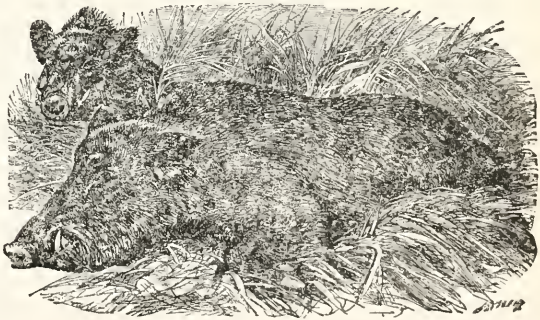
They force it to unroll itself, by sprinkling warm water upon it, and then, suspended by one of its hind legs, it is left to die of hunger; for there is no other mode of destroying it, without doing injury to its skin. This animal is not, as many

of us imagine, entirely useless to man. If it were not for the quills which it produces, the soft fleece of the sheep would have been given in vain to mankind ; for it is by means of its skin, that our woollen cloth is dressed. From the monopoly of this article, great frauds and great profits have resulted ; there is no subject on which the senate has more frequently passed decrees, and there is not one of the Emperors, who has not received from the provinces complaints respecting it.

CHAPTER XIX.

THE WILD BOAR.

THE flesh of the wild boar is much esteemed. Cato the Censor, in his orations, strongly declaimed against the use of the brawn of the wild boar. The animal used to be divided into three portions, the middle part of which was laid by, and is called boar's chine. Publius Servilius Rullus was the first Roman who served up a whole boar at a banquet ; the father of that Rullus, who, in the consulship of Cicero, proposed the Agrarian law. So recent is the introduction of a thing which is now in daily use. The Annalists have taken notice of such a fact as this, clearly as a hint to us to mend our manners ; seeing that now-a-days two or three boars are consumed, not at one entertainment, but as forming the first course only.



WILD BOAR.—*Sus Scrofa*.

Fulvius Lupinus was the first Roman who formed parks for the reception of these and other wild animals : he first fed

them in the territory of Tarquinius: it was not long, however, before imitators were found in Lucullus and Hortensius. The wild boar of India has two curved teeth, projecting from beneath the muzzle, a cubit in length; and the same number projecting from the forehead, like the horns of the young bull. The hair of these animals, in a wild state, is the color of copper, the others are black. No species whatever of the swine is found in Arabia.

CHAPTER XX.

APES.

THE different kinds of apes, which approach the nearest to the human figure, are distinguished from each other by the



SILVERY GIBBON.—*Hylobates Leuciscus*.

tail. Their shrewdness is quite wonderful. It is said that, imitating the hunters, they will besmear themselves with bird-lime, and put their feet into the shoes which, as so many snares, have been prepared for them.* Mucianus says, that they have even played at chess, having, by practice, learned to distinguish the different pieces, which are

* We learn from Strabo, Ind. Hist. B. xv., that, in catching the monkey, the hunters took advantage of the propensity of these animals to imitate any action they see performed. "Two modes," he says, "are employed in taking this animal, as by nature it is taught to imitate every action, and to take to flight by climbing up trees. When the hunters see an ape sitting on a tree, they place within sight of it a dish full of water, with which they rub their eyes; and then slyly substituting another in its place, full of bird-lime, retire and keep upon the watch. The animal comes down from the tree, and rubs

made of wax.* He says that the species which have tails become quite melancholy when the moon is on the wane, and that they leap for joy at the time of the new moon, and adore it. Other quadrupeds also are terrified at the eclipses of the heavenly bodies. All the species of apes manifest remarkable affection for their offspring. Females, which have

been domesticated, and have had young ones, carry them about and show them to all comers, show great delight when they are caressed, and appear to understand the kindness thus shown them. Hence it is, that they very often stifle their young with their embraces. The dog-headed ape is of a much fiercer nature, as is the case with the satyr. The callitriche or "fine-haired monkey," has almost a totally different aspect; it has a beard on the face, and a tail, which in the first part of it is very bushy. It is said that this animal cannot live except in the climate of Æthiopia, which is its native place.



THE ORANG-OUTAN.—*Simia Satyrus.*

been domesticated, and have had young ones, carry them about and show them to all comers, show great delight when they are caressed, and appear to understand the kindness thus shown them. Hence it is, that they very often stifle their young with their embraces. The dog-headed ape is of a much fiercer nature, as is the case with the satyr. The callitriche or "fine-haired monkey," has almost a totally different aspect; it has a beard on the face, and a tail, which in the first part of it is very bushy. It is said that this animal cannot live except in the climate of Æthiopia, which is its native place.

its eyes with the bird-lime, in consequence of which the eyelids stick together, and it is unable to escape." Ælian also says, *Hist. Anim. B. xvii. c. 25*, that the hunters pretend to put on their shoes, and then substitute, in their place, shoes of lead; the animal attempts to imitate them, and, the shoes being so contrived, when it has once got them on, it finds itself unable to take them off, or to move, and is consequently taken.

* It is said that the Emperor Charles V. had a monkey that played chess with him.

Book V.

DOMESTIC ANIMALS.

CHAPTER I.

THE DOG ; EXAMPLES OF ITS ATTACHMENT TO ITS MASTER.

AMONG the animals that are domesticated with mankind have occurred many circumstances that deserve to be known. Among these animals are more particularly those faithful friends of man, the dog, and the horse. We have an account of a dog that fought against a band of robbers, in defending its master ; and although it was pierced with wounds, still it would not leave the body, from which it drove away all birds and beasts. Another dog, in Epirus, recognized the murderer of its master, in the midst of an assemblage of people, and, by biting and barking at him, extorted from him a confession of his crime. A king of the Garamantes was brought back from exile by two hundred dogs, who maintained the combat against all his opponents. The people of Colophon and Castabala kept troops of dogs, for the purposes of war ; and these used to fight in the front rank, and never retreat ; they were the most faithful of auxiliaries, and yet required no pay. After the defeat of the Cimbri, their dogs defended their movable houses, which were carried upon wagons. When Jason, the Lycian, had been slain, his dog refused to take food, and died of famine. When the funeral pile of King Lysimachus was lighted, his dog, to which Darius gives the name of Hyrcanus, threw itself into the flames, and the dog

of King Hiero did the same. Philistus gives a similar account of Pyrrhus, the dog of the tyrant Gelon.

Among ourselves, Volcatius, a man of rank, who instructed Cascellius in the civil law, as he was riding on his Asturian jennet, towards evening, from his country-house, was attacked by a robber, and was only saved by his dog. The senator Cælius, too, while lying sick at Placentia, was surprised by armed men, but received not a wound from them until they had first killed his dog. But a more extraordinary fact than all, took place in our own times, and is testified to by the public register of the Roman people. In the consulship of Junius and Silius, when Titus Sa-



MALTESE DOG.—*Canis Familiāris.*

binus was put to death together with his slaves, for the affair of Nero, the son of Germanicus, it was found impossible to drive away a dog which belonged to one of them from the prison; nor could it be forced away from the body, which had been cast down the Gemitorian steps; but there it stood howling, in the presence of vast multitudes of people; and when some one threw a piece of bread to it, the animal carried it to the mouth of its master. Afterwards, when the body was thrown into the Tiber, the dog swam into the river, and endeavored to raise it out of the water; quite a throng of people gathered to witness this instance of an animal's fidelity.

Dogs are the only animals that are sure to know their masters; and if they suddenly meet him as a stranger they will instantly recognize him. They are the only animals that

will answer to their names, and recognize the voices of the family. They recollect a road along which they have passed, however long it may be. Next to man, there is no living creature whose memory is so retentive. By sitting down on the ground, we may arrest their most impetuous attack, even when prompted by the most violent rage.

In daily life we have discovered many other valuable qualities in this animal; but its intelligence and sagacity are more especially shown in the chase. It discovers and traces out the tracks of the animal, leading by the leash the sportsman



THIBET DOG.—*Canis Familiaris*.

who accompanies it straight up to the prey; and as soon as it has perceived it, how silent it is, and how secret but significant is the indication which it gives, first by the tail and afterwards by the nose! Oftentimes even when worn out with old age, blind, and feeble, they are carried

by the huntsman in his arms, being still able to point out the coverts where the game is concealed, by snuffing with their muzzles at the wind.

Among the Gauls their packs of hounds have, each of them, one dog who acts as the guide and leader. This dog they follow in the chase, and him they carefully obey; for these animals have even a notion of subordination among themselves. It is asserted that the dogs keep running when they drink at the Nile, for fear of becoming a prey to the voracity of the crocodile. When Alexander the Great was on his Indian expedition, he was presented by the king of Albania with a dog of unusual size; being greatly delighted with its

noble appearance, he ordered bears, and after them wild boars, and then deer, to be let loose before it; but the dog lay down, and regarded them with contempt. The noble spirit of the general became irritated by the sluggishness thus manifested by an animal of such vast bulk, and he ordered it to be killed. The report of this reached the king, who accordingly sent another dog, and at the same time sent word that its powers were to be tried, not upon small animals, but upon the lion or the elephant; adding that he had had originally but two, and that if this one were put to death, the race would be extinct. Alexander, without delay, procured a lion, which in his presence was instantly torn to pieces. He then ordered an elephant to be brought, and never was he more delighted with any spectacle; for the dog, bristling up its hair all over the body, began by thundering forth a loud barking, and then attacked the animal, leaping at it first on one side and then on the other, attacking it in the most skilful manner, and then again retreating at the opportune moment, until at last the elephant, being rendered quite giddy by turning round and round, fell to the earth, and made it quite re-echo with his fall.

CHAPTER II.

THE HORSE.

KING ALEXANDER had a very remarkable horse which was called Bucephalus, either on account of the fierceness of its aspect, or because it had the figure of a bull's head marked on its shoulder. It is said, that he was struck with its beauty when he was only a boy, and that it was purchased from the stud of Philonicus, the Pharsalian, for thirteen talents. When it was equipped with the royal trappings, it would suffer no one except Alexander to mount it, although at

other times it would allow any one to do so. A memorable circumstance connected with it in battle is recorded of this horse; it is said that when it was wounded in the attack upon Thebes, it would not allow Alexander to mount any other horse. Many other circumstances, of a similar nature, occurred respecting it; so that when it died, the king duly performed its obsequies, and built around its tomb a city, which he named after it.

Cæsar, the Dictator, it is said, had a horse, which would allow no one to mount him but himself, and its forefeet were like those of a man;* indeed it is thus represented in the statue before the temple of Venus. The late Emperor Augustus also erected a tomb to his horse; on which occasion Germanicus Cæsar wrote a poem, which still exists. There are at Agrigentum many tombs of horses, in the form of pyramids. The Scythian horsemen make loud boasts of the fame of their cavalry. On one occasion, one of their chiefs was slain in single combat, and when the conqueror came to take the spoils of the enemy, he was set upon by the horse of his opponent, and trampled on and bitten to death.

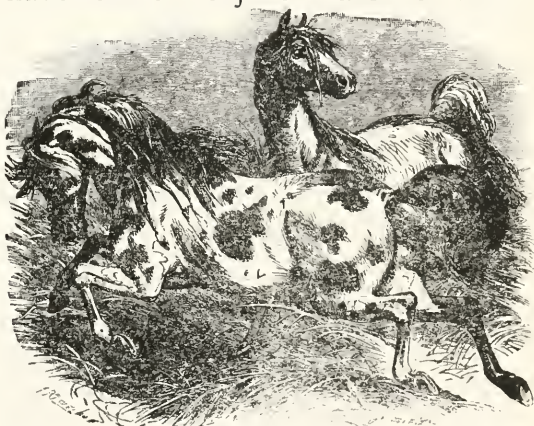
Their docility, too, is so great, that we find it stated that the whole of the cavalry of the Sybarite army were accustomed to perform a kind of dance to the sound of musical instruments. These animals also foresee battles; they lament over their masters when they have lost them, and sometimes shed tears † of regret for them. When King Nicomedes was slain, his horse put an end to its life by fasting. Phylarchus relates, that after Centaretus, the Galatian, had slain Antiochus in battle he took possession of his horse, and mounted it

* This account is given by Suetonius, *Life of Julius Cæsar*, c. 61. Cuvier suggests that the hoofs may have been notched, and that the sculptor probably exaggerated the peculiarity, so as to produce the resemblance to a human foot.

† We here find Pliny tripping, for he has previously said, that man is the only animated being that sheds tears. In this Book, also, he represents the lion as shedding tears.

in triumph ; upon which the animal, inflamed with indignation, became quite ungovernable and threw himself headlong down a precipice, so that they both perished together. Philistus relates, that a horse of Dionysius once stuck fast in a morass, but as soon as he disengaged himself, he followed the steps of his master, with a swarm of bees, which had settled on his mane ; and that it was in consequence of this portent, that Dionysius gained possession of the kingdom.

These animals possess an intelligence which exceeds all description. Those who have to use the javelin are well aware how the horse, by its exertions and the supple movements of its body, aids the rider in any difficulty he may have in throwing his weapon. They will even present to their master the weapons collected on the ground. The horses too, that are yoked to the chariots in the Circus, beyond a doubt display remarkable proofs how sensible they are to encouragement and to glory. In the Secular games, which were celebrated in the Circus, under the Emperor Claudius, when the charioteer Corax, who belonged to the white party,* was thrown from his place at the starting-post, his horses took the lead and kept it, opposing the other chariots, overturning them, and doing everything against the other competitors that could have been done, had they been guided by the most skilful charioteer ; and while we quite blushed to behold the skill of man excelled by that of the horse, they arrived the winners at



MUSTANG.

* There were four parties or factions of the charioteers who were named from the color of their dress.

the goal, after going over the whole of the prescribed course. Our ancestors considered it as a still more remarkable portent, that when a charioteer had been thrown from his place, in the plebeian games of the Circus, the horses ran to the Capitol, just as if he had been standing in the car, and went three times round the temple there. But the greatest prodigy of all, is the fact that the horses of Ratumenna came from Veii to Rome, with the palm branch and chaplet, he himself having fallen from his chariot, after having gained the victory ; from which circumstance the Ratumennian gate derived its name.



ZEBRA.—*A'sinus Zebra.*

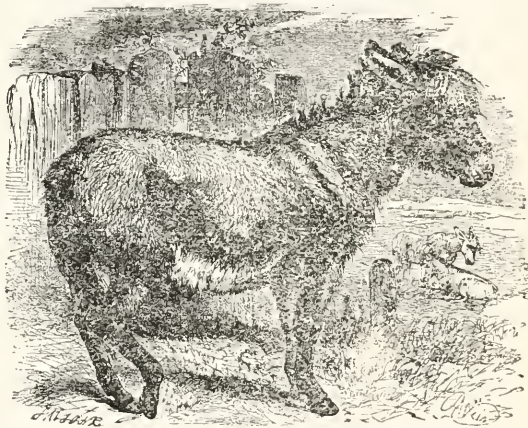
When the Sarmatæ are about to undertake a long journey, they prepare their horses for it, by making them fast the day before, during which they give them but little to drink ; by these means they are enabled to travel on horseback, without stopping, for one hundred and fifty miles.

Some horses are known to live fifty years. The poet Virgil has very beautifully described the points which ought more especially to be looked for, as constituting the perfection of a horse ; I myself have also treated of the same subject, in my work on the Use of the Javelin by Cavalry, and I find that pretty nearly all writers are agreed respecting them. The points requisite for the Circus are somewhat different, however ; and while horses are put in training for other purposes at only two years old, they are not admitted to the contests of the Circus before their fifth year. We have an account of a horse having lived to its seventy-fifth year. If a foal has lost its mother, the other mares in the herd that have young,

will take charge of the orphan. The more spirited a horse is, the deeper does it plunge its nose into the water while drinking.

Gallicia and Asturia, countries of Spain, produce a species of horse which have a peculiar pace of their own, very easy for the rider, which arises from the two legs of the same side being moved together. By studying the nature of this step our horses have been taught the movement, which we call ambling.

Marcus Varro informs us that Quintus Axius, the senator, paid for an ass the sum of four hundred thousand sesterces (or nearly \$16,000). I am not sure whether this did not exceed the price ever given for any other animal. It is certainly a species of animal singularly useful for ploughing, and other farm labor. The attachment of asses to their young



ASS.—*A'sinus Vulgáris.*

is great in the extreme, but their aversion to water is still greater. They will pass through fire to get at their foals, while the very same animal, if the smallest stream intervenes, will tremble, and not dare so much as to wet even its feet. In their pastures they never drink at any but the usual watering-place, and make it their care to find some dry path by which to get at it. They will not pass over a bridge either, when the water can be seen between the planks beneath. Wonderful to relate, too, if their watering-places are changed, though they should be ever so thirsty, they will not drink without being either beaten or caressed. They ought always to have plenty of room for sleeping; for they are subject to

various disturbances in their sleep, when they repeatedly throw out their feet, and would immediately lame themselves by coming in contact with any hard substance; so that it is necessary that they should be provided with an empty space. Mæcenas was the first person who had the young of the ass served up at his table;* they were in those times much preferred to the onager or wild ass; but, since his time, the taste has gone out of fashion.

The best wild asses are those of Phrygia and Lycaonia. Africa glories in the wild foals which she produces, as excelling all others in the flavor of their flesh. It appears from some Athenian records, that a mule once lived to the age of eighty years. The people were greatly delighted with this animal, because on one occasion, when, on the building of a temple in the citadel (the Parthenon), it had been left behind on account of its age, it persisted in promoting the work by accompanying and assisting them; in consequence of which a decree was passed, that the dealers in corn were not to drive it away from their sieves.

CHAPTER III.

THE OX.

WE find it stated, that the oxen of India are of the height of camels, and that the extremities of their horns are four feet apart. In our part of the world the most valuable oxen are those of Epirus, owing, it is said, to the attention paid to their breed by King Pyrrhus. He brought them to a very large size, and descendants of this breed are to be seen at the present day. The ox is the only animal that walks backwards while it is feeding; among the Garamantes, they feed

* The famous Bologna sausages are made, it is said, of asses' flesh.

in no other manner.* Cattle that are bred in the Alps, although very small of body, give a great quantity of milk, and are capable of enduring much labor; they are yoked by the horns, and not by the neck. The oxen of Syria have no dewlap, but have a hump on the back. Those of Caria in Asia, are unsightly in appearance, having a hump hanging over the shoulders from the neck; and their horns are movable; they are said, however, to be excellent workers, though those which are either black or white are condemned as worthless for labor. Oxen must be broken when they are three years old; after that it is too late, and before too early. The ox is most easily broken by yoking it with a trained animal. The ox is our closest companion, both in labor generally, and in the operations of agriculture. Our ancestors considered it of so much value, that there is an instance cited of a man being brought before the Roman people, on a day appointed, and condemned, for having killed an ox, in order to humor the whim of his wife, who said that she had never tasted tripe; and he was driven into exile, just as though he had killed one of his own peasants.

The bull has a proud air, a stern forehead, shaggy ears, and horns which appear always ready, and challenging to the combat; but it is by his fore feet that he manifests his threatening anger. As his rage increases, he stands, lashing back his tail every now and then, and throwing up the sand against his belly; being the only animal that excites himself by these means. We have seen them fight at the word of command, and shown as a public spectacle; these bulls whirled about and then fell upon their horns, and at once were up again; then, at other times, they would lie upon the ground and let themselves be lifted up; they would even stand in a two-horsed chariot, while moving at a rapid rate, like so many charioteers. The people of Thessaly invented

* This peculiarity in their mode of taking their food is mentioned by Herodotus, who ascribed it to the extraordinary length of the horns.

a method of killing bulls, by means of a man on horseback, who would ride up to them, and seize one of the horns, and so twist their neck. Cæsar the Dictator was the first person who exhibited this spectacle at Rome.

Bulls are selected as the very choicest of victims, and are offered up as the most approved sacrifice for appeasing the gods. Of all the animals that have long tails, this is the only one whose tail is not of proportionate length at birth; and in this animal alone it continues to grow until it reaches its heels. It is on this account, that in making choice of a calf for a victim, due care is taken that its tail reaches to the pastern joint; if it is shorter than this, the sacrifice is not deemed acceptable to the gods. This fact has also been remarked, that calves, which have been carried to the altar on men's shoulders, are not generally acceptable to the gods, and also, if they are lame, or of a species which is not appropriate, or if they struggle to get away from the altar. It was a not uncommon prodigy among the ancients, for an ox to speak; upon such a fact being announced to the senate, they were in the habit of holding a meeting in the open air.

CHAPTER IV.

THE EGYPTIAN APIS.

IN Egypt an ox is even worshipped as a deity; they call it Apis. It is distinguished by a conspicuous white spot on the right side, in the form of a crescent. There is a knot also under the tongue, which is called "cantharus." This ox is not allowed to live beyond a certain number of years; but is then destroyed by being drowned in the fountain of the priests. They then go, amid general mourning, and seek another ox to replace it; and the mourning is continued, with

their heads shaved, until such time as they have found one ; it is not long, however, at any time, before they meet with a successor. When one has been found, it is brought by the priests to Memphis. There are two temples appropriated to it, which are called thalami, and to these the people resort to learn the auguries. According as the ox enters the one or the other of these places, the augury is deemed favorable or unfavorable. It gives answers to individuals, by taking food from the hand of those who consult it. It turned away from the hand of Germanicus Cæsar, who died not long after. It commonly lives in secret ; but, when it comes forth in public, the multitudes make way for it, and it is attended by a crowd of boys, singing hymns in honor of it ; it appears to be sensible of the adoration thus paid to it, and to court it. These crowds, too, suddenly become inspired, and predict future events. There is a spot in the Nile, near Memphis, which, from its figure, they call Phiala (the goblet) ; here they throw into the water a dish of gold, and another of silver, every year upon the days on which they celebrate the birth of Apis. These days are seven in number, and it is a remarkable thing, that during this time, no one is ever attacked by the crocodile ; on the eighth day, however, after the sixth hour, these beasts resume all their former ferocity.

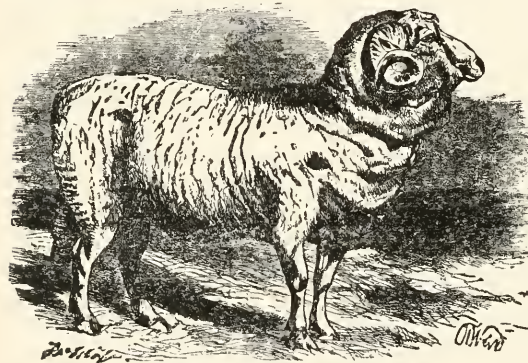
CHAPTER V.

SHEEP AND THEIR WOOL.

MANY thanks do we owe to the sheep, both for appeasing the gods, and for giving us the use of its fleece. As oxen cultivate the fields which yield food for man, so to sheep are we indebted for the defence of our bodies.

There are two principal kinds of sheep, the covered and the colonic, or common sheep; the former is the more tender animal, but the latter is more nice about its pastures, for the covered sheep will feed even on brambles. The best coverings for sheep are brought from Arabia.

The most esteemed wool of all is that of Apulia, and that which in Italy is called Grecian wool, in other countries Italian. The fleeces of Miletus hold the third rank. The Apulian wool is shorter in the hair, and owes its high character to the cloaks that are made of it. That which comes from the vicinity of Tarentum and Canusium is the most celebrated; and there is a wool from Laodicea, in Asia, of a



MERINO, OR SPANISH SHEEP.

similar quality. There is no white wool superior to that of the countries bordering on the Padus, nor up to the present day has any wool exceeded the price of one hundred sesterces (or about \$4.00) per pound. The sheep are not shorn in all countries; in some places it is still the custom to pull off the wool. There are so many various colors of wool, that we lack terms to express them all. Pollentia, in the vicinity of the Alps, produces black fleeces of the best quality; Asia, the red fleeces; those of Canusium are of a tawny color; and those of Tarentum have a peculiar dark tint. The wool of Istria is much more like hair than wool, and is not suitable for the fabrication of stuffs upon which a long nap is required.

The thick, flocky wool has been esteemed for the manufacture of carpets from the very earliest times; it is quite clear, from what we read in Homer, that they were in use in

his time.* Some kinds of wool are compressed for making a felt, which, if soaked in vinegar,† is capable of resisting iron even; and, what is still more, after having gone through the last process, wool will even resist fire; the refuse, too, when taken out of the vat of the scourer, is used for making mattresses, an invention, I fancy, of the Gauls. At all events, it is by Gallic names that we distinguish the various sorts of mattresses at the present day; but I am not well able to say at what period wool began to be employed for this purpose. Our ancestors made use of straw for the purpose of sleeping upon, just as they do at present when in camp. The gausapa‡ has been brought into use in my father's memory, and I myself recollect the amphimalla§ and the long shaggy apron being introduced; but at the present day, the laticlave tunic is beginning to be manufactured, in imitation of the gausapa.¶ Black wool will take no color.

* Καὶ ῥήγεα καλὰ
Πορφύρ' ἐμβαλέειν, στορέσαι δ' ἐφύπερθε τάπητας.

Odyssey, B. iv. l. 427. "And to throw on fair coverlets of purple, and to lay carpets upon them."

† "I have macerated unbleached flax in vinegar saturated with salt, and after compression have obtained a felt, with a power of resistance quite comparable with that of the famous armor of Conrad of Montferrat; for neither the point of a sword, nor even balls discharged from fire-arms, were able to penetrate it." *Memoir on the substance called Pilina, by Papadopoulos-Vretos.*

‡ The "gausapa," or "gausapum," was a kind of thick cloth, very woolly on one side, and used especially for covering tables and beds, and making cloaks to keep out the wet and cold. The wealthier Romans had it made of the finest wool, and usually of a purple color. It seems also to have been sometimes made of linen, but still with a rough surface.

§ From ἀμφίμαλλα, "napped on both sides." They probably resemble our baizes or druggets, or perhaps the modern blanket.

¶ About the time of Augustus, the Romans began to exchange the "toga," which had previously been their ordinary garment, for the more convenient "lacerna" and "pænula," which were less encumbered with folds, and better adapted for the usual occupations of life.

CHAPTER VI.

DIFFERENT KINDS OF CLOTHS.

VARRO informs us, as an eye-witness, that in the temple of Sancus, the wool was still preserved on the distaff and spindle of Tanaquil,* who was also called Caia Cæcilia; and he says that the royal waved (or “watered”) toga, formerly worn by Servius Tullius, and now in the temple of Fortune, was made by her. Hence was derived the custom, on the marriage of a young woman, of carrying in the procession a dressed distaff and a spindle, with the thread arranged upon it. Tanaquil was the first who wove the straight tunic, such as our young people and newly-married women wear with the white toga. Waved garments were at first the most esteemed of all: after which those composed of various colors came into vogue. Fenestella informs us, that togas with a smooth surface, as well as the Phryxian togas of crisp and crinkly wool, began to be used in the latter part of the reign of Augustus. The prætexta † had its origin among the Etrurians. I find that the trabea ‡ was first worn by the kings; embroidered garments are mentioned by Homer, § and in this class originated the triumphal robes. The Phrygians first used the needle for this purpose, and hence this kind of garment obtained the name of Phrygian. King Attalus, who

* According to the commonly received account, Tanaquil was the wife of Tarquinius Priscus, and a native of Etruria; when she removed to Rome, and her husband became king, her name was changed to Caia Cæcilia.

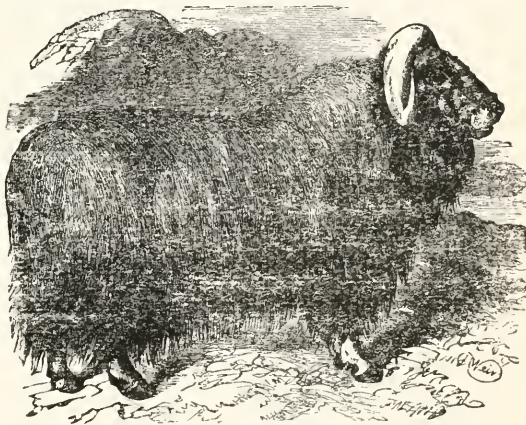
† The prætexta is described by Varro as a white toga, with a purple band or border; it was worn by boys until their seventeenth year, and by young women until their marriage.

‡ The trabea differed from the prætexta, in being ornamented with stripes (trabes) of purple, whence its name.

§ Helen is introduced, Iliad, B. iii. l. 125, weaving an embroidered garment, in which were figured the battles of the Greeks and Trojans. It was probably somewhat of the nature of modern tapestry.

also lived in Asia, invented the art of embroidering with gold, from which these garments have been called Attalic. Babylon was very famous for making embroidery in different colors, so that stuffs of this kind have obtained the name of Babylonian. The method of weaving cloth with more than two threads was invented at Alexandria; and in Gaul cloths were first woven into checkered plaids. Metellus Scipio, in the accusation which he brought against Cato, stated that even in his time Babylonian covers for couches were selling for eight hundred thousand sesterces, and these of late, in the time of the Emperor Nero, had risen to four millions.*

The prætextæ of Servius Tullius, with which the statue of Fortune, dedicated by him, was covered, lasted until the death of Sejanus; and it is a remarkable fact that, during a period of five hundred and sixty years, they had never



MUSK OX.—*Ovibos Moschatus*.

faded or received injury from moths. I myself have seen the fleece upon the living animal dyed in strips of three colors, purple, scarlet, and violet,—a pound and a-half of dye being used for each,—just as though they had been produced by Nature in this form, to meet the demands of luxury.

In the sheep, it is considered a proof of its being of a very fair breed, when the legs are short, and the belly is covered with wool; when this part is bare, they are looked upon as worthless. The tail of the Syrian sheep is a cubit in length, and upon that part most of the wool is found.

* The first sum amounts to about \$23,000, the latter to \$115,000.

CHAPTER VII.

GOATS.

SOME of these animals have no horns; but where there are horns, the age of the animal is denoted by the number of knots on them. In Cilicia, and in the vicinity of the Syrtes, the inhabitants shear the goat for the purpose of clothing themselves. It is said that the she goats in the pastures will never look at each other at sun-set, but lie with their backs towards one another, while at other times of the day they lie facing each other and in family groups. They all have long hair hanging down from the chin. If any one of the flock is taken hold of and dragged by this hair, all the rest gaze on in stupid astonishment.

Mutianus relates an instance of the intelligence of this animal, of which he himself was an eye-witness. Two goats, coming from opposite directions, met on a very narrow bridge, which would not admit of either of them turning round, and in consequence of its great length, they could not safely go backwards, there being no sure footing on account of its narrowness, while at the same time an impetuous torrent was rapidly rushing beneath; accordingly, one of the animals lay down flat, while the other walked over it.

Book VI.

THE NATURAL HISTORY OF FISHES.

CHAPTER I.

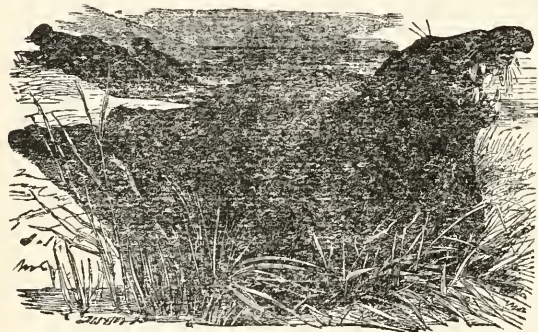
WHY THE LARGEST ANIMALS ARE FOUND IN THE SEA.

WE have now given an account of the animals which we call terrestrial, and which live as it were in a sort of society with man. Among the remaining ones, it is well known that the birds are the smallest; we shall therefore first describe those which inhabit the seas, rivers, and standing waters.

Among these there are many to be found that exceed in size any of the terrestrial animals; the evident cause of which is the superabundance of moisture with which they are supplied. Very different is the lot of the winged animals, whose life is passed soaring aloft in the air. But in the seas, spread out as they are far and wide, forming an element at once so delicate and so vivifying, many animals are to be found of monstrous form. Hence it is that the vulgar notion may very possibly be true, that whatever is produced in any other department of Nature, is to be found in the sea as well; while, at the same time, many other productions are there to be found which nowhere else exist. That there are to be found in the sea the forms, not only of terrestrial animals, but of inanimate objects, is easy to be understood by all who will take the trouble to examine the grape-fish, the sword-fish, the saw-fish, and the cucumber-fish, which last so strongly resembles the real cucumber both in color and in

smell. We shall find the less reason then to be surprised to find that in so small an object as a shell-fish the head of the horse is to be seen protruding from the shell.

But the largest and most numerous of all these animals are those found in the Indian seas; among which there are balæ-næ, four jugera in extent, and the pristis, two hundred cubits long: here also are found cray-fish four cubits in length, and in the river Ganges there are to be seen eels three hundred feet long.* But at sea, more especially about the time of the solstices, these monsters are to be seen. For then in these regions the whirlwinds blow, the rains descend, the hurricane



SEA-ELEPHANT.—*Moringa proboscidea*.

comes rushing down, hurled from the mountain heights, while the sea is stirred up from the very bottom, and the monsters are driven from their depths and rolled upwards on the crest of the billow. Once upon a time the fleet of Alexander the Great met with such vast multitudes of tunnies, that he was able to make head against them only by facing them in order of battle, just as he would have done an enemy's fleet. Had the ships not done this, but proceeded in a straggling manner, they could not possibly have made their escape. No noises, no sounds, no blows had any effect on these fish; by nothing short of the clash of battle were they to be terrified, and by nothing less than their utter destruction were they overpowered.

There is a large peninsula in the Red Sea, known by the name of Cadara: as it projects into the deep it forms a vast gulf, which it took the fleet of King Ptolemy twelve whole days and nights to traverse by dint of rowing, for not a

* These are all, of course, excessive exaggerations.

breath of wind was to be perceived. In the recesses of this becalmed spot more particularly, the sea-monsters attain so vast a size that they are quite unable to move. The commanders of the fleets of Alexander the Great have related that the Gedrosi, who dwell upon the banks of the river Arabia, are in the habit of making the doors of their houses* with the jaw-bones of fishes, and rafting the roofs with their bones, many of which were found as much as forty cubits in length. At this place, too, the sea-monsters, just like so many cattle, were in the habit of coming on shore, and, after feeding on the roots of shrubs, they would return; some of them, which had the heads of horses, asses, and bulls, found a pasture in the crops of grain.

The largest animals found in the Indian Sea are the pistrix and the balæna; while of the Gallic Ocean the physeter, or blower, is the most bulky inhabitant, raising itself aloft like some vast column, and, as it towers above the sails of ships, belching forth, as it were, a deluge of water. In the ocean of Gades there is a tree, with outspread branches so vast, that it is supposed that it is for that reason it has never yet entered the Straits. There are fish also found there which are called sea-wheels, in consequence of their singular conformation; they are divided by four spokes, the nave being guarded on every side by a couple of eyes.

* Hardouin remarks, that the Basques of his day were in the habit of fencing their gardens with the ribs of the whale, which sometimes exceeded twenty feet in length; and Cuvier says, that at the present time, the jaw-bone of the whale is used in Norway for the purpose of making beams or posts for buildings.

CHAPTER II.

THE FORMS OF THE TRITONS AND NEREIDS.

A DEPUTATION of persons from Olisipo (Lisbon) that had been sent for the purpose, brought word to the Emperor Tiberius that a triton * had been both seen and heard in a certain cavern, blowing a conch-shell, and of the form under which they are usually represented. Nor is the figure generally attributed to the nereids at all a fiction; only in them, the portion of the body that resembles the human figure is still rough all over with scales. For one of these creatures was seen upon the same shores, and as it died, its plaintive murmurs were heard by the inhabitants at a distance. The legatus of Gaul, too, wrote word to the late Emperor Augustus that a considerable number of nereids had been found dead upon the sea-shore. I have, too, some distinguished informants of equestrian rank, who state that they themselves once saw in the ocean of Gades a sea-man, which bore in every part of his body a perfect resemblance to a human being, and that during the night he would climb up into ships; upon which the side of the vessel where he seated

* Hardouin, with excessive credulity, says that it is no fable, that the nereids and tritons had a human face; and says that no less than fifteen instances, ancient and modern, had been adduced, in proof that such was the fact. He says that this was the belief of Scaliger, and quotes the book of Aldrovandus on Monsters. But, as Cuvier remarks, it is impossible to explain these stories of nereids and tritons, on any other grounds than the fraudulent pretences of those who have exhibited them, or asserted that they have seen them. "It was only last year," he says, "that all London was resorting to see a wonderful sight in what is commonly called a mermaid. I myself had the opportunity of examining a very similar object: it was the body of a child, in the mouth of which they had introduced the jaws of a sparus, or "gilt-head," while for the legs was substituted the body of a lizard. "The body of the London mermaid," he says, "was that of an ape, and a fish attached to it supplied the place of the hind legs."

himself would instantly sink downward, and if he remained there any considerable time, even go under water.

In the reign of the Emperor Tiberius, a subsidence of the ocean left exposed on the shores of an island which faces the province of Lugdunum as many as three hundred animals or more, all at once, quite marvellous for their varied shapes and enormous size, and no less a number upon the shores of the Santones; among the rest there were elephants and rams, which last, however, had only a white spot to represent horns. Turranius has also left accounts of several nereids, and he speaks of a monster that was thrown up on the shore at Gades, the distance between the two fins at the end of the tail of which was sixteen cubits, and its teeth one hundred and twenty in number; the largest being nine, and the smallest six inches in length.

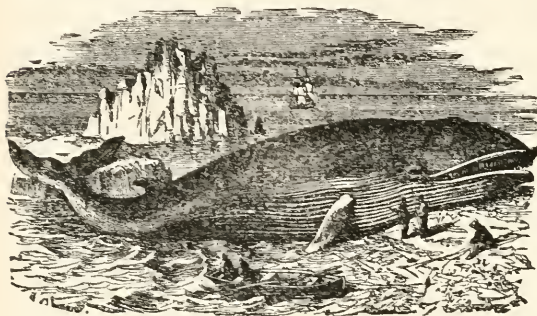
Marcus Scaurus, in his ædileship, exhibited at Rome, among other wonderful things, the bones of the monster to which Andromeda was said to have been exposed, and which he had brought from Joppa, a city of Judæa. These bones exceeded forty feet in length, and the ribs were higher than those of the Indian elephant, while the back-bone was a foot and a-half in thickness.

CHAPTER III.

THE BALÆNA AND THE ORCA.

THE balæna penetrates even to our seas. It is said that they are not to be seen in the ocean of Gades before the winter solstice, and that at periodical seasons they retire and conceal themselves in some calm capacious bay. This fact, however, is known to the orca, an animal which is peculiarly hostile to the balæna, and the form of which cannot be in any

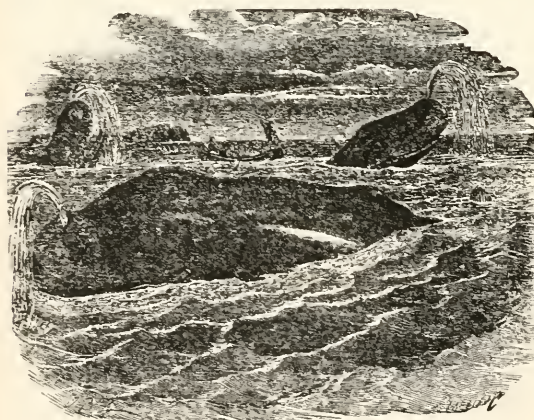
way adequately described, but as an enormous mass of flesh armed with teeth. This animal attacks the balæna with its young, in its places of retirement, and as they turn to defend themselves, it pierces them just as though they had been



RORQUAL.—*Physalus Bööps.*

attacked by the beak of a Liburnian galley. The balæna, devoid of all flexibility, without energy to defend themselves, are well aware that their only resource is to take to flight in the open sea and to range over the whole

face of the ocean; while the orca, on the other hand, do all in their power to meet them in their flight, throw themselves in their way, and either kill them cooped up in a narrow passage, or else drive them on a shoal, or dash them to pieces against the rocks. When these battles are witnessed, it appears just as though the sea were infuriated against itself; not a breath of wind may be felt in the bay, and yet the waves by their pantings and their repeated blows will be heaved aloft in a way which no whirlwind could effect.



SPERMACETI WHALE.—*Cátodon Macrocéphalus.*

An orca has been seen even in the port of Ostia, where it was attacked by the Emperor Claudius. While he was constructing the harbor there, an orca came, attracted by some hides brought from Gaul, which had happened to fall over-

board there. Feeding upon these for several days it had quite glutted itself, and hollowed out a channel in the shoal water. Here, the sand was thrown up by the action of the wind to such an extent, that the creature found it quite impossible to turn round; and while in the act of pursuing its prey, it was propelled by the waves towards the shore, so that its back came to be perceived above the level of the water, very much resembling in appearance the keel of a vessel turned bottom upwards. Upon this, Cæsar ordered a great number of nets to be extended across the mouth of the harbor, from shore to shore, while he himself went there with the prætorian cohorts, affording a spectacle to the Roman people; for boats assailed the monster, while the soldiers on board showered lances upon it. I myself saw one of the boats sunk by the water which the animal, as it respired, showered down upon it.

CHAPTER IV.

DOLPHINS.

THE swiftest not only of the sea-animals, but of all animals whatever, is the dolphin.* He is more rapid in his movements than a bird, more swift than the flight of an arrow, and were it not for the fact that his mouth is much below his muzzle, almost, indeed, in the middle of the belly, not a fish would be able to escape his pursuit. But Nature, in her prudence, has thrown certain impediments in his way; for, unless he turns and throws himself on his back, he can seize nothing, and it is this circumstance more especially that gives proof of his extraordinary swiftness. For, if pressed by hun-

* In his description of the dolphin Pliny has confused the peculiarities of the seal, the porpoise, the flying-fish and the squalus, with those of the dolphin.

ger, he will follow a fish, as it flies down, to the very bottom of the water, and then after holding his breath thus long, will dart again to the surface to breathe, with the speed of an arrow discharged from a bow ; and often, on such occasions, he is known to leap out of the water with such a bound, as to fly right over the sails of a ship.

Dolphins generally go in couples. They suckle their young like the balæna, and even carry them during the weakness of infancy ; in addition to which, they accompany them long after they are grown up, so great is their affection for their progeny. The young ones grow very speedily, and in ten years arrive at their full size. The dolphin lives thirty years ; a fact that has been ascertained from cutting marks on the tail, by way of experiment. It conceals itself for thirty days, at about the rising of the Dog-star, so effectually, that it is not known whither it goes ; a thing the more surprising as it is unable to breathe under water. Dolphins are in the habit of darting upon the shore, for some unknown reason. The tongue, contrary to the nature of aquatic animals in general, is movable, being short and broad, not much unlike that of the pig. Instead of a voice, they emit a moaning sound similar to that made by a human being ; the back is arched, and the nose turned up. For this reason they all recognize in a most surprising manner the name of Simo, and prefer to be called by that rather than by any other.*

The dolphin is an animal not only friendly to man, but a lover of music as well ; he is charmed by melodious concerts, especially by the notes of the water-organ. He does not dread man, as though a stranger to him, but comes to meet ships, leaps and bounds to and fro, vies with them in swiftness, and passes them when in full sail.

In the reign of the late Emperor Augustus, a dolphin

* He implies that the dolphin knows that it is "simus," or "flat-nosed," for which reason it is particularly fond of being called "Simo," or "flat-nose," a piece of good taste and intelligence remarkable even in a dolphin.

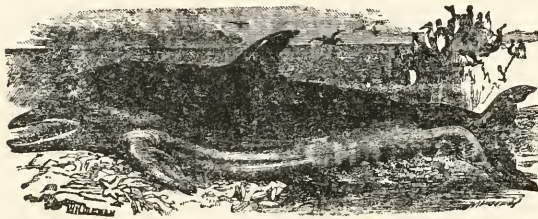
which had been carried to the Lucrine Lake conceived a most wonderful affection for the child of a certain poor man, who was in the habit of going that way from Baiæ to Puteoli to school, and who used to stop there in the middle of the day, call him by his name of Simo, and would often entice him to the banks of the lake with pieces of bread which he carried for the purpose. I should really have felt ashamed to mention this, had not the incident been stated in writing in the works of Mæcenas, Fabianus, Flavius Alfius, and many others. At whatever hour of the day he might happen to be called by the boy, and although hidden and out of sight at the bottom of the water, he would instantly fly to the surface, and after feeding from his hand, would present his back for him to mount, taking care to conceal the spiny projection of his fins in their sheath, as it were; and so, sportively taking him up on his back, he would carry him over a wide expanse of sea to the school at Puteoli, and in a similar manner bring him back again. This happened for several years, until at last the boy happened to fall ill of some malady, and died. The dolphin came again and again to the spot as usual, with a sorrowful air and manifesting every sign of deep affliction, until at last (a thing of which no one felt the slightest doubt), he died purely of sorrow and regret.

Within a few years another dolphin at Hippo Diarrhytus, on the coast of Africa, in a similar manner used to receive his food from the hands of various persons, present himself for their caresses, sport about among the swimmers, and carry them on his back. On being rubbed with unguents by Flavianus, the proconsul of Africa, he was lulled to sleep, as it appeared, by the sensation of an odor so new to him, and floated about just as though he had been dead. For some months after this, he carefully avoided all intercourse with man, as though he had received some affront or other; but at the end of that time he returned, and afforded the same won-

derful scenes as before. At last, the vexations that were caused them by having to entertain so many influential men who came to see this sight, compelled the people of Hippo to put the animal to death.

Before this, there was a similar story told of a child at the city of Iasus, for whom a dolphin was long observed to have conceived a most ardent affection, until one day the animal eagerly following him as he was making for the shore, was carried by the tide on the sands, and there expired. Alexander the Great appointed this boy high-priest of Neptune at Babylon, interpreting this extraordinary attachment as a convincing proof of the favor of that divinity.

Hegesidemus informs us, that in the same city of Iasus there was a boy, Hermias by name, who in a similar manner used to traverse the sea on a dolphin's back, but that on one occasion a tempest suddenly arising, he lost his life, and was brought back dead; upon which the dolphin, who thus admitted that he had been the cause of his death, would not return to the sea, but lay down upon the dry land, and there expired.



DOLPHIN.—*Delphinus Delphis.*

Theophrastus tells us, that the very same thing happened at Naupactus; nor, in fact, is there any limit to similar instances. The Amphiloichians and the Tarentines have similar stories about children and dolphins; and all these give an air of credibility to the one that is told of Arion, the famous performer on the lyre. The mariners being on the point of throwing him into the sea, for the purpose of taking possession of the money he had earned, he prevailed upon them to allow him one more song, accompanied with the music of his lyre. The melody attracted numbers of dolphins around the ship, and, upon throwing himself into the sea, he

was taken up by one of them, and borne in safety to the shore of the Promontory of Tænarum.*

There is in the province of Gallia Narbonensis and in the territory of Nemausus a lake known by the name of Latera, where dolphins fish in company with men. At the narrow outlet of this lake, at stated seasons of the year innumerable multitudes of mullets make their way into the sea, taking advantage of the turn of the tide; hence it is quite impossible to employ nets sufficiently strong to bear so vast a weight, even though the fish had not the instinctive shrewdness to watch their opportunity. By a similar instinct the fish immediately make with all speed towards the deep water which is found in a gulf in that vicinity, and hasten to escape from the only spot that is at all convenient for spreading the nets. As soon as the fishermen perceive this, all the people—for great multitudes resort thither, being well aware of the proper time, and especially desirous of sharing in the amusement—shout as loud as they can, and summon Simo to the scene of action. The dolphins very quickly understand that they are in requisition, as a north-east wind speedily carries the sound to their retreats, though a south one would somewhat retard it by carrying it in an opposite direction. Even then however, sooner than you could have possibly supposed, there are the dolphins, in all readiness to assist. They are seen approaching in haste in battle array, and, immediately taking up their position when the engagement is about to take place, they cut off all escape to the open sea, and drive the terrified fish into shallow water. The fishermen then throw their nets, holding them up at the sides with forks, though the mullets with inconceivable agility instantly leap over them; while the dolphins, on the other hand, are waiting in readiness to receive them, and content themselves for the present with killing them only, postponing all thoughts of

* Ovid tells the story of Arion more fully, and in beautiful language, in the *Fasti*, B. ii. l. 92.

eating till after they have secured the victory. The battle waxes hot apace, and the dolphins, pressing on with the greatest vigor, readily allow themselves to be enclosed in the nets; but in order that the fact of their being thus enclosed may not urge the enemy to find additional means of flight, they glide along so stealthily among the boats and nets, or else the swimmers, as not to leave them any opening for escape. Not one among them attempts to make its escape by leaping, which at other times is their favorite amusement, except when the nets are purposely lowered for it; and even after it has come out it continues the battle, as it were, up to the very ramparts. At last, when the capture is now completed, they devour those among the fish which they have killed; but being well aware that they have given too active an assistance to be repaid with only one day's reward, they take care to wait there till the following day, when they are filled not only with fish, but bread crumbs soaked in wine.

The account which Mucianus gives of a similar mode of fishing in the Iasian Gulf differs from the preceding one, in the fact that there the dolphins make their appearance of their own accord, and do not require to be called; they receive their share from the hands of the people, each boat having its own particular associate among the dolphins; and this, although the fishing is carried on at night-time by the light of torches.

Dolphins, also, form among themselves a sort of general community. Once, when one of them had been captured by a king of Caria and chained up in the harbor, great multitudes of dolphins assembled at the spot, and with signs of sorrow which could not be misunderstood, appealed to the sympathies of the people, until at last the king ordered it to be released. The young dolphins are always attended by a larger one, who acts as a guardian to them; and before now, they have been seen carrying off the body of one which had died, that it might not be devoured by the sea-monsters.

CHAPTER V.

THE VARIOUS KINDS OF TURTLES.

THE Indian Sea produces turtles of such vast size, that with the shell of a single animal they are able to roof a habitable cottage; and among the islands of the Red Sea, the navigation is mostly carried on in boats formed of these shells. They are to be caught in many ways; but they are generally taken when they have come up to the surface of the water just before midday, a season at which they experience great delight in floating on the calm surface, with the back entirely out of the water. Here the delightful sensations which attend a free respiration beguile them to such a degree, and render them so utterly regardless of their safety, that their shell becomes so dried up by the heat of the sun, that they are unable to descend, and, having to float against their will, become an easy prey to the fishermen. It is said also, that they leave the water at night for the purpose of feeding, and eat with such avidity as to glut themselves: upon which, they become weary, and on their return in the morning, to the sea, they fall asleep on the surface of the water. The noise of their snoring betrays them, upon which the fishermen stealthily swim towards the animals, three to each turtle; two of them, in a moment, throw it on its back, while a third slings a noose around it, as it lies face upwards, and then more men who are ready on shore, draw it to land.

In the Phœnician Sea they are taken without the slightest difficulty, and, at stated periods of the year, come of their own accord to the river Eleutherus, in immense numbers. The turtle has no teeth, but the edge of the mouth is sharp, the upper part shutting down over the lower like the lid of a box. In the sea it lives upon shell-fish, and such is the

strength of its jaws, that it is able to break stones; when on shore, it feeds upon herbage. The female turtle lays eggs like those of birds, one hundred in number; these she buries on the dry land, covers them over with earth, pats it down with her breast, and sits on them during the night. The young are hatched in the course of a year. Some persons are of opinion that they hatch their eggs by means of the eyes, by merely looking at them. The Troglodytæ have turtles with horns,* which resemble the branches of a lyre; they are large, but movable, and assist the animal like so many oars while swimming. The name of this fine but rarely-found turtle, is "chelyon;" for the rocks, from the sharpness of their points, frighten away the Chelonophagi, while the Troglodytæ, whose shores these animals frequent, worship them as sacred. There are some land turtles the shells of which are used for the purposes of art. They are found in the deserts of Africa, in the parts where the scorched sands are more especially destitute of water, and subsist, it is believed, upon the moisture of the dews. No other animal is to be found there.

Carvilius Pollio, a man of prodigal habits and ingenious in inventing the refinements of luxury, was the first to cut the shell of the tortoise into laminæ, or thin slices, and to veneer beds and cabinets with it.

CHAPTER VI.

DISTRIBUTION OF AQUATIC ANIMALS INTO VARIOUS SPECIES.

THE integuments of the aquatic animals are many in number. Some are covered with a hide and hair, as the sea-calf and hippopotamus, for instance; others again, with a hide

* According to Cuvier the fore-feet were here taken for horns, being in the turtle long, narrow, and pointed.



GROUP OF SEALS.

only, as the dolphin ; others again, with a shell, as the turtle ; others, with a coat as hard as a stone, like the oyster and other shell-fish ; others, with a crust, such as the cray-fish ; others, with a crust and spines, like the sea-urchin ; others, with scales, as fishes in general ; others, with a rough skin, as the squatina, the skin of which is used for polishing wood and ivory ; others, with a soft skin, like the muræna ; and others with none at all, like the polypus.

Of all aquatic animals the sea-calf is killed with the greatest difficulty, unless the head is cut off at once. It makes a noise which sounds like lowing, whence the name of "sea-calf." The animals are susceptible, however, of training, and with their voice, as well as by gestures, can be taught to salute the public ; when called by their name, they answer with a discordant kind of grunt.* No animal has a deeper sleep than this ; on dry land it creeps along as though on feet, by the aid of what it uses as fins when in the sea. Its skin, even when separated from the body, is said to retain a certain sensitive sympathy with the sea, and at the reflux of the tide, the hair on it always rises upright : in addition to which, it is said that there is in the right fin a certain soporiferous influence, and that, if placed under the head, it induces sleep.

There are one hundred and seventy-four species of fishes, exclusive of the crustacea, of which there are thirty kinds.†

Tunnies are among the most remarkable for their size ; we

* "Fremitu." From their lowing noise, the French have also called these animals "veaux de mer," and we call them "sea-calves." Lopez de Gomara, one of the more recent writers on Mexico, in his day, gave an account of an Indian sea-calf, or manati, as it was called by the natives, that had become quite tame, and answered readily to its name ; and although not very large, it was able to bear ten men on its back. He also tells us of a much more extraordinary one, which Aldrovandus says he himself had seen at Bologna, which would give a cheer for the Christian princes when asked, but would refuse to do so for the Turks.

† There are specimens of about 6000 kinds of fishes, in the Cabinet du Roi in Paris.

have found one weighing as much as fifteen talents (1200 pounds), the breadth of its tail being five cubits and a palm. In some of the rivers, also, there are fish of no less size, such, for instance, as the silurus of the Nile, the isox of the Rhine, and the attilus of the Po, which, naturally of an inactive nature, sometimes grows so fat as to weigh a thousand pounds, and when taken with a hook, attached to a chain, requires a yoke of oxen to draw it on land. An extremely small fish, which is known as the clupea, attaches itself, with a wonderful tenacity, to a certain vein in the throat of the attilus, and destroys it by its bite. The silurus carries devastation with it wherever it goes, attacks every living creature, and often drags beneath the water horses as they swim. It is also remarkable, that in the river Main of Germany, a fish that bears a very strong resemblance to the sea-pig, requires to be drawn out of the water by a yoke of oxen ; and in the Danube, it is taken with large hooks of iron. In the Borys-thenes, also, there is said to be a fish of enormous size, the flesh of which has no bones or spines in it, and is remarkable for its sweetness.

In the Ganges, a river of India, there is a fish found which they call the platanista ; it has the muzzle and the tail of the dolphin, and measures sixteen cubits in length. Statius Sebosus says, a thing that is marvellous in no small degree, that in the same river there are fishes found, called worms ; these have two gills, and are sixty cubits in length ; they are of an azure color, and have received their name from their peculiar conformation. These fish, he says, are of such enormous strength, that with their teeth they seize hold of the trunks of elephants that come to drink, and so drag them into the water.

The Black Sea is never entered by any animal that is noxious to fish, with the exception of the sea-calf and the small dolphin. On entering, the tunnies range along the shores to the right, and on departing, keep to those on the left ; this is

supposed to arise from the fact that they have better sight with the right eye, their powers of vision with either being naturally very limited. In the channel of the Thracian Bosphorus, by which the Propontis is connected with the Black Sea, at the narrowest part of the Straits which separate Europe from Asia, there is, near Chalcedon, on the Asiatic side, a rock of remarkable whiteness, the whole of which can be seen from the bottom of the sea. Alarmed at the sudden appearance of this rock, the tunnies always hasten in great numbers, and with headlong impetuosity, towards the promontory of Byzantium, which stands exactly opposite to it, and from this circumstance has received the name of the Golden Horn.* Hence it is, that all the fishing is at Byzantium, to the great loss of Chalcedon, although it is only separated from it by a channel a mile in width. They wait, however, for the blowing of the north wind to leave the Black Sea with a favorable tide, and are never taken until they have entered the harbor of Byzantium. These fish do not move about in winter; in whatever place they may happen to be surprised by it, there they pass the winter, till the time of the equinox.

Manifesting a wonderful degree of delight, they will often accompany a vessel in full sail, and may be seen from the deck following it for hours, over a distance of several miles. If a fish-spear is thrown at them never so many times, they are not in the slightest degree alarmed at it. Some writers call the tunnies which follow ships in this manner, by the name of *pompili*, or *pilot-fish*.

* He means, that in consequence of the lucrative nature of this fishery, it thence obtained the name of the "golden" horn.

CHAPTER VII.

FISHES VALUED FOR THE TABLE.

AT the present day, the first place in point of delicacy is given to the scarus, the only fish that is said to ruminate, and to feed on grass and not on other fish. It is mostly found in the Carpathian Sea, and never of its own accord passes Lectum, a promontory of Troas. Optatus Elipertius, the commander of the fleet under the Emperor Claudius, had this fish brought from that locality, and dispersed in various places off the coast between Ostia and the districts of Campania. During five years, the greatest care was taken that those which were caught should be returned to the sea; but since then they have been always found in great abundance off the shores of Italy, where formerly there were none to be taken. Thus has gluttony introduced these fish, to be a dainty within its reach, and added a new inhabitant to the seas; so that we ought to feel no surprise that foreign birds breed at Rome.

The fish that is next in estimation for the table is the mustela, but that is valued only for its liver. A singular thing to tell of—the lake of Brigantia (the modern Lake Constance), in Rhætia, lying in the midst of the Alps, produces them to rival even those of the sea.

Of the remaining fish that are held in any degree of esteem, the mullet is the most highly valued, as well as the most abundant of all; it is of only a moderate size, rarely exceeds two pounds in weight, and will never grow beyond that weight in preserves or fish-ponds. These fish are only to be found in the Northern Ocean, exceeding two pounds in weight, and even there in none but the more westerly parts. As for the other kinds, the various species are numerous; some live upon sea-weed, while others feed on the oyster, slime, and the flesh of other fish. The more distinctive mark

is a forked beard, that projects beneath the lower lip. The lautarius, or mud-mullet, is held in the lowest esteem of all. This last is always accompanied by another fish, known as the sargus, and where the mullet stirs up the mud, the other finds aliment for its own sustenance. The mullet most esteemed of all has a strong flavor of shell-fish. The masters in gastronomy inform us, that the mullet, while dying, assumes a variety of colors and a succession of shades, and that the hue of the red scales, growing paler and paler, gradually changes, more especially if it is looked at enclosed in glass.* Marcus Apicus, a man who displayed a remarkable degree of ingenuity in everything relating to luxury, was of opinion, that it was a most excellent plan to let the mullet die in the pickle known as the "garum of the allies" †—for we find that even this has found a surname—and he proposed a prize for any one who should invent a new sauce, made from the liver of this fish. I find it much easier to relate this fact, than to state who it was that gained the prize.

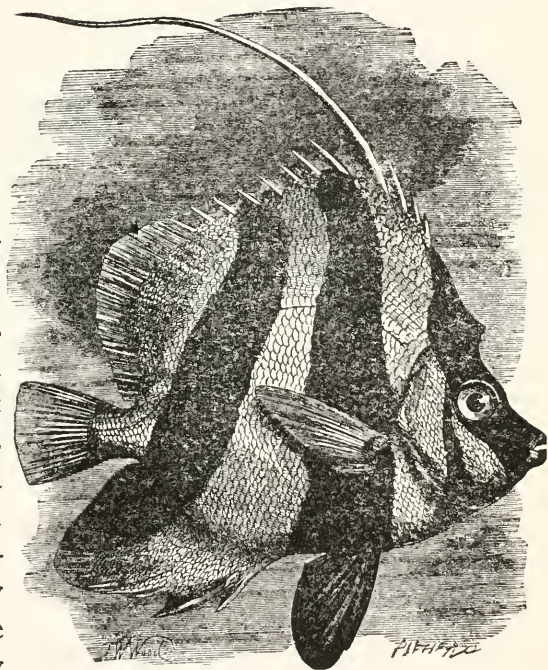
Asinius Celer, a man of consular rank, and remarkable for his prodigal expenditure on this fish, bought one at Rome, during the reign of the Emperor Caligula, at the price of eight

* Seneca has two passages on this subject, which strongly bespeak the barbarous tastes of the Romans. He says: "A mullet even, if just caught, is thought little of, unless it is allowed to die in the hand of your guest. They are carried about enclosed in globes of glass, and their color is watched as they die—ever changing by the struggles of death into various shades and hues." And again: "There is nothing, you say, more beautiful than the colors of the dying mullet; as it struggles and breathes forth its life, it is first purple, and then a paleness gradually comes over it; and then, placed as it is between life and death, an uncertain hue comes over it."

† Seneca speaks of this cruel custom of pickling fish alive. "Other fish, again, they kill in sauces, and pickle them alive. There are some persons who look upon it as quite incredible that a fish should be able to live underground. How much more so would it appear to them, if they were to hear of a fish swimming in sauce, and that the chief dish of the banquet was killed at the banquet, feeding the eye before it does the gullet?"

thousand sesterces.* A reflection upon such a fact as this will at once lead us to turn our thoughts to those who, making loud complaints against luxury, have lamented that a single cook cost more money to buy than a horse; while at the present day a cook is only to be obtained for the same sum that a triumph would cost, and a fish is only to be purchased at what was formerly the price for a cook! indeed, there is hardly any living being held in higher esteem than the man who understands how, in the most scientific fashion, to get rid of his master's property.

Licinius Mucianus relates, that in the Red Sea there was caught a mullet eighty pounds in weight. What a price would have been paid for it by our epicures, if it had only been found off the shores in the vicinity of our city!



LONG-SPINED CHÆTODON.—*Heinochus monoceros*.

Eels live eight years; they are able to survive out of water as much as six days, when a north-east wind blows; but when the south wind prevails, not so many. In winter, they

* Juvenal, Sat. iv. l. 15, speaks of a mullet being bought for 6000 sesterces, a thousand for every pound, and Suetonius tells us that in the reign of Tiberius three mullets were sold for 30,000 sesterces. It is in allusion to this kind of extravagance that Juvenal says, in the same Satire, that it is not unlikely that the fisherman could be bought as a slave for a smaller sum than the fish itself. At the above rate, each of these mullets sold for nearly \$400 of our money.

cannot live if they are in very shallow water, or if the water is troubled. They are taken about the rising of the Pleiades when the rivers are turbid. These animals seek their food at night; they are the only fish the bodies of which, when dead, do not float upon the surface.

There is a lake called Benacus, in the territory of Verona, in Italy, through which the river Mincius flows. At the part of it whence this river issues, once a year, and mostly in the month of October, the lake is troubled, evidently by the constellations of autumn, and the eels are heaped together by the waves, and rolled on by them in such astonishing multitudes, that single masses of them, containing more than a thousand in number, are often taken in the chambers which are formed in the bed of the river for that purpose.

CHAPTER VIII.

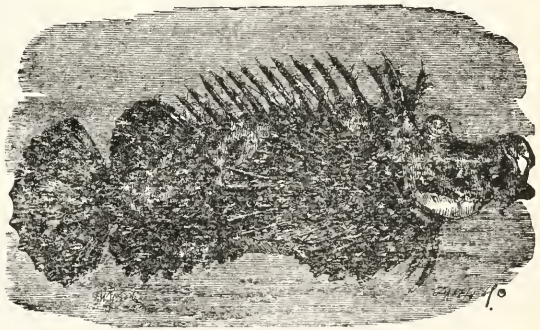
PECULIAR FISHES.

IN Northern Gaul the fish called *muræna* has on the right jaw seven spots, which bear a resemblance to the constellation of the Great Dipper, and are of a gold color, shining as long as the animal is alive, but disappearing as soon as it is dead. Vedius Pollio, a Roman of equestrian rank, and one of the friends of the late Emperor Augustus, found a method of exercising his cruelty by means of this animal, for he caused such slaves as had been condemned by him, to be thrown into preserves filled with *murænæ*; not that the land animals would not have fully sufficed for this purpose, but because he could not see a man so aptly torn to pieces all at once by any other kind of animal. It is said that these fish are driven to madness by the taste of vinegar. Their skin is exceedingly thin; while that of the eel, on the other hand, is much thicker.

Verrius informs us that formerly the children of the Roman citizens, while wearing the prætexta, were flogged with eel-skins.

There is a very small fish that is in the habit of living among the rocks, and is known as the echeneis.* It is believed that when this has attached itself to the keel of a ship its progress is impeded, and from this circumstance it takes its name.

Mucianus speaks of a murex of larger size than the purple murex with a head that is neither rough nor round; and the shell of which is single, and falls in folds on either side. He tells us, also, that some of these creatures once attached themselves to a ship freighted with children of noble birth, and that they stopped its course in full sail. Trebius Niger says that this fish is a foot in length, and that it



FILAMENTOUS GUNARD.—*Pelor filamentosum*.

can retard the course of vessels, five fingers in thickness; besides which, it has another peculiar property—when preserved in salt, and applied, it is able to draw up gold which has fallen into a well, however deep it may happen to be.

The only fish that builds itself a nest is the phycis: it makes it of sea-weed, and there deposits its eggs, which it defends from the attacks of enemies.

The sea-swallow, being able to fly, bears a strong resemblance to the bird of that name; the sea-kite, too, flies as well.

There is a fish that comes up to the surface of the sea, known, from the following circumstance, as the lantern-fish: thrusting from its mouth a tongue that shines like fire, it

* Ἐπὶ τοῦ ἔχειν νῆας. "From holding back ships."

emits a most brilliant light on calm nights. Another fish, which, from its horns, has received its name, raises them nearly a foot and a-half above the surface of the water. The sea-dragon, again, if caught and thrown on the sand, works out a hole for itself with its muzzle, with the most wonderful celerity.

CHAPTER IX.

BLOODLESS FISHES.

THE varieties of fish which we shall now mention are those which have no blood: they are of three kinds—first, those which are known as “soft;” next, those which have thin crusts; and, lastly, those which are enclosed in hard shells.* The soft fish are the loligo, the *sæpia*, the polypus, and others of a similar nature. The last have the head between the feet and the belly, and all of them have eight feet: in the *sæpia* and the loligo two of these feet are very long and rough, and by means of these they lift the food to their mouths, and attach themselves to places in the sea, as though with an anchor; the others act as so many arms, by means of which they seize their prey.

The loligo is also able to dart above the surface of the water, and the scallop does the same, like an arrow as it were. In the *sæpia*, the male is parti-colored, blacker than the female, and more courageous. If the female is struck with a fish-spear, the male comes to her aid; but the female, the instant the male is struck, takes to flight. Both of them, as soon as they find themselves in danger of being caught, dis-

* This division of the bloodless fish, made first by Aristotle, into the molusca, testacea, and crustacea, has been followed by naturalists almost down to the present day.

charge a kind of ink, and thus darkening the water, take to flight.

There are numerous kinds of polypi. The land polypus is larger than that of the sea; they all of them use their arms as feet and hands. The polypus has a sort of passage in the back, by which it lets in and discharges the water, and which it shifts from side to side, sometimes carrying it on the right, and sometimes on the left. It swims obliquely, with the head on one side, which is of surprising hardness while the animal is alive, being puffed out with air. In addition to this, they have cavities dispersed throughout the claws, by means of which, through suction, they can adhere to objects, with the head upwards, so tightly, that they cannot be torn away. They cannot attach themselves, however, to the bottom of the sea, and their retentive powers are weaker in the larger ones. These are the only soft fish that come on dry land, and then only where the surface is rugged: a smooth surface they will not come near. They feed upon the flesh of shellfish, the shells of which they can easily break in the embrace of their arms: their retreat may be easily detected by the pieces of shell which lie before it. Although, in other respects, this is looked upon as a remarkably stupid kind of animal, so much so, that it will swim towards the hand of a man, in its own domestic matters it manifests considerable intelligence. It carries its prey to its home, and after eating all the flesh, throws out the debris, and then pursues such small fish as may chance to swim towards them. It also changes its color, according to the aspect of the place where it is, and more especially when it is alarmed. The notion is entirely unfounded that it gnaws its own arms; this mischance befalls it from the congers; but it is perfectly true that its arms shoot forth again, like the tail in the colutus and the lizard.

Among the most remarkable curiosities among all the inhabitants of the sea is the animal which has the name of

nautilus, or, as some people call it, the pompilos. Lying with the head upwards, it rises to the surface of the water, raising itself little by little, while, by means of a certain conduit in its body, it discharges all the water, and this being got rid of like so much bilge-water as it were, it finds no difficulty in sailing along the surface. Then, extending backwards its two front arms, it stretches out between them a membrane of marvellous thinness, which acts as a sail spread out to the wind, while with the rest of its arms it paddles along below, steering itself with its tail in the middle, which acts as a rudder. Thus does it make its way along the deep, mimicking the appearance of a light Liburnian bark; while, if anything chances to cause it alarm, in an instant it draws in the water, and sinks out of sight.

Belonging to the genus of polypi is the animal known as the ozæna, being so called from the peculiarly strong smell exhaled by the head; in consequence of which, the murænae pursue it with the greatest eagerness. The polypi keep themselves concealed for two months in the year; they do not live beyond two years, and always die of consumption. I must not omit here the observations which Lucullus, the proconsul of Bætica, made with reference to the polypus, and which Trebius Niger, one of his suite, has published. He says that it is remarkably fond of shell-fish, and that these, the moment that they feel themselves touched by it, close their valves, and cut off the feelers of the polypus, thus making a meal at the expense of the plunderer. Shell-fish are destitute of sight, as well as of all other sensations but those which warn them of hunger and the approach of danger. Hence the polypus lies in ambush till the fish opens its shell, immediately upon which, it places within it a small pebble, taking care, at the same time, to keep it from touching the body of the animal, lest, by making some movement, it should chance to eject it. Having made itself thus secure, it attacks its prey, and draws out the flesh, while the other tries to con-

tract itself, but all in vain, in consequence of the separation of the shell, thus effected by the insertion of the wedge. So great is the instinctive shrewdness in animals that are otherwise quite remarkable for their lumpish stupidity.

In addition to the above, the same author states, that no animal in existence is more dangerous for its powers of destroying a human being when in the water. Embracing his body, it counteracts his struggles, and draws him under with its feelers and its numerous suckers, when, as often is the case, it happens to make an attack upon a shipwrecked mariner or a child. If, however, the animal is turned over, it loses all its power; for when it is thrown upon the back, the arms open of themselves.

The other particulars, which the same author has given, appear still more closely to border upon the marvellous. At Carteia, in the preserves there, a polypus was in the habit of coming from the sea to the pickling-tubs that were left open, and devouring the fish laid in the salt—for it is quite astonishing how eagerly all sea-animals follow the smell of salted condiments, so that for this reason the fishermen take care to rub the inside of the wicker fish-kipes with them.—At last, by its repeated thefts and immoderate depredations, it drew down upon itself the wrath of the keepers of the works. Palisades were placed before them, but these the polypus managed to get over by the aid of a tree, and it was only caught at last by calling in the assistance of trained dogs, which surrounded it at night, as it was returning to its prey; upon which, the keepers, awakened by the noise, were struck with alarm at the novelty of the sight presented. First of all, the size of the polypus was enormous beyond all conception; then it was covered all over with dried brine, and exhaled a most dreadful stench. Who could have expected to find a polypus there, or could have recognized it as such under these circumstances? They really thought that they were joining battle with some monster, for at one instant, it would drive off the

dogs by its horrible fumes, and lash at them with the extremities of its feelers; while at another, it would strike them with its stronger arms, giving blows with so many clubs, as it were; and it was only with the greatest difficulty that it could be despatched with the aid of a considerable number of three-pronged fish-spears. The head of this animal was shown to Lucullus; it was in size as large as a cask of fifteen amphoræ, and had a beard, to use the expressions of Trebius himself, which could hardly be encircled with both arms, full of knots, like those upon a club, and thirty feet in length; the suckers or calicules, as large as an urn, resembled a basin in shape, while the teeth again were of a corresponding largeness: its remains, which were carefully preserved as a curiosity, weighed seven hundred pounds. The same author also informs us, that specimens of the *sæpia* and the *loligo* have been thrown up on the same shores of a size fully as large: in our own seas the *loligo* is sometimes found five cubits in length, and the *sæpia*, two. These animals do not live beyond two years.

Mucianus relates that he has seen, in the Propontis, another curious resemblance to a ship in full sail. There is a shell-fish, he says, with a keel, just like that of the vessel which we know by the name of *acatium*, with the stern curving inwards, and a prow with the beak attached. In this shell-fish there lies concealed also an animal known as the *nauplius*, which bears a strong resemblance to the *sæpia*, and only adopts the shell-fish as the companion of its pastimes. There are two modes, he says, which it adopts in sailing; when the sea is calm, the voyager hangs down its arms, and strikes the water as with a pair of oars; but if the wind invites, it extends them, employing them by way of a helm, and turning the mouth of the shell to the wind. The pleasure experienced by the shell-fish is that of carrying the other, while the amusement of the *nauplius* consists in steering; and thus, at the same moment, is an instinctive joy felt by

these two creatures, devoid as they are of all sense, unless, a natural antipathy to man—for it is a well-known fact, that to see them thus sailing along, is a bad omen, and that it is portentous of misfortune to those who witness it.*

The cray-fish, which belongs to the class of bloodless animals, is protected by a brittle crust. This creature, like the crab, keeps itself concealed for five months. But at the beginning of spring both of them, after the manner of snakes, throw off old age, and renew their coverings. While other animals swim on the water, cray-fish float with a kind of action like creeping. They move onwards, if there were nothing to alarm them, in a straight line, extending on each side their horns, which are rounded at the point by a ball peculiar to them; but when alarmed, they straighten these horns, and proceed with a sidelong motion. They use these horns when fighting with each other. The cray-fish is the only animal that has the flesh in a pulpy state, and not firm and solid, unless it is cooked alive in boiling water.

The cray-fish frequents rocky places, the crab spots which present a soft surface. In winter they both choose such parts of the shore as are exposed to the heat of the sun, in summer they withdraw to the shady recesses of deep inlets of the sea. All fish of this kind suffer from the cold of winter, but become fat during autumn and spring, particularly during the full moon; for the warmth of that luminary, as it shines in the night, renders the temperature of the weather more moderate.

There are various kinds of crabs, known as carabi, lobsters, maia, paguri, heracleotici, lions, and others of less note. The carabus differs from other crabs, in having a tail; in Phœnicia they are called hippoi, or horses, being of such extraordinary swiftness, that it is impossible to overtake them. Crabs are long-lived, and have eight feet, all of which are

* Probably this is merely the reproduction of the story of the nautilus with exaggerated details.

bent obliquely; besides which, the animal has two claws with indented pincers. The upper part only of these fore-feet is movable: the right claw is the largest in them all. Sometimes they assemble together in large bodies; but as they are unable to cross the mouth of the Black Sea, they turn back again and go round by land, and the road by which they travel is to be seen all beaten down with their foot-marks.

The smallest crab known is the pinnotheres. It is peculiarly exposed to danger, but its shrewdness is evinced by its concealing itself in the shell of the oyster, removing as it grows larger, to those of a larger size.

Crabs, when alarmed, go backwards as swiftly as when moving forwards. They fight like rams, butting at each other with their horns. They have a mode of curing themselves of the bites of serpents. It is said, that while the sun is passing through the sign of Cancer, the dead bodies of the crabs, which are lying thrown up on the shore, are transformed into serpents.

To the same class also belongs the sea-urchin, which has spines in place of feet; its mode of moving along is to roll like a ball, hence it is that these animals are often found with their prickles rubbed off. Those among them which have the longest spines of all, are known by the name of *echinometræ*, while at the same time their body is the very smallest. They are not all of them of the same glassy color; in the vicinity of Torone they are white, with very short spines. The eggs of all of them are bitter, and are five in number; the mouth is situate in the middle of the body, and faces the earth. It is said that these creatures foreknow the approach of a storm at sea, and that they take up little stones with which they cover themselves, and so provide a sort of ballast against their volubility, for they are very unwilling by rolling along to wear away their prickles. As soon as seafaring persons

observe this, they at once moor their ship with several anchors.

To the same genus also belong both land and water snails, which thrust the body forth from their abode, and extend or contract two horns. They are without eyes,* and have, therefore, to feel their way, by means of these horns.

To the same class belong the sea-scallops, which also conceal themselves during severe frosts and great heats; as well as the onyches, which shine in the dark like fire, and in the mouth even while being eaten.

CHAPTER X.

VARIOUS KINDS OF SHELL-FISH.

LET us now pass on to the murex and other kinds of shell-fish, which have a stronger shell, and in which Nature, in her sportive mood, has displayed a great variety—so many are the hues of their tints, so numerous are their shapes, flat, concave, long, crescent-shaped, rounded into a globe, cut through into a semi-globe, arched in the back, smooth, rough, indented, streaked, the upper part spirally wreathed, the edge projecting in a sharp point, the edge wreathed outwards, or else folding inwards. And then, too, there are the various distinctions of rayed shells, long-haired shells, wavy-haired shells, channelled shells, pectinated shells, imbricated shells, reticulated shells, shells with lines oblique or rectilinear, thick-set shells, expanded shells, tortuous shells, shells the valves of which are united by one small knot, shells which are held together all along one side, shells which are open as if in the very act of applauding, and shells which wind, resembling a

* It is now known, thanks to the research of Swammerdam, that the black points at the extremity of the great horns of the land snail, and at the base of them in the water snail, are eyes.

conch. The fish of this class, known as the shells of Venus, are able to navigate the surface of the deep, and, presenting to the wind their concave side, catch the breeze, and sail along on the surface of the sea. Scallops are also able to leap and fly above the surface of the water, and they sometimes employ their shell by way of a bark.

But why mention such trifles as these, when I am sensible that no greater inroads have been made upon our morals, and no more rapid advances have been made by luxury, than those effected through the medium of shell-fish? Of all the elements that exist, the sea is the one that costs the dearest to the stomach; seeing that it provides so many kinds of meats, so many dishes, so many exquisite flavors derived from fish, all of which are valued in proportion to the danger undergone by those who have caught them.

But how insignificant is all this when we come to think of our purple, our azure, and our pearls; it was not enough, forsooth, for the spoils of the sea to be thrust down the gullet—but they must be employed as well to adorn the hands, the ears, the head, the whole body, in fact, and that of the men pretty nearly as much as the women. What has the sea to do with our clothes? What is there in common between waves and billows and a sheep's fleece? This one element ought not to receive us, according to ordinary notions, except in a state of nakedness. Let there be ever so strong an alliance between it and the stomach, on the score of gluttony, still, what can it possibly have to do with the back? It is not enough, forsooth, that we are fed upon what is acquired by perils, but we must be clothed, too, in a similar way; so true it is, that for all the wants of the body, that which is sought at the expense of human life is sure to please us the most.

CHAPTER XI.

PEARLS.

THE very highest position among all valuables belongs to the pearl. It is principally the Indian Ocean that sends them to us. Across many a sea, and over many a lengthened tract of land, scorched by the ardent rays of a burning sun, must the pearl seeker pass, amid those monsters so frightful and so huge which we have already described. The places most productive of pearls are the islands of Taprobana and Stoïdis, and Perimula, a promontory of India. But those most highly valued are found in the vicinity of Arabia, in the Persian Gulf, which forms a part of the Red Sea.

The origin and production of the shell-fish is not very different from that of the shell of the oyster. When the genial season of the year exercises its influence on the animal, it is said that, yawning, as it were, it opens its shell, and so receives a kind of dew, by means of which it becomes permeated; and at length small, hard bunches form in its shell, in the shape of pearls, which vary according to the quality of the dew. If this has been in a perfectly pure state when it flowed into the shell, then the pearl produced is white and brilliant, but if it was turbid, the pearl is of a clouded color also; if the sky should happen to have been lowering when it was generated, the pearl will be of a pallid color; from all which it is quite evident that the quality of the pearl depends much more upon a calm state of the heavens than of the sea, and contracts a cloudy hue, or a limpid appearance, according to the degree of serenity of the sky in the morning.*

* All this theory is, of course, totally imaginary. The pearl itself is nothing else but a diversion, so to speak, of the juices, whose duty it is to line the interior of the shell, to thicken and so amplify it; and consequently, the pearl is the result of some malady. It is possible for them to be found in all shell-fish; but they have no beauty in them, unless the interior of the shell, or, as

If, again, the fish is satiated in a reasonable time, then the pearl produced increases rapidly in size. If it should happen to lighten at the time, the animal shuts its shell, and the pearl is diminished in size in proportion to the fast that the animal has to endure : but if, in addition to this, it should thunder as well, then it becomes alarmed, and closing the shell in an instant, produces what is known as a physema, or pearl-bubble, filled with air, and bearing a resemblance to a pearl, but in appearance only, as it is quite empty, and devoid of body. Those which are produced in a perfectly healthy state consist of numerous layers. It is wonderful, however, that they should be influenced thus pleasurably, by the state of the heavens, seeing that by the action of the sun the pearls are turned of a red color, and lose all their whiteness, just like the human body. Those which keep their whiteness the best are the pelagiæ, or main-sea pearls, which lie at too great a depth to be reached by the sun's rays. Those pearls which have one surface flat and the other spherical, opposite to the plane side, are for that reason called tympania, or tambour-pearls. I have seen pearls still adhering to the shell ; for which reason the shells were used as boxes for unguents.

As soon as the fish perceives the hand, it shuts its shell and covers up its treasures, being well aware what is sought ; if it happens to catch the fingers it cuts them off with the sharp edge of the shell. No punishment could be more justly inflicted. There are other penalties as well, for while the greater part of the pearls are only to be found among rocks and crags, the others which lie out in the main sea are

we call it, the mother-of-pearl, is lustrous and beautiful itself. Hence the finest of them come from the east, and are furnished by the kind of bivalve, called by Linnæus, "*Mytilus margaritiferus*," which has the most beautiful mother-of-pearl in the interior that is known. The parts of the Indian sea which are mentioned by Pliny, are those in which the pearl oyster is still found in the greatest abundance.

generally accompanied by sea-dogs.* And yet, for all this, the women will not banish these gems from their ears! Some writers say, that these animals live in communities, or swarms like bees, each of them being governed by one remarkable for its size and venerable age; while at the same time it is possessed of marvellous skill in taking all due precautions against danger; the divers take special care to find these, because when once they are taken, the others stray to and fro, and are easily caught in their nets. When the pearl-fish are taken they are placed under a thick layer of salt in earthen-ware vessels; as the flesh is gradually consumed, the pearls are disengaged and fall to the bottom of the vessel.

There is no doubt that pearls wear out with use, and will change their color, if neglected. All their merit consists in their whiteness, large size, roundness, polish, and weight; qualities which are not easily to be found united in the same. Indeed no two pearls are ever found perfectly alike; and it was from this circumstance, no doubt, that our Roman luxury first gave them the name of "unio," or the unique gem: for a similar name is not given them by the Greeks; nor among the barbarians by whom they are found are they called anything else but "margaritæ." Even in the very whiteness of the pearl there is a great difference to be observed. Those are of a much clearer water that are found in the Red Sea, while the Indian pearl resembles in tint the scales of the mirror-stone, but exceeds all the others in size. The color that

* Procopius tells a wonderful story in relation to this subject. He says, that the sea-dogs are wonderful admirers of the pearl-fish, and follow them out to sea; that when the sea-dogs are pressed by hunger, they go in quest of prey, and then return to the shell-fish and gaze upon it. A certain fisherman, having watched for the moment when the shell-fish was deprived of the protection of its attendant sea-dog, which was seeking its prey, seized the shell-fish, and made for the shore. The sea-dog, however, was soon aware of the theft, and making straight for the fisherman, seized him. Finding himself thus caught, he made a last effort, and threw the pearl-fish on shore, upon which he was immediately torn to pieces by its protector.

is most highly prized of all. is that of the alum-colored pearls. Long pearls have their peculiar value, especially those called "elenchi," which are of a long tapering shape, resembling our alabaster* boxes in form, and ending in a full bulb. Our ladies quite glory in having these suspended from their fingers, or two or three of them dangling from their ears. For the purpose of ministering to these luxurious tastes, there are various names and wearisome refinements which have been devised by profuseness and prodigality; for after inventing these ear-rings, they have given them the name of "crotalia," or castanet pendants, as though quite delighted even with the rattling of the pearls as they knock against each other; and, at the present day, the poorer classes are affecting them, as people are in the habit of saying, that "a pearl worn by a woman in public, is as good as a lictor walking before her."† Nay, even more than this, they put them on their feet, and that, not only on the laces of their sandals, but all over the shoes; it is not enough to wear pearls, but they must tread upon them, and walk with them under foot as well.

Pearls used formerly to be found in our sea, but more frequently about the Thracian Bosphorus; they were of a red color, and small, and enclosed in a shell-fish known by the name of "myes." In Acarnania there is a shell-fish called "pina," which produces pearls; and Juba states that on the

* These alabaster boxes for unguents mentioned elsewhere by Pliny were usually pear-shaped; and as they were held with difficulty in the hand, on account of their extreme smoothness, they were called *ἀλάβαστρα*, from *ἀ*, "not," and *λαβέσθαι*, "to be held." Such was the offer made to our Saviour, of an "alabaster box of ointment of spikenard, very precious." Seneca says that the Roman matrons were not satisfied unless they had two or three patrimonies suspended from each ear.

† The pearls as fully bespoke the importance of the wearer, as the lictor did of the magistrate whom he was preceding. The honor of being escorted by one or two lictors, was usually granted to the wives and other members of the imperial family.

shores of Arabia a shell-fish is found which resembles a notched comb, covered all over with hair like a sea-urchin, and the pearl lies imbedded in its flesh, bearing a strong resemblance to a hailstone. No such shell-fish, however, as these are ever brought to Rome. The Acarnanian pearl is shapeless, rough, and of a marble hue; those are better which are found in the vicinity of Actium.

It is quite clear that the interior of the pearl is solid, as no fall is able to break it. Pearls are found in various places in the body of the animal. Indeed, I have seen some which lay at the edge of the shell, just as though in the very act of coming forth, and in some fishes as many as four or five. Up to the present time, very few have been found which exceeded half an ounce in weight, by more than one scruple.* It is a well-ascertained fact, that in Britannia pearls are found, though small, and of bad color; for the deified Julius Cæsar wished it to be distinctly understood, that the breast-plate which he dedicated to Venus Genetrix, in her temple, was made of British pearls.

I once saw Lollia Paulina, the wife of the Emperor Caligula—it was not at any public festival, or any solemn ceremonial, but only an ordinary wedding entertainment—covered with emeralds and pearls, which shone in alternate layers upon her head, in her hair, in her wreaths, in her ears, upon her neck, in her bracelets, and on her fingers, and the value of which amounted in all to forty millions of sesterces (\$1,525,000); indeed she was prepared at once to prove the fact, by showing the receipts and acquittances. Nor were these any presents made by a prodigal potentate, but treasures which had

* Tavernier speaks of a remarkable pearl, that was found at Catifa, in Arabia (the fishery alluded to by Pliny), and which he bought for the sum of \$500,000, of our money. It is pear-shaped, the *elenchus* of the ancients, regular, and without blemish. The diameter is .63 of an inch, at the largest part, and the length from two to three inches. It is now in the possession of the Shah of Persia.

descended to her from her grandfather, and obtained by the spoliation of the provinces. Such are the fruits of plunder and extortion! It was for this reason that Marcus Lollius was held so infamous all over the East for the presents which he extorted from the kings; as a result of which he was finally denied the friendship of Caius Cæsar, and took poison; and all this was done, I say, that his granddaughter might be seen, by the glare of lamps, covered all over with jewels to the amount of forty millions of sesterces! Now let a person only picture to himself, on the one hand, what was the value of the habits worn by Curius or Fabricius in their triumphs, let him picture to himself the objects displayed to the public on their triumphal litters, and then, on the other hand, let him think upon this Lollia, this one bit of a woman, the head of an empire, taking her place at table, thus attired; would he not much rather that the conquerors had been torn from their very chariots, than that they had conquered for such a result as this?

Yet even these are not the most supreme evidences of luxury. There were formerly two pearls, the largest that had been ever seen in the whole world: Cleopatra, the last of the queens of Egypt, came into possession of them both, by descent from the kings of the East. When Antony had been sated by her, day after day, with the most exquisite banquets, this queenly woman, inflated with vanity and disdainful arrogance, affected to treat all this sumptuousness and all these vast preparations with the greatest contempt; upon which Antony enquired what there was that could possibly be added to such extraordinary magnificence. To this she made answer, that on a single entertainment she would expend ten millions of sesterces. Antony was extremely desirous to learn how that could be done, but looked upon it as a thing quite impossible; and a wager was the result. On the following day, upon which the matter was to be decided, in order that she might not lose the wager, she had an enter-

tainment set before Antony, magnificent in every respect, though no better than his usual repast. Upon this, Antony joked her, and enquired what was the amount expended upon it; to which she made answer that the banquet which he then beheld was only a trifling appendage to the real banquet, and that she alone would consume at the meal to the ascertained value of that amount, she herself would swallow the ten millions of sesterces; and so ordered the second course to be served. In obedience to her instructions, the servants placed before her a single vessel, which was filled with vinegar, a liquid, the sharpness and strength of which is able to dissolve pearls. At this moment she was wearing in her ears those choicest and most unique productions of Nature; and while Antony was waiting to see what she was going to do, taking one of them from out of her ear, she threw it into the vinegar, and as soon as it was melted, swallowed it. Lucius Plancus, who had been named umpire in the wager, placed his hand upon the other at the very instant that she was making preparations to dissolve it in a similar manner, and declared that Antony had lost—an omen, which, in the result, was fully confirmed. The fame of the second pearl is equal to that which attends its fellow. After the queen, who had thus come off victorious on so important a question, had been seized, it was cut asunder, in order that this, the other half of the entertainment, might serve as pendants for the ears of Venus, in the Pantheon at Rome.

Antony and Cleopatra, however, will not bear away the palm of prodigality in this respect, and will be stripped of even this boast in the annals of luxury. For before their time, Clodius, the son of the tragic actor, Æsopus, had done the same at Rome; having been left by his father heir to his ample wealth and possessions. Let not Antony then be too proud, for all his triumvirate, since he can hardly stand in comparison with an actor; one, too, who had no wager to induce him—a thing which adds to the regal munificence of

the act—but was merely desirous of trying, by way of glorification to his palate, what was the taste of pearls. As he found it to be wonderfully pleasing, that he might not be the only one to know it, he had a pearl set before each of his guests for him to swallow. After the surrender of Alexandria, pearls came into common and, indeed, universal use at Rome; but they first began to be used about the time of Sylla, though but of small size and of little value, Fenestella says—in this, however, it is quite evident that he is mistaken, for Ælius Stilo tells us, that it was in the time of the Jugurthine war, that the name of “unio” was first given to pearls of remarkable size.

CHAPTER XII.

THE NATURE OF THE MUREX AND THE PURPLE.

AND yet pearls may be looked upon as pretty nearly a possession of everlasting duration—they descend from a man to his heir, and they are alienated from one to another just like any landed estate. But the colors that are extracted from the murex and the “purple” fade from hour to hour; and yet luxury, which has similarly acted as a mother to them, has set upon them prices almost equal to those of pearls.

Purples commonly live seven years. Like the murex, they keep themselves in concealment for thirty days, about the time of the rising of the Dog-star; in the spring season they unite in large bodies, and by rubbing against each other, produce a viscous saliva, from which a kind of wax is formed. The murex does the same; but the purple has that exquisite juice which is so greatly sought after for the purpose of dyeing cloth, situated in the middle of the throat. This secretion consists of a tiny drop contained in a white vein, from which

the precious liquid used for dyeing is distilled, being of the tint of a rose somewhat inclining to black. The rest of the body is entirely destitute of this juice. It is a great point to take the fish alive; for when it dies, it ejects this juice. From the larger ones it is extracted after taking off the shell; but the small fish are crushed alive, together with the shells, upon which they eject this secretion.

In Asia the best purple is that of Tyre, in Africa that of Meninx and the parts of Gætulia that border on the Ocean, and in Europe that of Laconia. It is for this color that the fasces and the axes of Rome make way in the crowd; it is this that asserts the majesty of childhood;* it is this that distinguishes the senator from the man of equestrian rank; by persons arrayed in this color are prayers addressed to propitiate the gods; on every garment it sheds a lustre, and in the triumphal vestment it is to be seen mingled with gold. Let us be prepared then to excuse this frantic passion for purple, even though at the same time we are compelled to enquire, why it is that such a high value has been set upon the produce of this shell-fish, seeing that while in the dye the smell of it is offensive, and the color then is harsh, of a greenish hue, and strongly resembling that of the sea when in a tempestuous state?

The tongue of the purple is a finger in length, and by means of this it finds subsistence, by piercing other shell-fish, so hard is the point of it. They die in fresh water, and in places where rivers discharge themselves into the sea; otherwise, when taken, they will live as long as fifty days on their saliva. All shell-fish grow very fast, purples especially; they come to their full size at the end of a year.

* The Roman consuls were clothed with the toga prætexta, the color of which was Syrian purple. All children of free birth wore the prætexta, edged with purple, and the purple laticlave or broad hem of the senator's toga distinguished him from the eques, who wore a toga with an angusticlave, or narrow hem.

Were I at this point to pass on to other subjects, luxury, no doubt, would think itself defrauded of its due, and so accuse me of negligence; I must therefore make my way into the very workshops, so that, just as among articles of food the various kinds and qualities of corn are known, all those who place the enjoyment of life in these luxuries may have a still better acquaintance with the objects for which they live.

There are two kinds of fish that produce the purple color; the elements in both are the same, the combinations only are different; the smaller fish is that which is called the "buccinum," from its resemblance to the conch by which the sound of the buccinus or trumpet is produced, and to this circumstance it owes its name: the opening in it is round, with an incision in the margin. The other fish is known as the "purpura," or purple, and has a grooved and projecting muzzle, which being tubulated on one side in the interior, forms a passage for the tongue; besides which, the shell is studded with points up to the very apex, which are ordinarily seven in number, and disposed in a circle; these are not found on the buccinum, though both of them have as many spirals as they are years old. The buccinum attaches itself only to crags, and is gathered about rocky places.

Purples are of numerous kinds, differing only in their element and place of abode. There is the mud purple, the seaweed purple, both of which are held in the very lowest esteem; the reef-purple, which is collected on the reefs or out at sea; the color from which is still too light and thin. Then there is the variety known as the pebble-purple, wonderfully well adapted for dyeing; and, better than any of them, that known by the name of "dialutensis," because of the various natures of the soil on which it feeds. Purples are taken with a kind of osier kipe of small size, and with large meshes; these are cast into the sea, baited with cockles which snap at an object, just as we see mussels do, and close the shell instantaneously. Though half dead when they are returned to the sea, these

animals come to life again, and open their shells with avidity ; upon which the purples seek them, and commence the attack, by protruding their tongues. The cockles, on the other hand, the moment they feel themselves pricked, shut their shells, and hold fast the object that has wounded them : in this way, victims to their greediness, they are drawn up to the surface hanging by the tongue.

The most favorable season for taking these fish is after the rising of the Dog-star, or else before spring ; for when they have once discharged their waxy secretion, their juices have no consistency : this, however, is a fact unknown in the dyers' workshops, although it is a point of primary importance. After it is taken, the vein is extracted, of which we have previously spoken, to which it is requisite to add salt, twenty ounces to every hundred pounds of juice. They are then left to steep for a period not exceeding three days, for the fresher they are, the greater virtue there is in the liquor. It is then set to boil in vessels of tin, and every eight thousand pounds ought to be boiled down to five hundred pounds of dye, by the application of a moderate heat ; for which purpose the vessel is placed at the end of a long funnel, communicating with the furnace ; while thus boiling, the liquor is skimmed from time to time, and with it the flesh, which necessarily adheres to the veins. About the tenth day, generally, the whole contents of the cauldron are in a liquefied state, upon which a fleece, from which the grease has been cleansed, is plunged into it by way of making trial ; but until such time as the color is found to satisfy the wishes of those preparing it, the liquor is still kept on the boil. The tint that inclines to red is looked upon as inferior to that which is of a blackish hue. The wool is left to lie in soak for five hours, and then, after carding it, it is thrown in again, until it has fully imbibed the color of that bright lustre, which approaches the shining crimson hue of the kermes-berry, a tint that is particularly valued.

CHAPTER XIII.

BODIES WHICH HAVE A THIRD NATURE, THAT OF THE ANIMAL
AND VEGETABLE COMBINED.

FOR my own part, I am strongly of opinion that there is sense existing in those bodies which have the nature of neither animals nor vegetables, but a third which partakes of them both:—sea-nettles and sponges, I mean. The sea-nettle wanders to and fro by night, and at night changes its locality. These creatures are by nature a sort of fleshy branch, and are nurtured upon flesh. They have the power of producing a smarting pain, just like that caused by the nettle found on land. For the purpose of seeking its prey, it contracts and stiffens itself to the utmost possible extent, and then, as a small fish swims past, it will suddenly spread out its branches, and so seize and devour it. At another time it will assume the appearance of being quite withered away, and let itself be tossed to and fro by the waves like a piece of sea-weed, until it happens to touch a fish. The moment it does so, the fish goes to rub itself against a rock, to get rid of the itching; immediately upon which, the nettle pounces upon it. By night also it is on the look-out for scallops and sea-urchins. When it perceives a hand approaching it, it instantly changes its color, and contracts itself; when touched it produces a burning sensation, and if ever so short a time is afforded, makes its escape.

Sponges grow on rocks, and feed upon shell- and other fish, and slime. It would appear that these creatures, too, have some intelligence; for as soon as they feel the hand about to tear them off, they contract themselves, and are separated with much greater difficulty: they do the same also when the waves buffet them to and fro. About Torone it is said that they will survive after they have been detached, and that they

grow again from the roots which have been left adhering to the rock. They leave a color like blood upon the rock from which they have been detached, especially those which are produced in the Syrtes of Africa.

The *manos* is the one that grows to the largest size, but the softest of all are those found in the vicinity of Lycia. Where the sea is deep and calm, they are more particularly soft, while those which are found in the Hellespont are rough, and those in the vicinity of Malea coarse. When lying in places exposed to the sun, they become putrid: hence those which are found in deep water are the best. While they are alive, they are of the same blackish color that they are when saturated with water. They adhere to the rock not by one part only, nor yet by the whole body: and within them there are a number of empty tubes, generally four or five in number, by means of which, it is thought, they take their food. There are other tubes also, but these are closed at the upper extremity; and a sort of membrane is supposed to be spread beneath the roots by which they adhere. It is well known that sponges are very long-lived.

CHAPTER XIV.

THE SHARK.

VAST numbers of sharks infest the seas in the vicinity of the sponges, to the great peril of those who dive for them. These persons say that a sort of dense cloud gradually thickens over their heads, bearing a resemblance to some kind of animal like a flat-fish, and that, pressing downward upon them, it prevents them from returning to the surface. It is for this reason that they carry stiletos with them, very sharp at the point, and attached to them by strings; for if they did not pierce the object with the help of these, it could not be got

rid of. This, however, is entirely the result, in my opinion, of the darkness and their own fears; for no person has ever yet been able to find, among living creatures, the fish-cloud or the fish-fog, the name which they give to this enemy of theirs.

The divers, however, have terrible combats with the sharks, which attack with avidity the groin, the heels, and all the whiter parts of the body. The only means of ensuring safety, is to go boldly to meet them, and so, by taking the initiative, strike them with alarm: for in fact, this animal is just as much frightened at man, as man is at it; and they are on quite an equal footing when beneath the water. But the moment the diver has reached the surface, the danger is much more imminent; for he loses the power of boldly meeting his adversary while he is endeavoring to make his way out of the water, and his only chance of safety is in his companions, who draw him along by a cord that is fastened under his shoulders. While he is engaging with the enemy, he keeps pulling this cord with his left hand, according as there may be any sign of immediate peril, while with the right he wields the stiletto, which he is using in his defence. At first they draw him along at a moderate pace, but as soon as they have got him close to the ship, if they do not whip him out in an instant, with the greatest possible celerity, they see him snapped asunder: and many a time, too, the diver, even when already drawn out, is dragged from their hands, through neglecting to aid the efforts of those who are assisting him, by rolling up his body in the shape of a ball. The others, it is true, are in the mean time brandishing their pronged fish-spears; but the monster has the craftiness to place himself beneath the ship, and so wage the warfare in safety. Consequently, every possible care is taken by the divers to look out for the approach of this enemy.

The surest sign of safety is to see flat-fish, which never frequent the spots where these noxious monsters are found: and for this reason the divers call them sacred.

CHAPTER XV.

OYSTER-BEDS, AND FISH-PRESERVES.

THE first person who formed artificial oyster-beds was *Sergius Orata*, who established them at *Baiæ*, in the time of *Lucius Crassus*, the orator, just before the *Marsic War*. This was done by him, not for the gratification of gluttony, but as a commercial venture, and he contrived to make a large income by this exercise of his ingenuity. He was the first to invent hanging baths over heating furnaces, and after buying villas and trimming them up, he would every now and then sell them again. He, too, was the first to adjudge the pre-eminence for delicacy of flavor to the oysters of *Lake Lucrinus*; for every kind of aquatic animal is superior in one place to what it is in another. Thus, for instance, the wolf-fish of the river *Tiber* is the best that is caught between the two bridges, and the turbot of *Ravenna* is the most esteemed, the *murena* of *Sicily*, the *elops* of *Rhodes*; the same, too, as to the other kinds, not to go through all the items of the culinary catalogue. The *British shores* had not as yet sent their supplies, at the time when *Orata* thus ennobled the *Lucrine oysters*: at a later period, however, it was thought worth while to fetch oysters all the way from *Brundisium*, at the very extremity of *Italy*; and in order that there might exist no rivalry between the two flavors, a plan has been more recently hit upon, of feeding the oysters of *Brundisium* in *Lake Lucrinus*, famished as they must naturally be after so long a journey.

In the same age, *Lucinius Murena* was the first to form preserves for other fish; and his example was soon followed by the noble families of the *Philippi* and the *Hortensii*. *Lucullus* had a mountain pierced near *Naples*, at a greater outlay even than that which had been expended on his villa, in

order to admit the sea to his preserves. For this reason Pompey gave him the name of "Xerxes in a toga."* After his death, the fish in his preserves were sold for the sum of four million sesterces (\$150,000).

C. Hirrus was the first person who formed preserves for the murena; he lent six thousand of these fishes for the triumphal banquets of Cæsar the Dictator; on which occasion he had them duly weighed, as he declined to receive the value of them in money or any other commodity. His villa, which was of a very humble character in the interior, sold for four millions of sesterces, in consequence of the valuable nature of the stock-ponds there. Next after this, there arose a passion for individual fish. At Bauli, in the territory of Baiæ, the orator Hortensius had some fish-preserves, in which there was a murena to which he became so much attached, as to be supposed to have wept on hearing of its death. It was at the same villa that Antonia, the wife of Drusus, placed earrings upon a murena which she had become fond of; the report of which singular circumstance attracted many visitors to the place.

Fulvius Lupinus first formed preserves for sea-snails, in the territory of Tarquinii, shortly before the civil war between Cæsar and Pompey. He also carefully distinguished them by their several species, separating them from one another. The white ones were those that are produced in the district of Reate; those of Illyria were remarkable for the largeness of their size; while those from Africa were the most prolific; those, however, from the Promontory of the Sun were the most esteemed of all. For the purpose of fattening them, he invented a mixture of boiled wine, spelt-meal, and other substances; so that fattened periwinkles became quite an object of gastronomy; and the art of breeding them was brought to

* "Xerxen togatum," or "the Roman Xerxes," in allusion to Xerxes cutting a canal through the Isthmus, which connected the Peninsula of Mount Athos with Chalcidice.

such a pitch of perfection, that the shell of a single animal would hold as much as eighty quadrantes (fifteen quarts). This we learn from Marcus Varro.

CHAPTER XVI.

LAND FISHES.

THERE are still some wonderful kinds of fishes which we find mentioned by Theophrastus: he says, that when the waters subside, which have been admitted for the purposes of irrigation in the vicinity of Babylon, there are certain fish which remain in such holes as may contain water; from these they come forth for the purpose of feeding, moving along with their fins by the aid of a rapid movement of the tail. If pursued, he says, they retreat to their holes, and when they have reached them, will turn round and make a stand. The head is like that of the sea frog, while the other parts are similar to those of the gobio, and they have gills like other fish. He says also, that in the vicinity of Heraclea and Cromna, and about the river Lycus, as well as in many parts of the Black Sea, there is one kind of fish which frequents the waters near the banks of the rivers, and makes holes for itself, in which it lives, even when the water retires and the bed of the river is dry; for which reason these fishes have to be dug out of the ground, and only show by the movement of the body that they are still alive. He says also, that in the vicinity of the same Heraclea, when the river Lycus ebbs, the eggs are left in the mud, and that the fish, on being produced from these, go forth to seek their food by means of a sort of fluttering motion,—their gills being but very small, in consequence of which they are not in need of water. It is in this way that eels also can live so long out of water; and that their eggs

come to maturity on dry land, like those of the sea-tortoise. In the same regions of the Black Sea, he says, various kinds of fishes are overtaken by the ice, the gobio more particularly, and they only betray signs of life, by moving when they have warmth applied by the saucepan. All these things, however, though very remarkable, still admit of some explanation.

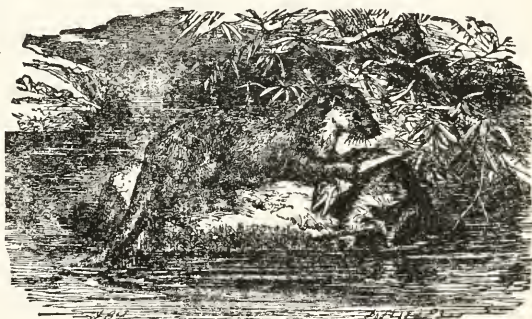
CHAPTER XVII.

HOW THE FISH CALLED THE ANTHIAS IS TAKEN.

It would not be right to omit what is said about the fish called anthias, and which I find is looked upon as true by most writers. I have already mentioned the *Chelidoniæ*, certain islands off the coast of Asia, in the midst of a sea full of crags and reefs. These parts are much frequented by this fish, which is very speedily taken by the employment of a single method of catching it. A fisherman pushes out in a little boat, dressed in a color resembling that of his boat; and every day, for several days together, at the same hour, he sails over the same space, while doing which he throws a quantity of bait into the sea. Whatever is thrown from the boat is an object of suspicion to the fish, who keep at a distance from what causes them so much alarm; but after this has been repeated a considerable number of times, one of the fish, reassured by becoming habituated to the scene, at last snaps at the bait. The movements of this one are watched with the greatest care and attention, for in it are centred all the hopes of the fishermen, as it is to be the means of securing them their prey; nor is it difficult to recognize it, seeing that for some days it is the only one that ventures to come near the bait. At last, however, it finds some others to follow its example, and by degrees it is better and better attended, till

at last it brings with it shoals innumerable. The older ones, at length becoming quite accustomed to the fisherman, easily recognize him, and will even take food from his hands. Upon this, the man throws out, a little way beyond the tips of his fingers, a hook concealed in a bait, and smuggles them out one by one, standing in the shadow of the boat and whipping them out of the water with a slight jerk, that the others may not perceive it. Meantime another fisherman is ready inside to receive them upon pieces of cloth, in order that no floundering about or other noise may scare the others away. It is

of importance to know which has been the betrayer of the others, and not to take it, otherwise the shoal will take to flight, and appear no more for the future. There is a story that a fisherman who quarrelled once with his mate,



OTTER.—*Lutra Vulgaris.*

threw out a hook to one of these leading fishes, which he easily recognized, and so captured it with a malicious intent. But the fish was recognized in the market by the other fisherman, against whom he had conceived this malice; who accordingly brought an action against him for damages; and, as Mucianus adds, he was condemned to pay them on the hearing of the case. These anthiæ, it is said, when they see one of their number taken with a hook, cut the line with the serrated spines which they have on the back, the one that is held fast stretching it out as much as it can, to enable them to cut it.

CHAPTER XVIII.

THE ECHENEIS AND THE TORPEDO.

FOLLOWING the proper order of things, we have now arrived at the culminating point of the wonders manifested to us by the operations of Nature. For what is there more unruly than the sea, with its winds, its tornadoes, and its tempests? And yet in what department of her works has Nature been more seconded by the ingenuity of man, than in this, by his inventions of sails and of oars? In addition to this, we are struck with the ineffable might displayed by the Ocean's tides, as they constantly ebb and flow, and so regulate the currents of the sea as though they were the waters of one vast river.

And yet all these forces, though acting in unison, and impelling in the same direction, a single fish, and that of a very diminutive size—the fish known as the “echeneis”—possesses the power of counteracting. Winds may blow and storms may rage, and yet the echeneis controls their fury, restrains their mighty force, and bids ships stand still in their career; a result which no cables, no anchors, from their ponderousness quite incapable of being weighed, could ever have produced! A fish bridles the impetuous violence of the deep, and subdues the frantic rage of the universe—and all this by no effort of its own, no act of resistance on its part, no act at all, in fact, but that of adhering to the bark! Trifling as this object would appear, it suffices to counteract all these forces combined, and to forbid the ship to pass onward in its way! Fleets, armed for war, pile up towers and bulwarks on their decks, in order that, upon the deep even, men may fight from behind ramparts as it were. But alas for human vanity!—when their prows, beaked as they are with bronze and with iron, and armed for the onset, can thus be arrested and riveted to the spot by a little fish, no more than half a foot in length!

At the battle of Actium, it is said, a fish of this kind stopped the prætorian ship* of Antonius in its course, at the moment that he was hastening from ship to ship to encourage and exhort his men, and so compelled him to leave it and go on board another. So that the fleet of Cæsar gained the advantage in the onset, and charged with a redoubled impetuosity. In our own time, too, one of these fish arrested the ship of the Emperor Caius Caligula in its course, when he was returning from Astura to Antium: and thus, as the result proved, did an insignificant fish give presage of great events; for no sooner had the emperor returned to Rome than he was pierced by the weapons of his own soldiers. Nor did this sudden stoppage of the ship long remain a mystery, the cause being perceived upon finding that, out of the whole fleet, the emperor's five-banked galley was the only one that was making no way. The moment this was discovered, some of the sailors plunged into the sea, and, on making search about the ship's sides, they found an echeneis adhering to the rudder. Upon its being shown to the emperor, he strongly expressed his indignation† that such an obstacle as this should have impeded his progress, and have rendered powerless the hearty endeavors of four hundred men, particularly as the fish had no such power when brought on board.

According to the persons who examined it on that occasion, and who have seen it since, the echeneis bears a strong resemblance to a large slug. Some of our own authors have given this fish the Latin name of "mora."‡

If we had not this illustration by the agency of the echeneis, would it not have been quite sufficient only to cite the instance

* An absurd tradition, invented to palliate the disgrace of his defeat.

† If there was any foundation at all for the story, there can be little doubt that a trick was played for the purpose of imposing upon Caligula's superstitious credulity, and that the rowers as well as the diving sailors were in the secret.

‡ "Delay."

of the torpedo, another inhabitant also of the sea, as a manifestation of the mighty powers of Nature? From a considerable distance even, and if only touched with the end of a spear or a staff, this fish has the property of benumbing even the most vigorous arm, and of riveting the feet of the runner, however swift he may be in the race.

CHAPTER XIX.

THE INSTINCTS AND PECULIARITIES OF FISHES.

THE statements which Ovid has made as to the instincts of fish, in the work * of his known as the "Treatise on Fishes," appear to me truly marvellous. The scarus, for instance, when enclosed in the wicker kype, makes no effort to escape with its head, nor does it attempt to thrust its muzzle between the oziers; but turning its tail towards them, it enlarges the orifices with repeated blows therefrom, and so makes its escape backwards. Should, too, another scaurus, from without, chance to see it thus struggling within the kype, it will take the tail of the other in its mouth, and so aid it in its efforts to escape. The lupus, again, when surrounded with the net, furrows the sand with its tail, and so conceals itself, until the net has passed over it. The muræna, trusting in the slippery smoothness of its rounded back, boldly faces the meshes of the net, and by repeatedly wriggling its body, makes its escape. The polyp makes for the hooks, and without swallowing the bait, clasps it with its feelers; nor does it quit its hold until it has eaten off the bait, or perceives itself being drawn out of the water by the rod.

The mullet, too, is aware that within the bait there is a

* Of this work, begun by Ovid during his banishment in Pontus, and probably never completed, only a fragment of one hundred and thirty-two lines has come down to us.

hook concealed, and is on its guard against the ambush; still, however, so great is its voracity, that it beats the hook with its tail, and strikes away from it the bait. The *lupus*, again, shows less foresight and address, but repentance at its imprudence arms it with mighty strength; for, when caught by the hook, it flounders from side to side, and so widens the wound, till at last the insidious hook falls from its mouth. The *muræna* not only swallows the hook, but catches at the line with its teeth, and so gnaws it asunder. The *anthias*, Ovid says, the moment it finds itself caught by the hook, turns its body with its back downwards, upon which there is a sharp knife-like fin, and so cuts the line asunder.

Trebius Niger informs us that whenever the *loligo* is seen darting above the surface of the water, it portends a change of weather: that the *xiphias*, or, in other words, the sword-fish, has a sharp-pointed muzzle, with which it is able to pierce the sides of a ship and send it to the bottom: instances of which have been known near Cotte, a place in Mauritania, not far from the river Lixus. He says, too, that the *loligo* sometimes darts above the surface, in such vast numbers, as to sink the ships upon which they fall.

At many of the country-seats belonging to the Emperor the fish eat* from the hand. In the fountain of Jupiter at Labranda, there are eels which eat from the hand, and wear earrings.†

At Myra, too, in Lycia, the fish in the Fountain of Apollo, known as *Surium*, appear and give oracular presages, when thrice summoned by the sound of a flute. If they seize the flesh thrown to them with avidity, it is a good omen for the person who consults them; but if, on the other hand, they

* Martial, B. iv. Ep. 30, speaks of this being the case at the fish-ponds of Baia, where the Emperor's fish were in the habit of making their appearance when called by name.

† "Inaures." He probably means ornaments suspended from the gills, a thing which, in the case of eels, might be done.

flap at it with their tails, it is considered an evil presage. At Hierapolis,* in Syria, the fish in the Lake of Venus obey the voice of the officers of the temple: bedecked with ornaments of gold, they come at their call, fawn upon them while they are scratched, and open their mouths so wide as to admit of the insertion of the hand.

CHAPTER XX.

CORAL.

IN the same degree that people in our part of the world set a value upon the pearls of India do the people of India prize coral: it being the prevailing taste in each nation respectively that constitutes the value of things. Coral is produced in the Red Sea also, but of a more swarthy hue than ours. It is to be found also in the Persian Gulf, where it is known by the name of "iace." But the most highly-esteemed of all, is that produced in the vicinity of the islands called Stœchades, in the Gallic Gulf, and near the Æolian Islands and the town of Drepana in the Sea of Sicily. Coral is to be found growing, too, at Erythræ, where it is intensely red, but soft, and consequently little valued.

Its form is that of a shrub,† and its color green: its berries are white and soft while under water, but the moment they are removed from it, they become hard and red, resembling the berries of cultivated cornel in size and appearance. They say that, while alive, if it is only touched by a person, it will immediately become as hard as stone; and hence it is that the greatest pains are taken to prevent this, by tearing it up from

* The seat of the worship of the half-fish goddess, Addirga, Atergatis, Astarte, or Derceto.

† Theophrastus reckons coral among the precious stones, and Pliny would seem to be at a loss whether to consider it as an animal or a vegetable.

the bottom with nets, or else cutting it short with a sharp-edged instrument of iron : from which last circumstance it is generally supposed to have received its name of "curalium."* The reddest coral and the most branchy is held in the highest esteem ; but, at the same time, it must not be rough or hard like stone ; nor yet, on the other hand, should it be full of holes or hollow.

The berries of coral are no less esteemed by the men in India than are the pearls of that country by the ladies among us ; their soothsayers, too, and diviners look upon coral as an amulet endowed with sacred properties, and a sure preservative against all dangers : hence it is that they equally value it as an ornament and as an object of devotion. Before it was known in what estimation coral was held by the people of India, the Gauls were in the habit of adorning their swords, shields, and helmets with it ; but at the present day, owing to the value set upon it as an article of exportation, it has become so extremely rare, that it is seldom to be seen even in the regions that produce it. Branches of coral, hung at the neck of infants, are thought to act as a preservative against danger. Calcined, pulverized, and taken in wine, or, if there are symptoms of fever, in water, it acts as a soporific. It resists the action of fire a considerable time before it is calcined.

CHAPTER XXI.

THE VARIOUS KINDS OF OYSTERS.

THE palm has been awarded to oysters at our tables as a most exquisite dish. Oysters love fresh water and spots where numerous rivers discharge themselves into the sea. Generally speaking, they increase in size with the increase of the moon, but it is at the beginning of summer, more particu-

* From the Greek *κειρεται*, "cut short."

larly, and when the rays of the sun penetrate the shallow waters, that they are swollen with an abundance of milk.*

Oysters are of various colors; in Spain they are red, in Illyricum of a tawny hue, and at Circeii black, both in meat and shell. But in every country, those oysters are the most highly esteemed that are compact without being slimy from their secretions, and are remarkable more for their thickness than their breadth. They should never be taken in either muddy or sandy spots, but from a firm, hard bottom; the meat should be compressed, and not of a fleshy consistence; and the oyster should be free from fringed edges, and lying wholly in the cavity of the shell. Persons of experience in these matters add another characteristic; a fine purple thread, they say, should run round the margins of the beard, this being looked upon as a sign of superior quality, and obtaining for them their name of "calliblephara." †

Oysters are all the better for travelling and being removed to new waters; thus, for example, the oysters of Brundisium, it is thought, when fed in the waters of Avernus, both retain their own native juices and acquire the flavor of those of Lake Lucrinus. Mucianus, who is really a connoisseur, says:—"The oysters of Cyzicus are larger than those of Lake Lucrinus, fresher than those of the British coasts, ‡ sweeter than those of Medulæ, more tasty than those of Ephesus, more plump than those of Lucas, less slimy than those of

* It is at the spawning season that this milky liquid is found in the oyster; a period at which the meat of the fish is considered unwholesome as food. We have a saying that the oyster should never be eaten in the months without an r; that the same, too, was the opinion in the middle ages is proved by the Leonine line:

"Mensibus erratis vos ostrea manducatis."

"In the r'd months you may your oysters eat."

† Literally, "Having beautiful eyebrows."

‡ Those of Rutupæ, the present Richborough in Kent, were highly esteemed by the Romans. See Juvenal, Sat. 4. l. 141.

Coryphas, more delicate than those of Istria, and whiter than those of Circeii." For all this, however, it is a fact well ascertained that there are no oysters fresher or more delicate than those of Circeii, last mentioned.

According to the historians of the expedition of Alexander, there were oysters found in the Indian Sea a foot in diameter: * among ourselves, too, the nomenclature of some species of thrift and gourmand has found for certain oysters the name of "tridacna," † wishing it to be understood thereby, that they are so large as to require three bites in eating them. We will take the present opportunity of stating all the medicinal properties that are attributed to oysters. They are singularly refreshing ‡ to the stomach, and tend to restore the appetite. Luxury, too, has imparted to them an additional coolness by burying them in snow, thus making a medley of the produce of the tops of mountains and the bottom of the sea. Calcined oyster-shells, mixed with honey, are good sprinkled upon burns, and are highly esteemed as a dentifrice.

* They probably gave the name of "oyster" to some other shell-fish of large size. In Cook's Voyages we read of cockles in the Pacific, which two men were unable to carry.

† From τρίς, "thrice," and δάκνω, "to bite."

‡ Ajasson, however, remarks that many persons are unable to digest oysters in an uncooked state.

Book VII.

THE NATURAL HISTORY OF BIRDS.

CHAPTER I.

THE OSTRICH.

THE history of birds follows next, the very largest of which, and indeed almost approaching to the nature of quadrupeds, is the ostrich of Africa or Æthiopia. This bird exceeds in height a man sitting on horseback, and can surpass him in swiftness, as wings have been given to aid it in running; in other respects ostriches cannot be considered as birds, and do not raise themselves from the earth. They have cloven talons, very similar to the hoof of the stag; with these they fight, and they also employ them in seizing stones for the purpose of throwing at those who pursue them.* They have the marvellous property of being able to digest every substance without distinction, but their stupidity is no less remarkable; for although the rest of their body is so large, they imagine, when they have thrust their head and neck into a bush, that the whole of the body is concealed. Their eggs are prized on account of their large size, and are employed as

* Father Lobo, in his account of Abyssinia, says that when the ostrich is running at great speed, it throws the stones behind with such violence, that they would almost seem to be thrown at those in pursuit.

An ostrich, Cuvier says, will swallow anything, but it is by no means able to digest everything. He says, that he has seen ostriches with the stomach ruptured by nails which they have swallowed, or dreadfully torn by pieces of glass.

vessels for certain purposes, while the feathers of the wing and tail are used as ornaments for the crest and helmet of the warrior.

CHAPTER II.

THE PHŒNIX.

ÆTHIOPIA and India, more especially, produce birds of diversified plumage, and such as quite surpass all description. In the front rank of these is the phœnix,* that famous bird of Arabia ; though I am not quite sure that its existence is not all a fable. It is said that there is only one in existence in the whole world, and that that one has not been seen very often. We are told that this bird is of the size of an eagle, and has a brilliant golden plumage around the neck, while the rest of the body is of a purple color ; except the tail, which is azure, with long feathers intermingled of a roseate hue ; the throat is adorned with a crest, and the head with a tuft of feathers. The first Roman who described this bird, and who has done so with the greatest exactness, was the senator Manilius, so famous for his learning, which he owed to the instructions of no teacher. He tells us that no person has ever seen this bird eat, that in Arabia it is looked upon as sacred to the sun, that it lives five hundred and forty years, that when it becomes old it builds a nest of cassia and sprigs of incense, which it fills with perfumes, and then lays its body down upon them to die ; that from its bones and marrow there springs at first a sort of small worm, which in time changes into a little bird : that the first thing that it does is to perform the obsequies of its predecessor, and to carry the

* All these relations are neither more nor less than so many absurd fables or allegories, but the description given is exactly that of a bird which does exist—the golden pheasant.

nest entire to the city of the Sun near Panchaia, and there deposit it upon the altar of that divinity.

The same Manilius states also, that the revolution of the great year* is completed with the life of this bird, and that then a new cycle comes round again with the same characteristics as the former one, in the seasons and the appearance of the stars; and he says that this begins about mid-day of the day on which the sun enters the sign of Aries. He also tells us that when he wrote to the above effect, in the consulship of Licinius and Cornelius, it was the two hundred and fifteenth year of the said revolution. Cornelius Valerianus says that the phœnix took its flight from Arabia into Egypt in the consulship of Plautius and Papinius. This bird was brought to Rome in the censorship of the Emperor Claudius, being the eight hundredth year from the building of the City, and it was exposed to public view in the Comitium. This fact is attested by the public Annals, but there is no one who supposes that it was a genuine phœnix.

CHAPTER III.

THE EAGLE.

OF all the birds with which we are acquainted, the eagle is looked upon as the most noble, and the most remarkable for its strength. There are six different kinds; the one called "melanaetos" or black eagle by the Greeks, and "valeria" in our language, the least in size of them all, but the most remarkable for its strength, is of a blackish color. It is the only one among all the eagles that feeds its young; for the others, as we shall presently mention, drive them away; it is the only one too that has neither cry nor murmur; it is an

* Five hundred and thirty-two years.

inhabitant of the mountains. The second kind is the pygargus (white tail), an inhabitant of the cities and plains, and distinguished by the whiteness of its tail. The third is the morphnos; it is the second in size and strength, and dwells in the vicinity of lakes. Phemonoë, who was styled the “daughter of Apollo,” has stated that this eagle has teeth, but that it has neither voice nor tongue; she says also that it is the blackest of all the eagles, and has a longer tail than the rest; Bœus is of the same opinion.

This eagle has the instinct to break the shell of the tortoise by letting it fall from aloft, a circumstance which caused the death of the poet Æschylus. An oracle, it is said, had predicted

his death on that day by the fall of a house, upon which he took the precaution of trusting himself only under the canopy of the heavens.

The fourth kind of eagle is the “percnopterus” (black wing), with much the appearance of the vulture, having remarkably small wings, while the rest of the body is larger than the others; but it is of a timid and degenerate nature, so that even a raven can beat it. It is always famishing and ravenous, and has a plaintive, murmuring cry. It is the only one among the eagles that will carry off the dead carcass; the others settle on the spot where they have killed their prey.



BALD, OR WHITE-HEADED EAGLE.—*Haliaeetus*
Leucocephalus.

The character of this species causes the fifth one to be known by the distinctive name of "gnesios," as being the genuine eagle, and the only one of untainted lineage; it is of moderate size, of rather reddish color, and rarely to be met with. The *haliætus* or sea-eagle is the last, and is remarkable for its bright and piercing eye. It poises itself aloft, and the moment it catches sight of a fish in the sea below, pounces headlong upon it, and cleaving the water with its breast, carries off its prey.

The eagle which we have mentioned as forming the third species, pursues the aquatic birds in the vicinity of standing waters: in order to make their escape they plunge into the water every now and then, until at length they are overtaken by lassitude and sleep, upon which the eagle immediately seizes them. The contest that takes place is really a sight worthy to be seen. The bird makes for the shore to seek a refuge, especially if there should happen to be a bed of reeds there; while in the mean time the eagle endeavors to drive it away with repeated blows of its wings, and tumbles into the water in its attempts to seize it. While it is standing on the shore its shadow is seen by the bird, which immediately dives beneath, and then making its way in an opposite direction, emerges at some point at which it thinks it is the least likely to be looked for. This is the reason why these birds swim in flocks, for when in large numbers they are in no danger from the enemy; as by dashing up the spray with their wings they blind him.

Again, it often happens that the eagle is not able to carry the bird aloft on account of its weight, and in consequence they both of them sink together. This and the *haliætus* beat their young ones while in an unfledged state, with their wings, and force them from time to time to look steadily upon the rays of the sun; and if the parent sees either of them wink, or even its eye water, it throws it headlong out of

the nest, as being spurious and degenerate, but rears the one whose gaze remains fixed and steady.

Eagles build among rocks and trees; they lay three eggs, and generally hatch but two young ones, though occasionally as many as three have been seen. Being weary of the trouble of rearing both, they drive one of them from the nest: for just at this time the providential foresight of Nature has denied them a sufficiency of food, to save the young of all other animals from becoming their prey. During this period, their talons become reversed, and their feathers grow white from continued hunger, so that it is not to be wondered at that they take a dislike to their young. The ossifrage, however, a kindred species, takes charge of the young ones thus rejected, and rears them with its own; but the parent bird still pursues them with hostility, even when grown up, and drives them away, as being its rivals in rapine. Under any circumstances, one pair of eagles requires a very considerable space of ground to forage over, in order to find sufficient sustenance; for which reason they mark out by boundaries their respective allotments. They do not immediately carry off their prey, but first deposit it on the ground, test its weight and then fly away with it.

They die, not of old age, nor yet of sickness, or of hunger; but the upper part of the beak grows to such an extent, and becomes so curved, that they are unable to open it. They take the wing, and begin upon the labors of the chase at mid-day; sitting in idleness during the hours of the morning, until such time as the places of public resort are filled with people. It is said that this is the only bird that has never been killed by lightning; hence usage has pronounced it to be the armor-bearer of Jove.

Caius Marius, in his second consulship, assigned the eagle exclusively to the Roman legions. Before that period it had only held the first rank, over four others, the wolf, the minotaur, the horse, and the wild boar, each of which preceded a

single division. Some few years before his time it had begun to be the custom to carry only the eagle into battle, the other standards being left behind in camp; but Marius abolished the rest of them entirely. Since then, it has been remarked that hardly ever has a Roman legion encamped for the winter,



MARTIAL EAGLE.—*Spizæëtus bellicosus*.

without a pair of eagles making their appearance at the spot.

The first two species of eagle not only prey upon the whole of the smaller quadrupeds, but will attack even deer. Rolling in the dust, the eagle covers its body all over with it, then perching on the antlers of the animal, shakes the dust into its eyes, while at the same time it beats it on the head with its

wings, until the creature at last precipitates itself down the rocks. Nor is this one enemy sufficient for it; it has still more terrible combats with the dragon, and the issue is much more doubtful, although the battle is fought in the air. The dragon seeks the eggs of the eagle with a mischievous avidity; while the eagle, in return, carries it off whenever it happens to see it; upon these occasions, the dragon coils itself about the wings of the bird in multiplied folds, until at last they fall to the earth together.

There is a very famous story about an eagle at the city of Sestos. Having been reared by a little girl, it used to testify

its gratitude for her kindness, first by bringing her birds, and in due time various other kinds of prey : at last she died, upon which the bird threw itself on the lighted pile, and was consumed with her body. In memory of this event, the inhabitants raised upon the spot what they called a heroic monument, in honor of Jupiter and the damsel, the eagle being a bird consecrated to that divinity.

CHAPTER IV.

THE VULTURE AND THE HAWK.

OF the vultures, the black ones are the strongest. No person has yet found a vulture's nest : so that some have thought, though erroneously, that these birds come from the opposite hemisphere. The fact is, that they build their nest upon the very highest rocks ; their young ones are often to be seen, generally two in number. Umbricius, the most skilful among the aruspices of our time, says that the vulture lays three eggs, and that with one of these it purifies the others and its nest, and then throws it away : he states also that they hover about for three days, over the spot where carcasses are about to be found.

We find no less than sixteen kinds of hawks mentioned ; among these are the *ægithus*, which is lame of one leg, and is looked upon as the most favorable omen for the augurs on the occasion of a marriage, or in matters connected with property in the shape of cattle. There is a Roman family that has taken its surname from the species known as the "*buteo*," from the circumstance of this bird having given a favorable omen by settling upon the ship of one of them when he held a command. The Greeks call one kind "*epileus*;" the only one that is seen at all seasons of the year, the others taking their departure in the winter.

The various kinds are distinguished by the avidity and the various methods with which they seize their prey ; for while some will pounce on a bird only on the ground, others will seize it only while hovering round the trees ; others, again, while it is perched aloft, and others while it is flying in mid-air. Pigeons, on seeing them, are aware of the nature of the danger to which they are exposed, and either settle on the ground or else fly upwards, instinctively protecting themselves by taking due precautions against their natural propensities.

In the part of Thrace which lies above Amphipolis, men and hawks go in pursuit of prey, in a sort of partnership ; for while the men drive the birds from out of the woods and the reed-beds, the hawks bring them down as they fly ; and after they have taken the game, the fowlers share it with them. It has been said, that when sent aloft, they will pick out the birds that are wanted, and that when the opportune moment for taking them has come, they invite the fowler to seize the opportunity by their cries and their peculiar mode of flying. Hawks will not eat the heart of a bird. The night-hawk is called *cybindis* ; it is rarely found, even in the woods, and in the day-time its sight is not good ; it wages war to the death with the eagle, and they are often to be found clasped in each other's talons.

The cuckoo seems to be but another form of the hawk,* which at a certain season of the year changes its shape ; it being the fact that during this period no other hawks are to be seen, except, perhaps, for a few days ; the cuckoo itself is only seen for a short period in the summer, and does not make its appearance after. It is the only one among the hawks that has not hooked talons ; neither is it like the rest of them in the head, or in any other respect, except the color, while in the beak it bears a stronger resemblance to the pigeon. In addition to this, it is devoured by the hawk, if

* This erroneous notion is still entertained by the French peasantry.



GROUP OF FALCONS.

they chance at any time to meet; this being the only one among the whole race of birds that is preyed upon by those of its own kind. It changes its voice also with its appearance, comes out in the spring, and goes into retirement at the rising of the Dog-star. It always lays its eggs in the nest of another bird,—mostly a single egg, a thing that is the case with no other bird; sometimes however, but very rarely, it is known to lay two. It is supposed, that the reason for its thus substituting its young ones, is the fact that it is aware how greatly it is hated by all the other birds;* for even the very smallest of them will attack it. So, thinking that its own race will stand no chance of being perpetuated unless it contrives to deceive them, it builds no nest of its own: and, besides, it is a very timid animal. In the mean time, the female bird, sitting on her nest, is rearing a supposititious and spurious progeny; while the young cuckoo, which is naturally craving and greedy, snatches away all the food from the other young ones, and by so doing grows plump and sleek, and quite gains the affections of his foster-mother; who takes a great pleasure in his fine appearance, and is quite surprised that she has become the mother of so handsome an offspring. In comparison with him, she discards her own young as so many strangers, until at last, when the young cuckoo is now able to take the wing, he finishes by devouring her.† For sweetness of the flesh, there is not a bird in existence to be compared to the cuckoo at this season.

The kite, which belongs to the same genus, is distinguished from the rest of the hawks by its larger size. It has been remarked of this bird, extremely ravenous as it is, and always craving, that it has never been known to seize any food either

* Cuvier remarks, that this is not a very good reason; but we have not yet been able to find a better.

† Cuvier denies this story, but says, that when the foster-mother is a very small bird, the young cuckoo will take the whole of her head in his beak when receiving food.

from among funeral oblations or from the altar of Jupiter at Olympia; nor does it ever seize any of the consecrated viands from the hands of those who are carrying them; except where some misfortune is presaged for the town that is offering the sacrifice. These birds seem to have taught man the art of steering, from the motion of the tail, Nature pointing out by their movements in the air the method required for navigating the deep. Kites also disappear during the winter months, but do not take their departure before the swallow.

CHAPTER V.

THE CROW, THE RAVEN AND THE OWL.

THE crow, among other kinds of food, feeds upon nuts. If these prove too hard for his beak to break, the crow flies to a great height, and then lets them fall again and again upon the stones and tiles beneath, until at last the shell is cracked, and the bird is able to open them. The crow is a bird of a very ill-omened garrulity, though it has been highly praised by some. It is observed, that from the rising of the constellation Arcturus until the arrival of the swallow, it is rarely to be seen about the sacred groves and temples of Minerva, and in Athens not at all. It is the only bird that continues to feed its young for some time after they have begun to fly. The crow is most inauspicious at the time of incubation, or, in other words, just after the summer solstice.

All the other birds of the same kind—like the raven, for example—drive their young ones from their nest, and compel them to fly. In small hamlets there are never more than two pairs to be found; and in the neighborhood of Crannon, in Thessaly, never more than one, the parents always quitting the spot to give place to their offspring. Ravens are the

only birds that seem to have any comprehension of the meaning of their auspices; for when the guests of Medus were assassinated, they all took their departure from Peloponnesus and the region of Attica. They are of the very worst omen when they swallow their voice, as if they were being choked.

The birds of the night—the owlet, the horned owl, and the screech-owl—have crooked talons, and the sight of all is defective in the day-time. The horned owl is especially funereal, and is greatly abhorred in all auspices of a public nature; it inhabits desolate spots of a frightful and inaccessible nature: the monster of the night, its voice is heard, not with any tuneful note, but emitting a sort of shriek. It is therefore looked upon as a direful omen to see it in a city. I know, however, for a fact, that it is not portentous of evil when it settles on the top of a private house. It cannot fly whither it wishes in a straight line, but is always carried forward by a sidelong movement. A horned owl entered the very sanctuary of the Capitol, in the consulship of Palpelius and Pedanius; in consequence of which, Rome was purified on the nones of March in that year.

An inauspicious bird also is that known as the “incendiary,” on account of which we find in the Annals, the City has had to be repeatedly purified; as, for instance, in the consulship of Cassius and Marius, in which year also it was purified, in consequence of a horned owl being seen. What kind of bird this incendiary* was, we do not find stated, nor is it known by tradition. Some persons explain the term this way; they say that the name “incendiary” was applied to every bird that was seen carrying a burning coal from the pyre, or altar.

The owlet shows considerable shrewdness in its engagements with other birds; for when surrounded by too great a

* Our Jackdaw probably, the *Corvus graculus*. It has been said, that in its admiration of shining objects, it will take up a burning coal; a trick which has before now caused conflagrations.

number, it throws itself on its back, resists with its feet, and rolling up its body into a mass, defends itself with the beak and talons, until the hawk, attracted by a certain natural affinity, comes to its assistance, and takes its share in the combat. Nigidius says that the owlet has nine different notes.

CHAPTER VI.

THE WOODPECKER OF MARS.

THERE are some small birds which have hooked talons; the woodpecker, for example, surnamed "of Mars," of considerable importance in the auspices. To this kind belong the birds which make holes in trees, and climb stealthily up them, like cats; mounting with the head upwards, they tap against the bark, and learn by the sound whether or not their food lies beneath; they are the only birds that hatch their young in the hollows of trees. It is a common belief, that if a shepherd drives a wedge into their holes, they apply a certain kind of herb and it immediately falls out. Trebius informs us that if a nail or wedge is driven with ever so much force into a tree in which these birds have made their nest, it will instantly fly out, the tree making a loud cracking noise the moment that the bird has lighted upon the nail or wedge.

These birds have held the first rank in auguries, in Latium, since the time of the king who has given them their name.* One of the presages that was given by them, I cannot pass over in silence. A woodpecker came and lighted upon the head of Ælius Tubero, the City prætor, when sitting on his tribunal dispensing justice in the Forum, and showed such tameness as to allow itself to be taken with the hand; upon which the augurs declared that if it was let go, the state was

* Picus, the son of Saturn, king of Latium. He was skilled in augury, and was said to have been changed into a woodpecker.

menaced with danger, but if killed, disaster would befall the prætor ; in an instant he tore the bird to pieces, and before long the omen was fulfilled.*

Many birds of this kind feed also on acorns and fruit, but only those which are not carnivorous, with the exception of the kite ; though when it feeds on anything but flesh, it is a bird of ill omen.

The birds which have hooked talons are never gregarious ; each one seeks its prey by itself. They nearly all of them soar to a great height, with the exception of the birds of the night, and more especially those of larger size. They all have large wings, and a small body ; they walk with difficulty, and rarely settle upon stones, being prevented from doing so by the curved shape of their talons.

CHAPTER VII.

THE PEACOCK AND THE ROOSTER.

WE shall now speak of the second class of birds employed in augury, which is divided into two kinds ; those which give omens by their note, and those which afford presages by their flight. The variation of the note in the one, and the relative size in the other, constitute the differences between them. The peacock shall have precedence of all the rest, as much for its singular beauty as its superior instinct, and the vanity it displays.

When it hears itself praised, this bird spreads out its gorgeous colors, especially if the sun happens to be shining at the time, because then they are seen in all their radiance, and to better advantage. At the same time, spreading out its tail in the form of a shell, it throws the reflection upon the

* Valerius Maximus says, that seventeen members of this family fell at the battle of Cannæ.

other feathers, which shine all the more brilliantly when a shadow is cast upon them ; then at another moment it will contract all the eyes depicted upon its feathers in a single mass, manifesting great delight in having them admired by the spectator. The peacock loses its tail every year at the fall of the leaf, and a new one shoots forth in its place at the flower season ; between these periods the bird is abashed and moping, and seeks retired spots. The peacock lives twenty-five years, and begins to show its colors in the third. By some authors it is stated that this bird is not only a vain creature, but of a spiteful disposition, just as they attribute bashfulness to the goose. The characteristics, however, which they have thus ascribed to these birds, appear to me to be utterly unfounded.

The orator Hortensius was the first Roman who had peacocks killed for the table ; it was on the occasion of the banquet given by him on his inauguration in the college of the priesthood. Marcus Aufidius Lurco was the first who taught the art of fattening them, about the time of the last war with the Pirates. From this source of profit he acquired an income of sixty thousand sesterces.

Next after the peacock, the animal that acts as our watchman by night, and which Nature has produced for the purpose of arousing mortals to their labors, and dispelling their slumbers, shows itself most actuated by feelings of vanity. The cock knows how to distinguish the stars, and marks the different periods of the day, every three hours, by his note. These animals go to roost with the setting of the sun, and at the fourth watch of the camp recall man to his cares and toils. They do not allow the rising of the sun to creep upon us unawares, but by their note proclaim the coming day, and they prelude their crowing by clapping their sides with their wings. They exercise a rigorous sway over the other birds of their kind, and, in every place where they are kept, hold the supreme command. This, however, is only obtained

after repeated battles among themselves, as they are well aware that they have weapons on their legs, produced for that very purpose, and the contest often ends in the death of both the combatants at the same moment. If, on the other hand, one of them obtains the mastery, he instantly by his note proclaims himself the conqueror, and testifies by his crowing that he has been victorious; while his conquered opponent silently slinks away, and, though with a very bad grace, submits to servitude. And with equal pride does the throng of the poultry yard strut along, with head uplifted and crest erect. These, too, are the only ones among the winged race that repeatedly look up to the heavens, with the tail raised aloft, which in its drooping shape resembles that of a sickle, and these birds inspire terror even in the lion, the most courageous of all animals.

Some of these birds, known as game-cocks, are reared for nothing but warfare and perpetual combats, and have even shed a lustre thereby on their native places, Rhodes and Tanagra. The next rank is considered to belong to those of Melos and Chalcis. Hence, it is with very good reason that the consular purple of Rome pays these birds such singular honors. From the feeding of these creatures the omens by fowls are derived; they regulate day by day the movements of our magistrates, and open or shut to them their own houses, as the case may be; they give an impulse to the fasces of the Roman magistracy, or withhold them; they command battles or forbid them, and furnish auspices for victories to be gained in every part of the world. It is these that hold supreme rule over those who are themselves the rulers of the earth, and whose entrails and fibres are as pleasing to the gods as the first spoils of victory. Their note, when heard at an unusual hour or in the evening, has also its peculiar presages; for, on one occasion, by crowing the whole night through for several nights, they presaged to the Bœotians that famous victory which they gained over the Lacedæmo-

nians ; such, in fact, being the interpretation that was put upon it by way of prognostic, as this bird, when conquered, is never known to crow.

CHAPTER VIII.

THE GOOSE.

THE goose also keeps a vigilant guard ; a fact which is well attested by the defence of the Capitol, at a moment when, by the silence of the dogs, the commonwealth had been betrayed : for which reason the Censors always, as their first duty, attend to the farming-out of the feeding of the sacred geese. One might almost be tempted to think that these creatures have an appreciation of wisdom : for it is said, that one of them was the constant companion of the philosopher, Lacydes, and would never leave him, either in public or when at the bath, by night or by day.

Our people, however, are more wise ; for they esteem the goose only for the excellence of its liver. When they are crammed, this grows to a very large size, and, on being taken from the animal, is made still larger by being soaked in honed milk. It is matter of debate who first discovered so great a delicacy ; whether it was Scipio Metellus, a man of consular dignity, or Marcus Seius, a contemporary of his, and a Roman of equestrian rank. But there is no dispute that it was Messalinus Cotta, the son of the orator Messala, who first discovered the art of roasting the webbed feet of the goose, and of cooking them in a ragout with cocks' combs.

A second income is derived from the feathers of the white goose. In some places, this animal is plucked twice a year, upon which the feathers quickly grow again. Those are the softest which lie nearest to the body, and those that come

from Germany are the most esteemed: the geese there are white, but of small size. The price paid for their feathers is five denarii per pound. It is from this fruitful source that we have repeated charges brought against the commanders of our auxiliaries, who are in the habit of detaching whole cohorts from the posts where they ought to be on guard, in pursuit of these birds: indeed, we have come to such a pitch of effeminacy, that now-a-days, not even the men can think of lying down without the aid of the goose's feathers, by way of pillow.

CHAPTER IX.

CRANES.

THE tracts over which the cranes travel must be immense, if we only consider that they come all the way from the Eastern Sea. These birds agree by common consent at what moment they shall set out, fly aloft to look out afar, select a leader for them to follow, and have sentinels duly posted in the rear, which relieve each other by turns, utter loud cries, and with their voice keep the whole flight in proper array. During the night, they place sentinels on guard, each of whom holds a little stone in its claw: if the bird should happen to fall asleep, the claw becomes relaxed, and the stone falls to the ground, and so convicts it of neglect. The rest sleep in the mean while, with the head beneath the wing, standing first on one leg and then on the other: the leader looks out, with neck erect, and gives warning when required. These birds, when tamed, are very frolicsome, and even when alone will describe a sort of circle, as they move along, with their clumsy gait.

It is a well-known fact, that these birds, when about to fly over the Euxine, first of all repair to the narrowest part of it, that lies between the two Promontories of Criumetopon and

Carambis, and then ballast themselves with coarse sand. When they have arrived midway in the passage, they throw away the stones from out of their claws, and, as soon as they reach the mainland, discharge the sand from the throat.

Cornelius Nepos, who died in the reign of the late Emperor Augustus, after stating that thrushes had been fattened for the first time shortly before that period, has added that storks were more esteemed as food than cranes; but at the present day, this last bird is one of those that are held in the very highest esteem, while no one will touch the other.

CHAPTER X.

STORKS AND SWANS.

UP to the present time it has not been ascertained from what place the storks come, or whither they go when they leave us. There can be no doubt but that, like the cranes, they come from a very great distance, the cranes being our winter, the storks our summer, guests. When about to take their departure, the storks assemble at a stated place, and are particularly careful that all shall attend, so that not one of their kind may be left behind, with the exception of such as may be in captivity or tamed; and then on a certain day they set out, as though they were by some law directed to do so. No one has ever yet seen a flight of cranes taking their departure, although they have been often observed preparing to depart; and in the same way, too, we never see them arrive. Both their departure and their arrival take place in the night. In some of the vast plains of Asia, they assemble together, keep up a gabbling noise, and tear to pieces the one that happens to arrive the last; after which they take their departure. After the middle of August, they are never by any accident to be seen there.

Some writers assure us that the stork has no tongue. So highly are they esteemed for their utility in destroying serpents, that in Thessaly, it was a capital crime for any one to kill a stork, and by the laws the same penalty was inflicted for it as for homicide.



STORK.—*Ciconia Alba*.

Geese and swans travel in a similar manner, but are seen to take their flight. The flocks, forming a point like a harrow, much after the manner of our Liburnian beaked galleys, move along with great impetus, being thus able to cleave the air more easily than if they presented to it a broad front. The flight gradually enlarges in the rear, in the form of a wedge, presenting a vast surface to the breeze, as it impels them onward; those that follow place their necks on those that go before, while the leading birds, as they become weary, fall to the rear. Storks return to their former nests, and the young, in their turn, support their parents when old. It is stated that at the moment of the swan's death, it gives utterance to a mournful song; * but this is an error, in my opinion. These birds will eat the flesh of one another.

* M. Mauduit, in a learned discussion many pages in length, satisfactorily shows that this is not entirely fabulous, but that the wild swan of the northern climates really is possessed of a tuneful note or cadence. Of course, the statement that it only sings just before its death, must be rejected as fabulous.

CHAPTER XI.

FOREIGN BIRDS WHICH VISIT US.

HAVING spoken of the emigration of these birds over sea and land, I cannot allow myself to defer mentioning some other birds of smaller size, which have the same natural instinct: although in the case of those which I have already mentioned, their very size and strength would almost seem to invite them to such habits. The quail, which always arrives among us before the crane, is a small bird, which more commonly keeps to the ground than flies aloft. These birds fly in a similar manner to those I have already spoken of, and not without considerable danger to mariners, when they come near the surface of the earth: for it often happens that they settle on the sails of a ship, and that, too, always in the night, in such numbers that the vessel often sinks. These birds pursue their course along a tract of country with certain resting-places. When the south wind is blowing, they will not fly, as that wind is always humid, and apt to weigh them down, the body being so light, and their strength so very limited: and frequently we hear them make a murmuring noise as they fly, it being extorted from them by fatigue. For this reason they take to flight when the north wind is blowing, having the *ortygometra* * for their leader. The first of them that approaches the earth is generally snapped up by the hawk. When they are about to return from these parts, they always invite other birds to join their company, and the *glottis*, *otus*, and *cychramus*, yielding to their persuasions, take their departure along with them.

The *glottis* protrudes a tongue of remarkable length, from which circumstance it derives its name: at first it is quite

* The "mother of the quails." Frederic II., in his work, *De Arte Venandi*, calls the "rallus," or "rail," the "leader of the quails."

pleased with the journey, and sets out with the greatest ardor ; but very soon, when it begins to feel the fatigues of the flight, it is overtaken by regret, while at the same time it is equally as loth to return alone, as to accompany the others. Its travels never last more than a single day, for at the very first resting-place they come to, it deserts : here, too, it finds other birds, which have been left behind in a similar manner in the preceding year. The same takes place with other birds day after day. The cychramus is much more persevering, and is in such a hurry to arrive at the land which is its destination, that it arouses the quails in the night, and reminds them that they ought to be on the road.

The otus is a smaller bird than the horned owl, though larger than the owlet ; it has feathers projecting like ears, which gives it its name. Some persons call it in the Latin language the "asio ;" in general it is a bird fond of mimicking, a great parasite, and, in some measure, a dancer as well. Like the owlet, it is taken without any difficulty : for while one person occupies its attention, another goes behind, and catches it.

If the wind, by its contrary blasts, should begin to prevent the onward progress of the flight, the birds immediately take up small stones, or else fill their throats with sand, and so contrive to ballast themselves as they fly. The seeds of a certain venomous plant* are most highly esteemed by the quails as food ; for which reason they have been banished from our tables ; and a great repugnance is manifested to eating their flesh, on account of the epilepsy, to which alone of all animals, with the exception of man, the quail is subject.

* Either hemlock or hellebore.

CHAPTER XII.

SWALLOWS.

THE swallow, the only bird that is carnivorous among those which have not hooked talons, takes its departure also during the winter months ; but it goes only to neighboring countries, seeking sunny retreats there on the mountain sides ; sometimes they have been found in such spots bare and quite unfledged. This bird, it is said, will not enter a house in Thebes, because that city has been captured so frequently ; nor will it approach the country of the Bizyæ, on account of the crimes committed there by Tereus. Cæcina, a member of the equestrian order, and the owner of several chariots, used to have swallows caught, and then carried them with him to Rome. Upon gaining a victory, he would send the news by them to his friends ; for after staining them the color of the party that had gained the day, he would let them go, immediately upon which they would make their way to the nests they had previously occupied. Fabius Pictor also relates, in his Annals, that when a Roman garrison was being besieged by the Ligurians, a swallow which had been taken from its young ones was brought to him, in order that he might give them notice, by the number of knots on a string tied to its leg, on what day succor would arrive, and a sortie might be made with advantage.

CHAPTER XIII.

BIRDS WHICH TAKE THEIR DEPARTURE FROM US IN WINTER.

IN a similar manner also, the blackbird, the thrush, and the starling take their departure to neighboring countries; but they do not lose their feathers, nor conceal themselves, as they are often to be seen in places where they seek their food during the winter: hence it is that in winter, more especially, the thrush is so often to be seen in Germany. It is, however, a well-ascertained fact, that the turtle-dove conceals itself, and loses its feathers. The ring-dove, also, takes its departure, yet it is a matter of doubt whither they go. A peculiarity of the starling is to fly in troops, as it were, and then to wheel round in a globular mass like a ball, the central troop acting as a pivot for the rest. Swallows are the only birds that have a sinuous flight of remarkable velocity; so that they are not exposed to the attacks of other birds of prey: these are the only birds that take their food solely on the wing.

The time during which birds show themselves differs very considerably. Some, like the pigeon, remain with us all the year round, some for six months, such as the swallow; and some again, for three months only, as the thrush, the turtle-dove, and those which take their departure the moment they have reared their young, like the witwall and the hoopoe.

There are some authors who say that every year certain birds fly from Æthiopia to Ilium, and have a combat at the tomb of Memnon there; from which circumstance they have received from them the name of Memnonides, or birds of Memnon. Cremutius states it also as a fact, ascertained by himself, that they do the same every fifth year in Æthiopia, around the palace of Memnon.

In a similar manner, the birds called meleagrides fight in Bœotia. They are a species of African poultry, having a

hump on the back covered with a mottled plumage. These are the latest among the foreign birds that have been received at our tables, on account of their disagreeable smell. The tomb, however, of Meleager has rendered them famous.

Those birds are called seleucides, which are sent by Jupiter at the prayers offered up to him by the inhabitants of Mount Casius, when the locusts are ravaging their crops of corn. Whence they come, or whither they go, has never yet been ascertained, as, in fact, they are never to be seen but when the people stand in need of their aid.

The Egyptians also invoke their ibis against the incursions of serpents; and the people of Elis, their god Myiagros (the hunter of flies), when the vast multitudes of flies are bringing pestilence among them; the flies die immediately after the propitiatory sacrifice has been made to this god.

Rhodes possesses no eagles. In Italy beyond the Padus, there is, near the Alps, a lake known by the name of Larius, beautifully situated amid a country covered with shrubs; and yet this lake is never visited by storks, nor are they ever known to come within eight miles of it; while in the neighboring territory of the Insubres there are immense flocks of magpies and jackdaws, the only bird that is guilty of stealing gold and silver, a very singular propensity.

It is said that in the territory of Tarentum, the woodpecker of Mars is never found. It is only lately, and that very rarely, that various kinds of pies have begun to be seen in the districts that lie between the Apennines and the City. These birds are remarkable for the length of the tail and for the peculiarity of becoming bald every year at the time of sewing rape. The partridge does not fly beyond the frontiers of Bœotia, into Attica; nor does any bird, in the island in the Black Sea in which Achilles was buried, enter the temple there consecrated to him. In the territory of Fidenæ, in the vicinity of the City, the storks have no young nor do they build nests: but vast numbers of ringdoves arrive from

beyond sea every year in the district of Volaterræ. At Rome, neither flies nor dogs ever enter the temple of Hercules in the Cattle Market. There are numerous other instances of a similar nature in reference to all kinds of animals, which from time to time I feel myself prompted by prudent considerations to omit, lest I should only weary the reader.

There is another remarkable fact, too, relative to the birds which give omens by their note; they generally change their color and voice at a certain season of the year, and suddenly become quite altered in appearance; a thing that, among the larger birds, happens with the crane only, which grows black in its old age. From black, the blackbird changes to a reddish color, sings in summer, chatters in winter, and about the summer solstice loses its voice; when a year old, the beak also assumes the appearance of ivory; but only in the case of the male. In summer, the thrush is mottled about the neck, but in winter it becomes of one uniform color all over.

CHAPTER XIV.

THE NIGHTINGALE.

THE song of the nightingale is to be heard, without intermission, for fifteen days and nights, continuously, when the foliage is thickening, as it bursts from the bud; a bird which deserves our admiration in no slight degree. First of all, what a powerful voice it has in so small a body! its note, how long, and how well sustained! And then, too, it is the only bird the notes of which are modulated in accordance with the strict rules of musical science. At one moment, as it sustains its breath, it will prolong its note, and then at another, will vary it with different inflections; then, again, it will break into distinct chirrups, or pour forth an endless series of roulades.

Then it will warble to itself, while taking breath, or disguise its voice in an instant; while sometimes, again, it will twitter to itself, now with a full note, now with a grave, now again sharp, now with a broken note, and now with a prolonged one. Sometimes, when it thinks fit, it will break out into quavers, and will run through, in succession, alto, tenor, and bass: in a word, in so tiny a throat is to be found all the melody that the ingenuity of man has ever discovered through the medium of the invention of the most exquisite flute: so, that there can be no doubt it was an infallible pre-sage of his future sweetness as a poet, when one of these creatures perched and sang on the infant lips of the poet Stesichorus.

No doubt there is a remarkable degree of art in its performances, for every individual has a number of notes peculiar to itself; they do not, all of them, have the same, but each, certain melodies of its own. They vie with one another, and the spirit with which they contend is evident to all. Often the one that is vanquished, dies in the contest, preferring to yield its life rather than its song. The younger birds are listening, in the mean time, and receive the lesson in song from which they are to profit. The learner hearkens with the greatest attention, and repeats what it has heard, and then they are silent by turns; this is understood to be the correction of an error on the part of the scholar, and a sort of reproof, as it were, on the part of the teacher. Nightingales bring as high a price as slaves, and sometimes more than used formerly to be paid for a man in a suit of armor.

I know that on one occasion six thousand sesterces (\$250) was paid for a nightingale, a white one it is true, a thing that is hardly ever to be seen, for a present to Agrippina, the wife of the Emperor Claudius. A nightingale has been often seen that will sing at command, and take alternate parts with the music that accompanies it; men, too, have been found who could imitate its note with such exactness, that it would be

impossible to tell the difference, by merely putting water in a reed held crosswise, and then blowing into it, a languette being first inserted, for the purpose of breaking the sound and rendering it more shrill. But these modulations, so clever and so artistic, begin gradually to cease at the end of the fifteen days; not that you can say, however, that the bird is either fatigued or tired of singing; but, as the heat increases, its voice becomes altogether changed, and possesses no longer either modulation or variety of note. Its color, too, becomes changed, and at last, throughout the winter, it totally disappears. The tongue of the nightingale is not pointed at the tip, as in other birds. It lays at the beginning of the spring, six eggs at the most.

CHAPTER XV.

THE HALCYONS: THE HALCYON DAYS THAT ARE FAVORABLE TO NAVIGATION.

THIS bird is a little larger than a sparrow, and the greater part of its body is of an azure blue color, with a slight intermixture of white and purple in some of the larger feathers, while the neck is long and slender. There is one kind that is remarkable for its larger size and its note; the smaller ones are heard singing in the reed-beds. It is a thing of very rare occurrence to see a halcyon, and then it is only about the time of the setting of the Vergiliæ, and the summer and winter solstices; when one is sometimes to be seen to hover about a ship, and then immediately disappear. They hatch their young at the time of the winter solstice, from which circumstance those days are known as the "halcyon days:" during this period the sea is calm and navigable, the Sicilian sea in particular. They make their nest during the seven days before the winter solstice, and sit the same number of

days after. Their nests are truly wonderful;* they are of the shape of a ball slightly elongated, have a very narrow mouth, and bear a strong resemblance to a large sponge. It is impossible to cut them asunder with iron, and they are only to be broken with a strong blow, upon which they separate, just like foam of the sea when dried up. It has never yet been discovered of what material they are made; some persons think that they are formed of sharp fish-bones, as it is on fish that these birds live. They enter rivers also; their eggs are five in number.

The sea-mew builds its nest in rocks, and the diver in trees as well.

CHAPTER XVI.

THE INSTINCTIVE CLEVERNESS DISPLAYED BY BIRDS IN THE CONSTRUCTION OF THEIR NESTS.

THE form of the nest built by the halcyon reminds me also of the instinctive cleverness displayed by other birds; and, in no respect is the ingenuity of birds more deserving of our admiration. The swallow builds its nest of mud, and strengthens it with straws. If mud happens to fail, it soaks itself with a quantity of water, which it then shakes from off its feathers into the dust. It lines the inside of the nest with soft feathers and wool, to keep the eggs warm, and in order that the nest may not be hard and rough to its young when hatched. It divides the food among its offspring with the most rigid justice, giving it first to one and then to another.

There is a kind of swallow that frequents the fields and the country; its nest is of a different shape, though of the same

* This bird in reality builds no nest, but lays its eggs in holes on the water side. The objects taken for its nest are a zoophyte called *halcyonium* by Linnæus, and similar in shape to a nest.

materials, but it rarely builds it against houses. The nest has its mouth turned straight upwards, and the entrance to it is long and narrow, while the body is very capacious. It is quite wonderful what skill is displayed in the formation of it, for the purpose of concealing the young ones, and of presenting a soft surface for them to lie upon. At the Heracleotic Mouth of the Nile in Egypt, the swallows present an insuperable obstacle to the inroads of that river, in the embankment which is formed by their nests in one continuous line, nearly a stadium in length; a thing that could not possibly have been effected by the agency of man. In Egypt, near the city of Coptos, there is an island sacred to Isis. In the early days of spring, the swallows strengthen the angular corner of this island with chaff and straw, thus fortifying it in order that the river may not sweep it away. This work they persevere in for three days and nights together, with such unremitting labor, that many of them die with their exertions.

A third kind of swallow makes holes in the banks of rivers, to serve for its nest. The young of these birds, reduced to ashes, are a good specific against mortal maladies of the throat, and tend to cure many other diseases of the human body. These birds do not build nests, and they take care to migrate a good many days before, if it so happens that the rise of the river is about to reach their holes.

CHAPTER XVII.

THE ACANTHYLLIS AND THE PARTRIDGE.

BELONGING to the genus of birds known as the "*vitiparræ*," there is one whose nest is formed of dried moss,* and is in shape so exactly like a ball, that it is impossible to discover

* Not moss, Cuvier says, but blades of grass and the silken fibres of the poplar and other aquatic trees.

the mouth of it. The bird known as the acanthyllis, makes its nest of a similar shape, and interweaves it with pieces of flax. The nest of one of the woodpeckers, very much like a cup in shape, is suspended by a twig from the end of the branch of a tree, so that no quadruped may be able to reach it. It is strongly asserted, that the witwall sleeps suspended by its feet, because it fancies that by doing so it is in greater safety. In a spirit of foresight, they select projecting branches of trees that are sufficiently strong, for the purpose of supporting their nests, and then arch them over to protect them from the rain, or else shield them by means of the thickness of the foliage.

In Arabia there is a bird known as the "cinnamolpus," which builds its nest with sprigs of cinnamon; the natives knock the nests down with arrows loaded with lead, in order to sell them. In Scythia there is a bird, the size of the otis, which produces two young ones always, in a hare's skin suspended from the top branches of a tree. Pies, when they have observed a person steadily gazing at their nest, will immediately remove their eggs to another place. This is accomplished in a truly wonderful manner, by such birds as have not toes adapted for holding and removing their eggs. They lay a twig upon two eggs, and then solder them to it by means of a glutinous matter secreted from their body; after which, they pass their neck between the eggs, and so forming an equipoise, convey them to another place.

No less shrewdness is displayed by those birds which make their nests upon the ground, because, from the extreme weight of their body, they are unable to fly aloft. There is a bird, known as the "merops," which feeds its parents in their retreat: the color of the plumage is pale on the inside, and azure without, while it is of a somewhat reddish hue at the extremity of the wings: this bird builds its nest in a hole which it digs to the depth of six feet.

Partridges fortify their retreat so well with thorns and

shrubs, that it is effectually protected against beasts of prey. They make a soft bed for their eggs by burying them in the dust, but do not hatch them where they are laid : that no suspicion may arise from the fact of their being seen repeatedly about the same spot, they carry them away to some other place. The females also conceal themselves in order that they may not be delayed in the process of incubation, as the males are apt to break the eggs. The males often fall to fighting among themselves like game-cocks, and through this very pugnacity, these birds are often taken, as the leader of the whole covey frequently advances to fight with the decoy-bird of the fowler ; as soon as he is taken, another and then another will advance, all of which are caught in their turn.

These birds are often carried away by such frantic madness, that they will settle, being quite blinded by fear, upon the very head of the fowler. If he happens to move in the direction of the nest, the female bird that is sitting will run and throw herself before his feet, pretending to be wounded or weak, then, suddenly running or flying for a short distance before him, will fall down as though she had a wing broken ; just as he is about to catch her, she will then take another fly, and so keep baffling him in his hopes, until she has led him to a considerable distance from her nest. As soon as she is rid of her fears, and free from all maternal inquietude, she will throw herself on her back in some furrow, and seizing a clod of earth with her claws, cover herself all over. It is supposed that the life of the partridge extends to sixteen years.

CHAPTER XVIII.

PIGEONS.

THE pigeon will never desert its nest, unless it is either widower or widow. They manifest a great degree of affection for their offspring. When the female is sitting, the male renders her every attention that can in any way tend to her solace and comfort. The first thing that they do is to eject from the throat some saltish earth, which they have digested, into the mouths of the young ones, in order to prepare them in due time to receive their nutriment. It is a peculiarity of the pigeon and of the turtle-dove, not to throw back the neck when drinking, but to take in the water at a long draught, just as beasts of burden do.

We read in some authors that the ring-dove lives as long as thirty years, and sometimes forty, without any other inconvenience than the extreme length of the claws, which with them is the chief mark of old age; they can be cut, however, without any danger. The voice of all these birds is similar, being composed of three notes, succeeded by a mournful noise at the end. In winter they are silent, recovering their voice with coming of the spring. Nigidius expresses the opinion that the ring-dove will abandon the place, if she hears her name mentioned under the roof where she is sitting on her eggs: they hatch their young at the summer solstice. Pigeons and turtle-doves live eight years. The sparrow, on the other hand, is short-lived in the extreme. Pigeons appear to have a certain appreciation of glory. They are well aware of the colors of their plumage, and the various shades which it presents, and even in their very mode of flying they court our applause, as they cleave the air in every direction. Through this spirit of ostentation they are handed over, fast bound as it were, to the hawk; for from the flapping of their

wings, their long feathers become twisted and disordered; while if they can fly without any impediment, they are far swifter in their movements than the hawk. The robber, lurking amid the dense foliage, keeps on the look-out for them, and seizes them at the very moment that they are indulging their vain-glorious self-complaisance.

For this reason it is necessary to keep along with the pigeons the bird that is known as the "tinnunculus;" as it protects them, and by its natural superiority scares away the hawk. The hawk will vanish at the very sight of it, or the instant it hears its voice. Pigeons have a special regard for this bird; and, it is said, if one of these birds is buried at each of the four corners of the pigeon-house in pots that have been newly glazed, the pigeons will not change their abode—a result which has been obtained by some keepers of pigeons, by cutting a joint of their wings with an instrument of gold; for if any other were used, the wounds would be attended with danger.—The pigeon in general may be looked upon as a bird fond of change; they have the art, too, among themselves of gaining one another over, and so proselyting companions: we frequently find them returning to the cote attended by others which they have enticed away.

Pigeons have frequently acted as messengers in affairs of importance. During the siege of Mutina, Decimus Brutus, who was in the town, sent despatches to the camp of the consuls fastened to pigeons' feet. Of what use to Antony then were his intrenchments, and all the vigilance of the besieging army? or his nets, which he had spread in the river, while the messenger of the besieged was cleaving the air?

Many persons have a mania for pigeons—building towns for them on the top of their roofs, and taking a pleasure in relating the pedigree and noble origin of each. Of this there is an ancient instance which is very remarkable; Lucius Axius, a Roman of the equestrian order, shortly before the Civil War of Pompey, sold a single pair for four hundred denarii,

so Marcus Varro tells us. Countries even have gained renown for their pigeons; it is thought that those of Campania attain the largest size.

CHAPTER XIX.

DIFFERENT MODES OF FLIGHT AND PROGRESSION IN BIRDS.

MENTIONING the flight of the pigeon leads me to consider that of other birds. All other animals have one determinate mode of progression, which in every kind is always the same; birds alone have two modes of moving—on the ground, and in the air. Some of them walk, such as the crow, for instance; some hop, as the sparrow and the blackbird; some run, as the partridge and the woodhen; while others throw one foot before the other, like the stork and the crane. Then again, in their flight, some birds expand their wings, and poisoning themselves in the air, only move them from time to time; others move them more frequently, but then only at the extremities; while others expand them so as to expose the whole of the side. On the other hand, some fly with the greater part of the wings kept close to the side; and some, after striking the air once, others twice, make their way through it, as though pressing upon it enclosed beneath their wings; other birds dart aloft in a vertical direction, others horizontally, and others come falling straight downwards. You would almost think that some had been hurled upwards with a violent effort, and that others had fallen straight down from aloft; while others still are seen to spring forward in their flight. Ducks alone, and the other birds of that kind, in an instant raise themselves aloft, taking a spring from the spot where they stand straight upwards towards the heavens; and this they can do directly from the water. They are the

only birds that can make their escape from the pitfalls which we employ for the capture of wild beasts.

The vulture and the heavier wild birds can only fly after taking a run, or else by commencing their flight from an elevated spot. They use the tail by way of rudder. There are some birds that are able to see all around them; others have to turn the neck to do so. Some of them eat what they have seized, holding it in their feet. Many, as they fly, utter some cry, while others are always silent. Some fly with the breast half upright, others with it held downwards, others fly obliquely, or side-ways, and others follow the direction of the bill. The fact is, that if we were to see several kinds at the same moment, we should not suppose that they were adapted to the same element.

Those birds which are known as “apodes”* fly the most of all, because they are deprived of the use of their feet. They are a species of swallow which build their nests in the rocks, and are the same birds that are to be seen everywhere at sea. However far a ship may go, however long its voyage, and however great the distance from land, the apodes never cease to hover around it. Other birds settle and rest, but these know no repose save in the nest; they are always either on the wing or asleep.

CHAPTER XX.

STRANGE AND FABULOUS BIRDS.

THE instincts of birds are no less varied in relation to their food. The “Caprimulgus,” or goat-milker, is the name of a bird, which is to all appearance a large blackbird; it thieves

* “Without feet.” This was supposed to be the case with the martinet, the *Hirundo apus* of Linnæus.

by night, as it cannot see during the day. It enters the folds of the shepherds, and makes straight for the udder of the she-goat, to suck the milk. Through the injury thus inflicted the udder shrivels away, and the goat that has been thus deprived of its milk, is afflicted with incipient blindness.

“Platea,” or spoon-bill, is the name of another, which pounces upon other birds when they have dived in the sea, and, seizing the head with its bill, makes them let go their prey. This bird will swallow and fill itself with shell-fish, shells and all, and after the natural heat of its crop has softened them, it will bring them up again, pick out the shells from the rest, and choose the parts that are fit for food.

The farm-yard fowls have a certain notion of religion; upon laying an egg they shudder all over, and then shake their feathers; after which they turn



SPOTTED KING FISHER.—*Ceryle Gutta*.

round and purify* themselves, or else hallow† themselves and their eggs with some stalk or other. The carduelis, which is the very smallest bird of any, will do what it is bid, not only with the voice but with the feet as well, and with the beak, which serves it instead of hands. There is one small bird, found in the territory of Arelate, that imitates the lowing of oxen, from which circumstance it has received the name of “taurus.” Another, called the anthus, imitates the neighing of the horse; upon being driven from the pasture by

* By nestling in the dust. Throwing dust over the body was one of the ancient modes of purification.

† “Lustrant,” “perform a lustration.” This was done by the Romans with a branch of laurel or olive, and sometimes bean-stalks were used.

the approach of the horses, it will mimic their voices—taking this method of revenging itself.

But remarkable as it may seem, there are some birds that can imitate the human voice; the parrot, for instance, can even converse. India sends us this bird, which it calls by the name of “sittaces;” the body is green all over, except a ring of red around the neck. It will formally salute an emperor, and pronounce the words it has heard spoken; it is rendered especially frolicsome under the influence of wine. Its head is

as hard as its beak; and this, when it is being taught to talk, is beaten with a rod of iron, for otherwise it is quite insensible to blows. When it lights on the ground it falls upon its beak, and by resting upon it makes itself all the lighter for its feet, which are naturally weak.

The magpie is much less famous for its talking qualities than the parrot, because it does not come from a distance, and yet it can



RHINOCEROS HORNBILL.—*Buceros Rhinoceros*.

speak with much more distinctness. These birds love to hear words spoken which they can utter; and not only do they learn them, but are pleased at the task; and as they con them over to themselves with the greatest care and attention, make no secret of the interest they feel. It is a well-known fact, that a magpie has died before now, when it has found itself mastered by a difficult word that it could not pronounce.

Their memory, however, will fail them if they do not from time to time hear the same word repeated; and while they are trying to recollect it, they will show the most extravagant joy, if they happen to hear it. Their appearance, although there is nothing remarkable in it, is by no means plain; but they have quite enough in the way of attractions in their singular ability to imitate human speech.

Only that kind of pie* which feeds upon acorns can be taught to speak; and among these, those which have five toes on each foot † can be taught with the greatest facility; but even in their case only during the first two years of their life. The magpie has a broad tongue, as do all the birds that can imitate the human voice; although some individuals of almost every kind have the faculty of doing so.

Agrippina, the wife of Claudius Cæsar, had a thrush that could imitate human speech, a thing that was never known before. At the moment that I am writing this, the young Cæsars ‡ have a starling and some nightingales that are being taught to talk in Greek and Latin; besides which, they are studying their task the whole day, continually repeating the new words that they have learnt, and giving utterance to phrases of considerable length. Birds are taught to talk in a retired spot, where no other voice can be heard, so as to interfere with their lesson; a person sits by them, and continually repeats the words he wishes them to learn, while at the same time he encourages them by giving them food.

Let us do justice to the raven, whose merits have been attested not only by the kindlier sentiments of the Roman people, but also by the strong expression of their indignation. In the reign of Tiberius, one of a brood of ravens that had bred on the top of the temple of Castor, happened to fly into

* This is the jay, the *Corvus glandarius* of Linnæus; but they are not more apt at speaking than the other kinds.

† These are merely freaks of Nature.

‡ Britannicus, the son of Claudius, and Nero, his stepson.

a shoemaker's shop that stood opposite : upon which, from a feeling of religious veneration, it was looked upon as doubly recommended by the owner of the place. The bird, having been taught to speak at an early age, used every morning to fly to the Rostra, which look towards the Forum ; here, addressing each by his name, it would salute Tiberius, and then the Cæsars* Germanicus and Drusus, after which it would proceed to greet the Roman populace as they passed, and then return to the shop : for several years it was remarkable for the constancy of its attendance. The owner of another shoemaker's shop in the neighborhood, in a sudden fit of anger killed the bird, enraged, as he would have had it appear, because it had soiled some shoes of his. Upon this, such rage was manifested by the multitude, that he was at once driven from that part of the city, and soon after put to death. The funeral, too, of the bird was celebrated with almost endless obsequies ; the body was placed upon a litter carried upon the shoulders of two Æthiopians, preceded by a piper, and borne to the pile with garlands of every size and description. The pile was erected on the right-hand side of the Appian Way, at the second milestone from the City, in the field generally known as the " field of Rediculus." † Thus did the rare talent of a bird appear a sufficient ground to the Roman people for honoring it with funeral obsequies, as well as for inflicting punishment on a Roman citizen. No such crowds ever escorted the funeral of any one out of the whole number of its distinguished men.

At the present day, there is in the city of Rome a crow which belongs to a Roman of equestrian rank, and was brought from Bætica. It is remarkable for its color, which is of the deepest black, and is able to pronounce several con-

* The nephew and son of Tiberius.

† Festus says that the " fane of Rediculus was without the Porta Capena ; it was so called because Hannibal, when on the march from Capua, turned back (redierit) at that spot, being alarmed at certain portentous visions."

nected words, while repeatedly learning fresh ones. Recently, too, there has been a story told about Craterus of Erizena in Asia, who was in the habit of hunting with the assistance of ravens, and used to carry them into the woods, perched on the tuft of his helmet and on his shoulders. The birds used to keep on the watch for game, and raise it; and by training he had brought this art to such a pitch of perfection, that even the wild ravens would attend him in a similar manner when he went out. Some authors have thought the following circumstance deserving of remembrance:—A crow that was thirsty was seen heaping stones into the urn on a monument, in which there was some rain-water which it could not reach: by thus accumulating the stones, it raised the level of the water till it came within its reach.

I must not pass by the birds of Diomedes in silence. Juba calls them “*cataractæ*,” and says that they have teeth and eyes of a fiery color, while the rest of the body is white: they always have two chiefs, the one to lead the main body, the other to take charge of the rear, they excavate holes with their bills, and then cover them with hurdles, which they cover again with the earth that has been thus thrown up; in these places they hatch their young; each of these holes has two outlets—one of them looking towards the east, by which they go forth to feed, returning by the one which looks towards the west. In one only spot throughout the whole earth are these birds to be seen—in the island which is famous for the tomb and shrine of Diomedes, lying over against the coast of Apulia: they bear a strong resemblance to the coot. When strangers who are barbarians arrive on that island, they pursue them with loud and clamorous cries, and only show courtesy to Greeks by birth; seeming thereby, with a wonderful discernment, to pay respect to them as the fellow-countrymen of Diomedes. Every day they fill their throats, and cover their feathers, with water, and so wash and purify the temple there. From this circumstance arises the fable

that the companions of Diomedes were metamorphosed into these birds.

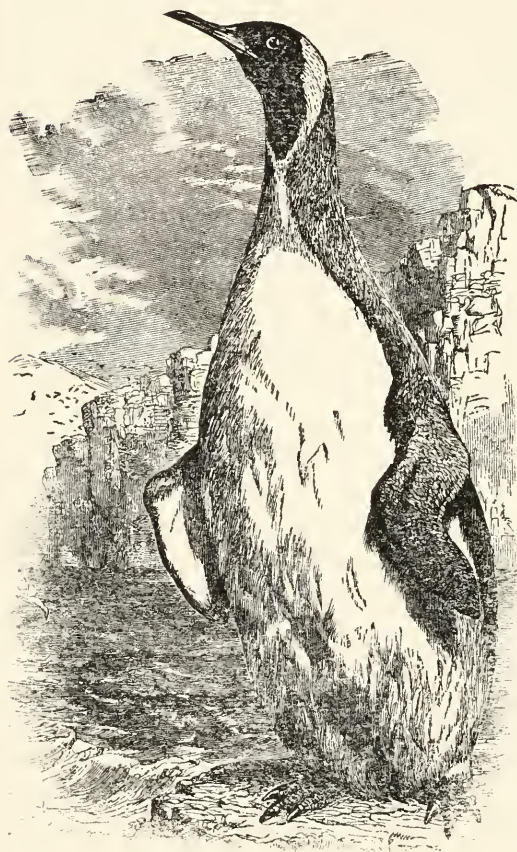
We ought not to omit, while we are speaking of instincts, that among birds the swallow* is quite incapable of being taught, and among land animals the mouse; while on the other hand, the elephant does what it is ordered, the lion submits to the yoke, and the sea-calf and many kinds of fishes are capable of being tamed.

Birds drink by suction; those which have a long neck taking their drink in a succession of draughts, and throwing the head back, as though they were pouring the water down the throat. The porphyrio is the only bird that seems to bite at the water as it drinks. The same bird

has also other peculiarities of its own; for it will every now and then dip its food in the water, and then lift it with its foot to its bill, using it as a hand. Those that are the most esteemed are found in Commagene. They have beaks and very long red legs.

All the heavy birds are frugivorous; while those with a

* Albert Magnus says that swallows *can* be tamed.



KING PENGUIN.—*Aptenodytes Pennantii*.

higher flight feed upon flesh only. Among the aquatic birds, the divers are in the habit of devouring what the other birds have disgorged.

The pelican is similar in appearance to the swan, and nobody would imagine there was any difference between them, were it not for the fact that under the throat there is a sort of second crop. In this the ever-insatiate animal stows everything away, till the capacity of this pouch is quite astonishing. Having finished its search for prey, it discharges bit by bit what it has thus stowed away, and reconveys it by a sort of ruminating process into its real stomach. The part of Gallia that lies nearest to the Northern Ocean produces this bird.

We hear of a singular kind of bird in the Hercynian Forest, in Germany, the feathers of which shine at night like fire; the other birds there have nothing remarkable beyond the celebrity which generally attaches to objects situated at a distance.

During the civil wars that took place at Bebriacum, beyond the river Padus, the "new birds" were introduced into Italy—for by that name they are still known. They resemble the thrush in appearance, are a little smaller than the pigeon in size, and of an agreeable flavor. The Balearic islands also send us a porphyrio or flamingo, as well as the buteo, a kind of hawk, held in high esteem for the table, and the vipio, the name given to a small kind of crane.

I look upon the birds as fabulous which are called "pegasi," and are said to have a horse's head; as also the griffons, with long ears and a hooked beak. The same is my opinion, also, as to the tragopan; many writers, however, assert that it is larger than the eagle, has curved horns on the temples, and a plumage of iron color, with the exception of the head, which is purple. Nor do the sirens obtain any greater credit with me, although Dinon, the father of Clearchus, a celebrated writer, asserts that they exist in India, and that they charm men by their song, and, having first lulled them to sleep, tear

them to pieces. The person, however, who may think fit to believe in these tales, may probably not refuse to believe also that dragons licked the ears of Melampodes, and bestowed upon him the power of understanding the language of birds; or what Democritus says, when he gives the names of certain birds, by the mixture of whose blood a serpent is produced, the person who eats of which will be able to understand the language of birds; as well as the statements which the same writer makes relative to one bird in particular, known as the "galerita," or crested lark—indeed, the science of augury is already too much involved in embarrassing questions, without these fanciful reveries.

CHAPTER XXI.

THE ART OF CRAMMING POULTRY.—AVIARIES.

THE people of Delos were the first to cram poultry, and to originate that abominable mania for devouring fattened birds, larded with the grease of their own bodies. I find in the ancient sumptuary regulations as to banquets, that this was forbidden for the first time by a law of the consul Caius Fannius, eleven years before the Third Punic War; by which it was ordered that no bird should be served at table beyond a single pullet, and that not fattened; an article which has since made its appearance in all the sumptuary laws. A method, however, has been devised of evading it, by feeding poultry upon food that has been soaked in milk: prepared in this fashion, they are considered still more delicate. Not all pullets are looked upon as equally good for the purposes of fattening, but only those are selected which have a fatty skin about the neck. Then come all the arts and affectations of the kitchen—that the thighs may have a nice plump appearance, that the bird may be properly divided down the back,

and that poultry may be brought to such a size that a single leg shall fill a whole platter. The Parthians have taught their fashions to our cooks; yet after all, in spite of their refinements in luxury, no article is found to please equally in every part, for in one it is the thigh, and in another the breast that is esteemed.

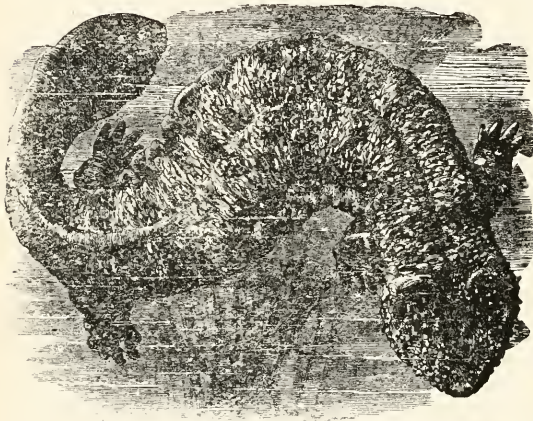
The first person who invented aviaries for the reception of all kinds of birds was Marcus Lænius Strabo, a member of the equestrian order, who resided at Brundisium. In his time we thus began to imprison animals to which Nature had assigned the heavens as their element.

But more remarkable than anything else in this respect, is the story of the dish of Clodius Æsopus, the tragic actor, which was valued at one hundred thousand sesterces, and in which were served up nothing but birds that had been remarkable for their song, or their imitation of the human voice, and he purchased each of them at the price of six thousand sesterces, being induced to this folly by no other pleasure than that in these he might eat the closest imitators of man; never for a moment reflecting that his own immense fortune had been acquired by the advantages of his voice; a parent right worthy of the son of whom we have already made mention as swallowing pearls. It would not be very easy to decide which of the two was guilty of the greatest baseness, unless, indeed, we admit that it was less unseemly to banquet upon the most costly of all the productions of Nature, than to devour tongues which had given utterance to the language of man.

CHAPTER XXII.

PECULIARITIES OF ANIMALS.

THE salamander, an animal like a lizard in shape, and with a body starred all over, never comes out except during heavy showers, and disappears the moment it becomes fine. This animal is so intensely cold as to extinguish fire by its contact,



GIGANTIC SALAMANDER—*Sieboldia Maxima*.

in the same way as ice does. It spits forth a milky matter from its mouth; and from whatever part of the human body is touched with this, all the hair falls off, and the part assumes the appearance of leprosy.

Man excels most in his sense of touch, and next, in that of taste.

In other respects, he is surpassed by many of the animals. Eagles can see more clearly than any other animals, while vultures have the better smell; moles hear more distinctly than others, although buried in the earth, so dense and sluggish an element as it is; and though every sound has a tendency upwards, they can hear the words that are spoken; and, it is said, that if you talk about them, they will take to flight immediately. Among men, a person who has not enjoyed the sense of hearing in his infancy, is deprived of the powers of speech as well. Among the marine animals, it is not probable that oysters enjoy the sense of hearing, but it is said that the instant a noise is made the solen will sink to the

bottom ; for this reason silence is observed by persons while fishing at sea.

Fish have neither organs of hearing, nor the exterior orifice. And yet, it is quite certain that they do hear ; for it is a well-known fact, that in some fish-ponds they are in the habit of being assembled to be fed by the clapping of the hands. In the fish-ponds, too, that belong to the Emperor, the fish are in the habit of coming, each kind as it hears its name. So the mullet, the wolf-fish, the salpa, and the chromis, have a very exquisite sense of hearing, and for this reason they frequent shallow water.

It is quite manifest that fish have also the sense of smell ; for they are not all to be taken with the same bait, and are seen to smell at it before they seize it. Some, too, that are concealed in the bottom of holes, are driven out by



HEMIGALE.—*Hemigale Hardwickii*.

the fisherman, by the aid of the smell of salted fish ; with this he rubs the entrance of their retreat in the rock, immediately upon which they take to flight from the spot, as though they had recognized the dead carcasses of those of their kind. Then they will rise to the surface at the smell of certain odors, such, for instance, as roasted sœpia and polypus ; these baits are placed in the osier kipes used for taking fish. They immediately take to flight upon smelling the bilge water in a ship's hold, and especially upon scenting the blood of fish.

The polypus cannot possibly be torn away from the rock to which it clings ; but, apply the herb cunila, and the instant it smells it the fish quits its hold. Purples also are taken by means of fetid substances. As to the other kinds of animals, who is there that can feel any doubt that they possess the

sense of smell? Serpents are driven away by the smell of harts' horns, and ants are killed by the odors of origanum, lime, or sulphur. Gnats are attracted by acids, but not by anything sweet.

All animals have the sense of touch, even those which have no other sense; in the oyster and the worm, this sense is found.

I am strongly inclined to believe, too, that the sense of taste exists in all animals; for why else should one seek one kind of food, and another another? In this is to be seen the wondrous power of Nature, the framer of all things. Some animals seize their prey with their teeth, others with their claws; some tear it to pieces with their hooked beak; others, that have a broad bill, wabble in their food; others, with a sharp nib, work holes into it; others suck at their food, lick it, sup it in, chew it, or bolt it whole. And no less a diversity is there in the uses they make of their feet, for the purpose of carrying, tearing asunder, holding, squeezing, suspending their bodies, or incessantly scratching the ground.

Serpents will feed on eggs, and the address displayed by the dragon is quite remarkable. For it will either swallow the egg whole, if its jaws will allow of it, and roll over and over so as to break it within, and then by coughing eject the shells: or else, if it is too young to be able to do so, it will gradually encircle the egg with its coils, and hold it so tight as to break it at the end, just, in fact, as though a piece had been cut out with a knife; then holding the remaining part in its folds, it will suck the contents.

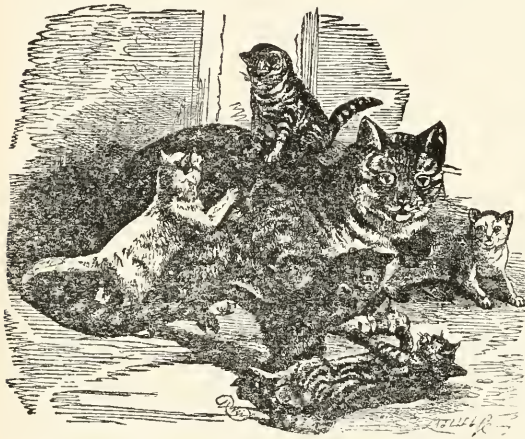
Scorpions live on earth. Serpents, when an opportunity presents itself, show an especial liking for wine, although in other respects they need but very little drink. These animals, when kept shut up, require but little aliment, hardly any at all, in fact. The same is the case also with spiders, which at other times live by suction. No venomous animal will die of hunger or thirst. The sphingium and the satyr stow away



GROUP OF RODENT ANIMALS.

food in the pouches of their cheeks, after which they will take it out piece by piece with their hands and eat it ; thus they do for a day or an hour what the ant usually does for the whole year.

The only animal with toes upon the feet that feeds upon grass is the hare, and he will eat corn as well ; while the solid-hoofed animals, and the swine among the cloven-footed ones, will eat all kinds of food, as well as roots. To roll over and over is a peculiarity of the animals with a solid hoof. All



THE CAT.—*Felis Domestica*.

those which have serrated teeth are carnivorous. Bears live also upon corn, leaves, grapes, fruit, bees, crabs and ants ; wolves will eat earth even when they are famishing. Cattle grow fat by drinking ; hence salt agrees with them well. All animals ruminate lying in preference to standing, and more in winter than in summer. The Pontic mouse also ruminates in a similar manner.

In drinking, those animals which have serrated or canine teeth, lap ; and common mice do the same, although they belong to another class. Those which have the teeth continuous, horses and oxen, for instance, sup ; bears do neither the one nor the other, but seem to bite at the water, and so devour it. In Africa, the greater part of the wild beasts do not drink in summer, through the want of rain ; the mice of Libya, when caught, will die if they drink. The ever-thirsting plains of Africa produce the oryx, an animal which, in consequence of the nature of its native locality, never drinks, and which, in a remarkable manner, affords a remedy against drought : for

the Gætulian bandits by its aid fortify themselves against thirst, by finding in its body certain vesicles filled with a most wholesome liquid. In this same Africa, also, the pards conceal themselves in the thick foliage of the trees, and then spring down from the branches on any creature that may happen to be passing by, thus occupying what are ordinarily the haunts of the birds. With what silent stealthiness, with what light steps do the cats creep towards a bird! How slyly they will sit and watch, and then dart out upon a mouse!

Book VIII.

THE VARIOUS KINDS OF INSECTS.

CHAPTER I.

THE EXTREME SMALLNESS OF INSECTS.

WE shall now proceed to a description of insects, a subject replete with endless difficulties. Insects are numerous, and form many species, and their mode of life is like that of the terrestrial animals and the birds. Some, like bees, are furnished with wings; others are divided into those kinds which have wings, and those which are without them, such as ants; while others, again, are destitute of both wings and feet. All these animals have been very properly called "insects," from the incisures or divisions which separate the body, sometimes at the neck, and sometimes at the corselet, and so divide it into members or segments, only united to each other by a slender tube. In some insects, however, this division is not complete, as it is surrounded by wrinkled folds; and the flexible vertebræ of the creature, whether situate at the abdomen, or whether only at the upper part of the body, are protected by layers, overlapping each other; indeed, in no one of her works has Nature more fully displayed her exhaustless ingenuity.

In large animals, on the other hand, or, at all events, in the very largest among them, she found her task easy and her materials ready and pliable; but in these minute creatures, so nearly akin as they are to nonentity, how surpassing the intelligence, how vast the resources, and how ineffable the perfection which she has displayed. Where is it that she has

united so many senses as in the gnat?—not to speak of creatures that might be mentioned of still smaller size—Where, I say, has she found room to place in it the organs of sight? Where has she centred the sense of taste? Where has she inserted the power of smell? And where, too, has she implanted that sharp shrill voice of the creature, so utterly disproportioned to the smallness of its body? With what astonishing subtlety has she united the wings to the trunk, elongated the joints of the legs, framed that long craving concavity for a belly, and then inflamed the animal with an insatiate thirst for blood, that of man especially! What ingenuity has she displayed in providing it with a sting,* so well adapted for piercing the skin! And then too, just as though she had had the most extensive field for the exercise of her skill, although the weapon is so minute that it can hardly be seen, she has formed it with a twofold mechanism, providing it with a point for the purpose of piercing, and at the same moment making it hollow, to adapt it for suction.

What teeth, too, has she inserted in the teredo, to adapt it for piercing even oak with a sound which fully attests their destructive power! while at the same time she has made wood its principal nutriment. We willingly yield our admiration to the shoulders of the elephant as they support the turret, to the stalwart neck of the bull, and the might with which it hurls aloft whatever comes in its way, to the onslaught of the tiger, or to the mane of the lion; while at the same time, Nature is nowhere to be seen to greater perfection than in the very smallest of her works. For this reason then, I must beg of my readers, notwithstanding the contempt they feel for many of these objects, not to feel a similar disdain for the information I am about to give relative thereto, seeing that, in the study of Nature, there are none of her works that are unworthy of our consideration.

* The trunk of the gnat, Cuvier says, contains five silken and pointed threads, which together have the effect of a sting.

CHAPTER II.

WHETHER INSECTS BREATHE, AND WHETHER THEY HAVE BLOOD.

MANY authors deny that insects breathe, upon the ground that in their viscera there is no respiratory organ* to be found. They assert that insects have the same kind of life as plants and trees, there being a very great difference between respiring and merely having life. On similar grounds also, they assert that insects have no blood, a thing which cannot exist, they say, in any animal that is destitute of heart and liver; just as, according to them, those creatures cannot breathe which have no lungs. Upon these points, however, a vast number of questions will naturally arise; for the same writers do not hesitate to deny that these creatures are destitute also of voice,† and this, notwithstanding the humming of bees, the chirping of grasshoppers, and the sounds emitted by numerous other insects which will be considered in their respective places. For my part, whenever I have considered the subject, I have ever felt persuaded that there is nothing impossible to Nature, nor do I see why creatures should be less able to live and yet not inhale, than to respire without being possessed of viscera, a doctrine which I have already maintained, when speaking of the marine animals; and that, notwithstanding the density and the vast depth of the water which would appear to impede all breathing. But what person could very easily believe that there can be any creatures that fly to and fro, and live in the very midst of the element of respiration, while, at the same time, they themselves are devoid of that respiration; that they can be possessed of the requi-

* They respire by orifices in the sides of the body, known to naturalists as *stigmata*. The whole body, Cuvier says, forms in a measure, a system of lungs.

† The various noises made by insects are in reality not the voice, as they are not produced by air passing through a larynx.

site instincts for nourishment, working, and making provision even for time to come, in the enjoyment too of the powers of hearing, smelling, and tasting, as well as those other precious gifts of Nature, address, courage, and skilfulness? That these creatures have no blood I am ready to admit, just as all the terrestrial animals are not possessed of it; but they have something similar, by way of equivalent.*

Insects, so far as I find myself able to ascertain, seem to have neither sinews,† bones, spines, cartilages, fat, nor flesh; nor yet so much as a frail shell, like some of the marine animals, nor even anything that can with any propriety be termed skin; but they have a body which is of a kind of intermediate nature between all these, of an arid substance, softer than muscle, and in other respects of a nature that may, in strictness, be rather pronounced yielding, than hard. Such, then, is all that they are, and nothing more: in the inside of their bodies there is nothing, except in a few, which have an intestine arranged in folds. Hence, even when cut asunder, they are remarkable for their tenacity of life, and the palpitations which are to be seen in each of their parts. For every portion of them is possessed of its own vital principle, which is centred in no limb in particular, but in every part of the body; least of all, however, in the head, which alone is subject to no movements unless torn off together with the corselet. No kind of animal has more feet than the insects have, and those which have the most, live the longest when cut asunder, as we see in the case of the scolopendra. They have eyes, as well the senses of touch and taste; some of them have also the sense of smelling, and a few that of hearing.

* They have a nourishing fluid, which is of a white color, and acts in place of blood.

† All insects have a brain, a sort of spinal marrow, and nerves; they have no fat except when in the chrysalis state; but they have a fibrous flesh of a whitish color. They have also viscera, trachea, nerves, and a most complicated organization.

CHAPTER III.

BEES.

BUT among them all, the first rank, and our special admiration, ought, in justice, to be accorded to bees, which alone, of all the insects, appear to have been created for the benefit of man. They extract honey and collect it, a juicy substance remarkable for its extreme sweetness, lightness, and wholesomeness. They form their combs and collect wax, an article that is useful for a thousand purposes of life; they are patient of fatigue, toil at their labors, form themselves into political communities, hold councils together in private, elect chiefs in common, and, a thing that is the most remarkable of all, have their own code of morals. In addition to this, being as they are neither tame nor wild, so all-powerful is Nature, that, from a creature so minute as to be nothing more hardly than the shadow of an animal, she has created a marvel beyond all comparison. What muscular power, what exertion of strength are we to put in comparison with such vast energy and industry as theirs? What display of human genius, in a word, shall we compare with the reasoning powers manifested by them? In this they have, at all events, the advantage of us—they know of nothing but what is for the common benefit of all. Away, then, with all questions whether they breathe or no, and let us be ready to agree on the question of their blood.—And now let us form some idea of the instinct they display.

Bees keep within the hive during the winter—for whence are they to derive the strength requisite to withstand frosts and snows, and the northern blasts? The same, in fact, is done by all insects, but not to so late a period; as those which conceal themselves in the walls of our houses are much sooner sensible of the returning warmth. With reference to

bees, either seasons and climates have considerably changed, or else former writers have been greatly mistaken. They retire for the winter at the setting of the Vergiliæ, and remain shut up till after the rising of that constellation, well past the beginning of spring. They do not come forth to ply their labors until the bean blossoms; but then not a day do they lose in inactivity, while the weather is favorable for their pursuits.

First of all, they set about constructing their combs, and forming the wax, or, in other words, making their dwellings and cells; after this they produce their eggs and then make honey and wax from flowers, and extract bee-glue from the tears of those trees which distil glutinous substances, the juices, gums, and resins, namely, of the willow, the elm, and the reed. With these substances, as well as others of a more bitter nature, they first line the whole inside of the hive, as a sort of protection against the greedy propensities of other small insects, as they are well aware that they are about to form that which will prove an object of attraction to them. Having done this, they employ similar substances in narrowing the entrance to the hive, if otherwise too wide.

The bees also form collections of "bee-bread" to serve as the food of the bees while they are at work, and is often found stowed away in the cavities of the cells, being of a bitter flavor. It is produced from the spring dews and the gummy juices of trees, being less abundant while the south-west wind is blowing, and blackened by the prevalence of a south wind. Sometimes it is of a reddish color and becomes improved by the north-east wind; it is found in the greatest abundance upon the nut trees in Greece.

Bees form wax from the blossoms of almost all trees and plants. Where olives are in the greatest abundance, the swarms of bees are the most numerous. Bees are not injurious to fruit of any kind; they will never settle on a dead flower, much less a dead carcass. They pursue their labors

within three-score paces of their hives; and when the flowers in their vicinity are exhausted, they send out scouts from time to time, to discover places for forage at a greater distance. When overtaken by night in their expeditions, they watch till the morning, lying on their backs, in order to protect their wings from the action of the dew.

It is not surprising that there have been persons who have made bees their exclusive study; Aristomachus of Soli, for instance, who for a period of fifty-eight years did nothing else; Philiscus of Thasos, also, surnamed Agrius, who passed his life in desert spots, tending swarms of bees. Both of these have written works on this subject.

CHAPTER IV.

THE MODE IN WHICH BEES WORK.

THE manner in which bees carry on their work is as follows. In the day time a guard is stationed at the entrance of the hive, like the sentries in a camp. At night they take their rest until one of them awakes the others in the morning with a humming noise, repeated twice or thrice, just as though it were sounding a trumpet. They then take their flight in a body, if the day is likely to turn out fine; for they have the gift of foreknowing wind and rain, and in such case will keep close within their dwellings. On the other hand, in fine weather the swarm issues forth, and at once applies itself to its work, some loading their legs from the flowers, while others fill their mouths with water, and charge the downy surface of their bodies with drops of liquid. Those among them that are young go forth to their labors, and collect the materials already mentioned, while those that are more aged stay within the hives and work. The bees whose busi-

ness it is to carry the flowers use their fore feet to load their thighs, which Nature has made rough for the purpose, and with their trunks load their fore feet: bending beneath their load, they then return to the hive, where there are three or four bees ready to receive them and aid in discharging their burdens. For, within the hive as well, they have their allotted duties to perform: some are engaged in building, others in smoothing the combs, while others again are occupied in passing on the materials, and others in preparing food from the provision which has been brought; that there may be no unequal division, either in their labor, their food, or the distribution of their time, they do not even feed separately.

Commencing at the vaulted roof of the hive, they begin the construction of their cells, and, just as we do in the manufacture of a web, they construct their cells from top to bottom, taking care to leave two passages around each compartment, for the entrance of some and the exit of others. The combs, which are fastened to the hive in the upper part, and in a slight degree also at the sides, adhere to each other, and are thus suspended altogether. They do not touch the floor of the hive, and are either angular or round, according to its shape; sometimes, in fact, they are both angular and round at once, when two swarms are living in unison, but have dissimilar modes of operation. They prop up the combs that are likely to fall, by means of arched pillars, at intervals springing from the floor, so as to leave them a passage for the purpose of effecting repairs. The first three ranks of their cells are generally left empty when constructed; and the last ones, especially, are filled with honey: hence the combs are always taken out at the back of the hive.

The bees that are employed in carrying look out for a favorable breeze, and if a gale should happen to spring up, they poise themselves in the air with little stones, by way of ballast; some writers say that they place them upon their shoulders. When the wind is contrary, they fly close to the

ground, taking care, however, to keep clear of the brambles. It is wonderful what strict watch is kept upon their work : all instances of idleness are carefully remarked, the offenders are chastised, and on a repetition of the fault, punished with death. Their sense of cleanliness, too, is quite extraordinary ; everything is removed that might be in the way, and the rubbish and waste bits made by those that are at work within, is all collected into one spot, and on stormy days, when they are obliged to cease their ordinary labors, they employ themselves in carrying it out. Towards evening, the buzzing in the hive becomes gradually less and less, until at last one of their number is to be seen flying about the hive with the same loud humming noise with which they were aroused in the morning, thereby giving the signal, as it were, to retire to rest : in this, too, they imitate the usage of the camp. The moment the signal is heard, all is silent.

They first construct the dwellings of the commonalty, then those of the king-bee. If they have reason to expect an abundant* season, they add abodes also for the drones : these are cells of a smaller size, though the drones themselves are larger than the bees.

The drones have no sting, and would seem to be a kind of imperfect bee, formed the very last of all ; a late and tardy offspring, and doomed, in a measure, to be the slaves of the genuine bees. The others exercise over them a rigorous authority, compel them to take the foremost rank in their labors, and if they show any sluggishness, punish them † without mercy. When the honey is beginning to come to maturity, the bees drive away the drones, and setting upon each in great numbers, put them all to death. It is only in the spring that the drônes are ever to be seen. If you

* Cuvier says that the three kinds of cells are absolutely necessary, and that they do not depend on the greater or less abundance. The *king* of the ancients is what we know as the *queen* bee.

† They do not work, but are the males of the hive.

deprive a drone of its wings, and then replace it in the hive, it will pull off the wings of the other drones.

In the lower part of the hive they construct for their future sovereign a palatial abode, spacious and grand, separated from the rest, and surmounted by a sort of dome: if this prominence should happen to be flattened, all hopes of progeny are lost. All the cells are hexagonal. No part of this work is done at any stated time, as the bees seize every opportunity for the performance of their task when the days are fine; in one or two days, at most, they fill their cells with honey.

The honey is always best in those countries where it is to be found deposited in the calix of the most exquisite flowers, such, for instance, as the districts of Hymettus in Attica, and Hybla in Sicily, and after them the island of Calydna. At first, honey is thin, like water, after which it effervesces for some days, and purifies itself like must. On the twentieth day it begins to thicken, and soon after becomes covered with a thin membrane, which gradually increases through the scum which is thrown up by the heat. The honey of the very finest flavor, and the least tainted by the leaves of trees, is that gathered from the foliage of the oak and the linden, and from reeds.

In some countries we find the honey-comb remarkable for the goodness of the wax, as in Sicily and the country of the Peligni; in other places the honey itself is found in greater abundance, as in Crete, Cyprus, and Africa; and in others, again, the comb is remarkable for its size; in Germany a comb has been known to be as much as eight feet in length.

In taking the combs the greatest care is always requisite, for the bees become desperate when stinted for food, and either pine to death, or wing their flight to other places: on the other hand, over-abundance will entail idleness, and they will feed upon the honey, and not the bee-bread. The most careful breeders take care to leave the bees a fifteenth part of this gathering.

The crop of honey is most abundant if gathered at full moon, and is richest when the weather is fine. The summer honey is the most esteemed of all, from the fact of its being made when the weather is dryest : it is best when made from thyme ; it is then of a golden color, and of a most delicious flavor. Thyme honey does not coagulate, and on being touched will draw out into thin viscous threads, the proof of its heaviness. When honey shows no tenacity, and the drops immediately part from one another, it is looked upon as a sign of its worthlessness.

CHAPTER V.

THE MODE OF GOVERNMENT OF THE BEES.

LET a man employ himself, forsooth, in the enquiry whether there has been only one Hercules, how many Bacchuses there have been, and all the other questions which are buried deep in the mould of antiquity ! Here behold a tiny object, one to be met with at most of our country retreats, and numbers of which are always at hand, and yet, after all, it is not agreed among authors whether or not the king* is the only one among them that is provided with no sting, and is possessed of no other arms than those afforded him by his majestic office, or whether Nature has granted him a sting, and has only denied him the power of making use of it ; it being a well-known fact, that the ruling bee never does use a sting. The obedience which his subjects manifest in his presence is quite surprising. When he goes forth, the whole swarm attends him, throngs about him, surrounds him, protects him, and will not allow him to be seen. At other times, when the swarm is at work within, the king is seen to visit the works, and appears

* The queen has a sting, like the working bees, but uses it less frequently.

to be giving his encouragement, being himself the only one that is exempt from work: around him are certain other bees which act as body-guards and lictors, the careful guardians of his authority. The king never quits the hive except when the swarm is about to depart; a thing which may be known a long time beforehand, as for some days a peculiar buzzing noise is to be heard within, which denotes that the bees are waiting for a favorable day, and making all due preparations for their departure. On such an occasion, if care is taken to deprive the king of one of his wings, the swarm will not fly away. When they are on the wing, every one is anxious to be near him, and takes a pleasure in being seen in the performance of its duty. When he is weary, they support him on their shoulders; and when he is quite tired, they carry him outright. If one of them falls in the rear from weariness, or happens to go astray, it is able to follow the others by the aid of its acuteness of smell. Wherever the king bee happens to settle, that becomes the encampment of all.

Happy omens are sometimes afforded by the swarming of bees, clustering, as they do, like a bunch of grapes, upon houses or temples; presages often of great events. Bees settled upon the lips of Plato when still an infant, announcing thereby the sweetness of that persuasive eloquence for which he was so noted. Bees settled in the camp of the chieftain Drusus when he gained the brilliant victory at Arbalo; a proof that the conjectures of soothsayers are not by any means infallible, for they consider this always of evil augury. When their leader is withheld from them, the swarm can always be detained; when lost, it will disperse and take its departure to find other kings. Without a king, they cannot exist.

If food fail the inhabitants of any particular hive, the swarm makes a concerted attack upon a neighboring one, with the view of plundering it. The swarm attacked at once ranges itself in battle array, and if the bee-keeper should happen to

be present, that side which perceives itself favored by him will refrain from attacking him. They often fight, for other reasons, and the two generals are to be seen drawing up their ranks in battle array against their opponents. The battle is immediately ended by throwing dust among them, or raising a smoke; and if milk or honey mixed with water is placed before them, they speedily become reconciled.

CHAPTER VI.

WASPS AND HORNETS.

WASPS build their nests of mud in lofty places, and make wax: hornets, on the other hand, build in holes or in the hollows of trees. With these two kinds the cells are also hexagonal, but, in other respects, though made of the bark of trees, they strongly resemble the substance of a spider's web. Their young are found at irregular intervals, and are of unshapely appearance; while one is able to fly, another is still a mere pupa, and a third only in the maggot state. The wasp which is known as the ichneumon, a smaller kind than the others, kills one kind of spider in particular, known as the phalangium; after which it carries the body to its nest, covers it over with a sort of gluey substance, and then sits and hatches from it its young.* In addition to this, they are all of them carnivorous, while bees will touch no animal substance whatever. Wasps particularly pursue the larger flies, and after catching them cut off the head and carry away the remaining portion of the body.

Wild hornets live in the holes of trees, and in winter, like other insects, keep themselves concealed; their life does not exceed two years in length. Not unfrequently, their sting is

* The true version is, that after killing the insect they bury it with their eggs as food for their future young.

productive of an attack of fever, and there are authors who say that thrice nine stings will suffice to kill a man. In spring they build their nests, generally with four entrances, and here the working hornets are produced: after these have been hatched they form other nests of larger size. These races, too, have their drones. Neither hornets nor wasps have a king, nor do they ever congregate in swarms.

CHAPTER VII.

THE SILK-WORM.

ANOTHER class of insects spring from a grub of larger size, with two horns of very peculiar appearance. The larva becomes a caterpillar, after which it assumes the state in which it is known as *bombylis*, then that called *necydalus*, and in six months it becomes a silk-worm. These insects weave webs similar to those of the spider, the material of which is used for making the more costly and luxurious garments of ladies, known as "bombycina." Pamphile, a woman of Cos, the daughter of Platea, was the first person who discovered the art of unravelling these webs and spinning a tissue therefrom.

The silk-worm is said to be a native of the isle of Cos, where the vapors of the earth give new life to the flowers of the cypress, the terebinth, the ash, and the oak which have been beaten down by the showers. At first they assume the appearance of small butterflies with naked bodies, but soon after, being unable to endure the cold, they throw out bristly hairs, and assume quite a thick coat against the winter, rubbing off the down that covers the leaves, by the aid of the roughness of their feet. This they compress into balls by carding it with their claws, and then draw it out and hang it between the branches of the trees, making it fine by combing it out: last of all, they take and roll it round their body, thus

forming a nest in which they are enveloped. In this state they are taken ; after which they are placed in earthen vessels in a warm place, and fed upon bran. A peculiar sort of down soon shoots forth upon the body, on being clothed with which they are set to work upon another task. The cocoons which they have begun to form are rendered soft and pliable by the aid of water, and are then drawn out into threads by means of a spindle made of a reed. Even men have not felt ashamed to make use of garments formed of this material, in consequence of their extreme lightness in summer : for, so greatly have manners degenerated in our day, that, so far from wearing a cuirass, a thin garment is found to be too heavy.

CHAPTER VIII.

SPIDERS.

IT is by no means an absurdity to append to the silk-worm an account of the spider—a creature worthy of our special admiration. The *phalangium* is of small size, with body spotted and running to a point ; their bite is venomous, and they leap as they move from place to place. Another kind is black, with fore legs remarkable for their length. They have all of them three joints in the legs. The smaller kind of wolf-spider does not make a web, but the larger ones make holes in the earth, and spread their nets at the narrow entrance. A third kind is remarkable for the skill which it displays in its operations. These spin a large web, the creature having in itself a certain faculty of secreting a peculiar sort of woolly substance. How steadily does it work with its claws, how beautifully rounded and how equal are the threads as it forms its web, while it employs the weight of its body as an equipoise ! It begins at the middle to weave its web, and

then extends it by adding the threads in rings around, like a warp upon the woof: forming the meshes at equal intervals, but continually enlarging them as the web increases in breadth, it finally unites them all by an indissoluble knot. With what wondrous art does it conceal the snares that lie in wait for its prey in its checkered nettings! How loose is the body of the web as it yields to the blasts, and how readily does it catch all objects which come in its way! You would fancy that it had left, quite exhausted, the thrums of the upper portion of its net unfinished where they are spread across; for with the greatest difficulty can they be perceived, and yet the moment that an object touches them, like the lines of the hunter's net, they throw it into the body of the web. With what architectural skill, too, is its hole arched over, and how well defended by a nap of extra thickness against the cold! How carefully it retires into a corner, and appears intent upon something else, all the while keeping so carefully shut up from view, that it is impossible to perceive whether there is anything within or not! And then, how extraordinary the strength of the web! When is the wind ever known to break it, or what accumulation of dust is able to weigh it down?

The spider often spreads its web right across between two trees, the thread extending from the very top of the tree to the ground, while the insect springs up again in an instant from the earth, and travels aloft by the self-same thread, thus mounting at the same moment and spinning its threads. When its prey falls into its net, how on the alert it is, and with what readiness it runs to seize it! Even though it should be adhering to the very edge of its web, the insect always runs instantly to the middle, where it can most effectually shake the web, and so successfully entangle its prey. When the web is torn, the spider immediately sets about repairing it, and that so neatly, that nothing like patching can ever be seen. The spider lies in wait even for the young of

the lizard, and after enveloping the head of the animal, bites its lips; a sight by no means unworthy of the amphitheatre itself, when it is one's good fortune to witness it. Presages also are drawn from the spider; for when a river is about to swell, it will suspend its web higher than usual. As these insects spin not in calm weather, but when it is cloudy, a great number of cobwebs is a sure sign of showery weather. It is generally supposed that the female spider spins while the male lies in wait for prey, thus making an equal division of their duties.

CHAPTER IX.

LOCUSTS.

LOCUSTS lay their eggs in large masses, in the autumn, in holes which they form in the ground. These eggs remain underground throughout the winter, and in the ensuing year, at the close of spring, small locusts issue from them, of a black color. A wet spring destroys their eggs, while, if it is dry, they multiply in great abundance.

Locusts are produced only in champaign places, that are full of chinks and crannies. In India, it is said that they attain the length of three * feet, and that the people dry the legs and thighs, and use them for saws. Sometimes the winds carry off these creatures in vast swarms, upon which they fall into the sea or standing waters, and perish. Some authors have stated, that they are unable to fly during the night, in consequence of the cold, being ignorant of the fact that they travel over lengthened tracts of sea for many days together, a thing the more to be wondered at, as they have to endure hunger all the time as well, for this it is which causes them to be thus seeking pastures in other lands. Such a visitation

* Cuvier says that some have been known nearly a foot long, but not more.

is looked upon as a plague inflicted by the anger of the gods ; for as they fly they appear to be larger than they really are, while they make such a loud noise with their wings, that they might be readily supposed to be winged creatures of quite another species. Their numbers, too, are so vast, that they quite darken the sun ; while the people below are anxiously following them with the eye, to see if they are about to make a descent, and so cover their lands. After all, they have the requisite energies for their flight ; and, as though it had been but a trifling matter to pass over the seas, they cross immense tracts of country, and cover them in clouds which bode destruction to the harvests. Scorching numerous objects by their very contact, they eat away everything with their teeth, even the very doors of the houses.

Those from Africa are the ones which chiefly devastate Italy ; and more than once the Roman people have been obliged to have recourse to the Sibylline Books, to learn what remedies to employ under their existing apprehensions of impending famine. In the territory of Cyrenaica* there is a law, which even compels the people to make war, three times a year, against the locusts, first, by crushing their eggs, next by killing the young, and last of all by killing those of full growth ; and he who fails to do so, incurs the penalty of being treated as a deserter. In the island of Lemnos also, there is a certain measure fixed by law, which each individual is bound to fill with locusts which he has killed, and then bring it to the magistrates. They pay great respect to the jack-daw, which flies to meet the locusts, and kills them in great numbers. In Syria, the people are placed under martial law, and compelled to kill them : in so many countries does this dreadful pest prevail. The Parthians look upon them as a choice food, and the grasshopper as well. The voice of the locust appears to proceed from the back part of the head.

* Julius Obsequens speaks of a pestilence there, created by the dead bodies of the locusts, which caused the death of 8000 persons.

It is generally believed that in this place, where the shoulders join on to the body, they have, as it were, a kind of teeth, and by grinding these against each other they produce the harsh noise which they make. About the two equinoxes they are to be heard in the same way that we hear the chirrup of the grasshopper about the summer solstice. In all these kinds of insects the male is of smaller size than the female.

CHAPTER X.

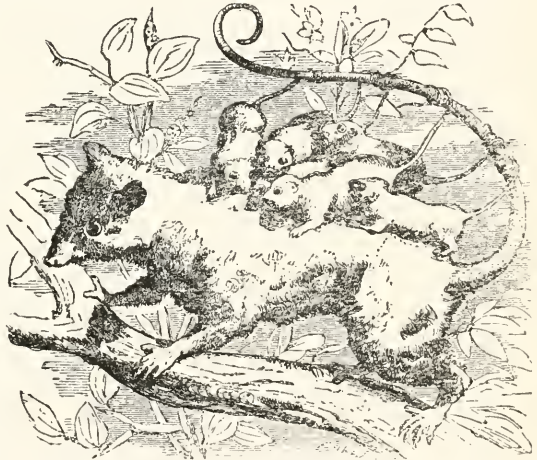
ANTS.

ANTS work in common, like bees ; but while the latter make their food, the former only store it away. If a person compares the burdens which the ants carry with the size of their bodies, he must confess that there is no animal which, in proportion, is possessed of a greater degree of strength. They carry these burdens with the mouth, or, when it is too large to admit of that, they turn their backs to it, and push it onwards with their feet, while they use their utmost energies with their shoulders. These insects have a political community among themselves, and are possessed of both memory and foresight. They gnaw each grain before they lay it by, for fear lest it should shoot while under ground ; they divide those grains which are too large for admission, at the entrance of their holes ; and those which have become soaked by the rain, they bring out and dry.* They work, too, by night, during the full moon. What ardor they display in their labors, what wondrous carefulness ! Because they collect their stores from different quarters, in ignorance of the proceedings of one another, they have certain days set apart for holding a

* It is in reality their larvæ that they thus bring out to dry. The working ants, or neutrals, are the ones on which these labors devolve ; the males and females are winged, the working ants are without wings.

kind of market, on which they meet together and take stock. What vast throngs are then to be seen hurrying together, what anxious enquiries appear to be made, and what earnest parleys are going on among them as they meet! We see even the very stones worn away by their footsteps, and roads beaten down by being the scene of their labors. Let no one fail to see how much can be effected by assiduity and application, even in the very humblest of objects! Ants are the only living beings, besides man, that bestow burial on the dead.

The horns of an Indian ant, suspended in the temple of Hercules, at Erythræ, have been looked upon as quite miraculous for their size. This ant excavates gold from holes, in a country in the north of India, the inhabitants of which are



MERIAN'S OPOSSUM.—*Philander Dorsigerus*.

known as the Dardæ. It has the color of a cat, and is in size as large as an Egyptian wolf.* This gold, which it extracts in the winter, is taken by the Indians during the heats of summer, while the ants are compelled, by the excessive warmth, to hide themselves in their holes. Still, however, aroused by the scent of the Indians, they will sally forth, and frequently tear them to pieces, though the Indians may be provided with the swiftest camels for the purpose of flight; so great is their fleetness, combined with their ferocity and their passion for gold!

* By this is probably meant the *Canis corsac*, the small fox of India, by some mistake represented by travellers as an ant.

Book IX.

THE NATURAL HISTORY OF METALS.

CHAPTER I.

GOLD.

WE are now about to speak of metals, of actual wealth, the standard of comparative value, objects for which we diligently search, within the earth, in numerous ways. In one place, for instance, we undermine it for the purpose of obtaining riches, to supply the exigencies of life, searching for either gold or silver, electrum or copper. In another place, to satisfy the requirements of luxury, our researches extend to gems and pigments, with which to adorn our fingers and the walls of our houses: while in a third place, we gratify our rash propensities by a search for iron, which, amid wars and carnage, is deemed more acceptable even than gold. We trace out all the veins of the earth, and yet, living upon it, undermined as it is beneath our feet, are astonished that it should occasionally cleave asunder or tremble: as though, forsooth, these signs could be any other than expressions of the indignation felt by our sacred parent! We penetrate into her entrails, and seek for treasures in the abodes even of the Manes as though each spot we tread upon were not sufficiently bounteous and fertile for us!

And yet, amid all this, we are far from making remedies the object of our researches: and how few in thus delving into the earth have in view the promotion of medicinal knowledge! For upon her surface she has presented us with these

substances, equally with the cereals, bounteous and ever ready, as she is, in supplying us with all things for our benefit! It is what is concealed from our view, what is sunk far beneath her surface, objects, in fact, of no rapid formation, that urge us to our ruin, that send us to the very depths of hell. As the mind ranges in vague speculation, let us only consider, proceeding through all ages, as these operations are, when will be the end of thus exhausting the earth, and to what point will avarice finally penetrate! How innocent, how happy, how truly delightful would life be, if we were to desire nothing but what is to be found upon the face of the earth; in a word, nothing but what is provided ready to our hands!

Gold is dug out of the earth, and, in close proximity to it, chrysocola, a substance which, that it may appear all the more precious, still retains the name which it has borrowed from gold. It was not enough for us to have discovered one bane for the human race, but we must set a value too upon the very humors of gold.

Alas for the prodigal inventions of man! in how many ways have we augmented the value of things! In addition to the standard value of these metals, the art of painting lends its aid, and we have rendered gold and silver still more costly by the art of chasing them. Man has learned how to challenge both Nature and art to become the incitements to vice! But in lapse of time, the metals passed out of fashion, and men began to make no account of them; gold and silver, in fact, became too common. From this same earth we have extracted vessels and vases of crystal, objects the very fragility of which is considered to enhance their value. In fact, it has come to be looked upon as a proof of opulence, and as quite the glory of luxury, to possess that which may be irremediably destroyed in an instant. Nor was even this enough;—we now drink from a mass of gems, and we set our goblets with smaragdi; we take delight in possessing the wealth of

India, as the promoter of intoxication, and gold is now nothing more than a mere accessory.

Would that gold could have been banished forever from the earth, accursed by universal report, as some of the most celebrated writers have expressed themselves, reviled by the reproaches of the best of men, and looked upon as discovered only for the ruin of mankind. How much more happy the age when things themselves were bartered for one another; as was the case in the times of the Trojan war, if we are to believe what Homer says. For, in this way, in my opinion, was commerce then carried on for the supply of the necessaries of life. Some, he tells us, would make their purchases by bartering ox-hides, and others by bartering iron or the spoil which they had taken from the enemy: and yet he himself, already an admirer of gold, was so far aware of the relative value of things, that Glaucus, he informs us, exchanged his arms of gold, valued at one hundred oxen, for those of Diomedes, which were worth but nine.

CHAPTER II.

THE ORIGIN OF GOLD RINGS.

THE worst crime against mankind was committed by him who was the first to put a ring upon his fingers. All the stories told about Prometheus, I look upon as utterly fabulous, although I am aware that the ancients used to represent him with a ring of iron: it was their intention, however, to signify a chain thereby, and not an ornament. As to the ring of Midas, which, upon the collet being turned inwards, conferred invisibility upon the wearer, who is there that must not admit, perforce, that this story is even still more fabulous? It was the hand, and a sinister hand, too, in every sense, that first brought gold into such high repute: not a Roman hand,

however, for upon that it was the practice to wear a ring of iron only, solely as an indication of warlike prowess.

As to the usage followed by the Roman kings, it is not easy to pronounce an opinion: the statue of Romulus in the Capitol wears no ring, nor does any other statue—not that of L. Brutus even—with the sole exception of those of Numa and Servius Tullius. I am surprised at this absence of the ring, in the case of the Tarquini more particularly, seeing that they were originally from Greece, a country from which the use of gold rings was first introduced; though even at the present day the people of Lacedæmon are in the habit of wearing rings made of iron. Tarquinius Priscus was the first who presented his son with the golden bulla, on the occasion of his slaying an enemy before he had laid aside the prætexta; from which period the custom of wearing the bulla has been continued, a distinction confined to the children of those who have served in the cavalry, those of other persons simply wearing a leather thong. Such being the case, I am the more surprised that the statue of this Tarquinius should be without a ring.

Rings were given, at the public expense, to those who were about to proceed on an embassy to foreign nations, the reason being, I suppose, because men of highest rank among foreign nations were perceived to be thus distinguished. Nor was it the practice for any person to wear these rings, except those who for this reason had received them at the public expense; and in most instances the Roman generals celebrated their public triumphs without this distinction. Those, too, who had received golden rings on the occasion of an embassy, wore them only when in public, resuming the ring of iron when in their houses. At the present day only an iron ring is sent by way of present to a woman when betrothed, and that, too, without any stone in it.

For my own part, I do not find that any rings were used in the days of the Trojan War; at all events, Homer nowhere

mentions them; for although he speaks of the practice of sending tablets by way of letters, of clothes and gold and silver plate being kept laid up in chests, still he gives us to understand that they were kept secure by the aid of a knot tied fast, and not under a seal impressed by a ring.

It was the custom at first to wear rings on a single finger, the one next to the little finger; and this we see the case in the statues of Numa and Servius Tullius. In later times, it became the practice to put rings on the finger next to the thumb, even in the case of the statues of the gods; and more recently, again, it has been the fashion to wear them upon the little finger as well. Among the peoples of Gallia and Britannia, the middle finger, it is said, is used for this purpose. At the present day, however, among us, this is the only finger that is excepted, all the others being loaded with rings, smaller rings even being separately adapted for the smaller joints of the fingers. Some there are who heap several rings upon the little finger alone; while others, again, wear but one ring upon this finger, the ring that sets a seal upon the signet-ring itself, this last being kept carefully shut up as an object of rarity, too precious to be worn in common use, and only to be taken from the cabinet as from a sanctuary. And thus is the wearing of a single ring upon the little finger no more than an ostentatious advertisement that the owner has property of a more precious nature under seal at home!

CHAPTER III.

COINS OF GOLD.

THE next crime committed against the welfare of mankind was on the part of him who was the first to coin a denarius of gold, a crime the author of which is equally unknown. The

Roman people made no use of impressed silver even before the period of the defeat of King Pyrrhus.

King Servius was the first to make an impress upon copper. Before his time, according to Timæus, at Rome, the raw metal only was used. The form of a sheep was the first figure impressed upon money, and to this fact it owes its name, "pecunia," from "pecus," a sheep.

Silver was not impressed with a mark until the year of the City 485, the year of the consulship of Ogulnius and Fabius, five years before the First Punic War; at which time it was ordained that the value of the denarius should be ten asses of copper. The weight, however, of the libra of copper was diminished during the First Punic War, the republic not having means to meet its expenditure: in consequence of which, an ordinance was made that the as should in future be struck of two ounces weight. By this contrivance a saving of five-sixths was effected, and the public debt was liquidated. The impression upon these copper coins was a two-faced Janus on one side, and the beak of a ship of war on the other. At a later period, when Hannibal was pressing hard upon Rome, in the dictatorship of Q. Fabius Maximus, asses of one ounce weight were struck, and it was ordained that the value of the denarius should be sixteen asses, by which last reduction of the weight of the as the republic made a clear gain of one half. Still, however, so far as the pay of the soldiers is concerned, one denarius has always been given for every ten asses. The impressions upon the coins of silver were two-horse and four-horse chariots, and hence it is that they received the names of "bigati" and "quadrigati."

The first golden coin was struck sixty-two years after that of silver.

But the invention of money opened a new field to human avarice, by giving rise to the practice of lending money at interest, while the owner passes a life of idleness: and it was with no slow advances that, not merely avarice, but a perfect

hunger for gold became inflamed with a sort of rage for acquiring. Septimuleius, the familiar friend of Caius Gracchus, not only cut off the latter's head, upon which a price had been set of its weight in gold, but, before bringing it to Opimius, poured molten lead into the mouth, and so not only was guilty of the crime of parricide, but added to his criminality by cheating the state. And the Roman name was rendered infamous by avarice, when King Mithridates caused molten gold to be poured into the mouth of Aquilius, the Roman general, whom he had taken prisoner.

One cannot but feel ashamed, on looking at those new-fangled names which are invented every now and then, from the Greek language, by which to designate vessels of silver, filagreed or inlaid with gold, and the various other practices by which such articles of luxury, when only gilded, are made to sell at a higher price than they would have done if made of solid gold. Spartacus forbade any one of his followers to introduce either gold or silver into the camp—so much more nobleness of mind was there in those days, even in runaway slaves.

I am much surprised that the Roman people nas always imposed upon conquered nations a tribute in silver, and not in gold. From Carthage, after its conquest under Hannibal, a ransom was exacted in the shape of a yearly payment, for fifty years, of silver, eight hundred thousand pounds' weight in all, but no gold. And yet it does not appear that this could have arisen from there being so little gold then in use throughout the world. Midas and Cræsus, before this, had possessed gold to an endless amount: Cyrus, on his conquest of Asia, had found a booty consisting of twenty-four thousand pounds' weight of gold, in addition to vessels and other articles of wrought gold, as well as leaves of trees, a plane-tree, and a vine, all made of that metal. In this conquest, he carried off five hundred thousand talents of silver, as well as

the vase* of Semiramis, the weight of which alone amounted to fifteen talents.

Saulaces, king of Colchis, the land of the Golden Fleece, had golden arches to his palace, and silver supports, columns, and pilasters, all of which he had come into possession of on the conquest of Sesostris, king of Egypt; a monarch so haughty, that every year, it is said, it was his practice to select one of his vassal kings by lot, and yoking him to his car, celebrate his triumph afresh.

At the games celebrated by Caius Antonius the stage was made of silver. The Emperor Caius had a scaffold introduced into the Circus, upon which there were one hundred and twenty-four thousand pounds' weight of silver. His successor, Claudius, on the occasion of his triumph over Britain, announced by the inscriptions that among the coronets of gold, there was one weighing seven thousand pounds, contributed by Nearer Spain, and another of nine thousand pounds, presented by Gallia Comata. Nero, who succeeded him, covered the Theatre of Pompey with gold for one day, the occasion on which he displayed it to Tiridates, king of Armenia. And yet how small was this theatre in comparison with that Golden Palace of his, with which he environed our city.

The first statue of solid gold was erected in the Temple of the goddess Anaïtis, a divinity held in the highest veneration. This statue was carried off during the wars of Antonius with the people of Parthia; and a witty saying is told, with reference to it, of one of the veterans of the Roman army, a native of Bononia. Entertaining on one occasion the late Emperor Augustus at dinner, he was asked by that prince whether he was aware that the person who committed the violence of carrying off the statue, had been struck with blindness and paralysis, and then expired. To this he made an-

* This vase of Semiramis was her drinking bowl, in much the same sense that the great cannon at Dover was Queen Elizabeth's "pocket pistol."

swer, that at that very moment Augustus was making his dinner off of one of her legs, for he himself was the very man, and to that bit of plunder he had been indebted for all his fortune.

CHAPTER IV.

SILVER.

WE come next to speak of silver ore, another egregious folly of mankind. Silver is never found but in shafts sunk deep in the ground, there being no indications on the surface to raise hopes of its existence, no shining sparkles, as in the case of gold. The earth in which it is found is sometimes red, sometimes of an ashy hue. It is impossible, too, to melt it, except in combination with lead or galena, the latter being the name given to the vein of lead that is mostly found running near the veins of the silver ore. When submitted to the action of fire, part of the ore precipitates itself in the form of lead, while the silver is left floating on the surface, like oil* on water.

Silver is found in nearly all our provinces, but the finest of all is that of Spain; where it is found, like gold, in uncultivated soils, and in the mountains. Wherever one vein of silver has been met with, another is sure to be found not far off: a fact that has been remarked in the case of nearly all the metals, which have thus derived their Greek name of "metalla."† It is a remarkable fact, that the shafts opened by Hannibal in the Spanish provinces are still worked, their names being derived from the persons who were the first to discover them. One of these mines, still called Bæbello at the present day, furnished Hannibal with three hundred pounds'

* The specific gravity of lead is 11.352, and of silver only 10.474.

† From the words *μετ' ἀλλα*, "one after another."

weight of silver per day. The mountain is excavated for a distance of fifteen hundred paces ; and throughout the whole of this distance water-bearers stand night and day, baling out the water in turns, by the dim light of torches.

The vein of silver that is found nearest the surface is known by the name of "crudaria," raw silver. In ancient times, the excavations used to be abandoned the moment alum was met with, and no further search was made. Of late, however, the discovery of a vein of copper beneath alum, has withdrawn any such limits to man's hopes. The exhalations from silver-mines are dangerous to all animals, particularly to dogs. The softer they are, the more beautiful gold and silver are considered.

There are two kinds of silver. On placing a piece upon an iron-shovel at a white heat, if the metal remains perfectly white, it is of the best quality : if it turns a reddish color, it is inferior ; but if it becomes black, it is worthless. Fraud, however, has devised means of stultifying this test even ; for by keeping the shovel immersed in ammonia, the piece of silver absorbs it as it burns, and so displays a fictitious whiteness.

CHAPTER V.

MIRRORS.

It is generally supposed among us that only the very finest silver admits of being laminated, and so converted into mirrors. Pure silver was formerly used for the purpose, but, at the present day, this has been corrupted by the devices of fraud. But, really, it is a very marvellous property that this metal has, of reflecting objects. If a thick plate of this metal is highly polished, and is rendered slightly concave, the image or object reflected is enlarged to an immense extent.

Even more than this—drinking-cups are now made in such a manner, as to be filled inside with numerous concave facets, like so many mirrors; so that if but one person looks into the interior, he sees reflected a whole multitude of persons.

Mirrors invented to reflect monstrous forms have been consecrated in the Temple at Smyrna. It makes all the difference whether the surface has a concave form like the section of a drinking cup, or whether it is convex like a Thracian buckler; the peculiar configuration of the surface which receives the shadows, causing them to undergo corresponding distortions: for, in fact, the image is nothing else but the shadow of the object collected upon the bright surface of the metal.

However, to finish our description of mirrors on the present occasion—the best, in the times of our ancestors, were those of Brundisium, composed of a mixture of stannum and copper: at a later period those made of silver were preferred, Pasiteles being the first Roman who made them, in the time of Pompey the Great.

The people of Egypt stain their silver vessels, that they may see represented in them their god Anubis; and it is the custom with them to paint, and not to chase, their silver. This usage has now passed to our own triumphal statues; and, a truly marvellous fact, the value of silver has been enhanced by deadening its brilliancy. The following is the method adopted: with the silver are mixed two-thirds of the very finest Cyprian copper, that known as “*coronarium*,” and a proportion of live sulphur equal to that of the silver. The whole of these are then melted in an earthen vessel well luted with potter’s clay, the operation being completed when the cover becomes detached from the vessel. Silver admits also of being blackened with the yolk of a hard-boiled egg; a tint, however, which is removed by the application of vinegar and chalk.

The Triumvir Antonius alloyed the silver denarius with

iron: and in spurious coin there is an alloy of copper employed. It is truly marvellous, that in this art, and in this only, the various methods of falsification should be made a study: * for the sample of the false denarius is now an object of careful examination, and people absolutely buy the counterfeit coin at the price of many genuine ones!

CHAPTER VI.

INSTANCES OF IMMENSE WEALTH.

THE ancients had no number whereby to express a larger sum than one hundred thousand; and at the present day, we reckon by multiples of that number, as, for instance, ten times one hundred thousand, and so on. For these multiplications we are indebted to usury and the use of coined money; hence the expressions “*ǣs alienum*,” or “another man’s money,” which we still use to signify debt, and in later times the surname “*Dives*,” rich: only be it known to all, that the man who first received this surname became a bankrupt and bubbled his creditors. † *Marcus Crassus*, a member of the same family, used to say that no man was rich who could not maintain a legion upon his yearly income. He possessed in land two hundred millions of *sesterces*, being the richest Roman citizen next to *Sylla*. Nor was even this enough for him, but he must want to possess all the gold of the *Parthians* too! ‡ And yet, although he was the first to

* By public enactment probably; samples of the false denarius being sold for the purpose of showing the difference between it and the genuine coin.

† The first person mentioned in Roman history as having the cognomen “*Dives*,” is *Publius Licinius Crassus*. As he attained the highest honors of the state, and died universally respected, he cannot be the person so opprobriously spoken of by *Pliny*.

‡ Who cut off his head after his death, and poured molten gold down his throat.

become memorable for his opulence—so pleasant is the task of stigmatizing this insatiate cupidity—we have known of many manumitted slaves, since his time, much more wealthy than he ever was; three for example, all at the same time, in the reign of the Emperor Claudius: Pallas, Callistus, and Narcissus.

But to omit further mention of these men, let us turn to Caius Cæcilius Claudius Isidorus, who, in the consulship of Gallus and Censorinus, upon the sixth day before the calends of February, declared by his will, that though he had suffered great losses through the civil wars, he was still able to leave behind him four thousand one hundred and sixteen slaves, three thousand six hundred pairs of oxen, and two hundred and fifty-seven thousand heads of other kind of cattle, besides, in ready money, sixty millions of sesterces. Upon his funeral, also, he ordered eleven hundred thousand sesterces to be expended.

And yet, supposing all these enormous riches to be added together, how small a proportion will they bear to the wealth of Ptolemæus; the person who, according to Varro, when Pompey was on his expedition in the countries adjoining Judæa, entertained eight thousand horsemen at his own expense, and gave a repast to one thousand guests, setting before every one of them a drinking-cup of gold, and changing these vessels at every course! And then, again, how insignificant would his wealth have been by the side of that of Pythius the Bithynian*—for I here make no mention of

* According to some authorities, he was a Lydian. He derived his wealth from his gold mines in the neighborhood of Celænæ in Phrygia, and would appear, in spite of Pliny's reservation, to have been little less than a king. His five sons accompanied Xerxes; but Pythius, alarmed by an eclipse of the sun, begged that the eldest might be left behind. Upon this, Xerxes had the youth put to death, and his body cut in two, the army being ordered to march between the portions, which were placed on either side of the road. His other sons were all slain in battle, and Pythius passed the rest of his life in solitude.

kings. He it was who gave the celebrated plane-tree and vine of gold to King Darius, and who entertained at a banquet the troops of Xerxes, seven hundred and eighty-eight thousand men in all; with a promise of pay and corn for the whole of them during the next five months, on condition that one at least of his five children, who had been drawn for service, should be left to him as the solace of his old age. And yet, let any one compare the wealth of Pythius to that possessed by King Cræsus!

In the name of all that is unfortunate, what madness it is for human nature to centre its desires upon a thing that has either fallen to the lot of slaves, or else has reached no known limit in the aspirations even of kings!

CHAPTER VII.

INSTANCES OF LUXURY IN SILVER PLATE.

THE caprice of the human mind is marvellously exemplified in the varying fashions of silver plate; the work of no individual manufactory being for any long time in vogue. At one period, the Furnian* plate, at another the Clodian, and at another the Gratian, is all the rage—for we borrow the shop even at our tables. Now again, it is embossed plate that we are in search of, and silver deeply chiselled around the marginal lines of the figures painted upon it; and now we are building up on our sideboards fresh tiers of shelves for supporting the various dishes.

We find the orator Calvus complaining that the saucepans are made of silver; but it has been left for us to invent a plan of covering our very carriages with chased silver, and in our own age Poppæa, the wife of the Emperor Nero, ordered her favorite mules to be shod with gold!

* So called from the silversmiths who respectively introduced them.

The younger Scipio Africanus left to his heir thirty-two pounds' weight of silver: the same person who, on his triumph over the Carthaginians, displayed four thousand three hundred and seventy pounds' weight of that metal. Such was the sum total of the silver possessed by the whole of the inhabitants of Carthage, that rival of Rome for the empire of the world! How many a Roman since then has surpassed her in his display of plate for a single table! After the destruction of Numantia, the same Africanus gave to his soldiers, on the day of his triumph, a largess of seven denarii each—and right worthy were they of such a general, when satisfied with such a sum! His brother, Scipio Allobrogicus, was the very first who possessed one thousand pounds' weight of silver, but Drusus Livius, when he was tribune of the people, possessed ten thousand. That an ancient warrior, Rufinus the consul, a man, too, who had enjoyed a triumph, should have incurred the notice of the censor for being in possession of five pounds' weight of silver, is a thing that would appear quite fabulous at the present day.

For a long time past it has been the fashion to plate the couches of our women, as well as some of our banqueting-couches, entirely with silver. Two centuries ago these couches were invented, as well as chargers of silver, one hundred pounds in weight: it is a well-known fact, that there were then upwards of one hundred and fifty of these in Rome, and that many persons were proscribed through the devices of others who were desirous to gain possession thereof. Well may our Annals be put to the blush for having to impute those civil wars to the existence of such vices as these!

Our own age, however, has waxed even stronger in this respect. In the reign of Claudius, his slave Drusillanus, surnamed Rotundus, who acted as his steward in Nearer Spain, possessed a silver charger weighing five hundred pounds, for the manufacture of which a workshop had to be expressly

built. This charger was accompanied also by eight other dishes, each two hundred and fifty pounds in weight. How many of his fellow-slaves, pray, would it have taken to introduce these dishes, or who were to be the guests served therefrom? Compare this extravagance with the simplicity of the times of Fabricius, who would allow no general of an army to have any other plate of silver than a patera and a salt-cellar.—Oh that he could see how that the rewards of valor in our day are either composed of these objects of luxury, or are broken up to make them! Alas for the morals of our age! Fabricius puts us to the blush.

It is a remarkable fact that the art of chasing gold should have conferred no celebrity upon any person, while that of embossing silver has rendered many illustrious. The greatest renown, however, has been acquired by Mentor. Aside from single pieces only four pairs of vases were ever made by him, and at the present day not one of these, it is said, is any longer in existence, owing to the conflagrations of the Temple of Diana at Ephesus and of that in the Capitol. Varro informs us in his writings that he also was in possession of a bronze statue, the work of this artist. Zopyrus represented the court of the Areopagus and the trial of Orestes for the murder of his mother Clytæmnestra upon two cups valued at twelve thousand sesterces. There was Pytheas also, a work of whose sold at the rate of ten thousand denarii for two ounces: it was a drinking-bowl, the figures on which represented Ulysses and Diomedes stealing the Palladium from Troy. The same artist engraved also, upon some small drinking-vessels, kitchen scenes of such remarkably fine workmanship and so liable to injury, that it was quite impossible to take copies of them by moulding. Teucer, too, the inlayer, enjoyed a great reputation.

All at once, however, this art became so lost in point of excellence, that at the present day ancient specimens are the

only ones at all valued; and only those pieces of plate are held in esteem the designs on which are so much worn that the figures cannot be distinguished.

CHAPTER VIII.

BRONZE.*

WE must, in the next place, give an account of the ores of bronze, an alloy which, in respect of utility, is next in value; indeed the Corinthian bronze comes before silver, not to say almost before gold itself. It is also the standard of monetary value; I have already mentioned that for a great length of time the Roman people employed no coin except bronze, and there is another ancient fact which proves that the esteem in which it was held was of equal antiquity with that of the City itself, the circumstance that the third associated body which Numa established, was that of the braziers.†

The most highly esteemed copper is procured beyond the seas; it was formerly obtained in Campania, and at present is found in the country of the Bergomates, at the extremity of Italy. It is said to have been lately discovered also in the province of Germany.

Formerly a mixture was made of copper fused with gold

* “Æris Metalla.” The word “Æs” does not correspond to our word “brass;” the brass of the moderns being a compound of copper and zinc, while the “Æs” of the ancients was mostly composed of copper and tin, and therefore is more correctly designated by the word “bronze.” Mr. Westmcott says that the ancient “Æs” has been found, upon analysis, to contain *no* zinc, but in nearly every instance to be a mixture of copper and tin, like our bronze. Beckmann says, on the other hand, that the mixture of zinc and copper now called “brass,” first discovered by ores, abundant in zinc, *was certainly known to the ancients.*

† The colleges of the priests and of the augurs being the first two associated bodies.

and silver, and the workmanship in this metal was considered even more valuable than the material itself; but, at the present day, it is difficult to say whether the workmanship in it, or the material, is the worse. But in this, as in everything else, what was formerly done for the sake of reputation, is now undertaken for the mere purpose of gain. This art was ascribed to the gods themselves, and men of rank in all countries endeavored to acquire fame by the practice of it, but we have now so entirely lost the method of making this valuable compound by fusion, that, for a long time past, not even chance itself has assumed the privilege which formerly belonged to art.

Next to this compound, so celebrated in antiquity, the Corinthian metal has been the most highly esteemed. This was a compound produced by accident, when Corinth was burnt at the time of its capture. There has been a wonderful mania with many for gaining possession of this metal. Verres, whom Cicero caused to be condemned, was proscribed by Antonius, along with Cicero, for no other reason than his refusal to give up some specimens of Corinthian bronze which were in his possession.

Corinth was captured in the third year of the 158th Olympiad, being the year of the City, 608,* some ages after the period when those artists flourished, who produced all the specimens of what these persons now call Corinthian metal. The only genuine Corinthian vessels are those which these men of taste metamorphose, sometimes into table dishes, sometimes into lamps, or even into wash-basins, without any regard to decency. They are of three kinds; the white variety, approaching very nearly to the splendor of silver, and in which that metal forms a large proportion of the compound; a second kind, in which the yellow color of gold predominates; and a third, in which all the metals are mixed in

* B.C. 146.

equal proportions. Besides these, there is another mixture, the composition of which it is impossible to describe, for although it has been formed into images and statues by the hand of man, it is chance that rules in the formation of the compound. The last is highly prized for its color, which approaches to that of liver, but is far inferior to the Corinthian metal, though much superior to the Æginetan and Delian, which long held the first rank.

The Delian bronze was the first that became famous, all the world coming to Delos to purchase it; and hence the attention paid to the manufacture of it. It was in this island that bronze first obtained celebrity for the manufacture of the feet and supports of dining-couches. After some time it came to be employed for the statues of the gods and the effigies of men and other animated beings.

The next most esteemed bronze was the Æginetan; the island being famous not for the metal produced there, but because the annealing of the Æginetan manufactories was so excellent. A bronze Ox, which was taken from this island, now stands in the cattle market at Rome. This is a typical specimen of the Æginetan metal, as the Jupiter in the Temple of Jupiter Tonans, in the Capitol, is of the Delian. Myron used the former metal and Polycletus the latter; they were contemporaries and fellow-pupils, and there was great rivalry between them.

Ægina was particularly famous for the manufacture of sockets for lamp-stands, as Tarentum was for that of the branches; the most complete articles were, therefore, produced by the union of the two. There are persons who are not ashamed to give for one a sum equal to the salary of a military tribune, although, as its name indicates, its only use is to hold a lighted candle. On the sale of one of these lamp-stands, Theon the public crier announced, that the purchaser must also take, as part of the lot, one Clesippus, a tuller, who was hump-backed, and in other respects of a hid-

eous aspect. The purchase was made by a lady named Gegania, for fifty thousand sesterces.

The ancients were in the habit of making the door-sills and even the doors of the temples of bronze. Cneius Manlius was the first who introduced bronze banqueting-couches, buffets, and tables with single feet, when he entered the City in triumph, in the year of Rome 567, after his conquests in Asia. We also learn from Antias, that the heirs of Lucius Crassus, the orator, sold a number of banqueting-couches adorned with bronze. The tripods, which were called Delphian, because they were devoted more particularly to receiving the offerings that were presented to the Delphian Apollo, were usually made of bronze: also the pendant lamps, so much admired, which were placed in the temples, or gave their light in the form of trees loaded with fruit.

CHAPTER IX.

STATUES OF BRONZE.

BUT after some time the artists everywhere applied themselves to representations of the gods. I find that the first bronze image, which was made at Rome, was that of Ceres; and that the expenses were defrayed out of the property that belonged to Spurius Cassius, who was put to death by his own father, for aspiring to the regal office. The practice, however, soon passed from the gods to the statues and representations of men, and this in various forms. The ancients stained their statues with bitumen, which makes it the more remarkable that they were afterwards fond of covering them with gold. I do not know whether this was a Roman invention; but it certainly has the repute of being an ancient practice at Rome.

It was not the custom in former times to give the likeness of individuals, except of such as deserved to be held in lasting

remembrance on account of some illustrious deed; in the first instance, for a victory at the sacred games, and more particularly the Olympic Games, where it was the usage for the victors always to have their statues consecrated. And if any one was so fortunate as to obtain the prize there three times, his statue was made with the exact resemblance of every individual limb; from which circumstance they were called "iconicæ," or "portrait statues." I do not know whether the public statues were not erected by the Athenians, and in honor of Harmodius and Aristogiton, who slew the tyrant,* an event which took place in the same year in which the kings were expelled from Rome. This custom, from a most praiseworthy emulation, was afterwards adopted by all other nations; so that statues were erected as ornaments in the public places of municipal towns, and the memory of individuals was thus preserved, their various honors being inscribed on the pedestals, to be read there by posterity, and not on their tombs alone. After some time, a kind of forum or public place came to be made in private houses and in our halls, the clients adopting this method of doing honor to their patrons.

In former times the statues that were thus dedicated were clad in the toga. Naked statues also, brandishing a spear, after the manner of the youths at their gymnastic exercises, were much admired; these were called "Achillean." The Greek practice is, not to cover any part of the body; while, on the contrary, the Roman and the military statues have the addition of a cuirass. Cæsar, the Dictator, permitted a statue with a cuirass to be erected in honor of him in his Forum. As to the statues which are made in the garb of the Luperi,†

* Pisistratus. These statues are mentioned elsewhere by Pliny as being the workmanship of Praxiteles.

† The Luperi were the priests of Pan, who, at the celebration of their games, called Lupercalia, were in the habit of running about the streets of Rome, with no other covering than a goat's skin tied about the loins.

they are of no older date than those which have been lately erected, covered with a cloak. Mancinus gave directions, that he should be represented in the dress which he wore when he was surrendered to the enemy. It has been remarked by some authors, that Lucius Attius, the poet, had a statue of himself erected in the Temple of the Muses, which was extremely large, although he himself was very short.

Equestrian statues are also held in esteem in Rome; but they are of Greek origin, no doubt. Among the Greeks, those persons only were honored with equestrian statues who were victors on horseback in the sacred games; though afterwards the same distinction was bestowed on those who were successful in the races with chariots with two or four horses: hence the use of chariots with *mus* in the statues of those who have triumphed. But this did not take place until a late period; and it was not until the time of the late Emperor Augustus that we had chariots represented with six horses,* and also with elephants.

The custom of erecting chariots with two horses in honor of those who had discharged the office of prætor, and had passed round the Circus in a chariot, is not of ancient date. That of placing statues on pillars is older, as it was done in honor of Caius Mænius, who conquered the ancient Latins, to whom the Romans by treaty gave one-third of the spoil which they had obtained. It was in the same consulship also, that the "rostra" or beaks of the ships, which had been taken from the Antiates when vanquished, were affixed to the tribunal; in the year of the City, 416.

For a very different, and more important reason, was the statue of Horatius Cocles erected, he having singly prevented the enemy from passing the Sublician bridge: a statue which remains to this day.

* Pliny has forgotten the gilded chariot, with six horses, which Cneius Cornelius dedicated in the Capitol, two hundred years before Augustus; there is also an ancient inscription which mentions chariots of this description.

Then we have the statues of Romulus and Tatius without the tunic; and the equestrian statue of Marcius Tremulus, clad in the toga, before the Temple of the Castors, who twice subdued the Samnites, and by the capture of Anagnia delivered the people from their tribute.

Nor must I forget to mention Cneius Octavius, on account of the language used by the senate. When King Antiochus said, "I will give you an answer at another time," Octavius drew a line round him with a stick, which he happened to have in his hand, and compelled him to give an answer before he allowed him to step beyond the circle. Octavius was unfortunately slain* while on this embassy, and the senate ordered his statue to be placed in the most conspicuous spot, which of course was the Rostra. A statue appears also to have been decreed to Taracia Caia, or Furetia, a Vestal Virgin, the same, too, to be placed wherever she might think fit; an additional honor, no less remarkable, it is thought, than the grant itself of a statue to a woman. I will state her merits in the words of the Annals: "Because she had gratuitously presented to the public the field bordering on the Tiber."

I find also, that statues were erected in honor of Pythagoras and of Alcibiades, in the corners of the Comitium; in obedience to the command of the Pythian Apollo, who, in the Samnite War, had directed that statues of the bravest and the wisest of the Greeks should be erected in some conspicuous spot: and here they remained until Sylla, the Dictator, built the senate-house on the site. It is wonderful that the senate should then have preferred Pythagoras to Socrates, who, in consequence of his wisdom, had been preferred to all other men by the god himself; as, also, that they should have preferred Alcibiades for valor to so many other heroes; or, indeed, any one to Themistocles, who so greatly excelled in both qualities. The reason of the statues being raised on columns, was, that the persons represented might be elevated above

* By one Leptines, at Laodicea.

other mortals ; the same thing being signified by the use of arches, a new invention which had its origin among the Greeks. I am of opinion that there is no one to whom more statues were erected than to Demetrius Phalereus at Athens : for there were three hundred and sixty erected in his honor, no more days being reckoned at that period in the year : these, however, were soon broken to pieces.

Pedestrian statues have been, undoubtedly, for a long time in estimation at Rome : equestrian statues are, however, of considerable antiquity, and women even have participated in this honor ; for the statue of Clælia is equestrian, as if it had not been thought sufficient to have her clad in the toga.

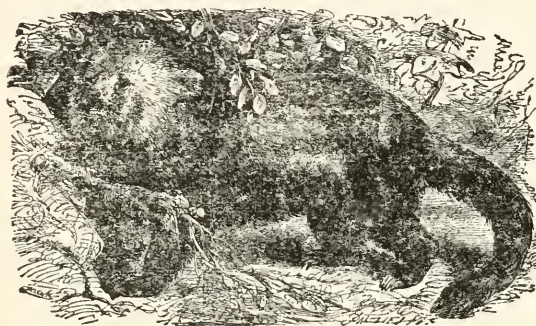
There are still extant some declamations by Cato, during his censorship, against the practice of erecting statues of women in the Roman provinces. However, he could not prevent a statue being erected at Rome to Cornelia, the mother of the Gracchi, and daughter of the elder Scipio Africanus. She is represented in a sitting posture, and the statue is remarkable for having no straps to the shoes.

Various circumstances prove, that the art of making statues was commonly practised in Italy at an early period. The statue in the Cattle Market is said to have been consecrated to Hercules by Evander ; it is called the triumphal Hercules, and, on the occasion of triumphal processions, is arrayed in triumphal vestments. King Numa dedicated the statue of the two-faced Janus ; a deity who is worshipped as presiding over both peace and war. The fingers are so formed as to indicate three hundred and sixty-five days,* or in other words, the year ; thus denoting that he is the god of time and duration.

There are also Etruscan statues dispersed in various parts of the world, which beyond a doubt were originally made in

* The mode in which the fingers were placed, so as to serve the purpose here indicated, is supposed to have been by their forming the letters which were the Roman numerals for the figures in question.

Etruria. I should have supposed that these had been the statues only of divinities, had not Metrodorus of Scepsis, who had his surname "Misoromæus," from his hatred to the Roman name, reproached us with having pillaged the city of Volsinii for the sake of the two thousand statues which it contained. It appears to me a singular fact, that although the origin of statues was of such great antiquity in Italy, the images of the gods, which were consecrated to them in their temples, should have been formed either of wood or of earthenware, until the conquest of Asia, which introduced



PANDA, OR WAHL.—*Ailuрус Fulgens*.

luxury among us. It will be the best plan to enlarge upon the origin of the art of expressing likenesses, when we come to speak of what the Greeks call "the plastic art," for the art of modelling was prior to that of statuary. This last, however, has flourished to such an extraordinary degree that a full account of it would fill many volumes.

We learn from Mucianus, who was thrice consul, that there are still three thousand statues in Rhodes, and it is supposed that there are no fewer in existence at Athens, at Olympia, and at Delphi. What living mortal could enumerate them all? or of what utility would be such information? Still, I may, perhaps, afford entertainment by giving some slight account of such of those works of art as are in any way remarkable, and stating the names of the more celebrated artists. Of each of these it would be impossible to enumerate all the productions, for Lysippus alone is said to have executed no less than fifteen hundred works of art, all of which were of such excellence that any one of them might

have immortalized him. The number was ascertained by his heir, upon opening his coffers after his death, as it was his practice to lay up one golden denarius out of the sum which he had received as the price of each statue.

This art has arrived at incredible perfection, both in successfulness and in boldness of design. As a proof of successfulness, I will adduce one example, and that of a figure which represented neither god nor man. We have seen in our own time, in the Capitol, before it was last burnt by the party of Vitellius, in the shrine of Juno, a bronze figure of a dog licking its wounds. Its miraculous excellence and its perfect truthfulness were not only proved by the circumstance of its having been consecrated there, but also by the novel kind of security that was taken for its safety; for since no sum appeared equal to its value, it was publicly enacted that the keepers of it should be answerable for its safety with their lives.

CHAPTER X.

THE MOST CELEBRATED COLOSSAL STATUES IN THE CITY.

As to boldness of design, the examples are innumerable; for we had statues of colossal bulk, equal to towers in size. Such, for instance, is the Apollo in the Capitol, which was brought by Lucullus from Apollonia, a city of Pontus, thirty cubits in height, and which cost five hundred talents: also the statue of Jupiter, in the Campus Martius, dedicated by the late Emperor Claudius, but which appears dwarfed from its vicinity to the Theatre of Pompey: and the Jupiter at Tarentum, forty cubits in height, the work of Lysippus. It is a remarkable circumstance that although this statue is so nicely balanced as to be movable by the hand, it has never been thrown down by a tempest. This, the artist guarded against,

by a column erected at a short distance from it, upon the side on which the violence of the wind required to be broken. On account of its magnitude, and the great difficulty of moving it, Fabius Maximus did not touch it, when he transferred the Hercules from that place to the Capitol, where it now stands.

But far the most worthy of our admiration is the colossal statue of the Sun, which stood formerly at Rhodes, and was the work of Chares the Lindian, a pupil of Lysippus;* no less than seventy cubits in height. This statue, fifty-six years after it was erected, was thrown down by an earthquake; but even as it lies, it excites our wonder and admiration. Few men can clasp the thumb in their arms, and its fingers are larger than most statues. Where the limbs are broken asunder, vast caverns are seen yawning in the interior. Within it, too, are to be seen large masses of rock, by the weight of which the artist steadied it while erecting it. It was twelve years before this statue was completed, and three hundred talents were expended upon it; a sum raised from the engines of warfare which had been abandoned by King Demetrius when tired of the long-protracted siege of Rhodes. In the same city are other colossal statues, one hundred in number; which though smaller than the one already mentioned, would, any one of them, wherever erected, have ennobled the place. In addition to these, there are five colossal statues of the gods, which were made by Bryaxis.

In Italy the Tuscan Apollo, in the library of the Temple of

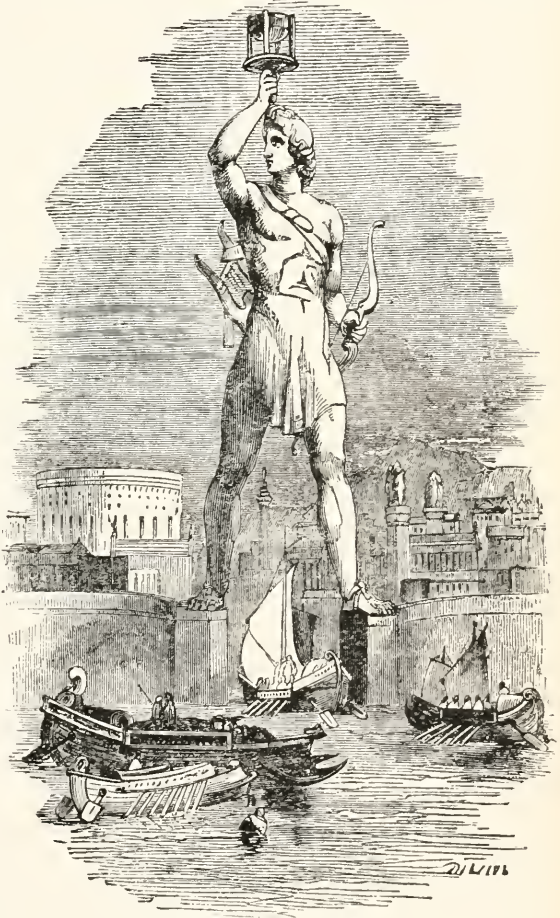
* The Colossus at Rhodes was begun by Chares, but he committed suicide, in consequence of having made some mistake in the estimate; the work was completed by Laches, also an inhabitant of Lindos.

It remained on the spot where it was thrown down for nearly nine hundred years, until the year 653 A.D., when Moavia, khalif of the Saracens, after the capture of Rhodes, sold the materials; it is said that it required nine hundred camels to remove the pieces.

The Bartholdi statue of "Liberty enlightening the World" is even larger than the Colossus at Rhodes.

Augustus, is fifty feet in height from the toe ; and it is a question whether it is more remarkable for the quality of the metal, or for the beauty of the workmanship. Spurius

Carvilius erected the statue of Jupiter. Capitolinus, after he had conquered the Samnites, who fought in obedience to a most solemn oath ; it was formed out of their breast-plates, greaves, and helmets, and is of such large dimensions that it may be seen from the statue of Jupiter Latiaris on the Alban Mount, twelve miles from Rome. He made his own statue, which is at the feet of the other one, out of the filings of the metal. There are also, in the Capitol, two heads which are very much admired, and which



COLOSSUS AT RHODES.

were dedicated by the Consul Lentulus, one of them executed by the above-mentioned Chares, the other by Decius ; but the latter is so greatly excelled by the former, as to have all the appearance of being the work of one of the poorest of artists.

But all these gigantic statues have been surpassed in our own age by the Mercury, made by Zenodotus for the city of

the Arverni in Gaul, which was ten years in completing, and cost four hundred thousand sesterces. Having given sufficient proof there of his artistic skill, he was sent for by Nero to Rome, where he made a colossal statue intended to represent that prince, one hundred and ten feet in height. In consequence, however, of the public detestation of Nero's crimes, this statue was consecrated to the Sun.* We used to admire in his studio the accurate likeness not only in the model of clay, but in the small sketches which served as the first foundation of the work. This statue proves that the art of fusing precious bronze was then lost, for Nero was prepared to furnish the requisite gold and silver, and Zenodotus was inferior to none of the ancients, either as a designer or as an engraver. At the time that he was working at the statue for the Arverni, he copied for Dubius Avitus, the governor of the province, two drinking-cups, chased by the hand of Calamis, which had been highly prized by Germanicus Cæsar, and had been given by him to his preceptor Cassius Silanus, the uncle of Avitus; and this with such exactness, that they could scarcely be distinguished from the originals.

CHAPTER XI.

AN ACCOUNT OF THE MOST CELEBRATED WORKS IN BRONZE,
AND OF THE ARTISTS WHO EXECUTED THEM.

AN almost innumerable multitude of artists have been rendered famous by their statues and figures of smaller size. Before all others is Phidias, the Athenian,† who executed the

* St. Jerome informs us, that Vespasian removed the head of Nero, and substituted that of the Sun with seven rays.

† There is no work of Phidias now in existence; the sculptures in the Parthenon were, however, executed by his pupils and under his immediate directions, so that we may form some judgment of his genius and taste. There is a foot in the British Museum, said to be the work of Phidias.

Jupiter at Olympia, in ivory and gold, but who also made figures in bronze as well. He flourished in the eighty-third Olympiad, about the year of our City, 300. In the ninetyeth Olympiad there were Polycletus, Phradmon, Myron, Pythagoras, Scopas, and Perellus. In the hundred and fourth Olympiad, flourished Praxiteles* and Euphranor; in the hundred and thirteenth, Lysippus of Sicyon, who was the contemporary of Alexander the Great, his brother Lysistratus, and Silanion, who was remarkable for having acquired great celebrity without any instructor: Zeuxis was his pupil.

The most celebrated of these artists, though born at different epochs, have joined in a trial of skill in the Amazons which they have respectively made. When these statues were dedicated in the Temple of Diana at Ephesus, it was agreed, in order to ascertain which was the best, that it should be left to the judgment of the artists themselves who were then present: upon which, it was evident that that was the best, which all the artists agreed in considering as the next best to his own. Accordingly, the first rank was assigned to Polycletus, the second to Phidias, the third to Cresilas, the fourth to Cydon, and the fifth to Phradmon.

Besides the Olympian Jupiter, which no one has ever equalled, Phidias also executed in ivory the erect statue of Minerva, which is in the Parthenon at Athens. He also made in bronze, beside the Amazon above mentioned, a Minerva, of such exquisite beauty, that it received its name from its fine proportions. He also made the Cliduchus, and another Minerva, which Paulus Æmilius dedicated at Rome in the Temple of Fortune of the present day. Also the two statues, draped with the pallium, which Catulus erected in the same temple; and a nude colossal statue.

* Praxiteles held a high rank among the ancient sculptors, and may be considered as second to Phidias alone.

Polycletus of Sicyon,* the pupil of Agelades, executed the Diadumenos, the statue of an effeminate youth, and remarkable for having cost one hundred talents; also the statue of a youth full of manly vigor, and called the spear-bearer. In this he made what the artists have called the Model statue, from which, as from a sort of standard, they study the lineaments: so that he, of all men, is thought in one work of art to have exhausted all the resources of art. He also made statues of a man using the body-scraper, and of a naked man challenging to play at dice; as also of two naked boys playing at dice, and known as the Astragalizontes; they are now in the atrium of the Emperor Titus, and it is generally considered, that there can be no work more perfect than this. He also executed a Mercury, which was formerly at Lysimachia; a Hercules seizing his arms, which is now at Rome. Polycletus is generally considered as having attained the highest excellence in statuary, and as having perfected the art, which Phidias invented. A discovery which was entirely his own, was the art of placing statues on one leg. It is remarked, however, by Varro, that his statues are all square-built, and made very much after the same model.

Myron of Eleutheræ,† who was also the pupil of Agelades, was rendered more particularly famous by his statue of a heifer, celebrated in many well-known lines. He also made

* Pliny has here confounded two artists of the same name; the Polycletus who was the successor of Phidias, and was not much inferior to him in merit, and Polycletus of Argos, who lived 160 years later, and who also executed many capital works, some of which are here mentioned. It appears that Cicero, Vitruvius, Strabo, Quintilian, Plutarch, and Lucian have also confounded these two artists; but Pausanias, who is very correct in the account which he gives us of all subjects connected with works of art, was aware of the distinction; and it is from his observations that we have been enabled to correct the error into which so many eminent writers had fallen.

† Myron was born at Eleutheræ, in Bœotia; but having been presented by the Athenians with the freedom of their city, he afterwards resided there, and was always designated an Athenian.

the figure of a dog, a Discobolus, a Perseus, the wood-sawyers, a Satyr admiring a flute, and a Minerva, the Delphic Pentathletes,* the Pancratiastæ,† and a Hercules, which is at the Circus Maximus, in the house of Pompey. Erinna of Teios makes allusion in her poems to a monument which he erected to a cricket and a locust. He also executed the Apollo, which, after being taken from the Ephesians by the Triumvir Antonius, was restored by the Emperor Augustus, from a warning received in a dream. Myron appears to have been the first to give a varied development to his art, having made a greater number of designs than Polycletus, and shown more attention to symmetry. And yet, though he was very accurate in the proportions of his figures, he has neglected to give much expression.

Pythagoras of Rhegium, in Italy, excelled him in the figure of the Pancratiast which is now at Delphi. Pythagoras also executed the statue of Astylos, the runner, which is exhibited at Olympia; that of a Libyan boy holding a tablet, also in the same place; and a nude male figure holding fruit. There is at Syracuse a figure of a lame man by him: persons, when looking at it, seem to feel the very pain of his wound. He was the first artist who gave expression to the sinews and the veins, and paid more attention to the hair.

There was also another Pythagoras, a Samian, who was originally a painter, seven of whose nude figures, in the Temple of Fortune, and one of an aged man, are very much admired. He is said to have resembled the last-mentioned artist so much in his features, that they could not be distinguished.

Lysippus was most prolific in his works, and made more statues than any other artist. Among these, is the Man using the Body-scraper, which Marcus Agrippa had erected

* A person engaged in the five contests of quoiting, running, leaping, wrestling, and hurling the javelin.

† Competitors in boxing and wrestling.

in front of his Warm Baths, and which wonderfully pleased the Emperor Tiberius. This prince, although in the beginning of his reign he imposed some restraint upon himself, could not resist the temptation, and had this statue removed to his bed-chamber, having substituted another for it at the baths: the people, however, were so resolutely opposed to this, that at the theatre they clamorously demanded the Apoxyomenos to be replaced; and the prince, notwithstanding his attachment to it, was obliged to restore it.

Lysippus is also celebrated for his statue of the intoxicated Female Flute-player, his dogs and huntsmen, and, more particularly, for his Chariot with the Sun, as represented by the Rhodians. He also executed a numerous series of statues of Alexander the Great, commencing from his childhood.* The Emperor Nero was so delighted with his statue of the infant Alexander, that he had it gilt: this addition, however, to its value, so detracted from its artistic beauty that the gold was removed, and in this state it was looked upon as still more precious, though disfigured by the scratches and seams which remained upon it, and in which the gold was still to be seen. He also made the statue of Hephæstion, the friend of Alexander the Great, which some persons attribute to Polycletus, whereas that artist lived nearly a century before his time. Also the statue of Alexander at the chase, now consecrated at Delphi, the figure of a Satyr, now at Athens, and the Squadron of Alexander, all of whom he represented with the greatest accuracy. This last work of art, after his conquest of Macedonia, Metellus conveyed to Rome. Lysippus also executed chariots of various kinds. He is considered to have contributed very greatly to the art of statuary by expressing the details of the hair, and by making the head smaller than had been done by the ancients, and the body more graceful

* The lines of Horace are well known, in which he says, that Alexander would allow his portrait to be painted by no one except Apelles, nor his statue to be made by any one except Lysippus.

and less bulky, a method by which his statues were made to appear taller. The Latin language has no appropriate name for that "symmetry," which he so attentively observed in his new and hitherto untried method of modifying the squareness observable in the ancient statues. Indeed, it was a common saying of his, that other artists made men as they actually were, while he made them as they appeared to be. One peculiar characteristic of his work, is the finish and minuteness which are observed in even the smallest details. Lysippus left three sons, who were also his pupils, and became celebrated as artists, Laippus, Bœdas, and, more particularly, Euthykrates; though this last-named artist rivalled his father in precision rather than in elegance, and preferred scrupulous correctness to gracefulness. Nothing can be more expressive than his Hercules at Delphi, his Alexander, his Hunter at Thespiæ, and his Equestrian Combat. Equally good, too, are his statue of Trophonius, erected in the oracular cave of that divinity, his numerous chariots, his Horse with the Paniers, and his hounds.

Praxiteles, who excelled more particularly in marble, and thence acquired his chief celebrity, also executed some very beautiful works in bronze, the Rape of Proserpine, a Father Liber, a figure of Drunkenness, and the celebrated Satyr. He also made the youthful Apollo, known as the "Sauroctonos" (Lizard-killer), because he is aiming an arrow at a lizard which is stealing towards him.

His kindness of heart, too, is witnessed by another figure; for in a chariot and horses which had been executed by Calamis, he himself made the charioteer, in order that the artist, who excelled in the representation of horses, might not be considered deficient in the human figure. This last mentioned artist has executed other chariots also, some with four horses, and some with two; and in his horses he is always unrivalled. But that it may not be supposed that he was so

greatly inferior in his human figures, it is as well to remark that his Alcmena is equal to any that was ever produced.

Lycius was the son and pupil of Myron: he made a figure representing a boy blowing a nearly extinguished fire, well worthy of his master, as also figures of the Argonauts. Leochares made a bronze representing the eagle carrying off Ganymede: * the eagle has all the appearance of being sensible of the importance of his burden, and for whom he is carrying it, being careful not to injure the youth with his talons, even through the garments.

Theodorus of Samos, † who constructed the Labyrinth at Crete, cast his own statue in bronze, which was greatly admired not only for its resemblance, but for the extreme delicacy of the work. In the right hand he holds a file, and with three fingers of the left, a little model of a four-horse chariot, which has since been transferred to Præneste: it is so extremely minute, that the whole piece, both chariot and charioteer, may be covered by the wings of a fly, which he also made with it.

The most celebrated of all the works, of which I have here spoken, were dedicated, some time ago, by the Emperor Vespasianus in the Temple of Peace, and other public buildings of his. They had before been forcibly carried off by Nero, brought to Rome, and placed by him in the reception-rooms of his Golden Palace. There is one other famous statue, the author unknown, which should not be omitted here,—that of Hercules clothed in the poisoned tunic; it stands near the Rostra, and the countenance is stern and expressive of his last agonies, caused by that dress. There are three inscriptions on it; the first of which states that it had formed part of the spoil obtained by Lucullus the general, in his war

* Two copies of this Ganymede are still in existence at Rome.

† There were two artists of this name, both natives of Samos. This one is the elder Theodorus, and is mentioned by Pausanias as having been the first to fuse iron for statues.

against Mithridates ; the second, that his son, while still a minor, dedicated it in accordance with a decree of the Senate ; the third, that Septimius Sabinus, the curule ædile, had it restored to the public from the hands of a private individual. So vast has been the rivalry caused by this statue, and so high the value set upon it.

CHAPTER XII.

IRON.

NEXT to copper comes the metal known as iron, at the same time the most useful and the most fatal instrument in the hand of mankind. For by the aid of iron we lay open the ground, we plant trees, we prepare our vineyards, and we force our vines each year to resume their youthful state, by cutting away their decayed branches. It is by the aid of iron that we construct houses, cleave rocks, and perform so many other useful offices of life. But it is with iron also that wars, murders, and robberies are effected, and this, not only hand to hand, but from a distance even, by the aid of missiles and winged weapons, now launched from engines, now hurled by the human arm, and now furnished with feathery wings. The last I regard as the most criminal artifice that has been devised by the human mind ; for, as if to bring death upon man with still greater rapidity, we have given wings to iron and taught it to fly.* Let us therefore acquit Nature of a charge that here belongs to man himself.

In the treaty which Porsena granted to the Roman people, after the expulsion of the kings, we find it expressly stipulated, that iron shall be only employed for the cultivation of the

* What would Pliny say, if he could see and hear the revolvers, rifles, mortars and Gatling guns of our day !

fields ; and our oldest authors inform us, that in those days it was considered unsafe to write with an iron pen, or stylus.

Still human industry has not failed to employ iron for perpetuating the honors of more civilized life. The artist Aristonidas, wishing to express the fury of Athamas subsiding into repentance, after he had thrown his son Learchus from the rock, blended copper and iron, in order that the blush of shame might be more exactly expressed, by the rust of the iron making its appearance through the shining substance of the copper ; a statue which still exists at Rhodes. There is also, in the same city, a Hercules of iron, executed by Alcon, the endurance displayed by the god in his labors having suggested the idea. We see too, at Rome, cups of iron consecrated in the Temple of Mars the Avenger. Nature, in conformity with her usual benevolence, has limited the power of iron, by inflicting upon it the punishment of rust ; and has thus displayed her usual foresight in rendering that substance the most perishable, which brings the greatest dangers upon perishable mortality.

Iron ores are to be found almost everywhere. But of all the different kinds the palm of excellence is awarded to that which is made by the Seres, who send it to us with their tissues and skins ; next to which, in quality, is the Parthian iron. None of the other kinds of iron are made of the pure hard metal, a softer alloy being welded with them all. In our part of the world, a vein of ore is occasionally found to yield a metal of this high quality, as in Noricum, but in other cases, it derives its value from the mode of working it.

CHAPTER XIII.

AN ACCOUNT OF PAINTINGS AND COLORS.

I CANNOT conclude what I have to say about art and artists without some reference to painting, an art which was formerly illustrious, when it was held in esteem both by kings and peoples, and ennobled those whom it deigned to transmit to posterity. But at the present day, it is completely banished in favor of marble, and gold. For not only are whole walls now covered with marble, but the marble itself is carved out or marqueted so as to represent objects and animals of various kinds. No longer now are we satisfied with formal partitions of marble, or with slabs extended like so many mountains in our chambers, but we must begin to paint the very stone itself! This art was invented in the reign of Claudius, but it was in the time of Nero that we discovered the method of inserting in marble spots that do not belong to it, and so varying its uniformity; representing the marble of Numidia variegated with ovals, and that of Synnada veined with purple; just as luxury might have willed that Nature should produce them. Such are our resources when the quarries fail us, and luxury ceases not to busy itself, in order that as much as possible may be lost whenever a conflagration happens.

Correct portraits of individuals were formerly transmitted to later ages by painting; but instead brazen shields are now set up, and silver faces, with only some obscure traces of the countenance: the very heads, too, of statues are changed, a thing that has given rise before now to many a current sarcastic line; so true it is that people prefer showing off the valuable material, to having a faithful likeness. Yet, at the same time, we tapestry the walls of our galleries with old pictures, and we prize the portraits of strangers; while as to

those made in honor of ourselves, we esteem them only for the value of the material, for some heir to break up and melt, and so forestall the noose and slip-knot of the thief.

Far different was it in the days of our ancestors. Then there were to be seen in their halls not statues made by foreign artists, or works in bronze or marble, but family portraits modelled in wax, each in its separate niche, always in readiness to accompany the funeral processions of the family; occasions on which every member of the family was always present. And the pedigree of the individual was traced in lines upon each of these colored portraits. Their libraries, too, were filled with archives and memoirs, stating what each had done when holding the magistracy. On the outside, again, of their houses, and around the thresholds of their doors, were placed other statues of those mighty spirits, in the spoils of the enemy there affixed, memorials which a purchaser even was not allowed to displace; so that the very house continued to triumph even after it had changed its master. A powerful stimulus to emulation this, when the walls each day reproached an unwarlike owner for having thus intruded upon the triumphs of another! There is still extant an address by the orator Messala, full of indignation, in which he forbids that there should be inserted among the images of his family any of those of the stranger race of the Lævini. It was the same feeling, too, that extorted from old Messala those compilations of his "On the Families of Rome;" when, upon passing through the hall of Scipio Pomponianus, he observed that, in consequence of a testamentary adoption, the Salvittos—for that had been their surname—to the disgrace of the Africani, had surreptitiously contrived to assume the name of the Scipios. But the Messalas must pardon me if I remark, that to lay a claim, though an untruthful one, to the statues of illustrious men, shows some love for their virtues, and is much more honorable than to have such a character that no one should wish to claim them.

There is a new invention, too, which we must not omit to notice. Not only do we consecrate in our libraries, in gold or silver, or at all events, in bronze, those whose immortal spirits hold converse with us in those places, but we even go so far as to reproduce the ideal of features all remembrance of which has ceased to exist; and our regrets give existence to likenesses that have not been transmitted to us, as in the case of Homer. Nothing can be a greater proof of having achieved success in life, than a lasting desire on the part of one's fellow-men, to know what one's features were. This practice of grouping portraits was first introduced at Rome by Asinius Pollio, who was also the first to establish a public library, and so make the works of genius the property of the public. Whether the kings of Alexandria and of Pergamus, who had so energetically rivalled each other in forming libraries, had previously introduced this practice, I cannot so easily say.

That a strong passion for portraits formerly existed, is attested both by Atticus, the friend of Cicero, who wrote a work on this subject, and by Varro, who conceived the very liberal idea of inserting, by some means or other, in his numerous volumes, the portraits of seven hundred individuals; as he could not bear the idea that all traces of their features should be lost, or that the lapse of centuries should get the better of mankind. Thus was he the inventor of a benefit to his fellow-men, that might have been envied by the gods themselves; for not only did he confer upon them immortality, but he transmitted them to all parts of the earth; so that it might be possible for them to be present, everywhere and each occupy his niche. This service Varro conferred upon persons who were not members of his own family.

CHAPTER XIV.

THE EARLIEST PAINTERS.

WE have no certain knowledge as to the commencement of the art of painting. The Egyptians assert that it was invented among themselves, six thousand years before it passed into Greece; a vain boast—evidently. As to the Greeks, some say that it was invented at Sicyon, others at Corinth; but they all agree that it originated in tracing lines round the human shadow. The first stage of the art was this, the second the employment of single colors; a process known as “monochrome-painting.” The invention of line-drawing has been assigned to Philocles, the Egyptian, or to Cleanthes of Corinth. The first who practised this line-drawing were Aricides, the Corinthian, and Telephanes, the Sicyonian, artists who, without making use of any colors, shaded the interior of the outline by drawing lines; hence, it was the custom with them to add to the picture the name of the person represented. Ecphantus, the Corinthian, was the first to employ colors upon these pictures, made, it is said, of broken earthenware, reduced to powder.

But already had the art of painting been perfectly developed in Italy. At all events, there are extant in the temples at Ardea, at this day, paintings of greater antiquity than Rome itself; in which, in my opinion, nothing is more marvellous, than that they should have remained so long unprotected by a roof, and yet preserving their freshness. At Lanuvium we see an Atalanta and a Helena, without drapery, close together, and painted by the same artist. They are both of the greatest beauty, the former being evidently the figure of a virgin, and they still remain uninjured, though the temple is in ruins. The Emperor Caligula attempted to have

them removed to his own palace, but the nature of the plaster would not admit of it. There are in existence at Cære, some paintings of a still higher antiquity. Whoever carefully examines them, will be forced to admit that no art has arrived more speedily at perfection, seeing that it evidently was not in existence at the time of the Trojan War.

Among the Romans this art very soon rose into esteem, the Fabii, a most illustrious family, deriving from it their surname of "Pictor;" the first of the family who bore it, himself painted the Temple of Health, in the year of the City, 450; a work which lasted to our own times, but was destroyed when the temple was burnt, in the reign of Claudius. Next in celebrity were the paintings of the poet Pacuvius, in the Temple of Hercules, in the Cattle Market: he was a son of the sister of Ennius, and the fame of the art was enhanced at Rome by the success of this artist on the stage. After this period, the art was no longer practised by men of rank; unless we except Turpilius, in our own times, a native of Venetia, and of equestrian rank, several of whose beautiful works are still in existence at Verona. He painted, too, with his left hand, a thing never known to have been done by any one before.*

Titidius Labeo, a person of prætorian rank, who had been formerly proconsul of the province of Gallia Narbonensis, and who lately died at a very advanced age, used to pride himself upon the little pictures which he executed, but it only caused him to be ridiculed and sneered at. I must not omit to mention a celebrated consultation upon the subject of painting, which was held by some persons of the highest rank. Q. Pedius, who had been honored with the consulship and a triumph, and who had been named by the Dictator Cæsar as co-heir with Augustus, had a grandson, dumb from his birth, whom the orator Messala, to whose family his grandmother

* Holbein and Mignard did the same, and Charles Felu of Antwerp, born without arms, paints most successfully with his feet.

belonged, recommended to be brought up as a painter. He died, however, in his youth, after having made great progress in the art. But the high estimation in which painting came to be held at Rome, was principally due, in my opinion, to Valerius Maximus Messala, who, in the year of the City, 490, was the first to exhibit a painting to the public; a picture, namely, of the battle in which he had defeated the Carthaginians and Hiero in Sicily, upon one side of the Curia Hostilia. The same thing was done, too, by Lucius Scipio, who placed in the Capitol a painting of the victory which he had gained in Asia; but his brother Africanus was offended at it, for his son had been taken prisoner in the battle. Lucius Hostilius Mancinus, who had been the first to enter Carthage at the final attack, gave a similar offence to Æmilianus, by exposing in the Forum a painting of that city and the attack upon it, he himself standing near the picture, and describing to the spectators the various details of the siege; a piece of complaisance which secured him the consulship at the ensuing Comitia.

The stage which was erected for the games celebrated by Claudius Pulcher, brought the art of painting into great admiration, for the ravens were so deceived by the resemblance, as to light upon the decorations which were painted in imitation of tiles.

The late Emperor Augustus placed in the most conspicuous part of his forum, two pictures, representing War and Triumph. He also placed in the Temple of his father, Cæsar, a picture of the Castors, and one of Victory, in addition to those which we shall mention in our account of the works of the different artists. He also inserted two pictures in the wall of the Curia which he consecrated in the Comitium, one of which was a Nemea seated upon a lion, and bearing a palm in her hand. Close to her is an old man, standing with a staff, and above his head hangs the picture of

a chariot with two horses. Nicias has written upon this picture that he "inburned" * it.

In the second picture the thing to be chiefly admired is the resemblance that the youth bears to the old man his father, allowing, of course, for the difference in age; above them soars an eagle, which grasps a dragon in its talons. Philochares attests that he is the author of this work, an instance, if we only consider it, of the mighty power wielded by the pictorial art; for here, thanks to Philochares, the senate of the Roman people, age after age, has before its eyes Glaucion and his son Aristippus, persons who would otherwise have been altogether unknown.

Cimon of Cleonæ first invented foreshortenings, or in other words, oblique views of the figure, and first learned to vary the features by representing them in the various attitudes of looking backwards, upwards, or downwards. It was he, too, who first marked the articulations of the limbs, indicated the veins, and gave the natural folds and sinuosities to drapery. Panænus, the brother of Phidias, even executed a painting of the battle fought by the Athenians with the Persians at Marathon: and so common had the employment of colors become, and to such a state of perfection had the art arrived, that he was able to represent the portraits of the various generals who commanded at that battle, Miltiades, Callimachus, and Cynægirus, on the side of the Athenians, and, on that of the barbarians, Datis and Artaphernes.

Polygnotus of Thasos was the first to paint the figures of women in transparent drapery, and to represent the head covered with a parti-colored head-dress. He, too, was the first to contribute many other improvements to the art of painting, opening the mouth, for example, showing the teeth, and throwing expression into the countenance, in place of the ancient rigidity of the features.

* "Inussisse;" meaning that he executed it in encaustic.

CHAPTER XV.

ARTISTS WHO PAINTED WITH THE PENCIL.

IN the ninetieth Olympiad lived Aglaophon, Cephisodorus, Erillus, and Evenor, the father of Parrhasius, one of the greatest of painters, and of whom we shall have to speak when we come to the period at which he flourished. All these were artists of note, but not sufficiently so to detain us by any further details, in our haste to arrive at the luminaries of the art; first among whom shone Apollodorus of Athens, in the ninety-third Olympiad. He was the first to paint objects as they really appeared; the first too, we may justly say, to confer glory by the aid of the pencil.* Of this artist there is a Priest in Adoration, and an Ajax struck by Lightning, a work to be seen at Pergamus at the present day: before him, there is no painting of any artist now to be seen which has the power of riveting the eye.

The gates of art being now thrown open by Apollodorus, Zeuxis of Heraclea entered upon the scene, in the fourth year of the ninety-fifth Olympiad, destined to lead the pencil, for which there was nothing too arduous, to a very high pitch of glory. Of him Apollodorus wrote a verse to the effect, that Zeuxis had stolen the art from others and had taken it all to himself. Zeuxis also acquired such a vast amount of wealth, that, in a spirit of ostentation, he went so far as to parade himself at Olympia with his name embroidered on the checked pattern of his garments in letters of gold. At a later period, he came to the determination to give away his works,

* "Penicillus." This was the hair-pencil or brush, which was used by one class of painters, in contradistinction to the stylus or cestrum used for spreading the wax-colors. Painters with the brush used what we should term "water-colors;" oil-colors, in our sense of the word, being unknown to the ancients.

there being no price high enough to pay for them, he said. He gave an Alcmena to the people of Agrigentum, and a Pan to Archelaüs, King of Macedonia. He also painted a Penelope, in which the peculiar character of that matron appears to be delineated to the very life; and a figure of an athlete, with which he was so highly pleased, that he wrote beneath it the line which has since become so famous, to the effect that it would be easier to find fault with him than to imitate him.* His Jupiter seated on the throne, with the other Deities standing around him, is a magnificent production: as, also, is his Infant Hercules strangling the Dragons, in presence of Amphitryon and his mother Alcmena, who is struck with horror. Still, however, Zeuxis is generally censured for making the heads and articulations of his figures out of proportion. And yet, so scrupulously careful was he, that on one occasion, when he was about to execute a painting for the people of Agrigentum, to be consecrated in the Temple of the Lacinian Juno there, he had the young maidens of the place stripped for examination, and selected five of them as models, in order to adopt in his picture the most commendable points in the form of each. He also painted some monochromes in white.

The contemporaries and rivals of Zeuxis were Timanthes, Androcydes, Eupompus, and Parrhasius. The last, it is said, entered into a pictorial contest with Zeuxis, who represented some grapes painted so naturally that the birds flew towards the spot where the picture was exhibited. Parrhasius, on the other hand, exhibited a curtain, drawn with such singular truthfulness, that Zeuxis, elated with the judgment which had been passed upon his work by the birds, haughtily demanded that the curtain should be drawn aside to let the picture be seen. Upon finding his mistake, with a great degree of ingenuous candor he admitted that he had been surpassed, for

* *Μωμήσεται τις μάλλον ἢ μιμήσεται.* This line is attributed by Plutarch to Apollodorus.

while he himself had only deceived the birds, Parrhasius had deceived him, an artist.

There is a story, too, that at a later period, Zeuxis painted a child carrying grapes, and the birds came to peck at them: upon which, with a similar degree of candor, he expressed himself vexed with his work, and exclaimed—"I have surely painted the grapes better than the child, for if I had fully succeeded in the latter, the birds would have been in fear of it." Zeuxis executed some figures also in clay, the only works of art that were left behind at Ambracia, when Fulvius Nobilior transported the Muses from that city to Rome. There is at Rome a Helena by Zeuxis, in the Porticos of Philippus, and a Marsyas Bound, in the Temple of Concord there.

Parrhasius of Ephesus also contributed greatly to the progress of painting, being the first to give symmetry to his figures, the first to give play and expression to the features, elegance to the hair, and gracefulness to the mouth: indeed, for contour, it is universally admitted by artists that he bore away the palm. This, in painting, is the very highest point of skill. To paint substantial bodies and the interior of objects is a great thing, no doubt, but at the same time it is a point in which many have excelled: but to make the extreme outline of the figure, to give the finishing touches to the painting in rounding off the contour, this is a point of success in the art which is but rarely attained. For the extreme outline, to be properly executed, requires to be nicely rounded, and so to terminate as to prove the existence of something more behind it, and thereby disclose that which it also serves to hide.

Such is the merit conceded to Parrhasius by Antigonus and Xenocrates, who have written on the art of painting; and in this as well as in other points, not only do they admit his excellence, but enlarge upon it in terms of the highest commendation. There are many pen sketches by him still in

existence, both upon panel and on parchment, from the study of which, even artists may greatly profit.

In his allegorical picture of the People of Athens, he has displayed singular ingenuity in the treatment of his subjects; for in representing it, he had to depict it as at once fickle, choleric, unjust, and versatile; while, again, he had equally to show its attributes of implacability and clemency, compassionateness and pride, loftiness and humility, fierceness and timidity—and all these at once. He painted a Theseus also, which was formerly in the Capitol at Rome, a Naval Commander wearing a cuirass, and, in one picture, now at Rhodes, figures of Meleager, Hercules, and Perseus. This last painting, though it has been thrice struck by lightning, has escaped being effaced, a circumstance which tends to augment the admiration which it naturally excites. He painted an Archigallus* also, a picture which the Emperor Tiberius greatly admired. According to Deculo, that prince had it shut up in his chamber, the price at which it was valued being six hundred thousand sesterces.

Parrhasius also painted a Thracian Nurse, with an Infant in her arms, a Philiscus, a Father Liber attended by Virtue, Two Children, in which we see portrayed the careless simplicity of childhood, and a Priest attended by a Boy, with a censer and chaplet. There are also two most noble pictures by him; one of which represents a Runner contending for the prize, completely armed, so naturally depicted that he appears covered with perspiration. In the other we see the Runner taking off his armor, and can fancy that we hear him panting aloud for breath. His Æneas, Castor, and Pollux, all represented in the same picture, are highly praised, as well as his Telephus, Achilles, Agamemnon, and Ulysses.

Parrhasius was a most prolific artist, but at the same time there was no one who enjoyed the glory conferred upon him by his talent with greater arrogance. He went so far as

* The "Chief of the Galli," or high-priest of Cybele.

to call himself "Habrodiaetus" (Liver-in-Luxury), and the "prince of painters," and asserted that in him the art had arrived at perfection. He boasted that he had sprung from the lineage of Apollo, and that he had painted his Hercules, a picture now at Lindos, just as he had often seen him in his sleep. Upon being defeated by Timanthes, at Samos, by a great majority of votes, the subject of the picture being Ajax and the Award of the Arms,* he declared in the name of his hero, that he felt himself quite disgraced on thus seeing himself a second time defeated by an unworthy opponent.

As to Timanthes, he was an artist highly gifted with genius, and loud have some of the orators been in their commendations of his Iphigenia, represented as she stands at the altar awaiting her doom. Upon the countenance of all present, that of her uncle Menelaus in particular, grief was depicted; but having already exhausted all the characteristic features of sorrow, the artist adopted the device of veiling the features of the victim's father, Agamemnon, finding himself unable adequately to give expression to his feelings. There are also some other proofs of his genius, a Sleeping Cyclops, for instance, which he has painted upon a small panel; but, being desirous to convey an idea of his gigantic stature, he has painted some Satyrs near him measuring his thumb with a thyrsus. Indeed, Timanthes is the only one among the artists in whose works there is always something more implied by the pencil than is expressed, and whose execution, though of the very highest quality, is always surpassed by the inventiveness of his genius. He painted the figure of a Hero, a master-piece of skill, in which he carried the art to the very highest pitch of perfection, in the delineation of the warrior: this work is now at Rome, in the Temple of Peace.

At this period, too, Euxinidas had for his pupil Aristides, who became a most illustrious artist; and Eupompus instructed Pamphilus, who afterwards became the instructor of

* Achilles, which were awarded to Ulysses in preference to Ajax.

Apelles. There is by Eupompus, a Victor in a gymnastic contest, holding a palm. So high was the reputation of this artist, that he established a school of painting, and so divided the art into three styles; whereas till then there had been but two, known respectively as the Helladic and the Asiatic. In honor of him, a native of Sicyon by birth, the Helladic school was divided into two, and from this period there were three distinct styles recognized, the Ionic, the Sicyonian, and the Attic.

We have, by Pamphilus, a picture representing the Alliance and the Battle that was fought at Phlius; a Victory also and a representation of Ulysses in his ship. He was a Macedonian by birth, but was the first painter who was also skilled in all the other sciences, arithmetic and geometry more particularly, without the aid of which he maintained that the pictorial art could not attain perfection. He gave instruction to no one for a smaller sum than one talent, at the rate of five hundred denarii per annum,* and this fee both Apelles and Melanthius paid. It was through his influence that, first at Sicyon, and then throughout the whole of Greece, all children of free birth were taught the graphic art, or in other words, the art of drawing upon boxwood; in consequence of which this came to be looked upon as the first step in the liberal arts. It is the fact, however, that this art has always been held in high estimation, and cultivated by persons of free birth, and that, at a more recent period, men of rank even began to pursue it; it having always been forbidden that slaves should receive instruction in it. Hence no celebrated work of painting or drawing has been executed by a slave.

In the hundred and seventh Olympiad, flourished Aëtion and Therimachus. By the former we have some fine pictures; a Father Liber, Tragedy and Comedy, Semiramis from

* Which would make the course of study extend over a period of twelve years.

the rank of a slave elevated to the throne, an Old Woman bearing torches, and a New-made Bride, remarkable for the air of modesty with which she is portrayed.

But it was Apelles of Cos, in the hundred and twelfth Olympiad, who surpassed all the other painters who either preceded or succeeded him. Single-handed, he contributed more to painting than all the others together, and even went so far as to publish some treatises on the principles of the art. The great point of artistic merit with him was his singular charm of gracefulness, and this too, though the greatest of painters were his contemporaries. In admiring their works and bestowing high eulogiums upon them, he used to say that there was still wanting in them that ideal of beauty so peculiar to himself, and known to the Greeks as "Charis;" others, he said, had acquired all the other requisites of perfection, but in this one point he himself had no equal. He also asserted his claim to another great point of merit: admiring a picture by Protogenes, which bore evident marks of unbounded laboriousness and the most minute finish, he remarked that in every respect Protogenes was fully his equal, or perhaps his superior, except in this, that he himself knew when to take his hand off a picture—a memorable lesson, which teaches us that over-carefulness may be productive of bad results. His candor was equal to his talent; he acknowledged the superiority of Melanthius in his grouping, and of Asclepiodorus in the niceness of his measurements, or, in other words, the distances that ought to be left between the objects represented.

A circumstance that happened to him in connection with Protogenes is worthy of notice. The latter was living at Rhodes, when Apelles disembarked there, desirous of seeing the works of a man whom he had hitherto only known by reputation. He repaired at once to the studio; Protogenes was not at home, but there happened to be a large panel upon the easel ready for painting, with an old woman who

was left in charge. To his inquiries she made answer, that Protogenes was not at home, and then asked whom she should name as the visitor. "Here he is," was the reply of Apelles, and seizing a brush, he traced with color upon the panel an outline of a singularly minute fineness. Upon his return, the old woman mentioned to Protogenes what had happened. The artist, it is said, upon remarking the delicacy of the touch, instantly exclaimed that Apelles must have been the visitor, for that no other person was capable of executing anything so exquisitely perfect. So saying, he traced within the same outline a still finer outline, but with another color, and then took his departure, with instructions to the woman to show it to the stranger, if he returned, and to let him know that this was the person whom he had come to see. It happened as he anticipated; Apelles returned, and vexed at finding himself thus surpassed, took up another color and split * both of the outlines, leaving no possibility of anything finer being executed. Upon seeing this, Protogenes admitted that he was defeated, and at once flew to the harbor to look for his guest. He thought proper to transmit the panel to posterity, just as it was, and it always continued to be held in the highest admiration by all, artists in particular. I am told that it was burnt in the first fire which took place at Cæsar's palace on the Palatine Hill; but in former times I have often stopped to admire it. Upon its vast surface it contained nothing whatever except the three outlines, so remarkably fine as to escape the sight: among the most elaborate works of numerous other artists it had all the appearance of a blank space; and yet by that very fact it attracted the notice of every one, and was held in higher estimation than any other painting there.

* Dr. Smith says: "The most natural explanation of this difficult passage seems to be, that down the middle of the first line of Apelles, Protogenes drew another, so as to divide it into two parallel halves, and that Apelles again divided the line of Protogenes in the same manner."

It was a custom with Apelles, to which he most tenaciously adhered, never to let any day pass, however busy he might be, without exercising himself by tracing some outline or other; a practice which has now passed into a proverb.* It was also a practice with him, when he had completed a work, to exhibit it to the view of the passers-by in some exposed place; while he himself, concealed behind the picture, would listen to the criticisms that were passed upon it; it being his opinion that the judgment of the public was preferable to his own, as being the more discerning of the two. It was under these circumstances, they say, that he was censured by a shoemaker for having represented the shoes with one shoestring too little. The next day, the shoemaker, quite proud at seeing the former error corrected, thanks to his advice, began to criticise the leg; upon which Apelles, full of indignation, popped his head out, and reminded him that a shoemaker should give no opinion beyond the shoes, a piece of advice which has passed into an equally proverbial saying.† Apelles was a person of great amenity of manners, a circumstance which rendered him particularly agreeable to Alexander the Great, who would often come to his studio. The monarch had forbidden, by public edict, that any other artist should represent him. On one occasion, however, when the prince was in his studio, talking a great deal about painting without knowing anything about it, Apelles quietly begged that he would quit the subject, telling him that he would get laughed at by the boys who were there grinding the colors: so great was the influence which he rightfully possessed over a monarch, who was otherwise of an irascible temperament. And yet, irascible as he was, Alexander conferred upon him a very signal mark of the high estimation in which he held

* The Latin form of which, as given by Erasmus, is "Nulla dies abeat quin linea ducta supersit." "Let no day pass by, without an outline being drawn, and left in remembrance."

† "Ne sutor ultra crepidam." "Let not the shoemaker go beyond his last."

him; for having, in his admiration of her extraordinary beauty, engaged Apelles to paint Pancaste undraped, the most beloved of his wives, the artist, while so engaged, fell in love with her; upon which, Alexander, perceiving this to be the case, made him a present of her, thus showing himself, though a great king in courage, a still greater one in self-command, this action redounding no less to his honor than any of his victories. Some are of opinion that Pancaste was the model of Apelles in his painting of Venus rising from the waters.

It was Apelles too, who, courteous even to his rivals, first established the reputation of Protogenes at Rhodes. Held as he was in little estimation by his own fellow-countrymen, a thing that generally* is the case, Apelles inquired of him what price he set upon certain finished works of his, which he had on hand. Upon Protogenes mentioning some very trifling sum or other, Apelles made him an offer of fifty talents, and then circulated a report that he was buying these works in order to sell them as his own. By this contrivance, he aroused the Rhodians to a better appreciation of the merits of their artist, and only consented to leave the pictures with them upon their offering a still larger price.

He painted portraits, too, so exactly to the life, that a fact with which we are made acquainted by the writings of Apion the grammarian seems altogether incredible. One of those persons, he says, who divine events by the traits of the features, and are known as physiognomists, was enabled, by an examination of his portraits, to tell the year of their death, whether past or future, of each person represented. Apelles had been on bad terms with Ptolemæus in former times, when they formed part of the suite of Alexander. After Ptolemæus had become king of Egypt, it so happened that Apelles was driven by the violence of a tempest to Alexandria. Upon

* See Matthew xiii. 57; Mark vi. 4. "A prophet is not without honor, save in his own country."

this, some of his rivals fraudulently suborned a jester, who was attached to the court, to carry him an invitation to dine with the king. Accordingly, Apelles attended; upon which Ptolemæus was highly indignant, and, summoning before him his stewards of the household, requested that the artist would point out the one that had given him the invitation. Thus challenged, Apelles seized a piece of quenched charcoal that lay in the fire-place, and traced a likeness upon the wall, with such exactness, that the king, the moment he began it, recognized the features as those of the jester.

He also made a portrait of King Antigonus; and as that monarch was blind of one eye, he painted him in profile, in order that what in reality was wanting to the person might rather have the semblance of being wanting to the picture. Among his works, too, there are some figures representing persons at the point of death; but it is not easy to say which of his productions are of the highest order of excellence. His *Venus Rising from the Sea*, known as the *Venus Anadyomene*, was consecrated by the late Emperor Augustus in the Temple of his father Cæsar; a work which has been celebrated in certain Greek lines, which, though they have outlived it, have perpetuated its fame. The lower part of the picture having become damaged, no one could be found to repair it; and thus did the very injury which the picture had sustained, redound to the glory of the artist. Time, however, and damp at last effaced the painting, and Nero, in his reign, had it replaced by a copy, painted by the hand of Dorotheus. Apelles also commenced another *Venus* for the people of Cos, which would have outshone even the former one; but death invidiously prevented its completion, nor could any one be found to complete the work in conformity with the sketches of the outline. He painted also, in the Temple of Diana at Ephesus, Alexander the Great wielding the Thunderbolts, a picture for which he received twenty talents of gold. The fingers have all the appearance

of projecting from the surface, and the lightning seems to be darting from the picture. The price paid in golden coin for this picture was ascertained by weight, there being no specific sum agreed upon.

He also painted a Procession of the Megabyzus, the priest of Diana at Ephesus; and a Clitus on Horseback, hastening to the combat, his Armor-bearer handing him his helmet at his command. How many times he painted Alexander and Philip, it would be quite superfluous to attempt to enumerate. At Samos, there is a Habron by him, that is greatly admired; at Alexandria, a Gorgosthenes, the Tragedian; and at Rome, a Castor and Pollux, with figures of Victory and Alexander the Great, and an emblematical figure of War with her hands tied behind her, and Alexander seated in a triumphal car; both of which pictures the late Emperor Augustus, with a great degree of moderation and good taste, consecrated in the most frequented parts of his Forum: the Emperor Claudius, however, thought it advisable to efface the head of Alexander in both pictures, and substitute likenesses of his predecessor Augustus. It is by his hand too, it is generally supposed, that the Hercules, with the face averted, now in the Temple of Anna, was painted; a picture in which, one of the greatest difficulties in the art, the face, though hidden, may be said to be seen rather than left to the imagination. He also painted a figure of a naked Hero, a picture in which he has challenged Nature herself.

There exists too, or did exist, a Horse that was painted by him for a pictorial contest; as to the merits of which, Apelles appealed from the judgment of his fellow-men to that of the dumb quadrupeds. For, finding that by their intrigues his rivals were likely to get the better of him, he had some horses brought, and the picture of each artist successively shown to them. Only at the sight of the horse painted by Apelles did they begin to neigh; a thing that has always been the case since, whenever this test of his artistic skill has been em-

ployed. He also painted a Neoptolemus on horse-back, fighting with the Persians; an Archeläus, with his Wife and Daughter; and an Antigonus on foot, with a cuirass on, and his horse led by his side. Connoisseurs in the art give the preference, before all other works of his, to his paintings of King Archeläus on horseback, and of Diana in the midst of a throng of Virgins performing a sacrifice; a work in which he would appear to have surpassed the lines* of Homer descriptive of the same subject. He also essayed some things, which in reality do not admit of being portrayed—thunder, lightning, and thunderbolts, in pictures which are known by the respective names of Bronte, Astrape, and Ceraunobolia.

His inventions, too, in the art of painting, have been highly serviceable to others; but one thing there was in which no one could imitate him. When his works were finished, he used to cover them with a black varnish, of such remarkable thinness, that while it gave more vivacity to the colors, and preserved them from the contact of dust and dirt, its existence could only be detected when one was close enough to touch it.† The brightness of the colors was softened and harmonized to the sight, as though they had been viewed from a distance, and through a medium of specular-stone, the contrivance, by some indescribable means, giving a sombreness to colors which would otherwise have been too florid.

One of the contemporaries of Apelles was Aristides of Thebes; the first of all the painters to give full expression to the mind and passions of man, known to the Greeks as *ἰθῆρ*. He painted a Battle with the Persians, a picture which contained one hundred figures, for each of which he was paid at the rate of ten minæ by Mnason, the tyrant of Elatea. He

* *Odyss. B. vi. l. 102.*

† Sir Joshua Reynolds discovers in the account here given “an artist-like description of the effect of glazing, or scumbling, such as was practised by Titian and the rest of the Venetian painters.”

also painted Chariots with four horses in full career; a Suppliant, which almost speaks; Huntsmen with game; and a damsel pining to death from love for her brother. There was also to be seen, in the Temple of Faith, in the Capitol, a picture of his, representing an Aged Man giving instructions to a Child on the lyre. He executed also a painting of an Invalid, upon which endless encomiums have been lavished. Indeed, so great was the excellence of this artist, that King Attalus is said to have purchased one picture of his at the price of one hundred thousand dollars.

At the same period flourished Protogenes, native of Causus, a place held in subjection by the Rhodians. Great poverty in his early days, and extreme application to his art, were the causes of his comparative unproductiveness. It is not known with certainty from whom he received his instruction in the art: indeed some say that he was only a ship-decorator down to his fiftieth year; a proof of which, it is asserted, is the fact, that in decorating the Propylæum of the Temple of Minerva, situated in one of the most celebrated spots in Athens, where he has painted the fine picture of Paralus and Hammonias, known by some as the Nausicaa, he has added in the side pieces of the picture, by painters called "parerga," several small ships of war; wishing thereby to show in what department that skill had first manifested itself which had thus reached the citadel of Athens, the scene of his glory. Of all his compositions, however, the palm has been awarded to his Ialysus, grandson of Apollo, now at Rome, consecrated in the Temple of Peace. So long as he was at work upon it, he lived upon nothing but soaked lupines; by which means he at once appeased both hunger and thirst, and avoided all risk of blunting his perception by too delicate a diet. In order to protect this picture against the effects of ill-usage and old age, he painted it over four times, so that when an upper coat might fail, there would be an under one to succeed it. There is in this picture the figure

of a dog, which was completed in a very remarkable manner, inasmuch as accident had an equal share with design in the execution of it. The painter was of opinion that he had not given the proper expression to the foam at the mouth of the animal, panting for breath, as it was represented; while, with all other parts of the picture he was perfectly satisfied, a thing extremely unusual with him. The thing that displeased him was, the evident traces of art in the execution of it, touches which did not admit of any diminution, and yet had all the appearance of being too labored, the effect produced being far removed from his conception of the reality—the foam bore the marks of being painted, and not natural. Vexed and tormented by this dilemma, it being his wish to depict truth itself, and not something that only bore a semblance of truth, he effaced it again and again, changed one brush for another, and yet by no possibility could satisfy himself. At last, quite out of temper with an art, which, in spite of him, would still obtrude itself, he dashed his sponge against the vexatious spot; when behold! the sponge replaced the colors that it had just removed, exactly in accordance with his utmost wishes. Thus did chance reproduce Nature in a painting.

Following his example, Nealces succeeded in representing the foam at a horse's mouth; for on one occasion, when engaged in painting a man holding in a pair of horses and soothing them with his voice, he also dashed his sponge against the picture, with the view of producing a like effect.

On account of this Ialysus, which he was apprehensive of destroying, King Demetrius forbore to set fire to the only side of the city of Rhodes by which it was capable of being taken; and thus, in his anxiety to spare a picture, did he lose his only opportunity of gaining a victory. The dwelling of Protogenes was in a little garden in the suburbs in the midst of the camp of Demetrius. The combats that were taking place made no difference whatever to the artist, and in no

way interrupted his proceeding with the work which he had commenced. At last he was summoned before the king, who inquired how he could have the assurance thus to remain without the walls. "Because I know," was his answer, "that you are waging war with the Rhodians, and not with the arts." Upon this, the king, delighted at having the opportunity of protecting the hand which he had thus spared, ordered a guard to be placed at his disposal for the especial purpose of his protection. In order, too, that he might not distract the artist's attention by sending for him too often, he would often go, an enemy albeit, to pay him a visit, and, abandoning his aspirations for victory, in the midst of arms and the battering down of walls, would attentively examine the compositions of the painter. Even to this day, the story is still attached to the picture which he was then engaged upon, to the effect, that "Protogenes painted it beneath the sword."

Protogenes executed also a Cydippe; a portrait of Philiscus, the tragic poet, in an attitude of meditation: an Athlete; a portrait of King Antigonus, and one of Phæstis, the mother of Aristotle.

CHAPTER XVI.

VARIOUS OTHER KINDS OF PAINTING.

WE must now make some mention of those artists who acquired fame by the pencil in an inferior style of painting. Among these was Piræicus, inferior to few of the painters in skill. I am not sure that he did not do injustice to himself by the choice of his subjects, seeing that, although he adopted an humble walk, he still attained in that walk the highest reputation. His subjects were barbers' shops, cobblers' stalls, jackasses, eatables, and the like. His paintings, however,

are exquisitely pleasing, and have sold at higher prices than the very largest works of many masters.

It would not be right to pass in silence the painter of the Temple at Ardea, particularly as he was honored with the citizenship at that place, and with the following inscription in verse upon one of the paintings which he executed there :

“These paintings, worthy of this worthy place,
Temple of Juno, queen, and wife of Jove,
Plautius Marcus, from Alalia, made.
May Ardea now and ever praise him for his skill.”

These lines are written in ancient Latin characters.

Ludius too, who lived in the time of the late Emperor Augustus, must not be allowed to pass without some notice ; for he was the first to introduce the fashion of covering the walls of our houses with most pleasing landscapes, representing villas, porticos, ornamental gardening, woods, groves, hills, fishponds, canals, rivers, seashores, and anything else one could desire ; varied with figures of persons walking, sailing, or proceeding to their villas, on asses or in carriages, fishing, fowling, or gathering in the vintage. In some of his decorations are fine villas and roads to them across the marshes, with women making bargains, great burdens carried across on men's shoulders, who move along slipping at every step and tottering beneath their load ; with numberless other subjects of a similar nature, redolent of mirth and of the most amusing ingenuity. It was this artist, too, who first decorated our uncovered edifices or promenades with representations of maritime cities,—a subject which produces a very pleasing effect at a comparatively trifling cost.

There have been some women painters also. Timarete, the daughter of Micon, painted a Diana at Ephesus, one of the very oldest panel-paintings known. Irene, daughter and pupil of the artist Cratinus, painted a figure of a girl, now at Eleusis, a Calypso, an Aged Man, the juggler Theodorus,

and Alcisthenes the dancer. Aristarete, daughter and pupil of Nearchus, painted an Æsculapius. Iaia of Cyzicus, who always remained single, painted at Rome, in the youth of Varro, both with the brush, and with the graver, upon ivory, her subjects being female portraits mostly. At Naples, there is a large picture by her, the portrait of an Old Woman; as also a portrait of herself taken by the aid of a mirror. There was no painter superior to her for expedition; while at the same time her artistic skill was such, that her works sold at much higher prices than those of the most celebrated portrait-painters of her day, Sopolis and Dionysius, with whose pictures our galleries are filled.

But as for fame, that has been reserved solely for the artists who have painted pictures; which gives us all the more reason to venerate the prudence displayed by the men of ancient times. For with them, it was not the practice to decorate the walls of houses, for the gratification of the owners only; nor did they lavish all their resources upon a dwelling which must of necessity always remain a fixture in one spot, and admit of no removal in case of conflagration. Protagenes was content with a cottage in his little garden; Apelles had no paintings on the plaster of his walls; it not being the fashion in their day to color the party-walls of houses from top to bottom. With all those artists, art was ever watchful for the benefit of whole cities only, and in those times a painter was regarded as the common property of all.

CHAPTER XVII.

THE INVENTORS OF THE ART OF MODELLING.

ON painting we have now said enough, and more than enough; but it will be only proper to append some accounts of the plastic art. Butades, a potter of Sicyon, was the first

who invented, at Corinth, the art of modelling portraits in the earth which he used in his trade. He made the discovery through his daughter, who, being deeply in love with a young man about to depart on a long journey, traced the profile of his face, as thrown upon the wall by the light of the lamp. Upon seeing this, her father filled in the outline, by compressing clay upon the surface, and so made a face in relief, which he then hardened by fire along with other articles of pottery.

Butades invented the method of coloring plastic compositions, by adding red earth to the material, or else modelling them in red chalk: he, too, was the first to make masks on the outer edges of gutter-tiles upon the roofs of buildings; in low relief, and in high relief. In these designs in terra cotta the ornaments on the pediments of temples originated.

The first person who expressed the human features by fitting a mould of plaster upon the face, and then improving it by pouring melted wax into the cast, was Lysistratus of Sicyon, brother of Lysippus, already mentioned. He first made it his study to give a faithful likeness; for before his time, artists only thought how to make their portraits as handsome as possible. The same artist, too, was the first who thought of making models for his statues; a method which afterwards became so universally adopted, that there could be neither figure nor statue made without its model in clay. The art of modelling in clay thus appears to be more ancient than that of moulding in bronze.

The most celebrated modellers were Damophilus and Gorgasus, who were painters as well. These artists adorned with their works, in both kinds, the Temple of Ceres, in the Circus Maximus at Rome, with an inscription in Greek, which stated that the decorations on the right-hand were the workmanship of Damophilus, and those on the left, of Gorgasus. Varro says that, before the construction of this temple, everything was Tuscan in the temples; and that, when the temple was afterwards repaired, the painted coatings of the walls were

cut away in tablets and enclosed in frames, but that the figures on the pediments were dispersed. Chalcosthenes executed at Athens some works in unbaked earth, on the spot which, from his manufactory, has since obtained the name of "Ceramicus."

Varro states that he knew an artist at Rome, Possis by name, who executed fruit, grapes, and fish, with such exactness, that it was quite impossible, by looking at them, to distinguish them from the reality. He speaks very highly also of Arcesilaüs, who was on terms of intimacy with Lucius Lucullus, and whose models in plaster used to sell at a higher rate, among artists themselves, than the works of others. He informs us, also, that the Venus Genetrix in the Forum of Cæsar was executed by this modeller, and erected before completion, in the great haste that there was to consecrate it. The same artist had made an agreement with Lucullus to execute a figure of Felicity, at the price of sixty thousand sesterces, the completion of which was prevented by the latter's death; and Octavius, a Roman of equestrian rank, being desirous of a model for a mixing-bowl, Arcesilaüs made him one in plaster, at the price of one talent.

CHAPTER XVIII.

WORKS IN POTTERY.

At Rome, and in our municipal towns, we still see many pediments of temples, wonderful for their workmanship, artistic merit and long duration, more deserving of our respect than gold, and certainly far less baneful. At the present day, even, in the midst of such wealth as we possess, we make our first libation at the sacrifice, not from murrhine vases or vessels of crystal, but from ladles made of earthenware.

Bounteous beyond expression is the earth, if we consider in detail her various gifts. To omit all mention of the cereals, wine, fruits, herbs, shrubs, medicaments, and metals, bounties which she has lavished upon us, and which have already passed under our notice, her productions in the shape of pottery alone would more than suffice, in their variety, to satisfy our domestic wants; there are gutter-tiles of earthenware, vats for receiving wine, pipes for conveying water, conduits for supplying baths, baked tiles for roofs, bricks for foundations, and the productions of the potter's wheel; results, all of them, of an art, which induced King Numa to establish, as a seventh college, or association, that of the makers of earthenware.

Many have chosen to be buried in coffins of earthenware. There was Varro himself, who was interred, in true Pythagorean style, in the midst of leaves of myrtle, olive, and black poplar; indeed, the greater part of mankind make use of earthen vases for this purpose. For the service of the table, the Samian pottery is even yet held in high esteem; and that of Arretium in Italy maintains its high character; while for their cups, and for those only, the manufactories of Surrentum, Asta, Pollentia, Saguntum in Spain, and Pergamus in Asia, are greatly esteemed.

The city of Tralles in Asia, and Mutina in Italy, have their respective manufactures of earthenware, and are rendered famous by their productions from the potter's wheel, now known to all countries, and conveyed by sea and by land to every quarter of the earth. In a temple at Erythræ are still shown two amphoræ, that were consecrated in consequence of the singular thinness of the material: they originated in a contest between a master and his pupil, which of the two could make earthenware of the greatest thinness. The vessels of Cos are the most highly celebrated for their beauty, but those of Adria are considered the most substantial.

Coponius was condemned for bribery, because he presented

a voter with an amphora of wine. To make luxury conduce in some degree to enhance our estimation of earthenware, "tripatinum,"* as we learn from Fenestella, was the name given to the most exquisite course of dishes that was served up at the Roman banquets. It consisted of one dish of murænæ, one of lupi, and a third of a mixture of fish. It is clear that the public manners were then already on the decline; though we still have a right to hold them preferable to those of the philosophers even of Greece, seeing that the representatives of Aristotle, it is said, sold, at the auction of his goods, as many as seventy dishes of earthenware. It has been already stated by us, when on the subject of birds, that a single dish cost the tragic actor, Æsopus, one hundred thousand sesterces; much to the reader's indignation, no doubt; but, by Hercules! Vitellius, when emperor, ordered a dish to be made, which was to cost a million of sesterces, and for the preparation of which a furnace had to be erected out in the fields! luxury having thus arrived at such a pitch of excess as to make earthenware even sell at higher prices than murrhine vessels. Alluding to this circumstance, Mucianus, in his second consulship, when pronouncing one of his perorations, reproached the memory of Vitellius with his dishes as broad as the Pomptine Marsh; not less deserving to be execrated than the poisoned dish of Asprenas, which, according to the accusation brought against him by Cassius Severus, caused the death of one hundred and thirty guests.

What is there that human industry will not devise? Even broken pottery has been utilized; for when beaten to powder, and tempered with lime, it becomes more solid and durable than other substances of a similar nature; forming the cement known as the "Signine" composition, so called from Signia, in Italy, celebrated for its tiles so extensively employed for making the pavements of houses.

* A service of three dishes.

CHAPTER XIX.

SCULPTURE.

THE art of sculpture is of much more ancient origin than those of painting and of statuary in bronze Phidias himself worked in marble, and there is a Venus of his at Rome, a work of extraordinary beauty, in the buildings of Octavia. He was the instructor of Alcamenes, the Athenian, one of the most famous among the sculptors. By this last artist, there are numerous statues in the temples at Athens; as also, without the walls there, the celebrated Venus, known as the Aphrodite in the Gardens, a work to which Phidias himself, it is said, put the finishing hand. Another disciple also of Phidias was Agoracritus of Paros, a great favorite with his master, on account of his extremely youthful age; and for which reason, it is said, Phidias gave his own name to many of that artist's works. The two pupils entering into a contest as to the superior execution of a statue of Venus, Alcamenes was successful; not that his work was superior, but because his fellow-citizens chose to give their suffrages in his favor in preference to a stranger. It was for this reason, it is said, that Agoracritus sold his statue, on the express condition that it should never be taken to Athens, and changed its name to that of Nemesis. It was accordingly erected at Rhamnus, a borough of Attica, and Varro has considered it superior to every other statue.

Among all nations which the fame of the Olympian Jupiter has reached, Phidias is looked upon, beyond all doubt, as the most famous of artists: but to let those who have never even seen his works, know how deservedly he is esteemed, we will take this opportunity of adducing a few slight proofs of the genius which he displayed. In doing this, we shall not appeal to the beauty of his Olympian Jupiter, nor yet to the vast

proportions of his Athenian Minerva, six-and-twenty cubits in height, and composed of ivory and gold ; but to the shield of this last statue we shall draw attention ; upon the convex face of which he has chased a combat of the Amazons, while, upon the concave side of it, he has represented the battle between the Gods and the Giants. Upon the sandals again, we see the wars of the Lapithæ and Centaurs, so careful has he been to fill every smallest portion of his work with some proof or other of his artistic skill. To the story chased upon the pedestal of the statue, the name of the "Birth of Pandora" has been given ; and the figures of gods to be seen upon it are no less than twenty in number. The figure of Victory, in particular, is most admirable, and connoisseurs are greatly struck with the serpent and the sphinx in bronze lying beneath the point of the spear. Let so much be said incidentally in reference to an artist who can never be sufficiently praised ; if only to let it be understood that the richness of his genius was always equal to itself, even in the very smallest details.

When speaking of the statuaries, we have already given the period at which Praxiteles flourished ; an artist, who, in the glory which he acquired by his works in marble, surpassed even himself. There are some works of his in the Ceramicus at Athens ; but, superior to all the statues, not only of Praxiteles, but of any other artist that ever existed, is his Cnidian Venus ; for the inspection of which, many persons before now have purposely undertaken a voyage to Cnidos. The artist made two statues of the goddess, and offered them both for sale : one of them was represented with drapery, and for this reason was preferred by the people of Cos, who had the choice ; the second was offered them at the same price, but, on the grounds of propriety and modesty, they thought fit to choose the other. Upon this, the Cnidians purchased the rejected statue, and immensely superior has it always been

held in general estimation.* At a later period, King Nicomedes wished to purchase this statue of the Cnidians, and made them an offer to pay off the whole of their public debt, which was very large. They preferred, however, to submit to any extremity rather than part with it; and with good reason, for by this statue Praxiteles has perpetuated the glory of Cnidos. The little temple in which it is placed is open on all sides, so that the beauties of the statue admit of being seen from every point of view; an arrangement which was favored by the goddess herself, it is generally believed. Indeed, from whatever point it is viewed, its execution is equally worthy of admiration.

Cephisodotus, the son of Praxiteles, inherited his father's talent. There is, by him, at Pergamus, a splendid Group of Wrestlers, a work that has been highly praised, and in which the fingers have all the appearance of being impressed upon real flesh rather than upon marble.

Scopas rivals these artists in fame: there is by him, a Venus venerated at Samothrace with the most august ceremonies. He was also the sculptor of the Palatine Apollo. But the most highly esteemed of all his works, are those in the Temple erected by Cneius Domitius, in the Flaminian Circus; a figure of Neptune himself, a Thetis and Achilles, Nereids seated upon dolphins, cetaceous fishes, and sea-horses, Tritons, the train of Phorcus, whales, and numerous

* The ancient writers abound in praises of this wonderful statue. Lucian, however, has given the most complete and artistic description of it. It was supposed by the ancients, to represent Venus as standing before Paris, when he awarded to her the prize of beauty; but it has been well remarked, that the drapery in the right hand, and the vase by the side of the figure, indicate that she has either just left or is about to enter the bath. It was ultimately carried to Constantinople, where it perished by fire in the reign of Justinian. It is doubtful whether there are any copies of it in existence. There is, however, a so-called copy in the gardens of the Vatican, and another in the Glyptothek, at Munich. It is supposed that Cleomenes, in making the Venus de Medici, imitated the Cnidian Venus in some degree.

other sea-monsters, all by the same hand ; an admirable piece of workmanship, even if it had taken a whole life to complete it. In addition to the works by him already mentioned, and others of the existence of which we are ignorant, there is still to be seen a colossal Mars of his, seated, in the Temple erected by Brutus Callæcus, also in the Flaminian Circus ; as also, a naked Venus, of anterior date to that by Praxiteles, and a production that would be quite sufficient to establish the renown of any other place.

At Rome, it is true, it is quite lost sight of amid such a vast multitude of similar works of art : and then besides, the inattention to these matters that is induced by such vast numbers of duties and so many items of business, quite precludes the generality of persons from devoting their thoughts to the subject. For, in fact, the admiration that is due to this art, not only demands an abundance of leisure, but requires that profound silence should reign upon the spot. Hence the artist is now forgotten, who executed the statue of Venus that was dedicated by the Emperor Vespasianus in his Temple of Peace, a work well worthy of the high repute of ancient times. With reference, too, to the Dying Children of Niobe, in the Temple of the Sosian Apollo, there is an equal degree of uncertainty, whether it is the work of Scopas or of Praxiteles.

Scopas had for rivals and contemporaries, Bryaxis, Timotheus and Leochares, artists whom we are bound to mention together, from the fact that they worked together at the Mausoleum in Halicarnassus, such being the name of the tomb that was erected by his wife Artemisia in honor of Mausolus, a petty king of Caria, who died in the second year of the hundred and seventh Olympiad. Through the exertions of these artists more particularly, this work came to be reckoned one of the Seven Wonders of the World. The circumference of this building is, in all, four hundred and forty feet, and the breadth from north to south sixty-three, the other two fronts being not so wide in extent. It is twenty-five cubits in

height, and is surrounded with six-and-thirty columns, the outer circumference being known as the "Pteron," or "wing." The east side was sculptured by Scopas, the north by Bryaxis, the south by Timotheus, and the west by Leochares ; but, before their task was completed, Queen Artemisia died. They did not leave their work, however, until it was finished, considering that it was at once a memorial of their own fame and of the sculptor's art : and even to this day, it is undecided which of them has excelled. A fifth artist also took part in the work ; for above the Pteron there is erected a pyramid equal in height to the building below, and formed of four-and-twenty steps, which gradually taper upwards towards the summit ; a platform, crowned with a representation of a four-horse chariot by Pythis. This addition makes the total height of the work one hundred and forty feet.

Beyond these, there are not many sculptors of high repute ; for, in the case of several works of very great excellence, the number of artists that have been engaged upon them has proved a considerable obstacle to the fame of each, no individual being able to engross the whole of the credit, and it being impossible to award it in due proportion to the names of the several artists combined. Such is the case with the Laocoön,* for example, in the palace of the Emperor Titus, a work that may be looked upon as preferable to any other production of the art of painting or of statuary. It is sculptured from a single block, both the main figure as well as the

* This group is generally supposed to have been identical with the Laocoön still to be seen in the Court of the Belvedere, in the Vatican at Rome ; having been found, in 1506, in a vault beneath the spot known as the *Place de Sette Sale*, by Felix de Eredi, who surrendered it, in consideration of a pension, to Pope Julius II. The group, however, is not made of a *single* block, which has caused some to doubt its identity : but it is not improbable, that when originally made, its joints were not perceptible to a common observer. The spot, too, where it was found was actually part of the palace of Titus. It is most probable that the artists had the beautiful episode of Laocoön in view, as penned by Virgil, *Æn.* B. II.

children, and the serpents with their marvellous folds. This group was made in concert by three most eminent artists, Agesander, Polydorus, and Athenodorus, natives of Rhodes.

CHAPTER XX.

OBELISKS.

THEBAIC stone, which is sprinkled all over with spots like gold, is found in Africa, adjacent to Egypt; being peculiarly adapted, from its natural properties, for the manufacture of hones. In the neighborhood of Syene, too, in Thebais, there is a stone found that is now known as syenite, but was formerly called red-spotted granite.

Monarchs have entered into a sort of rivalry with one another in forming elongated blocks of this stone, known as obelisks,* and consecrated to the divinity of the Sun. The blocks had this form given to them in resemblance to the rays of that luminary, which are so called † in the Egyptian language.

Mesphres, who reigned in the City of the Sun, Heliopolis, was the first who erected one of these obelisks, being warned to do so in a dream: and there is an inscription upon the obelisk to this effect.

At a later period other kings had these obelisks hewn. Sesosthes erected four of them in the above-named city, forty-eight cubits in height. Rhamsesis, too, who was reigning at the time of the capture of Troy, erected one, a hundred and forty cubits high. Having quitted the spot where the

* So called from *ὄβελισκός*, a "small spit," in consequence of their tapering form.

† Meaning, probably, that in the Egyptian language, the same word is used as signifying a "spit" and a "ray" of light; for it is generally agreed that the word "obeliscus" is of Greek origin.

palace of Apis stood, this monarch erected another obelisk, one hundred and twenty cubits in height, but of prodigious thickness, the sides being no less than eleven cubits in breadth. It is said that one hundred and twenty thousand men were employed upon this work;* and that the king, when it was on the point of being elevated, being apprehensive that the machinery employed might not prove strong enough for the weight, with the view of increasing the peril that might be entailed by due want of precaution on the part of the workmen, had his own son fastened to the summit; in order that the safety of the prince might at the same time ensure the safety of the mass of stone. It was in his admiration of this work, that, when King Cambyses took the city by storm, and the conflagration had already reached the very foot of the obelisk, he ordered the fire to be extinguished; for he entertained a respect for this stupendous erection which he had not entertained for the city itself.

Ptolemæus Philadelphus erected at Alexandria an obelisk eighty cubits high, which had been prepared by order of King Necthebis: it was without any inscription, and cost far more trouble in its carriage and elevation, than had been originally expended in quarrying it. Some writers inform us that it was conveyed on a raft, under the inspection of the architect Satyrus. For this purpose, a canal was dug from the river Nile to the spot where the obelisk lay; and two broad vessels, laden with blocks of similar stone a foot square, the cargo of each amounting to double the size, and consequently double the weight, of the obelisk, were brought beneath it; the extremities of the obelisk remaining supported by the opposite sides of the canal. The blocks of stone were then removed, and the vessels being thus gradually lightened,

* This, Hardouin says, was the same obelisk that was afterwards erected by Constantine, son of Constantine the Great, in the Circus Maximus at Rome; whence it was removed by Pope Sextus V., in the year 1588, to the Basilica of the Lateran.

received their burden. It was erected upon a basis of six square blocks, quarried from the same mountain, and the artist was rewarded with the sum of fifty talents. This obelisk was placed by the king above-mentioned in the Arsinoœum,* in testimony of his affection for his wife and sister Arsinoë. At a later period, as it was found to be an inconvenience to the docks, Maximus, then præfect of Egypt, had it transferred to the Forum there, after removing the summit for the purpose of substituting a gilded point, an intention which was ultimately abandoned.

There are two other obelisks, which were in Cæsar's Temple at Alexandria, near the harbor, forty-two cubits in height, and originally hewn by order of King Mesphres. But the most difficult enterprise of all was the carriage of these obelisks by sea to Rome, in vessels which excited the greatest admiration. Indeed, the late Emperor Augustus consecrated the one which brought over the first obelisk, as a lasting memorial of this marvellous undertaking, in the docks at Puteoli; but it was destroyed by fire. The one in which, by order of the Emperor Caius, the other obelisk had been transported to Rome, after having been preserved for some years and looked upon as the most wonderful construction ever beheld upon the seas, was brought to Ostia, by order of the late Emperor Claudius; and towers of Puteolan earth being first erected upon it, it was sunk for the construction of the harbor which he was making there. And then, besides, there was the necessity of constructing other vessels to carry these obelisks up the Tiber; by which it became practically ascertained, that the depth of water in that river is not less than that of the river Nile.

* Evidently a stupendous monument, or rather aggregate of buildings, erected by Ptolemy II., Philadelphus, in memory of his wife and sister, Arsinoë.

CONCLUSION.

ITALY.

HAVING now treated of all the works of Nature, let me end with a word about our native land. Throughout the whole earth, wherever the vault of heaven extends, there is no country so beautiful, or which, for the productions of Nature, merits so high a rank as Italy, that ruler and second parent of the world; recommended as she is by her men, her women, her generals, her soldiers, her slaves, her superiority in the arts, and the illustrious examples of genius which she has produced. Her situation, too, is equally in her favor; the salubrity and mildness of her climate; the easy access which she offers to all nations; her coasts indented with so many harbors; the propitious breezes that ever prevail on her shores; advantages, all of them, due to her situation, lying as she does, midway between the East and the West. Add to this, the abundant supply of her waters, the salubrity of her groves, the repeated intersections of her mountain ranges, the comparative innocuousness of her wild animals, the fertility of her soil, and the singular richness of her pastures. In short, whatever there is that can minister comfort to the life of man is nowhere else to be found in greater perfection. The cereals, wine, oil, wool, flax, tissues, and oxen—the finest are here. No horses are preferred to those of Italy for the course; while in mines of gold, silver, copper, and iron, Italy is held inferior to no country whatsoever. Ever teeming with these treasures, she lavishes upon us all her bounties of land and sea.

HAIL to thee, Nature, thou parent of all things! and do thou deign to show thy favor unto me, who, alone of all the citizens of Rome, have, in thy every department, thus made known thy praise.

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