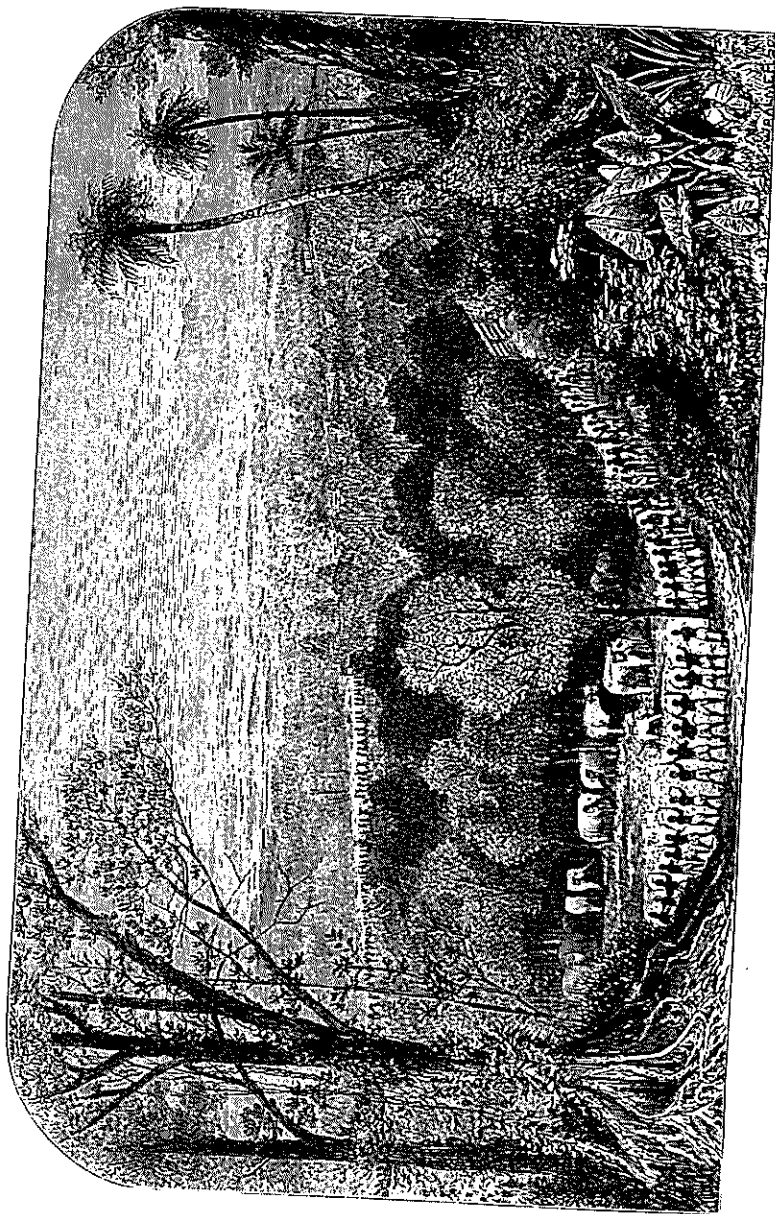


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EXCERPTS

OF THE

## NATURAL HISTORY OF CEYLON

WITH

NARRATIVES AND ANECDOTES

Illustrative of the Habits and Instincts of the

MAMMALIA, BIRDS, REPTILES, FISHES, INSECTS, &c.

INCLUDING A MONOGRAPH OF

### THE ELEPHANT

AND A DESCRIPTION OF THE MODES OF CAPTURING AND TRAINING IT

WITH ENGRAVINGS FROM ORIGINAL DRAWINGS

BY

SIR J. EMERSON TENNENT, K.C.S. LL.D. &c.

Author of

"Ceylon, an Account of the Island, Physical, Historical, and Topographical" &c. &c.

LONDON

LONGMAN, GREEN, LONGMAN, AND ROBERTS

1861

## INTRODUCTION.

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A CONSIDERABLE portion of the contents of the present volume formed the zoological section of a much more comprehensive work recently published, on the history and present condition of Ceylon.<sup>1</sup> But its inclusion there was a matter of difficulty; for to have altogether omitted the chapters on Natural History would have impaired the completeness of the plan on which I had attempted to describe the island; whilst to insert them as they here appear, without curtailment, would have encroached unduly on the space required for other essential topics. In this dilemma, I was obliged to adopt the alternative of so condensing the matter as to bring the whole within the prescribed proportions.

But this operation necessarily diminished the general interest of the subjects treated, as well by the omission of incidents which would otherwise have been retained, as by the exclusion of anecdotes calculated to illustrate the habits and instincts of the animals described.

<sup>1</sup> *Ceylon: An Account of the Island, Physical, Historical, and Topographical; with Notices of its Natural History, Antiquities, and Productions.* By Sir JAMES EMERSON TENNENT, K.C.S., LL.D., &c. Illustrated by Maps, Plans, and Drawings. 2 vols. 8vo. Longman and Co., 1859.

A suggestion to re-publish these sections in an independent form has afforded an opportunity for repairing some of these defects by revising the entire, restoring omitted passages, and introducing fresh materials collected in Ceylon; the additional matter occupying a very large portion of the present volume.

I have been enabled, at the same time, to avail myself of the corrections and communications of scientific friends; and thus to compensate, in some degree for what is still incomplete, by increased accuracy in minute particulars.

In the Introduction to the First Edition of the original work I alluded, in the following terms, to that portion of it which is now reproduced in an extended form:—

“Regarding the *fauna* of Ceylon, little has been published in any collective form, with the exception of a volume by Dr. KELAART entitled *Prodromus Faunae Zeilanicae*; several valuable papers by Mr. EDGAR L. LAYARD in the *Annals and Magazine of Natural History* for 1852 and 1853; and some very imperfect lists appended to PRIDHAM'S compiled account of the island.<sup>1</sup> KNOX, in the charming narrative of his captivity, published in the reign of Charles II., has devoted a chapter to the animals of Ceylon, and Dr. DAVY has described some of the reptiles: but with these exceptions the subject is almost untouched in works relating to the colony. Yet a more than ordinary interest attaches to

<sup>1</sup> *An Historical, Political, and its Dependancies*, by C. PRIDHAM, *Statistical Account of Ceylon and Esq.* 2 vols. 8vo. London, 1849.

the inquiry, since Ceylon, instead of presenting, as is generally assumed, an identity between its *fauna* and that of Southern India, exhibits a remarkable diversity, taken in connection with the limited area over which the animals included in it are distributed. The island, in fact, may be regarded as the centre of a geographical circle, possessing within itself forms, whose allied species radiate far into the temperate regions of the north, as well as into Africa, Australia, and the isles of the Eastern Archipelago.

“In the chapters that I have devoted to its elucidation, I have endeavoured to interest others in the subject, by describing my own observations and impressions, with fidelity, and with as much accuracy as may be expected from a person possessing, as I do, no greater knowledge of zoology and the other physical sciences than is ordinarily possessed by any educated gentleman. It was my good fortune, however, in my journeys to have the companionship of friends familiar with many branches of natural science: the late Dr. GARDNER, Mr. EDGAR L. LAYARD, an accomplished zoologist, Dr. TEMPLETON, and others; and I was thus enabled to collect on the spot many interesting facts relative to the structure and habits of the numerous tribes. These, chastened by the corrections of my fellow-travellers, and established by the examination of collections made in the colony, and by subsequent comparison with specimens contained in museums at home, I have ventured to submit as faithful outlines of the *fauna* of Ceylon.

“The sections descriptive of the several classes are accompanied by lists, prepared with the assistance of scientific friends, showing the extent to which each particular branch had been investigated by naturalists, up to the period of my departure from Ceylon at the close of 1849. These, besides their inherent interest, will, I trust, stimulate others to engage in the same pursuit, by exhibiting chasms, which it remains for future industry and research to fill up;—and the study of the zoology of Ceylon may thus serve as a preparative for that of Continental India, embracing, as the former does, much that is common to both, as well as possessing a *fauna* peculiar to the island, that in itself will amply repay more extended scrutiny.

“From these lists have been excluded all species regarding the authenticity of which reasonable doubts could be entertained<sup>1</sup>, and of some of them, a very few have been printed in *italics*, in order to denote the desirability of more minute comparison with well-determined specimens in the great national depositories before finally incorporating them with the Singhalese catalogues.

“In the labour of collecting and verifying the facts embodied in these sections, I cannot too warmly express my thanks for the aid I have received from gentlemen interested in similar studies in Ceylon: from

<sup>1</sup> An exception occurs in the list of shells, prepared by Mr. SYLVANUS HANLEY, in which some whose localities are doubtful have been admitted for reasons adduced. (See p. 387.)

Dr. KELAART<sup>1</sup> and Mr. EDGAR L. LAYARD, as well as from officers of the Ceylon Civil Service; the Hon. GERALD C. TALBOT, Mr. C. R. BULLER, Mr. MERCER, Mr. MORRIS, Mr. WHITING, Major SKINNER, and Mr. MITFORD.

“Before venturing to commit these chapters of my work to the press, I have had the advantage of having portions of them read by Professor HUXLEY, Mr. MOORE, of the East India House Museum; Mr. R. PATTERSON, F.R.S., author of the *Introduction to Zoology*; and by Mr. ADAM WHITE, of the British Museum; to each of whom I am exceedingly indebted for the care they have bestowed. In an especial degree I have to acknowledge the kindness of Dr. J. E. GRAY, F.R.S., for valuable additions and corrections in the list of the Ceylon Reptilia; and to Professor FARADAY for some notes on the nature and qualities of the “Serpent Stone,”<sup>2</sup> submitted to him.

“The extent to which my observations on *the Elephant* have been carried, requires some explanation. The existing notices of this noble creature are chiefly devoted to its habits and capabilities *in captivity*; and very few works, with which I am acquainted, contain illustrations of its instincts and functions when wild in its native woods. Opportunities for observing the latter, and for collecting facts in connection with them, are abundant in Ceylon; and from the moment of my

<sup>1</sup> It is with deep regret that I have to record the death of this accomplished gentleman, which occurred in 1860. <sup>2</sup> See p. 312.

arrival, I profited by every occasion afforded to me for observing the elephant in a state of nature, and obtaining from hunters and natives correct information as to its œconomy and disposition. Anecdotes in connection with this subject, I received from some of the most experienced residents in the island; amongst others, from Major SKINNER, Captain PHILLIP PAYNE GALLWEY, Mr. FAIRHOLME, Mr. CRIPPS, and Mr. MORRIS. Nor can I omit to express my acknowledgments to Professor OWEN, of the British Museum, to whom this portion of my manuscript was submitted previous to its committal to the press."

To the foregoing observations I have little to add beyond my acknowledgment to Dr. ALBERT GÜNTHER, of the British Museum, for the communication of important facts in illustration of the ichthyology of Ceylon, as well as of the reptiles of the island.

Mr. BLYTH, of the Calcutta Museum, has carefully revised the Catalogue of Birds, and supplied me with much useful information in regard to their geographical distribution. To his experienced scrutiny is due the perfected state in which the list is now presented. It will be seen, however, from the italicised names still retained, that inquiry is far from being exhausted.

Mr. THWAITES, the able Director of the Royal Botanic Gardens at Peradenia, near Kandy, has forwarded to me many valuable observations, not only in connection with the botany, but the zoology of the mountain region. The latter I have here embodied in their appropriate

places, and those relating to plants and vegetation will appear in a future edition of my large work.

To M. NIETNER, of Colombo, I am likewise indebted for many particulars regarding Singhalese Entomology, a department to which his attention has been given, with equal earnestness and success.

Through the Hon. RICHARD MORGAN, acting Senior Puisne Judge of the Supreme Court at Colombo, I have received from his Interpreter, M. D. DE SILVA GOONERATNE MODLIAR, a Singhalese gentleman of learning and observation, many important notes, of which I have largely availed myself, in relation to the wild animals, and the folk-lore and superstitions of the natives in connection with them.

Of the latter I have inserted numerous examples; in the conviction that, notwithstanding their obvious errors in many instances, these popular legends and traditions occasionally embody traces of actual observation, and may contain hints and materials deserving of minuter inquiry.

I wish distinctly to disclaim offering the present volume as a compendium of the Natural History of Ceylon. I present it merely as a "mémoire pour servir," materials to assist some future inquirer in the formation of a more detailed and systematic account of the *fauna* of the island. My design has been to point out to others the extreme richness and variety of the field, the facility of exploring it, and the charms and attractions of the undertaking. I am eager to show

how much remains to do by exhibiting the little that has as yet been done.

The departments of *Mammalia* and *Birds* are the only two which can be said to have as yet undergone tolerably close investigation; although even in these it is probable that large additions still remain to be made to the ascertained species. But, independently of forms and specific characteristics, the more interesting inquiry into habits and instincts is still open for observation and remark; and for the investigation of these no country can possibly afford more inviting opportunities than Ceylon.

Concerning the *Reptilia* a considerable amount of information has been amassed. The Batrachians and smaller Lizards have, I apprehend, been imperfectly investigated; but the Tortoises are well known, and the Serpents, from the fearful interest attaching to the race, and stimulating their destruction, have been so vigilantly pursued, that there is reason to believe that few, if any, varieties exist which have not been carefully examined. In a very large collection, made by Mr. CHARLES REGINALD BULLER during many years' residence in Kandy, and recently submitted by him to Dr. Günther, only one single specimen proved to be new or previously unknown to belong to the island.

Of the *Ichthyology* of Ceylon I am obliged to speak in very different terms; for although the materials are abundant almost to profusion, little has yet been done to bring them under thoroughly scientific scrutiny. In the following pages I have alluded to the

large collection of examples of Fishes sent home by officers of the Medical Staff, and which still remain unopened, in the Fort Pitt Museum at Chatham; but I am not without hope that these may shortly undergo comparison with the drawings which exist of each, and that this branch of the island *fauna* may at last attract the attention to which its richness so eminently entitles it.

In the department of Entomology much has already been achieved; but an extended area still invites future explorers; and one which the Notes of Mr. Walker prefixed to the List of Insects in this volume, show to be of extraordinary interest, from the unexpected convergence in Ceylon of characteristics heretofore supposed to have been kept distinct by the broad lines of geographical distribution.

Relative to the inferior classes of *Invertebrata* very little has as yet been ascertained. The Mollusca, especially the lacustrine and fluviatile, have been most imperfectly investigated; and of the land-shells, a large proportion have yet to be submitted to scientific examination.

The same may be said of the *Arachnida* and *Crustacea*. The jungle is frequented by spiders, *phalangia*<sup>1</sup>, and acarids, of which nothing is known with certainty; and the sea-shore and sands have been equally overlooked, so far as concerns the infinite variety of lobsters, crayfish, crabs, and all their minor congeners. The

<sup>1</sup> Commonly called "harvest-men."

*polypi, echini, asterias*, and other *radiata* of the coast, as well as the *acalephæ* of the deeper waters, have shared the same neglect; and literally nothing has been done to collect and classify the infusoriæ and minuter zoophytes, the labours of Dr. Kelaart amongst the Diatomaceæ being the solitary exception.

Nothing is so likely to act as a stimulant to future research as an accurate conception of what has already been achieved. With equal terseness and truth Dr. Johnson has observed that the traveller who would bring back knowledge from any country must carry knowledge with him at setting out; and I am not without hope that the demonstration I now venture to offer, of the little that has already been done for zoology in Ceylon, may serve to inspire others with a desire to resume and complete the inquiry.

J. EMERSON TENNENT.

London: November 1st, 1861.

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residence, a hook having been laid the night before, baited with the entrails of a goat; and made fast, in the native fashion, by a bunch of fine cords, which the creature cannot gnaw asunder as it would a solid rope, since they sink into the spaces between its teeth. The one taken was small, being only about ten or eleven feet in length, whereas they are frequently killed from fifteen to nineteen feet long. As long as it was in the water, it made strong resistance to being hauled on shore, carrying the canoe out into the deep channel, and occasionally raising its head above the surface, and clashing its jaws together menacingly. This action has a horrid sound, as the crocodile has no fleshy lips, and it brings its teeth and the bones of the mouth together with a loud crash, like the clank of two pieces of hard wood. After playing it a little, the boatmen drew it to land, and when once fairly on the shore all courage and energy seemed utterly to desert it. It tried once or twice to regain the water, but at last lay motionless and perfectly helpless on the sand. It was no easy matter to kill it; a rifle ball sent diagonally through its breast had little or no effect, and even when the shot had been repeated more than once, it was as full of life as ever.<sup>1</sup> It

<sup>1</sup> A remarkable instance of the vitality of the common crocodile, *C. biporcatus*, was related to me by a gentleman at Galle: he had caught on a baited hook an unusually large one, which his coolies disembowelled, the aperture in the stomach being left expanded by a stick placed across it. On returning in the afternoon with a view to secure the head, they found that the creature had crawled for some distance, and made its escape into the water.

"A curious incident occurred some years ago on the Magurn-

ganga, a stream which flows through the Paslum Corle, to join the Bentolle river. A man was fishing seated on the branch of a tree that overhung the water; and to shelter himself from the drizzling rain, he covered his head and shoulders with a bag folded into a shape common with the natives. While in this attitude, a leopard sprung upon him from the jungle, but, missing its aim, seized the bag and not the man, and fell with it into the river. Here a crocodile, which had been eyeing the angler in despair, seized the leopard as it

feigned death and lay motionless, with its eye sclosed; but, on being pricked with a spear, it suddenly regained all its activity. It was at last finished by a harpoon, and then opened. Its maw contained several small tortoises, and a quantity of broken bricks and gravel, taken medicinally, to promote digestion.

During our journeys we had numerous opportunities of observing the habits of these hideous creatures, and I am far from considering them so formidable as they are usually supposed to be. They are evidently not wantonly destructive; they act only under the influence of hunger, and even then their motions on land are awkward and ungainly, their action timid, and their whole demeanour devoid of the sagacity and courage which characterise other animals of prey.

**TESTUDINATA. Tortoise.**—Land tortoises are numerous, but present no remarkable features beyond the beautiful marking of the starred variety<sup>1</sup>, which is common in the north-western province around Putlam and Chilaw, and is distinguished by the bright yellow rays which diversify the deep black of its dorsal shield. From one of these which was kept in my garden I took a number of flat ticks (*Ixodes*), which adhere to its fleshy neck in such a position as to baffle any attempt of the animal itself to remove them; but as they are exposed to constant danger of being crushed against the plastron during the protrusion and retraction of the head, each is covered with a horny case almost as resistant as the carapace of the tortoise itself. Such an adaptation of structure is scarcely less striking than that of the

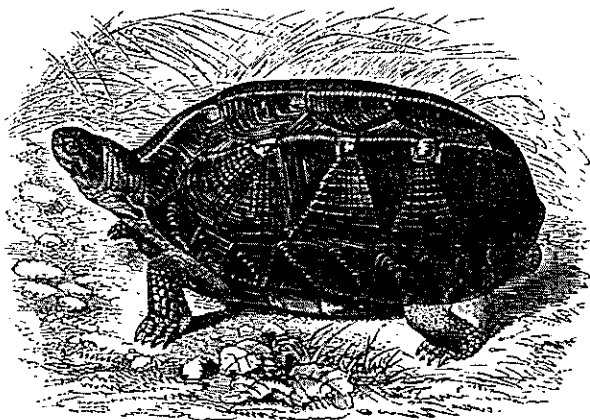
fell, and sunk with it to the bottom."—*Letter* from GOONERATNE Modliar, interpreter of the Supreme Court, 10th Jany., 1861.

<sup>1</sup> *Testudo stellata*.



parasites found on the spotted lizard of Berar by Dr. Hooker, each of which presents the distinct colour of the scale to which it adheres.<sup>1</sup>

The marshes and pools of the interior are frequented by *terrapins*<sup>2</sup>, which the natives are in the habit of keeping alive in wells under the conviction that they clear them of impurities. These fresh-water tortoises, the greater number of which are included in the genus *Emys* of naturalists, are distinguished by having their toes webbed. Their shell is less convex than that of their congeners on land (but more elevated than that of the sea-turtle); and it has been observed that the more rounded the shell, the nearer does the terrapin approach to the land-tortoise both in its habits and in



THE THREE-RIDGED TORTOISE (*EMYS TRIJUGA*)

<sup>1</sup> HOOKER'S *Himalayan Journals*, vol. i. p. 37.

<sup>2</sup> *Cryptopus granum*, SCHÖFF. DR. KELAART, in his *Prodromus* (p. 179), refers this to the common Indian species, *C. punctata*; but it

is distinct. It is generally distributed in the lower parts of Ceylon, in lakes and tanks. It is the one usually put into wells to act the part of a scavenger. By the Singhalese it is named *Kiri-ibba*.

the choice of its food. Some of them live upon animal as well as vegetable food, and those which subsist exclusively on the former, are noted as having the flattest shells.

The terrapins lay about thirty eggs in the course of several weeks, and these are round, with a calcareous shell. They thrive in captivity, provided that they have a regular supply of water and of meat, cut into small pieces and thrown to them. The tropical species, if transferred to a colder climate, should have arrangements made for enabling them to hibernate during the winter: they will die in a very short time if exposed to a temperature below the freezing point.<sup>1</sup>

The edible turtle<sup>2</sup> is found on all the coasts of the island, and sells for a few shillings or a few pence, according to its size and abundance at the moment. A very repulsive spectacle is exhibited in the markets of Jaffna by the mode in which the flesh of the turtle is sold piece-meal, whilst the animal is still alive, by the families of the Tamil fishermen. The creatures are to be seen in the market-place undergoing this frightful mutilation; the plastron and its integuments having been previously removed, and the animal thrown on its back, so as to display all the motions of the heart, viscera, and lungs. A broad knife, from twelve to eighteen inches in length, is first inserted at the left side, and the women, who are generally the operators, introduce

<sup>1</sup> Of the *Emys trijuga*, the fresh water tortoise figured on preceding page, the technical characteristics are,—vertical plates lozenge-shaped; shell convex and oval; with three more or less distinct longitudinal keels; shields corrugated; with

areola situated in the upper posterior corner. Shell brown, with the areolæ and the keels yellowish; head brown, with a yellow streak over each eye.

<sup>2</sup> *Chelonia virgata*, *Schweig.*

one hand to scoop out the blood, which oozes slowly. The blade is next passed round, till the lower shell is detached and placed on one side, and the internal organs exposed in full action. A customer, as he applies, is served with any part selected, which is cut off as ordered, and sold by weight. Each of the fins is thus successively removed, with portions of the fat and flesh, the turtle showing, by its contortions, that each act of severance is productive of agony. In this state it lies for hours, writhing in the sun, the heart<sup>1</sup> and head being usually the last pieces selected, and till the latter is cut off the snapping of the mouth, and the opening and closing of the eyes, show that life is still inherent, even when the shell has been nearly divested of its contents.

At certain seasons the flesh of turtle on the southwestern coast of Ceylon is avoided as poisonous, and some lamentable instances are recorded of deaths ascribed to its use. At Pantura, to the south of Colombo, twenty-eight persons who had partaken of turtle in October, 1840, were immediately seized with sickness, after which coma supervened, and eighteen died during the night. Those who survived said there was nothing unusual in the appearance of the flesh except that it was fatter than ordinary. Other similarly fatal occurrences have been attributed to turtle curry; but as they have never been proved to proceed exclusively from that source, there is room for believing that the poison may have been contained in some other ingredient.

In the Gulf of Manaar turtle is frequently found

<sup>1</sup> ARISTOTLE was aware of the fact that the turtle will live after the removal of the heart.—*De Vita et Morte*, ch. ii.

of such a size as to measure between four and five feet in length; and on one occasion, in riding along the sea-shore north of Putlam, I saw a man in charge of some sheep, resting under the shade of a turtle shell, which he had erected on sticks to protect him from the sun — almost verifying the statement of Ælian, that in the seas off Ceylon there are tortoises so large that several persons may find ample shelter beneath a single shell.<sup>1</sup>

The hawksbill-turtle<sup>2</sup>, which supplies the tortoise-shell of commerce, was at former times taken in great numbers in the vicinity of Hambangtotte during the season when they came to deposit their eggs. This gave rise to the trade in tortoise-shell at Point de Galle, where it is still manufactured into articles of ornament by the Moors; but the shell they employ is almost entirely imported from the Maldives.

If taken from the animal after death and decomposition, the colour of the shell becomes clouded and milky, and hence the cruel expedient is resorted to of seizing the turtles as they repair to the shore to deposit their eggs, and suspending them over fires till heat makes the plates on the dorsal shields start from the bone of the carapace, after which the creature is permitted to escape to the water.<sup>3</sup> In illustration of the resistless influence

<sup>1</sup> "Τίκτονται δὲ ἕρα ἐν ταύτῃ τῇ θαλάττῃ, καὶ χελῶναι μέγιστα, ὅνπερ οὖν τὰ ἔλντρα ὄροφοι γίνονται· καὶ γὰρ ἔστι καὶ πεντεκαίδεκα πηχῶν ἐν χελῳναίῳ, ὡς ὑποικεῖν οὐκ ὀλίγους, καὶ τοὺς ἡλίους πυρωθεῖν στάτους ἀποστρέγει, καὶ σκιάν ἀσμένους παρέχει."—Lib. xvi. c. 17. Ælian copied this statement literatim from MEGASTHENES, *Indica Frag.* lix. 31. May not Megasthenes have

referred to some tradition connected with the gigantic fossilised species discovered on the Sewalik Hills, the remains of which are now in the Museum at the East India House?

<sup>2</sup> *Caretta imbricata*, Linn.

<sup>3</sup> At Celebes, whence the finest tortoise-shell is exported to China, the natives kill the turtle by blows on the head, and immerse the shell

of instinct at the period of breeding, it may be mentioned that the identical tortoise is believed to return again and again to the same spot, notwithstanding that at each visit she may have to undergo a repetition of this torture. In the year 1826, a hawksbill turtle was taken near Hambangtotte, which bore a ring attached to one of its fins that had been placed there by a Dutch officer thirty years before, with a view to establish the fact of these recurring visits to the same beach.<sup>1</sup>

An opportunity is afforded on the sea-shore of Ceylon for observing a remarkable illustration of instinct in the turtle, when about to deposit its eggs. As if conscious that if she went and returned by one and the same line across the sandy beach, her hiding place would be discovered at its farthest extremity, she resorts to the expedient of curving her course, so as to regain the sea by a different track; and after depositing the eggs, burying them about eighteen inches deep, she carefully smoothes over the surface to render the precise spot indiscernible. The Singhalese, aware of this device, sound her line of march with a rod till they come upon the concealed nest.

*Snakes.*—It is perhaps owing to the aversion excited by the ferocious expression and unusual action of serpents, combined with an instinctive dread of attack<sup>2</sup>, that exaggerated ideas prevail both as to their numbers in Ceylon, and the danger to be apprehended from encountering them. The Singhalese profess to distinguish a great many kinds, of which they say not more than

in boiling water to detach the plates. Dry heat is only resorted to by the unskilful, who frequently destroy the tortoise-shell in the op-

ration.—*Journal Indian Archipel.*  
vol. iii. p. 227. 1849.

<sup>1</sup> BENNETT'S *Ceylon*, &c., c. xxxiv.  
<sup>2</sup> Genesis iii. 15.

one half have as yet been scientifically identified<sup>1</sup>; but so cautiously do serpents make their appearance, that the surprise of persons long resident is invariably expressed at the rarity with which they are to be seen; and from my own journeys through the jungle, often of from two to five hundred miles, I have frequently returned without observing a single snake. Mr. Bennett, who resided much in the south-east of the island, ascribes the rarity of serpents in the jungle to the abundance of the wild peafowl, whose partiality to young snakes renders them the chief destroyers of these reptiles. It is likely, too, that they are killed by the jungle-cocks; for they are frequently eaten by the common barn-door fowl in Ceylon. This is rendered the more probable by the fact, that in those districts where the extension of cultivation, and the visits of sportsmen, have reduced the numbers of the jungle-cocks and pea-fowl, snakes have perceptibly increased. The deer also are enemies of the snakes, and the natives who have had opportunities of watching their encounters assert that they have seen deer rush upon a serpent and crush it by leaping on it with all its four feet.

As to the venomous powers of snakes, DR. DAVY, whose

<sup>1</sup> This is not likely to be true: in a very large collection of snakes made in Ceylon by Mr. C. R. Butler, and recently examined by Dr. Günther, of the British Museum, only a single specimen proved to be new.

There is, however, one venomous snake, of the existence of which I am assured by a native correspondent in Ceylon, no mention has yet been made by European naturalists. It is called *Māpīlā* by the Singhalese; it is described to me

as being about four feet in length, of the diameter of the little finger, and of a uniform dark brown colour. It is said to be often seen in company with another snake called in Singhalese *Lay Medilla*, a name which implies its deep red hue. The latter is believed to be venomous. It would be well if some collector in Ceylon would send home for examination the species which respectively bear these names.

|                                     |                                    |                                |
|-------------------------------------|------------------------------------|--------------------------------|
| subgriseus, <i>Dum. &amp; Bib.</i>  | Bungarus                           | Bufo                           |
| sublineatus, <i>Dum. &amp; Bib.</i> | fasciatus, <i>Schneid.</i>         | melanostictus, <i>Schneid.</i> |
| Simotes                             | var. Ceylonensis, <i>Gthr.</i>     | Kelaartii, <i>Günth.</i>       |
| Russellii, <i>Daud.</i>             | Naja                               | Ixalus                         |
| purpurascens, <i>Schleg.</i>        | tripudians, <i>Merr.</i>           | variabilis, <i>Günth.</i>      |
| Ablabes                             | CHELONIA.                          | leucorhinus, <i>Martens.</i>   |
| collaris, <i>Gray.</i>              | Testudo                            | poecilopleurus, <i>Mart.</i>   |
| Tropidonotus                        | stellata, <i>Schweig.</i>          | aurifasciatus, <i>Schleg.</i>  |
| quincunclatus, <i>Schleg.</i>       | Emys                               | schmardanus, <i>Kelaart.</i>   |
| var. funebris.                      | Sebae, <i>Gray.</i>                | Polypedates                    |
| var. carinatus.                     | trijuga, <i>Schweigg.</i>          | maculatus, <i>Gray.</i>        |
| stolatus, <i>Linn.</i>              | Caretta                            | microtympaum, <i>Gth.</i>      |
| chrysargus, <i>Boie.</i>            | imbricata, <i>Linn.</i>            | eques, <i>Günth.</i>           |
| Cynophis                            | Chelonia                           | Limnodytes                     |
| Helena, <i>Daud.</i>                | virgata, <i>Schweigg.</i>          | lividus, <i>Blyth.</i>         |
| Coryphodon                          | EMYDOSAURI.                        | macularis, <i>Blyth.</i>       |
| Blumenbachii, <i>Merr.</i>          | Crocodylus                         | mutabilis, <i>Kelaart.</i>     |
| Cyclophis                           | biporcatus, <i>Cuv.</i>            | maculatus, <i>Kelaart.</i>     |
| calamaria, <i>Günth.</i>            | palustris, <i>Less.</i>            | Kaloula                        |
| Chrysopetea                         | BATRACHIA.                         | pulchra, <i>Gray.</i>          |
| ornata, <i>Shaw.</i>                | Rana                               | balteata, var. <i>Günth.</i>   |
| Dendrophis                          | hexadactyla, <i>Less.</i>          | stellata, <i>Kelaart.</i>      |
| picta, <i>Gm.</i>                   | Kuhlii, <i>Schleg.</i>             | Adenomus                       |
| Passerita                           | cutipora, <i>Dum. &amp; Bib.</i>   | badiolavus, <i>Cope.</i>       |
| mycterizans, <i>Linn.</i>           | tigrina, <i>Daud.</i>              | Psycophalus                    |
| fusca.                              | vittigera, <i>Wigm.</i>            | foedens, <i>Jerd.</i>          |
| Dipsadomorphus                      | Malabarica, <i>Dum. &amp; Bib.</i> | Engystoma                      |
| Ceylonensis, <i>Günth.</i>          | Kandiana, <i>Kelaart.</i>          | rubrum, <i>Jerd.</i>           |
| Lycodon                             | Neuera-elliana, <i>Kel.</i>        | PSEUDOPHIDIA.                  |
| aulecus, <i>Linn.</i>               |                                    | Cæcilla                        |
| Cercaspis                           |                                    | glutinosa, <i>Linn.</i>        |
| carinata, <i>Kuhl.</i>              |                                    |                                |

NOTE.—The following species are peculiar to Ceylon (and the genera *Ceratophora*, *Otocryptis*, *Uropeltis*, *Aspidura*, *Cercaspis*, and *Haplocercus* would appear to be similarly restricted); — *Lygosoma fallax*; *Trimesurus Ceylonensis*, *T. nigromarginatus*; *Megara Trigonoccephala*; *Trigonoccephalus hypnalis*; *Daboia elegans*; *Rhinophis punctatus*, *Rh. homolepis*, *Rh. planiceps*, *Rh. Blythii*, *Rh. melanogaster*; *Uropeltis grandis*; *Silybura Ceylonica*; *Cylindrophis maculata*; *Aspidura brachyorrhos*; *Haplocercus Ceylonensis*; *Oligodon sublineatus*; *Cynophis Helena*; *Cyclophis calamaria*; *Dipsadomorphus Ceylonensis*; *Cercaspis carinata*; *Ixalus variabilis*, *I. leucorhinus*, *I. poecilopleurus*; *Polypedates microtympaum*, *P. eques*.

## CHAP. X.

## FISHES.

HITHERTO no branch of the zoology of Ceylon has been so imperfectly investigated as its Ichthyology. Little has been done in the examination and description of its fishes, especially those which frequent the rivers and inland waters. Mr. BENNETT, who was for some years employed in the Civil Service, directed his attention to the subject, and published in 1830 some portions of a projected work on the marine fishes of the island<sup>1</sup>, but it never proceeded beyond the description of thirty individuals. The great work of Cuvier and Valenciennes<sup>2</sup> particularises about one hundred species, specimens of which were procured from Ceylon by Reynard, Leschenault and other correspondents; but of these not more than half a dozen belong to fresh water.

The fishes of the coast, so far as they have been examined, present few that are not in all probability common to the seas of Ceylon and India. A series of drawings, including upwards of six hundred species and varieties of Ceylon fish, all made from recently-captured specimens, has been submitted to Professor Huxley, and

<sup>1</sup> A Selection of the most Remarkable and Interesting Fishes found on the Coast of Ceylon. By J. W. BENNETT, Esq. London, 1830.

<sup>2</sup> Histoire Naturelle des Poissons.