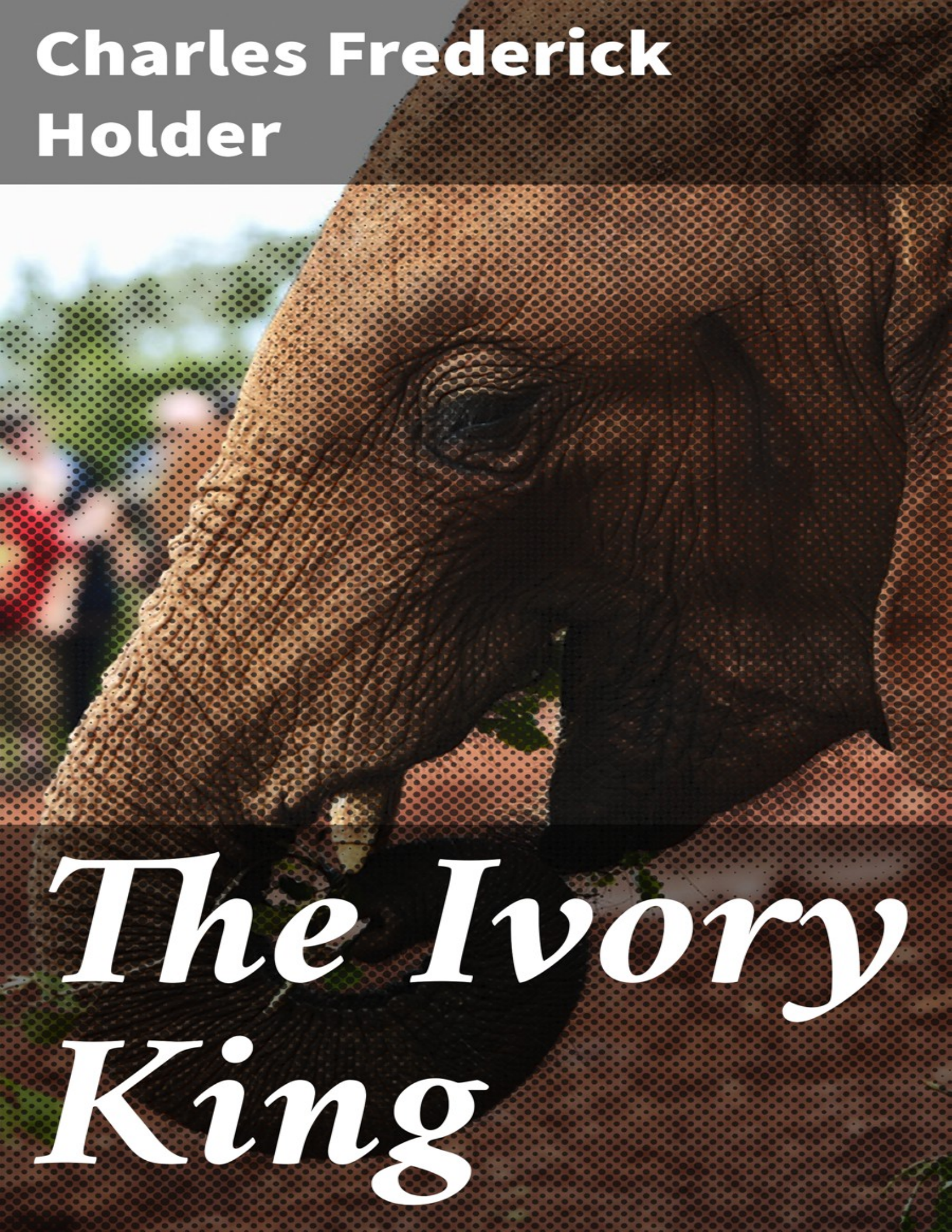
Charles Frederick Holder



The Ivory King

Charles Frederick Holder

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A popular history of the elephant and its allies

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PREFACE.

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The elephant is the true king of beasts, the largest and most powerful of existing land animals, and to young and old a never ceasing source of wonder and interest. In former geological ages, it roamed the continental areas of every zone; was found in nearly every section of North America, from the shores of the Arctic Ocean to the Gulf of Mexico, and from New England to California. Where the hum of great cities is now heard, in bygone days the trumpeting of the mastodon and elephant, and the cries of other strange animals, broke the stillness of the vast primeval forest. But they have all passed away, their extirpation undoubtedly hastened by the early man, the aboriginal hunter; and the mighty race of elephants, which now remains so isolated, is to-day represented by only two species, the African and the Asiatic, forms which are also doomed.

To produce the eight hundred tons of ivory used annually, nearly seventy-five thousand elephants are destroyed; and it does not require the gift of prophecy to foresee their extinction in the near future. The Asiatic elephant is said to be holding its own; but the rapid advance of the British in the East, the introduction of railroads and improvements which mark the progress of civilization in India, where heretofore the elephant has been employed, cannot fail to have a fatal effect, and their extermination is only a matter of time. Knowing these facts, and the close relationship which the elephant has ever held in the advancement of mankind in the East, it stands a picture of absorbing

interest, the last of a powerful race, worthy of earnest efforts for its preservation. The question of its extinction rests with the rising generation. In America and England the ornithologists have made an appeal for our feathered friends, and ladies have been asked to put their veto upon the excessive use of feathers, which is surely tending to the extermination of our birds. The elephant can be protected in the same way. Every ivory tusk that is brought to the African coast from the interior is said to cost a human life; and that we may have ivory fans, billiard-balls, chessmen, knife-handles, inlaid furniture, grotesque Japanese statuary, etc., the elephant, who has been man's helpmate from 1200 B.C., and perhaps earlier, to the present day, is threatened with extermination. The prominence of the elephant in early times is, I think, not generally appreciated. There was hardly a great public movement entailing war, in the early days of the East, in which these animals did not constitute an all-important element. Defeat and success were, as a rule, determined by the number of elephants; and the fate of nations may be said to have depended upon the prowess of the proboscidians.

In the present volume, I have endeavored to present as much of the history of the elephant as is compatible with popular interest, treating the animal in all its relations to man, and the economic questions involved: in war, pageantry, sports and games, as a faithful laborer and servant, comrade and friend, its ancestral forms, structure and anatomy. As the work is in no sense a scientific one, the student may regret the absence of details relating to anatomy, etc. To compensate for such omission, I have

appended a carefully selected bibliography of all the most important works, papers, and monographs, ancient and recent, relating to the subject.

I am indebted to Mr. George P. Sanderson, officer in charge of the elephant-catching establishment at Mysore, Bengal, whose valuable work embracing his experience with the Asiatic elephant has been frequently consulted; also to the works of Sir Emerson Tennent, and especially to the author of “Menageries,” published by Messrs. Charles Knight & Co., London.

C. F. H.

New York, June 1, 1886.

THE IVORY KING.

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CHAPTER I.
NATURAL HISTORY OF THE ELEPHANT.

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The elephant is the largest living land animal; and, though numerous forms existed in early geological times, it is represented to-day by two species only,—the African elephant, *Elephas Africanus*, and the Asiatic elephant, *Elephas Indicus*. The geographical range of the former originally included nearly all Africa, but now the animals are more closely confined to the central interior regions. The Asiatic elephant is found in the forests of India, Ceylon, Burmah, Siam, Cochin China, Sumatra, and the Malay peninsula; and, while the introduction of railroads into these countries in ensuing years will perhaps result in its extinction, at present its numbers are not growing less. The African elephant differs from its Asiatic cousin in several particulars. The apparent distinguishing features are the tusks that attain a much greater development and occur in both sexes, while in the Asiatic species the males alone possess them. The African elephant is at least a foot higher than the Asiatic, attaining a maximum height of eleven feet. Its ears are extremely large, covering the shoulder, and in some instances measuring three and a half feet in length by two and a half feet in width, while those of its Indian relative are comparatively small.

When Jumbo—who was an African elephant—and one of the Asiatic elephants stood side by side, the difference was very marked. The summit of the head of the Indian species forms a pyramid, while the front, or forehead, is concave. In

Jumbo the front of the head was somewhat convex, the eye was larger; and when we compare the feet, we find that while the African elephant has, as a rule, four nails on each foot, the Asiatic has four on each hind-foot, and five on each fore-foot. The number of nails often varies with individuals. The Indian natives esteem those animals most which possess five on each fore-foot, and four on each hind-foot, or eighteen, odd numbers being considered unlucky. The author of “Oriental Field Sports” says that he has observed elephants with fifteen nails, which no native would purchase; and he heard of one with twenty, and saw one with eighteen. These differences are external, as all elephants possess five toes upon each foot internally. The two species also differ as to their teeth. The incisor teeth of elephants are greatly developed, forming the tusks, and only occur in the upper jaw of living forms. They often attain enormous size, weighing from one hundred and fifty to three hundred pounds. The tusks of the Asiatic elephants born in this country were visible at birth. Concerning them in general, Sanderson states that they are not renewed, but are permanent; his information being based upon the personal observations of many years. Corse, who made observations in the last century, and published them in the “Philosophical Transactions,” 1799, states that the elephants observed by him had milk, or deciduous tusks as well as permanent ones; that the milk-tusks appeared at about six months of age and fell out between the first and second years. He found in the young skull the place of the capsule of the permanent tusks, which appear a couple of months after the loss of the milk-tusks. Huxley says, “In recent

elephants, only the two incisors are preceded by milk-teeth;" and this may be the generally accepted belief. The tusks have no roots like the teeth of some animals, but fit firmly into what are called premaxillary sockets: and if we should examine this buried or hidden portion, we should find that it was partly hollow, so to speak; the ivory at the root being very thin, and surrounding a pulp where the ivory is being secreted. The length of this soft pulp varies according to the age of the animal: thus, in young elephants, only a small portion of the tusk outside of the gum is solid ivory; all the rest being hollow, or containing the pulp. As the animal grows, this cavity decreases in length, until in extremely old elephants it disappears entirely and the tusk is solid ivory.

In the left tusk of the elephant shot by Sir Victor Brooke (p. 115), the pulp-cavity was wholly obliterated, its place occupied by an exceedingly dense nodular dentine. This tusk was diseased. In the right tusk of the same animal the pulp-hollow extended from the base through half the imbedded portion, or thirteen and a half inches. In a pair of tusks owned by Col. Douglas Hamilton, of the British army, the pulp-cavity occupies ten inches and a half of the imbedded length. From this it is evident that the length of a tusk cannot be accurately determined from mere observation, as in a large elephant the sockets are from one foot six inches to one foot nine inches in length; so that an animal might have a tusk three feet and a half long, and show only one foot and a half of it, the gum alone concealing about four inches.

As the ivory is so soft at the base of the tusk, it is evident that it can be easily broken; and, if a bullet or spear strikes

this spot, it becomes embedded, and eventually incorporated, in the tusk. Workers in ivory are often surprised to find a leaden bullet in the solid ivory. In a collection in London, there is a section of a tusk which was cut at a piano-forte manufactory in 1805, which has a wrought-iron musket-ball firmly embedded in it; and other instances can be seen in the museum of the London University.

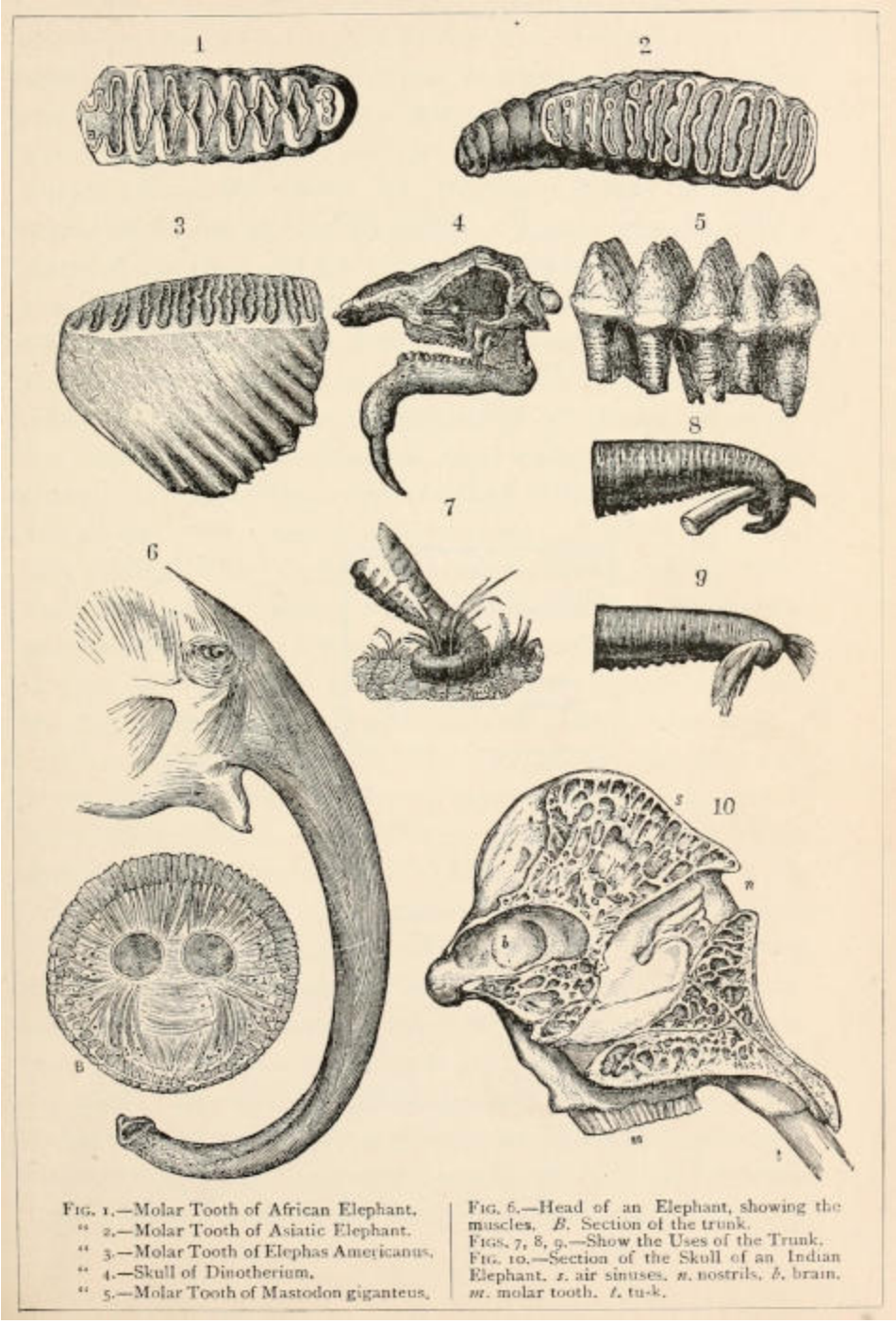

FIG. 1.—Molar Tooth of African Elephant.
" 2.—Molar Tooth of Asiatic Elephant.
" 3.—Molar Tooth of Elephas Americanus.
" 4.—Skull of Dinotherium.
" 5.—Molar Tooth of Mastodon giganteus.

FIG. 6.—Head of an Elephant, showing the muscles. *B*. Section of the trunk.
FIGS. 7, 8, 9.—Show the Uses of the Trunk.
FIG. 10.—Section of the Skull of an Indian Elephant. *s*. air sinuses. *n*. nostrils. *b*. brain. *m*. molar tooth. *t*. tu-k.

PLATE I.

- FIG. 1.—Molar Tooth of African Elephant.
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- FIGS. 7, 8, 9.—Show the Uses of the Trunk.
- FIG. 10.—Section of the Skull of an Indian Elephant. *s.* air sinuses. *n.* nostrils. *b.* brain. *m.* molar tooth. *t.* tusk.

In their growth, tusks often assume strange shapes, being liable to twist, just as the horns of a cow. Livingstone saw an elephant with three tusks, the third one growing out between the other two. The tusks frequently grow straight; some twist in a spiral, others form a complete circle; and many elephants have only one from birth,—like the fictitious unicorn. These animals are called *Gunésh* by the natives. The name is that of the Hindoo god of wisdom; and, if the single tusk of the *Gunésh* is the right one, the animal is reverenced. Some dimensions of tusks will be given in the chapter on Ivory. Perhaps the largest was one sold in Amsterdam some years ago. It weighed, according to Kolokner, three hundred and fifty pounds. Eden measured several nine feet in length, and one described by Hartenfels exceeded fourteen feet. There is one in the museum of Natural History, Paris, seven feet in length. The uses to which the large incisors are put, are often exaggerated. The African elephant employs its tusks to uproot small mimosa-trees, but they are never used to overthrow as large objects as is often stated. Sir Samuel Baker measured mimosa-trees four feet six inches in circumference, and thirty feet high, which elephants had pulled down; and the damage they cause in a mimosa-forest is almost incredible. These trees,

however, have no tap-root, and are comparatively easy to overthrow. Gumming says, “I have repeatedly ridden through forests where the trees thus broken down lay so thick across one another that it was almost impossible to ride through the district.” The female elephant uses her tusks to scrape the barks from trees; but the large tusks of the males are designed as a defence,—the elephant with the finest tusks ruling the herd,—and terrific wounds are made by them. The elephant Conqueror, in this country, was killed by being gored in this way; and in India, when it is necessary at the government corral to subdue a mad elephant, a reliable tusker is provided with steel tusks, or glavies, which fit over the stumps of the others, and with these they do terrible work.

If we examine the skull of the elephant, we find only two molar teeth on each side of each jaw,—eight in all; and no more, as a rule, are seen at one time, twenty-four in all appearing during the lifetime of an elephant.

The teeth appear in a curious way, moving gradually forward from behind in regular succession; each old front tooth as it is worn away being pushed out of place by its successor. This wonderful provision is necessary, as the front teeth are worn away by the sand and gritty substances taken in with the food. The molar, or grinding, teeth are extremely heavy and large, and are nearly buried in the socket, the upper portion only showing. They are made up of a number of transverse perpendicular plates composed of a mass of dentine incased in an outside layer of enamel, which is in turn covered by a layer of cement that fills the spaces between the plates, and seems to bind the whole

together. Each of the enamel plates, though appearing separate at the surface, is connected with the others at the base. The difference between the teeth of the Indian and African species is shown in Plate I. In the Indian elephant the ridges of enamel are narrower, more undulating, and appear in greater numbers than in the African species, in which the ridges are less parallel, and enclose lozenge-shaped spaces. There are certain other differences in the species, such as the number of bones in the vertebral column, or “backbone;” those of the African elephant numbering from twenty to twenty-one, and those of the Indian elephant nineteen to twenty. In examining the skull of an elephant, we are struck with its enormous size, and the comparatively small space taken up by the brain. The skull is not so heavy as it appears, the interior being divided off into partitions, or air-cells; so that, while there is a large surface for the attachment of the trunk-muscles, the head is massive, but not heavy. The neck of the elephant is so short, that, without some special provision, it could not feed from the ground; and this is seen in the trunk, or proboscis, that is a prolongation of the upper lip and nose, sometimes seven feet in length. It commences at the nasal opening of the face, contains a pair of tubes closed by a valvular arrangement, and at its end on the upper side is a small prolongation like a finger, opposite which is a prominence, or tubercle, that acts as a thumb. The trunk is made up of a vast number of muscles, estimated by Cuvier at about forty thousand. Upon the outside, the trunk appears to be ringed; and it is a most remarkable organ, combining the offices of a hand and nose, and exercising taste, touch, suction,

expulsion, and prehension. With it the elephant lifts its driver, pulls over small trees, reaches for its food, takes in water which is in turn expelled into the mouth, squirts water or sand over its body; in fact, there is hardly any thing, from drawing a cork from a bottle, to hurling a tiger into the air, that this wonderful trunk cannot do for its owner. Without it the elephant would starve. One in India which had lost its trunk, had to be fed by having food placed in its mouth. Though the trunk is so useful, it is a very tender and delicate organ, and is not used in the rough manner generally supposed. In making an attack, it is raised high in air out of the way. When a great weight is lifted, it is not the trunk, but the tusks, which are employed, the former only holding the object upon the latter.

Once, when visiting the herd of elephants owned by Mr. Barnum, the trainer called my attention to a small hole, or opening of a gland, situated on each side of the head between the eye and the ear, that is scarcely perceptible. It is the opening of a duct, perhaps two inches in length, that extends toward the lachrymal organs, and leads to a secretory gland. From this orifice, there exudes at times a thick, gummy substance, which sometimes clogs up the opening, and undoubtedly affects the animal unpleasantly; as, when this is filled, the trainer told me that the elephant would take a small stick or straw in its trunk, and endeavor to remove the obstruction. This will be alluded to in the chapter on Rogue Elephants. This exudation is generally considered a warning in the East, that the elephant is going to be ugly, and is called *must*. In Asiatic wild elephants it occurs usually in cold weather, from November to February.

This peculiarity has been noticed from the earliest times: it was remarked upon by Strabo, and is referred to in Hindoo mythology. “The Hindoo poets frequently allude to the fragrant juice which oozes, at certain seasons, from small ducts in the temples of the male elephant, and is useful in relieving him from the redundant moisture with which he is then oppressed; and they even describe the bees as allured by the scent, and mistaking it for that of the sweetest flowers. When Crishna visited Sanc’ha-dwip, and had destroyed the demon who infested that delightful country, he passed along the bank of a river, and was charmed with a delicious odor which its waters diffused in their course. He was eager to view the source of so fragrant a stream, but was informed by the natives that it flowed from the temples of an elephant, immensely large, milk-white, and beautifully formed; that he governed a numerous race of elephants, and the odoriferous fluid which exuded from his temples had formed the river.”

It is evident that wild elephants probe this opening, which is a little larger than a pin-head, and that the sticks used often break off in the orifice, and by working in give the animals such agony that they go mad for the time. When Mr. Cowper Rose shot an elephant in Africa, the men immediately began to hunt for the “piece of wood in the head, to which they attached great value as a charm.” Mr. Rose was evidently not familiar with the gland, or opening. He says, “I sat on one (a dead elephant) while they searched for the wood in his head. It lies about an inch beneath the skin, embedded in fat, just above the eye, and has the appearance of a thorn, or a small piece of twig

broken off. Some are without it: and, on examining the spot minutely, we found that there was a small opening in the skin,—a large pore, it may be; and I conceive that this phenomenon is simply accounted for by the twig breaking in this hole when the animal is in the act of rubbing his head against the bushes."

The body of the elephant, weighing sometimes three tons, is supported by four ponderous, pillar-like legs, the movements of which, especially the posterior, or hinder pair attract immediate attention; and the first impression is, that the hind-legs of the elephant are entirely different from those of any other mammal. They seem to bend in the wrong direction. The difference consists merely in the greater length of the thigh-bone, or femur, which brings the knee much farther down than in other animals. The horse is equally remarkable for an opposite reason; as it walks and stands upon the toe-nail of its single toe, while its heel is as high up as the knee of the elephant is low. Covering this wonderful frame, or skeleton, is the loose, wrinkled skin an inch thick, so tough and heavy,—often weighing eight hundred pounds,—that the elephant and others were at one time included in a group called the thick-skinned animals (pachyderms). The skin is comparatively hairless; though some elephants have more than others, and young ones more than adults. The theory generally accepted, is that the elephants of southern countries have lost their hair by long-continued residence in regions where it was not necessary. Quite recently two young or dwarfed Asiatic elephants were exhibited in New York as mammoths, on account of their

superabundance of hair; but it is needless to say that they were ordinary Asiatic elephants.

In the present work, it is not necessary to refer particularly to the internal organization of the elephant, but the subject is replete with interest. The enormous heart, a foot in diameter, in its contraction exerts tons of pressure; and the blood forced out by it must attain almost the force of water from the hose of a fire-engine. Hunters have often been astonished at seeing elephants, which they have been chasing for some time, insert their trunks into their mouths, and there obtain a supply of water that is blown over the dry and heated body. The explanation of this is, that the stomach of the elephant resembles that of the camel, in having a chamber that can be cut off or separated from the digestive cavity, in which about ten gallons of water is stored as a reserve supply, or to be used as occasion requires.

The female elephant is generally smaller than the male. The mammary glands are situated between the fore-legs, and the calf nurses with its mouth, instead of the trunk as was once supposed. The period of gestation is about five hundred and ninety-seven days. The weight of the elephant at birth differs in individuals. One observed by Owen weighed one hundred and seventy-five pounds, and stood two feet ten inches in height. The little elephant Bridgeport weighed two hundred and forty-five pounds at birth, and stood three feet in height. The baby elephant America, born in Philadelphia, weighed two hundred and thirteen and a half pounds, and measured thirty-four inches and a half at the shoulder. It grew so rapidly, that in eleven months it

gained about seven hundred pounds,—not so very surprising, as it came of a very heavy family. Its mother weighed seven thousand and twenty pounds, and was only twenty-three years old; and the father, who was three years older, four tons. The baby’s trunk, or proboscis, was at first twelve inches long, and nine inches in circumference at the root, or base.

The young Asiatic elephant grows about eleven inches in the first year, eight in the second, six inches in the third, five in the fourth, five in the fifth, in the sixth three and a half, and in the seventh, two and a half, the measurements having been made by Mr. Corse.

CHAPTER II.
HABITS AND WAYS OF ELEPHANTS.

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The most favorable locality to observe wild elephants in India is in Mysore, where the western ghats, the Billiga-rungun hills, and the Goondulpet and Kákankoté forests, afford fine opportunities to the naturalist and sportsman to observe the largest of living land animals in the haunts of its choice. It is here that the elephant-catcher of the British Government, Mr. George P. Sanderson, makes his headquarters, and has obtained such signal success for many years.

Wild Asiatic elephants usually travel in herds of from thirty to fifty, though sometimes the number is swelled to one hundred and over; but small herds are the rule, this division allowing them to obtain a much larger supply of food. The necessity of this can be better appreciated when it is known that a band of one hundred elephants require, or will consume, eighty thousand pounds of fodder in a day.

The favorite food of the wild Asiatic elephant in Ceylon is palms, especially the cabbage, the young trunks of palmyra and jaggery (*Caryota urens*). They are also very fond of figs, the sacred Bo-tree (*F. religiosa*) found near the temples, as well as the Negaha (*Messua ferrea*). The leaves of the jak-tree are considered a great luxury by the huge creatures; while the bread-fruit, wood-apple, sugar-cane, palm, pineapple, watermelon, and the feathery part of the bamboo, are all to its taste. Among the grasses, the

mauritius and Guinea grass are eaten; and all the grains. Cocoanuts they break by rolling them under foot.

The African elephant affects the succulent mimosa, and larger shoots and branches than its cousin, its teeth being fitted for a coarser diet. They are, according to Drummond, particularly fond of the fruit of the unganu-tree, which seems to intoxicate them; as they stagger about, performing the most remarkable antics for a clumsy beast; often trumpeting so loudly that they can be heard for miles, and sometimes engaging in terrific encounters.

When separated into small herds, the elephants all move in concert, as if there was a mutual understanding as to the general route to be taken. Elephants are extremely sure-footed, and will climb quite steep hills. A paper in the Journal of the Asiatic Society of Bengal describes the methods adopted by the elephant in going down-hill. The writer says, “An elephant descending a bank of too acute an angle to admit of his walking down it direct (which were he to attempt, his huge body, soon disarranging the centre of gravity, would certainly topple over), proceeds thus: his first manœuvre is to kneel down close to the edge of the declivity, placing his chest to the ground. One fore-leg is then cautiously passed a short way down the slope; and, if there is no natural protection to afford a firm footing, he speedily forms one by stamping into the soil if moist, or picking out a footing if dry. This point gained, the other fore-leg is brought down in the same way, and performs the same work, a little in advance of the first, which is thus at liberty to move lower still. Then the first one of the hind-legs is carefully drawn over the side, and then the second; and

the hind-feet in turn occupy the resting-places previously used and left by the first ones. The course, however, in such precipitous ground is not straight from top to bottom, but slopes along the face of the bank, descending till the animal gains the level below. This an elephant has done at an angle of forty-five degrees, carrying a howdah, its occupant, his attendant, and sporting apparatus, and in much less time than it takes to describe the operation. I have observed that an elephant in descending a declivity uses his knees on the side next the bank, and his feet on the lower side only." Elephants are often described as galloping, leaping, and gambolling about like a horse. Such movements are impossible; the only gait being a walk, that can be increased to a very rapid shuffle of fifteen miles an hour for a short distance. It appears to move the legs on the same side together, but this is not exactly so. Elephants cannot leap, and never have all four feet from the ground at the same time. Sanderson says, "I have seen an elephant go over quite high hurdles, but never take all four feet from the ground at once. Even the smallest spring is beyond its power; a small trench seven feet across being quite impossible by the largest elephant, although its stride may be six feet and a half long."

The sense of smell is so delicate that a tame elephant will recognize the presence of a wild one three miles away, and by its actions inform the mahout. Selous, the African hunter, watched a herd of elephants cross his trail from a place of security below them; and the moment the trunk of the leader crossed the spot where his foot had been, it stopped, waved its proboscis a few moments, then turned

and ran, accompanied by the entire band. The herds of elephants, when divided, are family parties, generally all related, and on the march. The mothers with young always take the lead; the old tuskers following along in the rear, taking the front, however, in case of alarm. This method of procedure might appear strange at first; but the mothers probably know how long a tramp the calves can endure, and so the responsibility is left to them.

All of my young readers who have visited the circus, must have heard the trumpeting of elephants. This is one of their methods of communication: in other words, elephants have a language that is expressed in different ways,—sometimes by the throat, and, again, by the trunk. When an elephant is pleased, it expresses it by a squeaking noise,—a most ear-grating sound made in the trunk. It also purrs gently, often so low that the keeper alone hears it. When fully enraged, and rushing upon an enemy, its war-cry is a shrill trumpeting that no one can mistake. Rage is also expressed by a low, hoarse rumbling in the throat. Fear or pain is manifested by a shrill squeak, and sometimes by a loud, reverberating roar. The expression of misapprehension or suspicion is entirely different from that of fear, being shown by rapping the trunk upon the ground sharply, at the same time emitting a volume of air from the trunk, that is said to sound like a sheet of tin being rapidly doubled. Desire or want is expressed by the throat, especially in young elephants; and any one who watched the famous baby elephant Bridgeport, must have heard the curious sounds it uttered.

In the open country the elephant seems to have regular trails, or drives, that are followed season after season with some regularity. During the dry time, that in India is from January to April, they follow the beds of streams, and seek the deep forests, there finding protection from the intense heat; but when the rain commences, in June, they roam into the open country, grazing upon the new and fresh grass produced by the warm showers. With the latter also come innumerable flies, that also drive them out into the low jungles; one, a huge insect as large as a bee, with a long proboscis, being especially irritating. At this time they frequent the salt-licks, and have been seen to eat earth impregnated with soda. This is the elephant’s medicine, certain kinds of earth being eaten for the same reason that dogs eat grass.

When the dry season comes, and the grass is withered and bitter, the herds leave the lowlands, remaining in the hills until the next season. Almost the entire time is spent in grazing; though they are often seen after a rain warming their great bodies in the sun, or standing upon the open rocks that form a characteristic of the hills of the Mysore country. When the fodder is exhausted in a locality, the march is taken up, and invariably in Indian file; so that it is often difficult to tell whether ten or one hundred elephants are ahead. Upon reaching a good locality, they disperse, and remain in the vicinity for two days or so. Their rest is taken, as a rule, in the middle of the night; particular friends lying down together, or often a family party. They are early risers, and by three o’clock in the morning are either feeding, or on the march. At ten o’clock they will perhaps

collect for a rest, then from four in the afternoon until eleven at night they feed or march. There are, of course, exceptions to this. In very cool or wet weather they march all day, and often for various reasons do not lie down for several days at a time. Elephants sleep like horses, either standing or lying down. The latter is the natural way, though the process of assuming a reclining position is a somewhat difficult one. When first captured, they often do not lie down for weeks. It is stated that an elephant owned by Louis XIV. did not lie down for the last five years of its life. It wore two holes in the stone buttress with its tusks, and seemed to support itself to some extent in this way while it slept. Wild African elephants have been observed leaning against a tree in the forests. The enormous ears of the African elephant are used as fans; and when a herd is seen upon a hot day, these huge members are continually moving, either to create a current of air, or to blow away the insect pests with which they are infested. They have also been seen to take a branch in their trunks to brush away flies, using it as a person would a fan. The hearing of the elephant is very acute, much more so than in man; experiment having shown that a female heard her young when the sound was inaudible to a party of Englishmen between her and the calf.

Sir Everard Home experimented with an elephant by musical sounds, and came to the conclusion that it did not possess a musical ear, though it was attracted by certain notes. He says, “I got Mr. Broadwood, as a matter of curiosity, to send one of his tuners with a piano-forte to the menageries of wild beasts in Exeter Change, that I might know the effect of acute and grave sounds upon the ear of a

full-grown elephant. The acute sounds seemed hardly to attract his notice; but as soon as the grave notes were struck, he became all attention, brought forward the large external ear, tried to discover where the sounds came from, remained in the attitude of listening, and after some time made noises by no means of dissatisfaction."

The elephant is extremely fond of water; and soon after sunrise the Asiatic species can be seen sporting in the streams, floundering about, and spouting water over their huge bodies, piping and trumpeting with conflicting emotions. They are very susceptible to cold, and when obliged to enter water at night, or when it is chilly, are careful to lift their tails and trunks above the surface if possible.

So clumsy an animal would hardly be expected to excel in swimming, yet probably few land animals can compete with them in this respect. In 1875 Mr. Sanderson sent a herd of seventy-nine from Dacca to Barrackpur near Calcutta, and during the march they had to cross the Ganges and several large tributaries. In one place the entire herd swam without touching bottom for six consecutive hours: then after resting a while on a sand-bank, they swam three more, or nine in all, with but one rest. Few land animals could accomplish this without losing some of their number. But Mr. Sanderson states that he has heard of swims even more remarkable than this. Notwithstanding their fine swimming powers, elephants are sometimes drowned by very simple means; and Mr. Sanderson records such an instance: "We had left the Myanee above its junction with the Kurnafoolie, and were marching by land; but, owing to the lie of the