Alfred Edmund Brehm

From North Pole to Equator: Studies of Wild Life and Scenes in Many Lands

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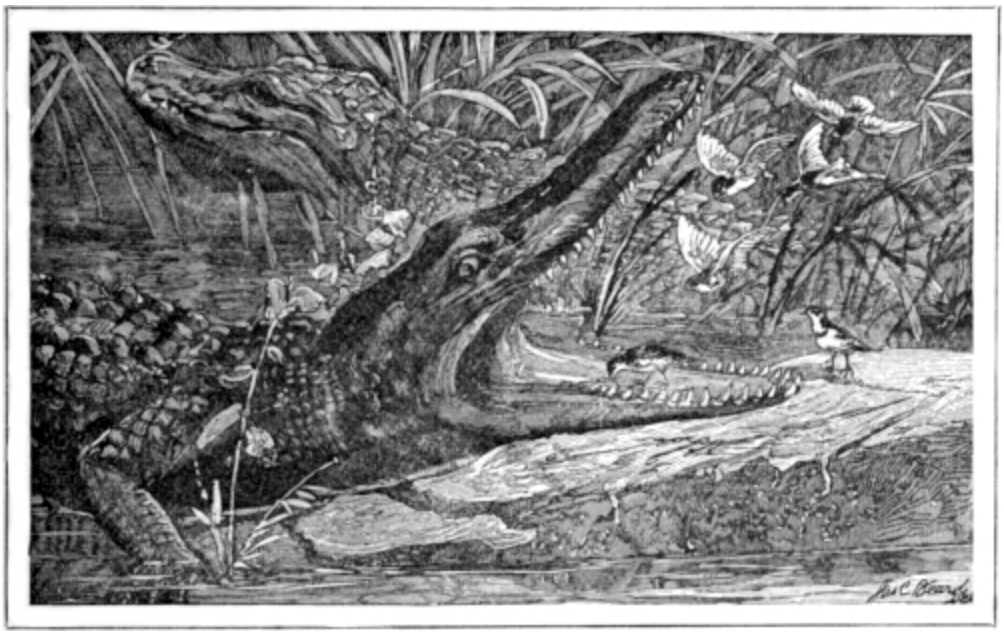
Published by Good Press, 2022

goodpress@okpublishing.info

EAN 4064066429591

Table of Contents



LONDON
BLACKIE & SON, LIMITED, 50 OLD BAILEY, E.C.
GLASGOW AND DUBLIN
1896

PREFACE

Table of Contents

TO THE GERMAN EDITION.

Six years have passed since the grave at Renthendorf closed over the remains of my esteemed father, whose death—all too early—was as great a loss to Science as to those who loved and honoured him. It was strange that his eventful and adventurous life, in the course of which he visited and explored four quarters of the globe, should have ended at the little spot in green Thuringia where he was born. He had just reached his fifty-fifth year when his lips, so apt in speech, were silenced, and the pen which he held so masterfully dropped from his hand. He was full of great plans as to various works, and it is much to be regretted that the notes which he had collected towards the realization of these were too fragmentary for anyone but their author to utilize. But the manuscripts which he left contained many a treasure, and it seemed to me a duty, both to the author and to all friends of thoughtful observation, to make these available to the reading public.

The following pages form the first book of the kind, and contain the most valuable part of the legacy—Alfred Edmund Brehm’s lectures, once so universally popular. I believe that, in giving these pages to the world, I am offering a gift which will be warmly welcomed, and I need add no commendatory words of mine, for they speak adequately for themselves. Writing replaces spoken words

very imperfectly, and my father, who was never tied down to his paper, may often have delivered the same matter in different forms according to the responsiveness of his audience, abbreviating here, expanding there—yet to anyone who has heard him the following pages will recall his presence and the tones of his sonorous voice; everyone will not only recognize in them the individuality of the author of the *Tierleben* (Animal Life) and *Bird Life*, but will learn to know him in a new and attractive side of his character. For it is my father's lectures almost more than any other of his works which show the wealth of his experiences, the many-sidedness of his knowledge, his masterly powers of observation and description, and not least his delicate kindly humour and the sympathetic interpretation of animate and inanimate nature which arose from his deeply poetic temperament.

Therefore I send these pages forth into the world with the pleasant confidence that they will add many to the author's already numerous friends. May they also gain new and unprejudiced sympathizers for the animal world which he loved so warmly and understood so thoroughly; and may they, in every house where the love of literature, and of the beautiful is cherished, open eyes and hearts to perceive the beauty of nature, the universal mother; then will the highest and noblest aim of their author be achieved.

So may all success attend these pages, may they receive a joyful welcome, and wherever they gain an entrance may they remain as a prized possession.

HORST BREHM,

Doctor of Medicine.

BERLIN, *September, 1890*.

PREFATORY NOTE

Table of Contents

TO THE ENGLISH TRANSLATION.

It has been a privilege to make available to English readers a book which shows a great naturalist at his best—a book that presents the reader with a series of vivid pictures of wild life and scenery, painted from actual observation, and with all the truth and accuracy that belong to the artist and man of science combined. It consists of a number of papers or articles that were originally read as public lectures and were afterwards collected into a volume that has met with much success in Germany. The subjects treated range over a wide and varied field. Some of them are unfamiliar to the ordinary reader, and besides their inherent interest have the added charm of novelty; others, if more familiar, are here invested with a freshness and charm that such a trained observer and practised writer as the author could alone impart.

To the translation of the German original have been added an introductory essay, showing Brehm’s position among naturalist-travellers, an extended table of contents, an appendix containing a number of editorial notes, and an index. The number of pictorial illustrations has also been increased.

For a notice of the Author and his labours see the concluding part of the Introductory Essay.

M. R. T.

J. A. T.

University Hall,

Edinburgh, *December, 1895*.

LIST OF ILLUSTRATIONS.

INTRODUCTORY ESSAY.

Table of Contents

BY J. ARTHUR THOMSON.

BREHM’S PLACE AMONG NATURALIST-TRAVELLERS.

Though Brehm’s lectures might well be left, as his son has said, to speak for themselves, it seems useful to introduce them in their English dress with some notes on the evolution of the naturalist-traveller and on Brehm’s place in the honourable list; for an adequate appreciation of a book like this depends in part on a recognition of the position it occupies among analogous works, and on having some picture of the illustrious author himself.

In sketching the history of the naturalist-traveller it is not necessary to go very far back; for though it is interesting to recall how men of old followed their migrating herds, as the Lapp or Ostiak does his reindeer, and were led by them to fresh fields and new conquests, or how others followed the salmon down the rivers and became the toilers of the sea, this ancient lore is full of uncertainty, and is, besides, of more moment to the sociologist than to the naturalist. What we attempt here is merely to indicate the various types of naturalist-traveller who have in the course of time succeeded one another in the quest for the new.

I.

The foundations of zoology were laid by Aristotle some three hundred years before Christ, but they remained unbuilt on for nearly eighteen centuries. Here and there

some enthusiast strove unaided, but only a fragmentary superstructure was reared. In fact, men were pre-occupied with tasks of civilization more serious than the prosecution of zoology, though that is not trivial. Gradually, however, great social movements, such as the Crusades and the collapse of Feudalism; great intellectual and emotional movements, such as those of the Renaissance; great inventions, such as that of printing, gave new life to Europe, and zoology shared in the re-awakening. Yet the natural history of the Middle Ages was in great part mystical; fancy and superstition ran riot along paths where science afterwards established order, and, for all practical purposes, the history of zoology, apart from the efforts of a few pioneers, may be said to date from the sixteenth century.

Now, one indubitable factor in the scientific renaissance of the sixteenth century was the enthusiasm of the early travellers, and this stimulus, periodically recurrent, has never failed to have a similar effect—of giving new life to science. But while science, and zoology as a branch of it, has been evolving during the last three centuries, the traveller, too, has shared in the evolution. It is this which we wish to trace.

I. The Romantic Type. Many of the old travellers, from Herodotus onwards, were observant and enthusiastic; most were credulous and garrulous. In days when the critical spirit was young, and verification hardly possible, there could not but be a strong temptation to tell extraordinary “travellers’ tales”. And they did. Nor need we scoff at them loudly, for the type dies hard; every year such tales are told.

Oderico de Pordenone and other mediæval travellers who give some substance to the mythical Sir John de Maundeville were travellers of this genial type. Oderico describes an interesting connecting link between the animal and vegetable kingdom, a literal “zoophyte”, the “vegetable lamb”, which seems to have been a woolly Scythian fern, with its counterpart in the large fungus which colonials sometimes speak of as the “vegetable sheep”. As for the pretended Sir John, he had in his power of swallowing marvels a gape hardly less than that of the great snakes which he describes. But even now do we not see his snakes in at least the picture-books on which innocent youth is nurtured? The basilisk (one of the most harmless of lizards) “sleyeth men beholding it”; the “cocodrilles also sley men”—they do indeed—“and eate them weeping, and they have no tongue”. “The griffin of Bactria hath a body greater than eight lyons and stall worthier than a hundred egles, for certainly he will beare to his nest flying, a horse and a man upon his back.” He was not readily daunted, Sir John, for when they told him of the lamb-tree which bears lambs in its pods, his British pluck did not desert him, and he gave answer that he “held it for no marvayle, for in his country are trees which bear fruit which become birds flying, and they are good to eate, and that that falleth on the water, liveth, and that that falleth on earth, dyeth; and *they* marvailed much thereat”. The tale of the barnacle-tree was a trump card in those days!

Another example of this type, but rising distinctly above it in trustworthiness, was the Venetian Marco Polo, who in the thirteenth century explored Asia from the Black Sea to

Pekin, from the Altai to Sumatra, and doubtless saw much, though not quite so much as he describes. He will correct the fables of his predecessors, he tells us, demonstrating gravely that the unicorn or rhinoceros does *not* allow himself to be captured by a gentle maiden, but he proceeds to describe tailed men, yea, headless men, without, so far as can be seen, any touch of sarcasm. Of how many marvels, from porcupines throwing off their spines and snakes with clawed fore-feet, to the great Rukh, which could bear not merely a poor Sinbad but an elephant through the air, is it not written in the books of Ser Marco Polo of Venezia?

II. THE ENCYCLOPÆDIST TYPE.—This unwieldy title, suggestive of an omnivorous hunger for knowledge, is conveniently, as well as technically, descriptive of a type of naturalist characteristic of the early years of the scientific renaissance. Edward Wotton (d. 1555), the Swiss Gesner (d. 1565), the Italian Aldrovandi (d. 1605), the Scotsman Johnson (d. 1675), are good examples. These encyclopædists were at least impressed with the necessity of getting close to the facts of nature, of observing for themselves, and we cannot blame them much if their critical faculties were dulled by the strength of their enthusiasm. They could not all at once forget the mediæval dreams, nor did they make any strenuous effort to rationalize the materials which they so industriously gathered. They harvested but did not thrash. Ostrich-like, their appetite was greater than their power of digesting. A hasty judgment might call them mere compilers, for they gathered all possible information from all sources, but, on closer acquaintance, the encyclopædists grow upon one. Their

industry was astounding, their ambition lofty; and they prepared the way for men like Ray and Linnæus, in whom was the genius of order.

Associated with this period there were many naturalist-travellers, most of whom are hardly now remembered, save perhaps when we repeat the name of some plant or animal which commemorates its discoverer. José d'Acosta (d. 1600), a missionary in Peru, described some of the gigantic fossils of South America; Francesco Hernanded published about 1615 a book on the natural history of Mexico with 1200 illustrations; Marcgrav and Piso explored Brazil; Jacob Bontius, the East Indies; Prosper Alpinus, Egypt; Belon, the Mediterranean region; and there were many others. But it is useless to multiply what must here remain mere citations of names. The point is simply this, that, associated with the marvellous accumulative industry of the encyclopædists and with the renaissance of zoology in the sixteenth and seventeenth centuries, there were numerous naturalist-travellers who described what they saw, and not what they fancied might be seen.

III. The General Naturalist Type.—As Ray (d. 1705) and Linnæus (d. 1778) began to reduce to order the accumulations of the encyclopædists, and as the anatomists and physiologists began the precise study of structure and function, the naturalist-travellers became more definite in their aims and more accurate in their observations. Linnæus himself sent several of his pupils on precisely scientific journeys. Moreover, in the eighteenth century there were not a few expeditions of geographical and physical purpose which occasionally condescended to take a zoologist on

board. Thus Captain Cook was accompanied on his first voyage (1768-1781) by Banks and Solander, and on his second voyage by the Forsters, father and son. On his third voyage he expressly forbade the intrusion of any naturalist, but from all that we can gather it would have been better for himself if he had not done so. In these combined voyages there was nascent the idea of co-operative expeditions, of which the greatest has been that of the *Challenger*.

In illustration of travellers who were not specialists, but in varying degrees widely interested naturalists, it will be sufficient to cite three names—Thomas Pennant, Peter Pallas, and, greatest of all, Alexander von Humboldt.

Of Thomas Pennant (1726-1798) we may note that he was one of the early travellers in Scotland, which was then, as he says, almost as unknown as Kamchatka, and that he extorted from Dr. Johnson the admission, “He’s a Whig, sir, a sad dog; but he’s the best traveller I ever read; he observes more things than any one else does”. He knew Buffon and corresponded with Linnæus, and was the author of several works on British and North American zoology. His so-called *Arctic Zoology* is mainly a sketch of the fauna in the northern regions of North America, begun “when the empire of Great Britain was entire, and possessed the northern part of the New World with envied splendour”. His perspective is excellent! the botanist, the fossilist, the historian, the geographer must, he says, accompany him on his zoological tours, “to trace the gradual increase of the animal world from the scanty pittance given to the rocks of Spitzbergen to the swarms of beings which enliven the vegetating plains

of Senegal; to point out the causes of the local niggardness of certain places, and the prodigious plenty in others". It was about the same time (1777) that E. A. W. Zimmermann, Professor of Mathematics at Brunswick, published a quarto in Latin, entitled *Specimen Zoologiæ Geographicæ Quadrupedum*, "with a most curious map", says Pennant, "in which is given the name of every animal in its proper climate, so that a view of the whole quadruped creation is placed before one's eyes, in a manner perfectly new and instructive". It was wonderful then, but the map in question looks commonplace enough nowadays.

Peter Simon Pallas (1741-1811) was a student of medicine and natural science, and did good work as a systematic and anatomical zoologist. He was the first, we believe, to express the relationships of animals in a genealogical tree, but his interest for us here lies in his zoological exploration of Russia and Siberia, the results of which are embodied in a series of bulky volumes, admirable in their careful thoroughness. We rank him rather as one of the forerunners of Humboldt than as a zoologist, for his services to ethnology and geology were of great importance. He pondered over the results of his explorations, and many of his questionings in regard to geographical distribution, the influence of climate, the variation of animals, and similar problems, were prophetic of the light which was soon to dawn on biological science.

Alexander von Humboldt (1769-1859) was undoubtedly one of the greatest naturalists of the century which his life well nigh covered. Geologist, botanist, zoologist, and more, he was almost the last of the all-round naturalists. In this

indeed lay his weakness as well as his strength, for great breadth of view is apt to imply a lack of precision as to details. In boyhood, “when life”, as he says, “appears an unlimited horizon”, he had strong desires after travel, which were in part gratified by excursions with George Forster and by Swiss explorations with the sagacious old geographer Leopold von Buch. These, however, only whetted his enthusiasm for journeys with a larger radius. At length, after many discouragements, he sailed in 1799 from Corunna, with Aimé Bonpland as companion, and spent five years in exploring the equinoctial regions of the New World. The full record of his voyage one cannot be expected to read, for there are about thirty volumes of it in the complete edition, but what we should all know is Humboldt’s *Personal Narrative*, in which the chief results of his explorations are charmingly set forth. Later in life (1829) he went with Ehrenberg and Rose to North Asia, and his crowning work was the publication of *Cosmos* (1845-58), which originated in a series of lectures delivered in the University of Berlin. In front of that building his statue now stands, along with that of his not less famous brother Wilhelm.

We think of Humboldt not so much as an early explorer of tropical America, nor because he described the habits of the condor and made observations on electric eels, nor because he furnished Cuvier and Latreille with many new specimens, but rather as a magnificent type of the naturalist-traveller, observant, widely interested, and thoughtful, who pointed forward to Darwin in the success with which he realized the complexity of inter-relations in nature. Many a traveller, even among his contemporaries, discovered more new

plants and animals than the author of *Cosmos*, but none approached him as an all-round naturalist, able to look out on all orders of facts with keenly intelligent eyes, a man, moreover, in whom devotion to science never dulled poetic feeling. His work is of real importance in the history of geographical distribution, for he endeavoured to interpret the peculiarities of the various faunas in connection with the peculiar environment of the different regions—a consideration which is at least an element in the solution of some of the problems of distribution. It is especially important in regard to plants, and one may perhaps say that Humboldt, by his vivid pictures of the vegetable "physiognomy" of different regions, and by his observations on the relations between climate and flora, laid the foundations of the scientific study of the geographical distribution of plants. We find in some of his *Charakterbilder*, for example in his *Views of Nature*, the prototype of those synthetic pictures which give Brehm's popular lectures their peculiar interest and value.

IV. The Specialist Type.—It would say little for scientific discipline if it were true that a man learned, let us say, in zoology, could spend years in a new country without having something fresh to tell us about matters outside of his specialism—the rocks, the plants, and the people. But it is not true. There have been few great travellers who have been narrow specialists, and one might find more than one case of a naturalist starting on his travels as a zoologist and returning an anthropologist as well. Yet it is evident enough that few men can be master of more than one craft. There have been few travellers like Humboldt, few records like

Darwin's *Voyage of the Beagle* (1831-6). Hence we recognize more and more as we approach our own day that naturalist-travellers have been successful either as specialists, or, on the other hand, in so far as they have furnished material for generalization (Type V.). The specialism may of course take various forms: a journey may be undertaken by one who is purely an ornithologist, or it may be undertaken with one particular problem in view, or it may be organized, like the *Challenger* expedition, with the co-operation of a number of specialists.

The French took the lead in organizing zoological expeditions. As early as 1800 they sent out the *Géographe*, *Naturaliste*, and *Casuarina*, zoologically conducted by Bury de St. Vincent, Péron, and Lesueur. Further expeditions followed with Quoy and Gaimard, Lesson, Eydoux, Souleyet, Dupetit-Thouars, and others as zoological guides. The English whaling industry gave early opportunity to not a few naturalists; and it is now a long time since Hooker went with Sir James Ross on the South Polar expedition and Huxley went on the *Rattlesnake* to the Australian Barrier Reef. The Russians were also active, one of the more famous travellers being Kotzebue, who was accompanied on one of his two voyages (1823-6) round the world by Chamisso and Eschscholtz. In the early part of this century the Americans were also enterprising, the work of Dana being perhaps the most noteworthy. It would require several pages to mention even the names of the naturalists who have had their years of wandering, and have added their pages and sketches to the book of the world's fauna and flora, but such an enumeration would serve no useful purpose here.

There is, however, one form of zoological exploration which deserves a chapter to itself, that is the exploration of the Deep Sea. Several generations of marine zoologists had been at work before a zoology of the deep sea was dreamed of even as a possibility. It is true that in 1818 Sir John Ross had found a star-fish (*Astrophyton*) at a depth of 800-1000 fathoms, but this was forgotten; and in 1841 Edward Forbes dredged to no purpose in fairly deep water in the Ægean Sea. Indeed those who thought about the great depths at all deemed it unlikely that there could be life there, and if it had not been for the practical affair of laying the ocean cables, we might possibly have been still in ignorance of the abyssal fauna.

But the cables had to be laid—no easy task—and it became important to know at least the topography of the depths. Cables broke, too, and had to be fished up again, and when that which ran between Sardinia and Algiers was lifted, in 1860, from a depth of 60-1000 fathoms, no less than 15 different species of animals were found on it. This was a discovery to fire enthusiasm, and Britain led the way in following it up. In 1868 Wyville Thomson began his explorations on the *Lightning*, and proved that most of the types of backboneless animals were represented at depths of at least 600 fathoms. Soon followed the similar cruise of the *Porcupine*, famous *inter alia* for the discovery of Bathybius, which many sceptics regard as a mare’s nest. From various quarters the quest after the deep-sea fauna began to be prosecuted.

It is now more than a score of years since the world-famous *Challenger* sailed from Portsmouth with Wyville

Thomson, Moseley, John Murray, and Willemoes-Suhm as naturalists. During three and a half years the explorers cruised over 68,900 nautical miles, crossed the Atlantic no less than five times, reached with the long arm of the dredge to depths equal to reversed Himalayas, raised treasures of life from over 500 stations, and brought home spoils over which the savants of Europe have hardly ceased to be busy, and the records of which, now completed under Dr. Murray's editorship, form a library of about forty huge volumes.

The *Challenger* expedition was important not only in itself, but in the wave of scientific enthusiasm which it raised. From Germany went forth the *Gazelle*; Norway sent the *Vöringen* to Spitzbergen; America has despatched the *Tuscarora*, the *Blake*, and the *Albatross*; from Sweden the *Vega* and the *Sophia* sailed to Arctic seas: Count Liechtenstein's yacht *Hertha* explored Adria; the Prince of Monaco's *Hirondelle* darted hither and thither; the French sent forth the *Travailleur* and *Talisman*; the Italians the *Vettor Pisani* and *Washington*; Austria and Hungary organized the *Poli* for work in the Mediterranean; the Germans again have recently specialized in investigating the Plankton, or surface-life of the ocean; and so, with a range even wider than we have indicated, the wave of enthusiasm has spread, one of the latest barques which it has borne being the Prince of Monaco's, which was specially built for marine exploration.

Specialism in travelling has, of course, gone much further. Thus to cite only three examples, we have Semper's zoological work on the Philippines, the researches of the

Sarasins in Ceylon, and the first results of Semon's recent visit to Australasia, all of them passing far beyond records of zoological exploration into monographs on the structure and development of characteristic members of the fauna of these countries. And it is no exaggeration to say that private enterprise, Royal Society subsidies, British Association grants, and the like have sent scores of naturalists from Britain half round the world in order to solve special problems, as to the larva of a worm, for instance, or as to the bird-fauna of some little island.

V. THE BIOLOGICAL TYPE. In some ways the most important scientific journey ever made was Darwin's voyage on the *Beagle*. It was the Columbus-voyage of zoology. There is a great deal to be said for the *Wanderjahre* of the old students, for to have time to think is one of the conditions of intellectual progress. Not that the *Beagle* voyage was one of idleness, but it gave Darwin, at the age of twenty-two, a wealth of impressions and some measure of enforced leisure wherein to gloat intellectually over what he saw. He has said, indeed, that various sets of facts observed on his voyage, such as the aspect of the Galapagos Islands, started him on paths of pondering which eventually led to his theory of the origin of species.

We take Darwin as the type of the biological, or, we may almost say, evolutionist travellers; but he must share this position with his magnanimous colleague, Alfred Russel Wallace, whose journeyings were more prolonged and not less fruitful. Before Darwin the naturalist-travellers had been, for the most part, describers, systematists, and analysts, and it goes without saying that such work is

indispensable, and must continue; but in the light of the conception of evolution all things had become new; the present world of life was henceforth seen as a stage in a process, as a passing act in a drama, not merely as a phantasmagoria to be admired and pictured, but as a growth to be understood.

It is within this group of biological travellers, which includes such men as Bates and Belt, that we must also place Brehm. For although he perhaps had not the firmness of grasp or the fineness of touch necessary for the successful handling of the more intricate biological problems, especially those which centre around the factors of evolution, he had unusual power as an observer of the habits of animals. His contributions, which must be judged, of course, from his great *Tierleben*,[A] as well as from his popular lectures, were rather to the old natural history than to biology in the stricter sense. His works show that he was as much interested in men as in beasts, that he was specially an ornithologist, that he was beneath the naturalist a sportsman; but so scores of other travellers have been. His particular excellence is his power of observing and picturing animal life *as it is lived in nature*, without taking account of which biology is a mockery and any theory of evolution a one-sided dogma.

[A] This well-known treasure-house of Natural History appeared originally in 1863-69 in six big volumes, which have since increased to ten. Even the first edition took a foremost place among similar works on the Natural History of Animals. With a wealth of personal observation on the habits of animals in their native haunts, it combined the further charm of very beautiful pictorial illustration.