

## = The Naturalist on the River Amazons =

The Naturalist on the River Amazons , subtitled A Record of the Adventures , Habits of Animals , Sketches of Brazilian and Indian Life , and Aspects of Nature under the Equator , during Eleven Years of Travel , is an 1863 book by the British naturalist Henry Walter Bates about his expedition to the Amazon basin . Bates and his friend Alfred Russel Wallace set out to obtain new species and new evidence for evolution by natural selection , as well as exotic specimens to sell . He explored thousands of miles of the Amazon and its tributaries , and collected over 14 000 species , of which 8 000 were new to science . His observations of the coloration of butterflies led him to discover Batesian mimicry .

The book contains an evenly distributed mixture of natural history , travel , and observation of human societies , including the towns with their Catholic processions . Only the most remarkable discoveries of animals and plants are described , and theories such as evolution and mimicry are barely mentioned . Bates remarks that finding a new species is only the start ; he also describes animal behaviour , sometimes in detail , as for the army ants . He constantly relates the wildlife to the people , explaining how the people hunt , what they eat and what they use as medicines . The book is illustrated with drawings by leading artists including E. W. Robinson , Josiah Wood Whympere , Joseph Wolf and Johann Baptist Zwickler .

On Bates 's return to England , he was encouraged by Charles Darwin to write up his eleven -year stay in the Amazon as a book . The result was widely admired , not least by Darwin ; other reviewers sometimes disagreed with the book 's support for evolution , but generally enjoyed his account of the journey , scenery , people , and natural history . The book has been reprinted many times , mostly in Bates 's own effective abridgement for the second edition , which omitted the more technical descriptions .

## = = Publication history = =

The first edition , in 1863 , was long and full of technical description . The second edition , in 1864 , was abridged , with most of the technical description removed , making for a shorter and more readable book which has been reprinted many times . Bates prefaced the 1864 edition by writing

Having been urged to prepare a new edition of this work for a wider circle than that contemplated in the former one , I have thought it advisable to condense those portions which , treating of abstruse scientific questions , presuppose a larger amount of Natural History knowledge than an author has a right to expect of the general reader .

An unabridged edition was reissued only after 30 years , in 1892 ; it appeared together with a ' memoir ' of Bates by Edward Clodd .

## = = = Major versions = = =

Bates H.W. 1863 . The naturalist on the river Amazons . 2 volumes , Murray , London .

Bates H.W. 1864 . The naturalist on the river Amazons . 2nd edition as one volume , Murray , London . [ abridged by removing natural history descriptions ; much reprinted ]

Bates H.W. 1892 . The naturalist on the river Amazons , with a memoir of the author by Edward Clodd . [ only full edition since 1863 , with good short biography by Clodd ]

## = = Approach = =

In 1847 , Bates and his friend Alfred Russel Wallace , both in their early twenties , agreed that they would jointly make a collecting trip to the Amazon " towards solving the problem of origin of species " . They had been inspired by reading the American entomologist William Henry Edwards 's pioneering 1847 book A Voyage Up the River Amazon , with a residency at Pará .

Neither had much money , so they determined to fund themselves by collecting and selling fine specimens of birds and insects . Both made extensive travels ? in different parts of the Amazon

basin ? creating large natural history collections , especially of insects . Wallace sailed back to England in 1852 after four years ; on the voyage , his ship caught fire , and his collection was destroyed ; undeterred , he set out again , leading eventually ( 1869 ) to a comparable book , The Malay Archipelago . By the time he came home in November 1859 , Bates had collected over 14 000 species , of which 8 000 were new to science . His observations of the coloration of butterflies led him to describe what is now called Batesian mimicry , where an edible species protects itself by appearing like a distasteful species . Bates 's account of his stay , including observations of nature and the people around him , occupies his book .

In the abridged version , there is a balance between descriptions of places and adventures , and the wildlife seen there . The style is accurate , but vivid and direct :

The house lizards belong to a peculiar family , the Geckos , and are found even in the best @-@ kept chambers , most frequently on the walls and ceilings , to which they cling motionless by day , being active only at night . They are of speckled grey or ashy colours . The structure of their feet is beautifully adapted for clinging to and running over smooth surfaces ; the underside of their toes being expanded into cushions , beneath which folds of skin form a series of flexible plates . By means of this apparatus they can walk or run across a smooth ceiling with their backs downwards ; the plated soles , by quick muscular action , exhausting and admitting air alternately . The Geckos are very repulsive in appearance .

The book begins and ends suddenly . The journey out , as reviewer Joseph James observes , is dismissed in a few words . The last few lines of the book run :

On the 6th of June , when in 7 ° 55 ' N. lat. and 52 ° 30 ' W. long . , and therefore about 400 miles from the mouth of the main Amazons , we passed numerous patches of floating grass mingled with tree @-@ trunks and withered foliage . Amongst these masses I espied many fruits of that peculiarly Amazonian tree the Ubussu palm ; this was the last I saw of the Great River .

= = Illustrations = =

There are 39 illustrations , some of animals and plants , some of human topics such as the " Masked @-@ dance and wedding @-@ feast of Tucuna Indians " , which is signed by Josiah Wood Whymper . Some illustrations including " Turtle Fishing and Adventure with Alligator " are by the German illustrator Johann Baptist Zwecker ; some , such as " Bird @-@ Killing Spider ( Mygale Avicularia ) Attacking Finches " are by E.W. Robinson ; others by the zoological artist Joseph Wolf .

= = Chapters = =

The structure of the readable , cut @-@ down second edition of 1864 is as follows :

1 Pará ? arrival , aspect of the country , etc . ( now the city of Belém )

Bates arrives , and at once starts learning about the country 's peoples and natural history .

The impressions received during this first walk can never wholly fade from my mind ... Amongst them were several handsome women , dressed in a slovenly manner , barefoot or shod in loose slippers ; but wearing richly @-@ decorated ear @-@ rings , and around their necks strings of very large gold beads . They had dark expressive eyes , and remarkably rich heads of hair . It was a mere fancy , but I thought the mingled squalor , luxuriance and beauty of these women were pointedly in harmony with the rest of the scene ; so striking , in the view , was the mixture of natural riches and human poverty .

He soon notices and describes the leafcutter ants . He stays in Pará for 18 months , making short trips into the interior ; the city is clean and safe compared to others in Brazil .

2 Pará ? the swampy forests , etc .

Bates takes a house a few miles outside town on the edge of the forest , and soon starts to notice butterflies and climbing palms . He settles in to a routine of collecting during the day , and making notes and preparing specimens in the evening . At first he is disappointed by how few signs there are of larger animals such as monkeys , tapir or jaguar . Later he realizes these do exist , but are widely scattered and very shy . He meets a landowner who complains of the high price of slaves .

There are colossal trees with buttressed trunks .

3 Pará ? religious holidays , marmoset monkeys , serpents , insects

He witnesses Catholic processions , notably the festival for Our Lady of Nazareth at Pará . He describes the few monkeys that can be seen in the area , and the strange *Amphisbaena* , a legless lizard . There are beautiful *Morpho* butterflies of different species , and assorted spiders , including " monstrous " hairy ones .

4 The Tocantins and Cametá

Bates and Wallace travel up the Tocantins river , hiring a two @-@ masted boat , a crew of three , and taking provisions for three months . At Baiao he is astonished to be shown a young man 's books including Virgil , Terence , Cicero and Livy : " an unexpected sight , a classical library in a mud @-@ plastered and palm @-@ thatched hut on the banks of the Tocantins " . Their host kills an ox in their honour , but Bates is kept awake by swarms of rats and cockroaches . They see the hyacinthine macaw which can crush hard palm nuts with its beak , and two species of freshwater dolphin , one new to science . Bates visits Cameta ; Wallace goes to explore the Guama and Capim rivers . The large bird @-@ eating spider ( *Mygalomorphae* ) has urticating hairs : Bates handles the first specimen " incautiously , and I suffered terribly for three days " . He sees some children leading one with a cord around its waist like a dog . On the return journey , the boat with his baggage leaves before him ; when he catches up with it , he finds it " leaking at all points " .

5 Caripí and the Bay of Marajó

Bates stays three months in an old mansion on the coast , going insect @-@ hunting with a German who lives in the woods . His room is full of four species of bat : one leaf @-@ nosed bat , *Phyllostoma* , bites him on the hip : " This was rather unpleasant " . He finds stewed giant anteater delicious , like goose . Several times he shoots hummingbird hawkmoths , mistaking them for hummingbirds . He catches a pale brown tree snake 4 ft 8 in ( 140 cm ) long , but only 1 / 4 in ( 6mm ) thick , and a pale green one 6 ft ( 180 cm ) long " undistinguishable amidst the foliage " . When he has shot all the game around his house , he goes hunting with a neighbour by canoe , getting some agouti and paca rodents .

6 The Lower Amazons ? Pará to Obydos ( now the city of Óbidos )

He describes how travellers went upriver before the steamboats arrived , and gives a history of earlier explorations of the Amazons . His preparations for the voyage to Obydos include household goods , provisions , ammunition , boxes , books and " a hundredweight ( 50 kg ) of copper money " . There are many species of palms along a river channel . A rare species of alligator and the armoured *Loricaria* fish are caught . Obydos is a pleasant town of 1200 people , on cliffs of pink and yellow clays , surrounded by cocoa plantations with four kinds of monkey and the huge *Morpho hecuba* butterfly up to 8 in ( 20 cm ) across , as well as slow @-@ flying *Heliconius* butterflies in great numbers . He obtains a musical cricket , *Chlorocoelus tanana* .

7 The Lower Amazons ? Obydos to Manaos , or the Barra of the Rio Negro

Bates leaves Obydos ; he finds the people lazy , as otherwise they could easily become comfortable with mixed farming . They sail through a tremendous storm . He finds a *Pterochroza* grasshopper whose forewings perfectly resemble leaves , the Victoria waterlily , masses of ticks , the howler monkey and large *Morpho* butterflies . He meets Wallace again at Barra . Back in Para , he catches yellow fever .

8 Santarem

He describes Santarem and the customs of its people . He goes on short " excursions " around the little town . The pure " Indians " choose to build light open shelters , resting inside in hammocks , whereas those of mixed or African origin build more substantial mud huts . He enjoys watching small pale green *Bembex* and other kinds of sand wasps . He regrets that the people cut down the *Oenocarpus distichus* palm to harvest its fruits , which yield a milky , nutty beverage . He describes some potter wasps and mason bees . He meets a " feiticeira " or witch who knows the uses of many plants , but remarks that " the Indian men all become sceptics after a little intercourse with the whites " and that her witchcraft " was of a very weak quality " though others have more dangerous tricks .

9 Voyage up the Tapajos

Bates hires a boat made of stonewood for a three month trip up the Tapajos river . He prepares for the trip by salting meat , grinding coffee , and placing all the food in tin boxes to keep insects and damp out . He buys trade @-@ goods such as fishhooks , axes , knives and beads . He witnesses poison @-@ fishing using lianas of *Paullinia pinnata* . At Point Cajetuba he finds a line of dead fire @-@ ants , " an inch or two in height and breadth " , washed up on the shore " without interruption for miles " . Terrible wounds are inflicted by the stingray and the piranha . His men make a canoe from a trunk of the stonewood tree , and an anaconda steals two chickens from a cage on his boat ; the snake is " only 18 feet nine inches ( 6 metres ) in length " . Becoming weak from a diet of fish , he eats a spider monkey , finding it delicious . They notice the river is gently tidal , 530 miles ( 850 km ) from its mouth , " a proof of the extreme flatness of the land " . Bates is unimpressed by a homeopathy @-@ crazed priest , especially when his pills prove useless against fever .

#### 10 The Upper Amazons ? Voyage to Ega ( now the city of Tefé )

He sails from Barra ( continuing the story from Chapter 7 ) to Ega . In Solimões ( the Upper Amazons ) the soil is clay , alluvium or deep humus , with rich vegetation . They catch a manatee ( sea cow ) which tastes like coarse pork with greenish , fish @-@ flavoured fat , and he is badly bitten by small " Pium " bloodsucking flies . Pieces of pumice have floated 1200 miles ( 1900 km ) from the Andes volcanoes . Bates observes a large landslip on which masses of giant forest trees rock to and fro . He notes there are discomforts but " scarcely any danger from wild animals " . He becomes desperate for intellectual society , running out of reading matter , even the advertisements in the *Athenaeum* journal . He describes the food and fruits at Ega , and the curious seasons , with two wet and two dry seasons each year , the river thus rising and falling twice . The people regularly eat turtles .

#### 11 Excursions in the Neighbourhood of Ega

Bates goes hunting with a native , who brings down a crested oropendola with a blowpipe at a range of 30 yards ( 27 metres ) ; he notes that the usefully silent weapon can kill at twice that range , but that he and Wallace " found it very difficult to hold steady the long tubes " . Around a campfire , he listens to tales ; the Bouto or river dolphin used to take " the shape of a beautiful woman , with hair hanging loose to her heels , and walking ashore at night in the streets of Ega , to entice the young men down to the water " where the Bouto would grab them and " plunge beneath the waves with a triumphant cry " . They go turtle @-@ hunting ; and Bates kills an alligator with a heavy stick . He finds many footprints of the jaguar , and " the great pleasure " of seeing the " rare and curious umbrella bird " . Arrived in Catua , he admires a woman of 17 : " her figure was almost faultless " , and her blue mouth " gave quite a captivating finish to her appearance " , but she was " extremely bashful " . He is amazed at how much alcohol the " shy Indian and Mameluco maidens " can drink , never giving way to their suitors without it .

#### 12 Animals of the Neighbourhood of Ega

Having discovered over 3000 new species at Ega , Bates agrees that discovery " forms but a small item in the interest belonging to the study of the living creation . " He describes the scarlet @-@ faced and other monkeys , " a curious animal " , the kinkajou , bats , and toucans . He found 18 species " of true *Papilio* ( swallowtail ) butterflies and about 550 butterfly species in all at Ega , among over 7000 species of insect . He describes some unusual insects and their behaviour , including a moth which suspends its cocoon on a long strong silk thread , which while conspicuous is hard for birds to attack . He describes at length various species of *Eciton* or army ants , noting that confused accounts of these have appeared in travel books , then copied into natural histories .

#### 13 Excursions beyond Ega

In November 1856 Bates travels on a steamboat from Ega upriver to Tunantins ; it travels all night despite the thick darkness , and makes the 240 miles ( 380 km ) in four days , with the captain at the wheel almost the whole time . He is delighted to discover a new butterfly , *Catagramma excelsior* , the largest of its genus . He finds the forest at St Paulo glorious , writing that five years would not be enough " to exhaust the treasures of its neighbourhood in Zoology and Botany " :

At mid @-@ day the vertical sun penetrates into the gloomy depths of this romantic spot , lighting up the leafy banks of the rivulet and its clean sandy margins , where numbers of scarlet , green , and black tanagers and brightly @-@ coloured butterflies sport about in the stray beams . Sparkling

brooks , large and small , traverse the glorious forest ...

= = Reception = =

= = = Contemporary reviews = = =

= = = Charles Darwin = = =

Charles Darwin , having encouraged Bates to publish an account of his travels , read *The Naturalist on the River Amazons* with great pleasure , writing to Bates on 18 April 1863 that

My criticisms may be condensed into a single sentence , namely that it is the best book of Natural History Travels ever published in England . Your style seems to me admirable . Nothing can be better than the discussion on the struggle for existence & nothing better than the descriptions on the Forest scenery . It is a grand book , & whether or not it sells quickly it will last . You have spoken out boldly on Species ; & boldness on this subject seems to get rarer & rarer . ? How beautifully illustrated it is . The cut on the back is most tasteful . I heartily congratulate you on its publication .

Darwin noted in his letter that *Athenaeum* magazine reviewed the book coldly and insolently , while the Reader received it warmly . Darwin published *An Appreciation of the book* in the *Natural History Review* in 1863 , in which he notes that Bates sent back " a mass of specimens " of " no less than 14 @, @ 712 species " ( mostly of insects ) , of which 8000 were new to science . Darwin at once observes that although Bates is " no mean authority " on insects , the book is not limited to them , but ranges over natural history and more widely to describe his " adventures during his journeyings up and down the mighty river " . Darwin clearly enjoyed Bates 's account of the hyacinthine macaw , calling it a " splendid bird " with its " enormous beak " able to feed on mucleja palm nuts , and quoting Bates : " which are so hard as to be difficult to break with a heavy hammer , are crushed to a pulp by the powerful beak of this Macaw . " Darwin took the opportunity to hit back at the *Athenaeum* magazine which had criticised Bates 's book , at the same time painting a picture of Bates 's lonely life in the rainforest :

Mr. Bates must indeed have been driven to great straits as regards his mental food , when , as he tells us , he took to reading the *Athenaeum* three times over , " the first time devouring the more interesting articles ? the second , the whole of the remainder ? and the third , reading all the advertisements from beginning to end .

Darwin notes that " We need hardly say that Mr. Bates ... is a zealous advocate of the hypothesis of the origin of species by derivation from a common stock " , in other words that Bates was a staunch Darwinian . Darwin was happy to have the *Naturalist* on his side , and to use the book in the Origin of Species debate which was still heated in 1863 . In particular , Darwin was struck by Bates 's robust evidence of mimicry in " the Butterflies of the genus *Heliconius* " . Here Darwin quotes nearly a whole page from Bates 's conclusions , including Bates 's view of his own findings that hint at speciation actually in progress :

The facts just given are therefore of some scientific importance , for they tend to show that a physiological species can be and is produced in nature out of the varieties of a pre @-@ existing closely allied one . This is not an isolated case ... But in very few has it happened that the species which clearly appears to be the parent , co @-@ exists with one that has been evidently derived from it .

= = = London Quarterly Review = = =

The *London Quarterly Review* began with the observation that " When an intelligent man tells us that he has spent eleven of the best years of his life in any district , we may be pretty sure he has something to say about it which will interest even those who generally find travels dull reading " . The reviewer finds Bates among the most readable , and free of the usual " personal twaddle " of

travel and adventure books . The reviewer also remarks on Bates 's subtitle " ... of the origin of species " , that Wallace had taken up that theme more fully . In the reviewer 's opinion , Bates says little about " the Darwinian hypothesis " , focusing instead steadily on natural history , while making " very shrewd remarks " about human society and giving " most glowing " descriptions of tropical scenery . The reviewer notes that most of the people Bates meets " had a tinge of colour " but made the " lonely Englishman " comfortable with their " winning cordiality " , and is amused that in a feast in Ega an Indian dressed up as an entomologist , complete with insect @-@ net , hunting @-@ bag , pincushion , and an old pair of spectacles . As for nature , the reviewer considers that " in Brazil man is oppressed , crushed , by the immensity of nature " .

Bates 's occasional hints at Darwinian evolution are unwelcome or misunderstood by the reviewer , as when Bates writes that if a kind of seed is found in two places , we have to " come to the strange conclusion " it has been created twice unless we can show it can be carried that far ; but the reviewer finds Bates in " too great a hurry to come to conclusions " ( sic ) . The reviewer , too , objects to Bates 's illustration of " transition forms between *Heliconius Melpomene* and *H. Thelxiope* , which he thinks are no more different than " a couple of Dorking hens " . Bates 's assumption that all forest animals are adapted to forest life is rejected by the reviewer , who sees the same features as signs of a beneficent Creator ; while his mention of " slow adaptation of the fauna of a forest @-@ clad country throughout an immense lapse of geological time " is criticised for being " haunted " by this " spectre of time " . However the reviewer is fascinated by the variety of life described in the book , and by Bates 's " rapturous manner " of speaking about how delicious monkey flesh is , which " almost puts a premium on cannibalism " . The review concludes " not without regret " ( at such an enjoyable book ) , and assures readers " that they will not find him heavy reading " ; supposes that 11 years was " perhaps a little too much " of tropical life ; and recommends intending museum curators to try it for " a year or two " .

= = = Joseph F. James = = =

An unabridged edition was reviewed by botanist and geologist Joseph F. James ( 1857 @-@ 1897 ) in *Science* in 1893 . James was reviewing a book which was at that time already a 30 @-@ year @-@ old classic that had been reprinted at least four times . He compared it to Gilbert White 's 1789 *The Natural History and Antiquities of Selborne* , Darwin 's *Voyage of the Beagle* , and Alfred Russel Wallace 's *The Malay Archipelago* , writing that

No one can err , we believe , in placing Bates 's " *Naturalist on the River Amazons* " among the foremost books of travel of this age ; and no one who has read it , but recalls its graphic pages with delight .

James notes that " on the appearance of the book in 1868 it met with cordial praise from all quarters " . Despite his professed liking for Bates 's " direct and concise " style , he quotes at length Bates ' description of the tropics , with the

whirring of cicadas , the shrill stridulation of a vast number and variety of field @-@ crickets and grasshoppers , each species sounding its peculiar note ; the plaintive hootings of tree @-@ frogs , - all blended together in one continuous ringing sound , - the audible expression of the teeming profusion of nature . "

James spends much space in his review quoting Bates 's account of the strangling fig , called the " Murderer Liana or Sipo " , which he uses to emphasize the " struggle for existence " between plants , as much as for animals . Bates explains how the fig grows rings around the " victim " tree , which eventually dies , leaving the " selfish parasite clasping in its arms the lifeless and decaying body of its victim " , so that the fig itself must quickly flower , fruit and die when its support fails . James observes that " It is as much in the reflections that the varied phenomena under observation give rise to as in the descriptive portions that the value and charm of the book lie . " Unable to resist a final quotation , even after admitting he has " overstepped our space " , he cites Bates 's description of his last night in the " country of perpetual summer " , regretting he will have to live again in England with its " gloomy winters " and " factory chimneys " ; but after Bates has returned , he rediscovers " how incomparably superior is civilized life " which can nourish " feelings , tastes and

intellect " .

= = = Modern assessment = = =

= = = New Yorker = = =

In 1988 , Alex Shoumatoff , writing in The New Yorker , makes Bates 's Naturalist his choice if he were allowed only one book for a tropical journey . In his view , it is " the basic text " and a monument of scientific travel writing . Shoumatoff had in fact spent eight months in Bates 's " glorious forest " ( he quotes ) with a copy in his backpack ; he thus admires Bates 's acceptance of the inevitable discomfort and homesickness from personal knowledge , noting that Bates only complained when all the following had occurred together : he had been robbed , he had gone barefoot having worn out his shoes , he had received no parcels from England , and worst of all he had nothing left to read . But otherwise Bates was " lost in wonder " at the astonishing diversity of the natural history of the Amazons . He was , writes Shoumatoff , one of the four largely self @-@ educated geniuses who pioneered tropical biology , and who all knew each other : Darwin , Wallace , Bates , and the botanist Richard Spruce .

Shoumatoff observes that " Reading Bates is an emotional experience for someone who has travelled in Amazonia , because much of what he describes so poignantly is no longer there " ; that the " charm and the genius " of the book is that Bates covers both natural history and everything else that is going on ? as the subtitle so accurately says , " A Record of Adventures , Habits of Animals , Sketches of Brazilian and Indian Life , and Aspects of Nature Under the Equator , During Eleven Years of Travel . "

He feels a dreamy quality in the best of Bates 's writing , as when he meets a boa constrictor : " On seeing me the reptile suddenly turned , and glided at an accelerated rate down the path . ... The rapidly moving and shining body looked like a stream of brown liquid flowing over the thick bed of fallen leaves . " However he is less impressed with Bates 's remarks about the " intellectual inferiority " of the natives , and observes that Bates was wrong about the fertility of tropical soils , which are often poor : the luxuriant growth results from rapid recycling of nutrients . He celebrates the " famous closing passage " of the book , where Bates expresses his " deep misgivings " about returning to England , and writes that recent " progress " in the Amazon is just as shocking .

= = = John G.T. Anderson = = =

In 2011 John G.T. Anderson chose to " recommend the reader 's attention " to Bates ' Naturalist in the Journal of Natural History Education and Experience , writing that

As much as I love Wallace , I feel that Bates is far and away the better storyteller of the pair , with a keen eye for landscapes , species , and peoples .

Anderson writes that Bates threw himself eagerly into the local culture , writing warmly about the people as well as delighting in everything from the odd to the mundane " in a modest yet engaging style that leaves this reader itching to go and see for himself . " Noting that Bates collected over 8 @, @ 000 species on the trip , the book shows , writes Anderson , how this was achieved :

the discomfort of narrow canoes , the encounters with alligators and giant spiders , drinking burning rum around a campfire while waiting for jaguars , and above all else the sheer fun and intense joy of seeing new things in new places through eyes of a keen observer and master storyteller ..

= = = Zoological Society of London = = =

The Zoological Society of London writes that " This fascinating , lucidly written book is widely regarded as one of the greatest reports of natural history travels . " It describes the book as " an eloquently written compendium of curious natural facts and observations on Amazon life before the rubber boom , revealing the amazing zoological and botanical richness of the region " and calls his

specimens " a hugely significant contribution to zoological discovery . "

= = = In science , education , and literature = = =

Bates 's book is cited in papers for its accurate early observations , such as of the urticating hairs of tarantulas , the puddle drinking habits of butterflies , or of the rich insect fauna in the tropics . The book and Bates ' Amazon trip are covered in lecture courses on evolution . The warm reception of Bates 's Naturalist was not confined to scientists . The novelists D.H. Lawrence and George Orwell both wrote admiringly of the book . Lawrence wrote to his friend S. S. Kotliansky " I should like , from the Everyman Library Bates ' ? Naturalist on the Amazon ... because I intend some day to go to South America ? to Peru or Ecuador , not the Amazon . But I know Bates is good . "

= = = Primary = = =

This list identifies the places in the book where quotations come from .

= = = Secondary = = =