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978-1-108-00163-2 - The Naturalist on the River Amazon

Henry Walter Bates

Excerpt

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THE
NATURALIST ON THE AMAZONS.

CHAPTER I.

PARÁ.

Arrival—Aspect of the country—The Pará river—First walk in the suburbs of Pará—Birds, Lizards and Insects of the suburbs—Leaf-carrying Ant—Sketch of the climate, history, and present condition of Pará.

I EMBARKED at Liverpool, with Mr. Wallace, in a small trading vessel, on the 26th of April, 1848; and, after a swift passage from the Irish Channel to the equator, arrived, on the 26th of May, off Salinas. This is the pilot-station for vessels bound to Pará, the only port of entry to the vast region watered by the Amazons. It is a small village, formerly a missionary settlement of the Jesuits, situated a few miles to the eastward of the Pará river. Here the ship anchored in the open sea, at a distance of six miles from the shore, the shallowness of the water far out around the mouth of the great river not permitting in safety a nearer approach; and the signal was hoisted for a pilot. It was with deep interest that my companion and myself, both now about to see and examine the beauties of a tropical country for the first time, gazed on the land where I, at least, eventually spent eleven of the best years of my life. To the eastward the country was not remarkable in appearance, being slightly undulating, with bare sand-hills and scattered trees; but to the westward, stretching towards the mouth of the river, we could see through the captain's glass a long line of forest, rising apparently out of the water; a densely-packed mass of tall trees, broken into

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groups, and finally into single trees, as it dwindled away in the distance. This was the frontier, in this direction, of the great primæval forest characteristic of this region, which contains so many wonders in its recesses, and clothes the whole surface of the country for two thousand miles from this point to the foot of the Andes.

On the following day and night we sailed, with a light wind, partly aided by the tide, up the Pará river. Towards evening we passed Vigia and Colares, two fishing villages, and saw many native canoes, which seemed like toys beneath the lofty walls of dark forest. The air was excessively close, the sky overcast, and sheet lightning played almost incessantly around the horizon, an appropriate greeting on the threshold of a country lying close under the equator! The evening was calm, this being the season when the winds are not strong, so we glided along in a noiseless manner, which contrasted pleasantly with the unceasing turmoil to which we had been lately accustomed on the Atlantic. The immensity of the river struck us greatly, for although sailing sometimes at a distance of eight or nine miles from the eastern bank, the opposite shore was at no time visible. Indeed, the Pará river is 36 miles in breadth at its mouth; and at the city of Pará, nearly 70 miles from the sea, it is 20 miles wide; but at that point a series of islands commences, which contracts the river view in front of the port.

On the morning of the 28th of May we arrived at our destination. The appearance of the city at sunrise was pleasing in the highest degree. It is built on a low tract of land, having only one small rocky elevation at its southern extremity; it therefore affords no amphitheatral view from the river; but the white buildings roofed with red tiles, the numerous towers and cupolas of churches and convents, the crowds of palm trees reared above the buildings, all sharply defined against the clear blue sky, give an appearance of lightness and cheerfulness which is most exhilarating. The perpetual forest hems the city in on all sides landwards; and towards the suburbs, picturesque country houses are seen scattered about, half buried in luxuriant foliage. The port was full of native canoes and other vessels, large and small; and the ringing of bells and firing of rockets, announcing the dawn of some Roman Catholic festival day, showed that the population was astir at that early hour.

The impressions received during our first walk, on the evening of the day of our arrival, can never wholly fade from my mind.

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After traversing the few streets of tall, gloomy, convent-looking buildings near the port, inhabited chiefly by merchants and shopkeepers; along which idle soldiers, dressed in shabby uniforms, carrying their muskets carelessly over their arms, priests, negresses with red water-jars on their heads, sad-looking Indian women carrying their naked children astride on their hips, and other samples of the motley life of the place, were seen; we passed down a long narrow street leading to the suburbs. Beyond this, our road lay across a grassy common into a picturesque lane leading to the virgin forest. The long street was inhabited by the poorer class of the population. The houses were of one story only, and had an irregular and mean appearance. The windows were without glass, having, instead, projecting lattice casements. The street was unpaved, and inches deep in loose sand. Groups of people were cooling themselves outside their doors—people of all shades in colour of skin, European, Negro and Indian, but chiefly an uncertain mixture of the three. 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. The houses were mostly in a dilapidated condition, and signs of indolence and neglect were everywhere visible. The wooden palings which surrounded the weed-grown gardens were strewn about, broken; and hogs, goats, and ill-fed poultry wandered in and out through the gaps. But amidst all, and compensating every defect, rose the overpowering beauty of the vegetation. The massive dark crowns of shady mangoes were seen everywhere amongst the dwellings, amidst fragrant blossoming orange, lemon, and many other tropical fruit trees; some in flower, others in fruit, at varying stages of ripeness. Here and there, shooting above the more dome-like and sombre trees, were the smooth columnar stems of palms, bearing aloft their magnificent crowns of finely-cut fronds. Amongst the latter the slim assai-palm was especially noticeable, growing in groups of four and five; its smooth, gently-curving stem, twenty to thirty feet high, terminating in a head of feathery foliage, inexpressibly light and elegant in outline. On the boughs of the taller and more ordinary-looking

trees sat tufts of curiously-leaved parasites. Slender woody lianas hung in festoons from the branches, or were suspended in the form of cords and ribbons; whilst luxuriant creeping plants overran alike tree-trunks, roofs and walls, or toppled over palings in copious profusion of foliage. The superb banana (*Musa paradisiaca*), of which I had always read as forming one of the charms of tropical vegetation, here grew with great luxuriance: its glossy velvety-green leaves, twelve feet in length, curving over the roofs of verandahs in the rear of every house. The shape of the leaves, the varying shades of green which they present when lightly moved by the wind, and especially the contrast they afford in colour and form to the more sombre hues and more rounded outline of the other trees, are quite sufficient to account for the charm of this glorious tree. Strange forms of vegetation drew our attention at almost every step. Amongst them were the different kinds of *Bromelia*, or pineapple plants, with their long, rigid, sword-shaped leaves, in some species jagged or toothed along their edges. Then there was the bread-fruit tree—an importation, it is true; but remarkable from its large, glossy, dark green, strongly digitated foliage, and its interesting history. Many other trees and plants, curious in leaf, stem, or manner of growth, grew on the borders of the thickets along which lay our road; they were all attractive to newcomers, whose last country ramble, of quite recent date, was over the bleak moors of Derbyshire on a sleety morning in April.

As we continued our walk the brief twilight commenced, and the sounds of multifarious life came from the vegetation around. 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 hooting of tree frogs—all blended together in one continuous ringing sound,—the audible expression of the teeming profusion of Nature. As night came on, many species of frogs and toads in the marshy places joined in the chorus: their croaking and drumming, far louder than anything I had before heard in the same line, being added to the other noises, created an almost deafening din. This uproar of life, I afterwards found, never wholly ceased, night or day: in course of time I became, like other residents, accustomed to it. It is, however, one of the peculiarities of a tropical—at least, a Brazilian—climate which is most likely to surprise a stranger. After my return to England, the death-like stillness of summer days in the country appeared to me

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as strange as the ringing uproar did on my first arrival at Pará. The object of our visit being accomplished, we returned to the city. The fire-flies were then out in great numbers, flitting about the sombre woods, and even the frequented streets. We turned into our hammocks, well pleased with what we had seen, and full of anticipation with regard to the wealth of natural objects we had come to explore.

During the first few days we were employed in landing our baggage and arranging our extensive apparatus. We then accepted the invitation of the consignee of the vessel to make use of his rocinha, or country-house in the suburbs, until we finally decided on a residence. Upon this we made our first essay in housekeeping. We bought cotton hammocks, the universal substitute for beds in this country, cooking utensils and crockery, and engaged a free negro, named Isidoro, as cook and servant-of-all-work. Our first walks were in the immediate suburbs of Pará. The city lies on a corner of land formed by the junction of the river Guamá with the Pará. As I have said before, the forest, which covers the whole country, extends close up to the city streets; indeed, the town is built on a tract of cleared land, and is kept free from the jungle only by the constant care of the Government. The surface, though everywhere low, is slightly undulating, so that areas of dry land alternate throughout with areas of swampy ground, the vegetation and animal tenants of the two being widely different. Our residence lay on the side of the city nearest the Guamá, on the borders of one of the low and swampy areas which here extends over a portion of the suburbs. The tract of land is intersected by well-macadamized suburban roads, the chief of which, Estrada das Mongubeiras (the Monguba road), about a mile long, is a magnificent avenue of silk-cotton trees (*Bombax monguba* and *B. ceiba*), huge trees whose trunks taper rapidly from the ground upwards, and whose flowers before opening look like red balls studding the branches. This fine road was constructed under the governorship of the Count dos Arcos, about the year 1812. At right angles to it run a number of narrow green lanes, and the whole district is drained by a system of small canals or trenches through which the tide ebbs and flows, showing the lowness of the site. Before I left the country, other enterprising presidents had formed a number of avenues lined with coco-nut palms, almond and other trees, in continuation of the Monguba road.,

over the more elevated and drier ground to the north-east of the city. On the high ground the vegetation has an aspect quite different from that which it presents in the swampy parts. Indeed, with the exception of the palm trees, the suburbs here have an aspect like that of a village green at home. The soil is sandy, and the open commons are covered with a short grassy and shrubby vegetation. Beyond this, the land again descends to a marshy tract, where, at the bottom of the moist hollows, the public wells are situated. Here all the linen of the city is washed by hosts of noisy negresses, and here also the water-carts are filled—painted hogsheads on wheels, drawn by bullocks. In early morning, when the sun sometimes shines through a light mist, and everything is dripping with moisture, this part of the city is full of life: vociferous negroes and wrangling Gallegos,* the proprietors of the water-carts, are gathered about, jabbering continually, and taking their morning drams in dirty wine-shops at the street corners.

Along these beautiful roads we found much to interest us during the first few days. Suburbs of towns, and open, sunny, cultivated places in Brazil, are tenanted by species of animals and plants which are mostly different from those of the dense primæval forests. I will, therefore, give an account of what we observed of the animal world, during our explorations in the immediate neighbourhood of Pará.

The number and beauty of the birds and insects did not at first equal our expectations. The majority of the birds we saw were small and obscurely coloured; they were indeed similar, in general appearance, to such as are met with in country places in England. Occasionally a flock of small parroquets, green, with a patch of yellow on the forehead, would come at early morning to the trees near the Estrada. They would feed quietly, sometimes chattering in subdued tones, but setting up a harsh scream, and flying off, on being disturbed. Humming-birds we did not see at this time, although I afterwards found them by hundreds when certain trees were in flower. Vultures we only saw at a distance, sweeping round at a great height, over the public slaughter-houses. Several flycatchers, finches, ant-thrushes, a tribe of plainly-coloured birds, intermediate in structure between flycatchers and thrushes, some of which startle the new-comer by their extraordinary notes emitted from their places of concealment in the dense thickets; and also

* Natives of Galicia, in Spain, who follow this occupation in Lisbon and Oporto, as well as at Pará.

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tanagers, and other small birds, inhabited the neighbourhood. None of these had a pleasing song, except a little brown wren (*Troglodytes furvus*), whose voice and melody resemble those of our English robin. It is often seen, hopping and climbing about the walls and roofs of houses and on trees in their vicinity. Its song is more frequently heard in the rainy season, when the Monguba trees shed their leaves. At those times the Estrada das Mongubeiras has an appearance quite unusual in a tropical country. The tree is one of the few in the Amazons region which sheds all its foliage before any of the new leaf-buds expand. The naked branches, the sodden ground matted with dead leaves, the grey mist veiling the surrounding vegetation, and the cool atmosphere soon after sunrise; all combine to remind one of autumnal mornings in England. Whilst loitering about at such times in a half-oblivious mood, thinking of home, the song of this bird would create for the moment a perfect illusion. Numbers of tanagers frequented the fruit and other trees in our garden. The two principal kinds which attracted our attention were the *Rhamphocelus jacapa* and the *Tanagra episcopus*. The females of both are dull in colour, but the male of *Jacapa* has a beautiful velvety purple and black plumage, the beak being partly white, whilst the same sex in *Episcopus* is of a pale blue colour, with white spots on the wings. In their habits they both resemble the common house-sparrow of Europe, which does not exist in South America, its place being in some measure filled by these familiar tanagers. They are just as lively, restless, bold, and wary; their notes are very similar, chirping and inharmonious, and they seem to be almost as fond of the neighbourhood of man. They do not, however, build their nests on houses.

Another interesting and common bird was the Japím, a species of *Cassicus* (*C. icteronotus*). It belongs to the same family of birds as our starling, magpie, and rook, and has a rich yellow and black plumage, remarkably compact and velvety in texture. The shape of its head and its physiognomy are very similar to those of the magpie; it has light grey eyes, which give it the same knowing expression. It is social in its habits; and builds its nest, like the English rook, on trees in the neighbourhood of habitations. But the nests are quite differently constructed, being shaped like purses, two feet in length, and suspended from the slender branches all round the tree, some of them very near the ground. The entrance is on

the side near the bottom of the nest. The bird is a great favourite with the Brazilians of Pará: it is a noisy, stirring babbling creature, passing constantly to and fro, chattering to its comrades, and is very ready at imitating other birds, especially the domestic poultry of the vicinity. There was at one time a weekly newspaper published at Pará, called "The Japím;" the name being chosen, I suppose, on account of the babbling propensities of the bird. Its eggs are nearly round, and of a bluish-white colour, speckled with brown.

Of other vertebrate animals we saw very little, except of the lizards. They are sure to attract the attention of the newcomer from Northern Europe, by reason of their strange appearance, great numbers, and variety. The species which are seen crawling over the walls of buildings in the city, are different from those found in the forest or in the interior of houses. They are unpleasant-looking animals, with colours assimilated to those of the dilapidated stone and mud walls on which they are seen. 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 Brazilians give them the name of Osgas, and firmly believe them to be poisonous; they are, however, harmless creatures. Those found in houses are small; but I have seen others of great size, in crevices of tree trunks in the forest. Sometimes Geckos are found with forked tails; this results from the budding of a rudimentary tail at the side, from an injury done to the member. A slight rap will cause their tails to snap off; the loss being afterwards partially repaired by a new growth. The tails of lizards seem to be almost useless appendages to the animals. I used often to amuse myself in the suburbs, whilst resting in the verandah of our house during the heat of mid-day, by watching the variegated green, brown, and yellow ground-lizards. They would come nimbly forward, and commence grubbing with their fore feet and snouts around the

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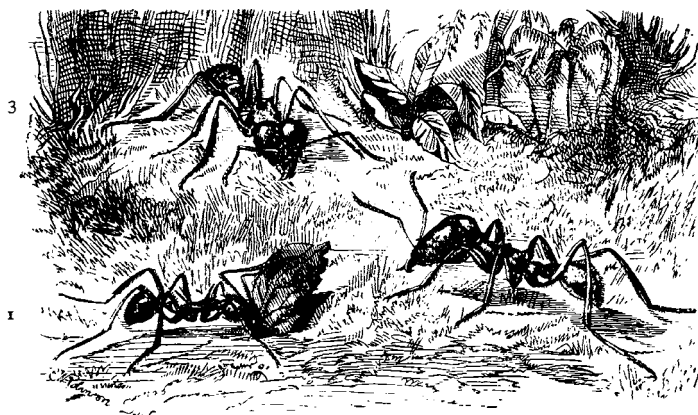
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roots of herbage, searching for insect larvæ. On the slightest alarm they would scamper off ; their tails cocked up in the air as they waddled awkwardly away, evidently an incumbrance to them in their flight.

Next to the birds and lizards, the insects of the suburbs of Pará deserve a few remarks. I will pass over the many other orders and families of this class, and proceed at once to the ants. These were in great numbers everywhere, but I will mention here only two kinds. We were amazed at seeing ants an inch and a quarter in length, and stout in proportion, marching in single file through the thickets. These belonged to the species called *Dinoponera grandis*. Its colonies consist



Saüba or Leaf-carrying Ant.—1. Worker-minor; 2. Worker-major; 3. Subterranean worker.

of a small number of individuals, and are established about the roots of slender trees. It is a stinging species, but the sting is not so severe as in many of the smaller kinds. There was nothing peculiar or attractive in the habits of this giant among the ants. Another far more interesting species was the Saüba (*Ecodoma cephalotes*). This ant is seen everywhere about the suburbs, marching to and fro in broad columns. From its habit of despoiling the most valuable cultivated trees of their foliage, it is a great scourge to the Brazilians. In some districts it is so abundant that agriculture is almost impossible, and everywhere complaints are heard of the terrible pest.

The workers of this species are of three orders, and vary in size from two to seven lines ; some idea of them may be obtained from the accompanying woodcut. The true working-

class of a colony is formed by the small-sized order of workers, the worker-minors as they are called (Fig. 1). The two other kinds, whose functions, as we shall see, are not yet properly understood, have enormously swollen and massive heads; in one (Fig. 2), the head is highly polished; in the other (Fig. 3), it is opaque and hairy. The worker-minors vary greatly in size, some being double the bulk of others. The entire body is of very solid consistence, and of a pale reddish-brown colour. The thorax or middle segment is armed with three pairs of sharp spines; the head, also, has a pair of similar spines proceeding from the cheeks behind.

In our first walks we were puzzled to account for large mounds of earth, of a different colour from the surrounding soil, which were thrown up in the plantations and woods. Some of them were very extensive, being forty yards in circumference, but not more than two feet in height. We soon ascertained that these were the work of the Saübas, being the outworks, or domes, which overlie and protect the entrances to their vast subterranean galleries. On close examination, I found the earth of which they are composed to consist of very minute granules, agglomerated without cement, and forming many rows of little ridges and turrets. The difference in colour from the superficial soil of the vicinity is owing to their being formed of the undersoil, brought up from a considerable depth. It is very rarely that the ants are seen at work on these mounds; the entrances seem to be generally closed; only now and then, when some particular work is going on, are the galleries opened. The entrances are small and numerous; in the large hillocks it would require a great amount of excavation to get at the main galleries; but I succeeded in removing portions of the dome in smaller hillocks, and then I found that the minor entrances converged, at the depth of about two feet, to one broad elaborately-worked gallery or mine, which was four or five inches in diameter.

This habit in the Saüba ant of clipping and carrying away immense quantities of leaves has long been recorded in books on natural history. When employed on this work, their processions look like a multitude of animated leaves on the march. In some places I found an accumulation of such leaves, all circular pieces, about the size of a sixpence, lying on the pathway, unattended by ants, and at some distance from any colony. Such heaps are always found to be removed when the place is revisited the next day. In course of time I had plenty of