THE MEDITERRANEAN OF AMERICA.

THE Indian canoe-men about the mouth of the Amazons sometimes pick up pieces of a porous gray substance which floats with sticks and rubbish on the current. They know nothing of the origin of this *pedra-pomes;* it is good for cleaning guns and knives, and they keep fragments of it about their houses for that purpose; I have some pieces of it which were given me by the poor folk as presents of some value. These floating bits have a story to tell. They speak of fierce, glowing heat, of streams of red-hot lava gushing down the sides of burning mountains, cooling slowly while puffed out with gases, and forming beds of pumice-stone, as light as cork. They tell again of snow-fed streams, rushing and tumbling over the rocks, undermining the lava-beds, and tearing off great fragments of the porous stone. These fragments are borne downward on the strong current, jammed against rocks, pounded and whirled about in the rapids, and ground between floating tree-trunks, until they reach the quiet water below: there a thousand tiny streams have united to form a broad river, which flows swiftly between forest-clad banks and past solitary Indian huts, until it is merged into a yet broader and deeper flood—the mighty Marañon, the Peruvian Amazons.

The fragments tell now of long stretches of clay-stained water; of open horizons east and west; of verdant shores and archipelagoes; of pathless forest, where the woodman's ax is never heard and the dusky hunter glides unobserved through the shadowy arcades of foliage; of sand-banks lighted by the fires of the turtle-hunters; of scattered settlements, half buried in the green forest; of weeks, months perhaps, in the swift current before the stained and battered fragments reach the sea.

We must conceive of the Amazons not as a single stream, but as a great alluvial flat, furrowed by a net-work of broad and narrow channels, and with much of its surface occupied by shallow lakes. All large rivers have such alluvial systems along their lower courses (the bayous and lakes of the lower Mississippi are familiar examples); but on other streams the plains narrow off as we ascend them, and are soon lost; on the Amazons alone they extend almost to the head-waters, as if a sea had been filled in, leaving deep ditches for the water-flow, and countless pools on the surface. From Manáos to the Atlantic, the width of this alluvial flat varies from fifteen miles to a hundred or more; on the upper Amazons it is probably still wider;* only as we approach the Andes, the rocky shores are narrowed to the main stream.

In our voyage up the river we shall see very little of the highlands; our first rambles then will be among the islands and channels of the *varzeas,* with their swampy forests and stretches of meadow, and half-submerged plantations. And the lowlands deserve a much more careful study than has ever been given them.

We leave Pará with the midnight tide; by gray morning we are steaming across the Bay of Marajó, which is not a bay at all, but properly a continuation of the Pará River. The wind blows briskly over the wide reaches, swaying our hammocks under the arched roof of the upper deck; we roll our blankets closer around us, and let who will retreat to the stifling state-rooms. But if Boreas cannot unwrap us, Phœbus brings us out quickly enough; we rise to look upon the beautiful morning, with the sun shining in our eyes, and the bright waves leaping and dancing for joy.

The water-system of this region belongs, perhaps, more properly to the Tocantins than to the Amazons. Marajó, commonly spoken of as an island in the mouth of the Amazons, is not to be confounded with the silt-formed archipelagoes of the river-valley, for it contains high as well as low land; it is rather a great tract cut off from the main shores by a net-work of narrow channels, through which the Amazons sends its contribution of water to the Pará River. But as this contribution is at least equal to the combined outflow of the Tocantins and its neighbors, the Pará has a fair claim to Amazonian honors.

Even the Amazons is no broader; crossing the mouth of the Tocantins the main channel is like a sea, with great reaches of open horizon. But farther on we enter the system of passages that separate Marajó

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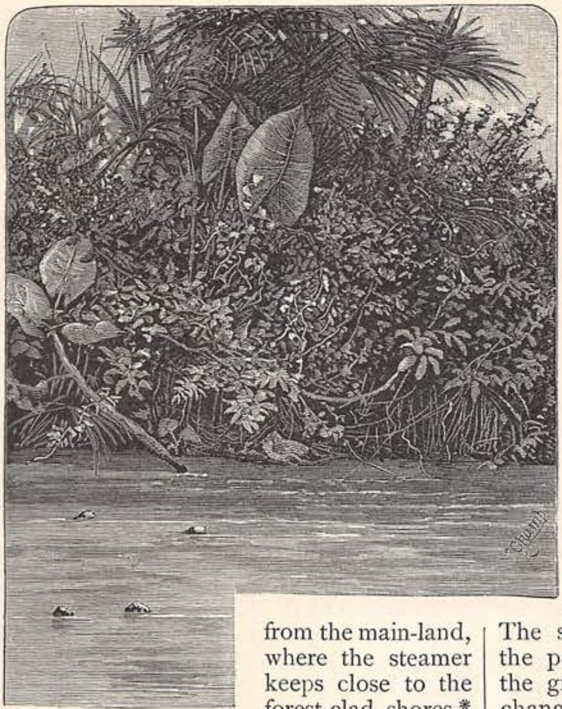
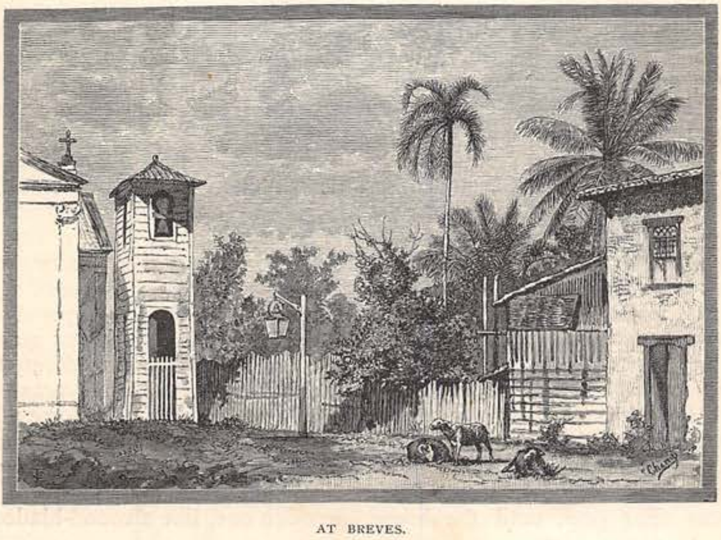
* I am not personally familiar with the river above Obidos.



ON THE AMAZONS.

from the main-land, where the steamer keeps close to the forest-clad shores.* Any one who is not blind must feel his soul moved within him by the marvelous beauty of the vegetation. Not a bit of ground is seen; straight up from the water the forest rises like a wall,—dense, dark, impenetrable, a hundred feet of leafy splendor. And breaking out everywhere from among the heaped-up masses are the palm-trees. For here the palms hold court; nowhere else on the broad earth is their glory unveiled as we see it: soft, plumy *Jupatis* drooping over the water, and fairy-light *assaiso* and *bussús* with their light-green vase-like forms, and great noble fan-leaved *miritis* looking down from their eighty-feet high columns, and others that we hardly notice at first, though they are nobles in their race. If palms, standing alone, are esteemed the most beautiful of trees, what shall we say when their numbers are counted, not by scores, nor hundreds, but by thousands, and all in a ground-work of such forest as is never seen outside of the tropics? The scene is infinitely varied; sometimes the palm-trees are hidden, but even then the great rolling mass is full of wonderful changes, from the hundred or more kinds of trees that compose it; and again the palms hold undivided sway, or only low shrubs and delicate climbing vines soften their splendor. In most places there are not many large vines; we shall find their kingdom farther up the river, and on the highlands; here we sometimes notice a tree draped with pendent masses, as if a green tapestry were thrown over it. Down by the



AT BREVES.

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* These channels are generally described as only just wide enough for the steamer to pass through them; a natural mistake, because the towering forest makes them look narrower. Most of them are as broad as the Hudson at Albany.

water's edge the flowering convolvuli are mingled with shield-like leaves of the arborescent arums, and mangroves standing aloft on their stilt-like roots, where they are washed by the estuary tides.

The Indian pilot points out numbers of rubber-trees, and we learn to recognize their white trunks and shining bright-green foliage. This low tide-region is one of the most important rubber-districts, where hundreds of *seringueiros* are employed in gathering and preparing the crude gum. Occasionally we see their thatched huts along the shore, built on piles and always damp, reeking, dismal, suggestive of agues and rheumatism; for the tide-lowlands, glorious as they are from the river, are sodden marshes within, where many a rubber-gatherer has found disease and death.

The little town of Breves owes its prosperity to this dangerous industry. It is built on a low strip of sandy land, but with swamps on either side coming close up to the town. Even along the water-front the main street is a succession of bridges. But the houses are well built, of brick or adobe, and the stores contain excellent stocks of the commoner wares. It looks fresh and pretty enough; the miasma of the swamps does not often rise to the high lands, so we are not loth to remain here for a few days and study the rubber industry more closely.

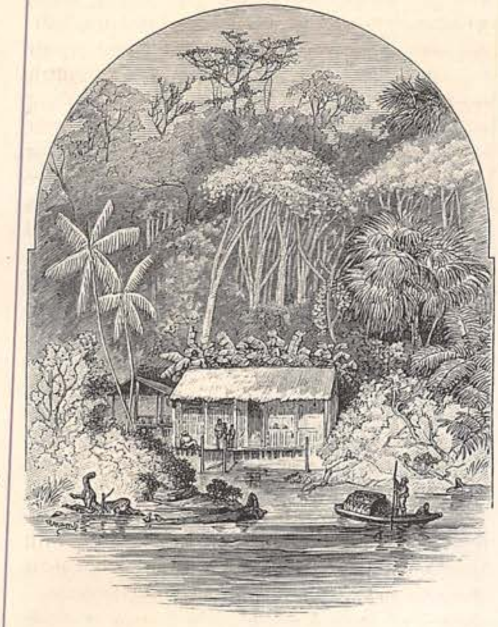
In the river-towns there are no hotels; but we are provided with a letter of introduction, which insures us a hearty welcome and a home as long as we care to stay. For the Amazons is a land of hospitality. Out of the large cities, a stranger, even unintroduced, will always find shelter and food, and for the most part without a thought of remuneration; and, if on a longer stay he occupies a house of his own, he will be expected to extend the same hospitality to others.

The rubber-swamps are all around, but land traveling is out of the question. So an Indian canoe-man is engaged,—a good-natured fellow, and an adept in wood-craft. He sets us across the river at a half-ruined hut, where bright vines clamber over the broken thatch and hang in long festoons in front of the low door-way; but within, the floor is sodden black clay, and dark mold hangs on the sides, and the air is like a sepulcher. The single slovenly *mameluca* woman who inhabits the place complains bitterly of the ague which tortures her; yet year after year, until the house falls to pieces, she will go on dying here, because, forsooth, it is her own and the rubber-trees are near. She will not even repair the structure. You can see sky through the roof, but if rain drives in she will swing her hammock in another corner, and shiver on through the night as best she may; for to-morrow there are rubber-trees to be tapped, and a fresh harvest of the precious milk to be brought home,—and what will you have? One must expect discomfort in a swamp.

Back of the house the rubber-trees are scattered through marshy forest, where we clamber over logs, and sink into pools of mud, and leap the puddles; where the mosquitos are blood-thirsty, and nature is damp, and dark, and threatening; where the silence is unbroken by beast or bird,—a silence that can be felt; it is like a tomb in which we are buried, away from the sunshine, away from brute and man, alone with rotting death. The very beauty of our forest tomb makes us shudder by its intenseness.

In the early morning, men and women come with baskets of clay cups on their backs, and little hatchets to gash the trees. Where the white milk drips down from the gash they stick their cups on the trunk with daubs of clay, molded so as to catch the whole flow. If the tree is a large one, four or five gashes may be cut in a circle around the trunk. On the next day other gashes are made a little below these, and so on until the rows reach the ground. By eleven o'clock the flow of milk has ceased, and the *seringueiros* come to collect the contents of the cups in calabash jugs. A gill or so is the utmost yield from each tree, and a single gatherer may attend to a hundred and twenty trees or more, wading always through these dark marshes, and paying dearly for his profit in fever and weakness.

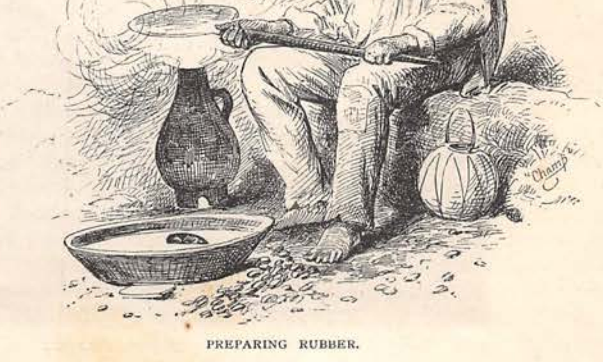
Our *mameluca* hostess has brought in her day's gathering—a calabash full of the white liquid, in appearance precisely like milk. If left in this condition it coagulates after a while and forms an inferior whitish gum. To make the black rubber of commerce the milk must go through a peculiar process of manufacture, for which our guide has been preparing. Over a smoldering fire, fed with the hard nuts of the *tucumá* palm, he places a kind of clay chimney, like a wide-mouthed, bottomless jug; through this *boião* the thick smoke pours in a constant stream. Now he takes his mold,—in this case a wooden one, like a round-bladed paddle,—



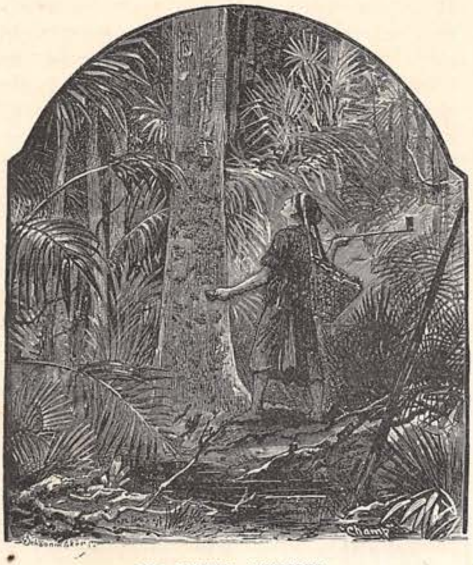
ON THE BANKS.

washes it with the milk, and holds it over the smoke until the liquid coagulates. Then another coat is added, only now, as the wood is heated, the milk coagulates faster. It may take the gatherings of two or three days to cover the mold thickly enough. Then the rubber is still dull white, but in a short time it turns brown and finally almost black, as it is sent to the market. The mass is cut from the paddle and sold to traders in the village. Bottles are sometimes made by molding the rubber over a clay ball, which is then broken up and removed. Our old-fashioned rubber shoes used to be made in this way.

Twenty million pounds of rubber, valued at $6,000,000, are annually exported from Pará; in the dry season many thousand people are engaged in gathering it. But the business is altogether a ruinous one for the province, as Brazilians themselves are fully aware. The *seringueiro*, who gains two or three dollars from a single day's gathering, has enough, as life goes here, to keep him in idleness for a week; and when his money is spent, he can draw again on his ever-ready bank. It is so with all the forest industries; they encourage idleness, and draw workmen from agricultural employments, and retard civilization by keeping the Indian and half-breed population away from villages and schools, yet not from the worst side of white life. The small traders have consciences as elastic as the rubber they buy. Generally they sell goods on credit, and when the poor ignorant people come to pay in produce, they come to a tyrant, who will charge them twenty milreis where they owe ten; who will force them to work for him, though he has no legal right to their services; who will sell them inferior goods at high prices, and take their produce at low ones. In this way one can see how even the small merchants manage to live. For instance, one of them buys a coarse German wood-knife, which, including freight from Pará, may cost him seventy-five cents. He sells this as an American article for two dollars, takes his pay in rubber at sixty-five cents the kilogram, and sells the latter for seventy-five cents the kilogram, with a sure market; total profit, over 200 per cent., and that when the trade is "*honesto*." They tell of one trader who carried to the River Tapajos a box of playing cards, which he was unable to sell because the Indians did not know their use; so this Christian gentleman picked out all the face-cards, and sold them as saints at fifty cents each. So the story goes, and the man does not deny it;



PREPARING RUBBER.



THE RUBBER GATHERER.

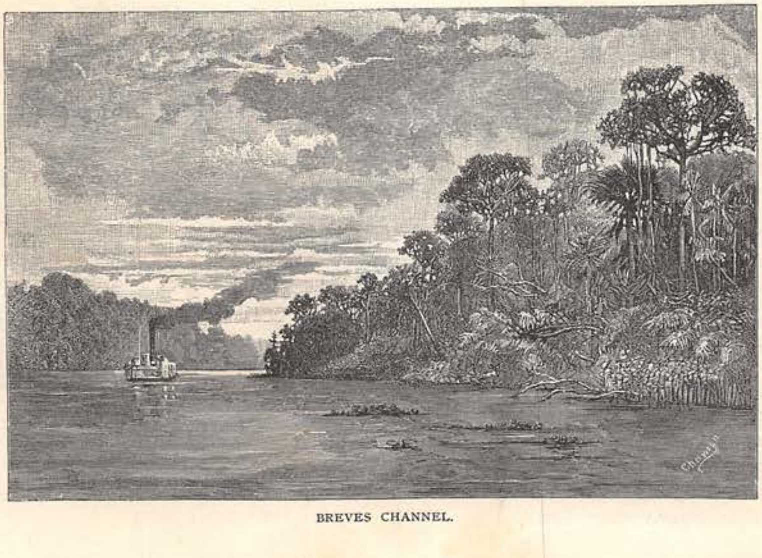
but, in justice to human nature, I prefer to doubt its entire truth.

The half-wild *seringueiros* will go on submitting to impositions and dying here in the swamps, until Brazilians learn that by purchasing this land from the government and planting it in rubber-trees, they can insure vastly larger profits, and do away with the evils of the present system. It is what must eventually be done. The rubber gatherers, in their eagerness to secure large harvests, have already killed an immense number of trees about the Pará estuary; they have been obliged to penetrate farther and farther into the forest, to the Tocantins, Madeira, Purús Rio Negro, and eventually even these regions must be exhausted, unless they are protected in some way. The trees, properly planted and cared for, will yield well in fifteen years, and, of course, the cost of gathering would be vastly reduced in a compact plantation; half the present labor of the rubber collector consists in his long tramps through the swampy forest.

Around Breves, rubber is almost the only product of the lowlands; the whole region is simply an endless succession of channels, and small lakes, and swamps covered with forest—beautiful beyond thought from without, a dismal wilderness within. From the village we could take canoe-trips in almost every direction, and return by different routes to our starting-point; or we could spend days in voyaging and never repass a place.

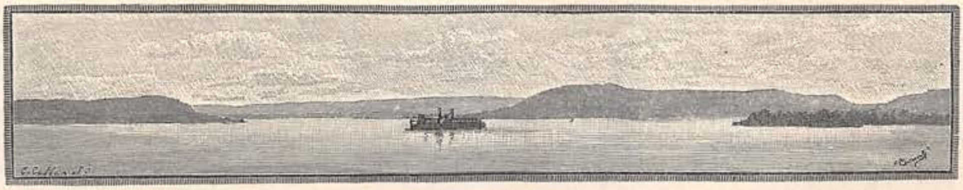
If we could only transport some of this forest to a northern park! If we could bottle up the sunshine and let it loose in Broadway! Our canoe passes along by shores where we would fain pause at every turn to catch some new effect of light and color; and as we are looking at the opposite side, our man may keep the boat steady by holding on to a palm-tree or an arum-plant, which would soon draw half the people in New York to see it, if we could set it in one of the squares.

And now we turn into a narrow channel, a mere cleft in the forest-wall; it is not more than ten yards wide, but, as in all these forest streams, the depth is considerable; hence, the Indians call such channels *iga-*



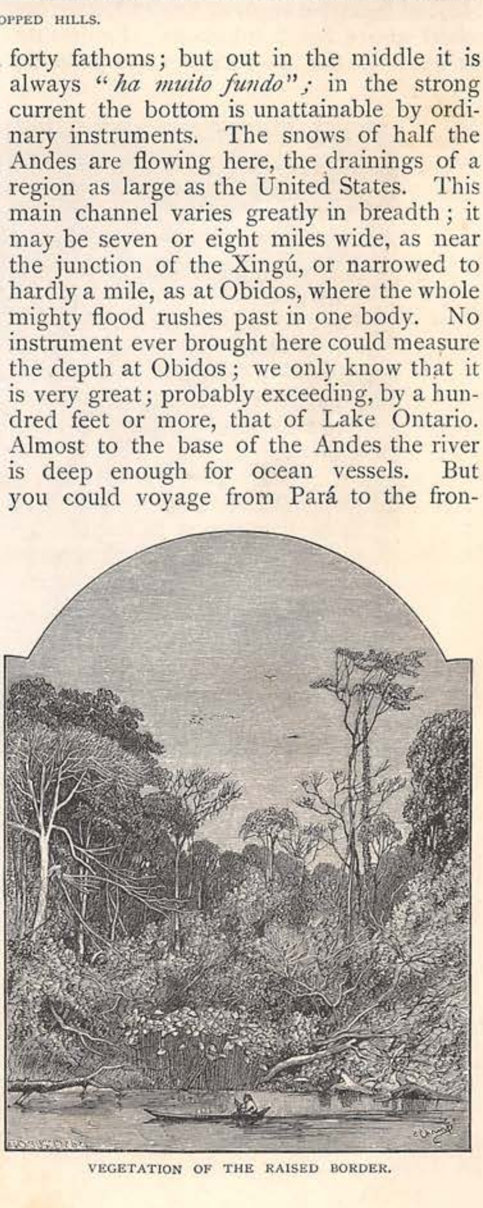
BREVES CHANNEL.

rapés, literally canoe-paths. There is a richness about all water-side vegetation that makes even our northern woodland streams superbly beautiful; but here the foliage is far thicker and more varied, and, among the dark leaves, drooping palm-fronds and great glossy wild-bananas spread their warm tropical splendors. One thinks of a temple; the arching boughs, the solemn cathedral shade, the sunshine breaking through to cast long trails on the quiet waters and drop golden glories over the tree-trunks and crooked water-washed roots, while tiny leaflets catch the glow, and shine like emeralds and diamonds in the dark forest setting. Even the Indian boatman dips his paddle noiselessly, as if he feared to disturb the Sabbath stillness. There is not much of animal motion; only now and then a brown thrush crosses the stream, or a *cuajuá* bird sounds his shrill alarm from the tree-tops, or great butterflies come waving along like blue silken banners, casting vivid reflections in the water, so bright are their glossy wings. But we must learn that solitude, not life, is the grand feature of these forests.


THE TABLE-TOPPED HILLS.

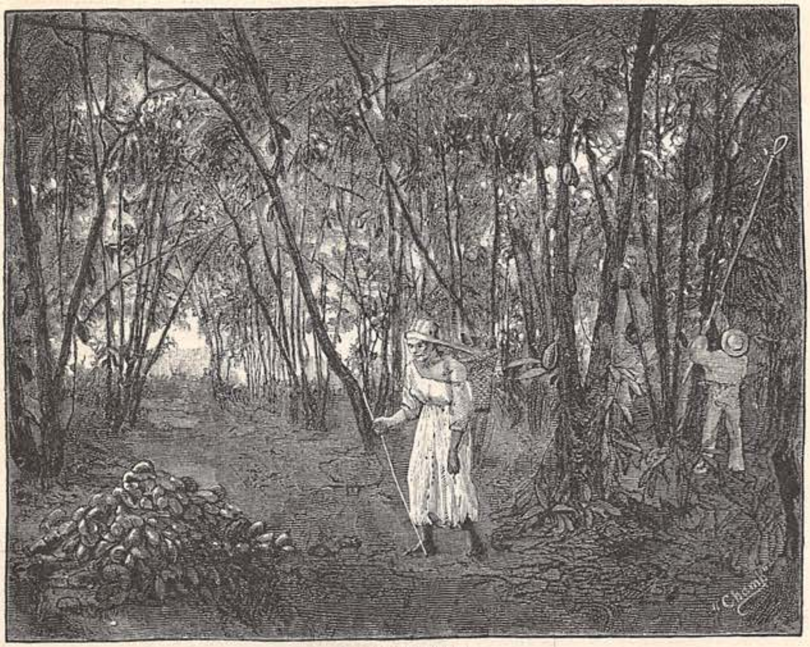
So we look, and wonder, and look again, until the steamer comes along to take us away from Breves; we carry off a thousand pleasant memories, and, as souvenirs, a lot of the fearfully ugly painted pottery for which the place is famous. Our good host comes down to the wharf to see us off, and to assure us once more that his house is always "*ás suas ordens*," whenever we care to return to it. May he always find hearts as kindly as his own!

We must travel all night yet before we emerge from the Breves channels into the broad northern stream. But we reach it at last,—the giant Amazons, the river of Orrelana, and Acuña, and Martius, the river with the destinies of a continent in its future. Its yellow waters, five miles broad, sweep majestically toward the sea. East and west lie open horizons, where the lines of forest are lifted up by the mirage, and broken into clumps and single trees, until they are lost in the sky. On either side there may be two or three other channels, for not a glimpse of northern or southern highland is seen over the dead level of the *varzeas*. No danger of running aground here. Along the sides our charts may mark twenty, thirty, forty fathoms; but out in the middle it is always "*ha muito fundo*"; in the strong current the bottom is unattainable by ordinary instruments. The snows of half the Andes are flowing here, the drainings of a region as large as the United States. This main channel varies greatly in breadth; it may be seven or eight miles wide, as near the junction of the Xingú, or narrowed to hardly a mile, as at Obidos, where the whole mighty flood rushes past in one body. No instrument ever brought here could measure the depth at Obidos; we only know that it is very great; probably exceeding, by a hundred feet or more, that of Lake Ontario. Almost to the base of the Andes the river is deep enough for ocean vessels. But you could voyage from Pará to the fron-


VEGETATION OF THE RAISED BORDER.

tier of Brazil, and hardly enter the main stream at all. Everywhere there are side channels—*paranámiris*, and *furos* *—rivers of goodly size, though they do not appear at all on the maps; some of them, in fact, are hardly less broad than the parent flood. Without counting the tributaries, I am safe in saying that there are ten thousand miles of navigable water-way in the Amazons valley.

The steamer passes from one side to another as we touch at the river-towns; mere hamlets, specks in the wilderness. Most of them are on *terra firma*,† but hardly raised above the flood-plains. Frequently we stop to take in fuel at some *fazenda*, where the wood that is put on is counted slowly, stick by stick. After passing the mouth of the Xingú, we see the flat-topped hills on the northern side, like a line of mountains, all cut off at the same level. They are remnants of the great table-land through which the river has cut its way; some of them are 1,600 feet high. It is easy enough to say this; but I confess that I am more and more filled with astonishment when I contemplate the vast extent of this aqueous denudation. Conceive of a mass two thousand miles long, on the average at least thirty-five wide, and varying in thickness from four hundred to eighteen hundred feet, all washed down to the sea by a single river! And you have to add to this the wide valleys of the tributaries, collectively at least as much more; it is even probable that the table-land itself was much thicker,—two thousand or twenty-five hundred feet. We have the very best of proof that all this has been done since the beginning—or, more probably, the middle—of the Tertiary period, the last of the geological ages. The elder Agassiz supposed that the whole valley was to be referred to glacial action. Naturalists are now convinced that he was wrong; but surely the wonder is not lessened. The world is full of just such proofs of the power of water, the symbol of instability and weakness.



CACÁO ORCHARD.

The hills are twenty miles away; between them and the main river there is a great belt of netted flood-plains,—in this district, for the most part, covered with grass-growth. Yet we do not see this; from the river there is

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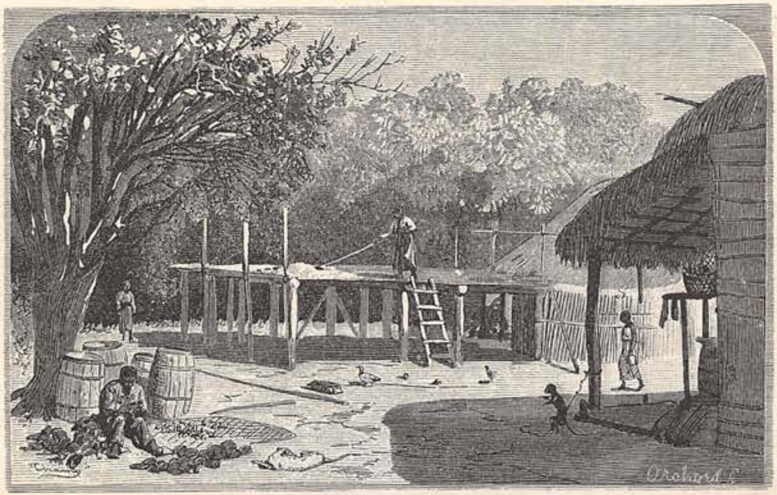
**Paraná*, in the Indian language (*Lingua geral*), means the sea, and is also applied to the Amazons; *paraná-miri* is a little sea, a lesser Amazons. Properly, this term is applied only to a channel which leaves a river above, and enters it again below; while a *furo* is a passage from one channel to another; but the words are loosely used.

† On the Amazons this term is applied to all land that is not alluvial or swampy. *Varzeas*, or *vargens*, are the flood-plains.

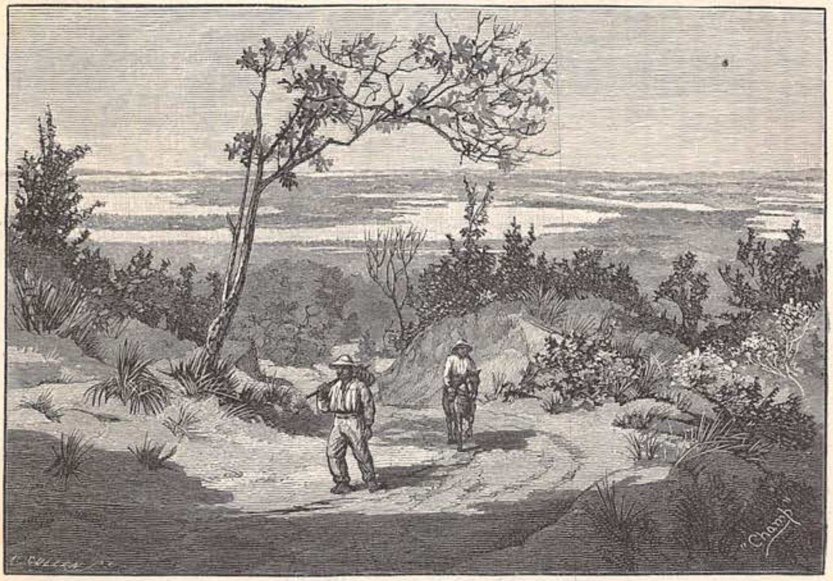


DRYING CACÁO.

only the same succession of forest-lined *varzeas*, with banks cut so steep that our steamer can keep close in shore; sometimes we almost brush the foliage. In most places, if we land from the main river or a side channel, we find, not marshes, as at Breves, but comparatively high land, running along the shore. The great trees are festooned with vines, and thick-leaved branches reach out over the water; but there is not much undergrowth, and we can easily walk inland. We find that after a little space the ground slopes gradually *away* from the river; two or three hundred yards from the bank the belt of forest ceases, and we come out suddenly on a great stretch of meadow, or a lake, the farther shore of which is lost on the horizon.

To explain these features, we must remember that the islands and flats have been formed by the river itself. Every year, in February and March, the Amazons rises to a height of thirty feet or more above its ordinary level, and overflows the meadow land in all directions. Now, in the river the particles of mud and clay are held in suspension by the swift current; but as the water flows over the meadows it becomes quiet, and the particles sink to the bottom. Naturally the coarser detritus is deposited first, near the river, and at last it builds up a ridge, as we have seen. When fully formed, the top of the ridge, in some places, is just out of reach of the highest floods. The meadows, being lower, are flooded during several months; hence the forest trees will not grow on them; but they flourish well on the banks, where their roots are only covered during three or four weeks.

The raised borders are the farming-lands of the *varzeas*. Corn, cotton, sugar-cane and tobacco all grow well on them; mandioca, which on the highlands requires more than a year to mature its roots, yields rich harvests on the plains during six months of the dry season. But between the Rio Negro and the Xingú, the most important lowland crop is cacáo. It is true, the trees will grow quite as well or better on the *terra firma*; but Brazilians prefer the *varzeas* for their plantations, because the ground is easily prepared and takes care of itself; besides, the orchard arrives at maturity much sooner. We hardly notice these cacáo plantations from the river; the dark green of the foliage is so like the forest, and generally there are other trees near the shore. But for miles the banks are lined with them, mostly the orchards of small proprietors, who own a few hundred *pés* of cacáo, though some of the estates have twenty or thirty thousand trees. In our wanderings about the lowland we often pass through these *cacoaes*. They have a rich beauty of their own,—the dense foliage, the twilight shade beneath, and the dark stems, four or five together, with the fruit growing, not among the leaves, but directly from the trunk and main branches, attached only by a short stem. The ground is quite clear and free from underbrush, and in the summer when the fruit is gathered is for the most part dry. The harvest months are July and August, when the gatherers go every day to pick the ripe fruit from each tree and bring it in baskets to the house. There the oval, ribbed outer shell is cut open and the seeds are washed from the white pulp; then they are spread over mats and placed on raised stagings to dry in the sun, care being taken to turn them at intervals. Most of the seed is exported in this form; a little is roasted, pounded, and made into cakes with melted sugar for the delicious chocolate of the country. Unfortunately, on the Amazons the sun is a very uncertain drying agent; frequently there are heavy showers, and the sky is clouded for days together; so it often happens that the imperfectly prepared seed gets musty and half rotten before it reaches the market. Much of the Pará cacáo, therefore, does not rate very high with the manufacturers. All this might be avoided by the introduction of a simple drying-machine, such as is used at Rio for coffee.

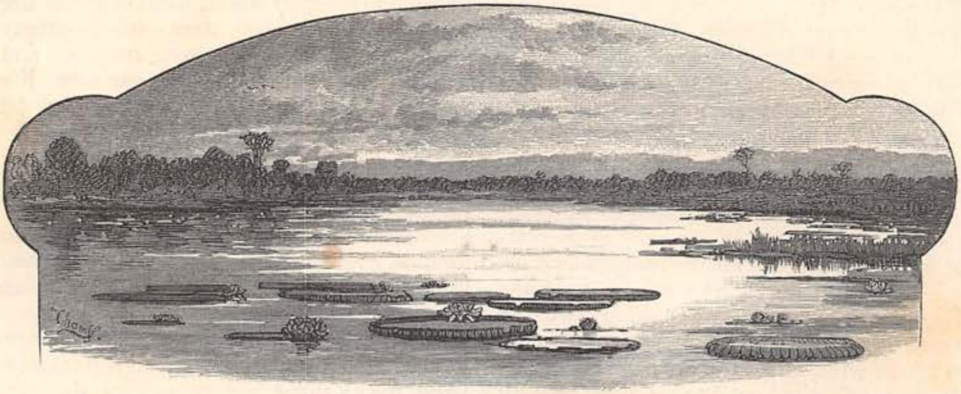


LOOKING OVER THE LOWLANDS FROM MONTE ALEGRE.

Stopping at the *fazendas*, we frequently get a refreshing drink, made from the white pulp which surrounds the cacáo-seeds. Enterprising planters prepare from this pulp a delicious amber jelly, which, if it were placed in the market, would be much more popular than guava-jelly. Even the shells are valuable; they are dried and burned, and from the ash is prepared a very strong brown soap—a necessity to every Amazonian washerwoman.

The high *varzeas* are healthful enough; unlike the Breves tide-plains, malarial fevers are not at all common here. But life on the cacáo-plantations has one great drawback: all the tigers and anacondas in Brazil can never compare to the terror of the mosquitos; not one or two serenaders, piping cannily about our ears, but swarms of them,—blood-thirsty monsters, making straight at face and hands with a savage desire to suck our life out of us. At night the houses must be closed tight, and even then the little torments come in through every chink, making life a burden to a sensitive man. And yet, in justice to the Amazonian mosquito, I must say that I have never found his bite half so virulent as that of his cousin in the Jersey swamps; after a day in the forest, where one is constantly exposed to their attacks, all irritation is removed by a cold water bath. Nor must one infer that these pests are everywhere; they keep to the woods, only coming out at night; at Pará and Breves we saw very few of them, and in the thick forest of the highlands, away from the channels, they are hardly noticed.

Back from the river we can ride for miles over the great breezy meadows, only we must make long detours to avoid the lakes and swampy forests and clumps of shield-leaved arums. There are a thousand beautiful things to see on these campos; bright yellow and white flowers dotting the surface, pretty warblers and finches and whistling black *japús*, little fishes in the pools and brilliant dragon-flies entomologizing over the reeds; drooping bushes of sensitive plant, with wonderfully delicate, feathery leaves all spread out gratefully to the sun;

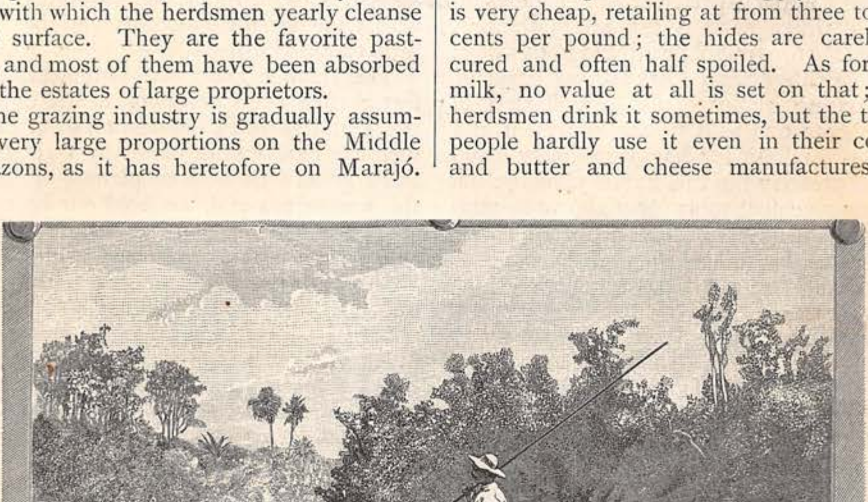


VICTORIA REGIA.

and which, if one jars the branch roughly, close and bend down in mute remonstrance, the protest of their helplessness against our brute strength.

Far away from the river, and sheltered in bays of the highland, the meadows are as level and clean as a wheat-field, bright velvety green, rippling with the wind like a great lake. Everywhere the grass is dotted with cattle. Such places, indeed, owe their beauty to the fires with which the herdsmen yearly cleanse their surface. They are the favorite pastures, and most of them have been absorbed into the estates of large proprietors.

The grazing industry is gradually assuming very large proportions on the Middle Amazons, as it has heretofore on Marajó. It is true that the herds do not compare, and probably never will, with those of La Plata; but there is an immense field for profit on these lowlands if the present barbarous system can be superseded by a more civilized one. The cattle are a hardy, half-wild stock, well suited to the rough life they lead, but of small productive value. The only profit derived is from the meat and the hides; owing to the over-supply, the meat is very cheap, retailing at from three to five cents per pound; the hides are carelessly cured and often half spoiled. As for the milk, no value at all is set on that; the herdsmen drink it sometimes, but the town-people hardly use it even in their coffee, and butter and cheese manufactures are



THE PIRARACÚ FISHER.

unknown. It is true that the cows give very little, a quart or two at the utmost, and that only when they are running on the lowland pastures; but with improved breeds and careful management I see no reason why the yield should not be equal to that of our northern herds. Excellent butter is made now by American residents; this and cheese ought to be manufactured in large quantities. The great difficulty in the way of successful grazing is that the lowland meadows must be abandoned during the floods; then the cattle are driven away to the scanty pastures of the highland campos; sandy tracts, with scattered trees, and short wiry grass. Even these are of limited extent; numbers of small herds are confined to little islands of the raised border, and reduced to rations of the long *canna-rana* grass, which the herdsmen cut for them over the submerged land; but there is not enough of this for their wants, and the poor beasts may be seen wading up to their necks to catch the floating leaves. Hundreds die of disease and famine; when the rise of water is rapid, whole herds are drowned.

Some system of winter-feeding ought to be devised. For instance, near large sugar-plantations, where cane is ground in the wet season, the tops might be utilized in this way; or the richly nutritive *canna-rana* grass of the floating islands could be collected in steamboats and sold to the herdsmen at a small price. As for hay, it probably could not be preserved in this humid climate; but various succulent roots grow almost spontaneously, and every northern herdsman knows their value for milch-cows. It might even be profitable to plant pastures on the high land.

I wish some enterprising American grazer would turn his attention to these plains. He would have to introduce new breeds with caution; probably it would be well to cross them with the hardy native stock. There would be other difficulties, no doubt, but I am sure that they would disappear before American pluck and ingenuity. Surely, with canned butter selling at seventy-five cents a pound, and land worth hardly so much per acre, there are vast possibilities for profit here. For making butter on a large scale it might be necessary to import or prepare ice. Even as now carried on, the industry is very lucrative. Some of the large proprietors own from ten to thirty thousand head of cattle, valued at eight or ten dollars per head. They employ hundreds of herdsman,—hardy fellows, in the saddle from morning till night, hunting up strays, keeping the herds in rich pasture, and branding them every year. We often see these *vaqueiros* galloping over the campos on their wiry little gray horses, each with a bright red blanket rolled behind the rough wooden saddle, and a lasso-cord hanging in front; their bare great-toes thrust into tiny stirrups, and their hair streaming in the wind.*

Climbing the heights of Monte Alegre, we look off over great stretches of the meadow-land, threaded by channels and dotted with quiet little lakes. The eye strives in vain to unravel the intricacies of this vast network. Yet it is all governed by certain fixed rules; there is a science of the lowlands. Here, just as everywhere else, we find that no natural form, however complicated, is the result of accident. The lakes are mere shallow depressions in the meadow-land; some of them dry up entirely in September and October, or remain only as rows of pools and swampy flats; many, even of the larger ones, are so shallow that in the dry season canoes are poled across them; five miles from shore a man can stand on the bottom with head and shoulders above water, and one might wade across but for the alligators and the fierce little cannibal fishes.

The smaller lakes are innumerable; in fact, there is every gradation in size down to pools and puddles. Sometimes our canoe-men can hardly push their way through the thick growth of aquatic plants; or, where the waters are still, we hold our breath to see the eight-feet-broad leaves of the *Victoria regia*, and its superb white and rosy flowers.† Nearly all the lakes are connected with the rivers, often by very long and tortuous channels,—forest-covered creeks, or passages in the open meadow, or wider *igarapés* lined with soft plumy bamboos and graceful *caraná* and *javary* palms. Where the banks are shelving, great flocks of herons gather to fish in the shallow water, flying up in snowy clouds before the canoe; roseate spoonbills spread their wings like flashes of sunset; egrets and bitterns hide in the tall grass. I love best to pass through these channels in the early morning, when the palm-tops are sharply defined against the deep blue sky, and the bamboos look white in contrast to the shadows beneath them, and the rising sun intensifies the picture with its wonderful richness of light and color. Then the wind blows freshly across the meadows, rippling the young grass; parrots and macaws come flying over the lowland in pairs, screaming loudly; toucans call from the solitary trees, and small birds innumerable keep up a ringing concert. They are all so happy to see the day, so brimming over with the gladness of life!

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* Leather-tanning and shoe-making would be very profitable. Excellent tan-bark is obtained from various highland trees.

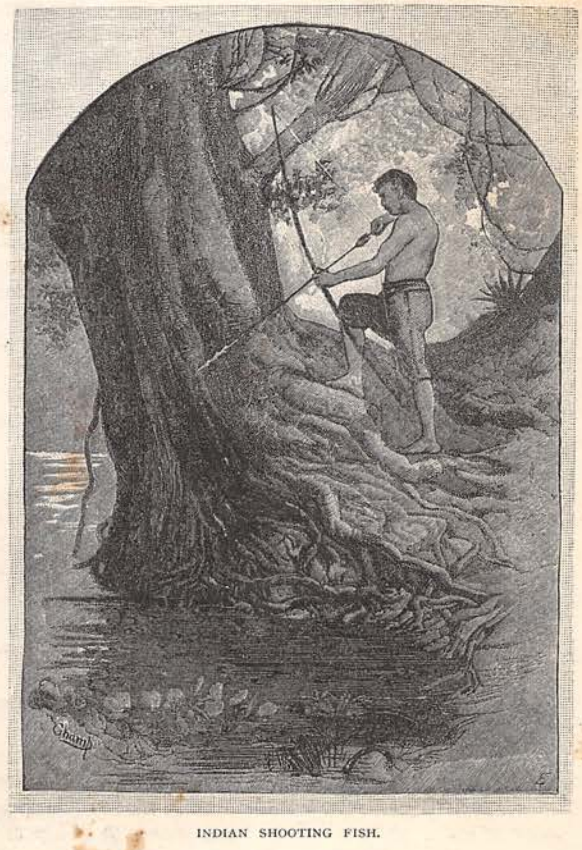
† I have measured flowers which were 11½ inches in diameter.

Heaven forgive me for my ingratitude! Even among the home friends I am forever panting to get back to my forests and streams. I am half minded to buy a wooden canoe and a fishing spear of the first Indian we meet, and to go sailing away, away, among the crooked channels and sunny lakes until I lose myself in their intricacies. One could live a hermit, and plant mandioca, and catch fish just as the Indians do, and live a life of peace. As it is, I must needs content myself with watching the Indian fishermen, and half envying them in my heart.

In the summer the Indians come by hundreds to the lakes and channels to fish for the great *pirarucú (Sudis)*, and to prepare the flesh, just as cod-fish is prepared on the Newfoundland banks. They build little huts along the shores; trading canoes come with their stock of cheap wares to barter for the fish, and a kind of aquatic community is formed, which breaks up with the January floods. The pirarucú feeds among the floating grass-patches, in shallow water; sometimes the fishermen watch for it here; in the open lakes one man paddles the canoe gently, while another in the bow stands ready to cast his harpoon at the fish as they come to the surface. Successful lake-fisheries depend, first, on high floods, which allow the fish to come in from the river over the submerged land; second, on low summer *vasantes*, which keep them confined to narrow limits and in shallow water. When both of these fail, the fisheries are unproductive; hence the price of dried pirarucú varies in different years from $1.50 to $8.00 the *arroba* (thirty-two pounds). Most Americans do not care to eat it at any price, yet one may come to like it very well. It is the standard article of food with the lower classes all through the Amazons.

Besides the pirarucú, the lakes and channels swarm with smaller fishes innumerable. The Indians catch them with a line, or spear them with tridents; in the small streams they are shot with arrows,—an art which requires peculiar skill, since one must allow for the refraction of the water. Even the little brown urchins take lessons by hooking the hungry *piranhas*, which will bite at anything, from a bit of salt meat to a bather's toe. Our northern trout-fishers are scandalized to see these boys thrashing the water with their poles to *attract* the piranhas. Turtles, too, are caught in the river; and on the sand-banks, where the animals come to dig their nests, the canoe-men go around with sharpened sticks, probing for the delicious eggs. Oil is made from these eggs, and on the upper Amazons the turtles themselves are kept in pens for the winter supply of meat.

The time of plenty is the dry season. With



INDIAN SHOOTING FISH.

the heavier rains of January the river rises rapidly. By March it has overspread all the lowlands like a sea, a vast sheet, two thousand miles long, and thirty or forty in average width, with only lines of forest and floating grass marking the limits of lakes and channels; canoes pass almost straight across. In May and June the waters recede.

In the river-towns one hardly notices the changes; only in the winter there are more rains and the air is damp, so that shoes gather mold, and books drop to pieces. The people lead the same quiet life, year in and year out; the well-to-do merchant is content with his slow sales and large profits; mechanics work clumsily in the manner of their fathers; Indians and mulattoes are satisfied with their mongrel existence, half the year in their palm-thatched houses, the other half wandering through the forests and over the lowlands.

The largest of these river-towns is Manáos, but it is little more than an overgrown village. Obidos, Santarem, Cametá and Teffé may each have two or three thousand inhabitants; the rest seem hardly worth mentioning. In all the world there is no region of like extent with the Amazons valley which is so thinly settled. A vast proportion of the surface is abandoned even by the wandering cannibal tribes.

Yet it is no wonder that Brazilians proudly call the Amazons the Mediterranean of America. Not alone for the main stream; the great branches spread their arteries in all directions, navigable often for hundreds of miles. And so the giant stream flows on, through the richest region on earth, yet the least known; where tropical heats are tempered by the refreshing trade-winds, and the climate is wholesome in most places; where all nature seems to invite man to come, yet the region of all others which man has forsaken—a glorious desert, an overflowing wilderness.

But the floating pumice-stones are full of prophecy. Across the continent, the Andes send their messengers to the Atlantic; and with the eye of faith one can see the wealth of the Pacific coast floated down on these waters to enrich the civilized world; isolated republics drawn into the sisterhood of nations by the strong bands of commerce; rich cities rising on the no longer silent shores; narrow prejudices disappearing with foreign intercourse.

Will it be soon? Sooner than we look for, may be. Brazil gave the signal by opening the Amazons to free navigation. Bankrupt Peru dreams yet of her railroad over the Andes; if she ever builds it her commerce will go—not westward to the Pacific but eastward to the Huallaga and Purús. The Mamoré Railroad is now surveyed around the falls of the Madeira. It may be abandoned for the present; even if it is built now it will not be a paying enterprise for years; but sometime it must be an achieved fact, and Bolivia will look back with wonder on her mule-train commerce. Colombia has had commissions at work exploring the Icá and Jamundá, and steamboats have penetrated from Pará almost to her capital. These are but signs; but be it soon or late the destiny of the Amazons is sure. Even the Darien ship-canal, if it is ever made, cannot compete with this deep, straight channel for the trade of the western republics.

◆

HOPE.

No matter where we sail,
A storm may come to wreck us—
A bitter wind, to check us
In the quest for unknown lands,
And cast us on the sands,
No matter where we sail:

Then, when my ship goes down,
What choice is left to me
From leaping in the sea—
And willingly forsake
All that the sea can take,
Then, when my ship goes down?

Still, in spite of storm,
From all we feel or fear
A rescue may be near:
Though tempests blow their best,
A manly heart can rest
Still, in spite of storm!