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ROYAL GEOGRAPHICAL SOCIETY

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An Exploration of the Rio Dôce and its Northern Tributaries (Brazil).

By WM. JOHN STEAINS, F.R.G.S.

(Read at the Evening Meeting, January 16th, 1888.)

Map, p. 116.

I HAVE the honour, this evening, to draw your attention to a portion of the great empire of Brazil, that at present is but little known—not only to Europeans generally, but also to the majority of the Brazilians themselves. Having resided some three years and a half in one of the northern provinces of Brazil, I determined, in the early part of 1885, to undertake an exploration of the Rio Dôce and its northern tributaries. This exploration, which lasted from June 1885 to January 1886, was undertaken entirely upon my own responsibility, and for no other reason than that of “pure love for the calling.”

The means at my disposal being limited, of course the men I had under my command were few, and with regard to our provisions, all I can say is, these at times were also few, and, as a natural result, I may add that our meals were “far between.” However, notwithstanding these and other drawbacks, my little expedition held stubbornly on its way, and after eight months’ “roughing it,” emerged once more into civilised life with the reflection that it had carried out its self-imposed task to the full.

The Rio Dôce lies between parallels 19°–21° south latitude, and is formed by several small streams springing from the eastern slope of an important range of mountains known by the name of the Serra da Mantiqueira.* This range, running in a north-easterly direction, forms a portion of the irregular “coast-range” of Brazil, and forms, so to speak, the “retaining wall” of the series of elevated, undulating tablelands composing the greater portion of Central and Southern Brazil.† The total length of the Rio Dôce is a little over 450 miles.

* The highest peak in this “Serra” is Itatiaia-assu, which, according to Wells, is 10,040 feet above the level of the sea, and is “the most lofty known elevation of Brazil.”

† See Mr. Wells’s interesting paper on the “Physical Geography of Brazil,” read before the Society, February 8th, 1886.

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That portion of the Rio Dôce basin lying east of the Serra dos Aymorés, is a densely wooded lowland, sloping gradually towards the coast from an elevation of about 900 feet. Near the coast this plain resolves itself into a long stretch of low alluvial ground, studded for the most part with small shallow lakes that communicate with each other by means of long, narrow, winding streams, called "vallões." The largest of these lakes is the Lagôa Juparaná, which communicates with the Dôce some 30 miles above its mouth by means of a narrow, tortuous, deep channel seven miles long. The lake is 18 miles long, and about 2½ miles broad at its southern extremity. It is very deep, and with the exception of some low alluvial ground at its northern and southern ends, is surrounded with high wooded bluffs, composed for the most part of reddish clay overlying a stratum of coarse red sandstone. At the head of the lake is a river—the S. José,* which rises in the Serra dos Aymorés, and flows through an unexplored district, inhabited by wandering hordes of wild Botocudo Indians. Throughout the whole of its course, the S. José flows through dense forest abounding in the much sought-after "Jacarandá," or rosewood tree (*Bignonia cœrulea* Will.).

With the exception of two, none of the tributaries of the Rio Dôce are navigable on account of the numerous falls and rapids, which in many instances oblige the traveller to haul his canoe overland. The Rios Sussuhy-Grande and S. Antonio are the two tributaries that offer the greatest facilities for navigation, the latter having a clean stretch of water for the comparatively small distance of 20 miles. The Rio Sussuhy-Grande has a heavy fall a short distance above its confluence with the Dôce, but beyond this fall there is uninterrupted navigation for several miles.

The main river is navigable as far as Porto de Souza, a distance of 120 miles from its mouth. Just above Porto de Souza are the series of heavy rapids known as Escadinhas. In order to pass these, all canoes have to be dragged overland by bullocks, a distance of 3½ miles. Above this, falls and rapids succeed each other at short or longer intervals.

The great charm of this portion of Brazil lies in the grand virgin forests that clothe with unsurpassed magnificence well-nigh the whole of the land watered by the Rio Dôce and its numerous tributaries. On both sides of the river throughout the greater portion of its course these beautiful forests, teeming with a hundred varieties of the choicest timber, crowd closely down to the water's edge, forming an almost

* On the maps that have as yet been published of this portion of Brazil, this river bears the name of S. Raphael. However, this mistake can scarcely be wondered at, considering the amount of errors to be found on every map that purports to represent the valley of the Rio Dôce. On one map that I came across in Brazil there were three or four large islands shown in the Lagôa Juparaná, whereas there is only one island in the lake, viz. the Ilha do Imperador, and that is a very small affair.

impenetrable wall of the most gloriously wild tropical vegetation that can be imagined. When, by the sacrilegious use of axe and knife, the traveller succeeds in forcing his way into the umbrageous recesses of these vast temples of nature, the grandeur and death-like stillness pervading the scene make it well-nigh impossible for him to divest himself of the idea that the place whereon he stands is none other than holy ground.

The immense tracts of virgin forest stretching away on the *north* side of the Rio Dôce are to this day all but untouched by the hand of civilised man,* and hence it is their gloomy recesses afford a safe retreat for numerous tribes of Botocudo Indians, who wander about in the same state of primitive barbarity as that in which their forefathers revelled at the time Brazil was discovered, well-nigh four centuries ago. Now and then these Indians make raids on the outlying settlements, and on such occasions "old scores," that rankle deep in the naturally unfor-giving hearts of these wild men, are paid off with frightful interest. Cannibalism is still the order of the day among some of the more savage tribes, but it is some little consolation to learn that this horrid custom is fast dying out, and that ere long it will cease to exist.

Before the valley of the Rio Dôce can ever be opened up, these Indians, numbering, I should say, some 7000, will have to be civilised, or at any rate brought to a state of partial civilisation. The Botocudos have steadily resisted all attempts made to civilise them during the last 380 years, but I firmly believe a well-organised mission might accomplish the work in a comparatively short space of time. The benefits arising would be enormous; the banks of the Rio Dôce would become settled—I will not say colonised—and Brazil would have one of the richest portions of its vast empire opened up and in a flourishing condition.

There are as yet only three little settlements on the banks of the Dôce, and none of these can be said to be in a prosperous state. Linhares, situated on the left bank of the river, 30 miles above its mouth, is a decaying little place, of which we shall have occasion to speak later on. Guandú, a little village situated close to the mouth of the river bearing the same name, is not what it might be, on account of the difficulties of communication with other ports. All products, of which coffee forms the principal, have to go overland † to Victoria (the

* The early settlers in Brazil were drawn into the interior of that country by the hope of finding gold, and in their search after this they always utilised the rivers as highways. Hence in many parts of Brazil we find enclosed portions of country that have never been traversed, although there is civilisation all round these unknown tracts.

† When steam navigation shall have been started on the lower waters of the Rio Dôce this tiresome journey overland will then be a thing of the past. A steamer could run from a little distance below Guandú to the mouth of the river in two days, or say two days and a half. Some few years back it was proposed to construct a railway from Victoria to Natividade (three miles above Guandú), in fact the surveys, &c., were all completed by Messrs. Waring Brothers, of Rio de Janeiro, but up to the present time the railway itself has not been commenced.

capital of the province), a journey occupying ten days. At Guandú there are four or five American settlers, the miserable remnants of a number of colonists who came to Brazil after the Civil War in the States. These colonists, immediately they landed in Rio de Janeiro, were packed off to the Rio Dôce, in order to develop the natural resources of the district, and at the same time make their own fortunes. They were led to believe that of all places upon this earth, the valley of the Rio Dôce was *the* home of the Southerner, and they eagerly embraced the opportunity afforded them. They soon found, however, that they had been duped by those who had persuaded them to leave their native land. Those who could manage to leave the so-called "home" did so, whilst those obliged to remain went gradually from bad to worse, and to-day there is scarcely one of the colonists who would not willingly give all he possesses (which, by the way, is next door to nothing) if he could only turn his back for ever upon the Rio Dôce and its sad associations. The third and last little settlement on the river is Figueira. The inhabitants, numbering some 700, certainly do manage to exist from day to day, but beyond this there is little that can be said.

Salt forms the chief article of commerce on the Dôce, but on account of the difficulty of transporting it by canoes from the coast into the interior, this commodity by the time it reaches its journey's end becomes a very expensive luxury. In Rio de Janeiro a bag of salt weighing 60 lbs. costs, roughly speaking, 1s. 8d. At the mouth of the Dôce its value increases to 3s. 4d. In Guandú the same sack of salt fetches 5s.; at Cuithé it is worth 13s.; and in Figueira it can command something like 16s. 8d.

The valley of the Rio Dôce may be described as a large gap in the great wall of civilisation that, during the last three hundred and seventy years, has been slowly reared along the 4900 miles of the Brazilian seaboard. There is little doubt that Espirito Santo at present is the poorest province in the whole Empire—at all events it is the poorest maritime province. I see no reason why such poverty should continue to exist in a province that is capable of yielding the same products as other provinces. There is not a richer piece of land in the whole of Brazil than that lying between the rivers Mucury and Dôce, yet all this is, figuratively speaking, a desert. Nearly 25,000 square miles of rich, habitable land is lying idle on account of the dread the people of Espirito Santo, and also those of Minas Geraes, have of the Indians. It is very certain the people of the two provinces will never attempt to improve the country; therefore, if anything is ever done to ameliorate this valuable portion of Brazil, it will have to be done by the Imperial Government.

By the way, some of the peasants (*matutos*) have a very curious idea concerning the meaning of the word "Government." One man informed me that if he should ever go to Rio de Janeiro, he should

certainly make a point of "calling upon the gentleman." And this walking mass of rustic simplicity further went on to ask me if I happened to know what his (the Government's) office hours might be.

There is little doubt that the future wealth of this portion of Brazil lies in the immense number of valuable woods with which the virgin forests abound. The following may be mentioned as being some of the principal varieties to be found here:—

Native Name.	Botanical Name.		Use.
	Species.	Family.	
Jacarandá ..	<i>Bignonia cœrulea</i> , Willd.	Bignonaceæ	Cabinet-making, &c.
Peroba	" <i>similiatrapea</i> ?	"	Construction, more especially ship-building.
Maçaranduba	<i>Mimosa excelsa</i>	Sapotaceæ ..	Used in the construction of piles.
Ipé	<i>Tecoma Ipé</i>	Bignonaceæ	Construction and medicinal properties.
Sapucaia	<i>Lecythis ollaria</i> , L. ..	Myrtaceæ ..	Construction.
Coração de Negro	"	Leguminosæ	"
Páo d'Arco ..	<i>Bignonia chrysantha</i> , Willd.	Bignonaceæ	Construction, especially railway "sleepers"; and also medicinal properties.
Vinhatico ..	"	Leguminosæ	Furniture-making, &c.
Angico	<i>Acacia Angico</i> , Mart. ..	"	Construction and medicinal properties.
Argelin pedra	<i>Andira spectabilis</i> , Sald.	"	Construction.
Graúna	"	"	"
Bicuiba	<i>Myristica officinalis</i> ..	Myristicaceæ	Construction and medicinal properties.
Araribé	"	"	Ditto.
Sicupira	<i>Robinia coccinea</i> , Aubl.	Leguminosæ	Construction. The bark of this tree has also medicinal properties.
Pequiá	<i>Marfim</i>	"	Construction, more especially for the rafters of houses.
Guarabú	<i>Astronium coccineum</i> ..	Terebinthaceæ	"
Cupahiba	<i>Copaifera officinalis</i> , L.	Leguminosæ	Medicinal properties.
Andiroba	<i>Carapa guyanensis</i> , Aubl.	Meliaceæ ..	"
Almecegueiro	<i>Bursera gumifera</i> , L. ..	Terebinthaceæ	" "
<i>Plants.</i>			
Guaxima	<i>Helicteres meliflua</i> ? ..	Sterculiaceæ	" "
Ipecacuanha ..	<i>Cephaelis Ipecacuanha</i> , Rich.	Rubiaceæ ..	" "
Salsaparrilha ..	<i>Smilax salsaparrilha</i> , Linn.	Asparagineæ	" "
Sassafray	<i>Ocotea cymbarum</i> , Hunt.	Laurineæ ..	" "
Jumbéba	<i>Cactus opuntia</i> , L. ..	Cactaceæ ..	" "

The valuable Brazil-wood (*Páo Brasil*, *Cesalpinia brasiliensis* Linn., Fam. *Leguminosæ*) is found in many parts of the Rio Dôce, and is more especially abundant on the lower waters of the S. José.

Concerning the mineral wealth of this portion of Brazil, I am able to say but little. Gold is to be found in various places, more especially in

the neighbourhood of Cuithé. At Onça we found innumerable specimens of what is known as Brazilian crystal, and on the upper waters of the Rios Pancas and S. José we came across garnets. Signs of iron were abundant in most places; and in many parts of the river we found a kind of talc. Tradition speaks of gold having been found in large quantities, years gone by, near the headwaters of the Rio S. José.

The climate of this portion of Brazil is generally healthy. If it were not so, I think the exposure my little party underwent for eight toilsome months would have had a worse effect than was the case. The heat at times is somewhat great, but this is made bearable by the cool, moisture-laden trade-winds, that bring an even distribution of rain throughout the year, thus making the Valley of the Rio Dôce one of the most fertile, luxuriant spots in Brazil.

The first explorer who attempted the ascent of the Rio Dôce, appears to have been Sebastião Fernando Tourinho. In the 'Dictionary of the Province of Espirito Santo,' we read that, in the year 1572, Tourinho left Porto Seguro with the view of exploring the Rio Dôce, but on account of his means being insufficient, he returned to Porto Seguro in order to raise fresh supplies. He succeeded in doing this, and once more started on his journey. How far up the river the explorer went, we do not know; neither do we know exactly the route taken by him and his followers. We are told, however, that the Indians helped Tourinho, upon more than one occasion, in his surveys.

Prince Maximilian von Neuwied tells us that, during his travels in Brazil (1815-17), he visited the lower waters of the Rio Dôce, but I believe the Prince's explorations were confined to the immediate locality around the little town of Linhares, a distance of thirty miles from the mouth of the river.

During the time (1865) the great Agassiz Expedition was prosecuting its researches in Brazil, Professor Hartt, one of the leading spirits of that expedition, ascended the Rio Dôce as far as Porto de Souza, and in a valuable work entitled 'Scientific Results of a Journey in Brazil,' that eminent American geologist gave an account of his journey, which was undertaken in the company of a Mr. Edward Copeland, who was one of the volunteers of the Agassiz Expedition.

More than one attempt has been made to improve the commercial standing of this valuable portion of Brazil, but, unfortunately, every attempt that has been made up to the present time, has hopelessly failed. I must just mention one of these attempts, viz. that organised in the year 1857 by a philanthropical Brazilian, Dr. Nicolaú Rodrigues da França Leite. This gentleman, having obtained permission (and something rather more substantial) from the Imperial Government, endeavoured to settle a number of colonists—principally Italians—upon the banks of the Rio Dôce at a place known as Fransilvania, and also at a place called Limão. But the well-intended work of Dr. França Leite

came to grief, and to-day, there is not a single sign remaining to show that any such attempt at colonisation was made. There is no doubt that the death of young Avelino (a near relative of Dr. França Leite), who was murdered by a party of Botocudos, was the chief cause that led to the break-up of this colony. This unhappy event occurred in the year 1860. The circumstances connected with the death of this young Avelino are indeed sad. Dr. França Leite, who was the overseer of the colony, was called away to Rio de Janeiro on business, and during his absence Avelino was left in charge. It was the custom for the neighbouring tribe of Botocudos—the Nackinhapmás—to visit the colony every now and again in order to obtain one or two little comforts of life, such as tobacco, and a taste of civilised food. Things went on serenely in this way for some time when, by degrees, the Indians began to take a dislike to Avelino. Why, or wherefore, I am unable to say. One day the Indians came down to the colony, and, in the presence of Avelino, deliberately shot his dog. Upon this, two or three of Avelino's friends (my interpreter Moreira was among the number) strongly urged him to leave the colony, but the young man was deaf to the advice that was given him, and bravely remained at his post. A few weeks elapsed, and the self-same Indians made their appearance again. This time, having no more dogs to kill, they put an end to Avelino himself, by striking him across the back of the neck with an axe, while he was quietly eating his dinner. After the Indians had set fire to the few palm-leaf huts composing the colony, they cut poor Avelino into handy-sized pieces, cooked him, and, after resting a while in order to allow digestion to do its work, retired once again into their native wilds. This incident is rendered the more sad, inasmuch as Avelino was shortly to have been married to an accomplished young Brazilian lady who, at the time, was living in Linhares.

I will now proceed to give a rough outline of my journey :—

On the 7th June, 1885, I left Rio de Janeiro, in a small Brazilian coasting-boat, bound for Sta. Cruz in the Province of Espirito Santo. I purchased all the provisions, ammunition, &c., that I calculated would be required for the journey before leaving Rio de Janeiro. I had reckoned that my exploration of the Dóce would occupy me about six months. The chief articles were *carne secca* (dried meat), *bacalhão* (dried cod-fish), and *farinha* (mandioca meal), making sixty large packages.

On the evening of the 8th June the little steamer *Mayrink* reached Victoria, the capital of the Province of Espirito Santo, and the next morning I went ashore to pay my respects to the President of the Province (Dr. Laurindo Pitta de Castro), who appeared to take great interest in my exploration. On the 10th June we arrived at the little seaport, Sta. Cruz, and there I landed with my stores. A small steamer used to run occasionally from Sta. Cruz to Linhares on the Rio Dóce, but

at the time of my arrival it had broken down, and I was obliged to arrange for a march overland to that settlement. Fortunately a Senhor Pinto was about to undertake the journey and so I left Sta. Cruz with him, on the 11th June, and after two days' hard riding, over somewhat hilly ground, reached the Rio Dôce. Linhares is an insignificant village, consisting of little more than a square, the houses of which are small, and, for the most part, inhabited by peasants who seemed to have no regular occupation beyond that of loafing about.

Prince Maximilian, in his 'Travels (1815),' speaks of Linhares as "a poor, insignificant settlement, the houses low and mean . . . built of clay, unplastered, and small. It is built in the form of a square; there is no church yet, but a large cross of wood. Mass is said in a small house." I am sorry to say that what Linhares was in the year 1815, so it is to-day, with this one exception. In the Prince's time there never had been a church, whereas now one can see by the ruins that at least two churches have been started, at different times, but neither of them has come to anything. One church has come to grief entirely, and the other, or rather what remains of the other, has been converted into a blacksmith's shop.

The past history of Linhares well accounts for its present state. We read in the 'Dictionary of the Province of Espirito Santo' (before quoted) that Linhares was founded in the year 1792, and that the little settlement was peopled by criminals who, having escaped the eye of the law, had fled to the banks of the Dôce as a kind of city of refuge.

With all its faults, however, I believe that at some future time Linhares will become a thriving commercial town. The ground on which it stands is without doubt the finest site for a town throughout the whole valley of the Dôce, being well elevated above the river, and therefore out of the reach of the heavy floods that in this part occur annually.

By the 28th of June I had purchased my canoes, and got the expedition into something like working order. I had engaged six men (four Brazilians, one Scotchman, and a Portuguese interpreter) to accompany me. My first journey was to the mouth of the river. We reached this place at midday on the 1st of July, and pitched our camp on a long, sandy neck of land on the north side of the river, opposite Regencia. Here the Dôce is about a mile and a half wide. It was my intention to stay some time here, in order to make a detailed survey of what, it is to be hoped, will some day be a recognised port of Brazil. At present the Barra of the Rio Dôce is scarcely counted in the same category with other, and in some cases far inferior, ports of the Empire. Beyond the fact that a few small sailing vessels, hailing from Rio de Janeiro, call here now and then for the purpose of carrying away timber (chiefly Jacarandá, or rose-wood), there is no trade whatever.

On the 9th July we returned to Linhares, and on the 16th July we

left Linhares in order to explore the Lagôa Juparaná and Rio S. José. During this journey I detected a mistake that has been made in all the maps of this portion of Brazil that have as yet been published, namely, the mistake of showing two rivers (the S. Raphael and the Rio Preto) running into the northern end of the Lagôa Juparaná. There is only one river running into this lake, and this river bears the name of S. José. Before I ascended it with my little party the S. José was entirely unexplored.* We were employed a month in ascending and descending this river.

Our greatest trouble was the almost total wreck of our canoe whilst shooting a rapid, and our lightest trouble the having to drink our coffee minus sugar for more than a fortnight. We encountered more than a dozen falls, and the rapids were innumerable. The first *cachoeira*, or fall, in going up the river was about 100 yards long, with a total fall of 24 feet, which meant, as far as we were concerned, one and a half day's hard labour. I am speaking of the time we took in ascending this fall. We descended it, upon our return journey, in about half a minute. Besides the rapids we had to encounter another kind of obstruction in the dense thickets of a leguminous tree, known as *Ingá*, that abounds on the upper waters of the river. In many places we simply had to cut our way through these *Ingá* thickets.†

The furthest point reached by us on the Rio S. José was a picturesque cataract that presented itself on the afternoon of the 26th July. We camped at its foot for two days, leaving for our return journey on the morning of the 29th July. I named this place the Leila Falls. The scene presented by these falls was of exquisite beauty; they are about 40 feet high, and 80 feet wide. We were now in the heart of the territory occupied by a tribe of Botocudos, known by the name of Pojicha. Some distance from the Leila Falls, away in the depths of the forest, we came across a deserted hut belonging to these Indians. I found out afterwards, that during the time we were up the S. José, these Pojicha Indians were hovering round the town of S. Matheus, causing every now and again great alarm to the outlying farmers (*fazendeiros*) of that place. Cattle were stolen by the Indians, and it was reported that the two daughters of a wealthy fazendeiro had disappeared, supposed to have been carried away by the Indians far into the interior, where a rescue will be impossible.

* Professor Hartt, in his 'Scientific Results of a Journey in Brazil' (Agassiz), says, "At the head of the lake (Juparaná) there enters a little river . . . It rises in the forest, in the country of the Botocudos, and has never been explored."

† There are about 140 species of *Ingá*. The *Ingá* referred to above is known by the name of *Ingá bahiensis* Benth. This tree is remarkable on account of its straggling habit. It is only to be found in those portions of the rivers which flow through swampy ground. Where the rivers are narrow (say 18 feet wide) the *Ingás* whose main roots grow on the banks, send forth a number of shoots which extend over and into the water, and become densely interlaced, thus causing the obstruction to navigation.

I was now brought face to face with the worst trouble experienced during the whole of my exploration, a trouble compared with which all the dangers to be feared from waterfalls, Indians, wild beasts, fevers, and agues were nothing.

Shortly after my return to Linhares, I found that all the money that I had brought with me from Rio de Janeiro was, through unforeseen expenses, exhausted. What was to be done? I could not endure the thought of selling off—and most likely at a loss—the provisions, ammunition, &c., belonging to the expedition, and abandoning my undertaking; therefore I decided to lay the state of affairs before my men. Calling them together, I told them that they would not be able to receive their pay until the expedition returned to Rio de Janeiro. The men were prepared to hear this, inasmuch as it was upon this understanding they had been engaged. I then went on to inform them that they would not receive a single penny in advance, beyond what they had already received; and in short, that my ready money was exhausted. The men looked somewhat “blue,” and one or two began to mutter something to the effect, that if such were the case they would not stir a yard. I then appealed to their good feeling in a set speech, and my harangue produced the desired effect. They sat silent for a few moments, looked at one another like so many sheep gone astray, and then with one accord said, “Doctor! we will follow you to the end.” There was no need for further words: a hearty shake of the hand all round, and the contract of allegiance was sealed. Having thus gained the loyalty of my men, I determined to leave Linhares as soon as possible. Accordingly, on the 31st August, we started on our long and arduous journey.

On the 3rd September we reached the mouth of the Rio Pancas, one of the northern tributaries of the Dôce, situated 54 miles above Linhares. It was my intention to ascend this river in the same manner as I had ascended the S. José; therefore, on the following day, four of the men, with myself, started off in the smaller canoe *Lily*, leaving Adriano and William in charge of the main camp, and the bulk of the provisions. Shortly after midday we arrived at the first fall on the Rio Pancas (Cax. dos Bugres). Here we were obliged to unload the canoe in order to haul her over the rocks. By five o'clock in the afternoon we had the satisfaction of camping above the fall.

On the next day we passed, at short distances from each other, two rapids, in order to ascend which we again had to take out cargo. At 2 p.m. we came to another rapid, about 200 yards long, very narrow, and rough. We unloaded the canoe, and hauled her over the rocks on east side of rapid, a distance of 160 yards. Fair sailing the remainder of the afternoon, with the exception of one portion of the river which was somewhat blocked with Ingás.

On September 6th we observed the first footprints of Indians, and

on the next day (September 7th), after surmounting four other falls, we found an Indian bridge—a narrow tree-trunk that had fallen across the stream—with a long piece of creeper stretched across and tied to a tree on either side so as to form a kind of hand-rail; the Indians having utilised this natural bridge in order to allow their women and children to cross. More proofs of Indians being in the neighbourhood showed themselves as we proceeded up the river. We passed another rustic bridge, and on nearly every sandbank we saw undeniable footprints. We measured up a few of these footprints, and satisfied ourselves that the Indians (whatever may be their other failings) at all events possess small feet. We also came across an apparatus for fishing. It was a simple affair, consisting of a number of stakes driven into the bed of a shallow portion of the river so as to form a kind of enclosure or trap.

Towards the latter end of the afternoon our progress was impeded by a large *Jequitibá* tree that lay stretched across the stream. We had to stop for quite a quarter of an hour in order to allow the men to cut away the obstruction with their axes, and here it was that we knew for certain that Indians or "Bugres" were close at hand, inasmuch as when the men were resting for a few moments from their labours, we distinctly heard a rustling in the forest as if somebody was running away. I ordered Moreira to call out to the invisible fugitive to show himself and all would go well; but the fugitive, whoever he was, did not obey. The tree having been cleared away, we continued our journey upstream. The river now commenced to be very narrow, and our progress was greatly impeded by fallen tree-trunks and dense *Ingá* thickets.

At 5.30 p.m., the men being thoroughly tired out, we sighted a small sandbank, and camped on it for the night, sleeping on ground that was studded with the fresh footprints of Bugres.

Next day we had our first encounter with the Indians. We had just turned a sharp bend in the stream, when I caught sight of a reddish form peering through the trees not more than ten yards from the canoe. This was quite enough. In the deep silence of that primeval spot old Moreira's voice, in obedience to my order, rang out loud and clear, "Juck-jum-nook Jacarung! . . . ning amancoot . . . ouroohoo-o-o-o!" which means, "We are your friends; we invite you to come and eat something." For a long time there was no reply, but we could hear a low mumbling going on in the woods. The Bugres were evidently holding a consultation among themselves. It was not until after a fresh invitation shouted out by Moreira that we heard a reply to the effect that they would come out if we would promise faithfully not to hurt them. "Hurt them, Moreira? I should think not. Tell them to come forward like men, and they will find us perfect brothers." The old interpreter called out once more, and then we were suddenly face to face with eight lean, wiry, stark naked men, each carrying a bow and a

bundle of arrows, and two or three wore around their necks pieces of string (*imbira*) to which small, roughly made knives were attached.

The tribe of Indians * to which these savages belonged numbered about seventy souls. We stayed with them nearly a month, and during that time I had an opportunity of studying their manners and customs, from early dawn till late at night. In appearance the Botocudos † can scarcely be called prepossessing. Some of the young girls certainly are pretty and well formed, but this girlish beauty is short-lived, inasmuch as among the Botocudos it is the custom (born of necessity) for the girls to marry at a very early age. I saw a striking example of one of these early marriages in the case of a young Indian, whose partner for life was just entering her ninth year; the husband was well into his twentieth. The average height of the Botocudos is five feet four inches. Their chests are very broad, and this accounts for the facility with which they can bend their bows, which are exceedingly strong, being made out of the tough springy wood of the Ayri or Brijaubá palm (*Astrocaryum Ayri* Mart.). The feet and hands of the Botocudos are small rather than delicate, and these are in fair proportion to their legs and arms, which are lean but muscular. Concerning the colour of their skin, these Indians are of all shades, some being of a dark reddish-brown, whilst others, and especially the women, are quite light. With regard to features, the Botocudos struck me as bearing a wonderful resemblance to the Chinese, and if instead of wearing their hair cut round their heads so as to form a kind of mop they wore pigtails, the casual observer would scarcely be able to tell where the difference lay.

The hideous custom for which the Botocudos have always been so famous, viz. that of wearing huge lip and ear-ornaments of wood, is fast dying out, and at the present time is only to be met with among some of the older members of the tribes, who retain all the habits and manners of their primitive forefathers intact.

* This tribe of Botocudos is known by the name of "Nackinhapmá," which signifies "beautiful land."

† The Portuguese settlers, at the beginning of the present century, gave these Indians the name of Botocudos, on account of their wearing the *botoque* (lip-ornament). The Botocudos were formerly known by the name of Aymorés, or Aimurás. Martius grouped six tribes (or clans) of Indians, whom he found inhabiting this portion of Brazil, under one head, calling them "Crens," on account of that word, which means head, being found in all the vocabularies of the languages spoken by the six tribes, viz. Botocudos, Puris, Corôados, Malalis, Ararys, and Xumetos. A craniological similarity has been found to exist between the Sambaquis, a prehistoric nation inhabiting Brazil, and the Botocudos. This discovery has led some people to imagine that the Botocudos may possibly be the living remnants of a long since departed age. I have used the word Sambaquis as if it signified the name of this prehistoric nation. In reality, however, the word only signifies the shell-mounds, or tumuli, in which the skulls, stone implements, &c., of these primeval men and women (?) are often found. In Brazil these human remains are said to belong to the "Homem dos Sambaquis" (the men of the shell-mounds). The shells mentioned in connection with these mounds are oyster-shells.

These lip-ornaments are made out of the light wood of the *Barriguda* tree (*Bombax ventricosa*, fam. *Bombacæe*). A regular process has to be gone through before a Botocudo can boast of wearing a lip-ornament, say, three inches in diameter, and what is more, it is a life-long process. When the Indian is about three or four years old its parents pierce a small hole in the centre of its under lip and also in the lobes of its ears. Into this hole a small plug of wood is inserted about the size round of a pencil. In the course of a few weeks a larger piece of wood is made to take the place of the first insertion, and so on, until at last the lip (having been stretched thus gradually) is capable of receiving a *botoque** (plug) of the dimensions mentioned above, viz. three inches in diameter. It generally happens that in course of time the lip, which stretches round the botoque just like an elastic band, splits. This action on the part of the lip, however, does not prevent the further wearing of the botoque. The Indian simply ties the two ends of his broken lip together by means of a small piece of imbirá, or stringy bark, and thus mends the breakage in a way that is decidedly more useful than ornamental.

As a rule the Botocudos live to a good old age. The Indian who is gathered unto his fathers when he is seventy years old is considered by his sorrowing relatives as having been cut off in the bloom of youth, but at the same time, this does not prevent the relatives from leaving the dying wretch behind if they happen to be on the march. They argue that if he gets well again he can always get up and follow them. And so he can, inasmuch as when the Bugres are on the march it is their custom to break twigs of the trees along the route they have taken, in order to mark the way for any members of the tribe who may have lagged behind.

The Botocudos live chiefly upon the nuts of two or three varieties of palm-trees. These nuts (the shells of which are cracked by the aid of stones) are exceedingly hard, and therefore, in order to allow the aged members of the tribes and the young children to digest their food properly, the women thoroughly chew the nuts, and then taking the already pulpy mixture out of their mouths, these thoughtful females offer the same to their fathers or their children, as the case may be, who eagerly accept this prepared food, and what is more, seem to enjoy it. The chief palms furnishing food for the Botocudos are the Ayri (*Astrocaryum Ayri* Mart.) and the Indaiá (*Attalea compta* Mart.). The nuts of the latter are, however, esteemed by the Indians more highly than the nuts of the Ayri palm, inasmuch as those of the latter are somewhat bitter. Indaiá nuts contain a great amount of oil.

These Indians spend their days in hunting, fishing, and seeing to their bows and arrows, whilst the women look after the children, gather nuts and other fruits for the day's consumption, and do the hard work

* This is a Portuguese word.

generally for their lords and masters. Whenever a fresh hut has to be built the women are the architects and builders, and when the tribe is on the march the women resolve themselves into nothing more nor less than household removal vans, inasmuch as the men will not deign to carry anything except their bows and arrows. Clothing of any sort is entirely unknown among these wild people.

The Bugres have no stated hours for eating, in fact they never know from one hour to another whether they will find anything to eat. Hence they are not tied down by domestic laws and regulations. They sleep when they like; hunt, fish, sing, and dance just when they feel inclined, and eat when they can.

Among the Botocudos, a plurality of wives is allowable, but one seldom finds a Bugre indulging in the luxury of more than one wife, because he knows full well that he would have to provide food (in the way of game, &c.) not only for an extra wife, but, in all probability, for an extra family; and that is a great consideration, inasmuch as the virgin forests do not by any means yield an inexhaustible supply of animal food; on the contrary, game is exceedingly scarce, and requires much careful tracking on the part of the hunter. This scarcity of game, however, is only to be found in those portions of the forest that have been much frequented by Indians, and therefore we find in certain places (up the Rio Tambaquary for instance) a profusion of game, whereas in other parts it is all but extinct.*

The Botocudos have no form of government, except that of a chief (*capitão*) for each tribe. The chief, however, possesses no real authority over his tribe. He is generally the best hunter, and such being the case, the bulk of the hunting, especially in hard times, usually falls to his lot.

The religion of these Indians is primitive in the extreme. They believe there is a certain great spirit who has made the world (their world), but no prayers or sacrifices are offered. When a thunderstorm occurs they take it as a sign that the great spirit (*coopân*) is very angry, and they accordingly become frightened. Some of the bolder spirits in the tribe, however, throw firebrands into the air, thinking that by doing this the wrath of the great spirit will be appeased, and that the thunder will stop. They believe that when a man dies, his ghost wanders about upon the earth in a kind of seeking-whom-he-may-devour manner, i. e. the ghost of the departed Bugre will be the means of

* This scarcity of game in the Indian territories will doubtless be the chief cause that will eventually result in the extinction of the wild Indian in this portion of Brazil. Take, for instance, the case of the Nackinhapmá tribe of the Rio Panoas. These Indians have a certain amount of country, over which they can roam, without being interfered with by any other tribe. But supposing, on account of the scarcity of game, the Nackinhapmás should wander into the adjoining territory of the Ineuteracks. What would be the result? Immediately the Ineuteracks might become aware of the intrusion, they would have a general call to arms, and this would end in a deadly struggle, resulting in the entire extermination of one or the other of the tribes.

causing harm to happen to all those who, during this life, have ill-treated him, and, on the other hand, that same ghost will be the means of benefiting all those persons who may have shown kindness to him when on earth. These Indians have a hazy idea of the evil one, who, they believe, resides in the body of a certain night-bird, which is accustomed to screech out during the most unearthly hours of the night, thus waking the Bugre out of his first sleep.

On the 27th September we continued our journey up-stream, and on the following day reached a place called Mutum. Here, on the south bank of the river, there is a small village of semi-civilised Indians, consisting of twenty-four souls, viz. six men (with trousers), eight women (with petticoats), and ten children (with nothing at all). This village is under the supervision of the Imperial Government. On the north bank of the river—just opposite this village—are the ruins of a mission that was started, some fifteen years ago, by a worthy Capuchin monk, Frei Bento. The object of the mission was to civilise the Indians in the neighbourhood of Mutum, but on account of a misunderstanding that arose between the civilised Indians belonging to the mission, and the wild tribe known as the Incutcracks, the whole affair came to an end; Frei Bento's interpreter, Daniel, was killed, and the remaining members of the little settlement, if they had not fled across the river, would doubtless have shared the same fate. Since this unhappy event the mission has become totally neglected, and nothing remains but the desolate ruins of a few houses and a large wooden cross to mark the spot where philanthropy once attempted to take up its abode, and failed.

On the 6th October we reached Guandú. We were now at the foot of the huge falls called the Cachoeira das Escadinhas. I was obliged to desert my small canoe at Guandú, inasmuch as it would have been absurd to have attempted to take it any further, on account of the rough water that we should have to contend with during the remainder of the voyage.

With some difficulty we made arrangements with a native of Guandú for the use of six bullocks, and, with the aid of these animals, we managed to drag our large canoe overland—a distance of three miles—to a place called Natividade. Here we were able to set it afloat once again, but before doing this our camp had also to be removed from Guandú. There were no bullocks to help in this labour, for we could not afford to pay for their further hire. We had been forced to draw upon our provisions in order to recompense the owner of the bullocks for their services in dragging the canoe, and we could not possibly afford to part with anything more in the way of food, and a cash payment was out of the question. We commenced to remove our camp from Guandú on the 12th October, and after a week of tedious marching through dense forest, we had the satisfaction of camping above the falls that had given us so much trouble.

At the falls called Do Inferno, and at the Cachoeira do M, we were obliged to drag the canoe along by ropes made of woody creepers. A rope is fastened to the bow of the canoe, and two men holding fast on to it, jump from one rock to another, and thus tow the canoe along. A third man remains in the bow of the canoe, and with a long pole prevents the canoe from being dashed against the rocks, whilst the pilot, with his heavy broad-bladed paddle, steers the canoe through the narrow openings between the rocks, and shouts his orders to the men, in a way that makes one fancy the whole canoe and its contents must inevitably be lost. The noise made by the rushing water adds greatly to the confusion that always prevails when a rapid is being ascended.

On the 29th October, we reached the mouth of the Sussuhy-Grande, one of the principal tributaries of the Rio Dôce. We entered this tributary, and found it to be wide and deep. Our travelling was easy for a distance of two miles or more, and then we were obliged to stop. As usual, the obstruction was a fall. We camped upon a sandbank just below the fall. Our provisions had at last come to an end, and here we were, at the foot of this first fall on the Sussuhy-Grande, dependent upon our guns for future support. The last spoonful of sugar had been dissolved, the last cup of coffee had been served, the last grain of *farinha* (flour) had disappeared, and the only remaining piece of *carne secca* (dried meat), a piece about three inches square and half an inch thick, had gone mildewy that very morning. The men behaved admirably under the circumstances, and few were the murmurings that escaped their lips, although at times, I know the poor fellows were sorely tempted to mutiny. We, however, ascended the Sussuhy-Grande and, on the 5th November, entered the Rio Tambaquary, a tributary of the former river.

I determined to ascend the Tambaquary in the same manner as I had ascended the rivers S. José and Pancas. The men, however, although I had more than once intimated to them my intention to explore this river, pretended not to know anything about it, and after we had paddled a short distance up they asked me if it was time to turn the canoe about. "No, go-a-head, until you are told to turn back," was my reply to this insidious query. The men went ahead; and it was not until the 24th November that we commenced to turn back.

On the 12th November, having reached a fall over which the big canoe could not possibly pass, we commenced making a smaller canoe, and this piece of work occupied us three days, inasmuch as we only had axes to work with. When the canoe, which was made of somewhat soft wood, was finished, we discovered that it would only hold five persons, and even then the water-line was within three inches of the gunwale. However, leaving two of the men in camp at Caçete, the other five started off in this risky kind of conveyance, and we thus continued our exploration of the Rio Tambaquary, returning from our furthest point

reached on that river, viz. 32 miles from its mouth, on the 24th of November.

Sometimes we had food enough and to spare, whilst, at other times our larder (the bow of the canoe) was completely empty.

As a substitute for bread, we had recourse to a vegetable, known as *palmito*. This is the top shoot of a species of palm (*Euterpe oleracea* Mart.), that grows in profusion in the dense forests of the Rio Tambaquary. In order to secure the palmito we were obliged to cut down the whole tree, and hence during our exploration of the Tambaquary, we made terrible havoc among these beautiful, slender palms. Upon an average we cut down fifteen trees a day, and I calculate that, during our exploration of the river, no less than four hundred and fifty of these palms were laid low, in order to supply our hungry little party with food. Of course we did not exist entirely upon palmito. This, as I have already said, was merely a substitute for bread. Our guns did us good service in bringing us a variety of game.

Some of the animals, consisting of monkeys, pacas, cotias, capyvaras, &c., were very good eating indeed, whilst others were decidedly the reverse. The same will apply to the various birds that we shot. In the animal way we esteemed monkeys as well as anything, and more especially those of a species known as "Barbados" (*Myctes ursinus*). Our favourite eatable birds were wild ducks, mutums (or curassows), jacus, jacutingas, and jacupebas (*Penelope marail* L.). Upon one occasion we tried to eat an *arara*, or macaw, but we were unsuccessful. We got half-way through what we thought would be a tit-bit, and then we decided to give the remainder to the dog. Capyvara is very poor eating, its flesh being tough, and of a decidedly strong flavour.

At times we had good fishing, surubim being the largest species that we caught, and piáu, piabá, and piabanha the most tasty.

On the 10th December we once more reached the mouth of the Sussuhy-Grande, and on the following day arrived at the little village of Figueira. Between the mouth of the Sussuhy-Grande and Figueira, a distance of eight miles, we found travelling extremely difficult. We were obliged to hug the bank, and adopt a tedious process known as the "fork and hook," in order to make any way at all. Flood-time had just commenced, and the Dôce was full. On account of the depth of water and the terribly strong current, either poling or paddling was out of the question. Therefore we simply had to pull the canoe along by means of the bushes that grew very densely on the banks of the river close to the water's edge. The fork and hook is a tedious process, but at the same time it is the only safe one that can be adopted on certain parts of the river during flood-time.

We were delayed at Figueira some days, on account of three of my men being sick, but on the 18th December the expedition pushed upstream again, so as to make good headway before the floods should reach

their height. We had comparatively easy travelling until we reached the Caxoeira de Baguary, 20 miles above Figueira. This was the first fall pure and simple that we had met on the main river, and a beautiful fall it was—not so very high (30 feet), but nevertheless quite high enough to cause us a fair amount of labour before we could pass it. We were fortunate enough to meet with a small party of fishermen hailing from Figueira at the foot of this fall, and with their help, given in exchange for some powder and shot, we got the canoe over Baguary in far less time than we should otherwise.

On Christmas Day we reached the mouth of the Rio S. Antonio. We entered this river, and camped some six miles up. The Rio S. Antonio was the finest tributary of the Dôce we had yet ascended, being broad, deep, and well suited for navigation for a distance of 20 miles from its mouth. Beyond this, however, the S. Antonio loses its good character entirely, and, like so many of the smaller rivers of Brazil, becomes a succession of falls and rapids. About 10 miles up the S. Antonio there is a small settlement called Naque, so named on account of a village (*aldeia*) of the Nackerehé tribe of the Botocudos having stood here years ago. We stayed at Naque for a short time, on account of my interpreter (Moreira) having some relations there whom he had not seen for twenty years. This will suffice to prove how very rare communications are between one place and another in this part of the world. Moreira had been living in Guandú, and (although as the crow flies the distance between Naque and Guandú is only 85 miles) he had never been able to visit his friends.

I noticed that a great number of the people living at Naque suffered from wens in the neck. Sometimes every member of a family would possess one of these unsightly excrescences, and in many instances the wen would be of such enormous dimensions that it would reach far round the neck of its owner. The people here say that these wens are caused by the water in the neighbourhood being full of lime.

Another disease very common among the people is leprosy. I have heard from good authority that in the town of Joanezia, a person with a wholesome body is quite a *rara avis*. This leprosy is possibly caused by the heating food that the *Mineiros*, for the want of knowing better, are accustomed to live upon, viz. *toucinho* (bacon fat), and *farinha do milho* (flour made from Indian corn). The peasants make it their special business to rear pigs for the sole purpose of obtaining their highly-prized bacon fat.

On the 29th December we left Naque, and on the following day arrived below the Caxoeira do Escuro. We found this fall very similar, both in size and appearance, to Baguary, only not quite so wide. The expedition floated away again, up-stream, on New Year's Day.

For some time past we had been terribly worried by mosquitoes and other insect pests. All day long, *matucás* (large brown flies of a very

vicious temperament), *capótes* (smaller flies, that look as if they had had the ends of their wings snipped off), and *borráchudas* (small sand-flies), allowed us no rest whatever; and at night, after these had quitted the field, large reinforcements of mosquitoes would come up and finish what their allies had begun.

On the 5th January the expedition reached the Caxoeira do Surubim. This was the worst fall we had encountered since leaving Escadinhas—now 150 miles in our rear. The work of hauling the canoe by land over the Caxoeira do Surubim was both long and tedious. We dragged the canoe out of the water on the morning of the 6th January, and not until the evening of the 11th were we able to set her afloat again.

During those six days we made a little over 80 yards' progress.

This was the last fall passed on the Rio Dóce, and our wanderings on that wild strange river were at an end. A day later my little party camped at the foot of another fall, the Caxoeira da Ponte Queimada, but we did not pass it. My poor men, on account of the hardships and privations we had undergone during the last two months and a half, had not only lost muscle, but heart, and now I was rendered helpless and weak by an attack of fever, which was followed almost immediately by an acute attack of ague.

At a small village called Sacramento (13 miles E.S.E. of Ponte Queimada) arrangements were made for a mule-troop to carry my little worn-out expedition down to S. Geraldo, a station on the Leopoldina Railway. We were twelve days on the road, the distance being about 160 miles. We passed through three or four small villages, the inhabitants of which looked at us with those intellectually bland expressions which Brazilian *matutos* (peasants) always assume when they do not quite understand anything.

We reached S. Geraldo on the 30th January. The following day I took the train (a sixteen hours' journey) to Rio de Janeiro, where my first visit was to the London and Brazilian Bank. Four days later I returned to S. Geraldo, settled up accounts with the worthy owner of the mule-troop, and then on the 6th February I brought my men down to the Brazilian capital, whence they were shipped back again to their sweethearts and wives in Linhares. Our wanderings, hardships, trials, and vexations were at an end, but my ague was not. That did not leave me until I had nearly reached home in old England, where I arrived on the 29th May, 1886.

Before the paper :—

The CHAIRMAN (the Hon. G. C. Brodrick) said that Mr. Steains originally went out to South America in connection with a commercial undertaking and the formation of railways, and having accomplished his duty in that direction he undertook the exploration of the Rio Dóce, which seemed to have been but little explored before, though a few travellers had gone a certain way up the river. It was strange that that should be so, considering that it was in Brazilian territory, and at no great distance from Rio Janeiro.

After the paper :—

Mr. COLIN MACKENZIE said he had not had the good fortune to visit the part of Brazil of which Mr. Steains had given such an interesting account, but like all students of Brazilian geography he saw the immense importance of the work that Mr. Steains had done. It would hardly have been expected that in a country which had been settled for nearly 400 years the natives would have been in such a condition as had been described. To the north of them was the old capital of Bahia, which with its province had a population of a million and a half; to the west of it was Minas Geraes with an equal population, and to the south of it was Rio Janeiro, the population of that province being two millions. The Rio Dôce district was thus surrounded by the oldest and most settled parts of the Empire, and yet it was practically unknown. Mr. Steains had been able to explore three of its tributary rivers which had never been explored before. The unexplored portion lay between the river Mucury on the north and the Rio Dôce on the south, while it was bounded on the west by the mountain range of the Aymorés. Mr. Steains had for the first time explored and given us information about the three rivers Tambaquary, San José, and Pancas. Whilst other travellers had obtained their knowledge of the Botocudo Indians from casual interviews with them, Mr. Steains, at great personal risk, had proceeded right into the heart of their wild country, and had spent a month among them. It was an extraordinary fact that the description he gave of their customs was identical with that in the old books relating to the first landing on that coast and the first interview with the natives by Cabral, the discoverer of Brazil. When Cabral was on his way to India he was driven to the extreme west by a series of winds, and discovered by accident the coast of Brazil, finding the first safe anchorage for his vessels at Porto Seguro. When he sent a boat ashore to investigate the country the men returned and told him that they did not believe the natives were men, though they were dressed up in feathers and painted in colours, for they had two mouths. It appeared that the Indians were accustomed to take out the lip-ornament, and whilst the teeth were grinning from the upper mouth the tongue was pushed out from the lower one. History repeats itself. 280 years later, when Cook was on his last fatal voyage in search of a north-west passage by the Pacific, he came to the southern shore of Alaska, the first time it had been reached by a British navigator, and at Prince William's Sound he heard one of the sailors say to his companion, "Come here, Jack, look at the men with two mouths." It seemed that the Eskimo on the coast of Alaska had the same custom of making a slit in the under lip and inserting a piece of wood or coloured stone. He (Mr. Colin Mackenzie) had in a very cursory way followed out the geographical line of this singular custom, and he found that it could be traced from Alaska to the coast of Brazil with very few breaks. The inhabitants of Sitka when they were first visited by Cook, by La Perouse, and other navigators, had that custom in full swing, and one writer described the size of a lip-ornament of the wife of a great chief. By a singular motion of the lower lip she could raise it in such a way as almost to cover the whole of her face. Probably that race would have been able to take the prize for that sort of exhibition, but the Botocudos evidently came very near them. Some years ago a very intelligent French artist visited a colony about midway between the capital of Victoria and the south bank of the Rio Dôce, for the purpose of collecting objects of natural history and painting Brazilian scenery. He was told that a party of Botocudos were passing through the village and he immediately decided it would be an excellent chance to paint the portrait of the chief, so he rushed out, showed them into his house, and hospitably gave them each a piece of meat to eat. The chief made signs that he wanted a knife. A knife was provided, the chief took the meat in one hand, the knife in the other, placed the

meat on the lip-ornament, cut off a piece and then raised the lip in such a way that the morsel passed into his mouth, and so he went on until he had finished the whole of what was given him. The lip-ornaments were also found in Prince Charlotte's Island, in Vancouver's Island, and down close to the northern boundary of the Columbia river. The corresponding ear-ornament gave the name to the territory of Oregon, which in Spanish meant Big Ears. In the peninsula of South California, where the native tribes were less subject to incursions and wars, the same system was in full swing at the time of the visits of the early Spaniards. From old Mexican pictures it was evident that it was one of the signs of a chief to wear the lip-ornament, generally formed of some precious metal or green jade. In Central America there were four or five tribes, especially hill tribes, who wore these ornaments. In Peru the same ornament was seen on the older monuments. In the valley of the Amazons four or five tribes were known who had the same custom, and a further tribe was recently discovered at lat. 11° S. by the German expedition which went down the Xingú river. There was one tribe in Maranham called the Gamella, which meant a shallow trencher carved out of a solid block of wood, so that it was easy to show that there was an almost continuous connecting line between the North American Indians of the Pacific coast and the South American Indians, and that might be looked upon as a corroboration of the fact of similar origin already derived from an investigation of the language and physical characteristics. But the custom which connected them more fully with the other wild tribes was cannibalism. He (Mr. Mackenzie) was residing in Rio in 1860 when those dreadful events took place which had been referred to in the paper, and he thought they were even greater in extent and atrocity than Mr. Steains had stated. The people in Rio who had not actually seen it did not doubt the murders, but they doubted the cannibalism, so one of the learned societies in Rio set to work to investigate the matter, and they arrived at the conclusion that there never had been cannibalism in Brazil. That appeared to some persons as an attempt to prove rather too much, because just at that time, or a little later, Sir Richard Burton had, from his Consulate at Santos, investigated the whole coast-line mentioned in the oldest book connected with the natives of Brazil, namely, the imprisonment of Hans Stade by the natives. He had verified every geographical fact connected with it, and that had led him to the conclusion that the other facts mentioned in the book were undoubtedly true and that cannibalism was practised, and that the worst tribe of all were the Botocudos. At last it became a terror for any of the people settled in Bahia to go to Espirito Santo, because they were unable to cope with the cunning and ferocity of the Aymorés who occupied that portion of the country. Notwithstanding all the efforts that had been made from north and south, those tribes had been able to hold their own against the white man for nearly 400 years, and so tenacious were they of their original customs, that what had been described in the paper was almost a repetition of what was seen by the original discoverers and visitors of Brazil. Their decreasing numbers would seem to imply that Mr. Steains, and he might also say those who had heard his interesting paper, had been assisting at the death-bed of an expiring race, but as they were totally and completely alien to any advance towards civilisation, and as every effort made by the Government through the Capuchin monks, the Jesuits, and other agencies, to get them to settle down to a civilised life had failed, it appeared that after all there was this compensation for the loss of the tribe—that it would open up a richly endowed region to the benefits of civilisation and Christianity.

Mr. WELLS said he was quite sure that geographers would much appreciate Mr. Steains's contribution to a better knowledge of a very little known coast region of Brazil; especially when it was remembered that he had not only carried

out his exploration at his own cost—and as he observed, for the “pure love of the calling”—but he had brought back the results of his observations in a very practical form. This labour of Mr. Steains would be all the more commended if people were only aware of what a considerable amount of exploration was always going on in Brazil, and yet so little of which the outside world hears. Even the Brazilian Government, who had ordered surveys of rivers and regions for various purposes, appeared in no wise to benefit from their labours; the surveys were made, paid for, and the plans then relegated to the dark oblivion of official archives and there forgotten. The Government had built thousands of miles of railways, and navigated by steamers thousands of miles of rivers. English companies and native companies have done the same, yet the world was none the wiser for any more geographical knowledge of those many and vast regions traversed; therefore they should be proportionately grateful for such knowledge as explorers like Mr. Steains brought to them in maps, or other information of such regions as circumstances or their own desires might have led them to explore.—In the paper there were a few points to which he would like to briefly direct attention. The fact of such a gap in the civilised regions of the coast as the basin of the Rio Dôce was certainly remarkable, as the only other coast regions of Brazil which could be compared to it were the boundaries of Maranhão with Pará, and the coast-line north of the Amazons. Some of the causes of the neglect of these districts were common to all, namely, that as they were situated between, or by the side of, old routes to the interior, they had been less subject to settlement than were other regions possibly less favoured by nature. The Dôce valley had been at various times briefly examined by some of the old Brazilian pioneers, but as they found nothing to recommend it, except the productions of the virgin forest, and the way by water—as Mr. Steains had told them—only full of difficulties, what wonder was it therefore that this region should have been neglected, even when some of the most distant regions of Brazil were being populated? But those distant regions produced gold and diamonds—there they were, and no matter how great the distance, or how terrible the obstacles, there went that hardy race the old Portuguese pioneers of Brazil—now, alas! extinct. He believed that if it had not been for the irresistible attraction of this natural mineral wealth, the vast interior of Brazil would be to-day as wild and unpopulated as were these neglected regions of the Dôce. Yet one other cause had been hitherto operating as a deterrent to the population of the basin of the Dôce, and that was, that this region was the territory of the most fierce and savage race of the old Brazilian Indians, the Aymorés. Remarkable for their stature amidst all the other aboriginal races of Brazil, and conspicuous for their untameable ferocity, they utterly ruined and destroyed the works of some of the earliest colonists of Brazil, those on the coast of Espírito Santo; and long after all the coast tribes of Brazil had become scattered or amalgamated with the colonists, the Aymorés still maintained possession of their lands, and it was not until 1758 that the colonists called in the aid of a powerful semi-civilised race, the Coroados, by whose assistance the Aymorés were fairly driven away and were reported to have retreated to the distant regions of the Rio Mearim in Maranhão. In the province of Maranhão, he had seen some unusually tall Indians and of a type very different to the Mongolian type, common to most Indians. This made him believe that the actual Indian inhabitants of the Dôce were not Aymorés, but rather the remnants of other races who had sought these congenial wilds. Even the name of one of these tribes, the Nackinimpás, was very suggestive of Tupinimbás, a branch of the great Tupi nation who once occupied the districts near Rio de Janeiro, but who were as different in language, habits, and customs from the Aymorés as the ancient Britons were from the Saxons. Mr. Steains mentioned the Indians of the Dôce as one of the

existing obstacles to an occupation of this district. These wandering vagabonds might be, and doubtless were, a source of terror to the present timid, degenerate settlers of the Dôce, but if at any time serious attempts were made to develop this region the poor Indians would soon be swept aside, as had been the far more warlike wild races of other countries, before the irresistible advance of the white man. The whole of the upper basin of the Dôce was surrounded by populous regions, many of which constituted what were once called the Forbidden Districts, that is, reservations of the old colonial Portuguese Government, rich in gold and diamonds. Mr. Steains's voyage up the river had shown how difficult was such a route as a means of communication, and as the land was everywhere covered with a dense forest, it was quite easy to conceive how the old miners would much prefer the more roundabout, but easy, land-route to and from Rio and the mines, rather than the tedious way up the Dôce dominated as it then was by the fierce Aymorés. Two attempts at settling on the rich lands of the Dôce had been mentioned by Mr. Steains, both of which had ended in utter failure. Although he himself had already drawn attention to this region as an admirable field for colonising—if carried out in a practical way—he must say that all such attempts as Mr. Steains had described could not lead to anything but bitter disappointment, for without a ready communication to fair markets for their productions, how was it possible for a number of impecunious immigrants to do more than obtain a living? If they produced more than they required for themselves the surplus was only wasted, as they could not dispose of it at a profit where the transport to a market ate up everything, as it must do where a bag of salt cost ten times its value in Rio de Janeiro. Yet with all this, the poor disappointed settlers in this wilderness were really far better off than thousands and thousands of our own poor people at home, who, bred in poverty, battle through a weary, hopeless life, to end their days in the union or prison. In Brazil, in no part of the interior could any scheme of colonisation ever hope to be successful, unless the colonists were accompanied and supported by capitalists, who would provide them with the essentials of work and communications. He maintained that, as soon as the iron road threaded the wild interior of Brazil and opened up that bountiful land in a genial climate, there would then be no lack of immigrants. See what the iron road was doing for the Argentine Republic, and for São Paulo and Minas Geraes in Brazil. In the latter province, the Leopoldina railway penetrated an old neglected region, yet rich in a generous soil, and now, even with sleepy Brazilian countrymen to utilise it the change had been marvellous indeed. Railways first and colonists afterwards, should be the axiom of the Brazilian people, but never the reverse of this order of things, for otherwise the immigrants, devoid of any stimulus to work for more than their own necessities, would sink into the apathy of the country folk of internal Brazil and degenerate morally and physically as they had done. How could it be otherwise, where kind Nature repaid so bountifully the slightest exertion of man, and thus tempted him to a *dolce far niente* life in a land of perpetual summer? He did not see any reason whatever for anticipating an early settlement of the Dôce regions, for there were other districts of Brazil which would much sooner be made attractive to immigrants. One of these means was the extension of railways; another, was another possible golden era for Brazil; she enjoyed it once, when her sons swarmed over vast areas of the country, but natural difficulties and hordes of warlike Indians were then insurmountable obstacles to the exploration of what are yet virgin regions, rich in gold and diamonds. The difficulties and Indians no longer existed, and he quite anticipated that before long they would see gold doing for Brazil what it had done for Australasia, California and South Africa.—Mr. Steains had noticed that the people of Naque suffered from wens on their necks. This was doubtless

goitre, a most prevalent disease in the mountainous regions of Brazil as in Switzerland. It was evidently caused by some element in the water of the streams—lime, he believed—for he had often seen all the inhabitants of a valley suffering from the complaint, whereas those of an adjoining valley were quite free from it. He had never seen the complaint in any lowland region.—The Brazilian camarada is, in nine cases out of ten, a most excellent, useful, and faithful follower for any traveller in Brazil, and he could quite join with Mr. Steains in his appreciation of such good fellows as he met with.

In answer to a question by Mr. Bouverie Pusey, with regard to the danger incurred on account of the natives,

Mr. STEAINS said the natives did not show any hostility towards his little party. He treated them with confidence, and found they were open to good treatment. When his party were in great distress the natives could certainly have cut them off. They could have shot them all if they had wished, but they understand what kind treatment is, and they are grateful in their way, though they are not very demonstrative.

Mr. CHARLES NEATE said that fifty-four years ago an Englishman made an exceedingly valuable and elaborate reconnaissance of the Rio Dôce, and he (Mr. Neate) now held in his hands the plans that were then made. More than sixty years ago some gentlemen in England, he believed at Southampton, knowing the value of the river, from which considerable quantities of timber were exported, conceived the idea of sending out an expedition to colonise there, and an English engineer, the late Mr. Humphreys, was commissioned by them to make a survey. He did so in 1834, in the face of great difficulties. At his death he (Mr. Neate) was living at Rio, and the family placed the reconnaissance, which was a most valuable one, in his hands, and he would now like to place the charts in the Chairman's hands. Very few people in England, and perhaps nobody in Brazil, were aware of the existence of this reconnaissance. Mr. Humphreys was at least twelve months in the Dôce region. He measured the distance traversed by taking the length of the strokes of the canoe, and the number of strokes. He took all the angles, and a large number of soundings; the document was comparable with a military sketch map. The author of the paper had spoken of some American gentlemen from the Southern States who went to Brazil after the War of Secession with the intention of settling there. One of these gentlemen called upon him (Mr. Neate) at Rio, and said he wished very much to visit the Dôce. Mr. Humphreys' chart was lent to him, and he brought it back, after visiting the river, saying he was delighted with its accuracy. It was due to the memory of the late Mr. Humphreys, and might also be interesting to the Society, that this survey should be noticed.

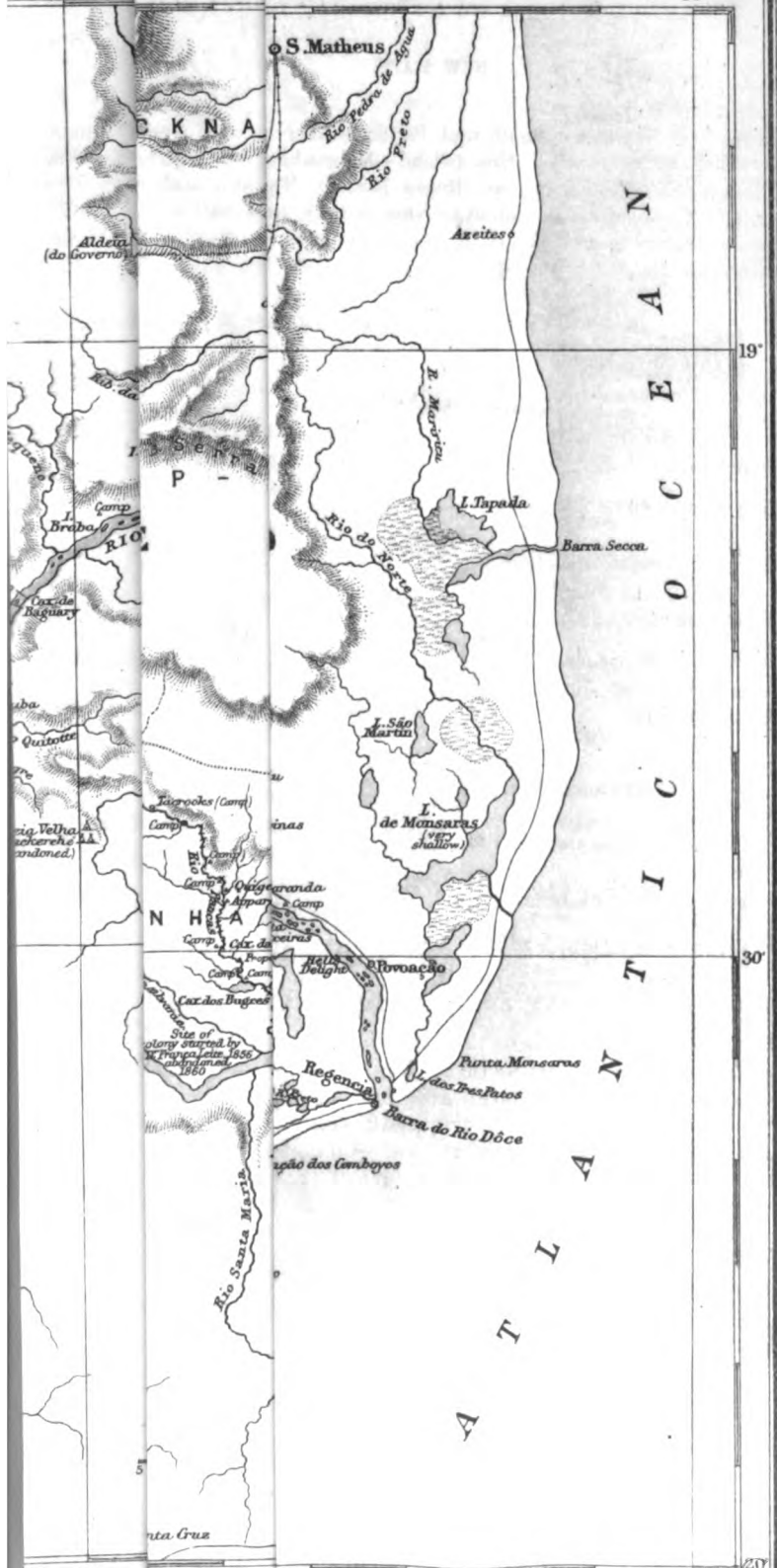
In answer to a question by the Chairman, Mr. Neate said that the survey in his hands had not been published.*

The CHAIRMAN asked the meeting to pass a vote of thanks to Mr. Steains for his paper. They must all agree that it was a very interesting study of a very interesting subject. It had also elicited some very useful remarks from other gentlemen, not excluding the last speaker, who had brought to light the forgotten record of a former exploration in the same district, made by a gentleman whose name had not probably been heard at a meeting of the Society before. Mr. Steains had not only been a vigorous and successful explorer, but he was also a very skilful draughtsman, as might be seen from the specimens of his drawings on the table.

* The survey was confined to the main river.—[Ed.]

42°

30'



19'

30'

20'