The River Uaupés

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the Act was passed in 1901, I was very doubtful as to the chances of the experiment. I remember asking two distinguished Australian politicians whether they did not think it was rather a reckless step to take. The view has been expressed in this country that the policy was forced upon Queensland by the Labour Party in the Southern States; but this was not so: it was forced on the Government by the overwhelming demand of the members from Queensland itself.

I was extremely glad to hear of the discovery of artesian water in the area along the proposed trans-continental railway east of Kalgoorlie. It has been known for a long time that there is artesian water under that country, but all that has been obtained is so salt that it is of no use. It has been confidently hoped that fresh water would be found in that area, and thus remove the great difficulty in the way of the trans-continental railway. On the assumption that the newly-found water is fresh, we can congratulate Australia on this valuable discovery.* With regard to Prof. Lyde's remarks, I have been carefully into the physiological arguments, and have come to a different conclusion. His remarks show how great a change has taken place in the position of those who object to the possibility of tropical colonization by the white races. Until recently the point advanced was that no white men could work in the tropics. That position has been abandoned, and the difficulty with tropical climate is not its immediate but its ultimate effect, by injury to the type. That is much more difficult to check, because it is a prediction for the future. The evidence from the Spaniards in South America I do not think is worth much, because so many other effects than climate have contributed to their change of type. The statement that whites degenerate in India, if they live there generation after generation, was contradicted in 1873 by Sir Joseph Farrer. He refers to his examination of white people of the third generation born in Calcutta, and he tells us that "neither in physical nor mental properties was there anything to suggest marked degeneration." The opinion of such a distinguished medical authority shows that degeneration from type when people are living under suitable conditions is unnecessary. I quite agree with Prof. Lyde that if people live on unsuitable foods, they will degenerate; but food is not climate. The improvement in the negroes in the northern states of America has been due to improved conditions of life and food, and not due to climate. So many of the factors which have been claimed as causing degeneration are not climatic, and can be eliminated, and I am sure that when the white people settle in tropical Australia, they will be protected from these known causes of degeneration.

THE RIVER UAUPÉS.†

By HAMILTON RICE, B.A., M.D., F.R.G.S.

THE Uaupés or Caiary is one of the great tributaries of the Rio Negro entering that stream from the west, and is of salient interest geographically, ethnologically, and perhaps for its commercial possibilities.

In 1854 Wallace ascended the river to its Cuduary affluent, and about this time Spruce journeyed up the stream for a short distance. Stradelli, in 1891, reached the Jurupary Caxoeira, 71° 9' W. long., and in 1904 Koch-Grünberg ascended to El Dorado, a point ten days'

* Information since received from Australia describes this water as "stock water." so it is apparently brackish.

† Map, p. 744.

journey beyond. It was thought that the river took its origin in the Andes, having its source at no greater distance than 90 miles south of Bogota, a statement credited to Wallace and espoused by Crevaux, whose knowledge, however, was confined to descents of the Guaviare and Caqueta, contiguous rivers entering the Orinoco and Amazon respectively. Strange it is that Crevaux, who determined positions by occasional astronomical observations, and who must have known the Uaupés to be south of the Guaviare, should have reasoned thus, and stranger still that he should have mapped the Unilla as debouching into the Guaviare, when, in fact, it is the north fork of the Uaupés, and rises 30 miles farther south.

The heavily forested district limited on the north by the Guaviare, and which is the commencement of that stupendous area of the Amazonas forest, is designated here as the Vega de Caqueta, the district in which rise the Ynirida, Guainia, Issana, and Uaupés rivers. Crossing it obliquely north-east to south-west is a line of low hills extending from the Guaviare to the Ajajú, an affluent of the Apaporis branch of the Caqueta, and these are probably the hills which Wallace * refers to as situated on the north bank of the Issana in about 1° N. lat., 70° W. long., mentioned as the Serra Tunuhy. They are, however, west of the 71st meridian, and begin in $2^{\circ} 6'$ N. lat. On the map of Manoel Paz they are designated Sierra Tunahi, and placed on the north of a river which Paz calls Guainia (cabeceras de Rio Negro). The stream that takes its origin from these hills is known locally among Caucheros and Indians as Caño Grande, and much mystification and conjecture exist as to its real identity—whether the Ynirida, which is probable, or the Guainia, or the Issana, a most unlikely possibility. Innumerable caños course across the vega, and all of these are gathered in by Caño Grande, which early asserts itself as a stream of importance.

To the west of these hills the country intervening between them and the Andes is a trackless wilderness of dense forest and swamp, enclosed by the Guaviare and Caqueta systems, whose headwaters, rising in the Andes just to the east of Gigante, might be said to intercommunicate, so close is their juxtaposition. To reach this country from Bogota, a line of march east across the Andes was pursued by me, beginning July 26, 1907, to Villavicencio, thence south over the llanos to San Martin, a cattle centre and last outpost of Colombian municipal control. This ordinarily can be accomplished in a week or less, depending upon the season. Heavy rains, however, with resultant swollen streams so complicated and retarded the progress that sixteen days' time was consumed. Here several weeks' more delay had to be patiently endured, and periods of fever were alternated with disputatious conferences, in which all the town partook, as to whether Rio

* 'Travels on the Amazon and Rio Negro,' p. 417. By A. R. Wallace. London, 1853.

Unilla debouched into Rio Guayabero. An old map of Codazzi, which adorned a wall of my adobe residence, was an inspiration for every quidnunc to illustrate his particular views, further enhanced by the suborning of whatever poor ignorant Indians happened to be in town. Geographical enthusiasm, however, gave way to financial computations of what it would cost to descend the Ariare to the Guaviare, and then transport the cargo southward across the densely forested country to the upper affluents of the Uaupés. San Martin had "cornered the exploration market," and the values of men and supplies soared accordingly. Eventually, however, a compromise was effected, though at a ridiculously high price.

From San Martin it is two short days' march to Iraca, a house on the Caño Caimeto, a small affluent of the Ariare, and used as a port of embarkation. The Savanna country of San Martin gives way to one of elevations and depressions, known locally as *sarraniá*, whose trough-like vales were filled with dense growths of *mauriche* and *cumari* palms. This stretch forms the watershed between the Meta and Guaviare systems, trending along the Ariari, which rises in the Paramo de Suma Paz near Fusagasugá, southward, till it debouches into the Guayabero, or Guaviare as it becomes known below the junction. Four days were spent descending the river leisurely, which flows in big meanders, sometimes through densely forested areas, at others swinging by land more elevated and open. As it approaches the Guaviare, islands become numerous, as well as alligators of gigantic proportions, though of less pugnacious disposition than their combative *confrères* which menaced Crevaux in his descent of the latter stream. The voyage was uneventful, barring the attempt of a large macarel, a serpent of the rattlesnake family, to force the fighting by boarding the canoe, once his anger was aroused by a heavy blow of a paddle for his temerity in mid-river in crossing our bows. The rencontre was unpleasant till the temporarily inaccessible guns and cutlasses could be obtained. The Ariare has no tributaries of any size, and its densely fringed banks give way to open savanna, usually less than half a mile from its shores. The rubber trees of commercial value are the *Caucha negra* and *Caucha rosalis*, though not seen here in any unusual abundance.

A prominent hill south-west, the beginning of the range before mentioned, marks the near approach to the confluence of the Guaviare and Ariare, which was reached in the early evening of September 17; and just below the junction on the right bank is the barraca* of Carlos Borrero, brother of two men of my party, who, signalled by our gobono (ox-horn) blasts, stood waiting to receive us and offer advice on the landing, rendered doubly difficult by a swift current and steep river margin.

Near Puerto Alturo a zambo and myself, disembarking some distance

* Shed or shack.

down the river early in the morning, intending to procure monkeys for breakfast, got separated from each other, spending a miserable day floundering helplessly about in a big laguna, from which we were unable to extricate ourselves. Heavy thunderstorms were succeeded by night, further complicated by our stumbling upon a small herd of peccaries—unpleasant opponents to meet when ammunition, mental energy, and physical strength are alike exhausted. The in-and-in fighting ability of these animals I have witnessed on numerous occasions, when they, with jaws shot away, legs broken, and bodies fearfully mutilated, have badly punished big hounds. A providentially fallen tree-trunk saved us from an ignominious end, allowing later an inglorious return to camp, and the slaughter of three of our valorous foes.

From Puerto Alturo to Santa Maria, after a couple of hours, a natural clearing is reached, which allows a view of the low-lying sierras that appear from a distance as an even tree-covered elevation of mesa or scarp formation; but a close approach reveals a very different condition, for they are seen to be distinct domes separated by deep impenetrable ravines, gloomy chasms, huge fissures and beetling cliffs, while an impenetrable jungle of carob, palm, and scrub contributes to the eeriness and desolation. The trail winds through gorges, canyons, and tunnels formed by massive blocks of rock, superimposed upon others, whose igneous character gives evidence of some past cataclysm. Where bog and sand have been scoured away, the corrugated scoriaceous quality is everywhere indicative of the previous molten condition, and over such a bed the Lindosa, a shallow but broad stream, courses to empty into a laguna of the Guaviare.

When Caño Grande is reached, bullocks are dispensed with and the men become *cargueros*. The packs are divided into small lots, which enable them to be compactly placed in a cradle or saddle constructed from two stems of the tough *mil-peso* palm, whose leaves are so plaited as to form a framework $3\frac{1}{2}$ feet high, 1 foot broad, 9 inches to 1 foot deep, in which cargo may be most expeditiously carried through thick woodlands. When material is obtainable, such as sacking made from pita, it is whipped to light strong sticks and used by preference. These are carried upon the back by means of forehead and shoulder bands, for which the tough bark of the bornu is utilized. Extraordinary feats of strength and endurance are enacted, 6 to 8 arrobas (150-200 lbs.) being carried for long distances over the roughest kind of trails and single slippery narrow log-bridges, where a misstep means grave or fatal consequences. They work on the most meagre diet, principally coarse hulled maize, which is boiled, seasoned, when fortunate, by brown sugar, *carne seca*, or tapir.

Calamar is on the left bank of the Unilla, where a small clearing has been effected, and a path leads south two days distant to the Itilla river. Here I remained three weeks taking observations, and gleaning

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every sort of information from Indians and caucheros. The Unilla here is 25 yards wide, and varies in depth from a few inches to 3 fathoms, according to the season. Just above Calamar the river forks into two unnavigable streams, whose individuality becomes lost in capillary-like rivulets.

On October 28, with two men and packs reduced to rifle, sextant, hammocks, and sparsest rations compatible with circumstances, a march across the vega toward La Sal was begun, where a great laguna was said to exist, which I imagined might be the one depicted on Paz's map in connection with the Guainia, but it proved to belong to the Guaviare. The route was east of the one taken when working south, and worse in every way. Caño Grande when reached was 22 yards wide, $2\frac{1}{2}$ fathoms deep, with a rushing torrent over which it was necessary to construct a bridge. On either bank were caucheros bivouacked preparatory to mobilizing in La Sal, and these, working in conjunction, felled opposing trees to lock in mid-stream. Held, however, by intervening limbs of others, it required some daring work of cat-like agility before the trees fell clear. Chonta palms were stepped as buttresses, others lashed as railing with yary, a vine of the size and consistency of telegraph-wire, which trails from the trees in a profuse fashion, and in three hours a bridge was open to traffic. From here to La Sal is a good tapir country, and each camp had its *pacera* (raised framework of crossed poles), upon which meat was being cured by roasting and smoking.

Just before La Sal is reached the trail strikes across a swampy savanna, a path due west leading to San José, where an abandoned maloca exists a mile or so back from the river, upon a plain of lava formation covered with coarse grass and chaparal. La Sal is made up of sheds and kitchens, a despatching and distributing point for rubber of the *Calderon impresa*, and presents a busy scene when the Indians and caucheros are in with several months' gathering of rubber. From here an ascent was made, two days, to Puerta Alturo, the night being passed at San José. Our smoke from the maloca awakened the curiosity or resentment of some Guahiba Indians, for two naked specimens appeared from apparently nowhere, though they were appeased by assurances that we were moving on the morrow, and some gifts of sugar, salt, matches, tobacco, and a drink of aguardiente. Within the maloca freshly overturned earth showed two recent interments, an Indian reason for its abandonment. Toward nightfall many dusky forms could be seen squirming through the long grass, but some carbine-shots sent them scattering and scampering into the timbered recesses of the neighbouring laguna.

From Puerta Alturo a return march was made to the west of the first track followed, crossing the caños in most cases at their very inception. At Calamar a tall pole was erected, surmounted with a flag. Close to the Earth's surface the mornings were usually very calm, while

TRANSPORTING THE CARGO TO THE RIO ARIARE ON THE LLANOS OF SAN MARTIN,
IN THE RUVIANO COUNTRY.

PUERTO ALTURO, RIO GUAVIARE AT MOUTH OF RIO ARIARE. BARRACA OF DON
CARLOS BORERO.

HOUSE OF A "RACIONALISTA," OR TRADER, CARLOS TOVAR, UPPER UAUPE'S.

JURUPARY CAXOEIRA, HIGHEST AND LAST ON THE RIVER, SHOWING SCORIACEOUS VOLCANIC CHARACTER OF ROCK AND SCARP-LIKE FORMATION.

higher a gentle air-current drifted cumulus clouds eastward. By noon or a little after cumulo-nimbus were returned from the east, which later seemed ricocheted by a westerly or west-north-westerly breeze, generally culminating in heavy thunderstorms. The barometer was invariably highest at the first or morning reading, and lowest at the afternoon (4 p.m.) reading. Temperature was less constant in its diurnal variation. The highest temperature recorded was $98^{\circ}5$, lowest $74^{\circ}5$, average 87° . Barometric and thermometric readings were taken daily at 8 a.m., noon, and 4 p.m. Throughout this region, winter or wet season is of nine months' duration, and summer or dry, three months, viz. December, January, and February.

The animal-life of the Uaupés is abundant, as attested by large jaguars, striped tiger-cats, tapirs, peccaries, deer, monkeys, sloths, boas, poisonous serpents, agoutis, big otters, and turtles. Two varieties of the peccary are found, the *saina* or *manáo*, and the *cerillo* or *cajuchi*. The hair of the former is longer, coarser, the teeth shorter, darker, and the fore feet characterized by dew claws externally and internally placed, the hind feet showing them internally; while the *cajuchi* has but a single one on the fore feet, and absent on the hind. They hunt in herds, and when excited clack their jaws, simulating castanets. Birds are represented by macaws, parrots, toucans, egrets, several varieties of the currawong family, gaivote or small gull, and a number of brilliantly plumaged birds for whose Spanish or Indian names I have no equivalent. Of fish there are countless varieties, the chief of which are the small delicious *jacú*; the dreaded *caribé*; the long and thin *guaracu*; the *bágarre*, white bellied, with dorsal markings of dull blue; the *barbudo* of big yellow belly, dorsally black streaked, and exophthalmic-like eyes; the *pintadillo*, harlequin marked and larger than a salmon; and the *pirahiba*. As far up as the *Ipanoré*, the first fall, the manatee is found, but higher he does not go. The temperature of the Uaupés 3 to 6 feet below surface was invariably 76° Fahr.

On December 9 the descent of the river from Calamar was commenced in a montería type of canoe, with a crew of eight Cubbeo Indians, in company with José Espriella, a young man of great natural intelligence, whose mother is of much importance in the Carijona nation, his consort a Huitote, he himself master of several Indian dialects, and to whom I was indebted for much information and kindness. The stream was extremely tortuous, less than 2 yards wide in places, and occasionally progress was completely blocked by floating logs and *débris*, it being necessary at times, when the combined weight of the disembarked rowers failed to sufficiently submerge the jam, to break it with cutlasses and axes. On the second day the narrow lanes began to open up somewhat, but the stream still continued a course of sharp winds, twists, and turns. By noon of the fourth day the junction of the Unilla and Itilla was reached. The mouth of the first measured 33 yards, depth

$4\frac{1}{2}$ fathoms; the second had a width of 47 yards, depth $6\frac{1}{2}$ fathoms. The Uaupés just below the junction was 74 yards wide and 7 fathoms deep. All measurements were made by tachymetry, and soundings with ship's lead and line. The fall from Calamar to the junction of the two affluents, as given by Kew-tested Watkin mountain aneroid, is 77.5 feet. The current is stronger in the Itilla, suggestive of its origin at greater elevation than the Unilla, compared with which it is a larger, longer stream, and should be considered the main upper tributary of the Uaupés. Both affluents are white water. Itilla and Unilla are degenerated forms of the Carijona words Itiya and Uniya, signifying respectively *paujil*, a bird of the curassow group, and *gusano*, a worm. The Itilla enters the Uaupés flowing south 120° east, and we ascended a short distance to where Espriella has a house on the right bank at an elevation of 100 feet from the river, and whence, looking west, hills of a scarp character similar to those of Tunahi can be made out, and are a continuation of that series. According to the Indians, it is possible to go up-stream ten days, the last two or three of which it is very tortuous, and that then the river emerges from a laguna. As neither craft nor men were available, I was compelled to forego my plan for ascending this southern tributary, and to continue down to the Jurupary caxoeira (falls or rapids) with Espriella, where he intended working the *Caucha xeringue*, or white rubber, which is not found on the upper Uaupés.

From the junction to the Jurupary is a two weeks' journey. The river is white water, the current sluggish, the course exceedingly crooked. There are not the signs of playa formation such as one sees in the Guaviare and rivers of greater velocity of current, the banks being steep, and the depth of the river near shore equalling that of the stream's centre; its corrosion shows as much work exerted against its boundaries as upon its bed, as is displayed by the enormous broadening in places, taking on the nature of a lake, and the elaborately developed lagunas which flank its sides. A day's journey below the junction an affluent, the Jerisa (white water), comes in on the right. It is a stream of no great size, hemmed in as it is between the Itilla and the Macaya branch of the Ajajú. For the most part the Uaupés is a desolate wilderness to the Jurupary, and to this point flows through an apparently level country, whose flood-plain consists of a white unctuous clay, while the land elevated above it has a sandy soil, in some places so loose as to be ankle-deep and more.

When the Jurupary caxoeira is reached, the river rushes over rock of vesicular and scoriaceous texture, the denuded core apparently of a massif of laccolithic structure running north-north-east to south-south-west from above the Issana on the north to below the Apaporis on the south. Just above the Jurupary are the Pucaron rapids, and from here until the Uaupés empties into the Negro are thirty caxoeiras, as the

cataracts and falls are called, and sixty *correntadas*, or smaller rapids. Difference of level from above the Pucaron to below the Jurupary the aneroid barometer gave as 93 feet. From here to the Negro the evenness of the country is broken by isolated hills of igneous rock, of dome and cone formation, and these, as a rule, are tell-tales of existent *caxoeiras*, or so worn down as to be exposed only at low water. Below the Jurupary rock is granitic for the most part, streaked with quartz. At some of the *caxoeiras* are huge boulders, immense slabs, and enormous fragmental masses superimposed upon each other, while again fusion and crystallization appear to have been synchronous. In some cases, as the Jurupary and Tatú (armadillo) *caxoeiras*, the river plunges over scarp-like formations, but oftener rushes down through gorges with dizzy swiftness, its volume broken and churned into engulfing waves, whirlpools, maelstroms, eddies, bubbles, and foam by the rough, uneven bed. Most of these the natives shoot, the pilot always a man of nerve, strength, and keen vision, but above all of consummate skill. When *tuxauas*, or chiefs, honoured me with their company they were in several instances old men, and the masterful and extraordinary way in which they navigated the long, narrow, rolling, and too often overloaded *ubás* through these hazardous courses, when the slightest error of judgment or physical laxity meant destruction, was such as to excite keenest admiration for their canoemanship. I well remember a solitary individual on the rock-terraced wall of the Macucú (fruit) *caxoeira*, whose coarse black hair, narrow-slitted and Pierrot slanted eyes and brows, colour, and features belied his pretensions to Lusitanian claim; when my Indians had just negotiated in most precarious fashion the twisting Nana (pineapple) above, and refused to attempt the Macucú, he treated them with contumely, ran in turn, single-handed, the two canoes in the most masterful and *sangfroid* manner imaginable.

Much conglomerate of a pumiceous and scoriaceous character, cemented with clay, is found below the Jurupary; and still further down-river, granite and quartz conglomerates, and all vary from extreme hardness to friable and crumbling rottenness. The apparent levelness of the country is deceptive, for in traversing the terrain it is seen to be a surface of undulating and crumpled unevenness, significant of a process of uplift having ensued in conjunction with, or as complementary to, the violent volcanic activity of a former period, both being factors in bringing about its present constructive topographical character.

The Uaupés in its upper portion is white water, but lower down, in the granitic district, it becomes black water, as are its tributaries—the Kerary, which comes in from the north, and the Papory on the south. From the Jurupary district down are found the most highly prized rubber trees, from which the *Caucha xeringue* is obtained; and a variety of palm called *corejia*, a long slender trunk with spraying top, becomes very common here, but is not found above.

The Carijona nation occupies the territory of the Macaya and Ajajú rivers, and some members of this tribe wander over into Uaupés territory, and are the link between the Huitote nation and the Uaupés tribes. The Huitote women are much sought after as consorts by the caucheros, who bring them to the upper Uaupés. On the Caqueta are two tribes much dreaded on account of their hostile and uncompromising attitude toward any conciliatory advances from others, and they enjoy a great reputation for fierceness and bravery. These are known as the Andoques, the so-called white Indians, on account of their reputed light hue, who inhabit the territory known as "Choreda araquara," situated on the right bank of the Caqueta between the Cara-parana and Rio Chorida. The other is the Miranha tribe, whom Chandless* digressively mentioned in his model brochure of the Purus. It may be that the Auhishiras so dreaded by the Piojes and Orejones of the Rio Napo are marauding nomad Andoques or Miranhas. On the Uaupés the Cubbeos occupy the territory from Carurú igarape to below the Jurupary, the Guainanos from above the Tatu caxeira to the Panapaná, the Tarianos from here to below the mouth of the Papory, below which are found the Tucanos. The Cubbeos seem to be a smaller people physically than the others, short, slender, and lithe; some of the largest men I saw were up the Cuduary, where specimens upward of 6 feet with big necks, square shoulders, thick arms, and powerful torsos were found. The abdominal protuberance so marked in both adult and young is due probably to the coarse, bulky, innutritious food and enormous consumption of fermented drinks upon which they subsist, rather than to any peculiar physical idiosyncrasy. Their colour is an olive brown, corresponding to #4 of Broca's scale, and seems invariable—a conclusion based on a comparison of the scale with many hundreds of subjects on parts of the cuticle least exposed to sun and pigmented decoration. The eye is dark, the palpebral fissure narrow, not oblique, pointed at its external aspect, and the upper lid so heavy at times as to suggest the puffiness of œdema; but the eye by no means conforms invariably to so Mongolian a criterion, closely resembling the European eye in many other cases. The hair is black, lanky, coarse in the male, fine and glossy in the female. The faces are escutcheon-shaped and hairless, chins rounded and receding, noses from straight and *busqué* to hooked and Chinese flat types, region of cheek-bones flat, lower lips large and inclined to turn slightly downward. The ears are not large, lobes absent or slightly developed; heads of the brachycephalic type, though I have noticed cases of extreme dolichocephalic variation. Teeth are generally poor.

They are capable of great and prolonged exertion on the smallest possible amounts of food and sleep, slumbering even in the open entirely naked, exposed to wind, rain, and lowered temperature, awaking usually

* *Proceedings of the R.G.S.*, vol. 36, 1866, p. 86.

when the vitality of the various bodily functions have reached its lowest ebb at 4 a.m., then huddle chattering and shivering around a fire until the natural warmth of the body temperature is restored. They are amphibious, bathing many times a day, and all are good swimmers, doing the erroneously termed Australian crawl stroke as naturally as they walk, which seems characteristic of the aborigines of all the lesser-known districts of the world. Their canoemanship stands foremost and perhaps unequalled, judging from an experience of many river journeys in the wildernesses of both North and South America. Trained from earliest youth with a Spartan mode of procedure, they are made to run most dangerous rapids in tiny ubás, taught in a dramatically practical way the rudiments and science of a craft in which they attain a proficiency when ten or even younger that no white man could hope to achieve during a lifetime. It is the result of training and experience of countless generations in which environment and heredity are predisposing and influential factors.

The canoes or dugouts, known as ubás, are made from tree-trunks such as the cachicama, gouged out by burning, with considerable sheer imparted stem and stern, which gives a rise from amidships to either extremity, but lacking the square blocked-out overhang aft which characterizes the craft of the Napo river people. The paddles are circular blades sometimes as much as 16 inches across, with ogee-shaped throats, long, straight, smooth round looms, and cleverly fashioned handles, the width of the palm affording the handle hand firm finger grasp. These are hewn out of a single piece of wood with a machete in from twenty-five to thirty minutes. Their ubás vary from 5 to 50 feet in length. Notwithstanding the Draconian rigour of upbringing, fathers are affectionately attached to their male offspring, and generally insisted upon bringing their hopefuls along, who, however, worked hard and copied the elders in a ludicrously precocious and serious way. The men always parted from the wives in a very reluctant and unwilling fashion, and only because the mandate of the tucháua or chief compelled obedience according to maloca polity; they disliking intensely at having to leave their households even for a day, and the exasperating and treacherous desertion, fraught always with embarrassing conditions and grave possibilities to the abandoned explorer, followed several times in consequence of this non-nomadic and nostalgic idiosyncrasy, afforded a bad precedent to the youths, who emulate in every way the practices of their elders.

Wallace speaks of the Cubbeos as cannibals* who eat their dead enemies, and make war for the purpose of obtaining human flesh, but evidences of anthropophagic tendencies are by no means confirmed. The old slave-raiding days, when Portuguese and Indians ascended from

* 'Travels on the Amazon and Rio Negro,' p. 498. By A. R. Wallace. London: 1853.

the Rio Negro and spread terror and havoc among the Uaupés tribes, killing their men, burning their houses, and impressing the women and children as slaves, are still doubtless remembered, and counter acts of violence and murder do occur as a resultant perhaps of the outrages of those man-hunt days.

Three years ago, four Colombian caucheros, Martiano Murcia, Francisco Cordova, Nasario Jimenez, and Antonio Quintera, ascended the Cararu garape to a settlement of Cubbeo Indians, and were so hospitably received as to be fooled into relaxing the vigilance and close co-operation they had previously agreed upon. As a result, each was shadowed and murdered in the most revolting fashion. A year later at the Jurupary falls a cauchero and his companion, a male Huitote, were transfixed with lances such as are used for killing tapirs, by Indians from just below the caxoeira Mandí. The maloca of these Indians is some 3 miles back from the main river, an ascent up an igarape being first necessary, and then a walk of an hour or more across undulating sandy soiled, densely forested country, with several unbridged streams to cross.

In company with some caucheros and Raimondi, tuçháua of the big maloca on the main river below the caxoeira, the inland maloca was rushed one morning, by which both Indians and provisions were obtained, and the pleasure afforded of meeting the ringleader of the last outrage, who is a much-dreaded character on that part of the river, the entire lot caught asleep in their hammocks. When Indians are absent from the main stream, away on hunting or fishing trips, the caucheroes organize raiding parties, obtain by bribery, cajolery, or threat from other Indians the whereabouts of these isolated malocas, creep up the igarapes noiselessly at night, sling hammocks till the first inkling of dawn, then with Winchesters and machetes, moving cautiously, swoop down on the maloca before the dogs can give warning and the inmates escape. Parley and compromise follow, compacts pledged by the offering and reciprocating of gifts, and the Indians may become valuable allies or the reverse. As a rule, if warning is received beforehand, all inmates of the maloca take to flight after having concealed fowls, food, and personal belongings, not returning till danger of unwelcome intrusion is passed. Occasionally a maloca is found just as its occupants left it, half burned out fires, utensils in their places, hammocks slung, and everything arranged as though the owners' return were but a question of hours, though that maloca is never again occupied—a forest derelict abandoned by its occupants, the mystery and fate of whose disappearance into the vastness and solemnity of the wilderness baffles all conjecture.

Circumstances were such that for two months, between the Jurupary caxoeira and the Cuduary river, during which time two journeys were made up and down the stream, it was necessary to take part in these predatory incursions, and unrivalled opportunities were given for

MALOCA OF JOAQUIN, GUAINANO OR QUENANO TRIBE, SITUATED SOME
DISTANCE FROM RIVER.

MATAPI CAXOEIRA, A FEW HOURS ABOVE THE CARURU.

CARURU CAXOEIRA: THE ROCKS ARE GRANITE. ONE OF THE BEST EXAMPLES OF MALOCA ARCHITECTURE EXISTS HERE, WITH CURIOUS PIGMENTED DESIGNS AND DRAWINGS. ON THE ROCKS ARE INCISED STRANGE FIGURES.

SHOWING BROKEN, ROCKY CHARACTER OF THE STREAM WHICH OCCURS FREQUENTLY IN MIDDLE PORTION OF THE RIVER.

studying the Indians under diverse conditions. Taken as a whole, they are simple-minded, sensitive, reserved people, with child-like natures, docile, amenable to kindness, obedient to authority; of great manual dexterity and ingenuity, extraordinary powers of taming birds and beasts of the forest, industrious, amiable, having great respect for each other's rights, belongings, and families, and live in perfect harmony under communal conditions. They lack, however, the inclination and ability for prolonged application in industrial work, and their reticence or shyness about personal appeal gives rise to unpleasant treachery. Their religion is prompted by superstition and fear, in conjunction with the grim grandeur and eerie solemnity of their environment. Monotheism manifests itself in the conception of a being of the jinnee or devil type, which the word "Jurupary" interprets. This Jurupary is not a concrete being, but an invisible and omnipresent spirit which lurks in individual ferocious beasts, as the jaguar, in the unknown recesses of the dark, mouldy, cavernous forests, in the roaring cataracts, in thunderstorms, disease, pestilence, and famine. It is necessary the Jurupary's anger from time to time should be appeased and his goodwill cultivated, which the *tuxaua* do by inaugurating festivals characterized by sottish drinking, strange incantations, curious dances, and weird music on drums, flageolets, piccolos, bassoons, and pounding instruments of crude design, but most effective as noise-producers. The *pagés*,* or medicine men, robe themselves in grotesque dominos fashioned from bark cloth, gaudily painted, the head represented by a black triangle, it being as orthodox that no face should be depicted as is the rubric of ikon in lieu of sculptured image in the Russo-Greek church. The male dancers adorn themselves with cinctures and circlelets of feathers, garters of shells, and much pigment. The ritual is an elaborate one of dancing, which continues until copious and protracted libations of caxiri† turn the frenzied activities of the performers into a finale of soporific stupefaction.

They are a people subsisting by agriculture, hunting, and fishing, divided into two classes, an aristocracy and democracy or patrician and plebeian orders. The former is marked by a superior mental as well as physical ability, and among these are included the hereditary chiefs, or *tucháuas*, who act as the pilots in the canoes, leaders in war, appoint the festivals, arbiters of justice, sanctioners of marriage, and in some cases are the *pagés*, or medicine men, who are credited with extraordinary occult powers of exorcism, capable of curing disease, driving away storms, and performing a host of other miracles. Time and again I watched these performances, the technique of which consists in alternate blowing and suction over the affected area of the patient's body, with intermittent pauses for the operator to go behind the maloca to spit out the evil spirit. This, with cabalistic signs and passes, grotesque facial contortions,

* Or *payés*, or *peis*, or *pagayers*.

† Beer made from mandioca.

and monk-like intonations, completed the treatment, and was of course of the Canute order of efficacy in curing illness or acting as a prophylactic to undesired thunderstorms. Nevertheless the *pagés* do a great business, and their fees are high. To the *tucháua* one must always apply for men; all are subservient to his orders, and without his sanction one may do nothing.

In the communities up the igarapes, where the malocas are from 1 to 3 miles back from the main river, both sexes go about in a state of nudity, or in some cases have a cumari string, from which a piece of bark cloth is suspended. Both sexes are addicted to strings of beads around the neck, and necklaces of jaguars' teeth and claws, tapirs' teeth, and monkeys' teeth are highly prized. The males wear their hair short; the females gather theirs in a graceful knot. Just below the knee a garter is invariably worn, which swells out the calf, and is considered a highly desirable physical characteristic. Among the Indians of the lower river are occasionally seen smooth cylindrical pieces of quartz, similar in size to a 3-inch section of an ordinary candle, and these are known as *itanbuhás*. They are priceless heirlooms, and are hatchments of the *tucháua* or insignias of individuals, who are skilled dancers, musicians, and hunters. A hole is bored, usually through the vertical aspect, sometimes horizontally, and they are worn suspended about the neck as amulets. Wallace states that these come from the upper Uaupés, but this is doubtful for several reasons. It is extremely unlikely that there ever were any settlements of Indians on that part of the river; they are never found among the Carijonas or Cubbéos. What rocks exist are entirely scoriaceous in character and many days from the river, and quartz is not met with until the cataracts of the lower river are encountered. It may be that they come from the Kerary.

Pigments are used extensively, black and red being the prevailing colours. From the genipapa tree indigo juice is obtained, which gives an ink-like stain. This the women allow to be poured upon their bodies, arms, necks, and faces. At other times they strive for a more æsthetic effect, and patterns in encircling bands, punctate spots, chevrons, lozenge-shaped figures, and feathered lines are traced on the bodies, faces, arms, and thighs. The men use a red pigment, carajurú, made from the nut of a tree, and devote most of their attention to the decoration of the face, especially the forehead and cheeks, parallel lines and filled-in triangles being very popular, as well as crossed basketwork and feathered lines.

The Indians do exquisite feather-work, plaited crowns, circlets, and long broad bands being constructed of the feathers of the macaw, garsus, and toucan. Double-toothed combs, which are worn in the hair just below the occipital protuberance, hold feathers from either extremity, and these are never worn except on occasions of feasts, dancing, and

celebrations, but are kept carefully in ingeniously constructed palm-weaved boxes and chests slung from the rafters of the maloca. What semblance of a lobe there is is usually perforated, and short spines inserted. Among the Huitote women, just above the alæ of the nose are borings, and short spines are inserted.

The people of the Uaupés are communal, and big structures known as malocas are built, in which from ten to twenty families dwell. These malocas are surrounded with clearings, in which are cultivated plaintain groves, mandioca and cane fields, pineapple and pepper patches, and fruit-bearing trees of chontaduras,* grapes, and wild cocos. The grapes are usually large, purple, with a syrupy juice and an enormous single stone. The malocas are built on eminences or elevated land fronting the river, and always at the mouths of igarapes, or if inland close by an igarape, and these igarapes are closed by strong weirs stretched from bank to bank with a fence of the tough split chouta palm, which is called a cacurí. They vary from 6 to 20 or even 30 feet in height, according to the depth of the igarape in which they are to be used. Even when a way has been chopped through the cacurí, one frequently finds further progress by water blocked on account of floating *débris* and long low overhanging limbs of trees, both of which act as effective barriers, and so cunningly concealed is the path, that its existence could never be guessed except by the initiated and experienced. Built in the form of a rectangle, the malocas vary from 60 to 120 feet in length, from 40 to 80 feet in width, with a height in the centre of 30 feet, and at the sides from 3 to 5 feet, the thatched roof descending at an abrupt pitch. At the rear a semicircular addition usually exists, which is appropriated by the tuxáua as a special apartment for him and his wives. So far as I could ascertain, these people were for the most part monogamic, but a perquisite of the tuxáua privileges him with several wives. The framework of these malocas are tall, smooth, straight tree poles, with cross-beams and rafters lashed to them by tough vine ropes—everything significant of remarkable manual dexterity. The roof and sides are palm thatch except the front, which for some feet from the ground is constructed of the cascara tree, in many cases decorated in colour with divers designs of diamond and circle or grotesque figures of people and birds. Entrance to the maloca is by a suspended plaited swing door, which pushes inward and is raised before sunrise and lowered at sunset. The centre or great aisle of the maloca is utilized for the big fires, in which the cassava is baked in enormous ceramics of glazed clay with shallow sloping edges, and which are rested over the fire upon spool-shaped supports of clay, the size of some of these ovens being quite 5 feet in diameter. Huge sections of tree-trunks hollowed out into troughs as receptacles for the caxirí, the universal drink, the liquor always neatly covered with broad

* Pupunha or peach palm.

leaves of plantain or palm, also have their assigned place in centre. To each family is allotted the cubicle or space which the supporting posts of the maloca mark off, and in these are kept the family's hammocks, the articles of culinary use, the matafrio, a long plaited telescoping cylinder from which the juice of grated mandioca is compressed. One end is attached above, and a pole inserted through the lower loop; a powerful leverage is thus exerted, and the sap made to exude through the interstices. Among other family treasures are pipkins, calabashes, gourds, baskets and strainers, the Uaupés Indians on the lower river being especially renowned for their clever workmanship of these and wooden stools, which are hewed out of single pieces of wood.

In addition to the household articles are javelins, whose butts are artistically trimmed with plumage feathers, and whose hollow bulbous-shaped coronals are perforated, containing pod rattles; lances used in hunting the tapir, so scrimshawed as to simulate the effect of inlaid pearl work; circular wickerwork shields; long bows and arrows neatly arranged with the tips in a shoe. These arrows are not feathered, there is no slit to fit the bowstring, and the tips are hard chonta, the shafts being guachi, light and stiff; and wickerwork, pitch-covered quivers. They are very skilful in the use of the bow, and there is no more stirringly picturesque sight than, at the sunset hour, to see an Indian poised upon a rock jutting from the river, his torse out-rivalling any sculptured ideal. The rippling pliable muscles of the limbs and the bow stiffen and tauten simultaneously, a quick suspense, a fish transfixed in the pellucid water; a ubá gliding swiftly, noiselessly past, impelled by one whose languorous grace and dark beauty of glorious hair, shapely arms, soft sinuous lines of shoulder and waist make her a fitting mate of the bronzed river-god—a scene that appeals through its poetic beauty and sensuous colour as only a touch of Nature truly can. They shoot with the left foot advanced, the bow held vertically, arrow butt grasped by thumb and forefinger drawn to the shoulder. The style is the personification of grace, quickness, and accuracy. From all I could ascertain, these Indians have no knowledge of curari, hence do not use it nor any other poison on the tips of their darts employed with the blow-gun, though curari is used extensively by the Banivas Indians of the Issana river just north of the Uaupés, where a laticiferous vine from which it is made is very plentiful. It is pounded first so as to exude the sap, which is mixed with water, strained, thickened to the consistency of an unguent by boiling, and put into little pots.

Their music is performed on various instruments, chief of which is the mambi, a dozen pipes of varying length and calibre from 3 inches to 1 foot, arranged in concomitant order of length. For hours together an assembled multitude within a maloca will watch a couple of mambi performers execute their dance. It is always done in pairs, and consists

of a quick walk or skip or run up and down the centre of the maloca after the fashion of a goose step; each time the right foot touches the ground the cadence is accentuated by a stamp, as is the turn and termination, which is most abrupt, steps and music ending suddenly together; copious draughts of caxiri being tendered them, it is as suddenly resumed. The music is a simple melody, not unpleasing, though its repetition grows monotonous. Up the Tapiri igarapé, whither I was carried by a rescue flotilla of Indians and canoes from an island marooned by deserters, I witnessed one of these performances, which lasted from sunset to sunrise, and it was here that Jurupary music was at its highest development. It is surprising with what inimitable grace and litheness the mambi step is imitated by the veriest tots of boys, whom I have watched countless times with amused admiration as they pranced up and down the maloca. The imbaúbas are long hollow cylinders of wood surmounted with a handle and closed at the bottom. They are pounded in unison as the dancers lunge and stamp. Flageolets are constructed from the jupati wood and the long bones of animals, and a piccolo, known as a bocini, is made from clay. Dried shells of the wild coco are tied together in large clusters, which are fastened about the legs and shaken, and maracas, which are dried gourds filled with pods and used as rattles. Then there are drums of various sizes up to the big one of the Tucanos, known as a trocana or botuto, a hollowed log 5 feet long and large circumference with the ends enclosed, and along its longitudinal surface four holes large enough to admit the fist. The log is slung by a cradle of rope from four posts usually surmounted by grotesque and crudely carved heads. This is played upon with batons, whose wooden handles are surmounted with heads of rubber the size of a cricket-ball, and the sound produced can be heard several miles on a quiet night.

A far more lugubrious noise is the Jurupary music, produced by an instrument of two forms, one resembling a gigantic megaphone, and the other a huge bassoon. These are made from the paxiúba, and no women may gaze upon this instrument under dire penalty of death, which accounts for night being frequently made hideous, as a more propitious time to practise; though without doubt this, in common with the severe flagellation inflicted upon females coming of age, which, if they survive, constitutes their *debut* and signifies their eligibility for marriage, as well as the disinterment of corpses several weeks after burial, when the decomposed remains are incinerated and the ashes put into the vats of caxiri to be partaken of by those attending these grisly memorial services, is becoming more traditional than customary upon the river.

The question of childbirth is a comparatively simple one for the mother. During the term of pregnancy she is supposed to abstain from all food of meat and fish character, but at any time her share of this is

not large, as the men eat together from a single dish, using their fingers, and what is left the women and children have afterward. At the time of parturition she retires into the forest—if done in the maloca, a very vexatious removing of all utensils and belongings is entailed—and is there delivered, assisted by one or two other women. Complications and twins are both unknown. Both mother and child return to the maloca within a few hours, where the sire is found in his hammock, a victim of the fixed idea that upon him is visited the necessity of *post-partum* precaution, as he regards himself as an ill man and is so considered by others. Whatever this form of malingering could be classified under, whether ascribed wholly to hysteria or to some curious process of sexual affinity, would be hard to determine. Mothers carry their young straddled across the right or left hip, usually the latter, supporting the child by passing her arm beneath the infant's axillæ. This allows her great freedom of movement, whether walking or in the canoe, rendering her at all times a valuable assistant to her husband when engaged in hunting or fishing. The infants in this position nurse easily, as the breasts are of the long conical type, pointing markedly outward and downward, firm and resilient till the menopause, when they become atrophied into great loose pendulous folds; though they seem singularly free from any of the pathological conditions so commonly associated with civilized woman during this period of degenerative change.

The Cubbeo Indians, as the Guayibas, Carijonas, and Huitotos, bury their dead within their dwellings, but whereas the Guayibas and Carijonas then abandon their houses, the Cubbeos and Huitotos are of a more economical frame of mind and do not. The Uaupés Indians, for the most part, bury their dead outside the malocas. At Yutica, which I reached late one night, I was shown a young Indian woman merging into a moribund condition, suffering intense agony. To render her last hours more bearable, I injected quarter of a grain of morphin, and the result, in contrast to anything the *pagé* had been able to effect, produced a profound impression among her Indian brethren, the needle becoming for the moment an object of far greater curiosity than the big .405 bore rifle or sextant or camera. A few hours after midnight the woman died, and from then till burial, a little before noon, was one uninterrupted session of weird wailings, loud lamentations, mournful incantations, convulsive sobbings, in which all the residents of the maloca from time to time took part, putting their arms about one another's necks, repeating incessantly the word "guenig, guenig." In a hammock, an old woman, in a garrulous monotone with rising and falling inflection, was supposed to mitigate the Jurupary. At dawn the husband went forth, as is the custom, with his arms to shoot the evil spirit. A small *ubá* of 10 feet in length was cut in halves, made into a coffin, and in this box was deposited the corpse in her hammock. By doing a major share of the

lifting, straightening the limbs, folding the arms, and adjusting the head, as most of them seemed reluctant to touch her, I was enabled to make a tactile examination of the abdomen, but they resented any proposal for, autopsy, which I was most anxious to do, as the case presented an interesting condition of acute beriberi. In the coffin was put most of the personal belongings of the deceased, a sliced gourd over her face, some food, and many contributed some little trinket of his or her own. The contents of a basin of potassium permanganate, in which I was washing up after the cursory *post-mortem*, they were especially anxious should be included, its rich claret colour attracting them tremendously.

A quarter of a mile behind the maloca a hole was dug with paddles, its depth measured by the middle third of the men's thighs; into this the casket was lowered while the assembly stood or sat in apathetic fashion. There were no exercises, nothing more than an impressive silence; then each contributed his or her handful of earth to help cover the grave, completing the obsequies. In the afternoon came caxiri-drinking and a state call from a Desana chief of the Macu garape, a tributary of the Papory, who came to pay his respects while passing, gorgeously painted and attended by arm-bearers and concubines.

The Uaupés Indians seem curiously free from the most dreaded diseases of civilization, such as cancer, syphilis, and the ubiquitous appendix. Fever due to malarial infection or simulating such is common, as are large spleens and livers. In the territory of the upper river mosquitoes abound, and rest at night is impossible without nets. On the lower river they are absent for the most part, and infection, if due to malarial parasites, must be transmitted by a host or means other than the anopheles. One case I saw of possible leprosy of the nodular variety, and sporadic cases of beriberi are frequent.* They are very susceptible to, and especially dread, influenza, or "deflux" and "catarrho," as it is variously termed. Eye diseases are extremely common, especially conjunctivitis. Infant mortality is high, on account of intestinal diseases of protozoan and helminthic origin. Both carati or pinta and eczematous conditions are common. Bronchitis is frequent, due to the Indian's heedless exposure; but rheumatism is noticeably absent, and so is tuberculosis, though with the growth of the rubber industry and increased invasion of the white man, with consequent hybridization, will come his two aborigine annihilators, syphilis and tuberculosis; and the old order of things will pass away for ever, succeeded by a modernity to be accomplished probably by the sewing-machine and disease.

* Caused possibly by some agent or action of mouldy farinha similar to that attributed to unwashed rice as a cause of beriberi among Eastern people—a theory which, however, while strongly supported by circumstantial evidence, is not yet a conclusively proved and scientifically established fact.

Splendidly strong, well-woven hammocks are made by the Guainanos and Tarianos upon looms one or more of which are found in their malocas. The batten of the warp and woof is always a stick of polished pira-miranga, a dark red, intensely hard, heavy wood highly prized by the Indians. The Huitotos, Carijonas, and Cubbeos employ no loom, nor are the fibres woven, the longitudinal strings merely tied at regular intervals with cross-meshes, by which the initiated eye knows at once what tribe it signifies; for the Huitotos space the distance that the thumb and little finger outstretched subtend; the Carijona meshes are at a palm's distance apart, including thumb; and the Cubbeos is measured by four fingers.

The tipiti is the Indian cane-mill, or trapiche, and is made by two stout posts planted firmly in the ground, with perforated borings to support the extremities of two smooth rollers in close apposition, each made to rotate from either end by detachable levers. The cane is fed through this crusher and reduced to bagasse, the juice being caught in earthen and wooden vessels. The pilon and mano are huge wooden mortars and pestles, a hollow tree-trunk and a heavy pounder hewn from hard wood with a cylindrical head employed for crushing maize. These, with the matafrio previously mentioned, complete the crude mechanical devices in common usage with these people for ages past.

March 12 I reached the Ipanoré caxoeira, and two weeks later we passed down river to San Joaquin, and shooting the Tamandúa caxoeira, were hurled into the whirling waters of the Rio Negro April 1, reaching Santa Izabel, the head of steam navigation, four days afterward.

THE CAMBRIDGESHIRE RIVERS.*

By the Ven. W. CUNNINGHAM, D.D., Archdeacon of Ely.

[ABSTRACT.]

HAVING been called upon lately to write a short economic history of Cambridgeshire, I found that the story of half the country was very closely involved with that of the river system of the Fens. This had been interfered with from time to time by the digging of channels and erection of banks; but these great works do not always tell their own story: some channels were made for purposes of drainage, and some for navigation; some banks were meant for protection against flood, and some to be used as roads. The dates and the objects of most of the works are very uncertain, and the problem as to the course of the river before the artificial changes began is one of great difficulty. I make no pretence of having solved it, but I venture to put forward some pieces of evidence which ought to be carefully weighed by any one who takes up the question seriously, from the hydrographical side, and not as I have done, merely incidentally, and from the historical side.

The face of the country was entirely changed by the systematic drainage which was undertaken by Cornelius Vermuyden and carried through during the seventeenth

* Research Department, February 22, 1910.

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Scale 1:1,000,000 or 1 Inch = 15.78 Stat. Miles.

Reference.

Cac. = *Caxcoeira* = rapid.
Corr. = *Correntada* = small rapid.
M. = *Maloca* = large native house.
C. = *Casa* = rationale house or trader.
Ig. = *Igarape* = small tributary.
Bar. = *Barraca* = shed or shelter.

Depths in fathoms.

Heights in feet

- ◉ Latitude by Astronomical Observations
- ◉ Longitude " " "

Note.

This map is based on a compass traverse adjusted for latitude and longitude at points indicated.

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