

EXPLORATION BETWEEN THE RIO BRANCO AND THE SERRA PARIMA

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THE section of northern Brazil enclosed by the Negro, Branco, and Uraricoera rivers and the Serra Parima has long been indicated on maps of Brazil as *terra incognita* and it was in the hope of finding there aboriginal cultures unchanged by contact with white men that the writer's expedition was undertaken. During the seven months from May to November, 1932, explorations were conducted on three of the five large tributaries of the Amazon system that have their sources in the Serra Parima—the Catrimany, Deminí, and Aracá.¹

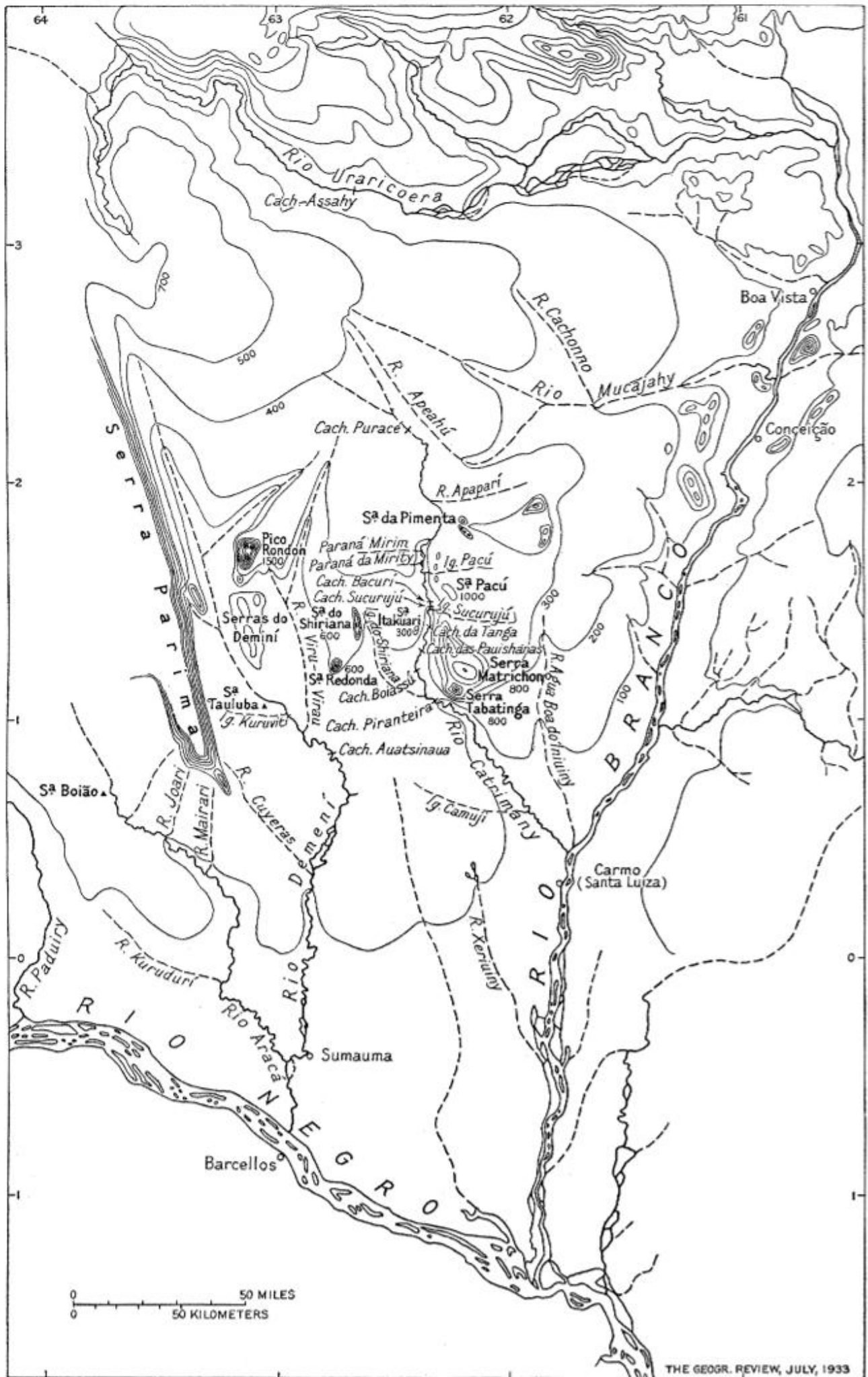
Throughout the several journeys low mountains at strategic points were ascended and bearings taken from them on near-by and distant peaks and sketches made. The resulting network of bearings constitutes a rough triangulation of the whole region and with the photographs and sketches has made possible the construction of a map giving an approximate representation of the topography. A part of the Brazil-Venezuela boundary, following the crest of the Serra Parima, lies within this area, and as a consequence its delineation will be quite different from any shown heretofore.

THE RIO CATRIMANY

The first river to be explored, the Catrimany, we entered on May 23 with two large canoes and a crew of twelve men, intending to follow the river to its supposed source in the Parima Range and, if possible, to cross the range to the headwaters of the Orinoco.

The Catrimany was first explored in 1787 by Manoel de Gama Lobo d'Almada, Portuguese governor of the Capitania do Rio Negro, who ascended it as far as latitude 1° 49' N. and made a map based on astronomical determinations of latitude and longitude from which all subsequent maps of the river have been copied. In recent years the river has become well known for a considerable distance to balata bleeders, who usually enter it early in May, at the beginning of the rainy season, and come down with their cargoes in October, when the rains ordinarily end. The fall in the price of balata due to present economic conditions, coupled with an attack on the *balateros* of the

¹ On the two trips up the Catrimany River the writer was accompanied by Emerson Smith of Wiscasset, Maine. Later Smith made a trip up the Rio Negro.



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FIG. 1—Map of the region between the Rio Branco and the Serra Parima incorporating a preliminary compilation of Holdridge's surveys and elevations. The Negro, Branco, and Uraricoera rivers are from surveys by Dr. Alexander Hamilton Rice. Elevations and contours are in meters and are approximate only. Scale approximately 1:3,600,000.

region by Pairitiri Indians in 1926, has, however, virtually stopped the balata bleeding.

The only civilized habitation on the river is that of a negro who lives in a hut six miles above its mouth, and it was not until we had been ascending the river for ten days that we came upon the first Indian habitation, a *maloka* on the east side of the river occupied by ten semicivilized Pauishanas who speak some Portuguese and are the remnant of what was formerly a fairly large group.

The Catrimany is a white-water river: reports to the contrary evidently have come from persons who have only passed the mouth of the river, across which sweeps the very black water of the Rio Agua Boa do Iniuiny. White-water rivers, it may be noted, flow through regions of sand and clay, and it is the sediments of these held in suspension that give rise to the turbid, yellowish color. The black-water rivers usually flow through a granite or sandstone terrain, and the color of the water is to be attributed to the action of mineral salts on particles of vegetation held in suspension. The *igapo*, or flooded forest, is a characteristic feature of the white-water streams.

When we entered the Catrimany in May it was very nearly at its peak, whereas we had found it to be at dead low water when we passed the mouth in March. Almost everywhere in the *igapo geral* of the river below the first rapids the banks were flooded, and it was frequently very difficult to find a suitable camp site. Mosquitoes were not numerous and anopheles were rare; nevertheless a mild form of malaria made its appearance on several occasions, although never to such an extent as to be a serious handicap. The greatest drain on the efficiency of the party was caused by leg sores, a common affliction between the Rio Branco and the Rio Negro and the most serious single menace to health in that region. There seemed to be a definite relation between the leg sores and the number of piume flies.

The Catrimany maintains a width of about 200 meters from its mouth to the Cachoeira Piranteira, the first rapid and the limit of possible navigation by steam vessels. Craft drawing up to eight feet could easily ascend to that point in the wet season. The number of dangerous cataracts is then not large, but in the dry season they become exceedingly difficult to negotiate. The first troublesome rapid that we encountered was the Cachoeira Boiassú, a mile-long stretch of falls, rapids, and fast water; Cachoeira da Tanga and Cachoeira das Pauishanas also proved difficult in spite of the high water; but it was the Cachoeira Bacurí that presented the greatest obstacles. A whole day was spent in passing it and its twin, Sucurujú. Our difficulties in the rapids were increased by the presence of numerous wasp nests; for the canoe men have the not unreasonable custom of slacking the bowline and jumping into the water when attacked by these pests.

RIDGES AND PEAKS SEEN FROM THE CATRIMANY

We had sighted our first mountain some distance above the mouth of the Igarapé Camují—a sharp peak about 800 meters high now called Serra Tabatinga but corresponding to the Serra Amariaki of Lobo d'Almada's map. From the Cachoeira Bacurí we had an excellent view of Serra Pacú, a 1000-meter mass bearing 45° and close to the left bank of the river. From the Cachoeira da Tanga could be seen the Serra Matrichon, a long mountain mass on the left bank of the Catrimany about the same height as Tabatinga and running from north-northwest to south-southeast. Directly opposite, on the west side of the river and about four miles from it was an isolated, 300-meter peak, Serra Itakuari (Itaqueu on the Lobo d'Almada map). We cut a trail to the top, whence we commanded a wide view from southeast through south to north-northeast.

From west-northwest to north-northwest numerous peaks and ridges could be seen. None of our crew was able to name any of them, having been previously unaware of their existence. The most conspicuous object was a mass crowned with high cliffs whose highest point bore 291° from our position. I estimated its distance from the summit of Itakuari as 45 miles and its height as 1500 meters. Conversation with the mestizos of the Rio Branco and Rio Negro, as well as careful examination of existing maps, convinces me that it has never before been reported. I shall hereafter refer to it as Pico Rondon for General Candido Rondon, the noted Brazilian explorer. Behind Pico Rondon we could see the Serra Parima, a long wall of even height that reached considerably farther south than has been previously supposed. At no point was there a visible break in the range. Our photographs of it, taken from Itakuari, very nearly connect with Dr. Alexander Hamilton Rice's photographs taken from an airplane over the Cachoeira Assahy on the Rio Uraricoera.²

Between Itakuari and the Serra Parima and apparently immediately south of Pico Rondon was a low range extending from west to west-southwest. This also has not been previously reported, and I shall refer to it as the Serra do Deminí since the Rio Deminí cuts through it. About 30 miles to the southwest there was a solitary 600-meter mountain, which I called Serra Redonda from its shape. From 20 to 25 miles due west was a low mountain of about the same height, which may well be called the Serra do Shiriana since the Rio Shiriana has its source in it. To the northwest we could see several flat-topped mountains 30 to 40 miles away. In the same direction but close at hand were low, rounded mountains. To the southeast the Serra Tabatinga, first sighted a short distance above the mouth

² A. Hamilton Rice: The Rio Branco, Uraricuera, and Parima, *Geogr. Journ.*, Vol. 71, 1928, pp. 113-143, 209-223, 345-357.



FIG. 2—View east and southeast from a low hill at $1^{\circ} 26' N.$, $62^{\circ} 24' W.$ of the mountains east of the Rio Catrimany. The peak at the left of the photograph is Serra Pacú.

of the Igarapé Camují, was again visible, and it was at once clear that it was not an isolated peak but merely a knob on a long range whose southern end was shut off from our view by the dense forest on the summit of Itakuari. To the south a flat and utterly featureless forested plain stretched away to the horizon.

CAMP OF BALATA GATHERERS

A short distance above the Igarapé Pacú, a black-water stream about 20 meters wide, we came upon the last of the camps of the balata bleeders, where a party of twelve mixed bloods was working. They reported that the Uaiká Indians were around the interior camp but were confining themselves to a teasing campaign that consisted in hiding near a man high on a balata tree and shaking the branches of low bushes. The psychological effect of being watched by savages, of whom nothing more than tracks was ever seen, was apparent in the low morale of the party. The Igarapé Pacú is now the farthest point visited by the balateros, and it is doubtful whether they will ever again go so far on account of their distrust of the Uaikás.

The Catrimany, during the ten years in which it has been exploited by the balateros, has been the scene of a number of Indian attacks, and each attack has been followed by the withdrawal of white men and mixed bloods from a section of the river. In most of the cases brought to our attention it seemed evident, however, that the balateros had provoked the attacks. These encounters between the balateros and the Indians sadly upset our plans, for we had counted on the Indians' knowledge of the country and the use of their trails and bridges in our proposed exploration of the region.

We climbed a rocky hillock a short distance from the balata camp and took bearings on and photographs of the mountains visible to the east. To the northeast was a high, round mountain, called Serra da Pimenta by the balateros, which forms the northern end of the range occupying the triangle formed by the Branco, Catrimany,



FIG. 3—Continuation southward of Figure 2. The slender pinnacle at the left is Serra Tabatinga; the sharp peak a little to the right of the center, Serra Itakuari.

and Mucajahy rivers. Serra Tabatinga forms the southern extremity of the range. Far to the east we recognized a mountain which we had already seen from Caracarahy on the Rio Branco and which Rice reported as bearing 247° from Conceição on the same river.³ The triangle formed by the lines connecting these points is filled with more or less continuous ridges, peaks, and bluffs, whose character and relative positions are best understood by reference to the accompanying map.

From the balata camp we continued on up the river by way of the Parana da Mirity—a three-mile, rapid-choked side channel—rather than by the even more encumbered main river. Two days were spent in getting through the Parana da Mirity and one day in the Parana Mirim. The upper end of the Parana Mirim marks the end of the first cataract-obstructed section of the river, and, having passed through it, we were once more in the igapo geral with its peculiar vegetation and its numerous and varied pests. The piume flies, which had disappeared in the rapids, reappeared unequalled in numbers and voracity. The leg sores that had closed reopened, and those that had failed to heal grew worse. Meanwhile the paddlers were increasingly uneasy on the subject of Indians, and game became scarce.

RELATIONS OF THE UPPER CATRIMANY

On June 24, a month after leaving the Rio Branco, we arrived at the confluence of the Catrimany and the Rio Araparí. This is the farthest point reached by Lobo d'Almada and was called by him Repartimiento. From Repartimiento on we were in completely unexplored country, although it was generally supposed that the upper part of the river flowed in an easterly direction from sources in the Serra Parima, making a sharp bend to the south a short distance above its junction with the Araparí. We were soon enlightened, however, for, after a short east-west section, the river resumed its

³ *Ibid.*, p. 123.

north-south course. Its width varied between 5 and 40 meters with stretches nearly 100 meters wide dammed by shallow sand bars.

Food and ammunition being now very low, we resolved to push on until both were entirely exhausted and then trust to a swift descent through the rapids to the Pauishana maloka where vegetables and fruit were to be had. On July 1 our resources gave out at the Cachoeira Puracé in latitude $2^{\circ} 11' N.$, longitude $63^{\circ} 25' W.$ From the rate at which the river narrowed I should estimate its source to be some 30 miles farther north or northwest. The Pauishanas say that there is a large fall not far above the Cachoeira Puracé and that a short distance above it a sizable creek enters the river from the west. According to tradition, the source of the Catrimany is in a large pool with a low sand bank on its eastern side. Turtles crawl from the pool over this sand bar and drop at once into the source of the Mucajahy or its affluent, the Apeahú. It is also said that a half-day's walk east of the Cachoeira Puracé there is a large tributary of the Mucajahy, probably the Apeahú. The Pauishana headman told us that he formerly lived on the Rio Araparí, which is a small stream in spite of its wide mouth, and that, at a point two days' paddling up the river from its mouth, the Pauishanas were accustomed to leave their canoes and walk overland for one day to the Apeahú, which they would descend to the Mucajahy, the seat of the tribe and my informant's birthplace. The conformation of the mountains on the east bank of the Catrimany seems to bear out his statements.

Our discovery that the Catrimany flows south from at least as far north as $2^{\circ} 11' N.$ reduces the importance of the Mucajahy. It also makes possible the Indian story that there is a *furo* between the Mucajahy and the Uraricoera that is navigable by canoes in the rainy season.

The descent to the Pauishana maloka was made without incident, the main river being followed instead of the Parana Mirim. The large rapid that is avoided by using this side channel is the Cachoeira Duarte of the Lobo d'Almada map. The Pauishanas having agreed that some of them would help us search for the Uaiká maloka, where we hoped to secure help in reaching the Parimas, we descended to Manaus to overhaul our motor boat.

On August 8 we again ascended the river to the Pauishana maloka and left the motor boat there, for the river had fallen so low as to make the rapids impassable to anything but a canoe. On this trip the canoe was crewed by three Pauishanas and an Arekuna from the highland savanas of southeastern Venezuela whom I had brought down to Brazil in 1930. The elimination of the mixed bloods from the party was an enormous advantage. The Indians were better canoe men and harder workers. Moreover, there was none of the bickering and the flourishing of knives that characterized the first ascent.

All of the cachoeiras had been transformed into dangerous falls except Bacurí, which was appreciably less difficult than on our first ascent. Six days after leaving the maloka we reached the balata camp above the mouth of the Igarapé Pacú to find the balateros just about to leave. They reported that no signs of the Indians had been observed for weeks. Leaving the river we worked westward for two days and then made a camp from which we scoured the forest for long distances in various directions; but a week of continuous searching yielded only blazed hunting tracks that invariably disappeared when followed for any distance. We decided, therefore, to ascend the Rio Shiriana to its source and from there make a similar search to the west.

THE RIO SHIRIANA

The Shiriana proved to be a much pleasanter stream than the Catrimany, since it was without insect pests and fish and game were plentiful. On the morning of the fifth day, however, the river suddenly divided into two branches, which, in turn, divided into others until we found ourselves forced to cut a passage for the canoe through thick growth that interlaced across the narrow channels. A half day of experimenting with various tiny channels convinced us that we were in an enormous igapo geral, a suspicion confirmed when we returned to our last camp and climbed a tall tree. Due west, however, and about five miles away was the Serra do Shiriana. Several exploratory trips were made from this camp, but we found no trace of the Uaikás. An attempt to reach the top of the Serra do Shiriana failed because of the difficulty of making progress through the flooded forest. We now decided to ascend the Deminí and therefore returned to the Pauishana maloka. After a trip to a large stretch of *campina* several miles west of the maloka from which we were able to get bearings on and photographs of Tabatinga and the adjacent mountains, we brought the motor boat around to Barcellos, a small village on the Rio Negro opposite the mouth of the Aracá.

THE RIO DEMINÍ

The Aracá and Deminí rivers have been exploited by mestizos of the Rio Negro for many years. The Aracá has supported a small population with its piassava fiber, and the Deminí has been worked for rubber and Brazil nuts in its lower reaches; but the high rate of mortality from a peculiarly malignant form of malaria endemic on the latter river has prevented either industry from attaining any importance. Health conditions on the Deminí have improved slightly since the great fires of 1926; but it is still decidedly unhealthful. Malaria, leg sores, digestive troubles, and eye diseases are very common. Mosquitoes are numerous and the commonest form is the

anopheles. The civilized population of the Deminí does not number more than two hundred persons, who live by fishing and the gathering of Brazil nuts, and is centered in the little settlement of Sumauma and a number of *sítios* all located within ten miles of Sumauma but in no way dependent on it. The civilized settlements of the Aracá were the scene of a spirited attack on September 24, 1931, by Indians



FIG. 4—Serra Pacú from the Cachoeira Bacurí.

of an unidentified tribe. The settlements comprised nearly a hundred persons; but they were greatly outnumbered by their assailants, and, though seven Indians were killed, two women and a child were carried off. It seemed possible that the Indians might have been Uaikás.

We entered the Deminí on October 6 and ascended it as far as Serra Tauluba in latitude $1^{\circ} 05' N.$, longitude $63^{\circ} 02' W.$ For some distance above its mouth the Deminí ranges in width between a third and a quarter of a mile. The water here is black but the color is to be attributed to the Rio Cuyeras, a tributary about 50 meters wide that enters from the west. Above the mouth of the Cuyeras the water of the upper Deminí is white and exhibits the peculiarity of growing lighter and clearer as its source is approached.

VISIT TO THE UAIKÁ INDIANS

Immediately above the first rapid, the Cachoeira Auatsinaua, there is a maloka of Shiriana Indians who are in contact with the civilized population farther downstream and some of whom speak a little Portuguese. The chief maintains trade relations with the Uaikás of the forests of the upper river and agreed to guide us to their first maloka, three days farther upstream. On the afternoon of the third day we arrived at the Igarapé Kuruvití, on which the maloka is situated. The Kuruvití, also a black-water stream, is ten meters wide but is so encumbered with fallen logs as to be impassable even

for canoes. Leaning against a fallen tree near its mouth was a newly cut fishing pole. A little farther on there were fresh tracks in the sand, and not far away an opening in the forest wall announced the trail to the maloka.

The motor boat was tied up on the opposite side of the river, and we proceeded along the well-marked trail. At the urgent behest of



FIG. 5—A view northward from Serra Tauluba of the Serras do Demini.

our three Shirianas, all were armed. Within fifteen minutes the trail led across a small bridge over a dry brook bed and then through a banana patch. We soon crossed another banana patch, and immediately thereafter the low hum of human voices was heard. The Shiriana who led the party stopped and ordered us to fire one shot each and then follow him into the maloka at a quick trot. The sound of the volley was followed by a burst of savage yells, and almost at once we were confronted by ten naked bowmen. They were larger than most Indians and somewhat lighter in color than the ordinary forest Indians. The crowns of their heads were shaven and painted red as had been those of the Indians killed in their attack on the civilized settlements of the Aracá River. On seeing the Shirianas they wheeled and ran through the several doors of their huge maloka. We followed them in.

When our eyes had become accustomed to the gloom of the great structure we discovered that every man was in his bark hammock with his bows and arrows beneath. They were very suspicious, and their chief said so at once. The long explanation of our presence delivered by the Shirianas was finally accepted, and we were led to a great trough of banana stew and invited to eat. Later the men came down the river, and cloth and steel instruments were distributed among them. Our purpose in visiting the country was explained, maps and photographs were displayed, and Ueiasu, the Uaiká chief, allotted three men to cut a trail for us to the top of Serra Tauluba, a low mountain two miles away.

At daybreak the next morning the three men arrived as promised, and the entire party climbed the 300-meter hill. From a rocky knob on its summit the horizon from southeast through north to west was visible: to the northeast were the Serra do Shiriana and the Serra Redonda; due north was Pico Rondon. We realized that we were on a summit of the Serra do Deminí that we had seen against the wall of the Parimas from the top of Itakuari. The mountains northwest and northeast of Pico Rondon did not show through the mist, nor did the Parimas. After taking photographs and bearings on everything visible we returned to the maloka and attempted by tactful questions and offers of ransom to discover the whereabouts of the two women and the child who had been carried off during the attack on the Aracá settlements. Umiasu pointed west-southwest and counted ten days of overland travel to the maloka where he believed they were held but said that he could not treat for their release or guide us to the place because he was at war with the tribe.

One of the women in the Uaiká maloka was a Pairitiri, a tribe closely allied to the Uaiká. I believe that the savages encountered by Rice at the head of the Uraricoera were not Shiriana, as he surmises, but Pairitiri, for his description tallies exactly with the appearance of the Uaiká and of this Pairitiri woman and Pairitiri men of whom we have heard. Furthermore, the word *puca*, which Rice says the Indians of the region called a certain rapid on the Alto Parima, is a Uaiká and Pairitiri word and means simply a rapid. In the Shiriana tongue the word has no significance as far as I could learn.

Specimens of the low material culture of this group were obtained by barter, names of neighboring tribes recorded, and some geographical information gathered. We were told that the Deminí flows from the northwest and has several affluents as I have indicated on the accompanying map. It is highly probable that the source of the river is near that of the Parima.

THE RIO ARACÁ

Since the Deminí was falling rapidly we left the *maloka* on October 21 and descended to Barcellos, where preparations were made to ascend the Aracá. The Aracá is a black-water river but otherwise is much like the Catrimany and the Deminí, with the same winding course. We found the river so low that the sandstone bed twenty feet below the surface of the soil was exposed. The most remarkable characteristic of the region through which the Aracá flows is the thinness of the vegetation that grows in its sandy soil. We suspected from this that we might find open campo to the north, as proved to be the case.

The width of the river up to the mouth of the Rio Mairari ranges between 300 and 400 meters. Above that point it narrows rapidly

until at Boião it is only fifteen meters wide, while above the first fall it is so narrow that it is necessary to cut a passage for canoes. As along the Deminí and the Catrimany, numerous lakes, some of considerable size, open into the river. The first tributary, the Rio Kurudurí, is a black-water stream twenty meters wide, which rises in the northwest in the vicinity of the Paduiry. This is attested by the journey of a piassava gatherer who, in fleeing from his *patrão* on the Paduiry, lost his way and came out on the Kurudurí.

A short distance above the mouth of the Kurudurí the campinas of the Aracá begin, and farther on there is the Campo da Limão. We explored this campo for a short distance to determine its fitness for cattle. The grass, in the main, was of the type known in Brazil as *tiririque*: a season's burning would have converted it into excellent pasturage. Fat, sleek deer abounded, and near the islands of scrubby forest tapir tracks were numerous. The campo ran northeast, interrupted here and there by islands of forest, and our surmise that it continues to the Deminí was later confirmed.

On November 19 we reached the Serra Boião, a granite hill rising 73 meters above the river and distant from it three miles. The forest here was very thin with the piassava palm predominating. From the summit of Boião we had a good view in all directions. The Serra Parima, known at this point as Tulu-Tuloi—a Bufuana word—filled the horizon from east through north to northwest where it disappeared in the haze. The range was a sheer wall of what appeared to be sandstone cliffs. The valleys of several rivers that we had passed could be distinguished and also the valley of another river entering the Aracá above our highest point. To the west we could see the hills along the valley of the Paduiry. To the south and southeast the country was a flat, featureless plain. Everywhere, as far as we could see, the land was forested.

We went on up the river to a point near the first rapid and then returned to a low cluster of granite rocks. From these on a clear day we had another view of the not-far-distant Parima Range. Bearings were taken on prominent points on the crest of the range and the intersections of these bearings with those taken from Serra Itakuarí served to fix with a fair degree of accuracy this previously unexamined side of the range. As we have pointed out, both the position of the range and the outline of its crest—and consequently the course of the Brazil-Venezuela boundary that it carries—are different from previous representations.

CAMPOS AND CATTLE

Between us and the Parimas was a continuous campo that stretched to the Deminí. The courses of the Rio Mairari and the Rio Joari could be seen and also the probable source of the Rio Cuyeras. I

strongly suspect that this point marks the end of a more or less continuous campo that extends from Carmo on the Rio Branco to the very foot of the Parimas. Coronel Bento Brazil has put cattle in the campo back of Carmo and has explored it west as far as the sources of the Xeriuny. Along the Yufary River and also along the Igarapé Camují there are large campos. Between the Deminí and the Yufary lost Brazil nut gatherers have come out on open grassland, and from our observation point it was clear that the campo extended to the Deminí.

Persistently burned over for several seasons and stocked with Rio Branco cattle, these campos might become of economic value to the impoverished state of Amazonas. On the Rio Negro a regular supply of fresh meat would greatly improve the health of the inhabitants, to say nothing of providing a source of livelihood, for, since the collapse of the rubber market and the Brazil nut and piassava industries, the people of the region have lived on the verge of starvation.