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## AN EXPLORATION OF THE SIERRA DE PERIJÁ, VENEZUELA

By THEODOOR DE BOOY

[With separate map, Pl. XVII.\*]

For many years it had been the ambition of the writer to explore the Sierra de Perijá, one of the little-known areas of South America. Two attractions beckoned towards the mountain range: the ethnological mystery that envelopes the Motilone Indians who inhabit the mountains, and the scant nature of the reports, often contradictory, relating to the geography of the region. Thanks to a grant made by the American Geographical Society of New York, it became possible for the writer during the past summer to undertake an expedition to the mountains. He sailed on May 1, 1918, for the city of Maracaibo in Venezuela, from which point he set out on his overland trip. In connection with the geographical reconnaissance, ethnological and archeological surveys of the region were made under the auspices of the University Museum of Philadelphia, and reports on these studies will appear in the *Journal* of that institution.

On arrival in Maracaibo the writer found that the credentials furnished him by the Venezuelan Government were in the custody of the administrator of customs of the port. By order of the Government the baggage of the expedition was to enter duty free, and, furthermore, the Minister of the Interior had dispatched a document in which the civil and military authorities of the districts that might be visited were called upon to render all aid and protection in their power. It is indeed a pleasure to work in a country where the Government encourages scientific research, and the writer's grateful thanks are due to the authorities in Caracas not only for the facilities extended, but also for the kind telegram of welcome from the Minister of the Exterior that was awaiting his arrival in Maracaibo.

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\* Pl. XVII will accompany an article by the same author in the next number of the *Review*. This article, which the map likewise illustrates, discusses the geographical features of the plain between Lake Maracaibo and the Sierra de Perijá.—EDIT. NOTE.

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Thanks are furthermore due to the Caribbean Petroleum Company of Philadelphia for its kindness in allowing the expedition to make its headquarters in any of its drilling stations near the lower slopes of the Sierra de Perijá. The hospitality shown by this organization and the help rendered by its local representatives were of the greatest value to the undertaking. Finally, the writer is indebted to Señor Eleodoro García, a landowner of Machiques, for aid in introducing him to certain Tucucu Indians and for courtesies in many other matters.

### State of Knowledge

#### NAME

The valley of the Magdalena River in the southern part of Colombia separates two spurs of the northern Andes, the Cordillera Central and the Cordillera Oriental (see inset, Pl. XVII). The latter runs along the eastern banks of the Magdalena to the northward, until at about 7° N. latitude it divides, one branch leading in a northeasterly direction and forming the Venezuelan Andes, the other continuing on towards the north. It is with this northern range that we are concerned. Its southernmost part is known as the Sierra de Ocaña and lies within Colombia. At about latitude 8° 30' the range begins to form the boundary between Venezuela and Colombia and continues to do this as far as its most northerly spurs, the Montes de Oca. On the Colombian side the Sierra de Ocaña obtains the name of the Sierra de los Motilones when the 10th degree of latitude is reached and from here on continues under the names of Sierra de Manaure, Sierra Montaña, Sierra Negra, and Sierra Colorada. On the Venezuelan side the range is called the Sierra de Perijá and retains this name as far north as the Montes de Oca.<sup>1</sup>

### TRANSMONTANE TRAILS

Since the Conquest the eastern slopes of the Sierra de Perijá have remained completely unexplored between the headwaters of the Palmar River to the north and the Rio de Oro to the south. Sievers,<sup>2</sup> one of the few contemporary geographers to discuss the Sierra de Perijá and an explorer who has done considerable work along its western (Colombian) slopes, states that "the eastern slopes of the Sierra de Perijá are covered from the

<sup>1</sup> On some of the older maps this range is shown as the "Sierra de Itoto," and this name is mentioned by Codazzi (*Agustín Codazzi: Résumé de la Geografía de Venezuela*, Paris, 1841, p. 455). It is likely that the name Itoto was derived from an Indian tribe formerly frequenting the eastern slopes. Sanchez (*Silvestre Sanchez: Geografía y Breve Historia de la Sección Zulia*, Caracas, 1883, p. 43) speaks of the "Sierra de Perijá, or Itotas," the different version of the Indian name probably being due to inadvertence, as this author is frequently inaccurate. The first known map of the Maracaibo region, that of Oviedo (Rudolph Schuller: *The Date of Oviedo's Map of the Maracaibo Region*, *Geogr. Rev.*, Vol. 3, 1917, pp. 294-301) shows the Sierra de Perijá under the name "Siera (*sic!*) de los Bubures," so named after the Bububes Indians, a subtribe of the Motilones. The writer can find no mention in any of the earlier or later historians explaining the origin or significance of the word "Perijá."

<sup>2</sup> Wilhelm Sievers: *Venezuela und die deutschen Interessen, Angewandte Geographie*, Ser. I, Part III, Halle, 1903, p. 10.

foot to the top with dense woods, but are still totally unknown." Both Simons and Sievers speak of a trail which at one time was used for travel between the Colombian village of El Molino and the Venezuelan town of Perijá, the latter settlement being more generally known under the name of La Villa. Simons<sup>3</sup> states that "not many years ago a rugged footpath led across the high range of the Andes from Molino to Perijá in Venezuela," while Sievers<sup>4</sup> writes that "as late as the sixties a path existed from El Molino near Villa Nueva in the valley of the César which led to the lowlands of Lake Maracaibo at the Palmar River." From numerous inquiries in the Perijá district, the writer learned that this path originally led along the Palmar River and followed the bed of the Rio Tosas (or of the Rio Lajas, our informants were not quite certain which), one of the tributaries of the Palmar, as far as its source, where a pass gave access to the western slopes of the range and a consequent descent into Colombian territory. This information was from traditional sources, as the oldest inhabitant could not positively state that the path had been used in his time. One account was current that an escaping Colombian malefactor had some ten years earlier succeeded in reaching Venezuela after incredible hardships by making use of the traces of the path which are still said to exist. It is likely, therefore, that the path was formerly used by both Venezuelans and Colombians and that attacks by the Cocina Indians, robber bands belonging to the Goajira Peninsula, or possibly by the even more dreaded Motilones, who in former days may have ranged farther to the north, were responsible for its abandonment. It is interesting to note that the ethnographic map in Codazzi's "Atlas of Venezuela,"<sup>5</sup> which indicates the routes of the earliest explorers of the northern part of the South American continent, shows the route taken by the German Alfinger on his journey from Venezuela to Colombia in 1531 to have led him over the mountains in the self-same locality, and it is well within the bounds of reason to suppose that in pre-Colombian days this pass was in general use by the Indians.

Sievers<sup>6</sup> also mentions a second trail. "A second path led from the small settlement of Espíritu Santo . . . over the Sierra de Perijá to Venezuela." It is probable that Sievers was misled by native accounts in Colombia regarding this means of reaching Venezuela. All inquiries in the Venezuelan town of Machiques, which about corresponds in latitude to Espíritu Santo in Colombia, failed to elicit any information regarding a path that in former years had led to the neighboring republic, and it is almost certain that, had such a path existed, the Venezuelans would have known of it. Furthermore, the Macoa Indians inhabiting the interior of the Sierra de

<sup>3</sup> F. A. A. Simons: On the Sierra Nevada of Santa Marta and Its Watershed. *Proc. Royal Geogr. Soc.*, Vol. 3, 1881, pp. 705-723, with map, 1:780,000; reference on p. 711.

<sup>4</sup> Wilhelm Sievers: Die Sierra Nevada de Santa Marta und die Sierra de Perijá. *Zeitschr. der Gesell. für Erdkunde*, Vol. 23, 1888, pp. 1-158, with a geological and topographical map, each in 1:500,000; reference on p. 113.

<sup>5</sup> Agustín Codazzi: *Atlas físico y político de la República de Venezuela*, Caracas, 1840.

<sup>6</sup> Work cited in footnote 4, pp. 113-114.

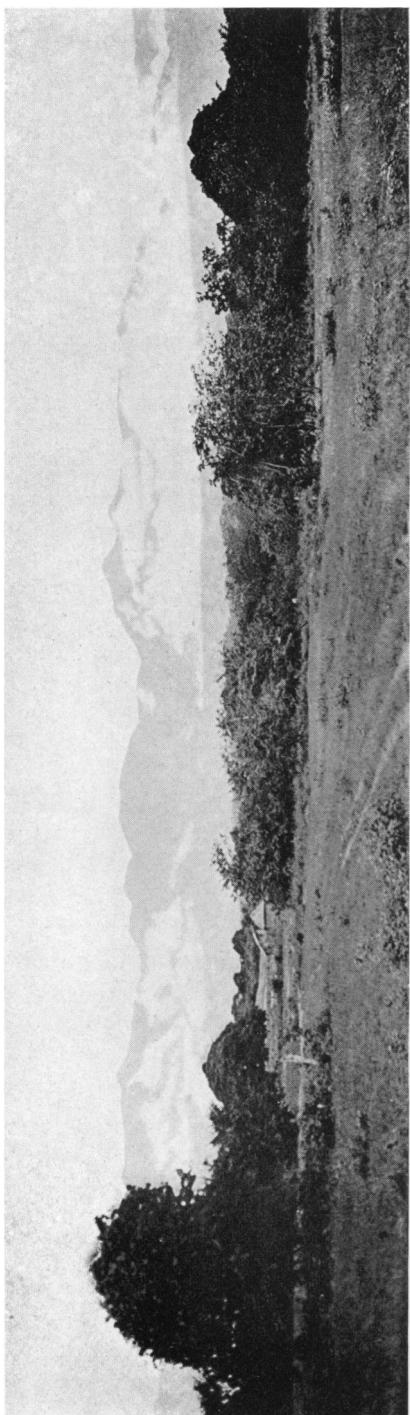


FIG. 1.—General view of the Sierra de Perijá from high ground near La Villa.

Perijá were emphatic in declaring to the writer that they had, in their nomadic wanderings, never encountered the slightest trace of a former Spanish trail in the district where the headwaters of the Apon originate. The tribe had no legendary lore regarding such a trail, and from personal travel in the mountains over which such a trail would have led, the writer is positive that the hardships of the traverse, to say the least, would have rendered the journey from Colombia to Venezuela by this route impracticable.

#### LOCAL KNOWLEDGE OF THE RANGE

Except for the trail along the Palmar River, and the highly doubtful trail along the Apon, the Sierra de Perijá offers no facilities for travel and, as far as our knowledge goes, has not been ascended from the Venezuelan slopes by white men. It is probably for this reason that the Venezuelan population is today unacquainted with the range. The inhabitants of the region from the western shore of Lake Maracaibo to the foot of the mountains are not interested in the Sierra, as they find all the room they need for their farms and ranches in the lowlands; and the slopes of the mountains, while far more fertile than the savanas at their foot, are too precipitous to allow of ready cultivation. Furthermore, the Venezuelans stand in great dread of the Indians that live due west of the town of Machiques and even imagine the mountains to the northward peopled with Indians, although in fact there are none now living there. From the

headwaters of the Macoita River to the north as far as the Rio Lajas, the Sierra de Perijá is uninhabited, and it is not even certain that aborigines inhabit the region around the headwaters of the latter river.

The most modern map of the state of Zulia,<sup>7</sup> while relatively accurate for the lowlands as far as roads, settlements, and rivers are concerned, depicts the Sierra de Perijá in what can be called an imaginative manner. The heights of many peaks are shown in the interior of the mountains, as are the headwaters of the Apon, Aponcito, Macoita, and other rivers. The location of the several Motilone tribes, such as the Macoita Indians, the Aponcito Indians, the Rio Negro Indians, and various others is also indicated. The writer is at a loss to account for these topographical details in a region that not only has been unvisited for the last hundred years, but that probably was never visited by any but Indians since the days of the Conquest. The inhabitants of Machiques can see the higher peaks of the Sierra de Perijá from their doors (for similar view from La Villa, see Fig. 1) but are of course unable to see the even more elevated peaks of the interior. Nor have they any knowledge of the headwaters of the above-mentioned rivers. The map, for instance, ignores the fact that the Macoita rises in the interior of the mountains and is much larger than the Aponcito, which originates near the western slopes of the second range due west from Machiques. The location of the Indian tribes is also entirely faulty and was probably derived from hearsay information from such Indians as at various times visited the cattle farms near the mountains.

#### INDIAN TRIBES

On the ethnographic map in Codazzi's "Atlas of Venezuela" the region under discussion is shown peopled by the Sabrites and the Guiriquires to the north of the Apon River and the Carates and Motilones to the south of this river. Codazzi indicates on this map that the Cocinas and Goajiras of the Goajira Peninsula are of the same stock as these tribes. The ethnological researches of the writer prove that the Motilones are of a different stock from the Goajiras and speak a language that is entirely different. It is of course not the purpose of this paper to go into a lengthy ethnological discussion of the tribes studied on the Sierra de Perijá expedition, but it may be said briefly that the Macoa Indians, among whom the writer took up his abode, belong to the Motilones and speak the same language as do the neighboring tribes to the south, the Tucucus, the Irapéños, the Chaparras, the Pariris, the Rio Negro, and the Rio Yasa Indians. Undoubtedly many other tribes exist as far south as the Catatumbo and Oro Rivers that belong to the same linguistic stock and have in the past been known under the generic term of Motilones. None of these tribes have names for themselves, the names used being derived from the streams whose headwaters they frequent. The word "Motilone" is unknown to them. According to

<sup>7</sup> Estado Zulia, 1:500,000. In series: *Atlas de Venezuela*, Vicente Lecuna, edit. Caracas, 1916.



FIG. 2—The Sierra in the vicinity of the Macoa settlement. Note the scattered Macoa huts and clearings. The larger of the two huts on the slope on the right is the author's hut (see Figs. 4 and 5).

Fray Nicolas de la Rosa<sup>8</sup> the word Motilone signifies "cut-haired," and this author gives a long and fanciful description of how the Indians came to adopt the custom of cutting their hair. This description is more ingenious than plausible, and it is more likely that the custom existed many centuries before the coming of the *conquistadores*. At any rate the practice is still followed today among the Macoas by men, women, and children.

For centuries the Motilones have had a bad reputation, and it is probably for this reason that no expeditions have penetrated the eastern slopes of the Sierra de Perijá. For many years the western slopes have also remained unknown, although the Colombian Motilones have held a great deal more intercourse with the Spaniards than have their Venezuelan fellow-tribesmen. In 1915 a Swedish ethnologist<sup>9</sup> collected certain data on the Colombian Motilones living in the lowlands below the Sierra de Perijá in the neighborhood of the former settlements of El Jobo and Palmira. The photographs made by this explorer of the Colombian Motilones bear a striking resemblance to those made of the Macoas by the writer. All references in works treating of the ethnology of the Indians of the eastern slopes of the Sierra de Perijá agree as to the ferocity of the aborigines, and one early geographer<sup>10</sup> goes so far as to put a terse notice on his map stating that the Motilones are "the worst Indians that exist." A modern ethnologist<sup>11</sup> in discussing the region says that "the mountain range west of Lake Maracaibo (Sierra de Perihá [sic]) is controlled by the wild and little-known Motilones." The few other authors who mention the Motilones speak in a like vein, and there appears to have been built up around this race a wall of superstitious dread that possibly may prove, ultimately, its strongest defense against the encroachments of its Venezuelan and Colombian neighbors.

### Narrative of the Expedition

#### PREPARATION

The writer experienced considerable difficulty in obtaining servants to accompany his expedition once he left the petroleum station of La Horqueta, to which he had proceeded from Maracaibo after landing on Venezuelan soil. La Horqueta lies almost at the foot of the Sierra de Perijá. These mountains are not inhabited at that point, and information gained in the district indicated that it would be necessary to go to the town of Machiques before further information could be had on which to base an attempt to

<sup>8</sup> Nicolas de la Rosa: *Floresta de la Santa Iglesia Catedral de la Ciudad de Santa Marta*, 1739. Reprinted at Valencia, 1833. Parts of this work have been translated by F. C. Nicholas: The Aborigines of the Province of Santa Marta, Colombia, *Amer. Anthropologist*, Vol. 3, N. S., 1901, pp. 606-649; reference on p. 624.

<sup>9</sup> Gustaf Bolinder: *Det Tropiska Snö-fjällets Indianer*, Stockholm, 1916 (reviewed in this number of the *Review*).

<sup>10</sup> Juan Lopez: *Carta plana de la provincia de Caracas ó Venezuela*, Madrid, 1787.

<sup>11</sup> H. J. Spinden: Travel Notes in Western Venezuela, *Amer. Museum Journ.*, Vol. 17, 1917, pp. 15-23; reference on p. 17.

enter the Indian territory. It was an easy task to obtain men to go to Machiques with the expedition, but it became another question when these men were asked to make an ascent of the mountain range. Despite the fact that Machiques lies within full view of the higher summits and that the town is watered by the Apon River, which breaks out of the range within a distance of not over ten miles from the settlement, the inhabitants are not only absolutely ignorant of the interior of the chain but are content to remain so. They were unanimous in stating that a visit to the region was an impossibility and would be accompanied by the gravest danger. In



FIG. 3—Ranges of the Sierra de Perijá seen from top of second range west of Machiques at an altitude of 2,800 feet. Note the dense forest cover of the range in the foreground, characteristic of the eastern border of the mountains in contrast with the interior (see Figs. 9 and 12).

consequence no peon could be found who was willing to undertake the trip with the writer, although, after his return from his visit to the interior of the mountains, there appeared to be a number of eager applicants for the next trip. The writer was informed in Machiques that a Señor Eleodoro García owned a considerable cattle farm at the foot of the mountains some ten miles due west from Machiques, on the Aponcito River. Señor García had also a residence in Machiques itself, and here I was so fortunate as to meet this gentleman. Señor García informed me that his ranch was frequently visited by some Tucucus Indians who lived among the Macoas in the interior; that these Tucucus worked on his property, felling trees and preparing the cleared land for pasturage; and that they did this work in exchange for ironmongery, which they afterwards carried to their mountain abodes and bartered with the Macoas.

As a result of this information a visit was paid to the cattle ranch, and it so happened that several of the Tucucus had just come from the mountains. A few of the Indians spoke Spanish, and, after the writer consulted with them, they undertook a special trip to their settlement to request permission from the Macoas for a stranger to visit their haunts. The Tucucus returned after four days with the information that the writer would be allowed to accompany them, but on the stipulation that he take not more than one companion.

Señor García was instrumental in procuring for me an excellent peon,



FIG. 4—View from a nearby elevation of the hut built for the author by the Macoa Indians.

Manuel Peñaranda, who was induced to go with the expedition to the Macoas. Peñaranda proved throughout my stay to be an excellent companion and one who was not easily daunted by the dangers that occasionally presented themselves. He was acquainted with some of the Tucucus through previous visits to Señor García's ranch, although he had, of course, never visited the interior of the mountains. Much credit is due to Señor García for having persuaded his *compadre* to accompany me and also to Peñaranda for having stood by me in what afterwards turned out to have been a rather hazardous undertaking.

It may be noted for the benefit of future explorers that there are but two means by which one can penetrate to the headwaters of the Apon and the Macoita Rivers. The first way would be to establish friendly relations with the Tucucus, as was done by the writer, and thus obtain permission to enter the Macoa territory. The Macoas are extremely jealous of their rights

of occupation and would resent by forcible means any intrusion of their haunts. Even if this first method were followed, it is not probable that the Macoas would allow more than a party of three to penetrate the mountains, and they certainly would not allow any larger number to enter. The second way would be to go into the country without Tucucu guides, by taking a large body of men and cutting one's way in the desired direction. The

result of this procedure would undoubtedly mean the loss of a number of followers through ambushes prepared by the Indians, and it is doubtful if one could do much without from fifty to a hundred guards. At any rate, it is certain that if an explorer went in with ten men or so, without the sanction of the Indians, the expedition would be foredoomed to massacre.

By the time the Tucueus returned, the writer had collected his baggage at Machiques and also had laid in a supply of trading goods for the Indians. These loads were distributed among the men, who appeared to feel no discomfort in carrying weights up to 120 pounds. They arranged on their backs the bags



FIG. 5—The author's hut. Explorers' Club flag flying over hut.

in which our belongings were stowed and helped support them by a woven cord fastened over their foreheads; in this manner they climbed steep places which personally I had difficulty in ascending without any load at all.

#### THE JOURNEY TO THE MACOA SETTLEMENT

Leaving Señor García's ranch on June 2, we followed the trail to the Macoa country. First it leads along the banks of the Aponcito River (for route, see Pl. XVII). There is of course nothing but the most elementary path, as the Indians of the Sierra de Perijá are in constant dread of attacks from other Indian tribes and attempt to hide their trails as much as possible. Frequently there was no path at all, and one simply jumped from rock to rock in the river bed or else had to wade. After some three hours, the trail left the Aponcito and led through the denser forest of a precipitous mountain slope (see Fig. 3). It would be impossible to describe the diffi-

culties of this journey. The Tucucus appeared to be used to it; but what with the almost perpendicular ascents, the wet ground which caused constant slipping, and the dense vegetation, the writer suffered considerably. At an altitude of 4,800 feet a pass was reached which permitted descent into the ravine separating the first and the second mountain range. This descent proved even harder than the ascent, and it was not unusual to encounter a perpendicular cliff where one had to descend by means of *bejucos*, the parasitic creepers hanging from trees. Camp was made the first afternoon at an altitude of 4,400 feet, on the slope of the second mountain. The making of camp simply entailed cutting some sticks and thatching these sticks with large leaves. The baggage was spread in a dry place, and the party slept on the ground.

The next morning the journey was continued, and about noon, after having ascended the second mountain and descended to a larger valley in a northwesterly direction, we came to the confines of the Macoa country. Up to now no cleared ground had been visible, but after reaching the summit of the second range we could distinguish the agricultural clearings of the Macoas by their different shade of green. At length the first Macoa hut came in sight, and our Tucucus gave notice of the approach of the expedition by prolonged shouts from the hilltop. On reaching the outskirts of the Macoa settlement, I gained my first view of the Indians in their native land. The average altitude here was 3,600 feet.

The settlement consists of some fourteen huts spread over contiguous hilltops. No two huts are placed side by side and the Indians apparently are not of a congenial disposition. Perhaps the explanation of the widespread Macoa village is that in the event of raids from hostile tribes, there is a better chance of escape for some of the members of the community. Nevertheless, the arrangement is inconvenient in the extreme, as a visit from one hut to another frequently means a steep descent and then a steep ascent, while actually the huts are so near together in an air line that their occupants can converse from one to another without great difficulty. The Macoas also have their clearings at considerable distances from their huts, but why this is so the writer cannot tell. Frequently the hillsides directly under their huts are not cleared, and the Macoa undertakes a walk of an hour or more before he reaches his agricultural patch on a distant hill. Yet the first hill slope would be equally well suited for cultivation. (For general view, see Fig. 2.)

The greeting accorded me by the Macoas was quite friendly, and I appeared to be as much of a curiosity to them as they were to me. Their first act consisted in building me a large hut some 24 feet long and 14 feet wide (Figs. 4 and 5). This hut was far larger than their own huts. The Macoa men have an average height of a little over 5 feet 1 inch and the Macoa women a height of almost 4 feet 9 inches, and the aborigines evidently reasoned that the tall stranger needed a good deal of room. The building

of the hut took about a day and a half and was undertaken by practically all the male members of the community. All work was done in the most willing spirit, and seldom during my stay did any Indian show unwillingness to grant any request I might make. Food was brought to my hut daily and in enormous quantities. The Tucucus had at various times brought chickens from the lowlands to the Macoa settlement, and no day passed without their bringing in numerous chickens and eggs. Furthermore the supplies of yams, bananas, plantains, corn, sweet potatoes, and yucca given me far exceeded my necessities, and of the game killed a generous share was always reserved for my use.

#### ETHNIC STATUS OF THE MACOAS

Outside of the ethnological work undertaken for the University Museum of Philadelphia, the object of my stay among the Macoas was the exploration of the headwaters of the Macoita and the Apon Rivers and the possible undertaking of a journey to the west in order to reach the Colombian side of the mountains. As far as the ethnological work and the exploration of the headwaters of the Macoita were concerned, the expedition was successful. The headwaters of the Apon were not reached, nor did I succeed in crossing the last mountain chain dividing the valley of the Apon from the Colombian lowlands. The Macoa Indians were studied and photographed, and a vocabulary of their language was compiled with the aid of Tucucu interpreters. Reports on this work are to appear in the *Museum Journal*. Briefly, it may be said that the Macoas and Tucucus proved to have habits that differed greatly from those of the Goajiras to the north and the Arhuacos to the west. Unlike these tribes, the male Indians of the interior of the Sierra de Perijá do all the agricultural work, while the women do the weaving. The opposite is the case with the Goajiras and the Arhuacos. The feasts, ceremonies at birth and marriage and death, hunting customs, and games are also quite different. Perhaps the greatest distinction lies in the apparel, both male and female Macoas wearing heavy cotton robes, which are never discarded by the men and the upper part of which only is discarded by the women during the warmer hours of the day. For these practices the climate is of course the chief reason, heavy clothing being needed as a protection against the mists and the cold of the interior of the Sierra de Perijá. Furthermore, the Macoas are also one of the few tribes of northern South America who do not use the hammock. They sleep on woven grass mats.

#### DISCOVERY OF WATERFALLS

The Macoa settlement lies within a few miles of the two principal tributaries that go to make up the headwaters of the Macoita River. It was on these two tributaries and on the Macoita River itself that I was fortunate enough to discover a series of waterfalls which had hitherto not been seen



FIG. 6—Upper Bolívar Falls, right fork of the Macoita River: upper and middle cascades, respectively 100 and 200 feet high.

by any but the aborigines of the region. Their discovery came about in this manner. The second evening we passed among the Macoas happened to be a very still night with almost no wind, and I noted at intervals a subdued roar that appeared to proceed from some distant spot. Upon inquiry what this could be, the Indians repeatedly made use of the expression *kúna-torótpok*. The Tueucus appeared to be unable to inform me of the Spanish equivalent for these words. The following day, one of the Indian children happened to fall and set up a loud wail, and I noted that its mother, in speaking of the occurrence, frequently employed the word *torótpok*. The same day also, when I began compiling a vocabulary, I was informed that *kúna* meant water, and after this it needed no great amount of perspicacity to decide that *kúna-torótpok* meant waterfall. This solved the origin of the mysterious sounds. I determined to visit these falls at once and gave the Indians no rest until they agreed to guide me to them. In all, six waterfalls were visited and surveyed, an undertaking which took three weeks. Large wooded areas had to be felled occasionally in order to obtain proper light in the deeper canyons for taking photographs. The cutting of trails to the falls was also a laborious piece of work.

Three of the falls occur on the right, or western, tributary, two on the left, or eastern, and the sixth just below the junction of the two, on the Macoita proper (see inset on Pl. XVII). The writer would suggest naming the falls on the right fork Upper, Middle, and Lower Bolívar Falls, in honor of Simón Bolívar, the liberator of Venezuela and founder of five South American republics; the falls on the left

(The figure of the Macoa Indian at the bottom cannot serve as a scale because of the different angles from which the component parts of this view are seen.)

fork, Upper and Lower Arismendi Falls, after Doña Luisa Cáceres de Arismendi, the heroine of the Venezuelan War of Independence, whose history has been related elsewhere by the writer,<sup>12</sup> and the falls on the Macoita River itself, Venezuela Falls. The writer would feel honored if these names should meet with the approval of the Venezuelan Government, to which he is indebted for such numerous courtesies and so much good will.

The Upper Bolívar Falls consist of a series of three cascades, respectively from highest to lowest about 100, 200, and 45 feet high, the altitude at the bottom of the lowest fall being 3,740 feet. The uppermost and middle falls are of comparatively small volume but their picturesque beauty is indescribable (Fig. 6). The lowest fall owes its impressiveness to its greater volume of water. About three-quarters of a mile in an air line downstream below the lowest of the Upper Bolívar Falls lie the Middle Bolívar Falls. Their height is about 40 feet and elevation at bottom 3,400 feet. At a considerable distance farther downstream lie the Lower Bolívar Falls, consisting, like the upper falls, of three cascades. These are respectively 80, 60, and 40 feet high. The altitude at the bottom of these falls is 3,000 feet.

Of the falls on the eastern tributary the Upper Arismendi Falls consist of two cascades 80 and about 70 feet high. The elevation at the top of the first is 3,400 feet, at the bottom of the second, 3,250 feet. The pool at the foot of the first cascade is spanned by a natural stone arch about 120

FIG. 7—Upper Arismendi Falls on the left fork of the Macoita River: lower and upper cascades, respectively 70 and 80 feet high. Note the natural stone arch at the top through which the upper cascade plunges.

feet across, which serves as a charming frame for the upper part of the falls and the tropical vegetation that can be seen through its opening (Fig. 7). The Lower Arismendi Falls lie about half a mile south in an air line. The altitude at the top is 3,050 feet. The fall descends about 80 feet and then rushes through a ravine about 300 feet long.

The two tributaries now join and go to make up the Macoita River.

<sup>12</sup> Theodoor de Booy: Island of Margarita, Venezuela, *Bull. Pan Amer. Union*, Vol. 42, 1916, pp. 531-546; *id.*, La Isla de Margarita, Venezuela, *Bol. Unión Pan Americana*, Vol. 43, 1916, pp. 32-45.

From a pool at an altitude of 2,950 feet which is fed by the two tributaries descend the Venezuela Falls (Fig. 8). They consist of three cascades, 80, 60, and 15 feet high. The altitude at the foot of the lowest fall is 2,750 feet.

While our stay in the Macoa region was during the rainy season, it should be stated that the photographs of all the falls described were taken after fairly dry spells and that the Tucueu Indians informed us that at the height of the rainy season a far larger volume of water passes over them.

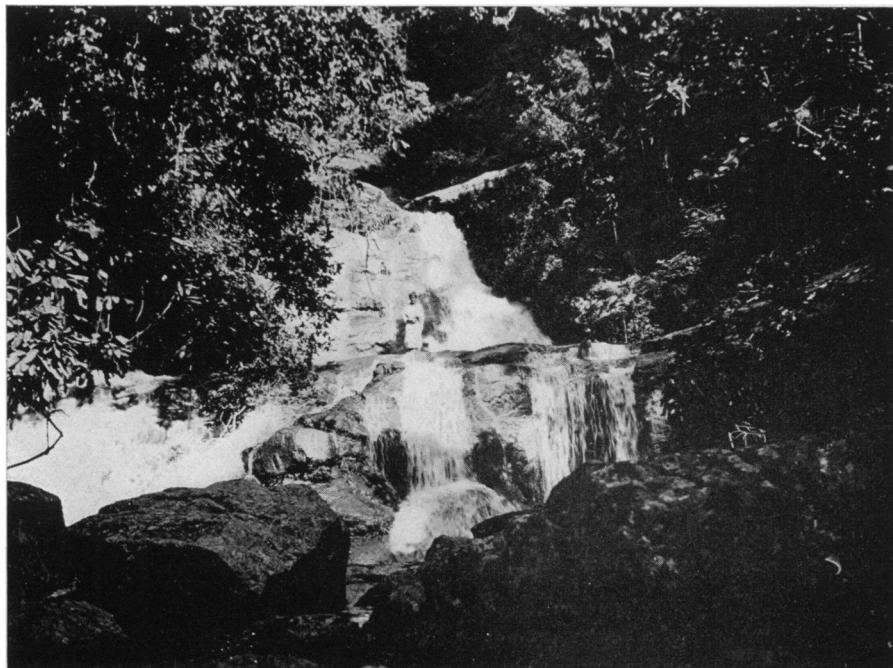


FIG. 8—Venezuela Falls, at the junction of the right and left forks of the Macoita River: middle and lower cascades, respectively 60 and 15 feet high.

Evidence of this could be seen on the rocks above each fall, which were waterworn above the level of the water at the time of our visit. The Indians also informed us that the falls never went dry and that in fact they seldom had less water than at the time the photographs were taken, probably because prolonged droughts are unknown in the interior of the Sierra de Perijá.

#### OTHER WATERFALLS

According to our Indian informants, the Macoita River has still another waterfall before it breaks its way through to the lowlands. The Indians, however, declared that the trail to the top of this fall was absolutely impassable during the rainy season and that even in the dry season there is no possibility of descending to the bottom of the cascade. They also de-

clared that this fall was higher than those visited by the writer. Owing to the precipitous formation of the easterly slopes of the Sierra de Perijá, it is likely that almost every river originating in the interior of these mountains has falls. The Indians informed us that the Apon River has a fall of considerable height below the place where we actually struck this stream in our journey westwards. Furthermore, the Cogollo River to the northward has a number of falls, three of which were visited by the writer during his stay at La Horqueta, previous to his journey to Machiques and his sojourn among the Macoas. While the Cogollo falls are nearer the extreme eastern slopes of the range and are not so high as the falls of the Macoita, they are very similar. The Cogollo falls are reached by following the bed of the river from the place where it breaks through the mountains. They have on two occasions been visited by geologists of the Caribbean Petroleum Company. The highest of the falls was not seen by the writer. He made the trip accompanied by a peon who was unfamiliar with the terrain and who in consequence guided him up the southern branch of the river where he should have followed the northern branch from the fork at an altitude of 1,600 feet. The falls visited by the writer had a height of 15 and 30 feet respectively and were located at an altitude of 1,700 feet. The higher falls on the northern branch of the Cogollo are reported to have a height of about 150 feet but contain a far smaller volume of water than those of the southern branch. They are distinctly visible from the lowlands and make a picturesque strip of white against the vivid green background of the woods that cover the Sierra de Perijá.

#### TRIP TOWARD THE WESTERN BORDER OF THE RANGE

After having been with the Macoas about three weeks, the writer decided to make an attempt to proceed in a due westerly direction with the object of reaching the last chain of mountains dividing Venezuela from Colombia and of descending to the Colombian plains. When the subject was first broached to the Macoas and Tucucus, the Indians appeared to be very reluctant to take part in this undertaking. They said they were unacquainted with the mountains that lay more than a day's journey to the west. Furthermore, the journey would lead fairly close to the headwaters of the Rio Negro, the next major eastward-flowing river south of the Apon, where was settled a tribe with which the Macoas had been at war for a long period. On previous occasions, when a punitive expedition was organized by the Macoas for the chastisement of the Rio Negro Indians, a circuitous route was taken along the easterly slopes of the Sierra de Perijá to the south before striking west to reach the Rio Negro settlement; but the Macoas were uncertain whether the Rio Negro Indians were not in the habit of frequenting the regions we proposed to visit. It may incidentally be stated that, less than a generation ago, the Rio Negro and the Macoa tribes were all one tribe and that at a feast a dispute between a chief and another

Indian resulted in a general fight in which many Indians were killed. The two factions then went their respective ways and since that time have waged deadly warfare the one against the other. One Macoa showed the writer two scarcely healed arrow wounds received only about three months before in a fight with Rio Negro Indians.

The proposed expedition caused a great deal of perturbation among the Indians, and it was not until after a generous offer had been made of many beads and much ironmongery that the writer could prevail upon two Tucucus and two Macoas to take part in it. One of the Tucucus stated that his father had told him of an expedition he had made toward the west many years ago, and that on this expedition the members of the party had found an immense cave in a curiously shaped mountain peak. This cave was filled with large funeral urns (the Tucucu called them earthenware pots, filled with bones). It was probably similar to the cave found by Crevaux on the island of Cueurital in the Orinoco River near Atures.<sup>13</sup> As the present-day Motilones are in the habit of tying up the bones of their dead in sleeping-mats and subsequently depositing these bundles in rock shelters, it would appear as if the interior of the Sierra de Perijá was at one time inhabited by a different race. Archeological evidence in support of this theory was also found by the writer.

#### DIFFICULTIES OF TRAVEL

Leaving Peñaranda in camp, the writer started on June 25 with his four Indians. The first day's journey (for route, see Pl. XVII) led towards the summit of a peak due west from the camp. This trail had frequently been used by the Indians, and we were going over what to them was familiar ground. The peak had an altitude of 5,500 feet. After descending to a brook, tributary to the Bolívar fork of the Macoa, we spent the afternoon in crossing the southern ridge of this mountain, reaching an elevation of 5,250 feet, and then pitching camp for the night on the slope beyond at an altitude of 4,700 feet. The mountain traversed was densely wooded and had been partially cleared on its eastern slope by the Macoas some years previously, when some of the Indians had grown corn and other vegetables in this locality. Only very little game was seen on this first day, the total bag consisting of a toucan and a partridge, both being eaten that night by the Indians. While the writer had already come to know the intense cold of the Sierra de Perijá, it was in this camp that he first learned how much one can suffer from cold even in a tropical country. The mists which cover the mountain tops in the afternoon are not conducive to warm nights, and when one travels on such a journey as this, where every ounce of extra weight means retarded progress, one learns the intense discomfort of sleeping on boughs and leaves spread on the ground without even a single blanket for covering.

<sup>13</sup> Jules Crevaux: *Voyages dans l'Amérique du Sud*, Paris, 1883; description of burial cave on p. 561, illustrated on p. 563.

The following day our party passed the last landmark with which the Indians were familiar. We now proceeded in a northwesterly direction along a ridge connecting the elevation we had rounded with a higher summit farther on. It may be said here that travel with the Macoas and Tucueus was irritating in the extreme. It was not unwillingness on their part, but simply what one might term lack of concentration on the desired objective, which at times caused the writer great annoyance. The slightest reason, such as the sight of animal trails or supplies of bamboo from which arrow shafts could be made, caused the Indians to forget for the moment the object of the journey and to waste valuable time in other pursuits.

#### LACK OF GAME

On the second day, as we followed the mountain ridge in a northwest-  
erly direction, it was noted that the summits of many of the spurs of this  
ridge were covered with large ferns which made an almost impenetrable  
thicket. Had the trip taken place in the dry season, these ferns could easily  
have been burned. As it was, the constant drizzle had made them so wet  
that our party was forced laboriously to carve its way through the tangle  
with cutlasses. The crests of the spurs were not covered with the deep  
soil that formed the basis for the heavier vegetation of the lower slopes.  
The summits of the mountains appeared to be formed of a soft volcanic  
rock in which were imbedded many granite boulders. Larger trees were  
but seldom found, and shrubs, together with giant ferns and wiry grasses,  
took their place. It was in these regions that the writer began to note the  
absolute lack of game which afterwards proved so disastrous to the under-  
taking. With the exception of hawks and eagles, birds were no longer seen.  
On the other hand, bear tracks were plentiful; and several of the larger  
trees showed numerous claw marks of this animal. During the entire jour-  
ney, however, we did not have the good fortune to see one of these animals.  
Had we seen one, a plentiful supply of meat might have been secured and  
the expedition brought to a successful termination. It is probable that  
these tracks belonged to the "spectacled" bear, as our Indians told us the  
animal's pelt was black, but that its face was covered with white hair.

Owing to the undergrowth, our progress was but slow on the second day, and we finally camped at an altitude of 5,100 feet amid the ferns. By this time the food supplies brought from the Macoa settlement were getting low, one reason for this being the Indian habit of gorging when there is food and fasting when there is none. But while the Indians showed remarkable ability in gorging, they subsequently did not show any of the fabled endurance in fasting. When we broke camp on the morning of the third day, the writer insisted upon leaving a fair amount of yucca and plantains in a cache, to serve for the return journey. This left loads for but two of the Indians, the other two remaining free to proceed ahead and cut a way through the fern thickets. Our progress in consequence became

somewhat faster. We continued on the ridge to an elevation of 5,400 feet, where our progress was barred by a westward-facing precipice. Skirting this to the south, we then struck off in a westerly direction and at noon had climbed to an altitude of 6,000 feet, the highest elevation reached on the trip. To the west and to the north we could plainly perceive peaks that were far higher than the summit of the mountain we were on. It is in fact highly doubtful if the highest elevation at present stated for the Sierra de Perijá—the Cerro Pintado, by Sievers, who claims<sup>14</sup> from 2,800 to 3,000 meters for this peak on the western edge of the range in  $10^{\circ} 25' N.$ —is not

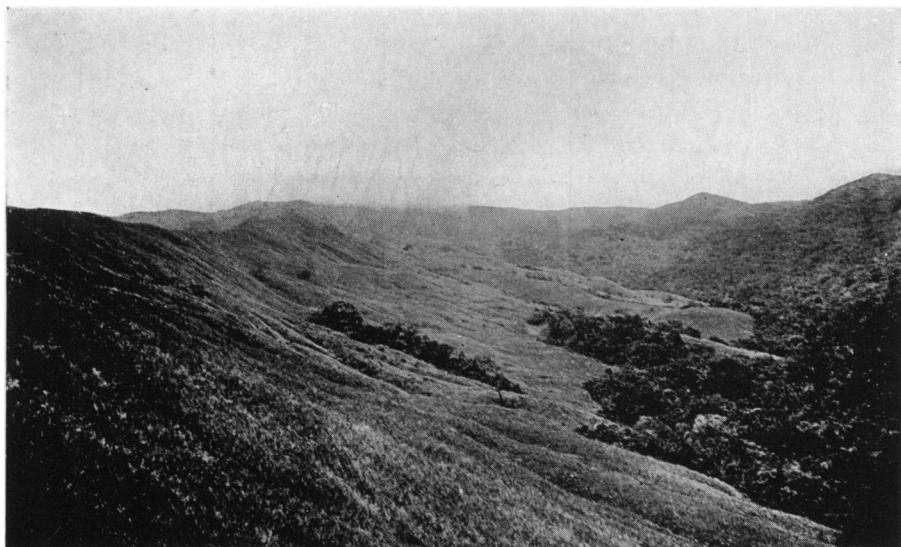


FIG. 9—Looking east along savanna-covered ridge at point from which westward view, Fig. 12, was taken. Altitude 2,500 feet.

considerably lower than some of the peaks seen by the writer in the interior of the Sierra. He estimated several to have heights of at least 11,000 feet.

#### NERVOUSNESS OF THE INDIANS

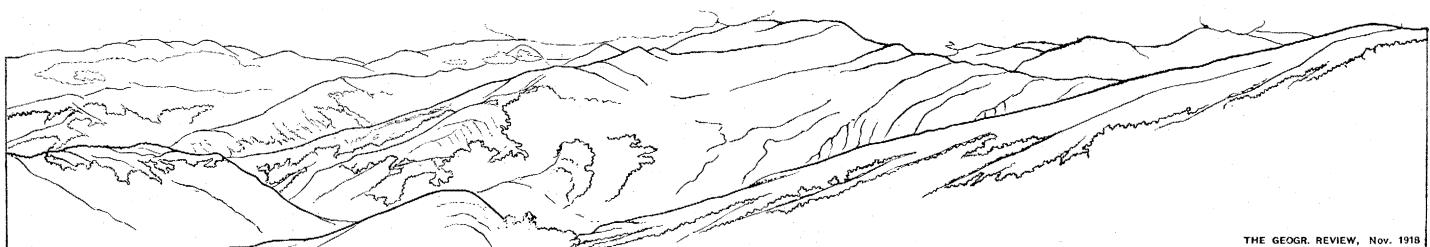
The afternoon of the third day our path led northwest along a ridge with a serrated crest line which was still covered with ferns and the smaller, tangled undergrowth. In the late afternoon the ridge made a steep descent, and we once again reached heavy forests, whose trees consisted largely of the valuable cedar. The Indians had been palpably nervous all day, fearing possible encounter with members of hostile tribes, and this nervousness increased on entering woods where the high vegetation did not allow frequent climbing of trees to make observations. During the entire trip, however, no sign was seen of other Indians, nor were new clearings found to indicate agricultural activities on the part of other tribes. We camped in

<sup>14</sup> Work cited in footnote 2, p. 10.

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FIG. 10.



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FIG. 11.

FIG. 10—Panoramic view, taken from an altitude of 4,100 feet and looking from west via southwest to south-southwest, of the Sierra de Perijá beyond the longitudinal course of the Apon River. The valley of the Apon lies in the middle distance. The farthest visible crest is in all probability on the westernmost range and overlooks the Colombian lowlands of the César valley.

FIG. 11—Outline sketch of panorama above to serve as key where the photograph is indistinct.

the woods that night at an altitude of 5,400 feet, and the entire party suffered intensely from the cold. The suffering furthermore was aggravated by a lack of food and a steady drizzle which continued through the night. The writer attempted to persuade his carriers to build a fire; but, owing to the Indians' fear of drawing the attention of other aborigines that might be about, the suggestion met with no response.

On the morning of the fourth day the writer noticed a great lack of enthusiasm in his Indians about continuing the journey. Of the party the two Tucucus appeared to be rather the more willing, but even they cast many a longing glance to the eastward. By this time the stock of food on hand was remarkable only for its lack of weight; and, as the writer insisted that half be left behind in order that there might be something for the return journey, the carrying of the remainder was no great hardship on two of the four bearers. After breaking camp our trail led us steadily downward in a southwesterly direction until about noon. Progress again became slow, as precipitous rocks had to be circumvented. At times we had glimpses of a mountain directly to the west whose altitude could not be less than 8,000 feet, while the mountains due north, with possible altitudes of 11,000 feet, also frequently became visible from points where the vegetation on our ridge was low enough to give an outlook.

#### VALLEY OF THE APON

At about noon, when we had descended to an altitude of 4,800 feet, we left the woods and entered upon the ridge of a wide-flung mountain spur which was covered with wiry savana grass (Fig. 9). The view obtained after our party emerged from the woods was magnificent. To the west and southwest one could see the cloud-capped mountain ranges which undoubtedly form the last chain that separates Venezuela from Colombia (Figs. 10 and 11). An extensive valley, running north and south, spread out below, the grass-covered slopes leading down to the Apon River, whose course was marked by a belt of dense woods. The river apparently originates on a mountain forming the northern barrier of the valley and flows due south until it bends east to seek an outlet to the lowlands. The southern barrier also is composed of a wide mountain. The valley has an area of possibly as much as 80 square miles, its length being not less than 10 miles and its width in places as much as 8 miles. On the slope of the high mountains beyond the Apon yellowish-green patches indicating savana interrupted the darker green areas of forest, which extended to the crests (Fig. 12). Apparently only the exposed ridges of the spurs are covered with grass while the more protected slopes are wooded. According to the Tucucu whose father had visited this region many years before, the Indian name for the savana-covered slopes leading west and east down to the Apon River was "Manatara" and that of the river itself, "Yapon." He also stated that the Rio Negro was called the

"Atapshi" and the great river to the south (the Catatumbo), the "Shukumu." It was possible to see, here and there in the wooded regions of the slopes of the last mountain chain, evidence of former clearings. To an archeologist, accustomed to work in the tropics, these signs are unmistakable. A cleared area, even one dating from pre-Colombian days, never grows up in such a manner as to blend absolutely with the virgin forest.

The afternoon of the fourth day we continued along the sharp ridge, steadily descending. While at first walking through the grass was a welcome relief from the everlasting cutting of undergrowth in the woods, the pebbly, hard ground which characterizes the savana-covered areas owing to their thinner soil covering soon caused intense suffering to our unaccustomed feet. In the late afternoon camp was made on the southern slope of the ridge near a spring that was found in a small wooded patch at an altitude of 4,000 feet (Fig. 13). The noon meal had practically exhausted our food supply, and it was only after a heated argument in the evening that the writer was able to persuade his companions to proceed at least half a day's journey farther to the Apon River.

#### VAIN HUNT ON THE BANKS OF THE APON

It was the writer's idea that perhaps the woods bordering this stream might contain game, and the shooting of a bird of any kind or of a monkey would save the day and encourage the Indians to continue the trip up the last mountain chain separating us from our objective. Incidentally, the Tucucu whose father had told him the story of the burial cave and had given him minute particulars of the peculiarly shaped peak in which the cave was to be found, had recognized this mountain on the slopes of the last chain and had pointed it out to the writer.

The next morning, which made the fifth day after leaving the Macoa settlement, we continued our journey on empty stomachs, our breakfast having consisted merely of tea, which offered but scant consolation to the Indians and did not serve effectively to still the writer's pangs of hunger. We proceeded along the ridge and at last, from an altitude of 2,700 feet, could clearly see the course of the Apon River (Fig. 15). The woods bordering the banks of this stream made us hopeful of game, and the rest of the morning was spent in a wild scurry down the slope in order to realize our hopes. At last we reached the river at an altitude of 2,200 feet, considerably lower than the Macoa settlement. At this elevation the Apon is already a wide stream with a considerable amount of water (Fig. 14). Its width is not less than fifty feet, and the velocity of the current perhaps as much as ten miles per hour. The depth in places is five feet or more and is nowhere less than three feet.

#### TURNED BACK BY HUNGER

The remainder of the day was spent in a futile attempt to find a victim for the writer's gun or the Indians' arrows. One solitary curassow was

flushed but did not allow us to come within gunshot afterwards, and with this exception no animal was seen. The Indians managed to secure some, to us, unknown roots, which they ate with no apparent relish. Fish were seen in the river, but all attempts to catch them without hooks proved vain.



FIG. 12—A detail of the slopes of the mountains west of the Apon, seen closer by than on Fig. 10. Note the distribution of forest and savana. Two Indians on the ridge in the middle distance. Taken from an altitude of about 2,500 feet.

The writer even tried to shoot some of them but met with no success. In the late afternoon the Indians became positively sullen and proposed returning to the camp. This time there was no argument on the part of the writer, as in the first place he did not believe that a continuance of the trip would mean the finding of food on the slopes west of the Apon, and in the second place he considered the two Macoas in no mood for argument.

We therefore returned and reached our camp of the previous night at

about ten o'clock, having had to make the latter part of the trip by moonlight owing to the time we lost in our fruitless hunt on the banks of the Apon. The pangs of hunger that night were especially severe, and the grumbling on the part of the Indians was only rivaled by the unexpressed thoughts of the writer. To have actually seen the last mountain chain separating him from his goal and not to have been able to continue was a trial that far exceeded in agony the pangs of hunger. It was only aggravated by thoughts of the burial cave in the curiously shaped peak where untold archeological treasures of the Arhuacos may be awaiting a discoverer.



FIG. 13—Camp on the southern slope of the ridge shown in Figs. 9 and 12. Altitude 4,000 feet. The first and third Indians from the left are Tucucus; the second and fourth, Macoas. The cotton robe worn by the two standing Indians is the characteristic garment of the Macoas—a response to the mists and cold of the interior of the Sierra.

#### KILLING A MONKEY

The sixth day found us struggling up the slopes and saw us finally reach our next camp in the late afternoon, at an altitude of 5,400 feet. Here we found that a large part of the food that had been left behind had spoiled. We finished the remainder that night, the Indians even eating the skins of the plantains. An early start was made the next morning, and almost before the sun was visible we ran into a party of howling monkeys, one of which the writer succeeded in shooting. This was his first experience in killing a monkey, and he sincerely hopes it may be his last. The dying

agonies of the wounded animal, regarded with stoical indifference by the Indians, will long remain in the writer's memory. Hungry as I was, the meal that was prepared almost directly after the animal's death had no attraction for me. In fact I was obliged to leave the Indians for a while until their repast was finished. Even the thought that I had shot the monkey under circumstances of great stress failed to console me. I believe that this remorse is experienced by the majority of tropical explorers who have at times been obliged to kill monkeys in order to ward off the dangers of starvation. The Indians, on the other hand, appeared to have none of



FIG. 14—The Apon River: looking downstream. The river here lies at an elevation of 2,200 feet

these feelings and made a hearty meal, with a consequent revival of their good humor. That night we reached our camp at an altitude of 5,100 feet, having traveled the entire afternoon in a steady downpour. In this camp we found the first cache of food we had made; this, together with the remainder of the monkey, was eaten by the Indians.

The seventh day found us once again cutting a way through the ferns, and early that afternoon, thanks to the quicker progress made over the path cleared five days previous, we reached our first camp at an altitude of 4,700 feet. As it was quite early, we decided to continue along the trail. The traveling was now all downhill and easy going, as the trail had frequently been used by the Macoa settlement. Incidentally we were again suffering from hunger, as no more game had been seen after we met the

monkeys, and no food had been left in the first camp. Our start the next morning was therefore made very early, and before eight o'clock in the forenoon of July 2 we reached the Macoa settlement, where plentiful food had been prepared by Peñaranda upon hearing the writer's warning shots from a nearby hilltop.

#### RETURN TO THE LOWLANDS

A few days after arriving, the writer decided to bid farewell to the Macoas and Tucucus and to return to the plains. The return journey down

the mountains took less time than the ascent; and, when we finally emerged at the cattle farm of Señor García, I had covered in ten hours what previously had taken two days. I was, in many ways, regretful at leaving the Macoas, who had treated me so well; and I believe that several of my kindly hosts were sorry to see me go. Not all the Macoas had remained friendly, however, and in some ways I felt that there was a possibility of imminent trouble had we remained much longer. The novelty had worn off, and several of the Indians had become dissatisfied when the stock of trading goods was exhausted. Besides, it is simply natural for the Macoa to get into a fight every little while, a propensity of which I saw plentiful evidence during two



FIG. 15—Looking down upon the Apon River from an altitude of 2,700 feet on the ridge shown in Fig. 12. The woods occur only immediately along the stream; above, the slopes are grass-covered, as in the right background.

*chicha* feasts that were held during my stay in the mountains. I was not desirous of being a party to one of these fights and losing the linguistic, ethnological, and geographical data I had been able to collect.

There are great possibilities in the Sierra de Perijá for future exploration. A prolonged sojourn among the Macoas, with a plentiful amount of trading goods and canned food, would allow for many journeys through the interior of the Sierra and for the mapping of the headwaters of many of the rivers that go to make up the western tributaries of Lake Maracaibo. That the American Geographical Society enabled the writer to lift, be it ever so slightly, the veil of mystery which now hangs over this chain, means to him a debt of gratitude which his mere words cannot sufficiently express.