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Account of a Journey Down the
Magdalena River, Through the
Magdalena Province and the
Peninsula of Goajira (*Colombia*)

BY
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AN ACCOUNT OF A JOURNEY DOWN THE MAGDALENA
RIVER AND THROUGH THE DEPARTAMENTO OF MAG-
DALENA AND THE PENINSULA OF GOAJIRA (COLOMBIA)

BY
M. T. DAWB, F. L. S.

*THE journey, of which this is an account, was under-
taken at the instance of the Minister of Agriculture
and Commerce (Señor Don Luis Montoya S.), with
the view of studying the agricultural conditions and possibili-
ties of the region traversed, and of submitting to the Gov-
ernment suggestions for the development of this adven-
tageously situated section of Colombia. Unfortunately the
greater part of the journey was performed in an exceptionally
unfavourable season, continuous and heavy rains restricted my
movements and limited examination of the lands and forests
through which I passed. The rains also involved considerable
delays and loss of time which would not have occurred under
more favourable conditions.*



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LOWER MAGDALENA.

I left Bogotá on 21st August, 1916, for the Coast, and on the way visited various ports along the lower Magdalena river, the first halt being made at Puerto Berrio.

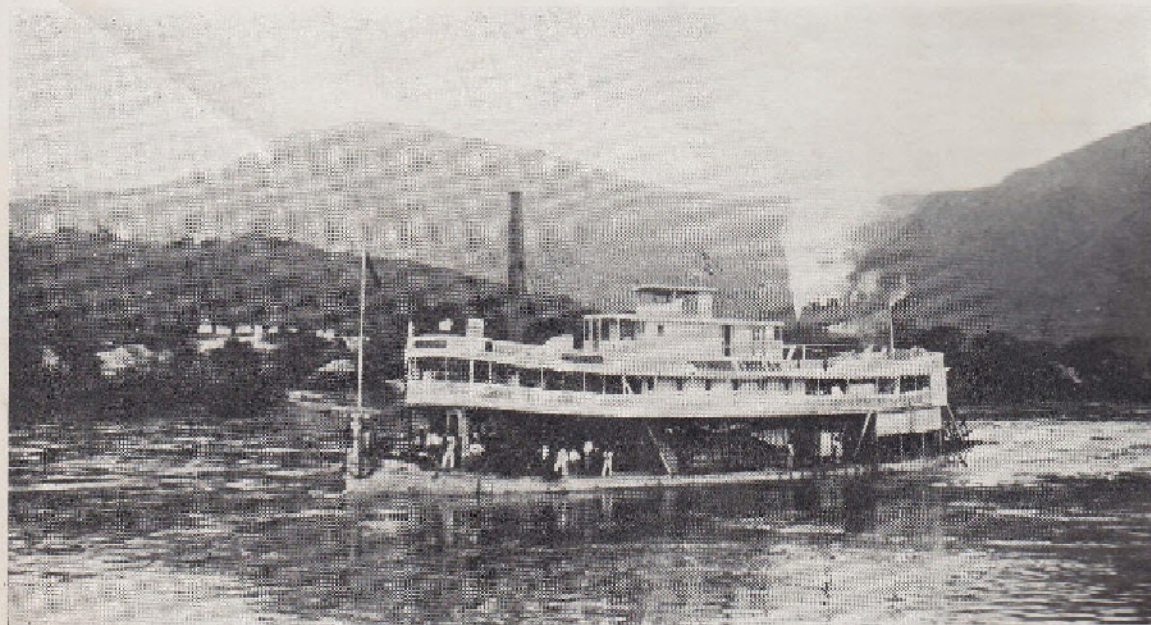
Puerto Berrio.

This town is chiefly of importance as being the river port for Antioquia and the terminus of the Medellín railway. It has been rather aptly described by a distinguished foreign visitor as a "village of vultures," and certainly these birds, from their very number, are the first thing to attract one's attention on arriving at the port. The special object of my visit to Puerto Berrio was to make an examination of the forest resources of that locality, but daily torrential rains and the flooded state of the country prevented me from doing any detailed forest survey. The land in this neighbourhood is broken in character, there are many lagoons and swamps, and the interior of the forests we found alive with mosquitos and other biting insects. I formed the impression that the lands are less fertile than those of the opposite side of the river in Santander. The forests near the Magdalena appeared to

me of poor timber value, but I was informed that much useful timber abounds further in the interior. I observed a valuable timber being employed locally in the construction of a new hotel which is known locally as *Comino* and botanically as *Aniba parulitis*, Hemsl. This timber is also employed very largely for sleepers on the Medellín railway, and is said to be very durable, lasting for many years. The tree is said to be abundant in the higher and drier lands of the interior, and the timber is certainly one that should figure amongst the possible classes for export.

Balsam of Copaiba.

I noticed in these forests the *Canime* or *Copaiba* tree (*Copaifera officinalis*, L.) which yields the Balsam of Copaiba. This important oleo-resin is contained in secretion ducts throughout the entire length of the tree. It is collected by cutting a V-shaped incision into the trunk of the tree near its base, penetrating to the centre of the tree. Into the plate-like cavity thus made is discharged the oleo-resin which is transferred to kerosene tins. From three to four kerosene tins are frequently



A River Steamer on the Magdalena

collected from a single tree, the yield is, however, very variable and some trees yield but little. A tree does not yield this valuable product but once, as the incision made reaches the heart of the tree and prevents it secreting balsam the second time.

Noli Palm.

Palms of considerable grace and beauty are abundant in the vicinity of Puerto Berrio. I noticed the graceful and slender *Palmetto* palm growing in large clusters in swampy lands. The *Noli* palm, a species of *Elaeis* allied to the West African oil palm of commercial fame, is here found in abundance. The kernels of this palm, which are produced in large erect bunches within a few feet of the ground, afford an oil which is extracted locally and employed for a variety of purposes. As this palm is found in many parts of the lower Magdalena region, and in great abundance, a sample of the kernels has been forwarded to Europe for examination to ascertain if the oil may have any value in commerce.

Cattle.

Attempts are being made in cattle farming in the vicinity of Puerto Berrio, and the cattle I saw appeared healthy and in good condition, although I noted that ticks (*Boophilus casuatis*, Fuller) were fairly abundant. As the forest lands become cleared, drained and replaced with artificial pastures, this locality should increase in importance from a cattle raising point of view.

Carare.

From Puerto Berrio I proceeded on the 27th down the river to Carare, a journey by boat of about four hours. Carare is a small village lying at the junction of the river of the same name with the Magdalena. It consists of a single street of small houses, the walls of which are built of the reeds of a grass known as *caña brava*, and the roofs are thatched with leaves of palms. There are about two hundred inhabitants altogether, and the chief occupations are the collection of the ivory-nut (*Iguá*), and the cultivation of maize along the banks of the Carare river.

Balata.

On the 28th I made an excursion by canoe to a large lagoon known as *Ciénega del Clavo*, which we reached by ascending some little distance the Carare and thence through caños. We here came across a tree (*Sapota-ceae*) which yields balata, but it does not appear to exist, at least in this locality, in sufficient abundance to be likely to prove of much commercial importance.

By Canoe Up the Carare.

On the 29th I left for a journey up the Carare river, in company with Señor Don Paulo Varegas, the genial chief of the survey in progress for the proposed new railway from Puerto Parra to the interior of Santander. The river was much swollen and we had a difficulty to persuade the canoe men to undertake the journey, owing to danger from whirlpools and the difficulty of punting due to the dense vegetation overhanging the banks. Having to hug the banks, not a little fear was exhibited

from possible attacks by savage Indians, who now and again cause trouble to canoe parties ascending the river. At dusk we camped on the bank for the night in a leaky *rancha* under conditions far from pleasing; it rained incessantly throughout the night until 10 o'clock the next morning. We then continued our journey and camped the evening of the second day under conditions even less congenial. The river here being on a level with the banks, necessitated the arrangement of our beds on raised platforms. Early in the afternoon of the third day we arrived at Puerto Parra, having taken about three days to cover seventy-five kilometers. Of course Puerto Parra is only a port in name, there is a little cliff on which the survey party have their grass huts, beyond which there are no habitations, there being nothing but forest all around. The river, I was informed, had not been known so high for many years, and this was in conformity with information I received later regarding other affluents of the Magdalena. The following day we left Puerto Parra about noon on the return journey for Carare, reaching there late in the evening of the same day.

The Forest Along the Rio Carare.

While at Puerto Parra I had an opportunity of examining the forest through which the railway survey is being conducted, and although there are many species of important timber value, their distribution is poor; the composition of the forest being mixed and the more valuable species few and far between. The larger and more outstanding trees of the forest which clothes the banks of the Carare are the *Ceiba* and *Higuerón*; the former is a species of *Bombax* and yields a soft and useless wood, and the latter is a species of *Ficus*, the timber of which is also of little or no value. There are mahogany (*Swietenia mahogany*, L.), cedar (*Cedrela glaziovii*, D. C.) *guayacán* and other trees of timber value throughout these forests. The more accessible parts, however, have already been largely denuded of their mahogany and cedar timber, which has been extracted by various parties for sale at Barranquilla or for export; without, I fear, any attention whatever having been given to the replanting of these valuable species.

Cacao.

There are a few cacao plantations along the Carare, and I was impressed by their general appearance in spite of the little attention which they appear to receive. The cacao beetle seems to cause very little trouble to the trees, and the plantations are said to yield good crops. I believe there to be a promising future for cacao along the Carare, given the plantations are established with selected seed and well cultivated and cared for.

Sugar.

The rich, fertile, alluvial lands along the Carare should prove suitable for the cultivation of sugar, which could be grown on a large scale. The great drawback is that there is very little local labour, and labour for sugar planting would need to be drawn from other sources.

Maize.

The natives living at Carare have discovered the fertility of the alluvial lands of the Carare river, and at various points along its banks within fifty kilometers of its mouth, are to be found clearings planted with maize. They merely clear the forest and sow the grain without any preparation of the land whatsoever. Excellent crops are obtained in this way and demonstrate the wonderful fertility of the soil, and the great possibilities of producing heavy crops of maize with proper methods of cultivation.

Copal or Algarroboillo.

A kind of copal known locally as *Algarroboillo* is found in the interior of Carare, but is not at present exported owing to the low price offered locally. A sample has been forwarded to Europe for a report on its quality and present value, to ascertain whether trade in this product may not be revived. This copal is probably the product of *Hydnocarpus splendida*, Tr. a large tree which affords a wood of remarkable durability.

Tagua.

Tagua or vegetable ivory is the principal forest product now exported from Carare. This is collected from the *taguales* of the interior, and the collection of the nuts forms the chief occupation of the inhabitants.

Sarsaparilla.

I noticed this plant in the drier forests at Puerto Parra. Sarsaparilla is collected from the Cordilleras on both sides of the Magdalena river and conveyed to Cartagena where it is sold. This drug is obtained from a species of *Sorbar*, in all probability *S. amara*, Hook. & Th., a wide climbing plant ascending lofty trees. The plant has a stout rhizome, which throws off slender cylindrical roots that creep for several feet a few inches below the surface. It is these roots, which when dried and made into bundles, that constitute the drug in its form for export.

Nuche.

I observed no cattle along the Carare except towards the mouth of the river, and I was surprised to find these suffering badly from warbles or *nuche*. This is caused by *Decalobia bewickii*, a fly generally found in the temperate zone. It is curious how this pest has become established in this lowland extra-tropical part, but I am informed that the banks of the Magdalena are free from the fly and that cattle removed from the Carare to the Magdalena soon become free from *nuche*.

Baranca Bermeja.

Petroleum.

On September 3rd I left for Baranca Bermeja, where an American Company are actively engaged in importing and erecting machinery for working the local oil fields. I called at this port with the object of visiting the interior, but owing to the impassable state of the country I resolved to continue the journey down the river to Puerto Wilches.

Puerto Wilches.

Copaiba.

On the 6th I left the port for Kilometer Viente, as the abrupt terminus of the local railway line is called which starts from Puerto Wilches and extends towards Bucaramanga for a distance of only 20 kilometers. The forest through which this unfinished line passes appears to be of the same character as the forests of the lower Magdalena generally. I observed, however, that the Copaiba tree is fairly abundant; this tree in addition to furnishing the Balsam of Copaiba, as mentioned in a previous part of this report, furnishes a valuable timber. Puerto Wilches is mainly of importance as the port for Bucaramanga, produce being brought by mules as far as Kilometer Viente and thence by train to the Magdalena river.

Gamarra.

On the 7th I continued down the river as far as Gamarra. In this day's journey the character of the country begins to alter, being more open and cattle more in evidence, especially on the Bolivar side. My object in visiting Gamarra was to look into the *tagua* industry, and on the 8th I left the port for the *taguales* of



The Tagua or Vegetable-Ivory Palm



The Promenade at Barranquilla

the interior. Passing through the village of Aguachica we camped the first night at Totumal, a small village which lies about two hours distant from Aguachica. The next day we left Totumal for the *taguales*, and the following day returned to Gamarra via Totumal and Aguachica. The country traversed was mainly bush land with extensive open sabanas, on which I noticed fine herds of cattle.

Tagua Industry.

The *tagua* or ivory-nut palm (*Phytelephas macrocarpa*, R. et P.) is of social habit and is found growing together over considerable areas, generally in wet and heavy clayish land. The palm is stemless, having only a rootstock from which the leaves and fruits are produced but little above the ground level. It is dioecious, consequently only the female palms bear fruit, which as a rule represent about fifty per cent. The nuts as they are known in commerce are borne in heads, one head containing about fifty nuts. These heads are usually collected and carried to a tree, where, on the spreading roots, they are beaten out with a wooden mallet. In good seasons, when there is a good crop, as many as four or five *arrabos* are collected by one person in a day.

Corozo or Cuesco.

In my journey to the *taguales*, I was struck with the abundance of a palm known locally as *corozo*, a name unfortunately applied indiscriminately to many palms. It is evidently identical with the palm known in the Tolima as *cuesco*, though the fruits are much larger than the Tolima variety. As these palms are exceed-



The Cathedral at Barranquilla

* An arraba is 25 lbs.

ingly abundant in many parts of the tropical regions of this country and the nuts are available in very large quantities, a sack of the nuts have been forwarded to the Imperial Institute of London for examination to ascertain if they may be of commercial value as a source of oil. Should they prove to contain a good percentage of oil, and the crushing of the nuts presents no difficulty, a new and very important industry for Colombia should be developed. The fruits, I may mention, are readily eaten by cattle and the nuts passed through; the nuts may therefore be collected in cattle corrals in large numbers and at little cost.

Magangué.

Sugar Plantation on Cauca River.

From Garmaria I proceeded on September 12th to Magangué. Here I called especially to arrange a visit to the sugar plantations of the *Compañia Azucarera de San José de Cerral Bolívar*, which are situated on the banks of the Cauca river; where, I was informed, had been installed a plant capable of turning out 120 sacks of sugar, of 125 lbs. each, per day. On arriving at Magangué, however, I learned that, owing to the heavy rains, the plantations had been inundated for the past three months, and that the factory was consequently temporarily closed. As a journey there would have occupied 8 days, and under these circumstances be useless, I decided to proceed to Barranquilla.

Magangué is a larger town than the majority along the Magdalena, having about 9,000 inhabitants. Its situation is important, being the port for the *sabanas* of Bolívar; consequently it is the scene of a good deal of traffic with cattle and trading generally. It being situ-

ated near the Cauca river contributes also to its importance. I proceeded to Barranquilla on the 15th, arriving there early on the following day.

General Impressions of the River Journey.

The principal object of my visit to the various river ports along the Magdalena was to obtain an idea of the forest resources, and of the agricultural possibilities of the country generally. The exceptional heavy rains, however, and the consequent flooded state of the country, prevented me from carrying out the systematic work that I had hoped to have accomplished. In any case, little could have been done in the space of three weeks, and I came to the conclusion that, in order to make a general survey of the forest areas of the lower Magdalena of any value, at least a year would be necessary. Such a survey would require a river steamer at one's disposal, as well as a motor or gasoline boat for ascending the affluents of the Magdalena; in addition a complement of at least fifty men would be required for opening lines through the forests for inspection. In my opinion, a careful survey of the Magdalena forests should be made, not only to map out those areas of most importance from a timber point of view, which of course should be worked on scientific lines, securing to the country a permanent supply of timber; but also for the purpose of mapping out those areas best adapted for cattle farming, for sugar growing, cacao and other plantation industries. Such information should prove invaluable to the Government in aiding the systematic exploitation of the forest resources, as well as the agricultural development of one of the most accessible parts of Colombia.



The Bay of Santa Marta

DEPARTAMENTO DE MAGDALENA.

Santa Marta.

On September 20th I proceeded to Santa Marta and remained there till the 30th making arrangements for my journey through the Departamento. I had intended starting with mules from Santa Marta for the Sierra Nevada, Provinces of Valle Dupar and Padilla, and thence to Río Hacha and Goajira. Not being able, however, to make satisfactory arrangements for the hire of transport, I decided to proceed by sea to Río Hacha and commence the journey overland from that town.

Santa Marta is the capital of the Departamento and the seat of the local Government. It possesses a fine deep bay which affords a safe anchorage and an excellent port, steamers being able to get alongside the railway wharf. The most important local industry is the growing of bananas for export, which has within recent years assumed an industry of the greatest importance. The banana plantations are served by the Santa Marta Railway which conveys the fruit to the port on the arrival of the fruit steamers. The bulk of the produce from the ports on the Magdalena river of this Departamento finds its way to Barranquilla and is exported from that port.

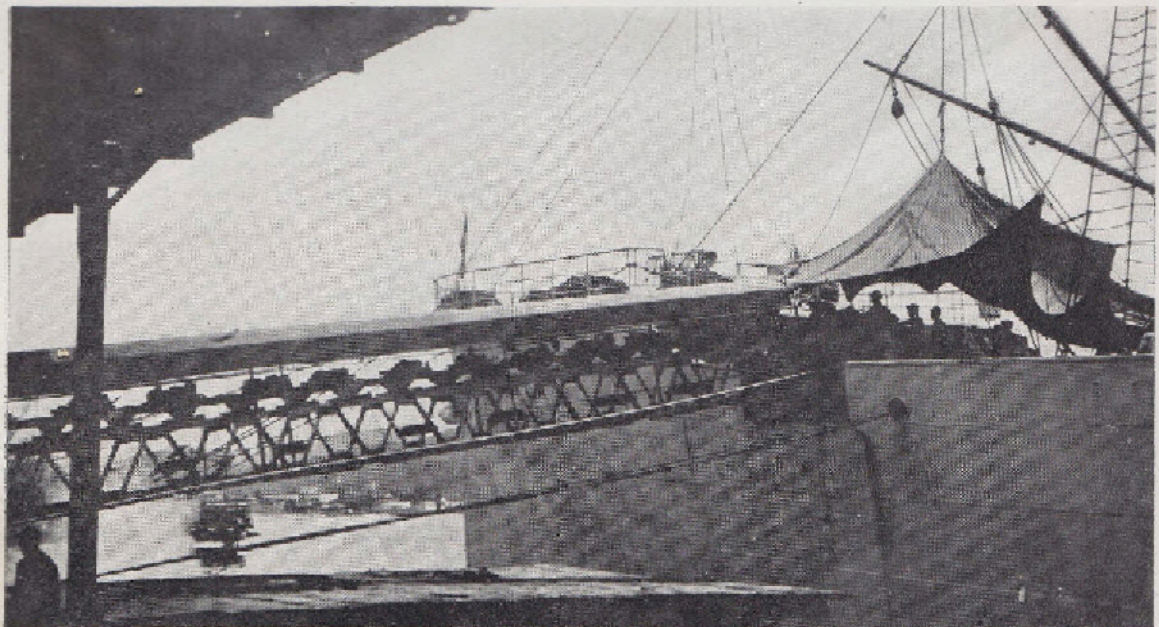
Río Hacha.

On the evening of September 30th we left by sailing boat from Santa Marta for Río Hacha, and arrived there in the afternoon of October 2nd. Río Hacha is one of the oldest towns of Colombia, but owing to various fires little remains of the old Spanish buildings except the ruins of an old castle now being washed by the waves of the encroaching sea. It is the capital of the Province of Padilla, and is situated near the river Calancala, on the boundary between the Province and the peninsula of Goajira. There is no harbour, the sea



A Banana Plantation near Santa Marta

being an open roadstead and very shallow, not permitting even small sailing boats to anchor nearer the shore than about a kilometer. All exports and imports have therefore to be transported in *cayncos* or large dug-out canoes from the shore to the boats or vice versa. The



Shipping Bananas at the Port of Santa Marta

town has no water supply, but an aqueduct to bring water from the river Calacala to the town is being constructed by private enterprise.

In spite of the difficulties of shipping, Rio Hacha is a busy trading and commercial centre.

Maguay Fibre.

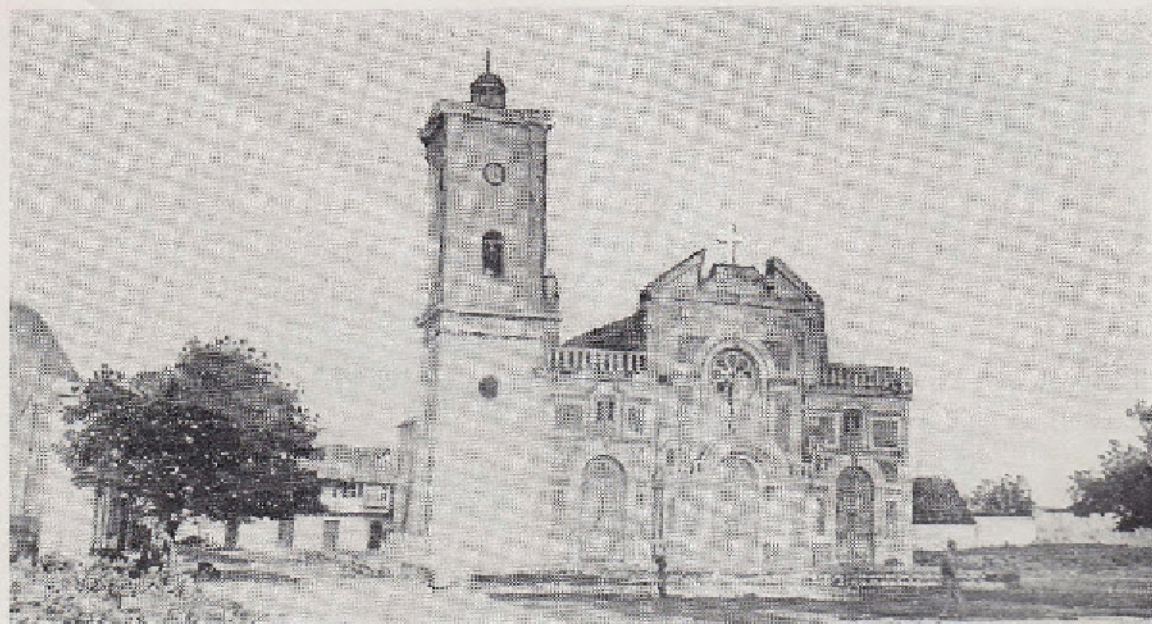
While at Rio Hacha preparing for a journey to the Guajira peninsula, I made short excursions in the neighbourhood. On one of these, along the old eastern road to Padilla, I was agreeably surprised to find extensive areas covered with fibre yielding *Passerina*, known locally as Maguay. In fact, so abundant are these plants, that the areas covered may appropriately be described as nature sown plantations. The fibre is utilized by the Indians for making their hammocks, and is of finer quality than the fibre of the interior. The *Passerina* has been identified as *P. macrophylla*, Baker, and as far as is at present known fibre has not been produced commercially from this species. In the question of the quality Mr. Lyster Dewey, the Fibre Expert of the United States Department of Agriculture, writes to me as follows: "Some specimens of fibre of *Passerina macrophylla* which we have cleaned by hand from leaves received here at this Department indicate that the fibre is finer, whiter and softer than that of either the true sisal of the Bahamas or the bonaguao of Yucatan."

The possibility of developing a new and important fibre industry in this neighborhood appears to me exceedingly favorable. The lands in the region of the Calacala river, excepting parts which are subject to being flooded in the rainy seasons, are on the whole suitable for fibre cultivation; the best proof of this being the existence of these *Passerinas* in a state of nature over large areas. The situation of these lands is also favorable, being within seven or eight kilometers of the township of Rio Hacha. The lands are

almost level, or only slightly undulating, and therefore adapted for rail transport for the conveyance of the leaves to the factory. The special recommendation of this locality for a fibre proposition, lies in the fact that there is an abundant supply of leaves ready for cutting, so that a decorticator could be installed and extraction commence at once, instead of having to wait three years for the plantations to come into bearing as is the case with sisal. While existing sources of fibre are being exploited, however, plantations should be laid down so as to provide a continuous supply of leaves. Another feature of this proposition is that cheap Indian labour can be employed: the local Indians can at present be obtained for a handful of maize per day, but a just wage or suitable payment would doubtless secure permanent and adequate labour. The only doubtful point in the question of plantations is the irregularity of the rainfall, but as these *Passerinas* thrive under natural conditions, it is not unreasonable to presume that their cultivation would likewise be successful. This locality has the advantage that the necessary machinery can be established on the banks of the Calacala river, where adequate water is, I am informed, always available.

Aloe Extract.

While at Rio Hacha I also visited an Aloe plantation, the property of Señor Moisés C. Henriques. The extract is prepared on the plantation and exported. The quantity exported in 1915 was 283 kilos, and the first six months of 1916 460 kilos. This industry is therefore in its infancy, being new to the locality though the plants are found wild in the district. The Aloe plant requires a dry soil, and the leaves are ripe for the extraction of aloes in the dry season when they assume a colored hue. Aloes is a well known domestic drug in Colombia, plants being grown in almost every garden in the tropical and sub-tropical parts of the country, and they are also found for sale in most markets.



The Church at Rio Hacha

THE GOAJIRA PENINSULA.

Rio Hacha to Tucuraca by Sea.

I had intended leaving from Rio Hacha overland on an excursion through the Goajira peninsula, but I was advised to proceed by sea to Tucuraca on the Coast, where transport animals were said to be more easily procured and commence the journey from that point. We therefore left for Tucuraca on October 6th at 8 p. m. in a *cayuco* or dug-out canoe. We sailed when possible, and when there was no wind we were towed by Indians from the beach, my first experience of this novel means of sea transport. At 2 a. m. on the morning of the 8th we reached Tucuraca, and spent the rest of the night on the beach. At daybreak we proceeded to the settlement of Tucuraca and occupied the rest of the day in arranging animals for the journey.

Tucuraca to Carraipia.

On the 8th we set out from Tucuraca for Carraipia, our party consisting of Señores Cornelissen, Gomes, Delacio (the guide) Higuera, Rodrigues and two Indians. Our transport consisted of six saddle horses and six donkeys. The Indians took care of the latter and replaced the loads when they fell off, which occurrences were so frequent that I wonder anything is left of my equipment undamaged. We rode on ahead of our donkeys, and after five hours good riding we reached Malace, an Indian settlement, some thirty miles from Tucuraca. The *cacique* or chief of Malace, whose adopted name is Federico Peñafer (it being improper to recognize or call the Goajirans by their proper names, much less to refer to a departed chief by name, or to use his name) received us kindly, for it was not long before he began to inquire for cigars and tobacco and then for bigger things. Fortunately for me however, for the first night his scope for appropriation was limited, since we had nothing but our guns and what we carried in our saddle bags, for the donkeys did not reach Malace with our loads until late in the morning of the next day. In writing up my notes that evening the *cacique* was very curious to know what I had written, and I was commanded to read it out to him. I therefore read into the notes complimentary remarks about the chief, and this so flattered and pleased the old man that I was commanded to read it to him several times. He then regaled us liberally with cheese and milk, and we passed the night in hammocks under the shelter of a tree.

The Covetous Cacique.

On the arrival of our donkeys the next day, the *cacique* soon became busy to ascertain what he could appropriate. A brand new *mechero* caught his covetous eye and was taken off to his *casaca* with forced consent. He then brought forward an old battered hurricane lamp which he suggested he should exchange for a new one of mine, but being my only lamp he was unsuccessful. He then tried on my *sarapes* and suggested that I had evidently brought these especially for him since they fitted him so nicely, the suggestion however that a cow would be a good exchange left them in my hands! He now escorted me off arm in arm, ostensibly to visit his

large herds of cattle, but really to communicate his desires to me, amongst which was an intimation that he wanted so many blocks of tobacco; this I was to give him quietly in the privacy of his rancho and not in the presence of other Indians!

It had been arranged at Tucuraca that we were to change our horses at Malace, and a family connection of the *cacique* had accompanied us to Malace for this purpose. The day was passing and I found that no attempt was being made to replace our horses, and on inquiry, I was told that there were none available, when just at that moment we saw at least two hundred gallop past. Presently a horse with a large saddle wound was brought up and offered me for sale; evidently the object of the delay was to sell me animals. As I had hired horses, and moreover had paid in advance for their hire up to Rio Hacha I was naturally incensed at this suggestion, and requested that the agreed exchange should be effected without delay. After some discussion the animals were exchanged, and next morning we proceeded on our way to Carraipia, arriving there together with the donkeys at dusk, having had to increase our number of Indians and donkeys at Malace.



An Indian Youth of Goajira

The Lost Track.

From Carraipia we decided to proceed to the Sierra de la Teta, and about noon on the following day sent off our loads in advance, being assured by our guide that it was impossible to mistake the route. Before proceeding we ourselves visited the river Carraipia, which lies twenty-five minutes from the collection of huts known by that name. About an hour later we proceeded on the trail of the donkeys, but after travelling until 5 p. m. and not having overtaken them we concluded that they had taken another route and were some distance behind. We were therefore obliged to spend the night on the open *sabanas* without dinner and without water to drink save brackish water. We laid down with our saddles for pillows, but the millions of mosquitos made sleep impossible, and their attentions were only varied by downpours of rain. At daybreak we set out, sodden to the skin, with wet saddles and an inward emptiness, in search of our donkeys. At about 8 o'clock we reached a *rancheria* where we found they had passed the night, and galloping on their trail we shortly overtook them, when we breakfasted.

Toroira to Tucarcá.

We then proceeded to Toroira, a large *rancheria* which we reached early in the afternoon. Our guide lost no time in informing us that we could not proceed till mid-day in the morning, as we had to replace a horse and obtain further donkeys. It had become apparent that a great mistake had been made in the purchase of donkeys for transport, and that it was quite impossible to continue the journey to Sierra de la Teta or to return overland to Río Hacha with the same animals. Consequently I decided to return to Río Hacha via Tucarcá by sea. We therefore left Toroira about mid-day, and travelled throughout that afternoon through heavy clay land covered with Cactus and *Opuntias*. As

there was no pasture in this type of country we were obliged to continue until reaching a *sabana*, which we did at dusk. Before, however, we could erect our tent rain poured in torrents, and the ground within the tent became a mud pool where nine of us spent the night huddled together with saddles and boxes as best we could. In the morning we left for Tucarcá reaching there about 3 p. m., and the same night left in a *cayuco* for Río Hacha, arriving there at 1 p. m. the next day.

Impressions of the First Journey in Guajira.

Arduous and difficult as our journey across the peninsula proved to be, it was to me a journey of considerable interest; for I feel convinced that here is a country which might, with the liberal assistance of the Government in the way of communications, wells and irrigation, well become an important cattle country. The northwestern part along the Coast consists of sandy lands where grows the *diel-diel* tree (*Conocladus caribaea*, Willd.), a tree which affords one of the principal exports of the country. This type of country alternates with heavy clay lands, where grows little but Cactus trees, the undergrowth being principally prickly *Opuntias*. Here and there are pantanos or swampy lands covered with various *Leguminosae* or aquatic plants. In the centre of the peninsula are extensive *sabanas*, now (October) beautifully covered with fine short grass (*Leptochloa setifolia*, H. B. & K.) affording abundant and sweet pasture, but alas in the dry season almost desert lands. In the southeastern parts the character of the vegetation alters, and towards the mountains becomes more and more luxuriant, and gives evidence of a richer soil and more abundant rainfall. As we were nearing Carraipia, I was surprised to come across extensive areas covered with guinea grass. In fact, I first asked the guide who possessed *pericos* in this region, as I observed *guinea* (*Cenchrus ciliaris*, L. C.) and *hobo*



Crossing a Caño in Guajira

trees (*Spondias* sp.) for shade, reminding one of the artificial *porteros* of Tolima. The grass, evidently at first imported by the Spaniards, has become naturally established over wide areas. In our journey from Carraipia towards the Sierra de la Teta, we passed through ten miles of guinea grass, naturally established *porteros*; but I am informed that there are extensions of eight leagues or more covered with this grass. There are therefore many thousands of hectares of naturally established pastures which are not at present utilized. When the packing-house propositions now under consideration mature, may not these regions become an important feeding ground for such an establishment? Here are extensive areas of pasture ready for cattle ranching on a large scale, where it is not necessary to go through the costly process of felling forest to plant pastures, and where, on the *sabanas*, there are no ticks.

A Second Journey Through the Peninsula of Goajira.

Disappointed with the result of the first journey in Goajira owing to bad transport organization, and impressed with the agricultural possibilities of the peninsula, I determined to make a second journey direct from Rio Hacha, and if possible traverse the entire length of the peninsula before proceeding to the Province of Padilla. Owing to the existence in the interior parts of Goajira of hostile Indians, of whom there are armed gangs of bandits wandering on the main routes, who do not hesitate to attack, rob and even murder small parties; it is essential to travel armed and with suitable escort. I accordingly set to work to find an escort, and through the kind offices of Señores Dr. M. Alvarez J. and General Agustín Bernier, I was introduced to Señor Colonel R. Morales, a gentleman well known to the Indians who very kindly offered to accompany me.

We therefore set out for the second time on November 1st, the party consisting of Señores Colonel Morales, Caballero (the owner of the transport animals), Campo and Prallos (transport assistants), Rodríguez (servant) and myself. All of us were, of course, mounted and armed; and we took four pack animals to convey our tent and equipment, taking good care to leave all the donkeys behind. On leaving Rio Hacha we were informed by the inhabitants that, owing to the exceptionally flooded state of the country, it was quite impossible to do this journey and that within a few days we should be seen back at Rio Hacha. Discouraging as these opinions were I was determined to make the journey. We first had to cross the arm of the river Calancala at Rio Hacha in canoes, we then saddled and loaded our animals and started off towards the river Calancala, which we reached within an hour or so from starting. Here we had to cross the loads in a canoe, my companions first wading, then swimming and again wading with the animals across the river to the other side; a distance including the flooded area of not less than three hundred metres. We landed on the opposite side at the Orphanage of the Capuchinos, San Antonio, and after a delay of two hours in crossing we resaddled and reloaded our horses and proceeded on our way. The Rev. Padre Camillo of San Antonio was even less consoling than the inhabitants of Rio Hacha, and in-

formed us that as no Indians had passed through for several days, the country must be impassable. After leaving the Orphanage we soon reached lagoons and flooded lands, and travelled through two and three feet of water, being only varied with short expanses of sodden lands or heavy clay. At dusk we reached an Indian *rancheria* known as Guamachal where we camped the first night. Here lives an Indian lady known as Dionesia Duarte (Nicha) who is very wealthy, possessing about a thousand head of oxen, and a large number of horses, donkeys, sheep and goats. I was struck with the healthy and thriving condition of all the animals, with the exception of the goats which were suffering with foot-rot as the result of the wet condition of the lands.

The next morning we left Guamachal, the first part of this day's journey was through flooded clay lands of Cactus bush, but the latter part was through sandy lands covered with small spreading trees chiefly of the order Leguminosae. In certain parts I noted the dye-wood tree, known locally as *Brasilete* (*Haematoxylon brasiletto*, Krst), abundant. In the evening we reached a small *rancheria* known as Chimirang, and the Indians turned out their goats from a hut which they placed at our disposal. We had no sooner arranged our hammocks when, in the dusk, we were alarmed by the appearance of a large snake which took possession of one of the hammocks. We were, however, fortunate in killing it, but we passed the night rather uncomfortably thinking that our unwelcome visitor might have a complicity in the vicinity.



A Typical Indian of Goajira

The following morning we left Chimirang and journeyed through flooded lands until 1 p. m. when we reached a *ranchito* known as Arroya de Cardon, the residence of a *criollo*, Señor Manuel Antonio Cayón. Here we found good pasture lands and rested our animals that afternoon. The next morning we discovered that two of our horses were sick, having, it was supposed, eaten poisonous herbs at Chimirang; we were therefore obliged to leave these behind and both subsequently died. This delayed our departure as we had to replace these animals. Señor Cayón, however, came to our rescue and we were able to leave towards midday, he also very kindly accompanied us, together with an Indian guide, as far as Carraipia. The country we passed through was less flooded, though we had a difficulty in crossing a few streams. We passed through excellent grazing lands, alternating with bush formed largely of a small spreading tree known locally as *arbozuel* in repute as being the only local source of charcoal that can be employed by blacksmiths and silversmiths. At dusk we reached the guinea grass pastures to which I have before referred relating to our first journey. Darkness, however, soon overtook us and we lost our track in the tall grass. We wandered about for hours in the dark before discovering the track, which leads to the village of Carraipia, and only reached there at 10.30 at night, the inhabitants being apprised of our arrival by a tumult of all the dogs in the *pueblo*.

The following day being Sunday we remained at Carraipia and rested the animals. I made a short journey in the neighboring forest, where I found ebony trees fairly abundant, as well as a variety of other serviceable timber trees. From Carraipia we left of the 6th to ascend the adjacent range of hills. We rode as far as Caguasumana, the point from which we were to proceed on foot, and here made our camp. At this *ranchería* which is situated on the foot hills of the hill range, I noticed that ticks were very abundant; I have already mentioned that ticks are not found on the plains. I also observed that the Indians appeared less healthy than those of the plains, owing probably to the denser forest growth and the less open surroundings. In this locality, Señor Bartolo, who accompanied us from Carraipia, has considerable areas of bananas under cultivation; bananas are not grown by the Indians of the plains. Vanilla is found in the forests of this locality, but as the plants were not in fruit I cannot say if it may be of any economic importance.

Carraipia Range.

On the 8th I set out to ascend the hills, accompanied by Señores Morales and Bartolo and a few Indians. We ascended by way of the river Cañonero, but our progress was impeded by heavy rains. We had to back our way through there being no track. I was informed that no *chillado* had been known to climb these hills or to have attempted to do so. The hill slopes are covered with forest growth, there are cedar trees of considerable size; but the larger and most abundant tree is that known locally as *Caracolí* (*Amorimia rhinoceros*, D. C.), an immense tree from which the *cayapas* or dug-out canoes are made. The soil of this

hill range is, on the whole, good, and the lower parts should prove suitable for cacao. The plains extending from the hills should form excellent lands for a banana-growing proposition; though, in the main, covered with guinea-grass they would be more appropriately and profitably utilized for cattle ranching.

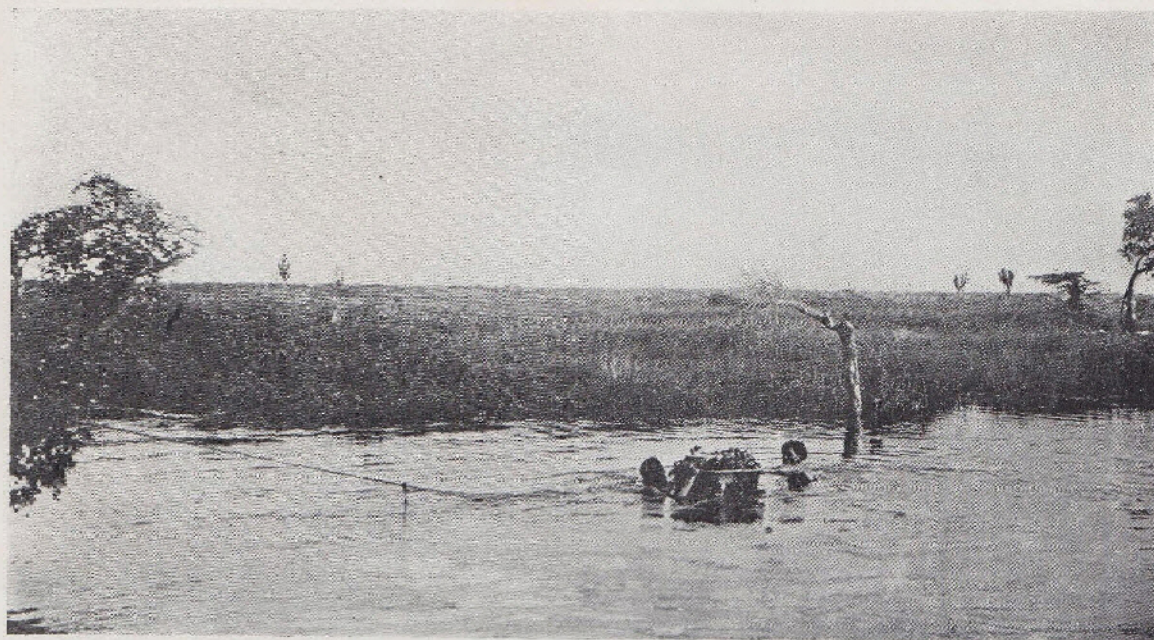
On the morning of the 8th we returned to Carraipia, and on the 9th we left for Sierra de la Teta. We journeyed from 9 a. m. till 3.30 p. m., when we were obliged to camp as we encountered a caño in flood which we could not cross. From Carraipia we passed through extensive pastures of guinea-grass on which we saw not a single animal; following this we journeyed through immense *sabanas* of natural grass (*Aristida setifolia*, H. B. & K.), varied with occasional *pantanos* or swampy expanses covered with the sensitive plant (*Mimosa pudica*). We completed the latter part of this day's journey in exceptionally heavy rains; one *aguacero* came from the Carraipia range met by another from the sea on the opposite side, and we rode for nearly two hours through a terrible downpour of rain.

Crossing a Caño.

In the morning the caño had only slightly abated, as a vast area of surrounding country was still draining off its surface water into it. However, we decided to cross, and having attached a rope to a tree on either side of its banks, we took advantage of a large travelling bath that I was fortunate to possess, and swimming one on each side of the bath, to prevent it capsizing, we gradually crossed all the loads in this way. Having crossed, we resumed our journey and reached a *ranchería* known as Zoruruma in the afternoon where we camped. This day we passed through excellent grazing lands composed chiefly of an excellent grass known as *cañalito*; it forms good pasture much liked by the animals and is a grass which would be worth introducing to other parts of Colombia. We also noted very extensive cultivations of millet, beans, etc.; in many cases these were situated long distances from the habitations of the Indians. This part of Goajira struck me as being particularly suitable for the cultivation of groundnuts, a plantation industry which might be encouraged amongst the Indians by the free distribution of seed for planting by the Government. Zoruruma is an Indian settlement of considerable size, the Indians possessing large herds of cattle, sheep and goats.

Cemerchi.

On the 11th we set out from Zoruruma with a guide to continue our journey to the Sierra de la Teta, which we had to deviate somewhat in order to replace some of our animals. The first two hours journey was through verdant *sabanas*, but the rest of the day was through inundated lands. We travelled from 10.30 a. m. till midnight, we first traversed a *pantano* over a mile long with a depth of water of three to four feet, and following that we travelled for eight leagues in water scarcely seeing dry land. We were obliged to travel on till midnight not encountering dry land on which we could camp on the way. At midnight we reached an Indian *ranchería* known as Cemerchi, and our arrival having



Crossing a Caño in Goajira, Substituting a Bath for Canoe

been duly notified by the numerous dogs, the inhabitants came forth with their rifles and bows and arrows, fearing, I presume, that we must be a hostile party arriving at that unusual hour. We were eventually received in a friendly manner and accorded a leaky *ranchito* in which to pass the night, and being exhausted from the trying journey dropped into our hammocks and fell asleep.

Sierra de la Teta.

On the 12th we found that our animals were too exhausted to proceed, and Colonel Morales took the opportunity of visiting a *rancheria* a few leagues distant belonging to a family connection called Ramoncito, in order to arrange an exchange of some of the transport animals. The other members of our party occupied themselves in an endeavour, between showers, to dry our wet clothes and belongings.

The next day we left with another guide for the Sierra de la Teta, which we reached early in the afternoon. The road to La Teta from Comacina was awful, at times through water up to a metre in depth for considerable distances, varied only by sodden soft land in which the horses often sunk up to their bodies and had to be extricated with assistance. We were, however, glad to arrive at La Teta, as here the atmosphere was drier and more bracing.

On the 14th four of us, accompanied by six Indians, set out to climb the mountain. My main object was to examine the vegetation to ascertain if it differed from that of the plains and contained anything of importance. I found, however, that it did not differ materially from the flora of the plains, only in that a species of *Borreria* was more common than on the plains. The Indians informed me that Colonel Morales and myself were the first persons apart from Indians who had

climbed the mountain or had attempted to do so. From the top, which is a huge rock broken up by time and weather, an excellent view of the surrounding country is obtained. I had been informed that petroleum is found in this locality, but on making inquiry I was told that nothing was known of its existence; whether this is so, or whether the Indians do not wish anything to be known of it, I do not know.

La Teta to Castillejos.

The following day we proceeded late in the morning from the Sierra de la Teta for Castillejos. We followed a track between the Cosina hills and the Venezuelan Coast, through beautiful and extensive *sabanas* affording unlimited pasture. The *Cadilla* grass, to which I have referred, is here found in abundance. In height and appearance it is not unlike wheat, except that the spikes are purplish in colour; in fact, these vast fields of *cadilla* may be aptly described as black wheat. A variety of this grass affords spikes which produce a dye that may with cultivation probably be turned to commercial account. I have noted this remarkable grass growing in all types of land, from sandy soil to heavy clay, and it appears to be very hardy, often assuming entire possession of the land. Throughout these vast *sabanas* we saw not a single animal! What excellent pasture is being lost, while in other parts of the country heavy forest lands are being felled to convert into grazing lands.

The Cosina Country.

To the left of our track lay the hills inhabited by the Cosinas, the most hostile of all the Goajiran Indians. This was the most dangerous part of our journey, and my good friend, Colonel Morales, kept urging us to keep together in case of a possible attack from these



In the Cactus Lands of Guajira.

villains, who think no more of shooting a man than a sportsman a rabbit. Fortunately, however, we did not encounter any of their raiding parties, but in order to get out of the more dangerous zone we travelled on till 7 p. m. Darkness prevented us from continuing our journey, so we unloaded our animals and rested on the road till the moon rose at 2 a. m., when we collected our horses and again proceeded. During these few hours my friend, Colonel Morales, kept awake in fear lest any bandits might be on our track. At midnight a dog appeared on the scene, and being, as far as we knew, many miles away from any habitations we suspected that the Cosinas were following us. No explanation of the dog's appearance presented itself, but we collected our animals and proceeded on the rising of the moon.

A Moonlight Journey.

We travelled along in the early hours of the 16th near the Coast, and about 5 a. m. reached a *ranchito* known as Porcharri, its existence being made known to us by the crowing of a cock. Here we were able to obtain milk to appease our hunger and thirst, and then continued our journey along the Coast till at 11 a. m. we reached a *ranchito* known as Guaraguarino, where we halted for lunch and to rest the animals.

Early in the afternoon we continued our journey, we were now travelling through Venezuelan territory, and at dusk we reached the salt marshes near Castilletes. Unfortunately, we lost our track and experienced some difficulty in reaching the other side, our animals collapsing in the mud. After firing several pistol shots we brought to our rescue a guide who conducted us to his *ranchito* on the other side where we reached at 5.00 p. m., thoroughly exhausted. In the morning we proceeded to Castilletes where we were very kindly received by the Government representative Señor Suárez.

Castilletes.

Castilletes is a small station on the Venezuelan frontier, part of it being in Colombia and part in Venezuela. It is situated at the base of two miniature table mountains, which occupy a position between the station and the sea; the surroundings are barren and present a somewhat desolate appearance.

Talc.

The coast lands here contain rich deposits of talc which is being exploited and exported to Venezuela, its local value being about four dollars per ton. It appears to me that more remunerative prices may be obtained in the United States or Europe; this question is being investigated, as this mineral is also found on the other side of the peninsula.

Macuire Hills.

The following day we left for the Macuire Hills via the Laguna de Tucacas, the Coastguards station on this coast. After traversing the plains, for the most part beautiful grazing lands of the *soyillo* grass, we reached the hills towards dusk. Not finding water we continued our journey until about 9 p. m., when we reached an Indian village. Here we found the whole village drunk, strange to say, on a liquor prepared from the apparently harmless watermelon. Considering it imprudent to camp here we continued for a further few kilometers and camped at a *ranchito* known as Tolumana.

In the morning we awoke to find ourselves in beautiful country, forest clad hills and open glades covered with abundant pasture; but, strange to say, after our experiences of previous days with a scarcity of water. In the morning we proceeded along the forest clad hills to Nazaret, where we arrived at about 1 p. m., and were welcomed by the Rev. Padre Antonio de Valencia and



Goajiran Boys at the Mission of the Capuchinos, Nazaret

his companions, and General F. D. Pichon. Nazaret is an orphanage of the Capuchinos Mission, which is situated in a beautiful part of the Macuire Hills at the base of the mountain known as Itajoro. This Mission is doing good work in the education of the Goajiran children; but, its scope of usefulness would in my opinion be enhanced if a school garden or an experimental plantation and an industrial school be established. In this manner the children and youth might be taught the elements of agriculture, and at the same time experiments could be made to prove what crops are best suited to the country. Crafts like that of carpentering should also prove of great importance to the Indians. On the 20th we remained at Nazaret, and I took an opportunity of being present at an examination of the students and of seeing what progress the Mission had made with the raw material of Goajira. My suggestion that the Mission should extend its usefulness conveys no disapprobation of the useful educational work now being accomplished; on the contrary, it is rather the expression of a desire that this education should not be lost to agriculture on which the future prosperity of the Goajira depends.

Itajoro Mt.

The scenery in the vicinity of Nazaret is probably the most beautiful in Goajira. The Itajoro mountain somewhat resembles La Tota; in fact the Indians call them brothers and say that when they were on the way to this locality La Tota got tired and stayed on the way. I was particularly struck with the possibilities of cotton growing in these parts, a subject to which I shall refer later.

Nazaret to Bahia Honda.

I had intended visiting Puerto Estrella, the station on the extreme end of the peninsula. Owing, however, to

this journey having taken much more time than I had anticipated, I decided to proceed direct to Bahia Honda from Nazaret and return by sea to Rio Hacha. We left Nazaret on the 21st, this day's journey was along the foot hills of the Macuire range, excellent lands for cotton growing. At dusk we reached a *rancho* on the Jereipa plains where we camped for the night.

On the 22nd we had a difficult and trying journey through poor and sterile lands, soft with heavy rains and difficult to traverse. We camped in the afternoon at a *rancheria* known as Jepipa.

The following day we set out from Jepipa to Bahia Honda, our last day's journey by land. The character of the country for the first part was a great improvement on that we traversed the previous day, there being excellent pasture land and many inhabitants and cattle. The latter part, however, was through stony and barren lands; we reached Bahia Honda at about 3.30 in the afternoon not sorry that our journey by land had ended.

Bahia Honda, as the name indicates, is the name of the bay. On a rocky spur running out into the sea is situated a single building surrounded by a few huts; this forms the Coastguards Station. Here we were kindly received by the Commandante, but we were disappointed to find no boat in port and none expected for several days. Our animals were absolutely exhausted and we could not think of returning with them overland to Rio Hacha. The Commandante came to our rescue and kindly placed at our disposal the Government *cayuco* for our journey by sea. We lost no time in fitting out the canoe for a three days voyage to Rio Hacha and left on the following morning at 4 a. m., sending the horses overland a six days journey to Rio Hacha.

Pearls.

We sailed that day till 3.30 p. m., when we reached Cabo de Vela, and landing spent the night at a *rancho*