

## THE SIERRA NEVADA DE SANTA MARTA, COLOMBIA

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HAVE you ever of a winter's evening reached up on your library shelf for your favourite atlas, settled down comfortably in a favourite chair and commenced thumbing over the pages with a vague but hopeful idea of finding some previously unespied range whose proximity and topographic composition might provide novelty for next season's climbing programme? And, having given due consideration to the Himalaya, as you have done many times before, the Alps, Caucasus and New Zealand ranges, have you returned with a sigh of contentment to your favourite Coast Range, Selkirks or St. Elias, satisfied that nothing has escaped your notice which, always considering time, budget and possible interest, might have demanded more consideration? If so, you have missed the boat. You have been lulled by a lacking atlas or a too cursory examination of its pages into a false sense of security. If, for example, you had stopped at the page depicting South America and allowed your inspection to ignore the great peaks of Ecuador through Chile, your gaze might have alighted on an apparently insignificant area in northern Colombia called the Sierra Nevada de Santa Marta. It is not probable that you would have stopped there, for most atlases fail to inspire curiosity in their portrayal of these mountains, but if you had so hesitated and consulted Alpine literature you would almost certainly have dropped the matter then and there, for you would have found nothing save a short sentence in *Mountaineering* describing the range as worthy of attention. The purpose of this paper is to describe the climbing aspects of a visit made to the Sierra in March 1939.<sup>1</sup>

Without a doubt one of the most interesting facts about the Sierra Nevada de Santa Marta is the lack of information concerning it. It would not be unfair to say that more has been written on the remote interior ranges of Asia or the mountains of Antarctica, New Guinea or Kamchatka than has ever appeared on the Sierra. The more astounding is it then when you discover that here is, by almost any definition, the highest coastal massif in the world, with peaks rising to approximately 19,000 ft. within 30 miles of the Caribbean coast of Colombia, girdled on the west by a railroad and on the south and east by gravelled motor roads. The important banana lands of Santa

<sup>1</sup> For a complete report on many aspects of geographical interest in the Sierra Nevada de Santa Marta see *The Cabot Expedition to the Sierra Nevada de Santa Marta of Colombia*, by Thomas D. Cabot, *Geographical Review*, Vol. xxix, No. 4, October 1939, pp. 587-621.

Marta snuggle against the foothills, and the snow-crowned summits are visible from the modern city of Barranquilla. During the dry seasons, and sometimes during the rains, ships bound for the coastal ports sight the high peaks from miles away, while pilots of planes flying south from Miami use them as landmarks from 100 miles offshore. Finally, the Sierra is but slightly more than 2000 miles from New York, and while some of the Rocky Mountains fall within such a radius none are alpine in character to the same extent as the Sierra. They can be reached in less than twenty-four hours from New York by air and in less than a week by sea. Despite all this no serious mountaineering party entered the range previous to 1939, and a bibliography of the few investigators who have studied various aspects of the lower slopes is short indeed.

The Sierra massif is an isolated offshoot of the Eastern Cordillera of the Andes. It is surrounded by lowland on the east, south and west and the Caribbean Sea flanks it on the north. If the sea were to rise only a thousand feet the range would become an island. The massif reaches its greatest elevation some 30 miles from the coast, then slopes gradually to the south for about 70 miles to the valley of the Rio Cesar, a tributary of the Magdalena. There are three routes by which the high peaks may be reached: from Dibulla on the coast, which exposes the traveller to the malaria-infested rain-forests of the northern slopes; from Rio Frió on the west, the most direct route but unsuitable for animal transport through the steepness and inadequacy of the trails; and from Valledupar on the south, the longest approach, but offering good trails and exempt from the danger of malaria.

In 1930 Tom Cabot saw the high snows from the deck of a cruise ship, immediately disembarked at Santa Marta, and spent two weeks investigating possibilities of ascent. Attempting to reach the peaks by two routes on the N. and W. slopes, he finally reached 13,000 ft. above Rio Frió, only to find himself cut off from his objective by a maze of intervening ridges and valleys.<sup>2</sup> Since that date he has sought an opportunity to return and complete the job, and during many an evening has tried, not without success, to instil his own enthusiasm into his friends. The dry season in Colombia is the first three months of the year. Having long since succumbed to Sierra Nevada propaganda without plans having matured beyond the stage of idle speculation, I had just resigned myself to an annual state of mind wherein I assured myself that in 1940 we would surely be able to combine our plans and was about to shelve the Sierra for another year, when, like a bolt from the blue, came a 'phone call from Tom asking me to join him in an exploration of the range and an attempt on the high peaks—no, not in 1940, but sailing from New York in less than two weeks. And so it came about that Tom and Henry Hall flew luxuriously to Barranquilla on February 22, leaving Anderson Bakewell and myself to follow by boat in charge of some 1000 lb. of baggage.

<sup>2</sup> T. D. Cabot: *Mountains of the Caribbean*. *Appalachia*, Vol. 18, 1930, pp. 17-22.

On March 3 we assembled in Santa Marta, the sea-going contingent being greeted even before it had disembarked by the disconcerting news that a German party had just returned from the range and had climbed the Central Peak of the Main Group. Why is it, I wonder, that two climbing parties so often seek the same objective, each independent of and completely unbeknown to each other? And the more so why here in the Sierra Nevada de Santa Marta, which has stood within sight of all comers for centuries without so much as a mountaineering finger being raised in its direction? The German party bore the awe-inspiring title of Deutsche Kolumbien-Kordillera Expedition, and of its five members three had reached the summit. Of these one, a Swiss-Italian prospector named Praolini, was in Barranquilla and was persuaded by Tom and Henry to accompany our party. Discouraging as was the news of the German conquest, we determined to carry out our original plan; for in the only published photograph of the highest peaks, a photo taken from 20 miles away, it could be seen that the central summit had an eastern neighbour which appeared to rival it in height, and Praolini stated that from the summit of the Central Peak it appeared as though the two were 'ganz gleich.' The East Peak was then to be our goal.

We left Santa Marta and the lavish hospitality of the United Fruit Company on March 4, travelling by rail to the terminus at Fundacion and thence by truck to Valledupar, reaching the latter on the evening of the same day. Losing no time, a creditable feat in Latin America, we enlisted mules to carry ourselves and our supplies over the first part of the route and were under way by noon of the 5th, making our way along the bank of the Guatapuri river and into the foothills of the range. The dry forest through which we passed was lovely in the extreme. Overhead whirled screaming macaws and parrots; flowering trees rose in a tangle on all sides and, though the heat seemed excessive to us who had left winter behind only a short ten days previously, the gushing torrent at our side provided the wherewithal to quench an unruly thirst. The delights of the trail were all too quickly dissipated. We camped that night at a corral called Ariguaní, and during our occupation were speedily and effectively devoured by the whole gamut of tropical pests—ticks, sand flies, fleas and chiggers. Probably we should not complain too much, for this persecution lasted only one night. The following day we crossed a 7000-ft. pass and dropped into the settlement of San Sebastián at 6400 ft., above the limit of even the most persistent tick.

We spent two days at San Sebastián negotiating for bulls to carry our equipment to the higher country, and were greatly aided in so doing by the fathers of a Capucin monastery whose history goes back prior to 1680. During the two days we stretched our still protesting legs by climbing the 9000-ft. summit of Figueroa for survey purposes, and were rewarded with a late afternoon view of the first snow peaks of the range 20 miles to the north. The highest snows were cloud-covered, but their satellites beckoned encouragingly and provided

the stimulus for an early start the following morning on the long climb ahead.

Up at four, the six bulls and two mules were packed and under way by six. After considerable indecision as to 'the way,' we found ourselves climbing by steep zigzags towards the paramos or grass-covered uplands. Dehydration from a scorching sun plus our first contact with moderate altitude produced an acute lassitude on nearly all of us, who, unwilling to admit of such a complaint, contrived to produce all manner of excuses to dawdle, and it was mid-afternoon before we reached a pass at 11,400 ft. and dropped a few feet to the head of the Aduriameina valley, where a camp site of doubtful virtue, due to its limited water supply, was found.

Here we saw the first traces of former glaciation. On the north slope of the valley were several terminal moraines, and above our camp a large lobate moraine descended to below 11,000 ft., the lowest altitude at which we saw definite traces of past glaciers. The high rocky peaks above us had by now taken on the appearance of having borne ice, their slopes being smoothly scoured though with few cirques and no remnants of ice. An interesting characteristic of the upper slopes of the Sierra Nevada is the fact that the topography appears to have supported an ice mantle but yesterday, so clean is the scouring and so perfectly preserved are the moraines. However long ago it was that glaciers mantled these slopes (11,000-15,000 ft.), it is the opinion of Mr. Frank Notestein, Chief Geologist of the Colombian Petroleum Company, who accompanied us, that the glacial epoch was of rather short duration and that such glaciation began in the late Pleistocene.

On March 10 we crossed a 12,600-ft. pass and from its crest had our first comprehensive view of the great peaks of the main range, about 12 miles to the north. Three high peaks stood out sharp and clear against a cloudless tropical sky. Praolini pointed out the route followed by the German party to the Central Peak, and we immediately set to work speculating on the relative height of the East Peak. Vertical angles measured with the theodolite were no encouragement, for these gave a greater angle to the Central Peak. At once all sorts of thoroughly unsound reasons were advanced why the angles were no true indication of relative height. Only one held water: to be higher the East Peak must be further away, and this appeared to be the case. The discussion dragged on as we descended into the Cataca valley, where we camped at a corral called Mamancanaca, snuggling between two huge lateral moraines at an altitude of 11,250 ft. Our triangulation later showed that the moraines rise over 900 ft. above the valley floor.

Mamancanaca was to serve as our base camp, and so we dumped our return supplies and superfluous equipment there in order to reduce the loads which the animals were to carry to the higher camps. Though a good idea, we had not counted on a number of our animals disappearing during the night, and when we came to pack our remaining animals the following morning each beast had at least the equal of its previous day's load. We were not long in having this state of affairs



*Air photo, W. A. Wood.]*

EAST, CENTRAL AND WEST PEAKS FROM THE N.W., SIERRA NEVADA DE SANTA MARTA.

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borne in upon us. Despite an early start, the hot sun and the altitude soon made itself felt, and one after the other the laden animals lay down, and once down no device which we could conceive would get them started again until the spirit so moved them.

In mid-afternoon we entered a deep and sullen glen, shut in to right and left by towering walls of rock, in which lay a number of deep blue lakes. Making our way round these we reached the highest, and found to our dismay that our animals had reached the end of their journey. Instead of an easy saddle connecting our glen with drainage from the high peaks, there rose at the far end of the lake a steep and rocky couloir giving access to a notch in the ridge, the only break in the perimeter of cliffs save the defile through which we had come. We named our surroundings 'Gloomy Gulch,' a name which described not only our surroundings but our feelings as well. Our altitude was 13,500 ft.

At this point a combination of circumstances made it advisable to split the party. First of all, altitude was making itself felt on several of us; secondly, it was felt that, now that the animals could go no further, a small climbing party would have a better chance of success than a large one; and finally, since climbing was only one of the interests of the trip, a wider understanding of the geology and complex topography could be had if our itineraries diverged. Consequently Tom Cabot and Frank Notestein went off to investigate the neighbouring valleys and ridges while Henry, Andy, Praolini and I, with a week's supply of food, turned toward the high peaks.

On March 12 we back-packed loads over 'Gloomy' notch and camped beside a crystal clear lake in the valley at the head of which stood the East Peak. This valley, above the point where we camped, contains three large lakes, all occupying glacier-formed depressions and flowing one into the other in swift-running streams and waterfalls. From below it seemed impracticable to follow the margins of these lakes, and so we packed our loads high on to the retaining slopes and then traversed across talus, grass and slabs to the shore of the highest lake at 15,000 ft. It was a day not soon to be forgotten, and the less said of it the better. We fondly imagined ourselves on ground which would make the Rishi gorge look insipid. (Those were my feelings, and in the light of retrospect I am afraid they were somewhat exaggerated!) The day was climaxed by the stubborn refusal of what Henry called the 'ultimate in pressure stoves' to produce heat for more than a few seconds at a time.

The following morning we moved forward once more and, following the axis of the now narrowing valley, reached a camp site by a pool of glacier water a few hundred feet away from the ice wall which forms the terminus of the glacier. The altitude was 16,500 ft. All in all it was a happier day than yesterday, for not only did the 'ultimate in pressure stoves' behave a trifle more normally, but the monotony of packing heavy loads was relieved by our coming face to face with—no, not a mountain sheep or goat—but a plain ordinary everyday cow.

The hilarity of such an encounter at such an altitude (about 15,700 ft.) so affected us that packs were forgotten for at least a quarter of an hour.

From the 16,500-ft. camp the obvious route appeared to be one which followed the true right (W.) margin of the glacier to a point safely beyond the much-crevassed lower portion and thence over moderately steep snow to the col between the East and Central Peaks. The final ridge to the summit seemed to present no difficulties.

At 7 A.M. on March 15 we left camp and in an hour were making our way up the trough between the ice cliffs of the glacier and the rock wall of a spur of the Central Peak. Gradually this became more encased and forbidding, and finally we were brought to a halt where the ice became annealed to the rock wall in a vertical joint over 100 ft. high. Neither rock nor ice could be climbed and, after an attempt to reach the surface of the glacier had shown that we were still in the midst of the unthreadable lower icefall, we called it a day and returned to camp. On our arrival there, out came the field-glasses, and for the remainder of the day we studied alternatives.

The following morning Henry, who had packed tremendous loads up from Gloomy Gulch, was feeling unfit for another attempt, so Andy, Praolini and I left camp at 6.45 A.M. and this time made for the eastern flank of the ice. Some delicate scrambling on ice-smoothed slabs brought us to the least forbidding portion of the frontal cliff, and some intricate and well-executed manœuvring by Praolini brought us on to the less crevassed surface of the glacier. Up this we slowly made our way, progress being hampered by razor-sharp *nieve penitente*. I have yet to decide whether this tropical snow condition is more wearisome than deep soft snow, for one breaks down the brittle ridges just as the weight is thrown forward to the next step and sinks in, usually knee-deep, in a mutilated mass of ice crystals.

At about 10 o'clock we reached the ridge which falls away abruptly to the rain-forests of the N. slope. Through gaps in low-lying clouds could be seen the shore line and blue water of the Caribbean Sea. We now had the alternative of passing below the S. face of our peak and joining our intended route of yesterday above the icefall or of climbing the steep rocks of the face itself to the E. ridge. After some debate the face route was chosen and the real work began. A steep rock step gave access to a couloir and up this we made our way. The rock was excellent, a biotite granite rich in quartz, and though steep and exposed, the rock provided holds of gratifying proportions. Shortly after noon we emerged on the crest of the E. ridge. Here ice was present and steps had frequently to be cut, but progress was rapid and at 1.15 P.M. we gingerly examined the cornice of the highest point and, finding it to be almost non-existent, sat down to reply to the shouts reaching us from Henry in camp below.

Throughout the climb clouds had been boiling up from the south, and by the time we reached the summit the entire range was blanketed, the sole exceptions being the Central Peak and our own. We were



CENTRAL AND EAST PEAKS, SIERRA NEVADA DE SANTA MARTA, 18,770 FT.

Air photo by W. A. Wood from 21,000 ft. Route was through ice face at right to snow ridge, thence to snow shoulder, then up rock face to summit ridge.

naturally much interested in the relative heights of the two summits and had brought a hand level with us to determine approximately the vertical angle between the two. Four readings were taken. Two of these gave slight depression angles to the Central Peak, one gave a zero reading and one a positive angle. At all events the difference of elevation between the two highest points of the Sierra Nevada appeared very slight, and this was confirmed on our return, when the triangulation indicated a difference of only 2 metres in favour of the Central Peak. On the map resulting from our work both peaks will bear the same height, since it seems likely that the relative heights will vary from season to season, due to fluctuations in the height of the snow cornices.

The descent was uneventful. Mists swirled about us as we roped down the rock face, and obligingly lifted as we reached the glacier. From above a route was picked out which led us around and across innumerable crevasses and emerged immediately above camp. We were then treated to the rare privilege of roping down the ice front of the glacier and finding ourselves home through the back door.

A week later we arrived in Santa Marta, and two days later flew over the range to obtain air photographs necessary to the topographic survey. These having been successfully obtained, there ended a month's work in a region which offers the climber endless possibilities. There are at least five unclimbed peaks of from 17,000 to 18,400 ft., and scores over 14,000 ft. All of these present problems of approach and ascent; and the working out of approach and the execution of ascent of any of them should provide climbers with as keen enjoyment as any mountains in the world.