Expedition to Caupolican Bolivia, 1901–1902: Discussion

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I propose to deal with the subject of the hydrographical system of the Andes in a short paper before the Research Department of the Society. In the mean time I would only express my conviction that the phenomena referred to by Sir Thomas Holdich tend to support rather than contradict the views I have put forward.

Before the reading of the paper, the CHAIRMAN (Colonel G. E. CHURCH, Vice-President) said: It is a great pleasure to welcome here this evening Señor Aramayo, the Bolivian minister, and also Admiral Capello, Captain Vasconcellos and Senhor Ferreira do Amiral. Admiral Capello is a distinguished African explorer, while Senhor Ferreira do Amiral is President, and Captain Vasconcellos is Secretary, of the Lisbon Geographical Society. We have also Dr. Park Thompson, very well known as being past President and present Secretary of the Geographical Society of Queensland, a society which is doing splendid work in that far-off colony. Dr. Thomson quite recently received one of the Society's awards for his services

San Juan, San Martin, San Rafael, Pelechuco, Juliaca. The longitude of Apolo was adjusted by a bearing on Illampu. I am inclined to think that the true position of Pelechuco is a little to the west of that shown, but there are not sufficient data to determine what correction should be made. Sir Martin Conway's map (9), which was found to be very reliable, was mainly followed for the portion within its limits. The portion of the Cordillera between the Rio Llica and Cololo and north-east of the latter place has never been surveyed, and has been only conjecturally inserted.

to geography. The paper this evening will be upon an extremely interesting portion of South America, perhaps the most fascinating of all, a district which was coveted by the Incas of Peru. The second Inca sent an expedition into the Caravaya district; the fourth Inca conquered Llaricasa just at the south of it; and the great Inca Yupanqui sent an army down the Mayutata river and conquered and pacified the whole of Caupolican, which district will be enlarged upon in detail by our friend Dr. Evans, whom I will now call upon to read his paper.

After the reading of the paper :—

The CHAIRMAN: We are favoured this evening with the presence of his Excellency Señor Aramayo, the Minister from Bolivia, and we shall be very pleased if he will make a few remarks.

Señor ARAMAYO: Although I am not prepared to take part in the debate on such an interesting paper as has been read this evening by Dr. Evans, I avail myself with pleasure of the opportunity so kindly offered me by the President in order to thank Dr. Evans, in my own name and in the name of my countrymen, for the great service which he has done to my country by the very interesting investigation which he has made of one of the most important districts of the republic which I have the honour to represent, and to congratulate him upon the success of his travels and for the excellent description which he has given us this evening of his explorations. Without considering myself biased in any way by an excessive patriotism, I think the region which has been examined by Dr. Evans, namely, the northern part of Bolivia, is one of the most interesting countries in existence, and most worthy of being thoroughly investigated in a scientific way, either geologically or geographically, as being endowed with the greatest variety of valuable productions, and having, as Dr. Evans has pointed out, a great variety of climate, besides being of comparatively easy access, and partly crossed by a great number of navigable rivers which flow into the Amazon. In fact, I believe it is only a matter of opening up the country by means of navigation and roads in order to make it one of the most enviable spots on the face of the Earth. I have pleasure in stating here this evening that the present administration of Bolivia has made strenuous efforts to explore all those regions which have been up to the present very little explored, and to encourage the explorations made by scientific societies. We have not been equally successful in our attempts to open out the country to the commerce of the world, on account of lack of financial support, and we have lately failed in an important attempt to open up the rubber districts of Beni and Acre on account of a certain amount of jealousy displayed beyond our frontier; but I feel confident that in the course of very little time, some years perhaps, we shall be able to open to the commerce of the world a most valuable region, capable of being the happy and prosperous home of many millions of settlers. I think it is worth mentioning, and certainly a very happy augury, that the King should have thought it convenient to appoint a minister resident at La Paz, a step which, I think, will tend to establish greater increase of friendly relationships between the two countries, and I believe to the benefit of both. I hope that the steps of Dr. Evans may be closely followed by other explorers, and I have only to say that they will be considered as the most welcome guests, and they will be given every possible facility to advance the work of civilization and progress which is the aim of this Society.

Sir MARTIN CONWAY: I have listened with very great pleasure and interest to the lucid account which Dr. Evans has given us, though necessarily so briefly, of his very interesting journey. Naturally it has interested me very much, because the region that he has travelled through and explored is adjacent to the region which I travelled in a few years ago, and his survey joins on to mine. I confess

that I listened with some envy to his descriptions, and looked at his photographs likewise with envy, because the region through which he travelled, though not quite so magnificent as the central region of the mountains, has a far greater luxury, and far more of what we understand in the ordinary way as beauty. I have only looked down upon the fringe of this region, but I saw enough to know that here is a country of very singular and extraordinary beauty. You have a diversified land whose tangle of mountain ranges Dr. Evans has resolved into a series of essentially parallel ridges, parts of the same crinkles of the Earth as the Andes. You have these foothills with great magnificent forests, and you have valleys in between them rich in the soil which they carry and wonderfully rich in the vegetation which they produce, and you have a climate of extraordinary suitability for all purposes of agriculture of different kinds. The result is that you have there a region that is wonderfully suitable to human habitation, and that up to the present is, as we have learnt, practically uninhabited. It was through that region I desired to travel, and being unable to do so, it is with immense interest that I listened to Dr. Evans's account of what he saw there. It would not be becoming on my part to speak at great length about a country I have not seen, but I think I am justified in adding my word of thanks to Dr. Evans, not merely for the journey that he so well performed, but for the delightful description of it which he has given us to-night. I should like to add that he was accompanied, amongst others, by an American botanist, Mr. Williams, who made a very large collection of plants. I have seen the collection. I saw it in New York about two months ago, and it was described to me by the best living American botanist as probably the finest collection, or one of the finest collections, of plants that had ever been brought out of South America by a single traveller on a single journey. At all events, he has discovered approximately 250 new species, and has brought home 2000 specimens of different plants, and of each at least four different specimens. I hope to present in his name ultimately, both to the British Museum and to the Herbarium at Kew, a complete series of the collection made by him on this journey. The third collection will be deposited in the Herbarium of the New York Botanical Museum. Well, that is all I have to say, and I am very thankful to have had the opportunity of contributing my word of thanks to Dr. Evans and his companions.

The CHAIRMAN: We have also with us this evening our friend Sir Thomas Holdich, fresh from his triumph as a peacemaker between Chili and the Argentine Republic, and we shall be pleased to hear a few words from him.

Sir THOMAS HOLDICH: I regret very much that I could not follow Dr. Evans in his very interesting journey through Bolivia, and therefore I came here to listen to him and to learn something about that country, for I have never had the opportunity of making any practical acquaintance with it. But when Dr. Evans refers to Patagonia, I find myself a little more at home, and I regret that the only criticism I can offer on Dr. Evans's interesting remarks is one of some slight disagreement with his theory as to the formation and cause of the direction of Patagonian rivers. It is true, no doubt, as he says, that for billions of years the wind currents have been much the same across the Pacific from the north-west and the west, and precipitation has been very considerably greater on the west of the Patagonian Andes than it has on the east. But for all these billions of years, till within very recent periods, the rivers have not maintained the same direction. It is very evident to a casual observer that the rivers have changed their courses, and that rivers which flow into the Pacific used to flow into the Atlantic; and I think we must look to some other cause than wind currents for the present conformation of the rivers of Patagonia. I think that probably the

alteration of their direction is much more due to the great process of desiccation which has been going on all through the world than to any action due to winds and air. This process is common everywhere. The glaciers are receding, and as they recede lakes are formed; lakes are drying up and moraines are formed, and the gradual alteration of the level of the highlands which border the foot of the Andes has been altering the direction of the rivers. There are one or two places even now in Patagonia of which it is difficult to say in which direction they drain—the Atlantic or the Pacific. That is all I can add to the interest of to-night's discussion. I have listened with very great pleasure to Dr. Evans, and wish to add my quota of thanks for what I have heard.

The CHAIRMAN: I am going to crave your indulgence for a moment by calling upon Dr. Thomson, who is the founder and head of the Queensland Geographical Society, which has done such admirable work in the southern hemisphere. Perhaps he will favour us with a few remarks on this occasion.

Dr. PARK THOMPSON: My object in offering a few remarks is not to discuss the very excellent paper with which we have been favoured this evening by Dr. Evans, but it is more on behalf of the society which I have the honour of representing, and of offering to you, sir, and the Fellows of this great British Society my very grateful thanks for the privilege conceded to me this evening in being present to listen to this very excellent paper. It has given me the greatest possible pleasure indeed to listen to Dr. Evans's remarks, and to follow him in his wanderings in that part of the country of which he has given us a very admirable description, illustrated as the description has been by very excellent photographs and the beautiful map which has been prepared by the Geographical Society. I beg, sir, without saying more, to thank you very gratefully on behalf of the society which I have the honour of representing, for the privilege of being here this evening and listening to this very excellent paper.

The CHAIRMAN: Perhaps I may be permitted also to say a word on this paper. The great province of Caupolican, known historically as Apolobamba, extends from the two Bolivian departments of Muñecas and Larecaja indefinitely towards the north. Geographers, both of Bolivia and Peru, have disagreed as to its limits. Many of the ancient geographers fix the northern boundary of Caupolican at about $7^{\circ} 40'$ S. lat., in accordance with the line of demarcation, from east to west, under the Treaty of San Ildefonso between Spain and Portugal. By the treaty of 1867 between Brazil and Bolivia, the boundary was changed to a line starting from the junction of the Madeira and Beni, at $10^{\circ} 20'$ S. lat., to the sources of the Yavari affluent of the Amazon; but the Brazilians now pretend that the limit between the two countries should be the parallel of $10^{\circ} 20'$ S. lat. In the varying changes of the twelve audiences of America made by the Spanish Government they shuffled the cards so with reference to departments and ecclesiastical areas that it is a very difficult problem to decide to whom belong certain territories, and I think it is more a question of occupation, perhaps, than it is of old boundary-lines; and thus Bolivia is probably more entitled than any other country to that region lying between the last two boundaries I have named. It certainly has shown great energy in developing that country, and in sending its sons from all parts of Bolivia to work the rubber deposits and make them valuable to commerce. It has laboured under great difficulties, because Bolivia is a Mediterranean country. It has no sea-coast to-day on the Pacific side; it is very difficult of access by the head-waters of the Purus river, and still more difficult by the Madeira, owing to the long line of nineteen cataracts, which interrupt navigation except by canoes, which means the hauling of them for days round some of the most formidable falls; but at the same time the country above these, according to my observation—and

I have travelled there a great deal—is perhaps the most beautiful of all South America. It has the noblest products, and the richest goldfields; I may say that in Caupolican and Caravaya and all that eastern slope of the interior range of Andes which lies to the east of Lake Titicaca, there is no country so rich in gold, and it is the region from which the Incas derived those treasures with which Atahualpa undertook to ransom from Pizarro the Inca Empire. The district from Santa Cruz, which is the eastern expression of the Andes, to the headwaters of the Mayu-tata, is one vast goldfield, but inaccessible for practical work to-day. But if its mineral wealth is so great, its agricultural resources are perhaps unequalled. It produces the best coffee in the world. There is nothing to equal the Yungas coffee. I may, perhaps, tell you that there is one little spot some distance north of La Paz, only an acre in extent, which was the burial-ground for a small Franciscan convent which still exists there. I believe that the monks have been dispersed, but the cemetery remains. There they grow the richest coffee in all Bolivia, so highly flavoured, that the two or three remaining monks send a distance of hundreds of miles, by native runners, presents of little boxes of this coffee of three or four pounds in weight. I once had this region described to me by an old man of the name of Holbrook, who walked all the way from Apolobamba, about 200 or 300 miles, to see me at La Paz and give me a description of the country. His evidence was that there was nothing obnoxious to be found there. In fact, in his most illiterate way he wrote down that “there were no venomous insects except tigers.” But between the Andean tableland and the Yungas of Bolivia, there is, perhaps, the most beautiful range of snow-peaks in all the world. Sir Martin Conway will bear me out that it would be difficult to match that line of peaks which stretches over 180 miles between Illimani and Sorata. If you stand upon the Titicaca tableland and look eastward as the sun rises, there is nothing more glorious than to watch the sun as it breaks through those giants of the Andes. It is on the eastern slope of these mountains that we find Caupolican, which has been described to-night. It is a perfect paradise, but it is almost as inaccessible as the Paradise which we all seek. It now remains for me to extend to Dr. Evans your thanks for the admirable lecture which he has given us this evening.

FOUR YEARS' ARCTIC EXPLORATION, 1898-1902.*

By Commander R. E. PEARY, U.S.N.

It is a difficult thing to compress within the limits of an hour's talk the story of four years of almost continuous Arctic effort, but I shall try to fix in your minds an outline, at least, of the work of my last Arctic expedition. My original plan; the inception and formation of the Peary Arctic Club, which financed the work; my preliminary expedition of 1897, which secured and brought home the “Ahnighito,” largest of known meteorites; Mr. Harmsworth's gift to me of the

* Read at the Royal Geographical Society, November 10, 1903. Map, p. 724. We have to acknowledge the courtesy of the Peary Arctic Club in sending a copy of their report on the expedition; the main facts are embodied in Commander Peary's paper.