FURTHER NOTES ON THE ANDES

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[The following notes form a useful supplement to the preceding article. They were prepared by Senor Echevarria for H. W. Tilman, to both of whom our thanks are due.]

Venezuela

Only six peaks in the Venezuelan Andes reach a little over the snow line (*c.* 15,000 ft.). They are concentrated in the Merida area, close to Merida City.

See *Berge der Welt*, No. 3 and *A.J.* 52. 70–89 and 53. 127–32.

Colombia

In this country there are many possibilities, but not for pioneer work. In the Sierra Nevada de Santa Marta, in the north near Santa Marta City, no more than six peaks from 17,000 ft. to 18,400 ft. remain unclimbed ; they are mapped but unnamed. See *Berge der Welt*, No. 3, *A.J.* 52. 243–9, *Geographical Review of New York*, No. 31, 1941, with map.

The Sierra Nevada de Cocuy is the best in Colombia for ice and rock work ; but the Swiss climbers have made such a good job there that I do not believe any are unclimbed. But every one of the Cocuy mountains has been climbed only once and you will find some wild walls to climb in difficult, rather short, tests. See *Berge der Welt*, No. 3, *Die Alpen*, 1939, 283–6. For other mountains in Colombia information can be had from *Berge der Welt*, No. 3, as also for every part of the Andes in pp. 340–446. There are many volcanoes, all isolated and all climbed many times.

Ecuador

The only unclimbed peaks in the Ecuadorian Andes are the twin minor summits of El Altar in the eastern portion of the range, both about 17,000 ft. As in Colombia there are other isolated volcanoes but they do not rise over 15,000 ft. and have snow only in the rainy season. See *Berge der Welt*, No. 3, *Zeitschrift des D.Oe.A.V.*, 1940, and Whymper's *Travels amongst the Great Andes of the Equator*.

Peru

Here you will find a very different country. Peru is a repetition of the Himalaya on a lower scale. Starting from the north you have the fine Cordillera Blanca in the long Santa Valley, easy to reach from Lima. The well-illustrated books by Kinzl and Schneider and the excellent maps of the German and Austrian expeditions are the best help you may wish. The highest unclimbed peaks are the west and south peaks

of Huandoy, about 20,880 ft. and 20,200 ft. But the most famous is Chacraraju *c.* 19,700 ft. Good photos of this may be seen in the above books as well as a list of unclimbed peaks, but these books are a little old. You must include in the list new ascents starting from 1949. See *Berge der Welt*, No. 3 and the new book, *Naar onbestegenen Andes-Toppen*, Amsterdam, with the remarkable picture of Nevado Cayesh, an unclimbed ice needle 18,915 ft. I understand that an Austrian party is heading now (July 1954) for the Cordillera Blanca.

South of Cordillera Blanca is the Huayhuash range, possibly the worst in South America for avalanches and snow cornices. The highest peak, Yerupaja, was climbed by Americans, but there are three other big peaks still to be climbed: Yerupaja Chico (20,090 ft.), Sarapo (20,149 ft.) and Jirishanca (20,104 ft.). The last is said to be unclimbable. There are in the Huayhuash, as well as in every part of Peru, Bolivia, Chile and Argentine, a large number of lesser peaks many of them unnamed and unmapped. In the Huayhuash area is to be feared the dangerous disease 'verruga peruana.' See *Berge der Welt*, No. 3 and *Eisgipfel unter Tropensonne*, by Karl Schmidt, Bern, which covers also the Huaytapayana range in Central Peru.

East of Lima is the unexplored Nudo de Pasco (Pasco Knot) where scores of beautiful ice peaks are grouped. The ranges of Pasco, Huaytapayana, Raura, Lasontay, Huarochiri, Tumshu, and Huen-goruncho, with more than three hundred snow peaks of 16,000 ft. to 19,200 ft. have not suffered more than six ascents; and every one is easily reached from Lima, some in only one day. (Is the true source of the Amazon to be found here?) From Pasco to Abancay there is another unexplored zone but without high peaks. Most of them are isolated and glaciated. See *American A.J.*, 1941, pp. 157–76, *ibid.*, 1942, p. 470 and 1943, pp. 81-86; Karl Schmidt's *Eisgipfel unter Tropensonne* and also Heim's *Wunderland Peru*, which is very good on Peruvian mountains. In the Arequipa region is the Cordillera Occi-dental with very high peaks including Coropuna (21,691 ft.), but there remains unclimbed only Nevado Sara-Sara (height unknown, possibly 19,300 ft.) and some smaller peaks. A very different zone is found in the Cuzco where there are many Himalayan-like minor ranges. I believe climbers will soon forsake the Cordillera Blanca to try the Cuzco's Cordillera Oriental. The highest unclimbed peak is Pumasillo (20,490 ft.); some others like Veronica and Soray are similar to the photographs I have seen of Garhwal peaks but a little smaller. Many ice ranges remain to be surveyed and climbed. The peaks of this Cordillera were sacred to the Incas. See Heim's *Wunderland Peru* and *Berge der Welt*, 1953.

Bolivia

The Cordillera Oriental of Cuzco extends over the Bolivian border forming in the Apolo valleys the totally unclimbed Apolobamba range with peaks from 18,000 ft. to 19,900 ft. Nevado Cachuca, a 19,405 ft. ice pyramid, deserves special mention. South of Sorata, a small

resort in Northern Bolivia, you will find the Cordillera Real with hundreds of ice and rock peaks. Only one 20,000 ft. peak is unclimbed, Nevado Haukana 20,495 ft., named thus by Sir Martin Conway in 1898. To reach Haukana you may go the Conway route to Ancohuma. Near Haukana are some 'Matterhorns' and a mysterious 19,695 ft. peak named Nevado Corpapatu, which nobody knows, but which appears in an old French map of 1878 by Senechel de la Grange. Last year I was climbing in the Huayana Potosi area where there are some smaller peaks, many of them very difficult. A good choice might be Nevado Tiquimani, a rock bastion 18,000 ft. high, said to be unclimbable.

South of Illimani is the fine Quimsa Cruz range with some thirty or forty ice and rock peaks of 16,000 ft. to 19,300 ft. Some of them have been climbed.

The Puna or Altiplano contains hundreds of volcanoes and snow peaks. They are difficult to reach owing to the immense distances to cover but are easy to climb. The highest of them, the very glaciated Sajama (21,400 ft.) has been climbed by inexperienced mountaineers. But the region, a true desert, cold and windswept, is almost totally unclimbed. See *Berge der Welt*, 1953, but you must not pay too much attention to Ertl's notes on Bolivian altitudes; much better are those of the Austrian expedition of 1928 which produced good maps, and their account, *Zeitschrift des D.Oe.A.V.*, 1929. See also *Berge der Welt*, No. 3, p. 360.

Chile

Most of the northern desert is covered by hills and volcanoes many over 21,000 ft. The highest unclimbed is El Muerto (21,220 ft.) on the Chile-Argentine border. You must not give too much credit to Argentine maps because they have errors of altitude of as much as 3,000 ft. Much better are the Chilean surveys of 1902 and the British of the same year. Photographs of Kilimanjaro and Fujiyama give an idea of what these mountains are like.

The Chilean Central Andes are the most climbed. Here climbing and ski-ing has reached its greatest development. The distances are very short, no more than fifty miles on good roads or railways, and because of that there are not many worthy objectives. Only the more difficult rocky peaks have not been climbed. The highest of these is Juncal Chico 19,100 ft. north-west of Santiago (there are fifty-two mountain clubs in Santiago). Here the peculiar 'nieve penitentes' are found in their best formation. The climbing season starts in December and finishes in March. See *A.J.*, 58; Fitzgerald, *The Highest Andes*; Conway, *Aconcagua and Tierra del Fuego*; *Berge der Welt*, No. 3; *Die Alpen*, 1940; *Rivista Mensile*, 1934; and the publications of *Rivista Andina*, by the Chilean Andine Club.

In the Chilean Southern Andes is the best region for pioneer work in the Andes, in some parts totally unexplored. The highest peak San Valentin (13,310 ft.) was climbed recently by an international expedition from Bariloche in Argentina (*A.J.* 59. 432). But from Chiloe

province to Magellan there are many hundreds of beautiful peaks, for example, The Tower (9,700 ft.), a photograph of which appears on the cover of *Monts Pacifique*, by Saint-Loup. See *Andes Patagonicos*, by Agostini ; *Rivista Mensile*, 1947 ; *A.J.*, 45 ; *Die Alpen*, 1948.

Tierra del Fuego

Sarmiento (6,995 ft.) is the Weisshorn of my country and close to it are many other fine peaks. Mount Buckland, a sort of Muztagh Tower, is only 3,680 ft. high. The interior of Tierra del Fuego is unexplored, only the coastal peaks have been surveyed. Only the Peruvian Andes near Cuzco deserve more attention than these peaks of Fireland.

[*Photo, Leigh Ortenburger.*

PEAKS OF CORDILLERA BLANCA SEEN FROM HUANDOY. L. TO R. : PYRAMID, 19,308 FT., PISCO EAST AND PISCO, CA. 19,000 FT. AND CHACRARAJU (BOTH PEAKS CA. 20,000 FT.).



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