

BOLIVIA

The Andes of Bolivia follow the general north-south line of the main axis and are grouped into two cordilleras, Occidental and Oriental, the latter being more extensive and important, containing as it does one of South America's finest ranges, the Cordillera Real. The Cordillera Occidental is a continuation of the Peruvian Cordillera Occidental and, for the most part, marks the boundary between Bolivia and Chile. The Cordillera Oriental enters Bolivia through the Cordillera de Apolobamba, north of Lake Titicaca, and continues in a north-west to south-east direction through the Cordillera Real, Cordillera de Quimsa Cruz, Sierra Santa Vera Cruz, and the Cordillera de Cocapata, finally stretching in a great crescent of lesser ranges some 600 kilometres in length around the Bolivian cities of Sucre and Potosí. Both cordilleras merge into the cordilleras bordering the Puna de Atacama in the north of Chile and Argentina.

Between the two Bolivian cordilleras lies the Altiplano, one of the world's highest interior drainage basins. It is approximately 800 kilometres long by 160 kilometres wide and slopes gently from c.3800 metres at Lake Titicaca to c.3700 metres at Lake Poopo, and a little lower at the Salar de Uyuni. The Altiplano is nearly as high as the Tibetan plateau but only about one tenth the size: it is also similarly cold, dry and barren. Its eastern edge is well-defined by the sharp rise and line of the Cordillera Oriental, but the western edge is less clear-cut, with irregular hilly areas formed of volcanic debris from the coastal cordillera. Between the Salar de Copasa and the Salar de Uyuni the Altiplano is divided by a line of volcanoes and hills which extends from the Cordillera Occidental almost to the Cordillera Oriental.

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Cordillera Occidental

The mountains of the Cordillera Occidental are of volcanic origin, often with the characteristic cap of snow. The most important group is that headed by Sajama, very near the junction of the borders of Peru, Chile and Bolivia. Sajama stands about twenty-five kilometres inside Bolivian territory but the neighbouring peaks and those further south mark the line of the Chile-Bolivia frontier. The snowline is at a height of c.5800 metres, increasing to c.5950m further south. There is no particular season for climbing, though snow may be expected from October-April. The peaks can be approached from the Bolivian side which is much more fertile, with some fresh water streams (if not polluted with sulphur); by comparison the Chilean side is fairly barren. Chilean expeditions usually put their base camps near Lake Chungar.

Sajama is the highest mountain in Bolivia and is situated nearly 200 kilometres south-west of La Paz, whence its base can be reached by bus in one long day (11 hours). Despite its precipices, rocks and walls, it is an easy enough climb, although the glaciers covering the upper slopes are crevassed and fairly steep. The usual routes are the ridges which lead to the icy summit, where there is no trace of any crater. Severe local storms, wind and altitude are the main obstacles to any ascent. The mountain

was first attempted in 1927 when Joseph Prem soloed the north-west ridge to a height of about 6200 metres. In 1931 Prem and W. Stricker reached approximately the same height by another route on the north side. In August 1939 Prem, accompanied by Piero Ghiglione, followed the north-west ridge, arriving on the summit plateau in the middle of a violent hurricane. Not satisfied that he had achieved the highest point, Prem returned two months later with Wilfrid Köhm and, at the second attempt, reached the top, having climbed the south-east ridge, a much more difficult route. The north-west ridge was followed again in 1946 when the third ascent was made by E.S.G. de la Motte, T. Rees, T. Polhemus and W. Tienken. Although the sky was clear, a strong wind was whipping up the snow on the summit plateau, causing them to lose sight of Polhemus who disappeared, never to be recovered, despite the efforts of his companions and an aerial search.

Some twenty-five kilometres west of Sajama, on the Chile-Bolivia border, stand the twin Payachata peaks, Nevado Parinacota and Nevado Pomarata, which the maps call Pomerape. Parinacota was climbed in 1928 by J. Prem, with the Indian Teràn, and again in 1939. A first ascent of Pomarata was claimed by two Bolivians, Garcia and R. Zalles, in 1946. In October 1964 an expedition from the Santiago Section of the Club Andino de Chile camped on the north-east shores of Lake Chungarà and climbed both peaks. Two intermediate camps were placed on Parinacota which was found to have an impressive crater. Only one camp was needed on Pomarata, the top of which is heavily glaciated. The following year the same climbers tackled the next group of volcanoes twenty-five kilometres south of the Payachatas. Starting from the southern end of Lake Chungar, the party camped on the volcano Huallatire, which has a great fumarole whose smoke is visible for more than 200 kilometres. The ascent was made up the northern slope by a rocky ridge leading to an ice dome and a snow ridge. Just to the east of Huallatire lie three peaks known as the Quimsallatas, headed by the extinct volcano Nevado Acotango, which was climbed without difficulty. Huallatire was first climbed in 1926 by Dr. F. Ahlfeld who also climbed several other peaks in the Cordillera Occidental, mostly in 1945.

The German geologist Frederick Ahlfeld (1892-1982) was perhaps better known for his knowledge of the Cordillera Real. He emigrated to Bolivia in 1924, where he lived in Cochabamba, and was for half a century the foremost authority on Bolivia's geology and mineralogy, producing over thirty specialist books and countless other publications. Whether visiting mines, studying mineral deposits or climbing high peaks he was indefatigable in his explorations, covering over 100,000 kilometres on foot and taking part in over forty expeditions, one of the most important of which was the 1928 D.Ö.A.V. expedition to the Cordillera Real. His knowledge of that range was unrivalled and his photo-archives a veritable treasure house. Even in his eighties he was still a forceful personality, disguising his age with a youthful agility and full mental ability. He helped to found the Club Andino Boliviano and was one of its early presidents.

Peak List

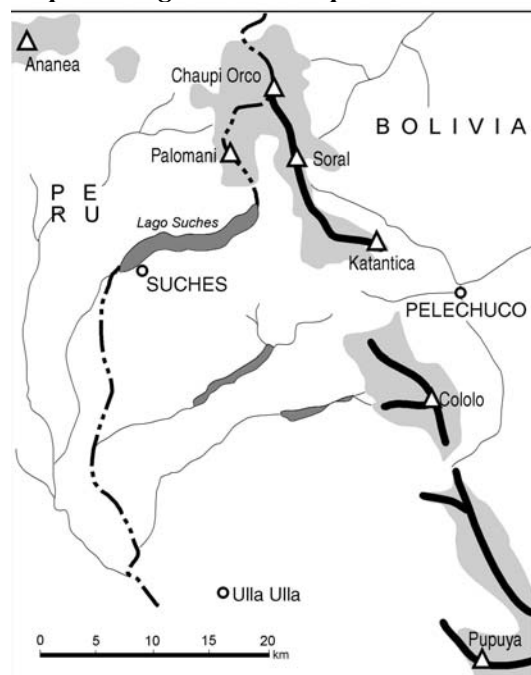
(For peaks on the Argentina-Bolivia border, see the section on the northern Andes of Argentina. See also the section on the northern Andes of Chile for some peaks on the Chile-Bolivia border. † indicates a peak climbed in pre-Columbian times. Chilean I.G.M. maps (1:500,000) may be easier to obtain than Bolivian ones).

Sajama 6520m: 18°06'S. 69°55'W.: beautiful mountain with a great cap of ice and covered with glaciers and nieves penitentes: 1-1939 via N.W. ridge: S.E. ridge-1939: N. face-1972: W. rib-1975: S.W. face-1977: E. buttress-1985, with nearly vertical ice at 5850m, descent via S. ridge.

- Larancagu* 5880m: located north of Payachata, east of the village of Caquena, near Portezuelo Casiri, above two beautiful unnamed lakes: 1-1985.
- Cerro Guaneguane* 5100m: frontier peak: 1?-1985
- Nevado Condoriri* c.5250m: frontier peak: 1-1985.
- Pomerata (Pomerape)* 6222m: frontier peak: 1-1946 (disputed): 2-1964. Ice appears to be retreating rapidly & lakes drying up.
- Parinacota (Payachata)* 6132m: frontier peak: 1-1928: ice ascent-1973.
- Volcàn Quisquisini* 5480m: lat.18 15'S: frontier peak:
- Umurata* 5717m: frontier peak: 1-1984.
- Pusupata* 5730m: twin peak of Umurata.
- Acotango* 6050m: 18°23'S. 69°04'W.: *Cordòn Quimsachata*; the ancient crater has gone, leaving a deep, glaciated valley: 1-1965.
- Capurata* 5990m: snow & ice covered volcano near northern tip of Chile: 1-1967.
- Guallatiri (Huallatire)* 6071m; 18°25'S. 69°07'W.: active volcano covered with ice: 1-1926: 2-1965 [see RA 89 (1966): 14-17]
- Sillajhuay* 5996m: highest point in Sillajhuay range:
- Ciberay* 5474m:
- Cerro Caltama* 5385m: 20°38'S. 68°18'W.: 1?-1984 from S. to highest points on E. & W. crater rims.
- Chorolque* 5600m: c. 20°59'S. 66°04'W. Ascended repeatedly by miners.
- Chiguana* 5278m: 21°14'S. 67°53'W.: 1?-1984 via N.W. slopes.
- Cerro Luxsar* 5510m: near Chiguana: 1?-1984 via S.E. slopes & S. ridge
- Cerro Caquilla (Callejon?)* 5950m: lat. 21°27'S. long.68°12'W.: highest in the Cerros de Cañapa: 1?-1984 from W., up steep snow to summit on southern crater rim.
- Bonete* † 5658m: c. 21°45'S. 66°28'W.: steep lava faces: 1-1945 from S.W. up slope of gigantic blocks.
- Morurco* 5670m: c.21°52'S. 66°35'W.: 1-1945.
- Uturunco* 5900m: c.22°17'S. 67°10'W.: 1-1955.
- Santa Isabel* 5169m: 1-1945.
- Nuevo Mundo* 6020m: location uncertain; possibly near Volc n Ollague: 1-1903. Climbed by M.G. Courty who mentions another peak, *Cerro Asunza*, which has never been identified.

Cordillera Apolobamba (Locally referred to as the northern Cordillera Real)

Map showing Cordillera Apolobamba



This range lies astride the Bolivia-Peru border approximately fifty kilometres north of Lake Titicaca, although most of the peaks are either in Bolivia or on the frontier. Approach to the range is usually from La Paz, a long and fairly disagreeable journey of over 300 kilometres. The area was thoroughly explored in 1911-13 by members of the boundary commission organized by the Royal Geographical Society on behalf of the Peruvian government, and their report contains a good description of the area, a large number of photographs and an excellent map.

The range, which is extensively glaciated on both slopes, may be said to have one main crest running roughly north-south, with lateral spurs. The northern half of the main crest carries the frontier and the highest peaks; south of Palomani Grande the frontier breaks away to follow the course of the Río Suches, and so to Lake Titicaca. The principal peaks from north to south are - Rita Pata; Chaupi Orco; whence a long spur runs into Peruvian territory culminating with Calijon and Ananea; Salluyo; Jorge Clavez; Palomani Grande, east of which is the Soral group; Matchu Suchi Coochi, east of which is the Catantica group; and south of the road to Pelechuco, the extensive massifs of Huanacuni, Cololo, Huellancollac and the Pupuya group.

For a long time the only ascent in the area was that of Palomani Grande, said to have been climbed by a captain of the Bolivian army, perhaps in the 1920s. The first mountaineers to travel through the range were Dr. Frederick Ahlfeld and Arnold Heim, in 1932 and 1946 respectively. However, they did not make any ascents and the Apolobamba remained virtually unheard of until 1957. In this year Werner Karl, Hans Richter and Hans Wimmer, of the Berchtesgarden Section of the D.A.V., approached the mountains from the Bolivian side and made various first ascents, including Huellancollac, Cololo, Huanacuni and Salluyo.

The German party started their five-week stay in the range by exploring the southern massifs. In the course of reconnoitring a route to Huellancollac two easy peaks and the dangerous Isacachu were climbed. The approach to and ascent of Huellancollac was long but easy despite the 1200m climb from their campsite. Next they turned to the north to attempt Cololo, the ascent of which involved a round trip lasting seventeen hours. After a tiring approach across the southern glaciers they attacked the peak via a couloir parallel to the south-east ridge. Higher up they transferred to the south-west ridge, and shortly afterwards were forced to traverse the steep rock and ice of the north face. Fifty metres below the top a shaky ladder of snow on a rock spur led to the slender, corniced summit. The group next moved north to Salluyo (then called Chaupi Orco), which turned out to be an even more strenuous expedition, crossing very broken and crevassed glaciers, and wind-slab into which they sank knee-deep. Eventually the narrow south-east ridge was gained and the top reached just before nightfall. The biting wind would not permit a high bivouac and they eventually staggered into camp guided by the big fire made by their arriero, Pasquale. The last ascent was that of Huanacuni, again in the south. This was climbed via the unpleasant, corniced south ridge. One by one, and doubly belayed, they set foot on the shattered ice formations of the summit. After this they returned to La Paz and made the first transverse of the three peaks of Illimani in the Cordillera Real. (Map and article in *Jahrbuch D. A.V.*, 1958, pp94-107).

The following year the region was the goal of an Italian expedition from Milan, based on the Peruvian side of the range. This group (C. Frigieri, R. Merendi, C. Zamboni, G. Sterna, A. Oggioni, P. Magni and H. Mellano) made eighteen first ascents, all in very favourable weather, including Ananea, Calijon (N.E. face),

Rita Pata, Palomani Cunca, Salluyo and Chaupi Orco Norte. (N.B. The references so far traced give no detailed information, only names of climbers and peaks and dates climbed).

In 1959 Dr. Geoffrey Bratt and five other members of London University's Imperial College travelled from La Paz to the Apolobamba to climb and make topographical and geological surveys. The main climbing objectives were the Soral peaks and the Matchu Suchi Coochi group, which form the east and south walls respectively of the central mass. This area of 170 square miles of peaks and glaciers was mapped on plane table; the three geologists surveyed an area of approximately 500 square miles, including a traverse across to the Amazon basin side of the main range. Initial climbs for survey purposes included Matchu Suchi Coochi but the most interesting was the ascent of Pelechuco Huaracha, the summit ridge of which was pierced by a large tunnel. The peak which provided the most interesting problem of all was Soral Este, which was climbed from the north at the second attempt. Altogether fourteen first ascents were made, between 21 July and 20 August, and a useful map produced. (N.B. the version of the map which appears in the AAJ is better than the one in the AJ).

In 1961 and 1965 two Japanese expeditions climbed extensively from the Bolivian side, making numerous first ascents and repeats. The 1961 party, led by Ichiro Yoshizawa, started in the Chaupi Orco area, where they made first ascents of Puinapata, Los Tres Hombres and Cacahuacho. Then they transferred to the Pupuya group in the extreme south of the Apolobamba, making first ascents of Canisaya, Acamani, Cavayani and Yanaorco. The 1965 group was also in the Pupuya group and climbed from a base camp at c.4600m just south of Cololo. Most interesting was a long traverse from south to north along the main ridge of the southern massifs. This was done by K. Miyasaki, T. Ohta and S. Okajima from 30 May to 2 June, with three bivouacs, climbing five peaks en route.

Two D.A.V. expeditions were in the Apolobamba in 1968 and 1969. They made repeat ascents of the bigger peaks and several first ascents of lesser peaks before moving on to the Cordillera Real. Far more important was the work of the 1969 Spanish party led by Arturo Bargay. They made first ascents of nineteen peaks in the central Apolobamba in much the same area as the 1959 Imperial College expedition. (See map in AJ, 75 (1970): 220). The most difficult ascents were Montserrat Norte, which involved hard climbing on iced rock, and Manresa, which had dangerous cornices and very steep walls; both these peaks are in the Soral Oeste massif. Since 1969 there has been very little recorded activity in the Apolobamba. In 1973 a French party climbed the south-west face of Ananea, a difficult ice route; in 1974 a D.A.V. group put up several new routes; and in 1978 a French expedition reported various climbs, the location of which are uncertain.

Peaks on Peru-Bolivia frontier

(See map in Michael Kelsey's *Climber's Guide*).

Chaupi Orco (Chaupi Orco Norte) 6100m: 1-1958 #: From E. (Tarucane basin)-1968.

Salluyo (Chaupi Orco) 6044m: 1-1957 via S.E. ridge: From E. (Tarucane basin)-1968: N. ridge & traverse north over 3 unclimbed summits to Chaupi Orco Norte-1969.

Jorge Chavez (Salluyo) 5808m: 1-1958 #.

Flor de Roca 5808m: S. of Jorge Chavez: 1-1958 #: E. face-1983.

Palomani Grande 5768m: 1-pre 1932: 2-1958 #: S.W. ridge rock scramble and snow spur to final summit-1989.

Tres Mujeres 5760m: W. of Salluyo: 1-1958 #.

Angelicum 5750m: N. of Chaupi Orco: 1-1958 #.

Donegani 5710m: W. of Jorge Chavez: 1-1958 #.

Palomani Tranca 5638m: southern end of border spur: 1-1985 via long N. ridge, over rock, snow and ice barriers, culminating in 3 pinnacles.

Chocacota (Nevado Club Alpino Italiano?, Cholkene) 5630m: S. of Jorge Chavez: 1-1958 #.

Palomani Cunca 5629m: 1-1958 #.

Manco Capac 5560m: south of Donegani: 1-1979.

Ichocollo 5423m: S. of Jorge Chavez: 1-1958 #.

Iscaycruzriti 5400m: near road over Iscai Cruz Pass: 1-1968.

#-See note below.

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Western extension in Peru

(See map in Michael Kelsey's *Climber's Guide*).

Huanacuni c.5280m: W. of Palomani Cunca, near Caserjo Chocacota: 1-1970.

Calijon (Poderoso) 5834m: 1-1958. #

Ananea 5820m: 1-1958 #: S.W. ice face-1973, difficult: N. face-1983, fierce but without great technical difficulty.

Citta di Desio 5530m: 1-1958 #.

Vanelli 5460m: 1-1958 #.

La Sierra (La Sega) 5400m: 1-1958 #.

Ritipata 5272m: near Iscai Cruz Pass: 1-1958. #

Patichoquichambi 4996m: 1-1969 via northern rock face, from the highest pass on the Untuca-Sina pass trail, as part of a 4-day circuit of the Ananea massif.

#-See note below.

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Peaks inside Bolivia

(a) Salluyo-Soral Oeste basin

Huanaco 5750m?: above Tukurane Glacier: 1-1968.

Villasanta 5700m?: on spur S.E. of Salluyo: 1-1958. #

Taro 5700m?: above Tukurane Glacier: 1-1968.

Monza 5600m?: on spur S.E. of Salluyo: 1-1958 #.

P.5510m: above Tukurane Glacier: 1-1968.

P.5500m: above Tukurane Glacier: 1-1968.

- The only references traced give no details of routes. This Italian expedition did not make use of available maps and it was only later that Mario Fantin unravelled which peaks had been climbed, and corrected the confusion over nomenclature.

N.B. Various peaks (Puinapata, Nevado 'K', Los Tres Hombres, Caccahuaycho, Nevado 'K') climbed by a Japanese expedition in 1961 are probably in the Salluyo-Soral basin.

(b) Soral Oeste section

Manresa 5655m: 1-1969, a hard climb, dangerous cornices, very steep walls.

Montserrat Norte 5655m: 1-1969, hard climbing on iced rock.

Curac (Qurae) 5650m: 1-1969.

Soral Oeste 5640m: 1-1959 via W. ridge: N. face (600m)-1980, lower part difficult, upper part very difficult, final vertical 75m wall: E. side of S. face-1985.

Sullica 5635m: 1-1969.

P.5560m: snow dome at end of ridge: 1-1959.

Montserrat Sur 5525m: 1-1969.

Chucuyo Grande 5430m: 1-1959 via W. face & ridge.

(c) Soral Este section

Soral Este 5470m: 1-1959 via N. ridge.

P.5430m, P.5390m: north-west of Soral Este: 1-1959 via traverse of N.W. ridge.

Macara 5430m, 5380m, 5340m: south-east of Soral Este: 1?-1981, all three tops.

P.5010m: between Riti & Yanacocha passes: 1?-1981.

Priamide 5405m: 1-1969.

P.5380m: south-east of Soral Este: 1-1959 via N. ridge.

P.5320m: south-east end of Soral Este ridge: 1-1959 via traverse from P.5380.

Penelope 5125m: north of Soral Este: 1-1969.

Pico Riti Superior 5041m: 1-1969.

P.5100m: third peak E.S.E. of Soral Este: 1-1985 via N. ridge (5.4, crumbly).

Pico Riti Inferior 4960m: 1-1969.

N.B. Several rock needles and lesser points were also ascended by the 1969 Spanish expedition. See map in AJ 75 (1970): 220.

(d) Matchu Sochi Cuchi section

Presidente 5700m? (P.5640 on Imperial College map): 1-1969.

P.5680m, P.5670m: 1-1959, traversing both tops from N.W. - S.E.

Pelechuco Huaracha 5650m: 1-1959 via N. ridge: S.W. ridge-1974: W. ridge-1981.

Apolo XI 5650m: 1-1969.

P.5640m: 1-1959 via N.W. face.

P.5610m: south-east of the highest peaks: 1-1959 via N. ridge.

P.5600m: extreme north-west peak of ridge: 1-1959 via N.E. ridge.

Radioafición 5580m: 1-1969.

OAE 1 5300m: 1-1968: W. face-1974.

Huanchochiri 5400m: just south of Lago Suches: 1-1970.

(e) Katantica section

Katantica Oeste (Katantica I) 5630m: 1-1968: S. face-1969, ice.

Katantica Central (Katantica III) 5610m: 1-1968.

Lloco Lloco 5605m: 1-1969.

Katantica Este (Katantica IV) 5592m: 1-1968.

P.5560m: c.1 km west of Katantica: 1-1985 via W. side of N. ridge on ice.

Ascarani (Azucarani) 5580m: 1-1959 via N.W. ridge: Spanish route?-1969, a hard climb with dangerous cornices and very steep walls: N. ridge-1970.

Katantica II 5550m: 1-1968.

Mo.Alba 5525m: north of Katantica & south of Ascarani: 1-1969.

Katantica Sur 5310m: 1-1968.

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Roldán, M. 'Triunfo de la Expedición Manresana del C.E.C. Bages a los Andes Bolivianos'. Centro Excursionista de Catalunya, Barcelona, Montaña, n.120-124 (Mar-Dec.1969): 397-401.

(f) Southern peaks (south of track to Pelechuco)

Cololo (Ccachura) 5915m: 1-1957: Japanese ascent from high camp, south of the peak-1965: W. ridge-1988: N. ridge-1989, mixed climbing mostly on E.side just below crest on steep, shattered rock, final 250m corniced; descent via W. ridge.

P.5580m: 4 km S.S.W. of Cololo: 1?-1986 via icy 60ø N.W.face to long, flat corniced summit.

P.5490m: 2nd or 3rd top S.W. of Cololo: 1?-1986 via N.E. ridge, rocky scramble.

Huelancallo 5836m: 1-1957: Traverse W. ridge, descend N. ridge-1989.

Huanacuni 5798m: 1-1957.

Nubi 5710m: 1-1957.

Iscacacho 5650m: three summits: 1-1957: N.face direct to S.W. summit-1989: N. face direct to central summit-1989: Complete traverses S.W. - N.E. & N.E. - S.W.

Levisito (Mita) 5500m: 1-1957: N. ridge-1989.

Posnansky 5480m: 1-1957: S.W. ridge of S. summit-1989.

Schwarzewand 5500m: 1-1969.

BJE 4 (Firnberg) 5450m: 1-1969.

BJE 6 (Firnkupe) 5440m: 1-1969.

BJE 2 5350m: 1-1969: S.W. face & traverse to BJE 1-1974.

BJE 1 5300m: icy peak: 1-1969.

BJE 3 5300m: 1-1969.

Wellenkamp 5185m: may be rocky peak N.E. of Iscacachu group:

P.5375m: twin summits just north of Iscacachu:

Sunchuli 5305m: snow peak 1 km S.E. of Posnansky: 1-1989 via W. flank.

Cunuareya 5370m: rock peak 2 km N. of Paso Osipal: 1-1989 via N.E. ridge.

Canisaya 5706m: 1-1961. #

Cavayani 5702m: 1-1961. #

Acamani 5666m: 1-1961. #

Yanaorco 5600m: 1-1961. #

Coruquini 5810m: 1-1965. #

Calisaya (Casarara?) 5702m: 1-1965. #

Corohuari 5668m: 1-1965. #

Cuchillo I 5655m: 1-1965. #

Huarini 5520m: 1-1965. #

Cuchillo II (Asano) 5450m: 1-1965. #

Acamani Sur 5320m: 1-1978.

P.5380m; P.5340m; P.5430m: three difficult snow and ice climbs on long snow ridge between Paso S nchez and Paso Riti.

- Pupuya massif, southern end of range. Climbs by Japanese expeditions. See Sangaku, 1962 & 1967.

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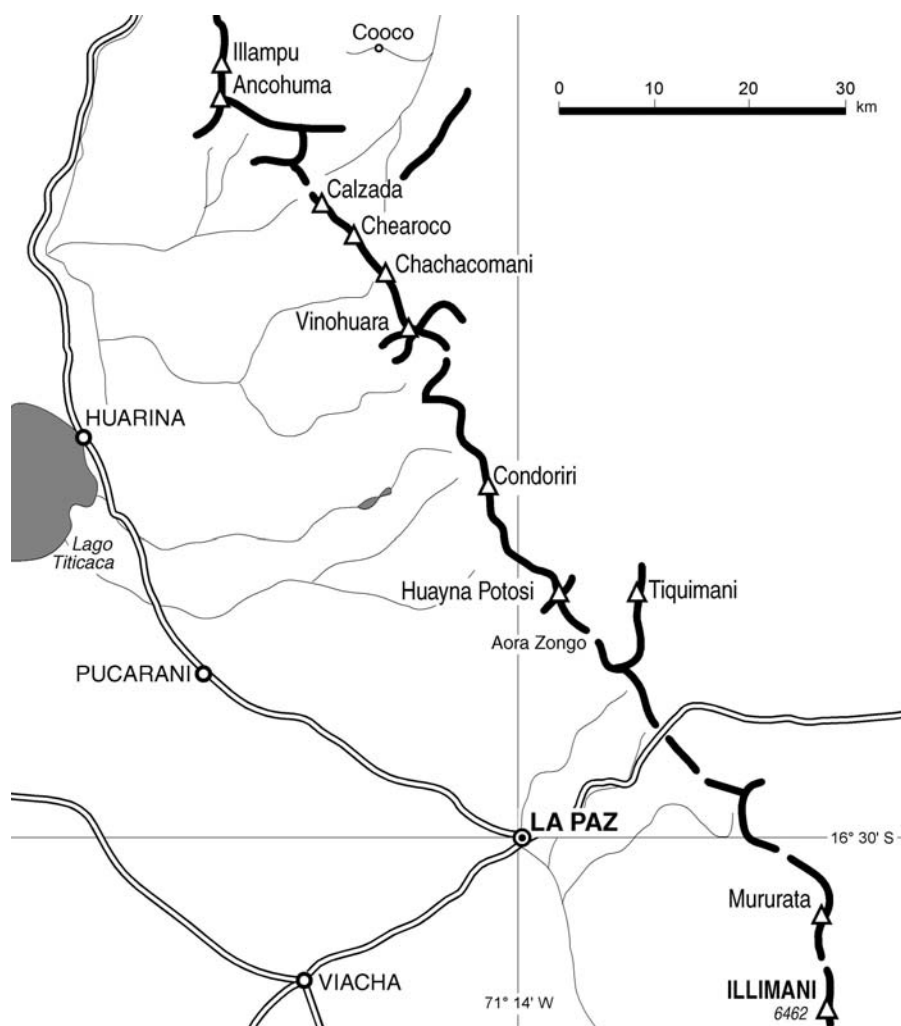
Cordillera de Muñecas

Between the Cordillera de Apolobamba and the Cordillera Real lies a minor mountain range, with no snow or ice peaks, the highest point of which is Callinsayani (5200m).

Cordillera Real

(Cordillera de La Paz is the local name).

Map showing Cordillera Real



This range, once termed the 'Himalaya of the New World', is approximately 160 kilometres in length and has one principal crest running from north-west to south-east, delimited to the north and south respectively by the mighty peaks of Illampu and Illimani. To the west the cordillera is bounded by the Altiplano, and to the east by a system of parallel valleys (yungas) which drain into the Río El Beni. Apart from the peaks of the main crest, there are considerable lateral ramifications, particularly on the eastern side of the range, which have been opened up by various large expeditions in recent years. Evelio Echevarría, writing in the *AJ* in May 1959, commented on the Cordillera Real's undeserved reputation as a range with little field for pioneer mountaineering, and suggested that there were

enough opportunities in the way of new summits and new routes to occupy a whole generation of climbers. In proof of this there have been over 200 first ascents of 5000-6000m peaks in the past thirty years, compared with about thirty up to 1960, plus numerous hard new routes. Despite this activity, most of the peaks await new routes.

The principal peaks and massifs from north to south are - Illampu and Ancohumá; two striking glaciated peaks, Casiri and Calzada; Chearoco and Chachacomani; the lower but important section headed by Vinohuara and Condoriri; the ice pyramid Huayna Potosí, one of the finest peaks of the range; much further south, Mururata; and finally Illimani, a high ridge with three summits. The principal lateral developments are the great cirques of peaks to the east of the Illampu-Ancohumá and Chearoco-Chachacomani massifs, and those to the south of Vinohuara and Condoriri.

Access to the range is good and climbing is predominantly on snow and ice, the snowline being at c.4650 metres. The glaciers are typical of the tropical Andes, resembling compact ice-caps on fairly gentle slopes. Huge cornices (which may have been the cause of more than one fatal accident) and ice-fluted faces are also features. The months of June-August are usually favoured for climbing; the tropical nights are almost constantly of eleven hours' duration and, above 4600 metres, very cold indeed, i.e. - 20°C.

The first recorded attempt at climbing occurred in May 1877 when the French geographer Charles Wiener, accompanied by the Russian De Grumblov and the Peruvian Jos, Ocampo, made an attempt on Illimani, reaching only a forepeak which they called Pico Paris (later, Pico del Indio). Previously J.B. Pentland had crossed high passes north and south of the peak. In 1888 the mountain region west of Chearoco was explored by an expedition led by Seneschal De La Grange. The first major climbing party was that organized by Sir Martin Conway in 1898. With his guides, Maquignaz and Pellissier, Conway made the first ascent of the south peak of Illimani; failed to climb Ancohumá by only 150 metres; and prepared the first topographic survey of the range. At the turn of the century Illimani was attempted by the American Annie Peck and the Italian Celestino Uselli, who also tackled Huayna Potosí.

In 1915 began a period of Austro-German domination of climbing activity in the Cordillera Real, which lasted almost unbroken until the 1950s. In this year A. Schulze, E. Bengel, R. Dienst and E. Overlack made the second ascent of Illimani Sur, while the following year Bengel and Dienst attempted Huayna Potosí, which was eventually climbed by Dienst and Schulze in 1919. Also in 1919 this pair reached the summits of Ancohumá and its neighbour Haukaña. After a gap of nearly ten years, Hans Pfann led a large and successful D.Ö.A.V. expedition in 1928. Pico Norte and Cerro Rojo were climbed in the course of attempts on Illampu, which was eventually conquered by E. Hein, A. Horeschowski, H. Hörtnagel, and Pfann. Subsequently Casiri, Chearoco and Vinohuara were climbed, as were Hichucota and Llaullini, both soloed by Hein, who also ascended the south peak of Illimani alone via the difficult north ridge. Carl Troll, meanwhile, made a topographical survey of the huge area of the cordillera, which resulted in the publication of one of the best maps of the range. In 1930 Hein and H. Weber climbed Ancohumá by a new route along the south ridge.

In 1940 there occurred the notorious incident when H. Bötcher, W. Kühm and F. Fritz planted on Illimani's south peak the flag of Nazi Germany surmounting that of Bolivia; it was removed a few days later by E.S.G. de la Motte, accompanied by the Bolivian Jesús Torres. The explanation given by the German climbers was that there had originally been a Swiss flag sewn above the Nazi one, but the Swiss climber had dropped out

of the party. Irrespective of their motives on this occasion, there is no doubt that there were many Nazi sympathisers in Bolivia during the war, often parading in Nazi uniforms.

In April 1941 Kúhm succeeded in soloing the difficult Condoriri. Two years later Kúhm and Gohrman attempted Illimani's north peak but, while roped together, the pair were blown off a steep ridge and fell to their deaths, a tragic ending to the career of Wilfrid Kúhm who had made his mark on the mountains of the Andes. This phase of German supremacy was crowned by the 1950-51 expedition led by Hans Ertl. First of all, with his friend Gert Schröder, he succeeded in making the first ascent of Illimani Nord, after a twelve-hour climb from camp at 5600 metres. Later, members made first ascents of Laramcota and two other peaks in the Illampu group; also Ancohuma by the north-west ridge; the second ascent of Illampu, and other climbs.

Revival of interest in the Cordillera Real was marked by the visit in July-September 1962 of the Reading University party, led by Ronald Hunter, who were the first to climb and map the Negruni group east of Chearoco. Activities commenced with first ascents in the Calzada-Casiri section of the main crest. Then a reconnaissance party was sent over the Calzada Pass to find an approach to and base camp in the Negruni valley, an area left blank on the 1929 map of Carl Troll's preliminary survey. Subsequently ascents were made of five of the Rumca peaks and five peaks in the beautiful Negruni range. The climax of the expedition was to be ascents of Chearoco and Chachacomani, but although the second ascent of the former was accomplished, the Chachacomani attempt was defeated at c.5800m by the many crevasses which blocked the route. Altogether members of the expedition made twenty new ascents. (See map in AJ, 68 (1963): fac. 221).

On 27 May 1964 the Alpine Club of Tokyo University of Foreign Studies expedition arrived in La Paz and spent three months climbing in the country, accompanied by several Bolivians. During June they climbed eleven peaks in the unknown Vinohuara group between Chachacomani and Condoriri, from a base camp south of Chachacomani. In July they moved to the Illampu area, where they made first ascents of Huayna Illampu, two of the Viluyo peaks and three of the Ancopiti group. The expedition finished with a visit to Sajama in the Cordillera Occidental. The Yugoslavian expedition of 1964 started in the Huayna Potosí group, from a base camp on the Zongo Pass, whence they repeated half a dozen climbs. Moving to the Condoriri group, they placed high camps under Condoriri and Wyoming, and made fifteen first ascents of peaks between 5175-5505 metres. After a ten-day break the expedition moved to the Illampu group where the ascents included Nevado de Cotaña. In the same year a party of New Zealand climbers traversed Ancohuma, ascending by the west ridge and descending by the south-east ridge and south-west face.

Exploration and survey work continued in 1966 with the arrival of the University College of Bangor expedition, led by M. Birchall. Their object was to survey the unknown country lying between the Troll survey of Illampu and Ancohuma, which form a great cirque of high peaks at the head of the Cooó valley, and the Reading University survey of the Negruni-Rumca mountains. This area, which lies between Illampu and Casiri is bounded on the east by the Viluyo peaks and those of the highly glaciated range known as Huma Huallanta. Members of the expedition were joined in some of their climbs by fellow countryman Tony Smythe and American Wayne Wagner. During the first three weeks of June ascents were made of peaks northeast of Casiri, and on 26 June Birchall, Winfield and Hall reached the summit of Casiri Este, one of the major climbs of the expedition. Having descended about sixty metres down the icy south-east face Birchall slipped, pulling his companions with him, and was unable to arrest himself with his axe, because of a layer of hard ice underlying the crisp

surface snow. The fall ended in Birchall's death, buried in a deep crevasse, while the others survived virtually uninjured. The expedition's programme was resumed a month later, completing in all twenty-one climbs (of which fifteen were first ascents) and a useful map (see AJ, 72 (1967): 296).

German climbers returned to the Cordillera Real in 1969, with a group of eight members of the Bayerische Naturfreunde, led by Rudolf Knott. Their first area of operations was north-west of Condoriri, where they explored the Kharta-Khota, Negruni and Linco valleys and made sketch-maps of them with the Chekapa and Negruni ranges. Eight first ascents were made in the Chekapa group and sixteen in the Negruni range. From 15-19 June four members also succeeded in climbing the two and a half kilometres long, knife-edge, south ridge of Huayna Potosí, on hard ice and snow, hampered at times by thick mist and a cold wind. The expedition also went to climb in the Araca group of the Cordillera Quimsa Cruz. Another German group, celebrating the one hundredth anniversary of the Berlin Section of the D.A.V. finished off their trip to the Apolobamba by making an ascent of the south ridge of Illampu, which had repulsed several previous parties.

In 1971 it was the turn of the centenary expedition of the Regensburg Section of the D.A.V., led by Anton Putz. After helping with the rescue of a Munich party on Ancohuma they continued up the Hichucota valley to base camp at the southern end of Lago Jankho Khota in the Negruni group. From there they made twenty-four first ascents of peaks between 5200-5700 metres on the ridges of the surrounding amphitheatres. The latter part of the expedition was devoted to climbs from the Coocó valley, including the fierce, two kilometres long, north-east ridge of Illampu, which took six days and involved traversing Laramcota, Pico del Norte and Illampu Norte. In 1972 members of an Imperial College expedition were in the Illampu group, and made a number of ascents. Two of the party were killed near the top of the east face of Illampu when a cornice appeared to collapse.

There were two more big expeditions to the Negruni group in 1973, by the Upper Austria and the Württemberg Friends of Nature. The Austrians explored the area east of the Mollo Pass, making thirteen first ascents, as well as climbing the difficult south face of Tiquimani, over 1000 metres of vertical rock and steep ice, comparable to the north face of the Matterhorn. The Germans made many ascents, including new ones, in the Negruni group, in the same area as the 1971 Regensburg expedition. Then they climbed above the Coocó valley, following the pattern set by previous expeditions, as well as bringing to a close this most vigorous phase in the development of Andean mountaineering.

While almost all of the summits have now been reached, the only peaks which have seen intense activity are Illampu, Ancohuma, Condoriri, Huayna Potosí, Illimani and the conveniently placed Khala Cruz-Charquini group. The majority of ridges and faces have not been touched. Indigenous Bolivian mountaineering has been at a very low ebb in recent years and in 1980 American Stanley Shepard described himself as La Paz's only weekend climber. In addition to the customary western approaches, the new highway from La Paz to the Yungas (over La Cumbre Pass, 4725m) quickly gives access to the impressive Pupusani-Kasiri group on the eastern side of the range. This group offers superb rock-climbing and some ice. Generally speaking the biggest climbs in the Cordillera Real, as well as the best opportunities for new ascents, are to be found on the eastern side, where unfortunately both access and weather are less good.

Peak List

(Groups are listed from north to south. Within each group peaks are listed in as continuous sequence as possible. See guidebooks by Mesili (not always easy to identify routes with other references) and

Pecher (not many routes described). Or, for details of modern routes on the big peaks, see the issue of the *AAJ* for the following year).

Illampu-Ancochuma and Coocó Basin

(D.A.V. map 1:50,000, Cordillera Real Norte (Illampu))

Emma-Maria 5715m: 1-1950: S.W. face-1983.

Ancoma de Coocó 5612m: 1-1963. #

P.5582m: north-west of Illampu: 1-1963. #

Pico del Norte 6085m: 1-1928 via W. face, fairly difficult (ord.route): from S. via E.col & E. ridge-1969: S.E. ridge-1972: S. face-1973: S. face? (new route on 600 ice face)-1974: S.buttress, descend E. face by new route-1982.

Laramcota 5840m: adjacent to & E.of *Pico del Norte*: 1-1950: Traversed to col N.E. of peak-1971.

Gorra de Hielo 5700m: S.E. neighbour of *Pico del Norte*: 1-1969 via S. ridge: S. face direct-1972: E. ridge-1982: also N.W. ridge.

Huayna Illampu (*Yacuma* 5) 6056m: 1-1964 via W. face (ord.route): N.E. face-1971.

P.5400m: N.W. of *Pico Schulze*: 1-1986.

Pico Schulze (*Nevado de Cotaoca*) 5933m: 1-1928 via N.W. face (ord.route): E. face-1973: S.E. face-1987: S.W. face couloir, extremely difficult-1987.

Pico Esperanza 5716m: on *Pico del Norte* ridge: 1-1950.

P.5300m: on *Pico del Norte* ridge: 1-1950.

P.5250m: S. of *Pico Schulze*: 1-1964.

P.5910m: lovely snow pyramid adjacent to Illampu: 1-1971 via knife-edge W. ridge.

Illampu (*Sorata*) 6362m: 1-1928 via W. face (ord.route): W. face variant-1951: S.W. face, 1000m, 500- 600 for first two-thirds-1967: S. ridge-1969: E. face, 1st, 2nd & 3rd pillars-1973-5: E. face, *Luxto spur*-1983: S. face-1983: N.W. face, left side-1983: N.W. face, far right side, to join S.W. ridge at c.6060m-1984: E. face, left of *Mesili's* 1975 buttress (V,600 ice) & descent left of this route over unknown terrain-1986: S.W. face, left of German route, which was joined in upper part-1986: S. face, left side, 450-600-1986: N. peak, W. face-1991: Main peak, W. face (2 routes)-1991.

P.5500m: 3 km due E. of Illampu: 1-1973.

P.5830m: E. of Illampu: 1-1964.

Cunotahua 5981m: 4 km N.E. of *Ancochuma*: 1-1966.

Cunotahua II 5882m: east of *Cunotahua*: 1-?: N.E. ridge-1972.

Nevado Yacuma (*Yacuma IV*) 6050m: 1-1969: W. ridge-1983 (see *AAJ*, 26 (1984): 212).

Collo Huichinca (*Yacuma I*) 5970m: southernmost of four *Yacuma* peaks: 1-1969 via N.E. face on good granite.

Mamaniri 5970m: difficult peak: 1-1969.

Yacuma II 5955m: 1-1969.

Yacuma III 5630m: 1-1969.

Yacuma Aguja 6005m: 1-?: N.W. buttress, 1200m, rocky crest, ice ridge & seracs, ice triangle below summit-1985.

Kanaazul 5600m: 1-1977.

Llhirini 5970m: 1-1969.

P.5900m: 'West' peak of *Ancochuma* massif: 1-1967 during traverse of whole *Ancochuma* massif from W.- E.

Ancochuma 6427m: 1-1919 via S.W. face (ord.route): N.W. flank-1922: N.W. ridge-1950: W. ridge-1964: Traversed W.- E.-1967: S.S.E. ridge-1968: S.W. face direct-1970: N.E. face, W. pillar-1970: Traverse S.E.- N. ridges-1974: N. ridge-1977: N.E. pillar, 1000m-1978: N.E. face, central pillar, 1200m: W. ridge (new route)-1983.

Haucaña 6206m: 'Central' peak of Ancohuma massif: 1-1919: Traversed on way to Ancohuma-1967: E. Buttress-1974: S. ridge, steep-1974: E. buttress-1974: From S.W.-1986: W. face, 45ø- 50ø-1986.
Arichiri 5882m: first major peak S. of Ancohuma: 1/2-1964.
Suça Uñyaña II 5670m: 1-1977.
Suça Uñyaña 5542m: 1-1977.
Vista Alegre 5200m: 1-1977.
P.5960m, P.5970m: N.W. of Haucaña: 1-1986.
Piràmide 5906m: S.W. of Haucaña: 1-1986.
Lloca de Ancohuma 6057m: a huge flat summit S.E. of Ancohuma, along ridge: 1-1966 via traverse from Quimsacollo: From col between this peak and Ancohuma-1968.
Quimsacollo 5893m: S.E. of Ancohuma, beyond Lloca de Ancohuma: 1-1966 via traverse north-westwards: N. ridge-1972.
Piràmide c.5500m: 1(?) -1972 from S.E.
Pico DYM ('Dios y Montaña') 5791m: on ridge S.E. of Quimsacollo: 1-1968.
Chuyma Chiara 5578m: 1.6 km E. of Pico DYM: 1-1968.
Buena Vista I 5548m: 1(?) -1972 via N.W. ridge.
Buena Vista II 5548m: 1(?) -1972 via S.E. ridge.
Ancopiti I 5867m: 1-1964 #: S.E. ridge-1972: N.W. face, centre, 55ø- 60ø-1986.
Ancopiti II 5818m: S. face-1969.
Ancopiti III 5770m: 1(?) -1972 via N.E. gully & face, and E. ridge.
Ancopiti IV 5918m: 1-1964 #: W. face-1972.
Asjaraña (Ancopiti V) 5839m: imposing rock tower culminating in sharp, triangular tooth of ice with cornices: 1-1969.
Ancopiti VI 5772m: 1(?) -1972 via N.E. gully & face, and E. ridge.
Ancopiti VII 5850m: 1-1964 #: N.W. face-1972: N.E. ridge, descend S.W. ridge-1972.
Haltatahua 5599m: 1-1966: S. flank-1972.
Taparacu 5751m: 1-1964.
Macataiña 5618m: 1-1966: N. ridge-1972.
Pico de la Linea 5608m: 1-1966.
San Pablo 5677m: 1-1966.
Corona Ocaja 5451m: on ridge running E. from main Viluyo ridge: 1-1966.
Collo de Llinqui 5525m: on ridge running E. from main Viluyo ridge: 1-1966.
Yapuchanani 5521m: 4th peak S. of Viluyo I: 1-1966.
Viluyo I (Viluyo Jancouma) 5638m: 1-1928: W. face-1972.
Viluyo II 5605m: 1-1964 #: N.E. ridge-1972.
P.5578m: S.E. of Viluyo 3: 1(?) -1972 via N.W. ridge.
Viluyo III 5593m: 1-1964 #: N.W. ridge-1972.
- see note below.

Peaks between Ancohuma and Condoriri

(a) Main ridge

Tri ngulo (Punta Norte) 5671m: 1-1966: S. face-1972.
Mesquetanta 5627m: immediately N. of Casiri Este: 1-1966 via N.W. face?: N. flank-1972.
Chamacahua 5727m: immediately N. of Casiri Este: 1-1966.
Casiri Este (Grande) 5946m: 1-1966 via S.E. face: W. face & S.E. ridge-1972.
Nevado Casiri 5828m: 1-1928: S.W. ridge-1990.
Casiri Norte c.5791m: a point on Casiri ridge: 1-1964.

- Casiri Aguja c.5791m: a point on Casiri ridge: 1/2-1964.*
Casiri Chico 5242m: 1-1962.
Nevado Calzada 5874m: 1-1962 via N.W. face, up steep icy gully.
Calzada II 5727m: 1-1962, snow & rock route.
Calzada III 5724m: 1-1962, steep ice face.
P.5626 (Calzada group): 1-1962.
P.5621 (Calzada group): 1-1962.
Verity (Verity Rock) 5215m: 1-1962.
Nevado Chearoco 6118m: steep glaciers & deep crevasses, even steeper above: 1-1928 from W. (ord.route): E. face (680m,55ø)-1973: S.E. face, S.E. ridge-1987.
P.5700m: N. of Quelluani: 1-1962.
Quelluani 5828m: between Chearoco & Chachacomani: 1-1964 via ridge from Chachacomani glacier.
Yaritagate c.5800m: W. of west Chachacomani glacier: 1-1964 from the glacier. #
Patapatani 5452m: 1(?) -1976: W. face-1983: S. ridge-1983: N. ridge-1987.
Thojo Loma 5174m: adjacent to Patapatani: 1?-1985 from north.
Wila Wilani 5358m: 1(?) -1976.
Chachacomani (Chisel Peak) 6074m: 1-1947 via S. face, E. pillar (ord.route): N. face,900m-1973: Via Chachacomani glacier & S.W. ridge-1976: Traverse from Chachacomani West-1983: S.E. buttress,70ø ice, 5.7 rock-1989: N.E. ridge & traverse to S.W. summit-1989: E. ridge, traverse to N. face-1989.
Chachacomani Sur (Oeste) 6058m: 1-1964: Traverse W. ridge-E. ridge-1983.
Jachcha Jokho 5192m: 1-1983 by traverse N.E. - S.W.
Jachcha Kkollu 5298m: 1-1983 by traverse N.E. - S.W.
Jayllahuaya Kunka 5300m: 1-1983 by traverse N.E. - S.W.
P.5260m: Western outlier of Jayllahuaya Kunka: 1-1983 from Jayllahuaya Kunka.
Jachcha Thojo 5358m: 1-1983 via E. ridge.
P.5750m: western outlier of Chachacomani: 1-1983 via E. ridge.
Himaciña 5830m: 1-1983 via N. ridge.
P.5270m, P.5250m, Huarisepitaña 5314m: 1-1983 by traverse southwards.
P.5250m, P.5200m: west of Mollo Pass: 1-1983.
P.5300m: N. of Janko Laya: 1-1983 & traverse N. over 2 more summits to Potrero.
'Dambil Bamba' 5510m: S.E. of Himaciña Pass: 1-1983 via W. face & S. ridge.
P.5225m: 1-1983 from north.
P.5252m: right-hand of two peaks shown on map as Himaciña: 1-1983 from north.
P.5340m: 1-1983.
Potrero 5100m: 1-1983 via N.W. face.
Huari Umaña 5264m: 1-1983 via S.S.W. ridge.
Jakocire 5540m: 1-1983 via N. ridge.
P.5810m: snow dome N.W. of Chachacomani: 1-1983 via S. slope & E. ridge.
Vinohuara I 5600m: 1-1964. #
Vinohuara II 5638m: highest in Vinohuara group: 1-1928.
P.5791m: follows Vinohuara I: 1-1964. #
P.5812m: follows P.5791: 1-1964. #
Haillaguaga I 5940m: S.W. of Vinohuara peaks: 1-1964. #
Haillaguaga II 5828m: 1-1964. #
Haillaguaga III 5837m: 1-1964. #
Haillaguaga IV 5578m: 1-1964. #

*N.B. Haillaguaga peaks also referred to as Haullaya Laurani I-IV.
- Peaks first climbed by 1964 Japanese expedition.*

(b) Negruni peaks east of Chearoco

Huaruseuta (Waruseuta) 5360m: 1-1962.

Negruni Ia 5406m: 1-1962.

Negruni Ib 5393m: 1-1962.

Negruni II 5365m: 1-1962.

Negruni III 5362m: 1-1962.

Sihuaillusa 5591m: 'Weisshorn-type' peak with steep, fluted ridges: 1-1962 via S.E. ridge.

Dome 5643m: 1-1962.

Dome II (Nev. Dçmine) 5706m: 1-1962: S.E. face-1989.

Dome I 5605m: 1-1962.

Rumca V 5401m: 1-1962, ridge climb.

Rumca IV 5410m: 1-1962.

Rumca III 5410m: 1-1962.

Rumca II 5410m: 1-1962.

Rumca I 5449m: 1-1962.

(c) Peaks around Lago Jankho Kkota, mostly on west side of main ridge

Janco Huyo 5512m: 1?-1983 via S.E. ridge: S.E. face-1983.

Janco Laya 5545m: 1?-1983 via N.W. glacier.

Torre Aimara c.4800m: fine rock tower: 1-1983.

Nevado Apachita Cuno c.5600m: 1-1983 via N.W. glacier.

Wila Lloje (Huilaroje, WKE 16) 5596m: 1-1970: E. ridge, descend N.W. ridge-1973: N. face & E. ridge-1975: S. face-1976.

Pacokeuta (RAK 18) 5590m: 1-(cairn found): N.W. face-1971.

Jankho Huyo (RAK 13, WKE 22) 5573m: 1-1970: S.W. face-1971: S. face-1975.

Jiskha Pata (RAK 10) 5569m: 1-1971 via S. face: S.E. face-1975.

Wila Jiskha Pata (WKE 27) 5310m: 1-1973: N.W. ridge, descend S. spur-1975.

Jankho Laya (Jancoracaya) 5545m: 1-1970: Traverse Jankho Laya group N.W. - S.E. -1973.

Warawarani 5542m: 1-1975 via E. face.

Negruni (WKE 10) 5468m: 1-?

Catanani (BAE 13) 5468m: 1-1969 via S.E. ridge: S. rib (rotten rock) to S. snow ridge-1984.

Ventanani (WKE 14) 5428m: 1-1973 by traverse W. - E.

Jachapata (Huachapata, RAK 12) 5424m: 1-1970: N. face-1971.

P.5400m: 1-1970

Jalli Huakunka 5392m: 5 1/2 km N.W. of Mollo Pass: 1-1973.

Culin Tojo (Crinotoj, RAK 2, WKE 3) 5368m: 1-1970: N. ridge-1971: W. face-1975.

Mullu Apacheta (WKE 2) 5368m: 1-1973 via S.W. ridge.

Waira Apacheta (WKE 21) 5320m: 1-1973.

P.5304m: near Wila Llojeta: 1-1967.

Wila Llojeta (Huillallojeta, RAK 5, WKE 26) 5244m: 1-1970: S.S.W. ridge-1971.

Potrera (Potrelcuchu) 5200m: 1-1970.

Kenasani Apacheta 5108m: 6 km N.E. of Mollo Pass: 2-1973 by traverse S.E. - N.W.

Purapurani Thojo 5416m: 1-1984 via N.E. ridge connecting peak to P.5342.

P.5342m: 1-1984 via N.W. rock ridge.

P.5398m: 1-1984 via N.E. ridge.

- P.5450m (BAE 1): 1-1969 via E. face & N.E. ridge.*
P.5396m (BAE 3): 1-1969 via S. face & S.W. ridge: S. snow ridge-1984.
P.5340m (BAE 12): 1-1969 via N.E. ridge.
P.5450m (BAE 14): 1-1969 via E. ridge.
P.5398m (BAE 15): 1-1969 via W. side.
P.5410m (BAE 16): 1-1969 via W. side.
P.5360m (BAE 17): 1-1969 via S.S.E. ridge.
P.5240m (BAE 18): 1-1969 via N. face.
P.5310m (BAE 19): 1-1969 via N.W. ridge.
P.5320m (BAE 20): 1-1969 via S.E. ridge.
P.5465m (BAE 21): 1-1969 via E. ridge.
P.5468m (BAE 22): 1-1969 via S.E. ridge.
P.5426m (BAE 23): 1-1969 via S.E. ridge.
P.5240m (BAE 24): 1-1969 via S. ridge.
P.5280m (BAE 25): 1-1969 via N.W. ridge.
P.5560m (RAK 1): 1-1971 via E. ridge.
P.5340m (RAK 3): 1-1971 via N.W. ridge.
P.5346m (RAK 4): 1-1971 via S.W. ridge.
P.5200m (RAK 6, WKE 25): 1-1971 via W. ridge.
P.5340m (RAK 7): 1-1971 via S. face.
P.5250m (RAK 8): 1-1971 via W. ridge.
P.5500m (RAK 9): 1-1971 via S.E. ridge.
P.5540m (RAK 11): 1-1971 via N. face.
P.5520m (RAK 14): 1-1971 via S.E. ridge.
P.5470m (RAK 15): 1-1971 via N.W. ridge.
P.5468m (RAK 16): 1-1971 via E. face & traverse to P.5570.
P.5570m (RAK 17): 1-1971 via N.W. ridge.
P.5570m (RAK 19): 1-1971 via W. face.
P.5620m (RAK 20): 1-1971 via S.E. face.
P.5604m (RAK 21): 1-1971 via S.E. ridge.
P.5660m (RAK 22): 1-1971 via N.W. ridge.
P.5620m (RAK 23): 1-1971 via S.W. ridge.
P.5620m (RAK 24): 1-1971.
P.5300m (WKE 1): 1-1973 via N.W. face.
P.5385m (WKE 4): 1-1973.
P.5480m (WKE 5): 1-1973.
P.5503m (WKE 6): 1-1973 via N.N.E. rock face.
P.5550m (WKE 7): 1-1973 via E. ridge.
P.5580m (WKE 8): 1-1973.
P.5460m (WKE 9): 1-1973.
P.5420m (WKE 13): 1-1973 by traverse W. - E.
P.5410m (WKE 15): 1-1973 by traverse W. - E.
P.5575m (WKE 17): 1-1973.
P.5575m (WKE 18): 1-1973 by traverse S. - N.
P.5340m (WKE 28): 1-1973.
Unnamed peaks climbed by Upper Austria expedition:
P.5300m: 1-1973.
P.5330m: Jankho Laya group: 1-1973 by traverse N.W. - S.E.

- P.5480m: 1 1/2 km N. of Jiskha Pata: 1-1973.*
P.5260m: 2 km N.E. of Jiskha Pata: 1-1973.
P.5420m: Jankho Laya group: 1-1973 by traverse N.W. - S.E.
P.5350m: Jankho Laya group: 1-1973 by traverse N.W. - S.E.
P.5080m: 1-1973 by traverse S.E. - N.W.
P.5400m: 5 km N.E. of Chachacomani: 1-1973 by traverse W.- E.
P.5370m: on ridge 5 km N.E. of Chachacomani: 1-1973 by traverse W. - E.
P.5360m: on ridge 5 km N.E. of Chachacomani: 1-1973 by traverse W. - E.
P.5360m: on ridge 5 km N.E. of Chachacomani: 1-1973 by traverse W. - E.

Chekapa group, west of main ridge

- P.5360m (BAE 2): 1-1969 via W. face & S. ridge.*
P.5250m (BAE 4): 1-1969 via S.E. side.
P.5450m (BAE 5): 1-1969 via S.E. ridge.
P.5360m (BAE 6): 1-1969 via W. face.
P.5350m (BAE 7): 1-1969 via S. ridge: W. face & N. ridge-1969.
P.5300m (BAE 8): 1-1969 via S.E. ridge.
P.5290m (BAE 10): 1-1969 via W. side & N. ridge.
P.5270m (BAE 11): 1-1969 via W. face.

Condoriri group

- (I.G.M. map 1:50,000, Sheets Lago Khara Khota, Peñas, Zongo, Milluni).*
Kalhuani 5492m (2 tops): 2 km N. of Condoriri: 1-1974 via middle of S. face to col between the two summits, both of which were climbed.
P.5300m: 1-1964. §
Pico Eslovenia 5381m: 1-1964. §
Pico Medio 5355m: 1-1964 via N. ridge? §
P.5395m: 1-1964. §
P.5380m: 1-1964. §
Pico Reya 5495m: W. of Yugoslavia: 1-1964. §
Pico Yugoslavia 5505m: N.W. of Condoriri: 1-1964. §
P.5400m: 1-1964. §
P.5280m: 1-1964. §
Dolgi Hrbet 45175m: 1-1964. §
P.5225m: 1-1964. §
P.5300m: 1-1964. §
Ala Norte (Huallomen, Condoriri West Peak) 5532m: northern Ñwing' of Condoriri: 1-1963 from col between west & main Condoriri peak, up knife-edge, corniced E. ridge: E. top from W. -1969: W. ridge-1970?
Condoriri 5648m: ice, glaciers, steep eroded rock walls: 1-1941 via S. ridge: S.E. ridge-1967: S. face direct-1973: N.W. face-1974: E. face to col at 5000m-1975: S.W. ridge & traverse to N.E. summit-1976: S.E. face direct-1981: W. face, northernmost couloir to top of southern spur-1989: W. face left of foregoing & new route to S.E. spur-1989.
Ala Sur 5482m: southern Ñwing' of Condoriri: 1-1964. §
P.5400m: next to Condoriri: 1-1974 from col leading to Condoriri.
P.5400m: 1-1974 via W. face.
Wyoming (Huallomen) 5463m: 1-1964 §: E. ridge-1976.
Tarija 5060m: 1-1959: Traverse on way to Fabulosa-1962.

Pequeño Alpamayo (Fabulosa) 5370m: 1-1962 via sharp, corniced N.W. ridge from Tarija: E. ridge & traverse-1976.

P.5320m (Innominado): 1-1964. §

Diente 5200m: 1-1964. §

Piràmide Blanca 5230m: 1-1964 §: S.W. face-1989.

Ilusioncita 5150m: east summit of Ilusiçn: 1-1962 via hanging glacier to saddle & unstable snow ridge.

Ilusiçn 5330m: a fine prominence of rock and snow on top of an ice dome: 1-1962.

Aguja Negra (Independecia Mexicana) 5290m: 1-1960: W. face to notch, cross to N.E. face, fairly easy-1962: S. ridge-1972: S.W. ridge & traverse-1976.

P.5250m: 1-1964. §

Titicaca c.4968m: 1-1963.

§ - see note below.

Huayna Potosj group

(I.G.M. map 1:50,000, Sheets Milluni, La Paz (Norte), Chojlla, Palca).

Condoriri Chico c.4877m: 1-1963.

Chico Adios c.4877m: 1-1963.

Teta c.4877m: 1-1963.

Campanilla c.4877m: 1-1963.

La Ola c.4877m: 1-1963.

Hichucota 5400m?: 1-1928.

Maria Lloca (Mamailloca) 5530m: 1-Probably local miners.

Nevado Huayna Potosj (Cacca Aca) 6094m: 1-1919 via E. face (ord.route): E. face var-1939: S.E. ridge-1959: S. face-1964: W. wall of south peak (Milluni)-1967: W. ridge-1969: W. face, left-hand route,1200m-1970: N. ridge, N.W. ridge-1971: S.E. ridge-1973: E. face-1973: N.E. ridge-1974: W. face, right-hand route,1100m-1975: Pico Milluni S. face, S. ridge-1979: Yugoslavian W. face route?-1983: W. face, spur on right side-1989: W. face, central direct-1989: W. face (righthand side)-1990: E. face (between ord./French routes)-1990.

--Pico Norte 6120m: 1-?

--Pico Mesili: 1-1978?

--El Triangulo 6096m: 1-1972

Tiquimani Oeste 5590m: 1-1940 by difficult rock-climb from north, unroped.

--Central (lowest peak): 1-1963 Bolivians: South African ice wall climb on central peak, very challenging: S. face (steep gully & ridge)-1990.

--Este 5550m: 1-1963.

Fraternidad 5050m: may be same as Cunatincuta Chico: 1-1964. §

Cuticucho (Hichuloma) c.5100m: 1-1953.

Mamancota 5200m: rock peak between Ayllaico & Cuticucho: 1-1952?

Ayllaico 5300m: 1-1944 (1940?):

Cunatincuta c.5500m: 1-1946 from south: Crevassed W. face, descend rocky N. ridge-1967.

Cunatincuta Chico c.5400m: 1-1960. §

Chacaltaya 5380m: Ski lift, hut and observatory on this peak. Highest ski run in the world.

Alhuayco 5295m: 1-1975 via S. ridge.

§ - All these peaks were climbed by members of a Yugoslavian expedition. The only account (with map) appears in the journal of the Mountain Club of Slovenia, Planinski Vestnik, n.4 (1965): 155-87

including 2-page summary in English. Brief summary in *AAJ*, 15 (1966): 182.

South of Huayna Potos; (Zongo Pass)

(I.G.M. map 1:50,000, Sheets Chojlla, Palca, Chulumani, Lambate; D.A.V. map 1:50,000, Cordillera Real Sur (Illimani)).

Charquini 5392m: 1(?) -1973 from Zongo Pass and N.E. glacier.

Charquini Norte 5310m: east of Alhuayco: 1-?: N. ridge-1975.

Huiyata 5092m: 1-?: S. ridge-1975.

Grincuni 5050m: 1-?: S.E. spur-1975.

Telata 5336m: 1?-1976 from W.

Khalla Cruz 5200m: 1 1/2 km S.W. of Zongo Pass: 1(?) -1973 via N. slopes: N. buttress-1975: N. ridge-1976.

Aniversario 5258m: northernmost peak in Hampaturi range, steep on all sides: 1-1969 via large couloir S.W. of peak, traverse N.W., up steep snow to rock pitch (V), easier to summit.

Coronado 5305m: 1-1950?

Chicani 5435m: 1-1950: S. ridge-1967: W. ridge-1967.

San Calixto c.5300m: 3 km S.E. of Chicani: 1/2/3/4-?: 5-1967.

Taquesi 5600m: 1-c.1915.

Mururata 5775m: easiest big peak in Cordillera Real, interesting buttresses on unexplored N. face: 1-c.1915, probably via W. face: S.E. spur, 1000m, last third very difficult, especially summit slope-1972: S. face, central pillar, 950m-1974: E. face buttress, 1000m-1977: S. face couloir, 540m to point just left of summit, 60ø- 70ø with 2 vertical pitches.

Pico Italiano 5400m: 1-1977.

Illimani (Sur) 6402m: 1-1898 from S.E.: W. flank-1940: Traverse all summits S. - N.-1968: S. face-1974: N.E. ridge-1977: Entire range traversed from south (Atahuallani)-1979: S.W. ridge-1983: W. face direct-1988 (other lines done on this broad face): Ordinary route, prominent ridge in centre of S.W. face.

--North peak 6380m: 1-1950: Traverse all summits N. - S.-1969: N. ridge-1969: S. face-1973: Left of ridge-1979: W. ridge, 1800m-1984: Ordinary route via W. ridge or 10 km further north.

--Central peak 6280m: 1-1950: W. face-1973. Can be reached from col on S. peak route.

--Pico del Indio:

--Piràmide de los Dioses: 1-1978 S. face.

--Piràmide Sanchez-Mesili: 1-1972 S. face.

Calahuyo 5490m: 1-1965.

Eastern side of range: Pupusani-Kasiri group: See *AAJ* 25 (1983): 204.

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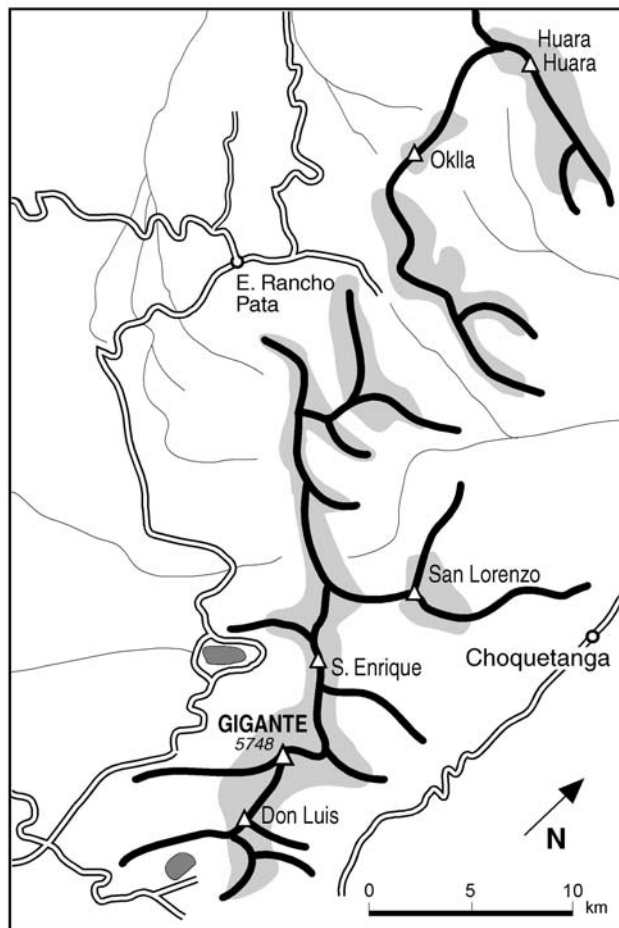
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Cordillera de Quimsa Cruz (Tres Cruces)
(Locally referred to as the southern Cordillera Real)

Map showing Cordillera de Quimsa Cruz, Bolivia



Scenically, this range resembles southern Peru. Its charm lies in its glaciers, in the bold forms of its peaks, and in the countless deep blue or dark green mountain lakes. On its eastern flank lie mist-laden forests, through which one can descend in a few hours from the regions of eternal snow to the upper tropical valleys of the Yungas. It is an attractive goal for a small party.

The range, which is about fifty kilometres long, consists principally of one crest running from north-west to south-east. North of the Salvadora Pass, the crest is less well defined. This is sometimes referred to as the Araca Group, or northern extension of the Cordillera de Quimsa Cruz. South of the pass, some peaks stand on lateral spurs either side of the main crest, or are entirely separated from it. The principal independent group is situated north of the big Lago Chatamarca, east of the main crest; this chain is sometimes referred to as the Choquetanga group, after the name originally applied to the main summit. Approaches to all parts of the range are reasonably good as there are numerous mines in the area.

The northern Araca group is geologically different from the rest of the range, being composed of granodiorite, giving rise to peaks not unlike the Mont Blanc aiguilles. Glaciers are not a serious problem here but snow conditions on the peaks can vary considerably. All the climbing consists basically of rock and ice problems. The higher peaks of the southern part of the cordillera carry more

snow and are better known than those to the north. Heights of peaks in the range are now taken to be c.150-200m less than quoted in older reports.

The first recorded climbs were made by Henry Hoek in 1903/4. T. Herzog and C. Seelig ascended several of the main summits in 1911, while others were climbed by J. Prem and companions some 20-30 years later. The bold rock tower of El Yunque was climbed as early as 1915, one of the party being A. Schulze, famed for his first ascent in 1903 of Ushba in the Caucasus. After 1939 there were no more ascents for another thirty years. Various parties operated in different parts of the range in the 1960's and 1970's, including two quite large expeditions from Japan and Italy. In 1987 a German expedition from Bayreuth opened up many climbs in the Araca Group (see expedition report by Hermann Wolf).

A fair amount of confusion in the matter of nomenclature has arisen over the years, with some expeditions possibly claiming the same peaks under different names. Since the original sketch-map published by T. Herzog there have been half a dozen or more sketches of various parts of the range, giving rise to a number of puzzles. The listing given below is primarily based on the latest one seen (Pyrenaica, n.162 (1991): 215).

Northern (Araca) extension

(I.G.M. map 1:50,000, Sheet Araca).

(a) Mama Ocello Group

Cerro Waillani 5193: north of Mama Ocello group: 1-1987 via 45° S.E. gully. #

P.5110m: northerly peak in northern Taruj Umaña valley: 1-1987 via S.W. face (V+); S. face (IV+)-1987; W. ridge-1987. #

P.5010m: north-east of pass into Castaga valley: 1-1987 via W. ridge. #

Cerro Taruj Umaña 4852m: 1?-1987 via N.E. edge (IV), a big slab: N.- S. traverse-1987 #: E. face-1991.

P.5021m: 1-1987 via 45° S.W. ice gully: N. ridge-1987. #

Cerro Torrini 5131m: 1-1987 via E. face, S.E. ridge (III/IV). #

Cerro Calsonani 5124m: 1-1987 via W. face (VI-). #

--Calsonani Sur 5050m: 1-?: E. ridge-1991.

Nuevo Zongo 5050m: central tower south of trig. point 5104: 1-1987 via W. flank (IV): N. ridge (VI-)-1987. #

--2nd tower of W. ridge of Central Tower: 1?-1987 via W. ridge (V). #

P.4800m: west of P.5050: 1-1987 via N. ridge. #

P.5104m: trig. point west of Mama Ocello: 1?-1987 via N. ridge. #

Nevado Mama Ocello (Puntiagudo) 5281m: 1-1987 via W. flank, S. ridge (II/V): N.W. pillar (V/VI)-1987. #

P.5050m: between P.5145 & P.5124 on Mama Ocello: 1-1987 via N.- S.traverse: N. ridge-1987. #

P.5000m: 1st Mama Ocello tower: 1-1987 via N. flank (III/IV). #

P.4950m: 2nd Mama Ocello tower: 1-1987 via N.W. face (V+). #

P.4900m: 3rd Mama Ocello tower: 1-1987 via S.W. flank (IV). #

P.4900m: 4th Mama Ocello tower: 1-1987 via W. flank. #

Torrini Chico 'First Wall' 4700m: 1?-1987 via W. -E.traverse: E.N.E. face (IV-V)-1987: N. face (VII)-1987.

Torrini Chico 'Big Wall' 4890m: 1-1987 via N.E. ridge (III/IV+): N.W. face (VI/VII)-1987: N.W. face, another route (IV)-1987. #

P.4900m: 2nd ridge tower on linking ridge between 'Big Wall' and Cuernos de Diablo: 1-1987 via N.W. pillar (V+). #

Cuernos de Diablo 5271m: 1-1987 via N.W. face (VI-): N.N.W. face (VI,A2)-1987. #

- see note below.

(b) Rest of Araca Group

P.c.5030m: box-like tower, 2nd summit on ridge N.W. of Cerro Torrini: 1-1990 via N.E. face.

P.5297m: central tower of the Three Towers: 1-1987 via S. flank, 45ø, ice. #

P.5304m: N.E. tower of the Three Towers: 1-1987 via W. ridge. #

Cerro Torreni de Catalina 5280m: 1-1969. by BAE party via S. side.

Piedra de los Incas 5350m (5200m?): 3km E. of Torreni de Catalina: 1-1968.

Agujón 5400: on spur E. of Yunque: Ascent in 1969 to within 15m. of top via S.W. ice face & S.E. ridge.

Grupo de los Enanos ('Dwarfs') c.5300m: four peaks:

El Yunque 5400m: bold rock tower: 1-1915:

Pusi Puntas 5400m?: 1-1968 via N. ridge.

Mountaineering in the Andes

Bolivia

Salvadora massif c.5200m: four peaks located just north of the Apacheta (Paso) Salvadora, which may be the following:

--P.5240m (BAE 27, Pico de Vientos): located east of Pusi Puntas: 1-1968: W. ridge-1969.

--P.5240m (BAE 29): 1-1969 via W. ridge.

--P.5250m (BAE 30): 1-1969 via W. ridge.

--Cumbre c.5185m: located at end of Pusi Puntas ridge above road to pass: 1-1968.

Trinidad 5200m: 1-1911 or possibly earlier by miners: Traversed with Cerro Bueno-1924.

Cerro Bueno: 1-1924 by traverse with Cerro Trinidad.

Pireo 5300m: 1-1911 or possibly earlier by miners.

Miscellaneous climbs: See AAJ, 34 (1992): 157-9.

- Ascents by members of German Bayreuth expedition: see Wolf report.

Main range

(I.G.M. map 1:50,000, Sheets Cairoma, Estancia Choquetanga, Mina Caracoles, Chico Yaco).

Chancapiña 5200m: rocky pyramid in group of three peaks: 1-1904:

--P.5200m:

--P.5200m:

P.5312m: located between Chancapiña & Inmaculado:

Inmaculado 5500m: 1-1911.

Torre Yaypuri 5566m: south of Inmaculado:

Nevado de las Virgenes 5600m: south of Torre Yaypuri & west of the Apacheta Bengala:

Yucu Collo 5215m: rock peak in Atoromachuma valley, west of main crest: 1-? by surveyors: N.E. gully-1989.

P.5400m: located between Yucu Collo and P.5500 on main crest:

P.5500m: on main crest east of Yucu Collo:

P.5500m (Tochigi): west of northern end of Lago Chatamarca: 1-1968.

P.5580m (Nikko): west of Lago Chatamarca: 1-1968

P.5550m (Shimotsuke, San Enrique): located west of southern end of Lago Chatamarca: 1-1968.

Cerro Chamacani c.5200m: a square rock block, as seen from the lake, on W. bank of Lago Chatamarca, crowned by long ridge of towers & needles: 1-1990 via N. side.

Atoroma 5480m: 1-1928: S.W. snow ridge-1982.
U/n (S.W. of Atoroma) 5800m: ascent in 1976 by Japanese women.
Torre 5300m: located east of Nev. Atoroma:
U/n (2nd peak on ridge running S.E. from Ndo. Atoroma to Gigante Grande, San Enrique?) 5600m: 1?-1982 via N.W. snow ridge.
Pir mide de Atoroma (3rd peak on ridge running S.E. from Nev. Atoroma to Gigante Grande) 5650m: 1?-1982 via western snow slope.
Apacheta 5250m: south of Mina Atoroma: 1?-1982 via N. rock ridge.
Cerro San Enrique 5555m: N.W. of Nina Collo group: 1?-1968: S. face, 55ø+, descent via steeper N.W. face-1980.
Nevado San Pedro 5590m: south of San Enrique: 1?-1987 via forepeak 5550m, E. ridge: N. ridge (IV)-1987: West peak 5500m via N.E. 45ø ice gully-1987: W. ridge-1987: Forepeak 5500m via E. ridge.
Ninacollo Grande 5352m: 1-pre 1946: W. ridge-1987: S. face, nearly all ice-1990.
Nina Ccollu Chico 5149m: 1-?: W.- N. traverse-1987.
Jancolampa (Hancolampa) 5480m: N.E. of Mallachumacollo: 1-1974 via S.W. ridge.
Mallachumacollo c.5700m: N.E. of Jihuaña: 1-? (cairn found): S.face-1974: E. slope-1974. May be the same as P.5800 claimed in 1976 by Japanese women's expedition.
Leñ Jihuaña/Jihuata (Torre Jihuaña) 5680m: west of Mallacuchucollo: 1-1952?: E. buttress-1974.
San Francisco 5400m: two peaks west of León Jihuaña:
El Gigante (Gigante Grande) 5748m: 1-late 1940s by Bolivian climbers: W. face & S. ridge attempted twice to within 300m of top in 1964: W. ridge-1974.
Gigante Chico c.5555m: 1-1964: N.W. face, N. ridge-1974.
Cometa 5200m: 1-1911 or possibly earlier by miners. May be same as Gigante Chico or on same ridge.
Cotacuchocollo c.5600m: N.E. of Gigante Grande: 1-1974 via E. ridge.
Grupo de Jacha Pacuni 5300m-5400m: four peaks east of Cotacuchocollo and well east of main crest:
Cerro Laramcota Chico 5380m: S.W. of Atoroma mine: 2-1985.
Princesa Blanca (Sofia): east of Gigante Grande:
Jacha Pacuni 5560m: south of Princesa Blanca:
P.5500m?: S.E. of Jacha Pacuni:
Jacha Caupiroja 5580m: south of Jacha Pacuni:
Jachacunocollo 5800m: Reached shoulder 20m below top-1911: 1-1939.
Huaynacunocollo (Grillo) 5640m: S. of Jachacunocollo: 1-1939.
Piroja (Arque) 5440m: west of Huaynacunocollo:
San Luis 5620m: long narrow corniced summit ridge of ice, south of Huaynacunocollo: 1-1982 from N.W.: N.E. side-1991.
Coricampana Alto 5400m: S.E. of San Luis:
Ancocollo 5460m: fine ice dome north of Nev. San Juan: 1-1989 via S. ridge & glacier.
Cerro Colorado (Yanaloma) 5280m: W. of Ancocollo on main crest: 1-1983.
San Juan (Altarani) 5540m: 1-1938 from west. Also via N. ridge.
Coricampana Sur 5200m: bold pyramid east of Nev. San Juan, southernmost of 3 peaks of same name: 1-1989 via W. ridge.
Cerro Mamani 5400m: 1?-1939.
Don Luis 5360m: E. of Lago Huallatini, N. of Mina Monte Blanco: 1-? by miners (cairn found).
Pusi Cote 5260m: west of Don Luis:
Vila Collo 5400m: southern end of range, west of El Aguila:

El Aguila 5400m: southern end of range, east of Vila Collo:
N.B. One of the two foregoing peaks is the Cerro Carnaval climbed by T. Herzog in 1911.
Choquetanga group (highest peak used to called Choquetanga): located N.E. of Lago Chatamarca, well east of the main crest:
--4 northernmost peaks 5300-5400m:
--Cometa de Oro 5400m:
--Nevado Yokokawa 5680m: 1-1968. Possibly same as Cometa de Oro.
--Nev. San Lorenzo (San Felipe) 5508m: 1-1968: S. ridge-1987: S.- E. traverse-1987: E. flank-1987.
Nevado San Felipe 5421: 1-1987 via S. flank.
Cerro Chamac Collo: 1-1990 via N.E. face, descend W. gully.
Nevado San Pedro 5590m:
--Yokokawa 5680m:
--San Felipe (San Lorenzo per 1987 German expedition) 5700m:
P.5500M: E.S.E. of San Felipe:
Ockruruni 5450m: may be German P.5420 'Cumbre de Amistad'.
Cerro Santa Rosa 5520m: 1-1991 via easy unstable N.E. side from Chocñota glacier.
Cerro Chamac Collo c.5350m: 1-1991 from N.E.: Via steep western gully-1991.
Cerro Chatamarca 5180m: attempted 1991:
Cerro Chamacani: long ridge with many pinnacles: See AAJ, 34 (1992): 157.

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Thellaeche, J. 'Viaje de exploración a la Cordillera de Quimsa Cruz', La Paz, *Revista de Andinismo y Excursion* no.6 (1983): 13-18.
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Cordillera Oriental (Southern peaks and ranges)

The first recorded exploration of that part of the Bolivian Cordillera Oriental which extends south-east from the Cordillera Real took place during the course of a journey lasting ten months in 1903-4, the work of a German geological expedition. The members of the expedition were Henry Hoek, G. Steinmann and Baron von Bistram. The party set out from the northern Argentine city of Jujuy in September 1903 and marched to Tarija in southern Bolivia. Here they made the ascent on 10 October of Cerro Campanario, an easy but laborious climb. Travelling north, Hoek next made the ascent ten days later of Cerro Liqui, a rock peak some 100 kilometres south of Potosí, which he described as having an interesting summit ridge covered with scree shining in the sun like snow. In November they

reached Potosí and explored the small range of rock peaks which lies six kilometres east of the town and runs south for fifteen kilometres, dominated by the central peak Cunurana (Anaroyo), which was easily climbed by Hoek. (The Cordillera Potosí is a range of unglaciated peaks with no permanent snow, and thus not especially interesting. In March 1956 Bolivian surveyors climbed several peaks and produced a good 1:100,000 map of the entire range, lowering previous heights by c.200m. Most of the nomenclature has been changed since 1903; the range was originally divided into the Cari-Cari and Anda-Caba groups). From Potosí the expedition continued north, passing through the city of Sucre, and arrived on 2 December in Cochabamba, which lies at the southern end of a larger and more interesting range, the Cordillera de Cocapata.

The Cordillera de Cocapata is a fine range of bold rocky peaks extending north-west for about 100 kilometres. The nearest peak to Cochabamba, and the best known, is Cerro Tunari, which was climbed in 1903 by Henry Hoek. The highest peak in the range is Incachaca, some fifteen kilometres north of Tunari. The whole area was surveyed in 1910 by Theodor Herzog, who climbed half a dozen peaks. A full account of his expedition, with map, is given in his book, *Bergfahrten in Südamerika*. However, Herzog did not climb Calacruz, a striking rocky peak. No report of an ascent of Calacruz has been traced but peaks in this range are apparently regularly ascended by local climbers nowadays.

From Cochabamba, Hoek and his companions rode north, arriving in the northern Bolivian town of Oruro in late December. After a brief rest they left Oruro on 4 January 1904, passing first through the small massif known as Sierra Santa Vera Cruz. This runs north-west for about twenty-five kilometres from the pass of Abra Ichoca to Abra Tres Cruces, which separates the range from the Cordillera de Quimsa Cruz. The massif, which is glaciated, rises to two beautiful peaks, Cerro Santa Vera Cruz, climbed in 1939 via the

north-north-west ridge by J. Prem, and the slightly lower Cerro Fortuna just to the north. Hoek's party next travelled through the Cordillera de Quimsa Cruz where Hoek climbed Chancapiña, a rocky pyramid overlooking the gorge of the La Paz river. Then they entered La Paz, thus ending their mountain exploration in Bolivia. There is a full and well illustrated account of their expedition written by Hoek in *Zeitschrift, D.Oe.A.V.* (see below).

Cordillera Santa Vera Cruz

Santa Vera Cruz 5600m: 1-1939 via N.N.W. ridge.

Cerro Fortuna:

Calacala 4800m: rock and scree peak (not on maps?): 1-1983.

Cerro Chupica 5100m: attempted 1990:

Cordillera de Cocapata

Incachaca 5230m: 1-1910.

Tunari 5204m: 1-1903: 2-1910.

Carapacheta 5100m: 1-1910.

Calacruz c.5100m: A Matterhorn-like tower, probably ascended by local climbers.

San Miguel 5050m: 1-1910.

Yuraccasa 5000m: in the Malaga massif: 1-1910.

Cerro Negros (Palcas) 4900m: 1-1910.

Viscachalani (Vintanani) 4860m: 1-1910.

Cordillera de Potos;

Cunurana (Anaroyo) 5056m: 1-1903:

Cari Cari (San Fernando) 5040m: 3-1985.

Hembra de Andacaba c.4900m?: 1-1903.

YatEncasa 5024m: 2-1985.

Puca Punta 5020m: 2-1985.

Cerro del Abra 4940m: 1-1985.

Yana Punta 4920m: 1-1985.

Isolated southernmost peaks

Cerro Liqui 5115m: 100 km S.E. of Cord.Potos;: 1-1903.

Campanario 5050m: S.W. of town of Tarija: 1-1903.

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----- 'The Cordillera de Potosi'. AJ, 23 (1906): 19-30.

Topographical Maps

Topographic maps of Bolivia are issued by the Instituto Geográfico Militar. The current series of the Carta Nacional de Bolivia are at 1:250,000 (Series H531), dating from 1967; and 1:50,000 (Series H731), dating from 1955. About half the sheets in each series have been published. The 1:50,000 map, in five colours, has 20-metre contour intervals. Some sheets are only available in the form of photocopies. Fine maps of the Illampu and Illimani areas of the Cordillera Real are published by the Deutscher Alpenverein.

Mountaineering and Other Organizations

Asociación de Guías de Montaña y Trekking, Calle Chaco 1063, Casilla 21217, La Paz.

Club Andino Boliviano, Calle México 1638, Casilla 1346, La Paz.

Club de Excursionismo, Andinismo y Camping, Casilla 3817, La Paz.

Departamento de Turismo, Avenida 16 de Julio 1440, La Paz.

Federación Boliviana de Ski y Andinismo, Casilla 1346, La Paz.

Instituto Geográfico Militar, Casilla Postal 7641, Gran Cuartel General, Avenida Saavedra final, La Paz.

Mountaineering Journals

Club Andino Boliviano, Informativo and Boletín de Ski y Andinismo.

Informativo. Mimeograph. No.1-1940. Monthly. No further details.

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N.B. The early issues of the Boletín are interesting but not easy to locate.

Also (publisher not known):

Revista de Andinismo y Excursión.

La Paz. No.6 (1983) No further details.