THE CHILEAN CORDILLERA CENTRAL

By Evelio Echevarria C.

The highlands behind Santiago and other cities of Central Chile are among the great mountain playgrounds of the world; within a strip of two hundred miles long by only thirty-five miles wide is comprised a well-defined region not unlike the Alps or the Caucasus, only on a grander scale. Being close to large cities, blessed by a pleasant Mediterranean climate, and displaying a large number and variety of rock and ice peaks ranging from 10,000 to 21,000 ft. high, it is no wonder that this region has great alpine activity. Nowhere else in the world on such high mountains does there exist such active mountain sport; the Himalayas and other Asiatic ranges are much higher, but they are visited sporadically by expeditions, while in the Andes of Central Chile peaks nearly as high as those of Asia are climbed repeatedly every season; in the Alps, the Caucasus, and the Rockies, mountaineering is far more active, but the peaks are much lower. Furthermore, there are still peaks to be climbed, glaciers to be explored, passes to be crossed, and the attraction of a five-month-long ski-ing season.

The accepted name for the region is Cordillera Central: it is located between 32° 30′ and 35° lat. S. As the international border runs along its crest, its eastern slopes fall into Argentina, while its western foothills are within a short distance of the outskirts of some of Chile's larger cities: Santiago, the capital, and Los Andes, Rancagua, and San Fernando, located on a basin lying between the low Pacific coastal range and the Cordillera Central itself. The whole region has been described by many as resembling the country around Innsbrück, but being favoured with a more benign climate, the resemblance may be well more Mediterranean or Californian.

The area has some historical interest; it was originally populated by a warlike race, the Araucanians, who were fierce enough to halt the advance of the Incas as well as to resist the onslaught of the Conquistadores for more than two and a half centuries. The physical peculiarities of the land, and the fiery character of its primeval defenders were aptly sung by a Conquistador poet-soldier, Alonso de Ercilla, in one of the first stanzas of his 'Araucaniad':

> Due north to south the coastline runs,
> Fronting along the west the Southern Main,
> Upon the east a range of cloud-capped peaks
> Shuts in the plainlands for a thousand leagues.
> Midway between the north and south is where

Our scene of war is set; here that fierce tribe
I speak of dwells. Mild Venus here no part
Has in men's lives; the only master is wrathful Mars.

The Araucanians held out against the Spaniards until they faced destruction and then took to the gloomy forests and fjords further south, near Patagonia. With the Spanish domination established, Indian names practically disappeared from the region, to the extent that today only four or five rivers and as many mountains bear Indian denominations; some Incan names also remain. The mating of the Spanish conqueror race with some of the Indian survivors produced a hardy type of adventurer, today still found represented by two characters, the ' arriero ', or herdsman, and the ' minero ', or miner, Both have left a wealth of legends and traditions still little explored.

The Spaniards established settlements not far from the foothills; mountain villages and, also, some important copper and silver mines, are located between 5,000 and 10,000 ft. above sea level. Water was never a problem, since it is obtained from streams or glacier-fed rivers. In spite of intense farming, carried on wherever possible on mountain land, forests are more or less well preserved in the southern part of the area; the timber-line does not reach higher than 7,000 ft.

Just above and below the tree-line can be found the most pleasant aspect of the Chilean country; with a particular appeal to Europeans because of its invigorating climate, its little poplars, cypresses and ' maitenes ' forests, clear water streams shadowed by willows and a background of sheer rock walls topped by snow banks. The slopes above the timber-line are rather bare, but in the bed of the upper valleys and in the sheltered ravines flourishes a gentle vegetation: blue gentians, violets, the beautifully arrayed bouquets of the stinging *Cajophora coronata* and the orange alpine nasturtium. By the vegas or grass-beds or by the springs and not far from the snows thrive gloriously the lemon-yellow pouches of the ' topa-topa ' (*Calceolaria paposana*), a most welcome sight for the eyes of the mountaineer weary of glacier glare. The most intensely admired, however, is the ' amancay ' or Dawn Flower (*Alstroemeria aurantiaca*), dear to Araucanian hearts, displaying pink bells under the shade of protective crags. This is a charming land indeed, with an intense appeal to natives of Alpine countries, who have settled in large numbers in Central and Southern Chile.

Important Peaks

To describe the different peaks or groups of peaks of the Cordillera Central is not easy, as they are confusedly arrayed; it will suffice to number and to describe some of the more striking or more representative ones, to obtain a general idea of the local topography.

The northernmost group of peaks is located north of Aconcagua river and is composed of scores of rock peaks averaging 15,000 ft. high, with small hanging glaciers; they are not very well known. Two outliers of the group, Espinazo del Diablo (13,510 ft.) and La Parva (15,620 ft.), offer an imposing sight to travellers on the Transandine Railroad and to tourists of the nearby Portillo ski resort, foremost in the Andes.

Between Aconcagua river and the Olivares glacier system rises the most abrupt group of peaks of the Cordillera Central; some of the wildest rock and ice walls are to be found in peaks like Nevado Juncal (20,046 ft.) and Nevado del Plomo (19,850 ft.), the two main points of the group. High as these peaks may be, however, they do not stir the admiration as their lesser but bolder neighbours do; Alto de los Leones and El Tronco, both just about 18,000 ft. high, are the most striking, resembling huge obelisks. But sometimes the mountaineer longs for the serene beauty of an ice peak and this is found in Potrero Escondido and Sierra Blanca, both 16,400 ft. high.

The so-called 'Santiago's Alpine background', composed of a dozen high peaks, can be included, although arbitrarily, in the same Juncal group. Soaring sixteen-thousand feet above the avenues of the capital are El Plomo (17,815 ft.), a massive ice dome, which, together with the lovely pair of La Paloma (16,175 ft.) and El Altar (17,130 ft.), can be seen to advantage from any point in the Mapocho valley, where Santiago lies; they are an unforgettable sight at sunset, when the clouds part and the setting sun tints cherry-red the snows and the rock cliffs.

Tupungato is the highest peak of the Cordillera Central; it is a dormant volcano, rising 21,490 ft. among scores of fine rock and ice peaks between 13,000 and 20,000 ft. The higher points of the group run along the international watershed and the most important of them are Alto (20,050 ft.), Marmolejo (20,013 ft.) and Piuquenes (19,685 ft.); but the lesser peaks around the giants deserve attention too, particularly Chimbote (17,815 ft.) and Aparejo (15,420 ft.), two of the many Chilean Matterhorns.

The best mountaineering in the whole area can be done in the Cortaderas group, formed by only a dozen peaks no higher than 17,000 ft., but with a complex system of ridges and rock and ice walls, ideal for daring climbing; this little group, undoubtedly the most popular among local mountaineers, is only five hours away by car from Santiago and has the advantage of a big hotel hut, built by Germans, on its southern slopes falling to the Volcán valley.

The peaks south of Volcán valley are the least known of Central Chile. Castillo (Castle Peak), one of the steepest of the area, almost 18,000 ft. high, is the highest and also one of the very few climbed. Many other peaks at the head of the Maipo river are believed to be unclimbable, because of their narrow and crumbling rock ridges; among

them, Catedral del Barroso, *ca.* 15,000 ft., and Picos del Bayo (16,076 ft.) are the more outstanding. No determined attempt, however, has so far been made on any of them.

Between Maipo and Tinguiririca rivers there are scores of beautiful peaks located in a part with much more attractive surroundings; this part of the Cordillera Central, although only seventy miles south of Tupungato, receives twice as much rainfall as the northern portion, and therefore it exhibits a more exuberant vegetation and the snow remains at a lower level for a longer time. The mountains at the head of the Pangal and Cachapoal rivers are known and feared because of their steep rock walls and castellated ridges; the two main sierras of the region are called Paredones (Tall Walls) and Punzones (Piercing Spires); the latter offers the best rock for climbing in South America, several Swiss mountaineers having declared it to be not unlike the needles of the Mont Blanc range. The height of both sierras is just a few rope-lengths above that of Mont Blanc.

The Cordillera Central comes to an abrupt end with the savage cliffs of El Brujo (15,486 ft.) and the lower Tinguiririca volcano, both surrounded by cypress forests and pleasant meadows. Farther south the high peaks disappear; only icy volcanoes, isolated in the Fuji manner, rise above a land of gloomy forests and green valleys and lakes, the land of the Araucanians. Farther south still, the mountaineer sights the first icy ramparts of Patagonia.

Glaciers and Border Passes

Glaciers in the Cordillera Central are typically Alpine; they do not rest on the peaks, but descend to the bottom of the upper valleys. The largest glaciers or ice-fields of the area are the Olivares-Juncal Sur, about 14 m. long, and Monos de Agua and San José, somewhat shorter. The peaks are heavily glaciated, particularly on the southern and eastern faces, where hanging glaciers and crevassed ice-fields are commonplace. The opposite slopes and faces are bare, mostly composed of scree or crumbling rock.

The so-called 'nieve penitente' is a characteristic of the Central Andes of Chile and Argentina, reaching a better development in the latter because of a drier climate. 'Penitentes' are snow pinnacles, between 3 and 10 ft. tall; they begin their first formation phase by November with the first warm spell of the summer and continue to grow in size until February; by autumn (late March in this part of the world), they are reduced to their ice core and either decrease in size or tumble down; they represent quite an obstacle to the mountaineer, who has to make his way across miles of penitent snow-fields, his exertions being increased by altitude and glacier lassitude. They very often determine success or failure in the Cordillera Central.

The snow-line reaches different levels according to latitude; in the northern part of the area it can be put at some 13,000 ft., and at 11,000 ft., in the southern part, but glacier tongues are known to reach as low as 9,200 ft. and snow beds remain throughout the year in gullies and ravines even lower, in the more sheltered (southern) faces and slopes.

Border passes are important, since they connect the active cities of Central Chile with Mendoza, in Argentina. Only one railway, the Transandine Railroad, crosses the range, just north of Nevado Juncal. The other passes are not open for motoring, but can be easily crossed by horse, the journey taking about a week between two main populated areas; good camping outfit is necessary. These Andean border passes have many legends and traditions attached to them, dating back to the time of the War of Independence against Spain, or even earlier; they provided easy communication between the rebels in Chile and Argentina. The most used pass of those days (1809 to 1817), was the Pircas, some one hundred feet higher than Mont Blanc; although it was usually snow-covered the rebels used it whenever possible, as it provides a direct route from Santiago to Buenos Aires, in Argentina.

One should not close a general description of this area without referring to the volcanoes of the Cordillera Central; there are five of them, but only two show some activity of sulphur smokes and cauldrons of boiling mud. There has been persistent belief among the hillmen of the Aconcagua valley that an unknown active volcano lies somewhere behind the first row of peaks of the Juncal group; local arrieros assert that on clear nights the light of the eruptions of the lost volcano brightens the skies behind the peaks; however, there is no such volcano, as was ascertained by the writer, who was stationed with a mountain artillery battery in the Aconcagua valley near the border and was able to prove that the light of the legendary eruptive volcano belonged to a lightning and thunder storm in the Argentinian pampas, a common occurrence 'behind the peaks'. Incidentally, it should be noticed that between Mercedario and Tupungato there exists a section of the Andes completely lacking in volcanic cones.

Mountaineering

Here, as everywhere, scientists led the way. Darwin visited the region, crossing and recrossing it, and giving in his *Narratives* one of the first descriptions to be found in English. Other scientists who undertook studies on behalf of the Chilean government, were the Frenchman Amadée de Pissis and the Pole Ignaz Domeyko, both geologists.

By the end of the nineteenth century the Chilean Boundary Commission was created in order to map the border with Bolivia and Argentina; a good general survey of the whole Andean chain from Southern Peru to Cape Horn was accomplished by the Commission

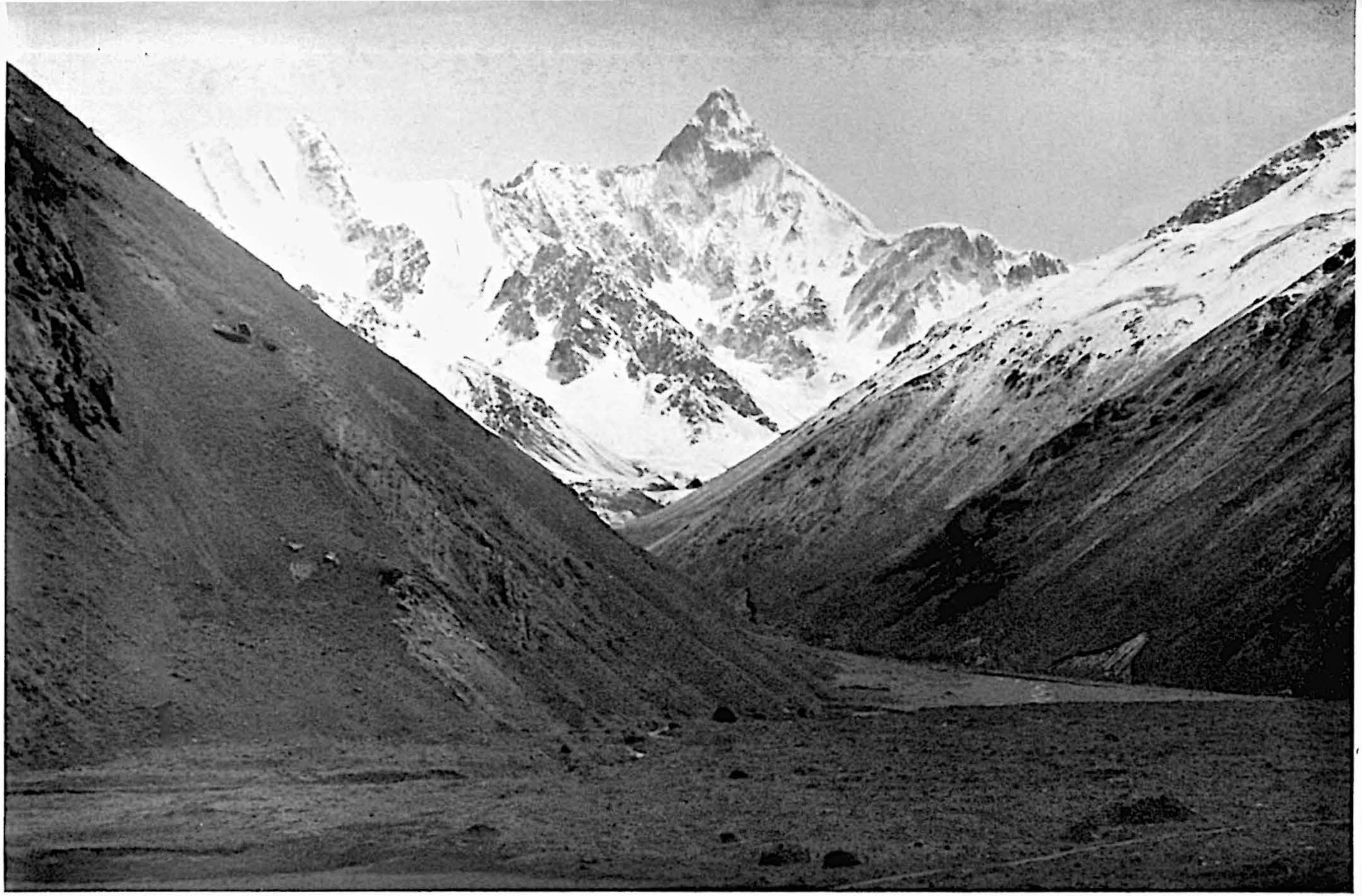
Photo, Manuel Bazán D.]

THE UNCLIMBED SOUTH FACE OF ALTO DE LOS LEONES, 17,717 FT.

[*To face p.* 232

Photo, Manuel Bazán D.]

THE UNCLIMBED SOUTH-WEST FACE OF NEVADO JUNCAL, 20,046 FT.



Photo, Bión González L.]

EL APAREJO, 15,420 FT., FROM YESO VALLEY; ITS SOUTH FACE (IN THE PICTURE) IS BELIEVED TO BE UNCLIMBABLE.

under the direction of the engineer Luis Risopatrón, who was to be awarded later, for his work, the David Livingstone Centennial Medal by the American Geographic Society; Risopatrón also did some mountaineering, placing iron landmarks on border passes (some of them more than 16,000 ft. high) and ascending Tupungatito volcano (18,504 ft.), which he had discovered in 1896. However, the Chilean surveyors restricted their mountaineering to surveying necessities; mountaineering as known in the European sense of the word, had to come from Europe.

Dr. Paul Güssfeldt blazed the trail; his ambition was to climb Aconcagua, in Argentina, but he lacked adequate companionship; as compensation he made the first ascent of Maipo volcano (17,356 ft.) and explored the sources of the Cachapoal river. The FitzGerald expedition followed fourteen years later (1897); although it operated in Argentina, its members made several trips to the Chilean border and into Chile, including the first ascent of Tupungato; they entered the latter country in search of a volcano, supposedly existent near Tupungato, but, as we already know, Risopatrón had discovered it, entered it on his map, and also ascended it.

An important segment of the Chilean population is related to British, Irish, German, Austrian and Swiss settlers; thus, the active mountaineering that was to follow after the FitzGerald expedition was mainly due to those European settlers or to their descendants. Two Englishmen, Messrs. R. Temperley and H. Trewhela, together with the Italian Signor F. Mondini, made the first ascent of lovely La Paloma, in 1912. Shortly before, the Germans had founded a sporting institution in Valparaíso and had become very active; they made the first ascent of several peaks of El Plomo group, and also climbed El Plomo itself, finding traces of Indian altars near its top. During the decade from 1906 to 1916, Herren F. Bade and F. Reichert, Germans, and R. Helbling, Swiss, seized a good number of fine peaks of the watershed, between the Transandine Railroad gap and Tupungato, including Juncal (20,046 ft.), which Reichert and Helbling, with the arriero Damasio Beíza accomplished in 1910, after two previous attempts; like FitzGerald, Reichert and his companions operated in Argentinian territory.

In the years after the First World War, Germans from Santiago began to show more activity than their countrymen from Valparaíso; very important was their ascent of Marmolejo (20,013 ft.), in 1928 by Herren S. Krückel, A. Maas and H. Sattler. Shortly after Herr Sattler founded a German mountaineering club in the capital, and in 1933, the Club Andino de Chile; both institutions he organised along the lines of the D.A.V. Chileans became gradually active, but the beginning was slow mainly because of lack of proper equipment.

Several foreign expeditions visited Chile from time to time; one of

the more important of them was that of Count Aldo Bonacossa, who, in 1934, organised his 'Crociera alle Ande' to attempt Morado and Alto de los Leones, both objects of keen German ambitions. The Italians failed on both, but two of them, Signori G. Gervasutti and L. Binaghi, scaled a rocky peak near Morado and christened it 'Punta Italia'; they also climbed the difficult West face of Littoria (17,700 ft.).

The Italians had given up on Morado not only because of technical obstacles, but also because this peak had been climbed in open competition with them by the Swiss and the Germans, who could not resign themselves to the loss of the jewel of the region. But Alto de los Leones (18,000 ft.) was not climbed until 1942, after several attempts by foreign and local climbers; at last, a mixed Swiss-Chilean party reached the top. The publicity given to this ascent did much to make mountain climbing more popular among the natives. After the Club Andino de Chile other institutions were founded, to the extent that today there exist in Santiago alone more than fifty mountain clubs; besides, a number of ski-ing counterparts have been organised in the southern strip of the country. Most of these institutions are grouped in regional 'Asociaciones' and these Associations under the Federación Chilena de Andinismo; the words 'andinismo' (Andean mountaineering) and 'andinista' (Andean mountaineer) are accepted today in most countries of South America.

In the last years efforts have been made by the Federación to develop Chilean mountaineering in the alpine manner; several eight-bed huts have been recently placed in high valleys, while a few factories contribute good equipment specially designed for local necessities; ice axes and crampons, a speciality of European craftsmen, however, have to be imported. More important still is the ski-ing industry, which achieved remarkable progress in the country after Sir Arnold Lunn had instituted the Kandahar of the Andes.

But climbing in Chile is still in the Golden Age of exploratory mountaineering; even in Central Chile itself many fine peaks of the Paredones, Punzones and other groups are all but forgotten. New routes are seldom sought, because the steep southern faces demand a higher degree of technique than that currently in use in the country today; furthermore, the publicity given to the ascent of Everest and to the Andes of Peru has distracted the attention from local mountains and aroused among Chilean 'andinistas' a desire for adventures abroad.

The task undertaken by the Federación is not an easy one; it has to organise light parties to explore the country's magnificent mountains, maintain a rescue and safety system, contribute to preserve forests, and further the development of local 'andinismo' by opening paths and placing new huts, all this with limited resources. Further, its programme of progress is being constantly opposed by a few backward

Photo, Evelio Echevarría C.]

ON THE TOP OF EL SERRUCHO, 15,750 FT., WITH THE HIGHEST PEAKS (16,100 FT.) OF THE PAREDONES GROUP IN BACKGROUND. [THE FIRST ASCENT OF EL SERRUCHO WAS MADE BY M. ECHEVARRÍA—EDITOR.]

minds, which reject roads, paths and huts, and which want to behold the mountains of their memories in all their primeval solitude and beauty; the writer has to confess himself guilty of such feelings.

Bibliography

This short list was prepared mainly from sources available to English readers only, but a more extensive bibliography can be had if South American publications are to be included. Undoubtedly the best information can be obtained from *Revista Andina*, edited by the Club Andino de Chile, section Santiago; the local German mountain club published, for several years, its *Andina*, but it was discontinued after 1943; finally, the Federación has published two small but useful *Anuarios* (Yearbooks). All this material, however, is in Spanish, but English readers may refer to Mr. H. Adams Carter's section 'Climbs and Expeditions', of the *A.A.J.*

Club Alpino Italiano, 'Crociera alle Ande', *Rivista Mensile*, June 1934, pp. 304–34, Rome.

Conway, Sir W. Martin, *Aconcagua and Tierra del Fuego*, London, 1902.

—— 'The Southern Andes: an Orographical sketch', *A.J.* 20. 81.

Echevarria C., Evelio, 'Further Notes on the Andes', *A.J.* 60. 79–82.

—— (brief account), *A.J.* 58. 407–10.

Fester, Gustav, 'Die Südlichsten Kordilleren', *Zeitschrift des D.A.V.*, 1938, pp. 229–38, Munich.

FitzGerald, E. A., *The Highest Andes*, London, 1899.

Gervasutti, Giusto, *Montagnes, Ma Vie*, Arthaud, 1949, Paris.

Güssfeldt, Paul, *Reise in den Andes*, 1887, Berlin.

Helbling, Robert, 'Cerro Juncal', *Osterreichischen Alpenzeitung*, 1911, pp. 201–11, Wien.

—— 'Erschliessung der Cordillera', *Jahresbericht des Akademischen Alpenclubs*, 1918, pp. 1–77, 5 sketch-maps, Zürich.

Herzog, Theodor, *Kampf um die Weltberge*, Brückmann Verlag, 1934, Munich.

Holdich, Col. Sir Thomas H., *The Countries of the King's Award*, Hurst & Blackett, 1904, London.

Lliboutry, L., *Nieves y Glaciares de Chile* (with folding map in separate cover), Imprenta Universitaria, 1954, Santiago.

Marmillod, Dr. Fréderic, 'Deux ascensions dans les Andes Chiliennes', *Die Alpen*, 1940, pp. 309–17, Zürich.

Pfennigger, Otto, 'Die Chilenische Zentralkordillere', *Berge der Welt*, 1948 (Band III), pp. 439–46, Zürich.

Reichert, Fritz, *Aus Berges und aus Lebenshöhe*, Casa Peuser, 1951, Buenos Aires, Argentina.

—— (brief account), *A.J.* 26. 85.

Risopatron, Luis, *La Cordillera entre los* 30° 40′ *S. y los* 34° *S.*, Imprenta Universitaria, 1906, Santiago.

—— *Diccionario Geográfico de Chile*, Imprenta Universitaria, 1928, Santiago.

Stevens, A. W., 'Flying the "Hump" of the Andes', *National Geographic Magazine*, May 1931, pp. 595–636, Washington D.C.

Trewhela, Herbert (brief account), *A.J.* 26. 216.

Maps

There are several in use, although none shows the detail of the Alpine maps. The Chilean Boundary Commission published the basic chart scale 1 : 100,000 still useful, even today; in 1932 and again in 1935, Herren W. Klatt and F. Fickensher edited their ' Carta de Excursionismo ', scale 1 : 50,000, very good for mountaineering in the northern part of the area. The Lliboutry work, listed above, includes a good map based on aerial surveys by the Chilean Air Force, but unfortunately, its nomenclature is not always correct.

The accompanying sketch includes only the more prominent peaks; the glaciers are placed only so as to give an approximate idea of their location.

Cordillera Central, Chile

▲ peak.

glacier or snowfield.

lake.

R. river.

pass, gap

O town, village.

5010 height in metres.

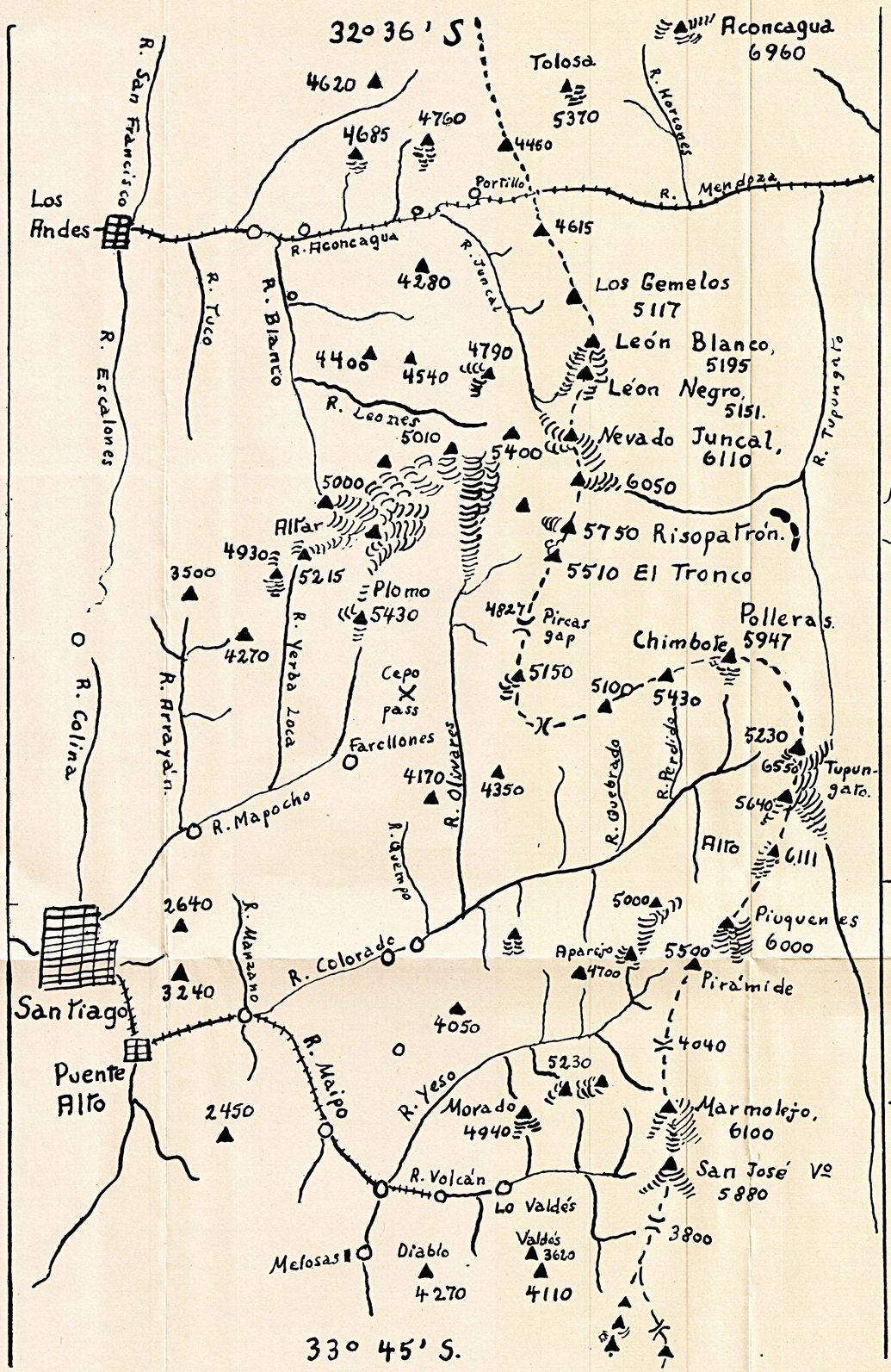
railroads.

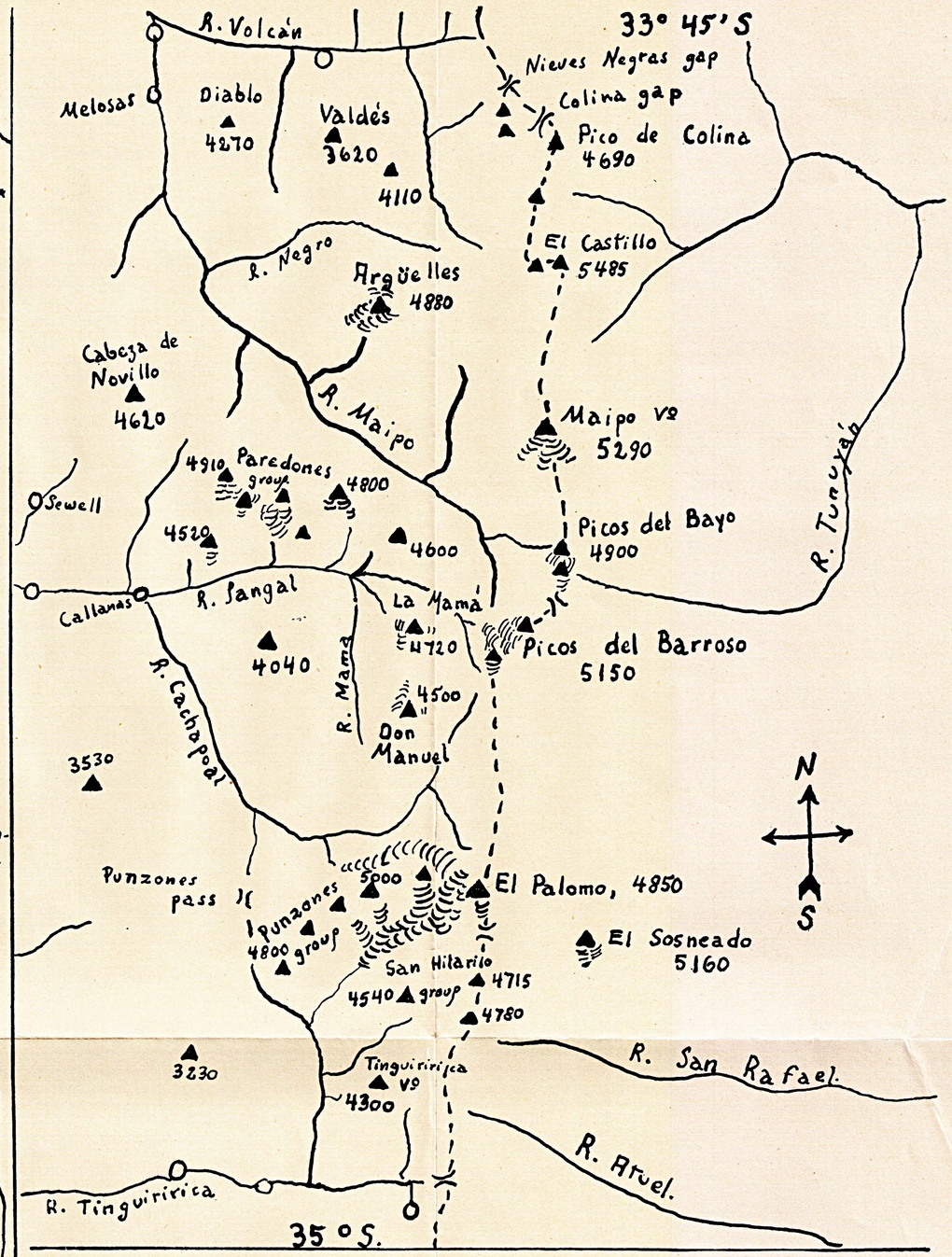
international border with Argentina.

V° volcano

0 10 20 30 40 50
50 Kilometers.

0 10 20 30
30 Statute miles.





Northern part (left) embraces the highlands of Aconcagua and Santiago provinces; Southern part, O'Higgins and Colchagua provinces.

E. Echevarría C.
1959.

[To face p. 236