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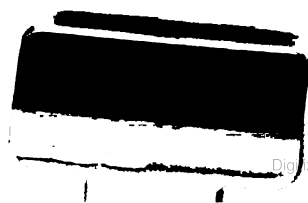


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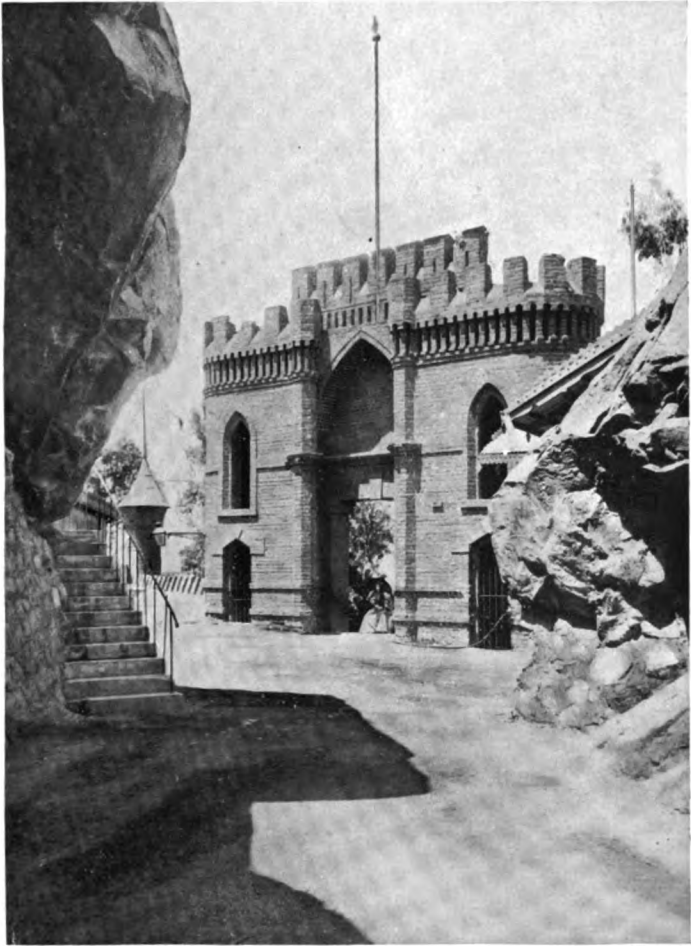


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*Cerro Santa Lucia, Santiago*



# CHILE





**SOUTH AMERICAN HANDBOOKS**

# **CHILE**

**PHYSICAL FEATURES, NATURAL RESOURCES,  
MEANS OF COMMUNICATION, MANUFACTURES  
AND INDUSTRIAL DEVELOPMENT**

UNIV OF TEXAS

**BY**

**GEORGE J. MILLS**

**WITH INTRODUCTION BY**

**W. H. KOEBEL**

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## INTRODUCTION

THE Republic of Chile at the present moment presents various features of exceptional interest. It has been frequently remarked how greatly the past history of this country has been affected by its geographical isolation. The great chain of the Andes is very deeply rooted in the circumstances of the republic. In the first place, the Cordillera works its will with the climate, being in part responsible for the aridity which prevails in certain sections of the republic, and serving indirectly as a cooling agent so far as the temperature is concerned. Thus it is that these Pacific shores are enabled to revel in far more bracing and fresher airs than those of the corresponding latitudes on the Atlantic coast.

{ Chile in one sense may, indeed, be considered to consist of two separate species of territory. There is the country of the Andes and the country which is not of the Andes ! There you have all Chile with the exception of the mountainous districts of the south, where, the ranges having become broken up, the hills abound in all directions, and countless islands, hilly and timbered, rise up from their respective bays and inlets.

In the same way as the Andes represent the one-half of Chile's geographical standing, these same mountains can lay claim to the republic's industrial wealth. To term this proportion exactly half is, perhaps, to indulge in a somewhat poetical licence, as it is beyond dispute that the mineral wealth of Chile represents by far the

greatest asset of the country. Many of the general British public—including even a number of the more select army of investors—go the length of refusing to regard the republic in any other but a mineral light. But Chile's agriculture and pastoral claims must not be overlooked. The smiling valleys of the central provinces of the Western Republic are some of the finest in the entire continent. Nowhere else, perhaps, exist more bountiful stretches of territory—some of the most pleasant lands in the world—which yield cereals and fruit with a prodigal and quite enchanting abundance.

Chile is usually divided for the purpose of geographical classification into three parts—the north, the central, and the southern; and this division may stand, since it serves sufficiently well for general purposes. It is certain that Chile is a thrice-fortunate land in that each one of these separate districts is wealth-producing in its own way. Thus the arid north, barren and parched, holds the important nitrate riches of the republic, and accounts for the greatest proportion of national revenue. The smiling agricultural and pastoral lands of the centre hold their treasures in their own more tranquil and beautiful form, while the forests and the pastures of the south are in their way not only magnificent but wealth-producing as well. But Chile has more to show even than this. At the back of these three zones runs the long line of the Cordilleras with its nests of gold, copper, silver, and, indeed, nearly every known metal.

There is no doubt that Chile is an enviable land. The inhabitants of this Western Republic would in the past have seemed to appreciate their benefits more keenly



than their neighbours have estimated those of their own countries. This virtue is of a more sterling order than may be apparent to the casual English reader, for to let well alone is a feat far harder of achievement in the progressive new world than in the more rigid and conventional setting of Europe. Compared with the majority of South American States the history of Chile is a tranquil one—if we except, that is to say, the very long period of the Araucanian Wars. The Chileans, indeed, would seem to have confined their energies largely to making headway against their Indian foes rather than to the indulgence in strife among themselves.

On the rare occasions when the internal peace has been broken, the business has been entered into with a resolution sufficiently grim to last the country for generations, as was evident in the case of the Balmaceda revolution. Now the Chilean, his government as stable as ever, and his Indian wars long ago at an end, is at liberty to turn his attention to science, learning, industries, and commerce. And this he does with a whole-hearted enthusiasm that is natural to his virile and sanguine character.

The Chilean, as a matter of fact, has frequently been termed the Englishman of South America, and he himself is by no means averse to this racial interpretation of his general traits. He has, for one thing, a geniality of disposition which is decidedly more pronounced than that of the majority of the inhabitants of the Continent. His geographical isolation in the past has increased his sense of initiative, and the Chilean, moreover, is an excellent sailor. In this respect not only his appearance but his training and manners resemble, I think, more

closely than any other that of the British naval man. In a similar way it may be said that the Chilean soldiers resemble with unusual accuracy the average German military type. The policemen of Chile, for their part, are strictly modelled on the British pattern. Thus we obtain a very cursory survey of three most efficient forces.

The Chilean, although the policy of the nation has never been aggressive, comes of a fighting stock. From the time of Ercilla, the famous poet who wrought the Epic on the early wars with the Araucanian Indians in which he himself took part, authorities of all periods have borne testimony to the bravery of the Chileans. This was again proved to the hilt in the case of the war with Peru and Bolivia in 1879, when the astonishing efficiency of the Chilean forces, as well as the pluck and daring of the men, was once again triumphantly displayed.

Chile may be termed one of the three progressive and cultured Republics of South America, the three which form the alliance popularly known as the A B C group, and whose members are Argentina, Brazil, and Chile. Nevertheless, far less has been written in Europe on Chile than on either Argentina or Brazil. This is certainly not because the former republic is lacking in interest, whether of the picturesque or of the industrial order. One of the main reasons, as a matter of fact, which almost certainly accounts for the comparative dearth of European works on this state, lies in the circumstances of that past isolation which has already been referred to. In this respect the twentieth century, of course, opens to show Chile in an entirely new situation. The old question of the mountain and Mahomet has now

become so easy and commonplace an achievement that it has grown somewhat of an everyday event. In this case Mahomet has flung the railway iron over the lofty Andes into Chile, and the opening of the Panama Canal must necessarily render the navigation of the Pacific Ocean almost as important as that of the Atlantic.

Certainly, no country has benefitted more from modern inventions and enterprise than this Western Republic of South America. For the traveller to attain to Chile in the old days was not only a costly, but also a very prolonged and hazardous business. Until the latter half of the nineteenth century the expedition was one which the newcomer could not but regard with a certain amount of dread. Landing at Buenos Aires it was necessary for him to make arrangements for the hire of a coach in order to travel the great extent of plain which lies between Buenos Aires and Mendoza, the westward terminus of the first stage of the journey.

In those days the traveller had no reason to expect anything in the way of comforts. In winter his conveyance would be pulled through a sea of deep and sticky mire, in summer it would roll along, the centre of a portentous whirl of dust. In either case he was fairly certain to arrive in safety, since his somewhat wild local retainers were loyal enough as a rule, and invariably efficient. Breakdowns and minor calamities would be repaired by means of liberal applications of raw hide. Relays of horses were to be obtained by the dozen, and although the journey from one post-house to another might be attended with undue delay, it was seldom, indeed, that they failed in their accomplishment.

There were dangers, it is true. From time to time, wandering tribes of Indians lay in wait where the faint track stretched itself across the vast open prairie, the wild horsemen grouped together to attack the unprepared traveller or the few isolated posts which were supposed to guard these territories. Nevertheless, to meet with such unpleasant gentry as these was rather an unfortunate exception than the rule, and the worst which the average traveller had to expect on this stage were the hardships of the actual road, and the strictly primitive accommodation such as the average post-house could boast. Of course there were many who completed the journey on horseback, and thus, travelling light, concluded the business more rapidly. This was usually the case with the Chileans and Argentines themselves, and, of course, invariably with the Gauchos. A certain number of the foreign visitors, however, unaccustomed to the saddle, were compelled to use the vehicles, that is to say, if they possessed any regard for their own comfort.

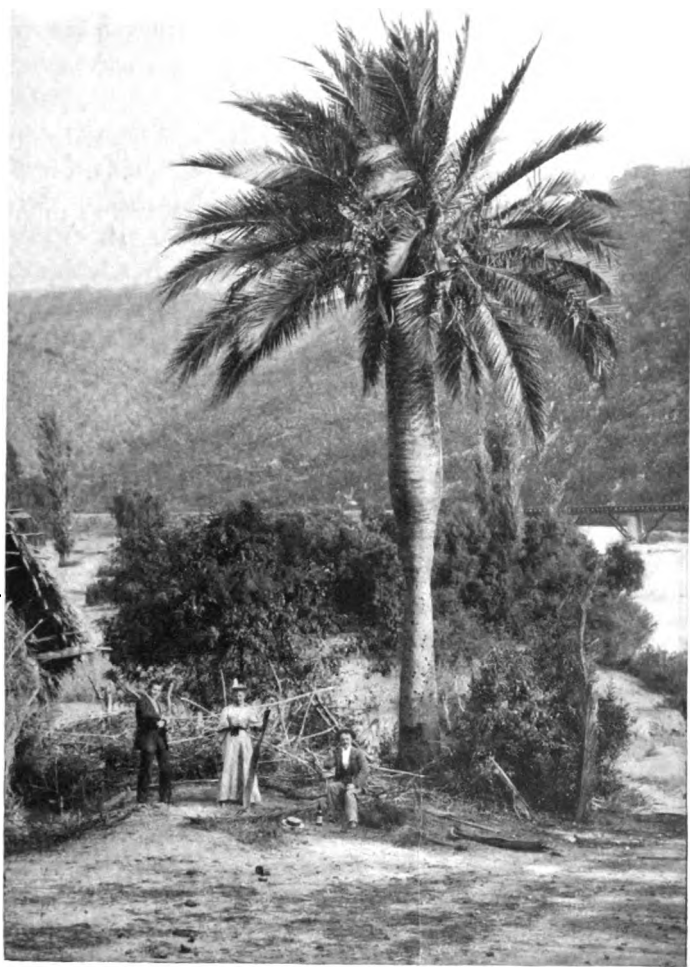
From Mendoza westwards the nature of the journey altered completely. The plains were no more, and the foothills and lofty central peaks of the vast Andes now barred the path. Here began some natural perils of a very real kind. Even in summer this passage of the Andes was no light task. The negotiation of the tracts cut in the sides of precipices, narrow pathways frequently swept away, the crossing of rushing mountainous torrents, and the scrambling up and down gradients occasionally somewhat appalling, all this in itself was quite sufficient for the nerves of the ordinary person, not necessarily a hardened traveller, who desired to cross to Chile. But

all this, of course, was mere child's play to an attempt of a crossing of the Cordilleras in winter time when the snow lay yards deep about the conical shelter huts, and the blizzard might well mean the death of the entire party. Many a traveller whose records exist had cause almost to give up hope ere he struck the track into the safety and sunshine of the smiling Chilean valleys. Such a journey was a sufficiently hard prelude even to the attainment of a land of such great promise as Chile. There was an alternative, of course, the passage round the Horn, uncertain at the best, wildly tempestuous at the worst, or the passage of the Magellan Straits, so perilous a feat for sailing vessels. It is not to be wondered at, therefore, that until the modern era visitors to Chile were comparatively few and far between. Moreover, as if to render the isolation of this land more complete, nature has placed on the northern frontier of the fair republic the Desert of Atacama. It was across this desert that Almagro, the pioneer Spaniard of Chile, went with his devoted band, suffering untold hardships from a dearth of water and provisions. At the time of his first advent into the country, Almagro had no inkling of the true riches of the land he had reached after so much suffering. To him and to his worn-out men Chile was associated with nothing more agreeable than parched tongues, empty stomachs, and fierce Indian attacks. It is true that this desert has now made amends, so far as lies in its power, for the number of those early lives it exacted. It has given up great hoards of mineral wealth to the descendants of Almagro and his men, the modern Chileans, and is now provided with railway lines and ports. Whatever

may have been its rôle in the past, it is now a mere purveyor of nitrate and other minerals and no longer a barrier between the green agricultural country of Peru, and the yet more verdant valleys of the more southern state.

The physical differences between Argentina and Chile are noticeable in the extreme. The great central plains of Argentina lie as flat as evenly-planed boards, the long and narrow strip of Chile on the other hand is essentially a country of hills and valleys. Physically, there are parts of Chile which may be said to resemble either New Zealand, Norway, or Switzerland. Owing largely to its broken nature, the republic, even in a pastoral and agricultural sense, does not resemble Argentina, a country mainly composed of large holdings. The Chilean hacienda answers to the estancia of Argentina, it is true, but it is seldom that an estate is to be met with in Chile that approaches in size those of the great properties of Argentina.

On the other hand, the *haciendas* of Chile make up for their want of area—merely comparative, this, from the European point of view!—by the intensive nature of their cultivation. There are few places in the world which give a richer and more smiling impression than the irrigated farms of Southern Chile. Here the cereals grow, not in endless seas from horizon to horizon, but in numerous entrancing lakes of vegetation, shut off the one from the other by hedges, rows of fruit trees, and poplar groves. For, besides its more formidable growths of timber, Chile is essentially a country of hedges, and its comparatively rare species of landscape is, therefore, doubly endeared to the English eye.



*Landscape, Central Chile*





There are numerous other growths, moreover, which are as typical of Chile as of Great Britain. The apple is one of these—but the apple, after all, is so cosmopolitan a fruit that it can scarcely count in this respect. The blackberry comes within a different category; for the scope of the blackberry of Northern Europe is far more restricted, and it is precisely this blackberry which thrives so astonishingly in Southern Chile, covering not only acres, but square miles of territory, somewhat to the disgust of the pastoralists, but altogether to the joy of those varied creatures who prize the luscious and heavy clusters of black fruit. Then, again, the strawberry is a native of Southern Chile, and there are, without the faintest doubt, valleys—though I have never had the good fortune to traverse them in the strawberry season—where the fruit grows wild in such profusion as to splash red the hoofs of the wayfarer's horse.

Were Chile to stand on her own intrinsic merits as a pastoral and agricultural country she would occupy a more important place in the popular mind as regards these industries than is actually the case. It is Chile's fate to be placed side by side with Argentina, perhaps the most amazing cattle-producing country in the world, and her fertile valleys are in consequence just a little overshadowed by the vast areas of the sister republic. It is owing to a propinquity such as this that Chile's rural claims to consideration are apt to be overlooked; nevertheless these exist in no small degree. This should supply only more proof of Chile's fortunate status, for, seeing that the main sources of her wealth are mineral, it is something to be said for the comprehensiveness of

her resources that she is able to supply her own inhabitants with food-stuffs as well.

This condition of affairs does not apply, of course, to the far north, since almost every ordinary object connected with the food supply and that of general provisions has to be brought by steamer from the south and distributed among the ports of this completely arid and barren district. Elsewhere, save in the very far south—the humid forests of which in many places still remain unexplored—every district, including even those chiefly distinguished for minerals, is self-supporting, and is usually given to produce a wider variety of growths than is to be met with in other parts of the world. Thus it is no unusual thing for the average hacienda to breed cattle, horses, sheep, pigs, and the other lesser creatures typical of the traditional farmyard, to grow cereals such as wheat, barley, maize, and alfalfa, and to produce such market-garden produce as potatoes, peas, beans, and all European vegetables. This, moreover, is not all, for fruit farming occupies an important place in the routine of the average hacienda, and here towards the south the species include apples—already referred to—pears, and currants, and, indeed, all European varieties, to say nothing of the local growths, such as the Chirimoya and its very numerous kindred fruits. Then, again, seeing that the benefits of afforestation are now very keenly appreciated, there must be taken into consideration, in addition, plantations of trees, such as the sequoia, eucalyptus, and a great collection of timber, whether indigenous to the country or imported from all quarters of the world.

From this may be gathered some idea of the Chilean produce. As to the Chilean himself, there is no doubt that he appreciates all these benefits to the full, for he is admitted on all hands to be a particularly warm-hearted and genial person who takes life much as he finds it, and joins acutely developed sociable instincts to his practical virtues and business instincts.

Some of the early writers on South America deserve a more permanent fame than has been their lot. This applies even to Chile. Thus, the translation of Molina's *Geographical, Natural and Civil History of Chile* is preceded by a note by "An American gentleman" (supposed to be Washington Irving), who rendered the text into English. It is certainly not usually known that Washington Irving was concerned with any work of the kind. Nevertheless, this was his opinion published in 1808. "Chile is acknowledged, by all who have written upon America, to be one of those provinces that merits the most attention. This country is distinguished, not so much by its extent, as by the mildness of its climate; and it may be said to enjoy all the advantages of the most favoured countries without their inconveniences. In my opinion it may, with propriety, be compared to Italy, as this is called the Garden of Europe, that, with more justice, may be styled the Garden of South America. The climate of the two countries is nearly the same, and they are situated on nearly the same parallels of latitude. They likewise resemble each other in the circumstances of their being of so much greater extent in length than in breadth, and that they are both divided by a chain of mountains. The Cordilleras or the Andes

are to Chile what the Apennines are to Italy, the source of almost all the rivers that water the country and diffuse over it fertility and abundance. This chain of mountains has as sensible an influence on the salubrity of the air of Chile as the Apennines have upon that of Italy ; and so firmly are the inhabitants convinced of this fact, that whenever they attempt to account for any change in the seat of the atmosphere they attribute it to the effect of these mountains which they consider as powerful and infallible agents."

These remarks of Washington Irving's are notable for their accuracy, although I, for one, know not if this American writer actually visited the Southern Republic or not. If he did, the fact appears in no record of which I am aware. Thus, curiously enough, it would appear that some of the best foreign contemporary accounts of Chile emanated from the pen of one who had never cast eyes on this country, but whose Spanish and South American studies had, nevertheless, been profound.

The Chileans have, from quite early days, been notable for their genial and sociable qualities. Thus, Mr. Caldeugh, writing in 1825, describes the inhabitants of Santiago in the following manner : "The upper ranks of people in Santiago live in a comfortable manner, their houses are well furnished and decorated with much gilding. . . . Their dress is in conformity with the English and French fashion, and it is most advantageously displayed on the full and fine figures of the ladies. They are fond of social happenings, and scarcely an evening passes without some ball or concert taking place. Minuets and Spanish dances are most in vogue, the latter are

danced with peculiar elegance, and some of the figures, the Espego or Looking-glass, for instance, when the gentleman and lady see each other's eyes reflected in their own, are at first scarcely to be danced with common nonchalance. . . . As there are few carriages in the city, and as those who attend the balls live in adjoining streets, it is usual when the lateness of the hour marks the period of separation for the band to march at the head of the retiring people and stop while the family knock at the door and take leave of the party until all the ladies have been escorted home. The nights are so fine that little attention is paid to taking the shortest road home."

Could any word-picture speak more eloquently of a pleasant, and surely very rational, mode of life with its somewhat unwonted freedom from the normal cares of humanity?

I have already referred to the sense of initiative displayed by the Chilean. This is evidenced not only in his private concerns, but in many affairs of the State. Thus, the principal railways of the country are the property of the nation, and are conducted by the Chileans themselves. A few private lines exist, it is true, and there is the very notable exception afforded by the Transandine Railway which leads from the town of Los Andes across the Cordilleras and so eastwards into Argentina.

Practically all the sections of the longitudinal railway, however, are the property of the Government. To those totally unacquainted with Chilean affairs it may be as well to explain that this system—when its various portions have been linked together and it is finally complete

—will connect the various provinces of the entire length of the main republic. The far south will naturally have to stand outside the system, since no comprehensive service is possible in a land which is little beyond a great collection of islands.

This longitudinal railway, moreover, is eventually destined to play an important part in the greatest railway scheme which has ever been attempted in the continent—that is to say, the international service which will one day permit the traveller to pass by train from the furthest north of South America to the furthest available south.

The hugeness of this scheme is sufficiently obvious without further explanation. Even the most optimistic of the experts would seem loth to attempt any prognostication concerning the year of its ultimate completion. But that it will one day come into being is as certain as anything human can be. When this, and the numerous contemplated additional Transandine railways are completed, the importance of Chile, not only as a mineral and agricultural country but as a manufacturing nation, will be second to very few in the world.

W. H. KOEBEL.

# CHILE

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## CHAPTER I

### GEOGRAPHY AND PHYSICAL FEATURES

THE Republic of Chile occupies the comparatively narrow strip of land which lies along the south-west seaboard of South America, between the Andes and the Pacific. It is bounded to the north by Peru; to the east by Bolivia and Argentina; and to the west and south by the Pacific Ocean. It extends from north to south over 38 geographical degrees, from  $17^{\circ} 59'$  to  $55^{\circ} 59'$  S. lat., with a coastline of 2,628 miles; its maximum breadth is only 248 miles, and the average breadth is estimated at 111 miles. The length of the country is, therefore, more than twenty-three times its mean breadth. Lord Bryce compares the country with Egypt in respect of its extraordinary length, and with Norway in respect of the fjord-like character of its southern coastline. The area is some 300,000 square miles (757,366 sq. kil.), exceeding that of any European country except Russia, and equaling the united area of Germany, Switzerland, Holland, Belgium, and Denmark.

**BOUNDARIES.**—The land frontiers of Chile march with those of Peru, Bolivia, and Argentina, and have been the subject of much war and litigation. The northern provinces of Tacna, Tarapacá, and Antofagasta accrued to Chile as the result of her victories in the war of 1879–81.

Tacna was by treaty to be occupied by Chile for the ten years 1884-94, after which a plebiscite was to determine whether it should for the future belong to Peru or Chile. This has never been taken, and the province is still in Chilean occupation. The river Sama, from source to mouth, is taken as the boundary between Peru and Chile, and Tacna is now to be definitely reckoned as permanently Chilean. The Bolivian frontier was, after much negotiation, settled by the treaty of October, 1904. It was agreed with Argentina that the boundary line should run along the crest of the Andes, which was believed to be the watershed throughout. Exploration, however, proved this idea to be wrong, and after long disputes, at times verging on war, the matter was settled by arbitration. For the northern part the districts in dispute were arranged by the mediation of the United States ambassador. The southern and more intricate portion was referred to the arbitration of the King of England, and a boundary commission under Sir T. W. Holdich surveyed the ground. The award, issued in 1902, has been loyally accepted by both countries. The somewhat complicated details of these boundaries must be studied on the maps. In the south of the continent the line runs eastward to the Cape of Virgins, leaving to Chile Cape Froward (the most southern point of the American continent), the western and larger portion of Tierra del Fuego, and Cape Horn on Horn Island.

THE LONGITUDINAL VALLEY.—Before describing the chief physical features in detail, a few words will suffice to elucidate one striking characteristic. The country is in essence a valley enclosed between two lines of



## GEOGRAPHY AND PHYSICAL FEATURES 3

mountains. On the east runs the Cordillera of the Andes, diminishing in height to the south, where its line is crossed by various rivers and lakes. On the west runs a parallel but lower range, the coast Cordillera, interrupted from about  $42^{\circ}$  S. lat. by many arms of the sea, but containing the long line of islands that fringe the mainland. Between the two lies what is known as the Longitudinal Valley of Chile, rich and fertile. North of  $30^{\circ}$  S. lat., this is continued by arid desert; south of  $42^{\circ}$  S. lat., from the Bay of Reloncavi, it is largely submerged beneath the ocean.

THE FOUR ZONES.—Physically, Chile falls into four zones—

(a) the *northern*, from  $18^{\circ}$  to  $27^{\circ}$  S. lat., c. 650 m., mostly rainless desert;

(b) the *semi-northern*, from  $27^{\circ}$  to  $32^{\circ}$ , c. 350 m., rich in minerals and less arid;

(c) the *semi-southern*, from  $32^{\circ}$  to  $43^{\circ} 30'$ , c. 850 m., fertile and agricultural;

(d) the *southern*, from  $43^{\circ} 30'$  to  $56^{\circ}$ , c. 1,150 m., a district of islands and uplands, rich in forests, fisheries, and lands suitable for stock-raising.

### MOUNTAINS

THE CORDILLERA OF THE ANDES, which rises above Chile on the east, has two general characteristics. First, it is precipitous towards the west, throwing off rapid, torrential rivers, while to the east it descends by much more gentle slopes to the Argentine pampas. Secondly, it is exceedingly lofty in the north, with a mean altitude of some 15,000 ft., and several summits exceeding 20,000,

but in the southern section the height gradually diminishes, the mean altitude being about 8,000 ft., and few summits exceeding 10,000 ft.; south of the Magellan Straits, the summits rise only to 7,000 ft.

In the northern section are over thirty extinct (or dormant) volcanoes, and among the highest peaks are Aconcagua (23,028 ft.), Mercedario (22,320 ft.), Juncal (20,500 ft.), Tupungato (22,000 ft.), with the volcanoes of Seullaillaco, Doña Inez, and San José. North of Aconcagua is the Los Patos pass (11,700 ft.), crossed by General San Martín in the War of Independence in 1817; south of it is the Cumbre or Uspallata pass, along which the Transandine Railway now runs. South of Copiapó the range is extended laterally by a succession of transverse ridges, which at times fill almost the whole breadth of the country. Between 27° and 33° there are no volcanoes, but further south they are numerous, *e.g.*, Maipo (17,644 ft.), Tinguiririca (14,700 ft.), Descabezado (12,160 ft.), Longavi (10,500 ft.), Chilean (10,000 ft.), Villarica (9,320 ft.), Osorno (7,500 ft.), Calbuco, etc.; these are still more or less active. The Tronador or "Thunderer" (9,800 ft.), far to the south, is, however, not volcanic, and derives its name from the continual falls of huge avalanches on its precipitous slopes. On the flanks of these volcanoes are numerous open sulphur mines, especially in the province of Tarapacá; for thermal springs, see below. Glaciers commence to the south of 32°, in the neighbourhood of Aconcoagua; further south they become more and more frequent, and descend even lower, till about 47° they are found at sea-level.

The snow-line, which at Llullaillaco is lat. 24° 41' S.

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is at about 19,450 ft., gradually descends with the lowering latitude ; near Santiago it is about 14,000 ft., at Valdivia rather under 6,000, and near the Straits of Magellan it is as low as 1,650 ft. above sea-level.

THE CORDILLERA OF THE COAST is, geologically, older than that of the Andes. It is, of course, lower and less continuous, but so far resembles it that it presents, generally speaking, an abrupt slope to the west, while sinking much more gradually to the east. In Tarapacá it rises, almost from the sea, to heights varying from 1,000 to 7,000 ft. In Atacama it averages 3,000 ft., rising near Toltal, and culminating in Peñarave (7,300 ft.). Further south it recedes from the sea and sinks in height, till it disappears below Tres Puntas and is succeeded by the plains of Caldea. It rises again to some 7,000 ft. in the central provinces, notably in Roble and Campana, near Valparaiso. South of the river Ropel the range becomes lower and more complicated. Further south it splits into two parallel low ranges. South of the Bio-bio it is known as the Cordillera of Nahuelputa ; further south again it disappears, but is in reality continued in the line of islands along the coast, united to the continent only at one point, the peninsula of Taitao.

### HYDROGRAPHY

1. RIVERS.—The Chilean geographers distinguish two hydrographic basins, that of the rivers flowing from the Andes to the ocean, and the smaller one of the rivers rising on the west side of the coast range. The rivers north of 28° S. lat. as a rule carry little water, only two reaching the ocean all the year round ; these are the

Azufre, which waters the fertile ravine of Lluta in Tacna ; and the Loa, which irrigates the district of Calama. The rivers from  $30^{\circ}$  to  $35^{\circ}$  S. lat. are torrential in character, subject to two annual floods, the first due to the summer rains, varying in time and amount, the second and more important due to the melting of the snow ; this is greatest in November and December, but does not wholly cease till the beginning of March. It is of great importance economically from the great quantities of fertile alluvial silt brought down into the agricultural valleys. The rivers south of  $35^{\circ}$  S. lat. have a quieter movement and are less influenced by the melting of the snows ; they become turbid and are subject to floods mainly in June and July.

The Andine rivers rise at great elevations and descend the precipitous slopes in great waterfalls. There is thus an unlimited source of potential hydraulic power, which, in view of the narrowness of the country, offers great possibilities for the future. Large navigable rivers are few, but, on the other hand, their function is performed by the Pacific Ocean, which, with over fifty ports facilitates communication and the interchange of products between all parts of the country.

The more important rivers are named below : some are navigable in their lower course for vessels drawing not more than 9 ft., the others only for small craft. All are impeded in their upper course by rapids, and the bar at the mouth is often difficult.

The *Maule*, which enters the ocean at  $35^{\circ} 18'$  S. lat., a mile below Constitución ; about 140 miles in length ; waters Maule.

## GEOGRAPHY AND PHYSICAL FEATURES 7

The *Bio-Bio*,  $36^{\circ} 49'$  S. lat. ; about 220 miles in length ; waters Concepción.

The *Imperial* (or *Cautín*),  $38^{\circ} 49'$  S. lat., navigable for vessels of 8 ft. to Carahue, 19 miles from the mouth ; about 200 miles in length ; waters Arauco.

The *Tolten*,  $39^{\circ} 15'$  S. lat. ; about 140 miles in length ; waters Valdivia.

The *Calle-Calle*,  $39^{\circ} 51'$  S. lat. ; known as the Valdivia from the mouth at Corral to the city of Valdivia, 15 miles up stream ; about 82 miles in length ; waters Valdivia.

The *Burno*,  $40^{\circ} 16'$  S. lat. ; rises in Lake Ranco ; about 150 miles in length ; waters Valdivia.

The *Maullín*,  $41^{\circ} 36'$  S. lat. ; rises in Lake Llanquihue ; navigable for 26 miles from the mouth ; about 110 miles in length ; waters Llanquihue.

The *Yelcho*,  $42^{\circ} 57'$  S. lat., believed to be the largest river in the country, rises in Argentina, and is known in its upper course as the Futaleufu ; it passes through lakes Nicolás, Bravo, Jorge Montt, Barros Arana, Menendez and Yelcho. The length of this and the following southern rivers is not yet ascertained.

The *Palena*,  $43^{\circ} 46'$  S. lat., rises in Lake Palena or General Paz, in Argentina.

The *Aysen*,  $45^{\circ} 26'$  S. lat., formed by the junction of the Simpson and the Mañipuales, about 20 miles from its mouth.

The *Huemules*,  $46^{\circ}$  S. lat., c. 100 miles in length.

The *Baker*,  $47^{\circ} 50'$  S. lat., which forms the outlet of lakes Buenos Aires and Cochrane.

The *Pascua*,  $48^{\circ} 08'$  S. lat., rising from Lake San Martín.

Other rivers of considerable size, but less available for navigation, which deserve mention, are the *Huasco* (135 miles), the *Coquimbo* (90 miles), the *Limari* (100 miles), the *Choapa* (100 miles), the *Aconcagua* (160 miles), the *Maipo* (150 miles), the *Rapel* (130 miles), the *Mataquito* (160 miles), and the *Itata* (110 miles). The numerous rivers of the coast range need not be particularised. It should be added that the rivers of the south (or of western Patagonia, as it is sometimes called) have not yet been fully explored ; but the most important, so far as is yet known, are named above.

#### LAKES

The lake basins, in earlier days numerous in north and central Chile, have mostly dried up, leaving only saline depressions. In the Andine and sub-Andine districts of the south they are still frequent, and appear due largely to glacial and volcanic action. In the provinces of Cautin, Valdivia, and Llanquihue they are very numerous, and from 44° lat. S. they are found at the top of the water-parting, and crossed from north to south by the frontier with Argentina. They are almost always of great depth, and often of great superficial area, and form the head waters of the chief rivers of this valley. Among the largest are Llanquihue (740 sq. kil.), Rauco (508), Villarica (250), Payehue (162), Todos Santos (130), in the south central region, and further south Buenos Aires and San Martin, which are half Argentine. Steam navigation is in operation on lakes Llanquihue and Todos Santos.

Near the coast are a number of brackish lagoons, probably remains of former arms of the sea ; of such

## GEOGRAPHY AND PHYSICAL FEATURES 9

Santo Domingo in Rancagua, and Bucalemu, Bollerica, and Cóhuil in Vichuquén may be mentioned.

Finally, there are some large sheets of water neither Andine nor marine in character, such as Lake Batuco in the level country of North Santiago, and Lanilhue, Acules, Verde, and Avendaño.

### THE SEABOARD

CAPES.—There are no very notable capes in Chile. The following may be named, however : *Punta Agamos*, to the south-west of the Bay of Mejillones ; the *Punta de Tetas*, north of the town of Antofagasta ; *Lengua de Vaca*, at south-west of the Bay of Tongoy ; *Caramilla*, south of Valparaíso, a useful mark in making the port ; *Lavapié*, in the Bay of Aranco ; *Cabra*, south of Valdivia ; *Huechucucuy*, in Ancud ; *Tres Montes*, on the peninsula so named ; *Pilar*, on Desolation Island, at west end of Magellan Straits ; and *Cape Horn*, at the south end of the Fuegian Archipelago.

BAYS.—In North Chile the coastline has few deep indentations, the Bays of Mejillones and Moreno (north and south of the Tropic of Capricorn), and of Serena or Coquimbo alone attracting attention on the map. South of Valdivia the character of the coast changes, and among the numerous bays and channels we must mention *Reloncavi*, on which stands Puerto Montt ; *Ancud*, its southern continuation ; *Corcovado*, south-east of Chiloe Island ; *Moraleda* Channel, between the Chonos Islands and the mainland ; *Pireas* and *South Estobon*, south of the Taitao peninsula ; the *Messier* Channel (with the famous English Narrows), between Wellington and the

mainland ; and the *Magellan Straits*, with Skyring Water, Otway Water, and the Beagle Channel.

PORTS.—For those, see the chapter on *Ports and Harbours*, and the *List of Towns*.

ISLANDS.—South of 42° S. lat. the seaboard is fringed by an infinite number of islands, large and small, which continue to represent the Cordillera of the Coast. First comes the large island of *Chiloé*, then the *Chonos* and *Taitao* archipelagos, then *Campaña*, *Wellington*, *Madre de Dios*, *Duke of York*, *Hanover*, and *Queen Adelaide*. South of Magellan Straits lie *Desolation*, *Santa Inez*, *Clarence*, *Hosta*, *Navorin*, and a host of smaller islands.

Far out in the Pacific are some isolated islands belonging to Chile, viz. (1) the *San Felix* and *San Ambrosio* archipelago, 370 miles west of Concepción, rocky and uninhabited ; (2) the *Mas a Tierra* ("landward"), and *Mas a Fuera* ("outward") groups, opposite the Gulf of Corcovado, about 350 and 450 miles to the West ; the former, better known as Juan Fernandez, is associated with the name of Alexander Selkirk and the romance of Robinson Crusoe ; the latter, smaller but higher, rises over 6,000 ft. from the sea ; (3) more remote still are *Sola y Gomez* and the mysterious *Easter Island* or *Pascua*, with its prehistoric statues of colossal size. It is situated some 2,000 miles west of Caldera, and was formally taken over by Chile in 1888.

MINERAL AND THERMAL WATERS.—These are numerous and important. On the coast they occur, among other places, at Punta Angamos, Punta Lavapié, Nahuelhuapi, Sotonió, Petrohué, Huel Island, and Puerto Perez on the River Aysen. In the central valley or sub-andine district



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there are iron waters at Catillo, and alkaline springs at Panamávida, Cauquenes, Apoguindo, Colina, Jahuel, etc. In the Andine region the most important stations are at Toro, Chillán, Tinguicirica, Mondaca, Vilucura, and Lagunillas. The most famous curative waters are at Chillán, some 7,800 ft. above sea-level; Cauquenes is, perhaps, the best provided with up-to-date bathing establishments.

**CLIMATE AND HEALTH.**—Two great factors must be borne in mind in respect to the climate of Chile—the latitude and the altitude. The country ranges from the torrid to the fringe of the arctic zones through about  $38^{\circ}$  of latitude: again, in the same degree of latitude a line from east to west may lead from sea-level to over 20,000 ft. above sea. Certain general features emerge at once. The northern provinces are rainless and (on the lower levels) extremely hot; as one goes south the mean temperature grows gradually lower and the rainfall increases, till in the extreme south the rainfall is excessive and almost continuous, and the winters are of arctic severity. Central Chile, where the bulk of the population lives, enjoys a temperate, regular, and healthy climate, free from the extremes above mentioned, and reputed to be one of the best climates in the world.

**SEASONS.**—The seasons in the southern hemisphere are the reverse of those in Europe, so that the Chilean summer is during the months of December, January, and February, while the winter occupies June, July, and August.

**WINDS AND OCEAN CURRENTS.**—Owing partly to the great barrier of the Andes and partly to the constant influence of cold winds and marine currents from the

south, there is a striking difference between the climates of the east and the west coasts of South America. The summer temperature on the west coast is some  $8^{\circ}$  to  $10^{\circ}$  Fahr. lower than that of places in the same latitude on the east coast, and the mean annual temperature is  $6^{\circ}$  to  $7^{\circ}$  lower. The greatest contrast is presented in the south of the continent, where Chile has an excessive rainfall, and Argentina a moderate rainfall but furious gales. The cold Humboldt current flows north along the coast from Chiloé to the equator, and serves to moderate the heat of the desert regions of North Chile and of Peru. The prevalent winds are from the west, varying from north-west to south-west according to season. In summer, to the north of  $39^{\circ}$  S. lat. sea breezes from west to south-west prevail; from  $39^{\circ}$  to  $46^{\circ}$  S. lat. the usual winds are north-west, warm and accompanied by rain. South of  $46^{\circ}$  S. lat. cold polar winds prevail, and in the extreme south they increase in strength from September to January and then diminish till April, reaching their lowest point in May and June. East winds are merely local land breezes ("*puelches*") from the Andes, as the great trade winds of Argentina sweep up the slopes of the eastern Andes and pass right over Chile. In the valley they rise daily from 10 to 11 a.m., and in the passes and narrow valleys are strong and dangerous, in the afternoon a contrary wind replaces them.

On the coast of Central Chile the mornings are usually calm, with mists where the Coast Cordillera is high. From noon to about 4 p.m. south-west winds blow with increasing strength, but afterwards die down and disappear at sunset. Rain is more frequent on the coast

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than in the Central or Longitudinal Valley, save that south of 38° S. lat. this valley is subject to torrential rains from time to time. In the Magellanic districts storms are frequent. Snow, of course, is common in the south, but in the centre and north is almost confined to the Andes, and even these falls infrequently in summer. It is rare in the plains, but occasionally lies for several days at Valdivia and Puerto Montt. North of 36° S. lat. it never falls save in the high Andes.

In the north of Chile and in high altitudes there is a great and constant variation between the day temperature and that of the nights.

The following table gives details as to the climate of several typical towns—

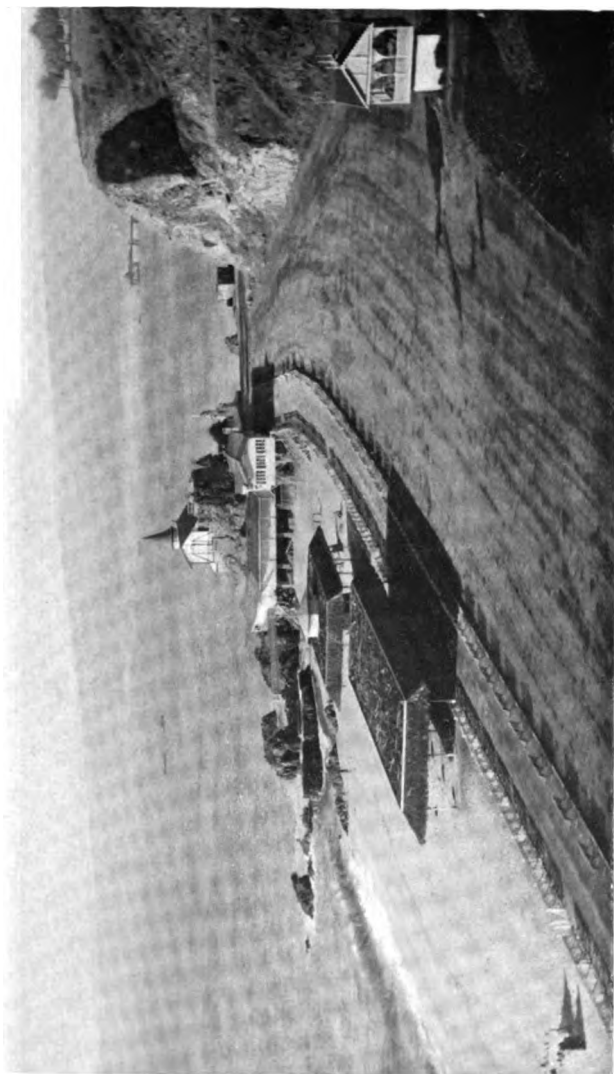
	<i>S. Lat.</i>	<i>Mean temp.</i>	<i>Summer temp.</i>	<i>Winter temp.</i>	<i>Rainfall (mm.).</i>	<i>Days of Rain.</i>
Iquique . . . . .	20° 23'	66 °	75 °	59 °	1·3	0·4
Copiapó . . . . .	27° 22'	60 °	—	—	3·8	1·3
Serena (Coquimbo) . . . . .	29° 54'	59·2°	65 °	53 °	39·0	4·0
Valparaiso . . . . .	32° 1'	57·6°	63 °	52·5°	318·6	32·6
Santiago . . . . .	33° 28'	55·6°	66 °	45 °	284·0	31·3
Talca . . . . .	35° 25'	56·5°	70 °	45 °	652·4	36·3
Concepción . . . . .	36° 49'	56 °	—	—	1323·0	96·0
Valdivia . . . . .	39° 53'	52·9°	61·5°	45 °	2841·1	155·3
Ancud (Chiloé) . . . . .	41° 50'	50·7°	56·5°	45·9°	2020·5	172·0
Punta Arenas . . . . .	53° 10'	43 °	51 °	34·9°	370·0	152·0

Meteorological observations under the direction of the Navy are taken regularly at the stations on the coasts and islands, and also at Almirante Barroso and on Pascua Island. The Agricultural Institute of Santiago also records observations at the chief inland towns.

Public health is in the charge of the Higher Council of

Public Hygiene (established in 1887), assisted by the Institutes of Hygiene at Santiago and by Departmental Councils. Free vaccination is provided by the State, and there are well-found hospitals in the chief ports and towns. Scientific analyses and studies are in continual operation, and the results are issued in official publication. Full legal and practical provision is made for dealing with epidemic and other diseases and controlling and improving sanitation.

Excellent though these regulations are, it cannot be said that as yet their operation is satisfactory. Sanitation has been somewhat neglected, and the habits of the mass of the population betrays ignorance and disregard of the laws of health. Mortality, especially of young children, is very heavy; that of the general population is given at 32-33 per 1,000. Epidemics are frequent; *e.g.*, of smallpox at Valparaíso and Viña del Mar in 1905, of bubonic plague at Iquique in 1910, of smallpox, typhoid, and plague at Antofagasta in 1911. Of late years the authorities have shown a consciousness of the necessity for reform. New drainage systems are in operation in Curicó, and parts of Concepción and Antofagasta, and are being constructed in Taltal, Serena, Tacna, Chillán, and Valdivia. Good water supplies have been installed at Curepto, Yungay, Nacimiento, Victoria, and Temuco, and improvements made at Vicuña, Los Andes, Cauquenes, Quirihue; whilst new systems are in construction at Talca, Concepción, Talcahuano, and a number of other towns.



*The Shore, Viña del Mar*



## CHAPTER II

### NATURAL HISTORY

I. FLORA.—Central Chile is distinguished botanically by its large number of indigenous species absolutely peculiar to the country. It is to-day cut off from the rest of the continent on the north by a series of almost barren deserts stretching for hundreds of miles, and on the east by the chain of the Andes, of which even the passes rise over 12,000 ft. until the south of the country is reached. Further, there is little doubt that the Argentine pampas were formerly the bed of a sea, so that Chile was completely isolated by ocean and mountain and desert. Among the peculiar species thus arising are the *Francoaceae* (two genera and five species), low-growing plants, yielding a black dye and a sedative drug; the *Vivianeae* (four genera and fifteen species); the *Sky-lanthus*, a low shrub with yellow flowers; and several species of cactus. Only one of the numerous varieties of palms appears to be indigenous. One of the most characteristic flowering plants is the Copihue (*Lapageria rosea*): two varieties—red and white—grow; the flower is beautiful in form and colour, and lasts long after gathering. Fuchsias grow abundantly in Central Chile and on the lower Andine slopes. The forests of Central Chile comprise a very large number of separate species; the most important of these are named in the chapter on *Forest Products*; the most characteristic are the Peumo and the Quillay; nearly all are evergreen. In the

south the species are few, the Winter's Bark (*Drimys Winteri*) and a Beech (*Fagus drimys*) predominating.

A list even of the commoner species would only weary the reader. The Chilean flora is estimated to comprise some 130 families, and 685 genera of phanerogams. The largest family is the Composite, with about 188 genera ; of these the genus *Senecio* (ragwort) contains about 250 species. The three zones—north, central, and south—may be subdivided longitudinally from the botanical point of view into (a) the coast and (b) the interior. More broadly still the flora of the north, the centre, and in part the Cordilleras belongs to the "Andine" botanical kingdom, while that of the south, from 40° S. lat., belongs to the "Austral-antarctic" kingdom.

It is believed that the Potato came originally from Chile ; it is still found wild in Chiloé and the adjacent islands and mainland. The Bean and Pepper are also indigenous, and Maize and Quinoa, whether indigenous or not, were certainly grown in the country before the Spanish conquest.

II. The FAUNA.—The Fauna of Chile is not distinguished by so many peculiar species as the Flora, but still in some respects is markedly different from the other countries of South America. Thus there are neither monkeys, jaguars, river turtles, nor venomous snakes, and lizards are hardly found beyond the arid zone of the north. A large venomous spider, peculiar to the country, is common in the region of cultivation. Fish are comparatively rare in the fresh waters but abundant in the sea, where seals (six species) and sea-otters are also found.



*Birds* are numerous, and many species are confined to Chile. Among them may be named the Andine Condor, represented in the national arms ; sea-birds, such as the white and the black albatross, the giant petrel, the pelican, the penguin, numerous gulls, and the so-called Cape pigeon (*Daption Capense*) ; several species of parrot, and three of humming-birds (one peculiar to Chile) ; the rhea or South American ostrich, swans, geese, ducks, cormorants, and many other water-haunting species ; and the characteristic *Ptarmachus* genus, including the ungainly *Turco*, the *Tapacollo* with its tail turned over its back, and the barking *Guid-guid*.

The *Rodents* form the most numerous order, twelve genera and twenty-five species. These include the beaver-like Coypu (*Muopotamus Coypu*) valued for its fur ; the Chinchilla (*Ch. laniger*), with still more valuable fur ; the Tuco-tuco (*Ctenomys brasiliensis*) ; a rabbit ; and several species of mice.

The *Carnivora* include the puma (*Felis concolor*), the fox, and wild cat (three species of each), one weasel, a sea-otter, and six species of seal.

The *Ruminants* include the Guanaco or Huanaco (*Auchenia huanaco*), which roams the uplands in large herds as far south as Magellan Strait ; the rare Vicuña (*Auchenia vicunia*) ; the Huemul (*Cervus Chilensis*) a species of deer, which figures on the national arms ; the Pudu, the smallest deer, peculiar to Chile. The first two are the wild members of the Llama family ; the Indians hunt the Guanaco, using its skin for clothing, and also for covering the framework of their huts.

The *Edentates* include the *Dasybus* and the rare *Pichiciego*, one of the opossums.

The coast in the north slopes steeply into considerable depths, and the *marine life* there is little known; the shallower and more sheltered waters of the south coast abounds in marine products of considerable economic service. The shellfish form the chief food supply of the Indians; oysters and the large barnacle (*Balanus psittacus*) are sent as delicacies to the towns of central Chile; and near Juan Fernandez valuable fisheries of cod and large crayfish are exploited for the market. The Cetacean family includes the Sperm and two whales, two dolphins, six seals, the sea-elephant (*Macrorhinus leonina*), which reaches 20 ft. in length, and the sea-lion (*Otaria jubata*).

*N.B.*—In this chapter no notice has been taken of the numerous foreign species both of Flora and Fauna which have been successfully acclimatised in Chile. For these see under *Agriculture*. They include horses, cattle, sheep, goats, swine; vines and many other fruit trees; the staple cereals; and trees such as the willow, poplar, beech, and eucalyptus.

## CHAPTER III

### HISTORY AND DEVELOPMENT

THE earliest European history of Chile is closely connected with the rivalry which prevailed between Pizarro and Almagro. The jealousies between the pair decided them to separate, and Almagro, collecting a force, started out from Peru for the unknown south. It is true that numerous tales relating to the booty which was to be met with in Chile had come to the ears of Almagro, and had assisted his resolution to leave the wealthy territory of Peru to the untender mercies of Pizarro. Nevertheless, Almagro's first expedition was, in many respects, somewhat disastrous. He set out with over five hundred Spaniards and a large number of Peruvians, and soon found himself not only involved among the bleak heights of the Cordilleras, but also more or less stranded in the midst of the tremendous and barren desert of Atacama. The death-roll had been enormous; the Indians had perished in thousands from the force of the lofty and frozen altitudes, while the Spaniards themselves had lost more than a hundred and fifty of their number owing to the hardships and want of suitable nourishment they experienced.

Almagro's resolution, however, overcame all difficulties. Advanced in years as he was, the Conquistador stirred his followers to unceasing action by his own intrepid example. For nine months the expedition continued, halting from time to time for lengthy periods in order to refresh their weary bodies.

At the beginning of 1536 Almagro's force entered the country which is now Central Chile. Not very much inkling of the real merits of the land appears to have occurred to them on this occasion. It is true that the pioneers assured themselves, not without reason, that the lofty mountains at the back of the valleys were heavily stocked with minerals. At the same time, they realised nothing of the pastoral and agricultural possibilities of the lower slopes, and looked with some horror on the country which refused to give them adequate subsistence, and the natives of which were becoming increasingly bellicose and aggressive. Almagro returned, therefore, bringing back with him only a shattered remnant of his force, and it may be imagined that the reputation of Chile did not stand high at that period with the Spaniards who had established themselves in Peru.

Almagro's tragic end does not really belong to the history of Chile, but is concerned with that of Peru. Nevertheless, his execution at the hands of Pizarro undoubtedly had the effect of delaying for a while the working of the colonising forces in Chile.

The next Conquistador who came down to Chile from Peru was Pedro de Valdivia. Valdivia was an officer of Pizarro's, and his appointment to the command of this expedition was, in reality, due to the intriguing policy of Pizarro. As a matter of fact, two officials had already been sent out direct from Spain, with the idea of undertaking the conquest of Chile. These were Pedro Sanchez de Hoz and Camargo. A certain amount of the geography of Chile had now been gleaned, and to the first of these two had been committed the conquest of

the country as far as the River Maule, while the country to the south of this had been entrusted to the latter.

Pizarro saw no cause to welcome this royal intervention into his plans. He therefore made numerous excuses, in order to avoid confirming the Spanish nominations, and although he could not prevent the departure of the officers, he sent with them Pedro de Valdivia, who was really in full command. As a result, the influence of the others rapidly deteriorated, until Valdivia remained in undisputed control of the force and of the new country. He took with him some 200 Spaniards, accompanied by Peruvian native auxiliaries and by various monks and numbers of domestic animals, with which the new pastures were to be populated. Many of the soldiers took their wives with them, and thus, in a sense, this second expedition partook of the nature rather of a small national migration than of a chance military excursion. The march was marked by not a few Indian attacks, but these were successfully repulsed, and the expedition eventually came to a halt on the banks of the River Mapocho. It is most curious that the first definite stopping-place of the pioneer Spaniards should have been on the exact site of the present capital of Santiago, but so it was, and the small force encamped at the foot of the hill of Santa Lucia, which now rises in the centre of the city.

The first establishment of the Spanish *régime* was accompanied by more than the usual amount of hardships and active suffering. On the 24th February, 1541, was laid the actual foundation of the city, the Indians of the neighbourhood regarding the uprising of the new and strange structures with a jealous eye. Friction

between these and the Spaniards was not long in arising. During the temporary absence of the commander-in-chief, Valdivia, the warlike natives fell with fury upon the new colony, destroyed the houses which were in the act of rising up, and attacked the fortress itself, which was bravely defended by the desperate followers of Valdivia. Undoubtedly this warfare was of the most ferocious order from the very start. Thus, before this attack, the Spaniards had captured several native chiefs, whom they held prisoners in the fortress. In the course of the fierce onslaught, a woman named Inez Suarez, wrought up to an extraordinary fury, is said to have seized an axe, to have run into the dungeons where the unfortunate Indians were confined, and, suspecting that they were attempting to break their fetters and to escape, she dashed out their brains with her weapon. In the meanwhile, the battle continued with unabated vigour, but the tide of war was turned by the advent of Valdivia, who appeared on the scene with his horsemen, charged into the Indian ranks, and slaughtered many hundreds of the warriors, who were unable to make an effectual resistance to the mailed horsemen.

Seeing that the natives were now actively hostile, the questions of supplies became more and more difficult, and Valdivia had to contend, not only with his open and dusky enemies, but with the growing discontent of his own people. On several occasions he thwarted an incipient mutiny by means of executions and stern punishments. In the meanwhile, some hint of the real mineral riches of the land was now forthcoming. It had been reported that the valley of Quillota abounded

in gold. Valdivia, determined to verify this, sent a force to the spot, and the subsequent quarrying revealed results which surpassed even the most fervent hopes of the Spaniards. This event naturally changed the entire aspect of affairs. With the possibilities of such wealth before them, the gloom of the half-starved settlers now gave way to confidence and joyous hopes, such as the promise of unbounded gold invariably induces in a new country. But it was necessary to obtain succour from Peru. According to one account, Valdivia sent two of his captains, Alonzo Monroy and Pedro Miranda, to the north, in order to blazon abroad these treasures of the south and thus to bring back a following.

In order that they might bear with them some proof of their words, it is said that the commander directed that the bits and stirrups of the messengers should be made of gold. Attacked on their road by the Indians, only two officers escaped with their lives. For a while they were imprisoned, and indeed, only owed their lives to the good offices of a native chieftainess. In the end they contrived to break away from their dusky captors and to make their way to Peru.

As a result, Valdivia received many reinforcements, and succeeded in colonising a far greater extent of the country than had been possible until then. In extending his dominions to the south, Valdivia was brought into contact for the first time with the warlike Araucanian Indians, an extraordinary virile and formidable race. These, resenting to the utmost the attempt of the Spaniards to capture their lands, met them in pitched battle in the forests and mountains of their own southern

country. Here, for the first time, the Spaniards found foemen worthy of their steel, and the war was by no means one-sided, both Spaniards and Araucanians gaining the advantage alternately for centuries.

A very full account of these Araucanians has been given by the Abbé Don J. Ignatius Molina. The original Italian version has been translated into English. This is his description of the Araucanian warriors, published in 1808—

“The army is at present composed of infantry and of horse. It originally consisted entirely of the former, but in their first battle with the Spaniards, perceiving the great advantage which their enemies derived from their cavalry, they soon began to discipline themselves in the same manner. Their first care was to provide themselves with a good breed of horses, which in a short time became so numerous that in the year 1568, seventeen years after their first opposing the Spanish arms, they were able to furnish several squadrons, and in the year 1585, the cavalry was first regularly organised by the Toqui Cadeguala.

“The infantry, which they called Namuntulinco, was divided into regiments and companies ; each regiment consists of one thousand men and contains ten companies of one hundred. The cavalry is divided in like manner, but the number of horse is not always the same. They have all their particular standards, but each bears a star, which is the national device. The soldiers are not clothed in uniform, according to the European custom, but all wear beneath their usual dress cuirasses of leather, hardened by a peculiar mode of dressing ; their shields and helmets are also made of the same material.

“The cavalry is armed with swords and lances ; the infantry with pikes or clubs pointed with iron. They formerly employed bows and slings, in the use of which they were very dexterous, but since the arrival of the Spaniards, they have almost entirely relinquished these, experience having taught them to avoid the destructive effect of their musketry by immediately closing in and fighting hand to hand with the enemy.”



The most terrible of these Araucanians, according to popular repute, were the club-bearers, who, in the words of the authority just quoted, "destroy with their iron pointed lances all that they meet in the way."

It is impossible, of course, to go fully into these Araucanian campaigns, since these, as we have said, endured for centuries, and, indeed, were only finally concluded towards the end of the eighteenth century.

One of the most famous of the early chiefs who made a stand against the Spaniards, was Caupolican. Led by this fierce chief, the Araucanians defeated the Spaniards on numerous occasions.

Valdivia himself was finally defeated by this great warrior. He is said by some to have been done to death by the pouring down his throat of molten gold. This is probably a somewhat garbled version of his end. Another account has it that his arms were cut off and devoured by his implacable foes in the sight of the unfortunate dying leader. A third story has it that Valdivia was dispatched in a commonplace fashion by a club. In any case, it is obvious enough that much confusion obtains as to what actually occurred. After this disaster, the Indian wave swept northwards, and but for Villagran, Valdivia's successor, a notable Spanish leader, the entire Spanish forces might well have been driven from Chile. With the turning of the tide again, Caupolican was captured and executed.

At this time, moreover, the scourge of smallpox first visited the Araucanians, and the ravages which the disease worked among their ranks were of a ghastly nature. Quiroga, in his *Memoirs of the War of Chile*,

written in the eighteenth century, gives an anecdote which shows the horror with which the smallpox inspired these Indians at a far later period, when they might have been thought to have become more accustomed to the disease and hardened to its terrors. Given in his own words the account is as follows—

“Some time since, the Viceroy of Peru sent as a present to the Governor, Juan Zaraqemada, from Lima to Chili, several jars of powder, honey, wine, olives and different kinds of seed; one of these being accidentally broken in unlading, the Indians who were in the service of the Spanish having noticed it, imagined that it was the purulent matter of the smallpox, which the Governor had imported in order to disseminate among their provinces and exterminate them by this means. They immediately gave notice to their countrymen, who stopped all communication and took up arms, killing forty Spaniards who were among them in full security of peace. The Governor, to revenge this outrage, entered the Araucanian territory, and thus, owing to the suspicion of these barbarians, was a war excited which was continued until Don Alonzo de Rivera returned a second time to resume the government of the kingdom.”

Another very fierce Indian warrior was Lautaro, who, together with Caupolican, assailed the Spaniards in many furious combats. There is no doubt, indeed, that had these warriors followed up their successes, the position of Villagran and his men would have been untenable. As it was, the Araucanians were wont to signalise a victory with a tremendous debauch, in the course of which their enemies had time to recover themselves, and occasionally to resume the offensive before the effects of the strong liquor had died away.

All this time, the Spanish civilisation in Central Chile had been becoming consolidated and firm. In 1567, a

Court of Royal Audience was established in Chile, which was made independent of that of Peru. To this was confided not only the political, but also the military, administration of the colony. The seat of this tribunal, for some reason or other, was fixed at the town of Concepción instead of Santiago. The mines were now being worked, and were yielding a large revenue, while the seeds brought into the country having flourished amazingly, the agricultural situation of the land had become secure.

Nevertheless, the early history of Chile was destined to be as much marked by the sword as by the ploughshare. Not only did the colonists have to suffer from the animosity of the Araucanian Indians, but they had in addition to this to endure many raids on the part of foreign buccaneers. The Dutch, encouraged by their successful occupation of Northern Brazil, proved themselves the most enterprising spirits in this respect, and on several occasions endeavoured to make an alliance with the Araucanians, with the object, of course, of continuing the war on a more ambitious scale.

An important English expedition was sent out under Sir John Narborough by Charles II, and this very formidable fleet would undoubtedly have caused dismay along the entire Chilean coast; but unfortunately for Narborough, and fortunately for the Chileans, the whole fleet was lost in passing through the Straits of Magellan. In the end, all these various foreign expeditions resulted in nothing, and little by little the state of Chile improved. Peace was now patched up from time to time between the Chileans and the Araucanians, and although these

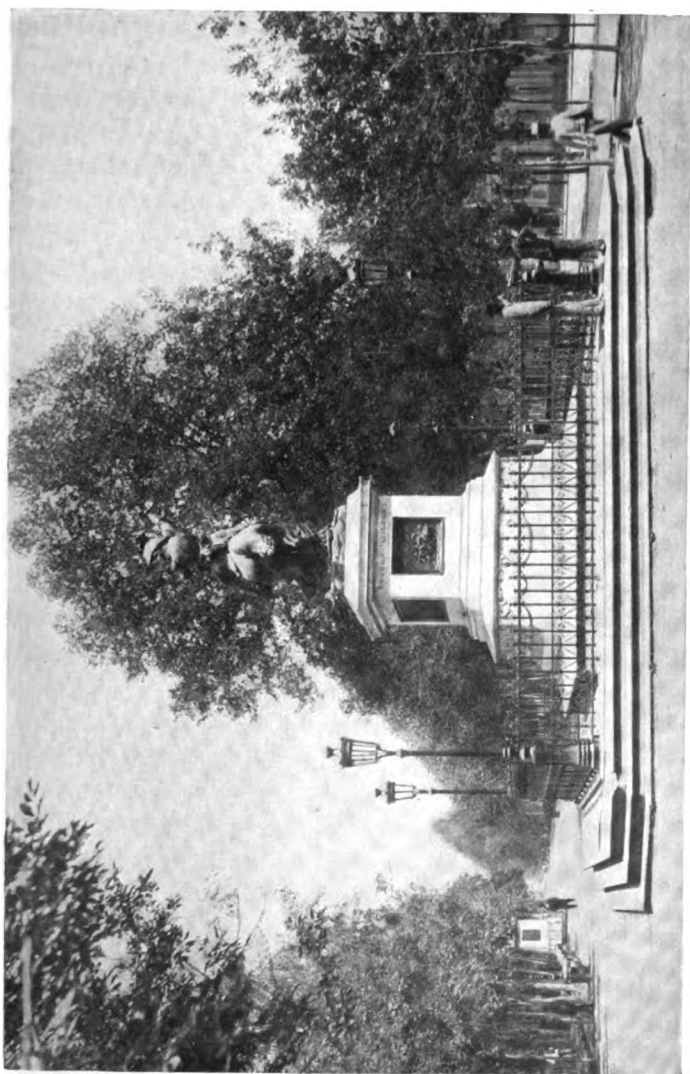
interludes of tranquillity were seldom of long duration, it was at all events a sign of improving times that they were enabled to be effected at all.

The inhabitants of Chile had in the meanwhile little by little been assuming characteristics of their own. Denizens of a bracing and invigorating climate, they had attained to a physical and mental status of a distinctly advanced order. In an old historical work, Raynal's *History of the Indies*, a very fair account of these Creoles or Chilean-born Spaniards is given.

"The Creoles are generally well made, those deformities so common in other countries are very rarely to be found among them. Their courage has frequently signalised itself in war, by a series of brilliant actions; nor would there be any better soldiers in the world, if they were not averse from discipline.

"Their history furnishes no traits of that cowardice, treachery and base conduct which dishonours the annals of all nations, and scarcely can an instance be produced of the Creole having committed a disgraceful action. Their minds are untainted with dissimulation, artifice or suspicion. Possessing great frankness and vivacity and a high opinion of themselves, their intercourse is wholly free from that mystery and reserve which obscures the amiableness of character, depresses the social spirit and chills sensibility, an ardent imagination which admits of no restraint, renders them independent and inconstant in their inclinations. It impels them in their pursuit of pleasure with an eagerness to which they sacrifice their fortunes and their very existence. A remarkable quickness in conceiving and in expressing their ideas with force, the talents of combining, added to that of observation and the happy mixture of all the qualities of mind and character that render man capable of the greatest performances, prompts them to the boldest undertaking when stimulated by oppression."

As was usual under Spanish Colonial régime, the fine



*Statue of O'Higgins, Santiago*



arts were kept in a somewhat low state, and even the crafts were very little encouraged. Father Carlos, however, of Hainhausen, in Bavaria, is said to have introduced a number of German workmen very skilled in iron and precious metals, and, with all the treasures of the country at their hand, the results of their labours were eminently satisfactory.

We now come to the period of the latter half of the eighteenth century, when Chile was passing through the last stages of her colonial existence. The most notable figure of this age was that of Don Ambrosio O'Higgins. O'Higgins had started life as an errand boy in the employment of Lady Bective, of Dangan Castle in County Sligo. Since he died Viceroy of Peru, and probably at the time the most influential official of the kind in the entire world, the romance of his career will be evident enough from the start.

O'Higgins, having arrived in South America in a humble condition of life, made his way gradually, until he obtained office in the Spanish service. In time, he found an opportunity of showing both his generalship and his governmental abilities in the Araucanian country. Soon after this, he was made Governor of Chile. Here, his extraordinary abilities found full scope. His liberal spirit saw to the setting free of the remaining Indian slaves in the country. He threw out a network of roads in all directions, and encouraged every species of industry. It was his son, moreover, Bernardo O'Higgins, who did for the new republic that which his father had achieved for the empire. The outbreak of the War of Independence, as a matter of fact, took place long after the promotion

of Ambrosio O'Higgins from the post of Governor of Chile to that of Viceroy of Peru, and by the time that the surges of strife passed northwards into Peru, O'Higgins had long ceased to be concerned with earthly affairs.

Miranda might be termed the Father of the Revolution in the entire continent of South America, and his influence was not long in penetrating to Chile.

The work and movements of the revolution were controlled almost entirely by a society founded on the principles of freemasonry, which attained to very great power, and undoubtedly worked in a disinterested and lofty-minded fashion. This was known as "The Gran Reunion Americana," and had its headquarters in Buenos Aires. Dependent lodges were soon established throughout South America. Concepción was the seat of the Chilean lodge, which was named the Lautaro Lodge.

According to Mr. Stuart M. Chisholm, in 1812 the lodge in Buenos Aires was promoted into a Grand Lodge, with the famous San Martin as its Grand Master, and with the erection of a Grand Lodge in Buenos Aires the status and ramifications of the remainder, including the Chileans, increased.

The early days of the War of Independence were productive of evil times for Chile. The patriot forces, although showing admirable bravery and devotion, had been overwhelmed on more than one occasion. At length the majority of the leaders, including Bernardo O'Higgins, took refuge across the Andes in Argentina, now a free republic. They returned with an army led by the famous Argentine General, San Martin, and the two battles of Chacabuco and Maipu ended in the final defeat of the



royalist forces, while at the same time, Admiral Cochrane in command of the new Chilean fleet, which proved itself so formidable and well manned, was sweeping the Spanish flag from the seas, and blockading those ports in the north which were still held by the Imperial troops.

The value of the assistance rendered by the Chilean fleet cannot be overestimated. Until the Chilean flag made its appearance on the waters the Spanish vessels had naturally had matters their own way, and were a standing danger to the cause of the patriots. With the entry upon the scene of the first vessels manned by their resolute crews, all became changed. The Spanish cause rapidly declined from an offensive to a defensive situation, and soon the terror of an attack on the part of the Chileans obsessed all the coast left to the Spaniards.

The last stronghold held by the Spaniards in Chile was that of Valdivia in the south. The capture of Valdivia is supposed to rank as one of Cochrane's greatest and most brilliant efforts. Valdivia was considered impregnable, and one who has seen the spot, all but shorn as it is at the present day of fortifications, can well imagine that this theory was not without its foundation.

At the beginning of the nineteenth century, the place is said to have been protected by nine forts, and, since so narrow is the entrance to the bay that one sailing on the inland waters is apt to take the spot for a lake, the difficulties of the attacking fleet were not to be overestimated. The forts themselves, moreover, were strongly situated on the sides of the mountains which enclose the small bay.

Nevertheless, Cochrane determined to make the

attempt, and on a summer's day, the 3rd February, 1820, he sailed for the narrow entrance, and boldly anchored in the waters of the bay. It is said by some that the artillery in the Spanish service of those days were not trained individually as gunners; they were merely told in which direction to fire, and when they pulled the lanions of their pieces, it was with only a very vague hope of hitting anyone or anything. This may or may not, have been the case, but certainly it seems remarkable how the two small vessels with which Cochrane entered the bay escaped unharmed from the shot which the forts poured down upon them.

The subsequent assault on the forts themselves affords a stirring tale. Night fell as the Chileans were still climbing the rugged heights towards the forts. The Spanish garrisons, not believing that their enemies would dare to undertake so terrific a task in the darkness, were caught unawares, and soon after daylight the next morning the patriot flag was flying from each of the nine forts, and the famous port of Valdivia had fallen once and for all into the hands of the Chileans.

In the meanwhile a certain amount of jealousy had arisen between the various Chilean leaders, and the party led by the brothers Carrera proved itself rather too much in favour of free-lance tactics to suit the majority of the remaining chiefs. The downfall of the Carreras occurred in the end, but not until a great amount of confusion had been brought about.

Bernardo O'Higgins, the son of Ambrosio O'Higgins, became the first director of the Republic of Chile. He stands out as one of the greatest heroes of the

Independence. When the war was over, internal unrest and the exigencies of party caused discontent with his government. There was no doubt, in fact, that the older and more aristocratic Chilean families had not yet become accustomed to the frankly liberal policy of O'Higgins. The head of the new State was not slow to recognise this. He called together the leaders of the contending parties, and put before them his views with an openness which won the unwilling admiration even of his enemies. Rather than be the instrument or unconscious cause of internal strife, he would resign his high office, he told them. In order to prove the earnestness of his conduct, he tore off his insignia of office and then explained that he was now nothing but a private citizen. The gathering, his opponents included, cried out in chorus that they had nothing against him and that their only sentiments for the great O'Higgins were those of respect and admiration. Acknowledging these sentiments, O'Higgins reiterated his firm intention of resigning. Thus ended the career of the famous Irish-Chilean.

Perhaps one of the best accounts of the abdication of O'Higgins is that by Mr. A. Stuart M. Chisholm, who gives the great Irishman's chief speech as follows—

“ ‘ I regret that I may not lay down the insignia of my office before the National Assembly, from which a few months ago I last received it, and I regret still more that I may not bring to completion the projects that I have meditated for the good of my country ; but I leave her free from foreign domination or invasion, respected abroad and at home, and covered with glory from her victories on land and sea. From this moment I am a simple citizen of Chile. It may be that during the years in which I held chief command, the

respect due to my person or at least to my high office, has silenced complaint or shortened the reach of justice. Let such accusers now step forward and speak without impediment. What wrong have I done? What tears have I made to flow? I speak not now of the wrongs we have all suffered, of the tears we have shed together of the evils that war and disaster have inflicted on every Chilean—but of those which my own position may have caused. If any such have just cause of accusation against me, let them speak, and though I am so poor that nothing remains to me but the blood in my veins, I will pay them in that coin if any accuse me.'

"At once a great shout went up, in which the people of the patio joined—'We have nothing against O'Higgins, Viva O'Higgins!'

"And then a wonderful thing! The shouts suddenly died, and the sound of weeping filled the assembly. O'Higgins was profoundly moved, he could not utter another word. He passed out from the patio and into the street. The throng of people followed him to his own door, in silence, honour, and love. The morning sun, as it rose above the eastern Cordilleras, found many of them still standing at the entrance through which he had disappeared."

After this we come to the period when numerous different species of constitutions were tried, and when a number of dictators followed each other with varying success, or, to be more accurate, with a varying want of success. Civil war broke out and continued intermittently, until President Montt managed to introduce the first permanent era of law and order. From that period the disturbances grew steadily less marked, and civil war gradually died away, although it was renewed for the last time on the occasion of the Balmaceda revolution, which is referred to later. With the exception of such isolated outbreaks, Chile now grew absolutely settled. Indeed, so far as internal affairs are concerned, the republic can without doubt lay claim to the most peaceful record

of all South American States. Externally, on the other hand, she has perhaps been less fortunate than the majority.

In the year 1865, friction took place between Chile and Spain. The matter arose owing to a difference between Peru and Spain, and Chile was brought into the question more or less inadvertently.

As a result of this, Admiral Pareja appeared with a Spanish fleet off Valparaiso and demanded satisfaction, which the Chilean Government firmly but temperately refused. On this, the Spanish admiral blockaded the Chilean ports of Caldera, Coquimbo, Valparaiso, and Talcahuano.

At this period the strength of the Chilean navy had been allowed to deteriorate. Chile possessed only two fighting vessels. These, however, managed to render an account of themselves worthy of their reputations as Chilean ships. The first, the *Esmeralda*, engaged the Spanish man-of-war, the *Covadongo*; while the *Independencia*, the other Chilean vessel, captured a Spanish launch. This seems to have preyed on the mind of Admiral Pareja, who for his part had merely succeeded in annoying a few merchant vessels, and shortly after this he committed suicide, being succeeded in his command by Admiral Nuñez.

Nuñez bombarded Valparaiso in March of the following year, and caused immense damage. The war, however, appears to have been fatal to Spanish admirals, for soon after this, Admiral Nuñez died, and in the end the Spanish fleet sailed away to Europe. But the war continued to smoulder on at intervals until the year 1879, although

the opportunities of the combatants to get at each other became practically non-existent.

This experience was, in one sense, beneficial to the Chileans, since it drew attention to the official neglect from which the navy had suffered, and from that day the Chilean fleets have always been maintained in a condition of efficiency.

It was just after this, too, that the Araucanians became finally pacified, although not defeated. The remnants of this once numerous race agreed to live in friendly fashion side by side with their white neighbours, and from that day until this, no real friction has occurred between the two peoples. Indeed, there seems no doubt that the Araucanians are now dying out much in the same way as are the Maoris in New Zealand.

At a later period Chile found herself obliged to undertake two serious wars with Peru, the last one, known as the "War of the Pacific," being waged against the allied forces of Peru and Bolivia. This ended in the complete victory of the Chileans, who by this means gained the rich nitrate territory of the North.

The last revolution of consequence, already referred to, was that brought about during the Presidency of José Manuel Balmaceda, who assumed office in 1886. Balmaceda's government was of too radical a character to suit the majority of the Chileans, although his motives and personality were undoubtedly single-minded. In the end, Balmaceda attempted to impose his views by force, and on this civil war broke out. The Chilean has always proved himself a notable fighter, and on this occasion the battles were peculiarly fierce, being carried on both

on land and sea. In the end, the forces of Balmaceda obtained the worst of the struggle. Balmaceda himself vindicated the honour of his principles by committing suicide.

Since that time, the internal affairs of Chile have proceeded with unbroken smoothness, and although elections may be frequent, and the change of ministries a matter which occurs too often in the opinion of many, no armed force has ever entered into the field of politics.

Chile is essentially a constitutional republic, valuing to the full the privileges and liberties of a progressive State.

The republic has, from the inception of her history, been curiously subject to visitations of Nature and other catastrophes of the kind. The story of the Chilean earthquakes makes appalling reading. Nevertheless, undaunted, the Chilean has continued to build afresh where the charred and shattered remains of his houses stand. The tendency of the present day to build Valparaيسان houses of greater height than before would seem a somewhat rash one, but it is sincerely to be hoped that the comparatively recent earthquake has satisfied the lust of the subterranean forces for some time to come.

As though this species of calamity did not suffice, one of the most ghastly holocausts in the history of the world took place in the summer of 1863, when the Christmas festivities were being celebrated at Santiago. A magnificent fête was in full swing at one of the principal churches of the capital, and over 3,000 people of the best families in Chile were congregated in the building, which was decorated to an enormous extent by very flimsy material.

This caught fire, and less than one-third of the gathering emerged from the church alive. Never, perhaps, has there been a more terrible gap in society than this.

Perhaps one of the most important political events of quite modern times was the formation of the Holditch Commission for the delimitation of the frontier between Argentina and Chile.

This question had given rise to serious anxiety for many years. That disputes concerning the Chilean-Argentine frontier must occur, was inevitable. In the early days when the parcelling out of the various republics was taken in hand very great tracts of the mountainous country of the Andes, which separate the two republics, had never been trodden by a white man. With the growth of civilisation and exploration the question could not fail to become acute. In the end, both the Chileans and the Argentines gave strong evidence of the breadth of their views, and of their liberal policy.

They decided to refer the points to the arbitration of King Edward VII, and Colonel Sir T. H. Holditch headed a boundary commission in order to settle the numerous complications involved. The labours of this commission were finally concluded in 1902, when the award was pronounced and was received by both sides with cordial loyalty.

Since that time, the only international strain which has entered into Chile's relations with her neighbours has been between herself and Peru. The situation between these two States remains in a complicated condition, and although the sympathies of the majority of Europeans are inclined to go out to Chile, as being the



more advanced and progressive of the two, there is no doubt that Peruvian resentment, born of the loss of her nitrate territories, is still smouldering, and it is some years now since diplomatic relations have existed between the two.

There is, nevertheless, no reason to expect active hostilities. The very wide discrepancy between the fighting powers of the two nations is alone sufficient to prevent any likelihood of this, for, whereas Chile possesses a European status in this respect, both on land and sea, Peru has not yet attained to anything like so formidable a position. In any case, Chile would seem to have proved in the past that her policy is no aggressive one, and the republic has now given further indication of this fact by joining in alliance with the important sister republics of Argentina and Brazil.

## CHAPTER IV

### PROVINCES, DEPARTMENTS, AND DISTRIBUTION OF POPULATION

IN Chile the growth of population has been very slow indeed, far too much so for the economic development of the country. On the other hand, chiefly owing to the difficulties of access to the country in the past, it has been, on the whole and as compared with other South American countries, a fairly homogeneous growth.

It is estimated that at the Conquest there were about half a million Indians in the country. It is impossible to enter here into the category of the numerous tribes and their subdivisions. The main divisions are sufficiently clear. These consisted of the Changos in the north, to the extremity of Atacama, a branch of the Aymara Indians, who had submitted to the influence of the Incas ; then came the sturdy and patriotic Araucanians, in the centre provinces and down south to Llanquihue, the Fuegians (including Onas, Yahgans, and many other tribes) in the cold regions of the Archipelago. All these made war with the Spanish invaders, and the Araucanians kept up active hostility until well into the first half of the nineteenth century. The Fuegians, on the other hand, came into conflict with colonists through a not altogether unnatural inability to distinguish sheep and cattle from the wild guanaco of their mountains. Consequently the native races have been worn down to a tithe. But the Araucanians have shown themselves a

fine race, susceptible to civilisation, and, although the aristocracy of the land is essentially of a western European type and appearance, there is a great deal of both Araucanian and Changos blood in the Chileans of to-day, more especially of the poor labouring classes.

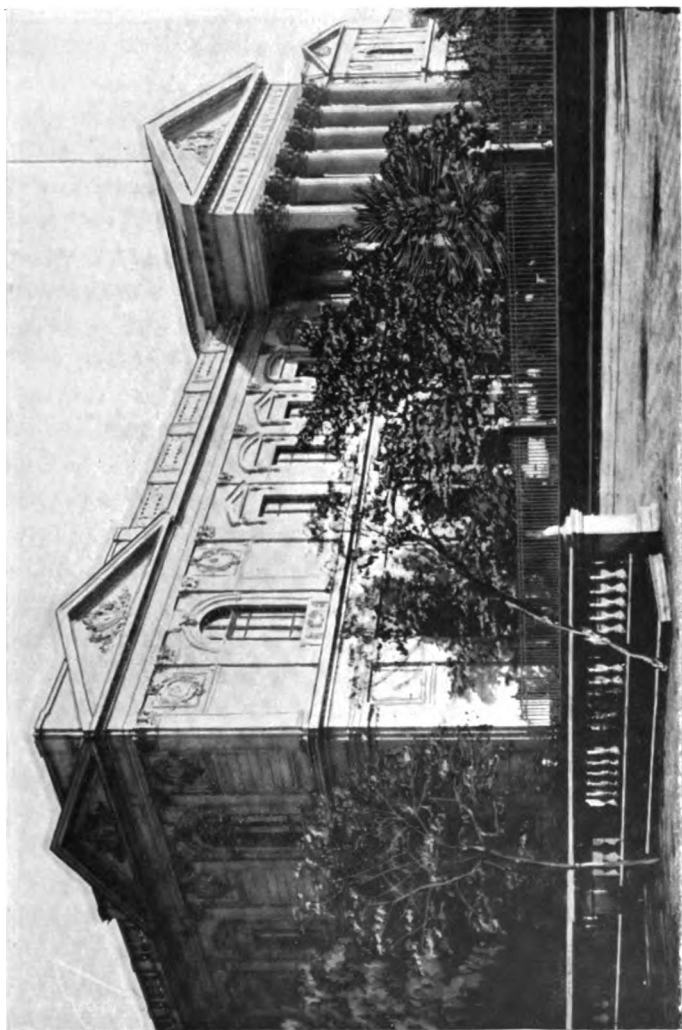
According to historians the Spaniards in Chile numbered little more than 2,000 at the beginning of the seventeenth century. By the middle of the eighteenth century they had increased to 80,000, and at the Declaration of Independence the population was about 500,000. It had rather more than doubled by 1835. In 1907, at the last census, the population was found to be 3,249,279. It is probable that at the present time the number of Chile's population approaches 5,000,000. There is practically no admixture of Asiatic or African blood. The people are of mainly European descent, and very largely Spanish. Among the governing classes many English and Irish names are to be met with, and a few French are found, the bearers of these being descendants of old colonists who made their mark in politics, the army, and navy, and in consequence, have now become thoroughly identified with the country. Since these early days there has been a thin infiltration of foreign emigrants, perhaps the most prominent elements being the German colonists who came to Valdivia and its neighbourhood about 1850, and the Anglo-Saxon sheep and cattle ranchers and miners. Other attempts at importation of foreign colonists on a fairly large scale have been made, but the grand total was not at all overwhelming. For instance, in 1910 only 2,543 immigrants were registered. Meanwhile the natural growth of population is quite

inadequate to the needs of the country, partly owing to the heavy death rate, the mortality among children being exceptionally high. In 1910 the excess of births over deaths was less than 25,000.

Population is most dense in the Central Provinces. At the last census the population of Santiago was 332,723, of Valparaiso 162,447, whilst Concepción (which could claim 55,330) and ten other towns accounted for another 306,965. Thus, about a fourth of the population was concentrated in twelve towns of 15,000 inhabitants and upwards. There is quite a notable foreign element in the seaport towns, but it must be remembered that in such northern ports as Iquique, Antofagasta, and Talca, the foreigners are largely mere birds of passage, attracted there by the nitrate and mineral industries.

We can now pass on to a consideration of the individual provinces.

/v ACONCAGUA is bounded on the north by Coquimbo, the rivers Chuapa and Leiva forming the dividing line ; on the east by Argentina, the Andes which here attain their greatest height (Aconcagua Peak attaining 7,000 metres and Juncal 6,000), forming the dividing line ; on the south by Santiago and Valparaiso ; and on the west by the Pacific. It has an area of 14,210 sq. km. and a population of over 130,000. Spurs from the grand mass of the Andes in the east descend towards the coast, forming a series of sheltered and fertile valleys, among which are those of Chuapa, Petorca, Ligua, and Aconcagua. At the head of the last-named valley is the Uspallata Pass, 3,927 metres high, which forms the main commercial highway between Chile and Argentina.



*Parliament House, Santiago*



Another important pass is that of Patos in the Department of Putaendo, much used in the cattle traffic. This province is well watered by perennial streams of considerable volume. There is a good deal of irrigation. Outside of the influence of these valleys, there are some stretches of rather arid plains, sparsely covered with cacti and palms. It is chiefly an agricultural and pastoral region, the crops ranging from cereals and fruits to hemp and tobacco. Some of the finest Chilean wines are produced from its districts. There are large herds of cattle. The chief mineral exploitation is in the copper districts. The province has several important railways.

The province is divided into five Departments. San Felipe, with a superficial area of 1,910 sq. km., and a population of about 30,000. Its fourteen administrative divisions are Coimas, Estación, Hospital, Santo Domingo, Almendral, Tambo, Santa Maria, Juhuel, San Fernando, San Nicolás, San Regis, Miraflores, San José, and Rio Colorado. San Felipe, capital of the province of the department, is situated on the north bank of the river Aconcagua. The town of San Estaban, is situated 8 km. to the east of Las Juntas, and 22 km. from San Felipe, and has a population of about 1,500. Other towns are Santa Maria, 10 km. north of San Felipe.

Los Andes has an area of 1,891 sq. km. and a population of about 30,000. Its thirteen administrative divisions are El Sauce, Comercio, San Rafael, Curímon, Panquehue, Montenegro, Rinconada, Valle Alegre, Tabolango, Calle Largo, Pocuro, Santa Rosa, and Chacabuco. Capital, Los Andes, at the eastern end of the valley of Aconcagua on the river of the same name. Curímon, 14 km. from

the capital, has a population of about 2,000, and other important centres are Rinconada, Rio Blanco, and Panquehue.

La Ligua has an area of 1,502 sq. km., and a population of about 15,000. Its seven administrative divisions are Ligua, Placilla de Ligua, Catapilco, Valle Hermoso, Cabildo, San Lorenzo, and Pullalli. Capital, Ligua, with a population of about 2,500. Other towns are Cabildo, Valle Hermoso, and Peña Blanca.

Petorca has an area of 6,882 sq. km., and a population of about 36,000. Its eighteen administrative divisions are Alicahue, Chincolco, Petorca, Hiero Viejo, Pedagua Pichilemu, Longotoma, Husquen, Quilimar, Cóncores, Tilama, Pupio Las Vacas, Los Vilos, Tunga, Las Cañas, Tambo, and Quelén. Capital, Petorca, a town of about 1,200 inhabitants. Other towns are Chincolco, the port of Los Vilos, and La Palma.

Putendo, with an area of 2,025 sq. km., and a population of 18,000. Its eight administrative divisions are Rinconada de Silva, San Antonio, Cártaro, Puzames, Quebrada de Hererra, Asiento, Maquinas, and Catemu. Putendo is the capital. Other centres are Catemu, Quebrada de Hererra, and Rinconada de Guzman.

✓ **ANTOFAGASTA** is bounded on the north by Tarapaca, the river Loa forming the dividing line ; on the north-east by the Republic of Bolivia ; on the east and south-east by the Argentine province of Jujuy and territory of Los Andes ; on the south by Atacama ; and on the west by the Pacific. It has an area of 120,718 sq. km., and a population of over 113,400. The surface consists of a series of arid tablelands, descending stepwise from the



lofty Cordilleras to the ocean. The coast is indented with two great bays, forming the anchorages of Mejillones and Antofagasta. There is only one river of importance, the Loa. The rainfall is scanty, with high temperature on the coast, and extremes of heat and cold on the tablelands. There is little vegetation away from the upper valleys of the Loa and small areas on the damp coast belt. Alfalfa, algarrobo beans and fruit are the chief produce. The principal industry of the province consists in the mining of caliche and the extraction of the nitrate and iodine therefrom. There is also well-developed exploitation of the rich borax deposits, and of copper. The province is well served by coasting steamers and by railways.

It is divided into three departments: that of Antofagasta has an area of 87,354 sq. km., and a population of upwards of 70,000 inhabitants. Its nine administrative divisions are Chimbe, Comercio, Prat, Maipú, Sierra Gorda, Caracoles, Calama, Ascotán, San Pedro de Atacama. Taltal has an area of 23,064 sq. km. with a population of over 27,000, and consists of nine administrative divisions: Esmeralda, Santa Luisa, Paposo, Refresco, Cachinal, Vapillas, Guanaco, and the two urban divisions of Taltal. Tocopilla covers 10,200 sq. km., and has a population of nearly 16,000. Its four administrative divisions are Peñaflor, Duendes, Toco, and Cobija.

Antofagasta, the capital of the province and the department, has a population of about 32,500. Other towns are Taltal, Tocopilla, Ascotan, Mejillones, San Pedro de Atacama, Alemania, and Caleta Coloso.

ARAUCO, bounded on the north by the bay of the same

name and the province of Concepción, with the river Laraquete as the dividing line ; on the east by Concepción, Malleco, and Bio-Bio ; on the south by Cantin, with the river Tirúa as the dividing line, and on the west by the Pacific. It is almost enclosed by spurs from the Andes, known as the Nahulbuta, peaks of which run to over 1,500 metres high. It has an area of 6,366 sq. km., and a population of over 63,000. There are some fertile valleys, and towards the west are a succession of slopes, forming rich plains. The coast is indented with bays, and off the shores are the islands of Santa Maria and La Mocha. There are a number of small rivers and the rainfall is abundant. It is an agricultural province, the plains being well cultivated, producing wheat, beans, peas, alfalfa, and carrying large herds of cattle. The forests are extensive, and contain valuable building and cabinet-making timbers. The minerals consist of coal (worked on a great scale), alluvial and quartz gold. There is a good railway service on the coast.

The province is divided into three departments : Lebu has an area of 1,698 sq. km., with a population of about 24,000. It has eight administrative divisions, the three urban divisions of Lebu, and those of Antilhue, Trancalco, Cupaño, Curihuillin or Los Rios, and Lavaderos de Tucapel. The capital of the province and department is Lebu, a port situated forty-five nautical miles south of Lota ; population about 3,000. Other centres are Curanilahue, Bocalabu (coal mining centre), and Amalia, a town engaged in mineral industries.

Arauco has an area of 1,851 sq. km., with a population of 22,000. Its twelve administrative departments are

Arauco, Carampangue, Villa Carampangue, Maquehua, Colico, Melipuro, Quiapo, Yani, Llico, Raque, Isla Santa Maria, and Laraquete. Capital Arauco. Other towns, Carampangue, Colico, San José de Colico, the headquarters of the Compañía de Arauco, and Yani.

Cañete has an area of 2,862 sq. km., with a population of about 16,000. Its eight administrative divisions are Cañete, Cayucupil, Peleco, Llanquihue, Paicaví, Contulmo, Curanilahue, and Quidico. Capital Cañete. The other centres of population are Contulmo, a port at the eastern extremity of Lake Lanalhúe, San Luis de Contulmo. Tirdá is a small port on the left bank of the river of the same name near its mouth.

ATACAMA is bounded on the north by Antofagasta ; on the east by Argentina ; on the south by Coquimbo ; on the west by the Pacific. It has an area of 79,583 sq. km., and a population of 70,000. It has an uneven surface of mountains separated by high plateaux and some deep ravines. In the extreme north are arid, longitudinal plains. There are few rivers, the chief one being the Copiapó. On the coast the climate is mild. In the interior there are extreme variations. Agriculture is carried on in the valleys of the Copiapó and the Huasco, wheat, maize, and other cereals, grapes, fruits, and alfalfa being grown. Gold, silver, and copper are mined on an increasing scale.

There are four departments : Copiapó, with twenty administrative divisions, namely, Caldera, Ramadilla, Bodega, San Chimba, San Francisco de la Selva, Arturo Prat, Hospital, San Fernando, Tierra Amarilla, Pabellón, Bodos, Loros, Lomas Bayas, Cerro Blanco, San Antonio,

Total, Chañarcillo, San Jose de Garin, Puquios, and Bulnes. Chañaral has five administrative divisions, namely, the two divisions of Chañaral, Las Animas, Salado, and Pan de Azúcar. Vallenar consists of the ten administrative divisions of O'Higgins, El Comercio, La Frontera, Camarones, Alto del Carmen, San Felix, El Transito, Agua, and Jarillas. Freirina consists of the eight administrative divisions of Huasco Bajo, Puerto Huasco, San Juan, Chañaral, Carrizal Alto, Carrizal Bajo, and the two divisions of Freirina, the capital.

Copiapó is the capital of the province, and of the department of the same name. Other centres are Caldera, Vallenar, Freirina, Huasco, Carrizal, and Morado. The principal centres are linked up by roads and railways.

Bio-Bio is bounded on the north by Concepción, with the river Laja as dividing line ; on the east by the Argentine territory of Neuquen ; on the south by Malleco and Cautin, with the river Reinavo as dividing line ; and on the west by Arauco. Its area is 13,587 sq. km., and population over 100,000. It is a mountainous country, with moderately high peaks, and good valleys. It is well watered by the Bio-Bio and other rivers, has a rather heavy rainfall and is subject to somewhat extreme variations of temperature. Large tracts of country are covered with dense forests. Viticulture is carried on in the north and west ; cereals (wheat, barley, oats, and rye), are grown extensively ; and on the wide pastures are sturdy herds of cattle. The forests are systematically exploited. The lumber industry here, however, is carried on in an entirely different fashion to that in North America. For in these districts of Southern Chile fire is

applied to the standing forests in summer, and when the undergrowth and smaller branches of the trees have been burned away, the charred main trunks which survive are dealt with. There is a fairly long stretch of the Longitudinal Railway between the river Laja and Renaico, and there are branch lines running east and west.

The province is divided into three departments: La Taja has an area of 7,607 sq. km., and a population of about 60,000, and consists of twenty-five administrative departments: Los Angeles, Hospital, San Miguel, Bolson, Humán, Curamávida, Rarincó, Cuñibal, Coreo, San Carlos de Purén, Paillihue, Cuel, Santa Fé, Picul, Rinconada, Coyanco, Guanacos, Pedregal, Canteras, Antuco, Quilleco, Villicura, Quenco, Santa Barbara, and Los Notros. The capital of the province and the department is Los Angeles, situated in the central plain on the banks of a small tributary of the Bio-Bio. Other centres are Antuco, in the vicinity of the Andes Cordillera, and on the road which leads to Argentina by the passes of Pichachen, Picunleo, and Copolhue, giving access to Chos Malal in the Argentine territory of Neuquen; Colonia Human, and Netrito.

Mulchen has an area of 4,003 sq. km., with a population of 26,000 and consists of ten administrative divisions, the two urban districts of Mulchen, and those of Picoltué, Pilé, Rocalhue, Baquecha, Nanquecuel, Rehuén, Pilhuén, and Malvén. Capital Mulchen.

Nacimiento, with an area of 1,977 sq. km., and a population of nearly 18,000, comprises nine administrative divisions: Negrete, Liñeco, Palmilla, Arinco, Santa Ana, Culenco, Millapoa, and the two divisions of Nacimiento,

which last-named is the capital of the department, and is situated on the river Vergara, near its confluence with the Bio-Bio at 113 metres above sea-level. Other centres are Negrete and Coigue.

CAUTIN is bounded on the north by Arauco, Malleco, and Bio-Bio; on the east by Argentina; on the south by Valdivia, the river Tolten forming the dividing line; and on the west by the Pacific. Its area is 15,105 sq. km., and population 140,000. In its eastern section are numerous ramifications of the Andes, with some tall peaks, but many passes accessible all the year round. Then follows a belt of high plains, succeeded by a range of maritime cordilleras, with good valleys watered by rivers. The chief river is the Imperial, formed by the Cholchol and the Cautin. The rainfall is rather heavy; the climate mild and damp. As a result the whole province is covered with luxuriant vegetation, from the forests to the grass-clothed plains. Cereals and other crops, fruit, and cattle are the mainstay of agriculture. The forests yield excellent timber and a large amount of bark for tannin extracts. There are deposits of alluvial gold and of coal, so far unworked. The Longitudinal Railway between Quillen and the river Tolten is 70 km. long. There are branches joining Temuco with the port of Carahue, and another between Pua and Selva Oscura.

The province is divided into the following three departments: Temuco has an area of 6,983 sq. km., and a population of about 60,000. It consists of three administrative divisions: the two divisions of Temuco, and that of Treire. Temuco, the capital of the province and the department, is situated 113 metres above sea-level, in

the central valley on the banks of the river Cautin, with a population of over 16,000. Other centres are Padre Las Casas, and Puente Cajon.

Imperial has an area of 4,458 sq. km., and a population of nearly 40,000. It has four administrative divisions: Nueva Imperial, Carahue, Rajo Imperial, on the banks of the river Cholchol near the junction of that river with the Cautin. Cholchol, at the junction of the Renaico and Cholchol rivers, is a town of about 2,000 inhabitants.

Llaima has an area of 3,664 sq. km. with a population of about 36,000. It has four administrative divisions: Lautaro, Galvarino, Muco, and Lonquimay. Capital, Lautaro. Other towns, Victoria, Galvarino, and Villa Portales.

CHILOÉ consists of the large island of that name (of 1,500 sq. km. in extent), several adjacent small islands, and the archipelago of Chonos. It has an area of 22,255 sq. km., and a population of about 90,000. The island is hilly, with deep ravines and plains covered with pastures and forests, but there are no high peaks or big rivers, though small streams are numerous. There is a heavy all-the-year-round rainfall, consequently the climate is exceptionally damp, with mild temperature. The forests are of a tropical kind, with fine timber, dense undergrowth, and trailing parasites. Cereals, potatoes, and fruit are grown, and there are large flocks of pigs. But the chief industries are forest exploitation and fishing.

The province is divided into three departments: Ancud has an area of 3,873 sq. km., and a population

of about 27,000, and consists of ten administrative divisions : Agüi, Quetalmahue, Ancud, Muelle, Caicumeo, Caipulli, Chacabuco, Llinco, Cancahué, Tenaún, Chauques, and Dalcahue. The capital of the province and department is Ancud, situated lat. S. 45.5, thirty-four nautical miles south of Corral, with a population of about 3,500. Other centres are Dalcahue, on the island of Chilöe, and opposite the island of Quinchao, from which it is separated by a narrow canal. Quenchi, a port, and Linao, a port on the Gulf of Ancud.

Castro has an area of 18,041 sq. km., with about 45,000 inhabitants, and consists of fifteen administrative divisions : Rilán, Quilquico, Putemún, Castro, Rauco, Vilupulli, Chonchi, Terao, Queilén, Quellón, Puqueldón, Aldachildo, Chelin, Quehui, and Melinka. Capital, Castro, at the mouth of the river Gamboi, 96 km. south of Ancud, and 26 from Dalcahue. Other centres are Queilen, a port at the extreme south of the peninsula which terminates the large island of Chilöe.

Quinchal has an area of 341 sq. km., a population of about 17,000, and consists of six administrative divisions : Achao, Curaco, Huyar, Judnac, Meulín, and Ajciao. Capital, Achao, on the north coast of the island of Quinchao. Other centres are Quenae and Curaco.

COLCHAGUA is bounded on the north by O'Higgins and Santiago, with the rivers Las Verjas, Cachapool, and Rapel forming a dividing line ; on the east by Argentina and the Cordilleras ; on the south by Curico, and on the west by the Pacific. Its area is estimated at 9,987 sq. km. and its population at 160,000. The eastern section is occupied by high mountains, but with three easy



passes into Argentina. The plains of the central valley forming a belt between the Andean and the maritime Cordilleras, have an average altitude of 400 ft., and a rich soil responsive to irrigation. On the coast are the cordilleras with many valleys. There is a good rainfall, but the climate is dry in summer. Agriculture is carried on for the most part by irrigation. The chief crops are wheat, barley, peas, beans, alfalfa, grapes. The live-stock industry is increasing. There are about 200 km. of railway, including seventy-five of the Longitudinal line.

The province is divided into the following two departments: San Fernando has an area of 6,664 sq. km., a population of over 85,000 inhabitants, and consists of twenty administrative divisions: San Fernando, La Estación, El Crucero, Roma, Talcarehue, Tinguiririca, Pidihuinco, Chimbarongo, Rancagua, Cunaco, Palmilla, Estrella, Callanque, La Placilla, and San Luis. San Fernando is the capital of the province and of the department. Other centres are Chimbarongo, Cunaco, Estrella, Rancagua, Navidad, Palmilla, Puquillay, Rapel, and San Miguel.

Caupolican has an area of 3,323 sq. km., a population of over 75,000, and consists of fifteen administrative divisions: Rengo, La Isla, Chanqueahué, Pichiguao, Requinoa, Olivar, Coinco, Guacarhue, Zúñiga, Pichidegua, Pencahue, San Vicente de Tagua, Mallow, Panquehue, and Huique. Capital, Rengo. Other centres are Coinco, Guacarhue, San Vicente, Larmahue, Malloa, Pelequen, Pichidegua, and Requinoa.

CONCEPCIÓN is bounded on the north by Nuble and

Maule ; on the east by Argentina ; on the south by Bio-Bio and Arauco ; on the west by the Pacific. Its area is 8,422 sq. km., and population 220,000. The eastern zone is occupied by the comparatively low spurs of the Andes. The central zone is mostly arid plateaux, ranging from 50 to 100 metres above sea-level. The coastal zone is a series of undulating plains, watered by numerous streams. This section is wonderfully fertile and produces rich crops, including grapes, from which excellent wines are made. There are large forests, and the coal deposits are a source of considerable wealth. The coast is varied, with bays, capes, rivers, and a number of flourishing ports. In some of the towns the textile and metal industries are well developed. There is a stretch of 53 km. of the Longitudinal Railway through the province, and there are branches to the coast.

The province is divided into six departments : Concepción has an area of 617 sq. km., about 75,000 inhabitants, and consists of nine administrative divisions : San José, Santo Domingo, San Agustín, Merced, Chiguayante, Nonquén, Hualqui, Palomares, and Penco. Concepción, capital of the province and of the department, is situated on the banks of the Bio-Bio river, 18 km. from its mouth. Other centres are Penco, Hualqui, and Larquín.

Talcahuano has an area of 167 sq. km., a population of about 26,000, and consists of four administrative divisions : Tumbes, Centro del Puerto, Portón, and Vegas del Talcahuano. Capital, Talcahuano. Other centres are San Vicente, Manzano, and Tumbes.

Latauro, with an area of 1,259 sq. km., has a population

of about 40,000, and consists of seven administrative divisions : Coronel, Lota, Santa Juana, Santo Domingo, Bio-Bio, San Pedro, and San Geronimo. Capital, Coronel. Lota Alta and Lota Bajo form a city and port 11 km. south of Coronel, with a combined population of upwards of 12,000 inhabitants. Other mining towns are Puchoco, Delano, Schwager, Buen Retiro, and Santa Juana.

Colemu has an area of 1,129 sq. km., a population of about 25,000 inhabitants, and consists of eleven administrative divisions : Tomé, Collen, Vegas de Itata, Coelemu, Batuco, Coleral, Ránquil, Guarilhue, Conuco, Rafael, and Roa. Capital, Tomé. Other centres are Guichato, and Coelemu.

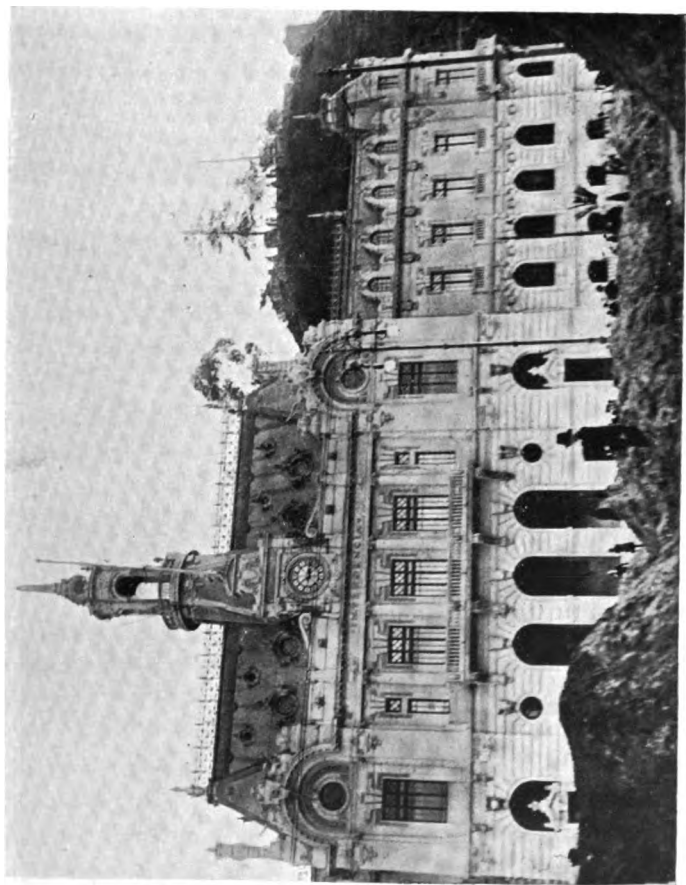
Rere has an area of 4,433 sq. km., a population of nearly 40,000, and consists of eleven administrative divisions : Yumbel, San Luis Gonzaga, Malvoa, Talcamávida, Quilacoya, Tomeco, Las Perlas, Tucapel, Salto del Laja, Renico, and Trupán. Capital, Yumbel. Other towns are San Rosendo, Malvoa, Cabrero, and Turquia.

Puchacay has an area of 754 sq. km., a population of about 17,000, and consists of five administrative divisions : Florida, Quillón, Cerro Negro, Copiulemu, and Poñén. Capital, Florida. Other towns are Quillón, Florida, and Coyanca.

COQUIMBO is bounded on the north by Atacama ; on the east by the Argentine province of San Juan ; on the south by Aconcagua ; and on the west by the Pacific. It has an area of 34,862 sq. km., and a population of 175,000. It is an extremely narrow strip of country, with numerous very high peaks of the Andes in the east, with considerable spurs running at right angles

down to the coast. The enclosed valleys, however, are very fertile, well protected and watered. The chief rivers are the Elqui, Coquimbo, formed by the Rio del Claro and Rio Torbio, the Limarí, and the Chuapa in the south. Coquimbo possesses a mild climate, with moderate rainfall. To the north are stretches of barren land, with sterile plateaux in the interior, but the valleys towards the coast and the south produce abundant crops. There is a large export of cereals, alfalfa, fruit, wine, and live-stock. Gold, silver, and copper are worked extensively, but the manganese deposits, once very valuable, are now almost worked out. There are 300 km. of railway, but means of communication will have to be greatly developed before the mineral wealth can be properly tapped.

The province of Coquimbo is divided into the following six departments : Serena, 6,495 sq. km. (capital, Serena), consists of the administrative divisions of Los Choros, La Higuera, Arqueros, Cutún, Saturno, Algarrobito, La Compañía, La Pampa, Barranca del Mar, San Juan de Dios, Catedral, La Merced, San Agustín, and Santa Lucia. Coquimbo (13,814 sq. km., capital of province and department, Coquimbo) consists of seven administrative divisions of Guayacán, Pan de Azúcar, Tambillo, Andacollo, and the three divisions of Coquimbo. Elqui (7,114 sq. km., capital, Vicuña) consists of eleven administrative divisions : the two divisions of Vicuña, and San Isidro, Diaguitas, Rivadavia, Paihuano, Monte Grande, La Unión, Peralillo, Tambo, and Molle. Ovalle (11,623 sq. km., capital, Ovalle) consists of twenty-one administrative divisions of Sotaqui, Huatulame, Carén, Agua Amarilla, Rapel, Mialqui, Monte Patria, Hurtado, Samo



*Government Palace, Valparaíso*



Alto, Recoleta, Panulcillo, Tamaya, La Torre, Tongoy, Barraza, San Julián, Punitaqui, Chimba, Huamalata, and the two divisions of Ovalle. Illapel (3,562 sq. km., capital, Illapel), contains the ten administrative divisions of Cuz-Cuz, Hacienda de Illapel, Peralillo, Chalinga, Salamanca, Mincha, Canela, Los Hornos, and the two departments of Illapel. Combarbala (2,284 sq. km., capital, Combarbala) consists of the seven administrative divisions of Valle Hermoso, Valdivia, Manquegua, Chañaral Alto, Cogote, and the two divisions of Combarbala.

CURICO is bounded on the north by Colchagua ; on the east by Argentina ; on the south by Talca, with the Pacific on the west. Its area is 7,714 sq. km., and population over 110,000. Here again we find the mountainous mass of the Andes in the eastern division, then a belt of plains, rather barren, succeeded by a maze of low, verdure-covered hills. There are numerous streams, the most important being the Teño, Lontué, and Nelahue. In spite of a rather heavy rainfall, irrigation is found necessary. The produce are cereals, fruits, alfalfa, and other forage plants and live-stock. The Longitudinal Railway runs through the province, but there are no branches.

Curico is divided into three departments. It has an area of 3,379 sq. km., with a population of about 57,000, and consists of eleven administrative divisions, namely, El Romeral, La Obra, Los Niches, El Guaico, Resguardo, Quinta, Teño, Palquibudi, Rauco, Entre Rios, and Convento Viejo. Curico is the capital of the province. Other centres are Comallé, Rauco, Teño, and Villa Alegre.

Vichuquen has an area of 2,172 sq. km., and a population of nearly 22,000 inhabitants. Its seven administrative divisions are Vichuquen, Llico, Paredones, Alcantara, La Huerta, Licantén, and Iloca. Capital, Vichuquen. Other centres are Iloca and Llico.

Santa Cruz has an area of 2,163 sq. km., a population of about 28,000, and consists of eight administrative divisions: Santa Cruz, Quinahue, Chépica, Auquingo, Nerquihue, Lolol, Culenco, and Pumanque. Capital, Santa Cruz. Other towns are Chépica, Pumanque, and Membrillo.

LINARES is bounded on the north by Talca, divided by the river Maule; on the east by Argentina; on the south by Nuble; and on the west by Maule. It has an area of 10,210 sq. km., and a population of 110,000. Here the eastern Cordilleras are very rugged and high. The central plain proves fertile when irrigated, while the western valley is a fertile stretch. The foot of the Andes is densely wooded. There are 90 km. of the Longitudinal Railway and a branch line from Parral to Cauquenes.

The province is divided into the three following departments: Linares has an area of 7,196 sq. km., a population of over 52,000, and consists of the eighteen administrative divisions of Arrayanes, Yervas Buenas, Esperanza, Arquén, Colbún, Panimávida, Putágan, San Antonio, Vega de Salas, Ancoa, San José, Longávi, Mesamávida, Catentoa, Bodega, Pilocayán, and the two divisions of Linares, the capital of the province and department. Other centres are Quinamávida, Panamávida, Colbún, and Longávi.

Loncomilla has an area of 827 sq. km., and a population of nearly 27,000. It consists of seven administrative



divisions: San Javier, Maule, Loncomilla, Cunaco, Carrizal, La Huerta, and Vaquería. Capital, San Javier de Loncomilla. Villa Alegre is a town about 10 km. south of San Javier, and other centres are Cunaco, and Carrizal, 25 km. south of San Javier.

Parral has an area of 2,188 sq. km., and a population of over 30,000. It consists of ten administrative divisions: Oriente de la Ciudad, Poniente de la Ciudad, Perquillauquén, Curipeumo, San José, San Nicolás, Rinconada, Santa Filomena, Huenutil, and Pencagua. Capital, Parral. Other towns are Catillo, Rinconada, Perquillauquén, and Curipeumo.

LLANQUIHUE is bounded on the north by Valdivia, on the east by the Andes, on the south by Chiloé and the Gulf of Chacao, and on the west by the Pacific. It has an area of 91,676 sq. km., with a population of 105,000. It is a narrow, very rugged strip of land, for the most part densely wooded, with many streams and some lakes, the most notable being that of Llanquihue, 740 sq. km. in extent. It has a somewhat cold but equable climate. The forests contain valuable timber. Behind the forests is a valley of lakes with apparently great stretches of fertile land, suitable for agriculture and grazing. Agriculture is carried on vigorously, and the herds of cattle and flocks of sheep are increasing steadily. The Longitudinal Railway is carried through the province to Puerto Montt.

The province is divided into the three following departments: Llanquihue has an area of 71,681 sq. km., with a population of nearly 30,000, and consists of six administrative divisions: Puerto Montt, Guatral, La Laguna,

Reloncaví, Cochamó, and Octay. Capital of the province and department is Puerto Montt. Other centres are Cochamó, Arrayán, and Puerto Varas.

Osorno has an area of 9,505 sq. km., a population of nearly 50,000, and consists of thirteen administrative divisions : Osorno, Cúinco, Las Damas, Cancura, Rahué, Maipúe, La Costa, Quilacahuín, El Roble, Pilmaiquén, Trumag, Tramahue, and Rio Negro. Capital, Osorno. Other towns are San Pablo and Riachuelo.

Caremapu has an area of 10,490 sq. km., with a population of nearly 28,000, and consists of twelve administrative divisions : Calbuco, Tabón, Pulaqui, Gualaihué, Huar, Rulo, Abtao, Caremapu, Maullín, Lepihué, Pargua, and Rio Frio. Capital, Calbuco. Other towns are Maullín, and Huito.

**MALLECO** is bounded on the north by Bio-Bio ; on the east by Bio-Bio and Cautín ; on the south by Cautín ; and on the west by Arauco. It has an area of 7,701 sq. km., and a population of over 100,000. Here the three longitudinal zones are formed by the strip of high mountains and valleys, the lower parts heavily wooded ; next a high plain of fertile land, celebrated for its wheat crops, and westwards by a hilly region. It possesses a mild but damp climate. There are 104 km. of the Longitudinal Railway in the province, with a branch between Renaico and Traiguén.

The province is divided into the four following departments : Angol has an area of 2,000 sq. km., with a population of about 27,000, and consists of nine administrative divisions : Angol, Rucapillán, Mininco, Tigueral, Hueguén, Villa Alegre, Los Sauces, Guadaba, and Choque

**Choque.** The capital of the province and department is Angol. Other centres are Los Sauces, Mininco, Renaico, and Tigueral.

**Traiguén** has an area of 1,975 sq. km., with upwards of 35,000 inhabitants. It consists of five administrative divisions : Estación, Los Molinos, Quillén, Lumaco, and Purén. Capital, Traiguén. Other centres are Purén, Quibo, and Lumaco.

**Collipulli** has an area of 1,734 sq. km., with a population of about 20,000, and consists of six administrative divisions : La Feria, Estación, Esperanza, Nanco, Curaco, and Ercilla. Capital, Collipulli. Other centres are Ercilla and Pailahueque.

**Mariluen** has an area of 1,992 sq. km., with a population of nearly 30,000. It consists of seven administrative divisions : Tricauco, Curamáhuido, Dumo, Quinco, Tolhauca, Huillinlebu, and Curacautin. Capital, Victoria. Other centres are Curacautin and Pua.

MAULE is bounded on the north by Talca ; on the east by Linares and Nuble ; on the south by Concepción ; on the west by the Pacific. It has an area of 6,410 sq. km., and a population of 115,000. The province is practically surrounded by big rivers, and is mostly occupied by the coastal Cordillera and spurs of low mountains. The valleys between these mountains and bordering the rivers are fertile and offer opportunities for considerable extension of the agricultural industries. But the province has suffered much from the unwise deforestation. The Longitudinal Railway traverses the province and there is a branch from Talca to Constitución.

The province is divided into the following four departments : Cauquenes has an area of 1,473 sq. km., and a population of over 30,000. It consists of eleven administrative divisions : Cauquenes, Tutúven, Pilén, La Vega, Coronel, Hilohegua, Sauzal, Caracol, Tomenclo, Santa Rosa, and San Antonio. Cauquenes is the capital of the province and the department. Other centres are Coronel de Maule, Pilén, and Sauzal.

Constitución has an area of 1,360 sq. km., with a population of about 25,000, and its nine administrative divisions are Las Cañas, Pahuil, Empredrado, Purapel, Morro, Nirivilo, Rinconada, and the two divisions of Constitución. The port of Constitución is the capital of the department. Other centres are Empredrado and Rinconada.

Itata has an area of 2,309 sq. km., containing about 40,000 inhabitants. Its fourteen administrative divisions are Guanaco, El Manzano, Lonquen, Treguaco, Portezuelo, Ninhue, Lircay, Pocillas, La Raya, Buchupureo, Cobquecura, Colmuyao, and the two divisions of Quirihue. Capital, Quirihue.

Chanco has an area of 1,268 sq. km., and a population of about 16,000. It consists of four administrative divisions : Chanco, Curanipe, Reloca, and Quilhuiaé. Capital, Chanco. Other centres are Chovellen and Reloca.

NUBLE is bounded on the north by Linares ; on the east by Argentina ; on the south by Concepción ; and on the west by Maule. It has an area of 8,823 sq. km., and a population of 170,000. In this province the Cordillera of the Andes are not very high. There are several easy passes into Argentina, and on the western slopes

the valleys are thickly wooded. Between these foothills and the coastal range is the region of plains, about 100 metres above sea-level and for the most part well cultivated. The coastal region is more in the nature of undulations, with stream-threaded valleys, than hills. The chief of these rivers are Perquilauquen, and a tributary of the Maule, the Nuble, and the Itata. Rains are rather heavy except during the short summer, and the temperature is mild. Cereals and vines are grown on a large scale. The Longitudinal Railway has a course of 90 km., and a branch line is being taken south-west to Concepción.

The province is divided into the four following departments: Chillán has an area of 3,100 sq. km., and a population of about 72,000 inhabitants. It consists of fifteen administrative divisions: the three divisions of Chillán, the two Chillán Viejo, Guape, Huechupin, Nebuco, Boyén, Pinto, Coihueco, Niblinto, Alico, Cato, and Reloca. Capital of the province and the department, Chillán. Other centres are Chillán Viejo and Cohueco.

San Carlos has an area of 3,378 sq. km., and a population of about 47,000. It consists of twelve administrative divisions: Alameda, El Estero, Virguin, Zemita, San Gregorio, Hucachoro, Toquiga, Maravillas, San Nicolas, Dadinco, Santa Isabel, and San Fabian. Capital, San Carlos. Other centres are Cocharcas and San Fabian de Aleco.

Bulnes has an area of 640 sq. km., and a population of over 22,000. Its seven administrative divisions are Bulnes, Santa Clara, Agua Buena, San Javier, San Miguel, San Ignacio, and Coltón. Capital, Bulnes. Other towns are Santa Clara and Peralilo.

Yungay has an area of 1,705 sq. km., and a population of over 26,000. It consists of twelve administrative departments, Yungay, Pedregal, Chólguan, San Antonio, Trilaleo, Dañicalque, Laureles, Pemuco, Palpal, Relbún, El Carmen, and San Vicente. Capital, Yungay. Other towns are El Carmen and Pemuco.

O'HIGGINS is bounded on the north by Santiago (the river Maipú forming the dividing line); on the east by Argentina; on the south by Colchagua; and on the west by Santiago. It has an area of 6,066 sq. km., and a population of over 95,000. It is a rugged district, with a central valley surrounded by the hills of Angostura, and is divided into two rolling plains watered by the Maipú and the Cochapoal. Irrigation is widely developed and good crops of cereals, grapes, and other fruit are grown, while there are large herds of cattle. Rich deposits of minerals are known to exist, but only copper at Teniente has been worked seriously.

The Longitudinal Railway traverses the province, and there is a branch from Pelequen to Las Cabras, passing through the Cachapoal valley.

The province is divided into the three following departments: Rancagua has an area of 29,282 sq. km., and a population of about 41,000, and consists of eleven administrative divisions: San Francisco, La Merced, Pueblo de Naturales, Macháli, Las Chacras, Hijuelas, Compañía, Codegua, Angostura, Doñihue, and Miranda. Capital of the province and department, Rancagua. Other towns are San Francisco del Mostazal, Doñihue, Graneros, and Las Chacras.

Maipú has an area of 1,637 sq. km., with a population

of upwards of 34,000 inhabitants. Its twelve administrative divisions are Buin, Maipo, Lindaros, Vilcuvo, Valdivia, Aculeo, Hospital, Paine, Escorial, Tránsito, Pirque, and Santa Rita. Capital, Buin. Other towns: Hospital, Maipo, and Valdivia de Paine.

Cachapoal has an area of 1,501 sq. km., with a population of over 30,000. It consists of eight administrative divisions: Puemo, Codao, El Carmen, El Manzano, Idahue, Coltauco, El Almendro, and El Parral. Capital, Puemo. Other towns are Idahue and Llallauquen.

✓ SANTIAGO is bounded on the north by Valparaiso and Aconcagua; on the east by Argentina; on the south by O'Higgins and Colchagua; on the west by the Pacific. It has an area of 14,672 sq. km., and a population of over 520,000. While the Andes have no outstanding peaks in this region, the general altitude is somewhat over 4,000 metres, though Juncal reaches 6,151 metres. The passes into Aconcagua are the Piuquenes and San José de Maipú. The coastal range makes a general average height of some 2,500 metres. The central valley has a westerly slope, being about 880 metres at the foot of the Cordillera of the Andes, and 300 metres at the foothills of the coastal range. It is an extensive, well-watered plain. Part of this is cultivated, yielding cereals, beans, peas, alfalfa, a large variety of fruits, and many excellent species of wines. Other parts are arid, the plains being covered with cactus. The foothills and valleys are densely wooded. The coast is indented with many bays. There are several large towns in which industry is developed on a healthy scale.

There are 200 km. of railway, including the Central

from Santiago to Valparaiso, the branch to Melipilla, that to San José de Maipú and several other short lines.

The province is divided into the three following departments : Santiago has an area of 3,689 sq. km., with a population of upwards of 405,000 inhabitants. It is comprised in twenty-seven urban administrative divisions : Urbanas, Cajitas de Agua, Santa Lucia, Teatro municipal, El Comercio, Moneda, Santa Ana, Mercado San Pablo, Negrete, Gasómetro, Yungay, Capuchinos, San Rafael, Quinta Normal, Arenal, Cañadilla, Recoleta, Escuela Militar, Ollería, San Francisco, Arturo Prat, Mercado San Diego, San Ignacio, Ejercito Libertador, Padura, Ugarte, Matadero, and Escuela Italia ; and twenty-six rural administrative divisions : Las Condes, San Carlos, Apoguindo, Nuñoa, Pervidencia, Santa Rosa, Llano Subercasceaux, Parque Cousiño, Chuchunco, Pajaritos, Maipú, Las Lomas, Pudahuel, Mapocho, Renca, Guilicura, Lampa, Cañada de Colina, Colina, Baños de Colina, Chacabuco, Tiltill, Caleu, Huechuraba, El Salto, and Mineral de las Condes. Santiago, the capital of the republic, is also the capital of the province and department. Other centres are Vargas, Nuñoa, a suburb of Santiago with which it is connected by electric tram, Renca, La Vidal, and Lampa.

Victoria has an area of 5,501 sq. km., containing a population of upwards of 51,000, and consists of the eighteen administrative divisions of San Bernardo, Santa Cruz, Esperanza, Peñaflor, Talagente, Isla de Maipú, Calera de Tango, Tango, Tres Acequias, Cerro Negro, Bajos de Mena, Puente Nuevo de Pirque, Canal de Maipú,



San José, La Cañas, Peral, La Granja, and Canino de Santiago. Capital, San Bernardo. Other towns are San José de Maipú, Peñafior, and Isla de Maipú.

Melipilla has an area of 5,482 sq. km., with a population of about 63,000, and comprises nineteen administrative divisions: Melipilla, San Francisco del Monte, Maria Pinto, Curocaví, Lepe, Catajena, San Antonio, Cuncumén, Matadero, Chocalán, Codiguz, San Pedro, Loica, Santo Domingo, Bucalemu, Quilamuta, Carén, Alhué, and El Asiento. Capital, Melipilla. Other towns, Chocalán and Popeta.

TACNA is bounded on the north by Peru; on the east by Bolivia; on the south by Tarapacá, and on the west by the Pacific. It has an area of 23,950 sq. km., and a population of about 30,000. A great part of the province is occupied by the Andes, with many peaks rising to over 6,000 metres high, the only two good passes being those of Guailillos 4,476 metres high connecting Tacna with La Paz, and Ticcania, 4,760 metres high. Towards the coast we find considerable stretches of desert land, with occasional valleys wherein irrigation makes cultivation possible. Within these limited areas maize, bananas, alfalfa are grown with complete success. However, the province is almost entirely given up to the nitrate industry. There is a railway from Arica to Tacna, thence to the Bolivian frontier and on to La Paz.

Tacna, with capital of province and department of same name, and an area of 7,484 sq. km., comprises ten districts, Callao, San Ramón, Alto de Lima, Pocollay, Pachía, Palca, Tarata, Sama, and Calana. Arica (capital the port of same name) has an area of 16,474 sq. km.,

and comprises six divisions: El Morro, Azapa, Lluta, Putre, Belén, and Codpa.

TALCA is bounded on the north by Curico; on the east by Argentina; on the south by Linares and Maule; on the west by the Pacific. It has an area of 9,984 sq. km., and a population of over 135,000. The eastern region is mountainous, but without any magnificent peaks, while the spurs into the longitudinal plain enclose fertile valleys. The coastal chain of hills are quite low, the highest only reaching 300 metres. There is an abundance of rivers, including the Mataquito and its tributary the Lontué in the north, and the Maule in the south. The climate is, on the whole, temperate; though the central plain suffers from extremities of cold and heat. The rainfall is heavy. In the central plain irrigation has to be resorted to, enabling cereals, grapes, and other fruit to be grown. There are good-sized herds of cattle. The forests are dense and afford plenty of opportunities for exploitation. The province is traversed by the Longitudinal Railway, and there is a branch from Talca to Constitución.

The province is divided into the three following departments: Talca has a population of about 82,000, and consists of nineteen administrative divisions: Colín, Duao, Queri, Perquín, Litres, Lircay, Perarco, Rincón, Río Claro, Tapihue, Penciahue, Perales, Matadero, and the six administrative divisions of the city of Talca. Capital of the province and the department is Talca. Other towns are San Clemente, Colín, and Duao.

Lontué has an area of 1,811 sq. km., containing a population of over 25,000 inhabitants, and consists of

six administrative divisions: Molina, Huerta, Lontué, Peteroa, Pequén, and Río Claro. Capital, Molina, and other towns are Valdivia and Villa Prat.

Curepto has an area of 1,914 sq. km., containing a population of over 25,000 inhabitants, and consists of ten administrative divisions: Curepto, Hornillas, Limávida, Tonlema, Gualleco, Libún, Toconey, Quivolgo, Putú, and Chanquiuque. Capital, Curepto. Other centres are Putú and Libún.

TARAPACÁ is bounded on the north by Tacna; on the east by Bolivia; on the south by Antofagasta; on the west by the Pacific. Its surface is diversified by the Andes in the east, the rolling arid plains of the nitrate fields and a sloping coastal strip. The climate is hot and extremely dry, consequently there is little or no natural vegetation. Apart from the nitrate deposits, there are veins of silver and copper and extensive deposits of salt.

The railways have a total length of 830 km., the principal line connecting the ports of Iquique and Pisagua with the nitrate fields of the interior.

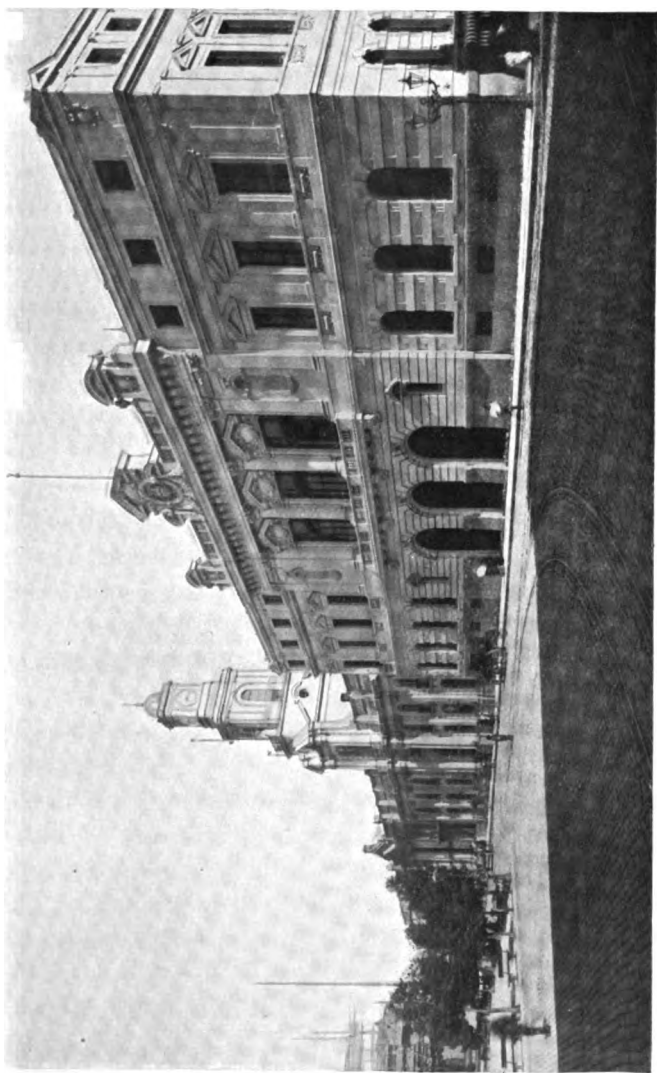
The province is divided into the departments of Tarapacá and Pisagua. Tarapacá has an area of 30,026 sq. km., and comprises thirteen administrative divisions: El Ferrocarril, Aduana, Plaza Montt, Avenida de Cavancha, Huantajaya, Caleta Buena, Pozo Almonte, La Noria, Saliteras del Sur, Las Guaneras, Tarapacá, Pica, and Challacollo. Pisagua is 16,931 sq. km. in extent, and comprises five administrative divisions: Pisagua, Santa Catalina, Aroma, Camiña, and Camarones. The principal centres of population are Iquique, the

capital of the province, and the principal northern port of the nitrate industry, Pisagua, Josefina, Tarapacá, and Huara.

VALDIVIA is bounded on the north by Cautin ; on the east by the Argentine territory of Neuquen ; on the south by Llanquihue ; on the west by the Pacific. Its area is 21,627 sq. km., and population over 120,000. In the eastern region are the Andes, here of moderate height, with numerous passes into Argentina. The foothills are thickly wooded. The central valley is wide and well watered, the important rivers including the Tolten, Valdivia, Calle-Calle, Cruces, the Pilmaiquén, and the Buenos. The lakes include Lacar and Ranco. The coastal Cordilleras are not high, and the chief bays are those of Corral and Valdivia. The climate is temperate and healthy in spite of the heavy rainfall. Natural vegetation is luxuriant and agriculture is carried on profitably. There is also much stockbreeding, and the forests yield timber, tanning material, and other products. The Longitudinal Railway traverses the province and there is a branch to Valdivia.

The province of Valdivia is divided into two departments : Valdivia (capital of province and department of same name) has an area of 15,580 sq. km., with a population of over 85,000, and consists of fifteen administrative divisions : Las Mercedes, San Francisco, La Teja, Corral, Chaihufn, Angachilla, Calle Calle, Quinchilca, Macó, Pichoy, Cabo Blanco, San José de la Mariquina, Toltén, Pitrufulquen, and Queule.

La Union has an area of 5,757 sq. km., with a population of nearly 35,000. It consists of the ten administrative



*Town Hall, Santiago*



divisions of La Unión, Paillaco, San Javier, Tranguén, Río Bueno, Filuco, Esperanza, Cudico, Truman, and Cuncos. Capital, La Unión, on the line of rail between Valdivia and Osorno, and 44 km. distant from the last-named centre. Other towns are Río Bueno, Dagllipulli, and Trumag.

✓ VALPARAISO is bounded on the north by Aconcagua ; on the east and south by Santiago ; on the west by the Pacific. It has an area of 5,095 sq. km., and a population of over 285,000. The surface is practically covered with mountains enclosing extensive valleys ; but towards the coast the foothills merge into an undulating plain. The coast has many bays, the chief being that of Valparaiso. Off the west coast are the group of volcanic islands known as the Archipelago of Juan Fernandez. Among the rivers are the Aconcagua, Purutun, Limache, Marga-Marga, and Casablanca. The climate is mild, the rainfall heavy. Agriculture is the chief industry, the leading crops being wheat, barley, beans, peas, alfalfa, linseed, grapes, and other fruits. The mineral wealth (placer gold and copper) is now nearly exhausted.

There are 135 km. of railway within the province, the principal lines being from Santiago to Valparaiso, (a branch of the Central Railway), and from Caldera to Ligua.

The province is divided into the four following departments : Valparaiso has an area of 440 sq. km., in which is contained a population of over 190,000. It consists of twenty-five administrative divisions : Las Zorras, Placilla de Peñuelas, Playa Ancha, La Matriz, San Francisco, Cordillera, Serrano, Cruz de Reyes, Orden,

San Juan de Dios, La Victoria, La Aguada, Jaime, San Ignacio, Hospital, La Merced, Cardonal, Las Delicias, Providencia, Wáddington, Estación, Barón, Matadero, Viña del Mar, and Juan Fernandez. Capital of province and department, the port of Valparaiso. Other towns are Recreo, Santa Elena, and La Placilla.

Quillota in the north of the province has an area of 2,154 sq. km., and a population of upwards of 54,000. It is composed of nineteen administrative divisions : Mayaca, Estación, San Francisco, El Mercado, San Pedro, La Palma, Pocochay, Charrabata, La Cruz, Peñón, Ocoa, Llay-Llay, Romeral, Hijuelas, Nogsles, Melon, Puchuncaví, Quintero, and Boco. Capital, Quillota. Other towns : San Pedro, Boco, and La Calera.

Limache has an area of 782 sq. km., and a population of over 24,000 inhabitants. It is comprised in the eight administrative divisions of Limache Alto, Limache Bajo, Olmué, Quebrada de Alvarado, San Francisco, Concón, Quilpué, and Quebrada de Escobares. Capital, Limache. Other towns are San Francisco de Limache, Olmué, and Peña Blanca.

Casablanca has an area of 1,683 sq. km., with a population of about 13,000, and consists of eight administrative divisions : Casablanca, Tapihue, Las Dichas, Laguinillas, Algarrobo, San José, Los Vásquez, and Marga-Marga. Capital, Casablanca.

TERRITORY OF MAGELLANES has an area of 131,438 sq. km., and a population of about 18,000. It is bounded on the north by the 47th parallel of latitude south ; on the east by Argentina ; on the south by the Antarctic Sea ; and on the west by the Pacific. It comprises part



of the mainland and part of the Archipelago of Tierra del Fuego, and is made up of mountains, forests, and rolling plains, with numerous rivers. The climate is, generally speaking, rigorous ; but it is equable on the coast, and distinguished by extremes inland. There is practically no agriculture, but the rearing of sheep and cattle is an important and profitable business. The forests are explored, and the maritime population is engaged in whaling.

The territory comprises three administrative divisions : Punta Arenas, Las Minas, and Tierra del Fuego. The capital and only town of importance is Punta Arenas, which is an active port and industrial centre.

## CHAPTER V

### CONSTITUTION AND ADMINISTRATION

BY the Constitution of 25th May, 1833, still in force, though repeatedly amended, the republican form of government was confirmed and declared to consist of the Legislative, Executive, and Judicial branches. Although important in details, the amendments of 1888 and 1890 and 1892 did not materially modify the original provision, the centralised form of administration being retained.

LEGISLATIVE POWER rests in the National Congress, composed of a Senate and a Chamber of Deputies. Senators are elected as representatives of provinces by direct cumulative vote, for a period of six years. There is one senator for every three deputies, and one-third of the Senate is renewed every two years. Senators must be not less than 36 years of age and have a fixed income. Deputies are elected by direct cumulative vote by the departments, and sit for three years. There is a deputy for every 30,000 inhabitants, or fraction of that number not falling below 15,000. Deputies must be not less than 36 years of age, and like the senators they must be possessed of a fixed income, and also serve without salary. Every married male Chilean of 21, or every unmarried man of 25, not civilly disqualified by Judicial act, is an elector ; but he must know how to read and write and possess landed or movable property. The literary test practically disenfranchises three-fifths of the possible electorate, for although primary education is

gratuitous, it is not compulsory. School attendance is regrettably small, and it is found that 70 per cent. of the conscripts are illiterate. This, of course, largely influences the complexion of the National Congress, which really represents an oligarchy. This is further emphasised by the requirement that the senator should have a fixed income of not less than £400, and a deputy of not less than £100 per annum.

**THE EXECUTIVE.**—The President of the republic, who must be a native Chilean of not less than 30 years of age, is chief of the Executive. He is elected by representatives who are themselves sent to a special congress for the purpose by direct vote of the whole electorate. He holds office for a period of five years, and cannot serve two successive terms. Moreover, he must not leave the country either during his term of office, or for one year after its termination, without sanction of Congress. The President receives the quite moderate salary of \$15,000 per annum. In Chile the President does not have quite so free a hand as do his brothers in Colombia and Argentina. He is more in the position of a constitutional monarch, with a limited veto and a liberal but responsible duty of patronage. He is assisted by a Council of State, consisting of eleven members, five of whom he appoints, the other six being appointed by the Senate. The President may prorogue congress for fifty days, and with the sanction of the Council of State may convene Extraordinary Sessions. During the recess a body of fourteen members of the Senate and Chamber of Deputies sit as a Supervising and Advisory Committee.

The Council of Ministers consist of the holders of the

following portfolios : Interior, Foreign Affairs, Justice and Public Instruction, Treasury, War and Marine, Industry and Public Works. In the event of the President's death or abdication, the Minister of the Interior becomes Vice-President and Chief of the Executive.

The country is divided into twenty-three provinces, and one national territory. The provinces are divided into departments, of which there are seventy-four, and these are divided into 865 sub-delegations, further subdivided into 3,068 districts. The President appoints an Intendente over each province and a Gobernador over each department. These in turn appoint the sub-delegates and the Inspectors over each district. We thus see that there is a complete hierarchy of officials reaching from the hamlet to the capital.

Under the Law of December, 1891, certain of the larger towns are elevated into municipalities. They possess a fairly large measure of liberty, being governed by a Council elected by direct vote of the citizens. These Councils in turn elect a mayor, who, like the councillors, must not be a government official or contractor, and gives his services without pay. Municipalities manage education within their districts, have their own police, administer the town generally, and impose industrial and business regulations.

The police, with a strength of about 500 officers, 1,000 non-commissioned officers, and 6,000 men (organised on a military basis), are in charge in the capital of the republic and the capitals of the provinces and departments.

The President is ex-officio Chief of the Army.

DEFENCE.—Under the Law of 1910 all males born in

Chile, whether of native or foreign parentage, are subject to compulsory service, mitigated by the system of conscription. The permanent forces are fixed at 23,216, of which 17,132 are in the land forces. The National Guard is supposed to comprise all other men between the ages of 20 and 45. The army cadre consists of three regiments of field artillery, two regiments of mountain artillery, one section of machine guns, four companies of sappers and miners, six regiments of cavalry, sixteen regiments of infantry, one battalion of railway troops, and certain administrative units. The war strength of the first line is estimated at 150,000, and of the second and third lines (or National Guard) at 450,000. The artillery is armed with 7 and 7.2 centimetre Krupp guns, and the infantry with 7 millimetre Mausers.

**JUDICATURE.**—The Judicial Administration comprises Supreme Court of Justice, Courts of Appeal, Courts of First Instance, Courts of Justice and Peace, and Courts of the Alcaldes and Higher Police Officers. The Supreme Court of Justice, with seven members, sits in Santiago. The six Courts of Appeal sit in Santiago, Tacna, Valparaiso, Serena, Talca, and Concepción. The Tribunals of First Instance in the capitals of the departments. The Executive is represented in each department by a Public Prosecutor, who initiates criminal and civil prosecutions, and is an officer dependent on the Ministries of Justice and of the Interior.

## CHAPTER VI

### COMMERCIAL LAW AND PRACTICE

JUDICIAL procedure is based partly on written pleadings and affidavits and partly on aural evidence. Commercial cases, like civil causes and criminal causes of importance, are heard by judges who are qualified lawyers.

An action for a sum or subject matter, of not more than 300 pesos, is taken by a judge sitting in a Court of First Instance. The claim is presented in writing, and if admitted, the defendant has a certain time defined by law within which to answer the claim. If no answer is made within the delay prescribed the judge proceeds by executive action, issuing an order of arrest against the defendant's goods, or in other words distress is levied. The defendant may enter a protest within two days, but failing that the judge appoints a valuer and the property is sold at auction. If the defendant contests the claim he sends within a specified delay a written answer (*contestación*) to which he may add a counter claim (*Contestación y Reconvención*). Copies of these are sent to the plaintiff who replies (*Replica*), and to this the defendant sends a further affidavit (*Duplica*). When these formalities have been observed, the judge may decide that aural evidence is necessary, or the parties themselves may demand that witnesses shall be heard. Then a day is fixed, not more than thirty days' delay being usual, when witnesses are heard. If this is not done, the judge summonses the parties and delivers his

decision. If evidence is taken this is reduced to writing, and copies of the records (*Alegato de Bien Probado*) are sent to plaintiff and defendant to draw up their final pleadings, ten days being allowed for this. On these affidavits, records, and pleadings, the judge forms his opinion and delivers judgment. Appeal may be made against a judgment for defect in form or as against the weight of evidence. In certain cases appeal from the Court of Appeal may be made to a higher Court.

In actions for amounts above 300 pesos procedure is somewhat simplified.

**COMMERCIAL CODE.**—This code, based largely on French and Spanish practice, came into force in 1866, and has been amended in some particulars by later laws.

**DEFINITION OF MERCHANTS.**—Persons who are legally capable of contracting and making commerce their profession are merchants (Art. 1), and those who, while not merchants, engage in acts of commerce are subject, so far as such acts are concerned, to the laws of commerce (Art. 2). Married women of 25 and upwards may trade under notarial authorisation of their husbands; but if the trading acts are notorious authorisation will be presumed (Art. 11). Women who are over 21 but under 25 may trade if their husbands, being of full age, grant them formal authority; or in default thereof on the authority of a judge, such authorisation being registered and published (Art. 12). Revocation will not be recognised unless registered and published, in default of which the husband will be held liable (Art. 13), because her trading always involves the property of her husband (Art. 15), unless the authorisation is given by a judge against the husband's will (Art. 146 of Civil Code).

**COMMERCIAL REGISTER.**—In the capital of each Department a Commercial Register is opened where all documents subject to registration are kept (Arts. 20 and 21).

**LIABILITIES OF MERCHANTS.**—Summaries of the following documents have to be entered at the Commercial Register :

(1) **Marriage Settlements**; inventories, wills, deeds of partition, adjudication, notarial instruments of gift, sale, exchange and others of like description which impose on the husband any liability in favour of his wife. (2) **Judgments of divorce or separation of property.** (3) **Documents proving the property of children or wards who are under tutelage.** (4) **Instruments relating to the formation of an Association, such as unlimited or limited partnership, or limited liability company; instruments by which members of any such association appoint a manager in cases of liquidation.** (5) **Powers granted by merchants to their managers or subordinates for the carrying on of their business (Art. 22).** Such documents must be registered within fifteen days of their execution, or within fifteen days from commencing business (Art. 23).

**Books.**—All merchants must keep (a) a day book; (b) ledger; (c) capital account book; (d) letter copying book (Art. 25); but such books may be kept in Spanish or any foreign language, though in the latter case if brought into Court they must be translated by official interpreters at the owner's expense (Art. 26). Merchants must not alter the order or date of entries; make interlineations, deletions or alterations in such entries; erase entries or any part of them; tear out leaves or mutilate books in any way (Art. 31). Errors can only be corrected by fresh entries (Art. 32). It is forbidden to make official inquiries to ascertain whether merchants keep books or not, or whether they are or are not in order according to the provisions of the code (Art. 41). But the Court may order production of books in cases of succession, liquidation, or bankruptcy (Art. 42).

**BROKERS.**—Brokers are public officials appointed to render assistance to merchants in return for stipulated remuneration, and their number is fixed according to the trade requirements of each district (Arts. 48, 49). Persons who are forbidden to trade, who have been deprived of a similar office, who are minors, who have undergone infamous punishments, and women, cannot be brokers (Art. 55). Brokers must; (1) answer for the identity and capacity of the persons with whom they contract; (2) carry out all business entrusted to them; (3) keep a bound and paged register of all transactions; (4) keep a pocket book for the immediate entry of names and



addresses of contractors, and particulars of contracts, terms, etc.; (5) collect from the assignor commercial documents which they have negotiated and deliver them to the acceptor, from whom they shall receive the price to be handed to the assignor; (6) deliver to each person interested, within twenty-four hours following the conclusion of the business, an extract signed by them and by the interested persons themselves, of the entry made in their register; (7) produce their registers and books to the Court or Arbitrators when called upon to do so (Art. 56). Brokers must not transact commercial operations on their own account, or have any interest in such transactions, directly or indirectly, nor can they act as clerks or assistants (Art. 57); and they must not demand or accept remuneration on a higher scale than fixed; or give certificates concerning facts not appearing on their registers (Art. 58). A broker taking part in a sale of merchandise is bound (a) to state the quality, quantity, and price of the thing sold, the place and time of delivery and the manner in which the price is to be paid; (b) to be present at the delivery of the goods if called upon (Art. 73). However, while only authorised persons shall be considered public officials, anyone who is not expressly forbidden under Article 55 may carry on the business of broker (Art. 80).

**AUCTIONEERS.**—Auctioneers are public officials (Art. 81), their number in any locality being determined administratively according to commercial requirements (Art. 82). Article 55 applies to auctioneers. They must keep (a) day book of entries; (b) day book of sales; (c) current account book (Art. 85). Auctioneers are subject to penalties varying from 100 to 300 pesos for declaring any advance not clearly made by a bidder, bidding themselves or through a third person, acquiring any object entrusted to them for sale by means of a contract with the purchaser (Art. 88). Sales cannot be suspended, and articles must be knocked down to the highest bidder, unless a reserved price has been fixed (Art. 89).

**MERCANTILE CONTRACTS.**—The Civil Code applies in default of any special provision in the Commercial Code (Art. 96). A verbal offer must be accepted or rejected within twenty-four hours, if the two parties reside in the same place, or by return of post if in a different place; but the person who offers may

recede from his offer before receipt of acceptance, though if he does so he will be liable for any damages suffered by the other party (Arts. 97-103). Indefinite offers made in circulars, catalogues, notes of current prices or similar documents are not considered binding offers (Art. 105). All matters concerning contracts made in a foreign country but to be performed in Chile, are governed by Chilean law, in conformity with the concluding paragraph of Article 16 of the Civil Code (Art. 113). When the contract has been completed, the seller must deliver the articles sold in the time and at the place agreed, but failing specification of time and place, then the goods must be held at the disposal of the buyer for twenty-four hours following completion of contract (Art. 144). Delivery of the thing sold is affected by (1) sending the bill of lading or invoice in the case of the sale of merchandise in transit by sea or land ; (2) the fact of the buyer fixing his mark, with the consent of the seller on the goods purchased ; (3) any other means sanctioned by usage in commerce (Art. 149). A buyer is not bound to accept partial delivery, but if he does, it is a complete sale so far as the goods delivered are concerned ; the seller is liable for any damages incurred by the purchaser (Art. 157).

**CARRIAGE.**—Consignors and carriers having agreed upon terms must draw up a bill of lading stating (1) names and addresses of consignor, carrier and consignee ; (2) description of goods, their weight and marks and the number of packages ; (3) place of delivery ; (4) charge for the carriage ; (5) time within which the delivery of the goods have to be effected ; (6) place, day, month and year of the execution ; (7) any other conditions agreed to (Art. 175). Omissions may be supplied by legal evidence (Art. 177). A bill of lading may be nominative, to order or to bearer, and the assignee, endorser, or bearer of the bill of lading takes over both rights and obligations of the consignor (Art. 176). A consignor is bound to deliver goods to the carrier in good condition and at the agreed time and place, and to supply him with the documents necessary for the free transit of the goods (Art. 180). Should such delivery not be effected at the time and place specified, the carrier may demand rescission of the contract and payment of half the stipulated freight ; but if he elects to complete

carriage, the consignor is liable for increased expense resulting from the delay (Art. 182). Goods are carried at the risk of the owner unless damage is caused by (1) an act or fault of the carrier ; (2) neglect to use diligence and skill necessary to lessen the effect of accidents ; (3) neglect to use diligence and skill in loading, carriage, preservation and delivery of goods (Art. 184). A carrier is bound to receive the goods at the agreed place and time, to load them, to begin and end the journey within the time and by the route specified in the contract, and is liable in damages for default (Art. 191).

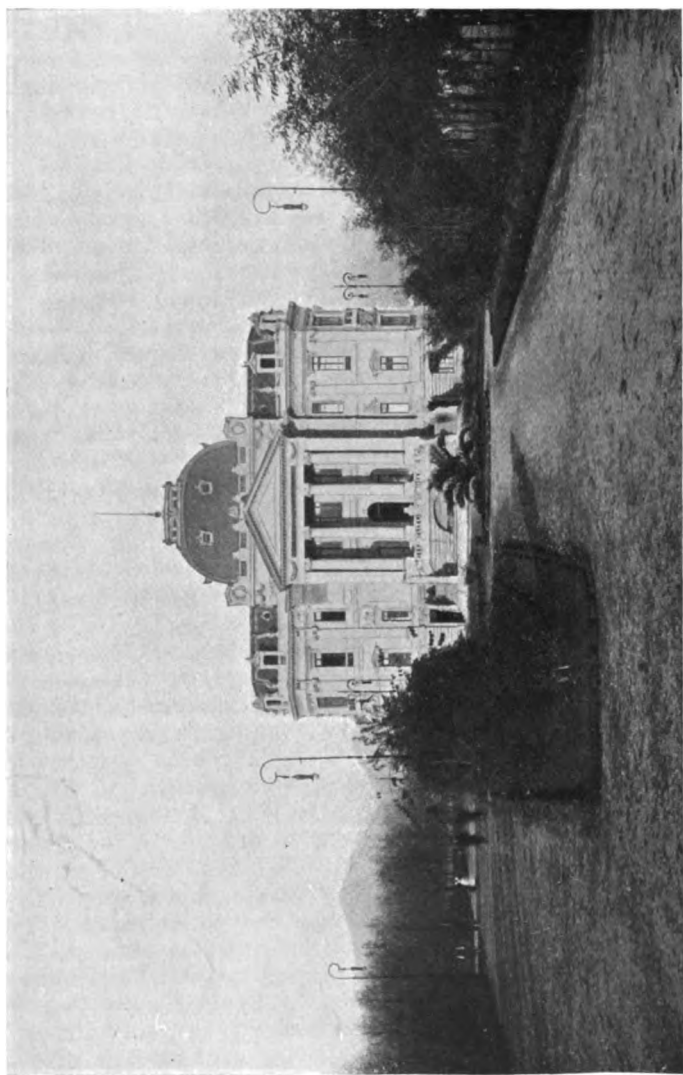
**COMMERCIAL MANDATE.**—Three kinds of commercial mandate are recognised: (1) commission ; (2) mandate to managers or other subordinates ; (3) Brokerage (Art. 234). Four kinds of commission agents are recognised: (1) buying agents ; (2) selling agents ; (3) carriers ; (4) banking agents (Art. 236). A commission agent may accept or decline the charge which is conferred upon him, but a refusal will entail liability for damages unless (1) immediate notice of rejection is given to the principal ; (2) and that all necessary measures are taken to preserve the interests of the principal pending such arrangements as the notifications of refusal may entail (Art. 243). But when a commission has been accepted, expressly or tacitly, the agent must conclude the commission, and failure to do so without lawful reason entails liability for damages (Art. 245). A commission agent must communicate speedily all news relating to the business which may cause the principal to confirm, revoke or modify his instructions (Art. 250). A commission agent for carriage is a person who in his own name, but on account of another, deals with a carrier for the carriage of goods from one place to another (Art. 318).

**TRADE ASSOCIATIONS.**—Three kinds of Associations are recognised: (1) unlimited partnerships ; (2) limited company ; (3) limited partnerships (Art. 348).

**PARTNERSHIPS.**—An unlimited partnership must be by notarial act, registered and published (Art. 350), by posting in the local Court, publication of the terms in a newspaper of the Department, or in the absence thereof by posting placards (Art. 355). The notarial act must state: (1) names and addresses of partners ; (2) name and signature of firm ; (3)

names of partners charged with the administration of the firm ; (4) the capital introduced by each partner, and whether money, credits or other kind of property ; the value assigned to chattels and immovables, and the way in which the valuation of the capital contributions has been made in case no value has been assigned to them ; (5) Nature of the transactions with which the business of the partnership is concerned ; (6) share of the profits or losses assigned to each capitalist or industrial partner ; (7) time limits of partnership ; (8) amount of annual drawings of each partner ; (9) the way in which the liquidation and division of the partnership property is to be effected ; (10) whether submitted to arbitration, and if so under what conditions ; (11) address of partnership ; (12) other bargains agreed to (Art. 352). The absence of a deed of partnership and publication thereof produces nullity as between the partners, but does not free them, jointly and severally, from liability to third parties (Art. 357) ; on the other hand, a person who contracts with a partnership which has not been legally constituted cannot on this ground withdraw from the performance of his obligations (Art. 363). Only the names of unlimited partners may enter into the firm's title. Names of partners who have died or resigned must be removed (Art. 366) ; the use of other names in the title is a penal offence (Art. 367).

**LIMITED COMPANIES.**—A limited company is a legal entity, whose members are only liable to the amount of their contributions (Art. 424). The memorandum of association must state : (1) names, professions and addresses of the members who are founders ; (2) address of the company ; (3) the nature of the business to be undertaken ; (4) capital of the company, number and nominal value of the shares into which it is divided ; the amount, manner and time in which payments are to be made by members ; (5) the time when inventories are to be made, balance sheets prepared and dividends voted ; (6) duration of company ; (7) method of administration, powers conferred on administrators and those reserved to the general meeting of shareholders ; (8) proportion of profits to remain in reserve ; (9) amount of deficit which is to cause dissolution of the company ; (10) method of dissolution and division of property ; (11) whether



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disputes arising in administration have to be submitted to arbitration and if so, the conditions; (12) other material considerations (Art. 426). No application for registration will be received which is not signed by members representing not less than one-third of the share capital, accompanied by a certified copy of the memorandum and articles of association passed at a general meeting of subscribers (Art. 428). A limited company is administered by temporary and removable agents, whether members or not, paid or unpaid, elected according to the articles of the company. All clauses tending to establish the permanence of administrations are null and void, even though their appointment is a condition of the contract of association (Art. 457). If the capital is reduced to the minimum prescribed in the memorandum of association, or if 50 per cent. of it be lost, the administrators must at once make a notification thereof to the proper authorities and proceed to liquidation, under penalty of becoming personally responsible for subsequent acts (Art. 464).

**LIMITED PARTNERSHIPS.**—A limited partnership is an association made between one or more persons who bind themselves to bring certain contributions to the social fund, and one or more persons who agree to administer the partnership, personally or by representative, in their own name (Art. 470). A simple limited partnership is formed by the combination of funds wholly or partly supplied by the limited and unlimited partners (Art. 472); while in a partnership limited by shares, the capital is divided into shares taken up by partners whose names do not appear in the articles of association (Art. 473).

A simple limited partnership is constituted as an unlimited partnership (Art. 474), only the names of the limited partners are not published (Art. 475). If a limited partner permits his name to appear in the title of the firm, he is liable in the same degree as an unlimited partner (Art. 477). A limited partner must not perform any act of partnership administration, even as an attorney for one of the managers (484); nevertheless he may attend the meetings of partners and give a consultative vote without losing his privilege (481). A limited partnership by shares must not divide such shares in lower amounts than 100 pesos if the capital does not exceed

50,000 pesos, or 500 pesos if the capital exceeds 50,000 pesos. The association is not definitely constituted until the capital is subscribed and at least 25 per cent. paid up (Art. 493). In every partnership limited by shares a vigilance committee shall be formed, composed of not less than three shareholders. The committee must be appointed at a general meeting before any partnership transactions are carried out. The first committee holds office for one year, and subsequent committees for five years (Art. 495). Each member of a committee becomes jointly and severally liable with the managers if (1) he has knowingly permitted serious inaccuracies to be made in the inventories to the prejudice of the partnership or third person; (2) he consents to dividends being distributed which are not justified (Art. 502).

**"PARTICIPACIÓN" OR ACCIDENTAL PARTNERSHIPS.**—"Participación" is a contract by which two or more merchants take an interest in one or more mercantile operations, which one carries out in his own name and on his personal credit, rendering account to his temporary partner; the ordinary formalities are not required; it is essentially a private transaction, with no legal entity (Arts. 507-511).

**INSURANCE.**—Title VIII deals with Insurance which, however, has been supplemented by the Law of 19th November, 1904, regulating the working of national and foreign insurance companies.

**CURRENT ACCOUNT.**—A current account is a bilateral and reciprocal contract by which one of the parties remits to the other or receives from him in ownership sums of money or other values, without obligation to apply to any particular use or to hold an equivalent sum or value to order, but with the duty of crediting the remitter with his remittances, to balance them at the agreed times, and to set them off on a single occasion up to the amount of debit and credit, and to pay the balance (Art. 602). The nature of a current account is (1) That the credit granted for remittances of commercial securities should carry the condition that they shall be paid on maturity; (2) that all items of debit and credit produce legal interest, or the interest agreed to be the parties; (3) that over and above the interest on the current account, the



contractors are entitled to a commission on the amount of all the remittances the realisation whereof requires the performance of acts of management. Such commission must be fixed by the parties or based on usage ; (4) that the final balance shall be payable from the moment of its acceptance unless unexpected sums which equal or exceed the balance are carried to the credit of the party who has obtained it, or unless the persons interested have agreed to pass it to a new account (Art. 606).

**BILL OF EXCHANGE.**—Persons who can bind themselves may make a contract of exchange (that is, draw a bill of exchange) on their own account or on that of a third person, who has specially authorised them to do so. Moreover, persons who are forbidden to trade by reason of their age, the nature of their profession, or status, may make a contract of exchange and draw, endorse, accept, pay and collect a bill, provided they do so casually, without the intention of speculating (Art. 622). A bill of exchange must state (1) place, day, month and year in which it is drawn ; (2) time when payment is to be made ; (3) name of person to whose order payment is directed to be made ; (4) the sum which the drawer orders to be paid ; (5) whether the price of the bill has been paid in cash or in goods, or if it is " value understood " or " in account " with the taker ; (6) name and address of the person on whom it is drawn and the place where the payment has to be made, if it is different from that where the drawer is domiciled. Bills must also bear the signature of the drawer or of the person who signs for him by virtue of a special power (Art. 633). A bill of exchange which is wanting in any of the legal formalities shall be considered as a simple promissory note signed by the drawer in favour of the taker (Art. 641). An " aval " (or guaranty) is a written contract whereby a third person who is a stranger to the bill of exchange jointly and severally guarantees the payment thereof in the times and under the agreed terms, or in the same terms as the guaranteed person has bound himself (Art. 680). A mere signature placed on the bill involves guaranty (Art. 681) ; but a guaranty may be limited in time, event, amount, or to a certain person. When it is given in these conditions, the guaranty produces no liability other than that which the guarantor has undertaken (Art. 682).

**MARITIME COMMERCE.**—The Third Book deals with Maritime Commerce.

**BANKRUPTCY.**—While the Code says that bankruptcy is the state of a merchant who suspends payment of his mercantile obligations (Art. 1325), the Courts have held that repudiation of a debt does not mean suspension, until the debt has been actually proved. Mere suspension of payment does not constitute a state of bankruptcy if all the creditors grant time to the common debtor (Art. 1326); on the other hand, to constitute bankruptcy it is not necessary that the suspension should be general (Art. 1327). While the bankruptcy of an unlimited partnership involves the personal bankruptcy of the members composing it who are jointly and severally liable, the bankruptcy of one of them does not place the partnership in bankruptcy (1329). There is presumption of culpable bankruptcy (1) if the domestic and personal expenses of the bankrupt have been excessive; (2) if the bankrupt has lost considerable sums in any kind of gaming, in large bets, or in fictitious stock exchange operations; (3) if with the intention of deferring the bankruptcy, the bankrupt has bought goods in order to re-sell them at less than the current price, has contracted loans, put into circulation documents of credit, or employed other ruinous means for putting himself in funds; (4) if after the suspension of payment he has paid one creditor to the prejudice of others (Art. 1332). A bankrupt is considered culpable (1) if he has no books or inventories, or if these have been improperly kept or are incorrect; (2) if he has not kept business letters; (3) if he has omitted to register documents set forth in Article 22; (4) if he has given security or contracted on another's account liabilities which are out of proportion to his fortune, without taking equivalent securities to guarantee his liability, (5) if he has received on loan, with or without interest, any quantity of goods at a higher price than that locally current; (6) if immediately after having bought goods on credit he has sold them at a price less than current price; (7) if he has not made the statement ordered by Article 1345 ("every bankrupt is bound to give a written statement of his position within three days, reckoned from the suspension of payment, and including therein the day wherein this

occurs"), or if the statement does not contain the names of all his partners who are jointly and severally liable; (8) if he has absented himself before or at the time of declaration of bankruptcy, or does not present himself to the Commercial Court or to the trustees in the cases wherein the law imposes this obligation; (9) if he is declared bankrupt for the second time without having performed the obligations which he has contracted by a previous arrangement (Art. 1333). Presumption of fraudulent bankruptcy exists (1) if in the annual inventory and balance sheet or in that which is annexed to the bankruptcy statement, the bankrupt has concealed money, goods, credits or other property; (2) if before or after the declaration of bankruptcy he has bought for himself and in the name of a third person immovable property, goods or credits, or has assigned commercial securities without having received the value thereof; (3) if he has feigned alienations of any kind; (4) if the existence or outgoings of the assets of the last inventory, or any occurring since the inventory, is not shown in the books; (5) if he absconds, taking away or concealing books or documents or any part of his assets; (6) if in his books, balance sheets or any other document he feigns debts, expenses or losses, or exaggerates the amount of the real debts, expenses or losses; (7) if he has assigned or acknowledged feigned debts; (8) if, having kept books, he conceals or mutilates them; (9) if he has applied to his own business, goods, or funds entrusted to him for administration on deposit or on commission; (10) if, without authorisation from the owner, he has negotiated bills, promissory notes or drafts so that they should be in his control for the purpose of their collection, remission or other purpose different from that of the negotiation, and has not remitted the proceeds; (11) if, having been commissioned to sell goods or negotiate commercial securities, he conceals alienation from his principal; (12) if, subsequent to preparing his balance sheet, he negotiates bills of his own drawing against a person in whose control there are no funds for the purpose, or who has not authorised him to do so; (13) if, to the prejudice of his creditors, he has in any way whatever paid a debt in advance which was not payable until after the declaration of bankruptcy; (14) if, after the declaration of bankruptcy, he has



received and applied to his own uses money, goods, or credits of the estate, or has abstracted any part of the assets belonging thereto ; (15) finally, if the bankrupt has fraudulently performed any act which diminishes his assets, or increases his liabilities (Art. 1334). Moreover, (1) if the bankrupt has executed notarial instruments or private documents whereby he admits himself debtor, without expressing the consideration of the debt or a definite value ; (2) if within the six months preceding the declaration of bankruptcy he has taken goods on credit or borrowed or taken money at interest ; or (3) if in breach of arrest or while in possession of a safe conduct, he fails to present himself to the commercial court, whenever the law orders it, he is presumed to have acted fraudulently (Art. 1336). So, too, is a broker who has carried through any mercantile transaction in his own account, either in his own name or another's, or has constituted himself guarantor of the transactions wherein he has taken part, even if the bankruptcy does not proceed from those transactions (Art. 1335). A person is considered an accomplice of the bankrupt who (1) by agreement with the bankrupt feigns credits or alters real credits either in amount or date ; (2) who aids the bankrupt to conceal or abstract assets of any nature, before or after declaration of bankruptcy ; (3) who, with the notice of the declaration of bankruptcy, conceals movables or immovables, documents of any kind which he may have in his control belonging to the bankrupt, or delivers them to the latter and not to the trustees ; (4) who, after the declaration of bankruptcy, admits assignments or endorsements of the bankrupt ; (5) a lawful creditor who makes private arrangements with the bankrupt to the prejudice of the estate ; (6) a bill broker or other broker who intervenes in any mercantile operation of the bankrupt after the declaration of bankruptcy (Art. 1337). While culpable and fraudulent bankrupts and their accomplices are punished according to the Criminal Code, this does not prevent the accomplices being civilly condemned : (1) to lose any right they may have against the estate ; (2) to restore thereto the assets and rights of actions with the abstraction whereof their complicity was concerned ; (3) to pay to the estate a sum equal to the amount of their attempted fraud (Art. 1340).

## CHAPTER VII

### FINANCE, BANKS AND BANKING

CHILEAN credit has always stood well in European markets, except when wars and the crisis of 1877-9, gave a temporary check to progress, with a consequent depreciation of prices. But the national obligations were honourably met, so that borrowing was easy, and the price of bonds remained, on the whole, at a gratifying high level. Not that the Chilean nation has altogether escaped financial difficulties. As the result of a deficit of \$2,000,000 in the revenue in 1877, and general trade depression following on the failure of wheat crop and heavy losses in the nitrate industry (the fields then being in the possession of Peru and Bolivia), the Government had to authorise the issue of \$21,000,000 of paper money, and at the same time postpone payment in species for three years. This caused immediate depreciation of credit and exchange, which evils were not alleviated by the long and costly war against Bolivia and Peru. At that time there was a great want of elasticity in the revenue, owing to narrow limits of taxation the Government policy allowed. After the successful war with her northern neighbours, the acquisition of the nitrate fields placed a vast source of wealth at the disposal of Chile. Not only were there greater opportunities for the use of Chilean capital and labour on the fields, but the export duty on nitrates and then on iodine filled the coffers of the State, making it possible to meet all the requirements

of Government, notwithstanding the very large expenditure by the war and navy departments. Nevertheless, the excessive issue of paper continued at intervals, with the inevitable concomitants of instability of the money market, and recurring stringency. It was only by strenuous efforts that in 1895 the paper dollar could be fixed at a nominal value of 18d. redeemable in gold. This was maintained by the creation of a Caja de Amortización with certain revenues to enable notes to be redeemed. At present there are twenty-five banks of issue, empowered to emit notes against certain gold deposits in the treasury.

**PUBLIC DEBT.**—The first public loan was for £1,000,000, raised in London in 1822. The interest was always regularly paid, and the debt was ultimately liquidated. Others followed and were paid off from time to time. Then, in 1885, a  $4\frac{1}{2}$  per cent. loan of £808,200 was raised at 89 per cent., and of this about half a million sterling is outstanding. In 1886 matters had so greatly improved that a  $4\frac{1}{2}$  per cent. loan of £6,010,000 was raised at  $98\frac{1}{2}$  per cent. Other loans followed in quick succession. That of 1887,  $4\frac{1}{2}$  per cent. bonds for £1,160,200 was issued at  $97\frac{1}{2}$ ; the 1889  $4\frac{1}{2}$  bonds for £1,546,392 were issued at  $101\frac{1}{2}$ . Such a success was too good to last, and the next issue, in 1892, for £1,800,000 5 per cent. bonds were offered 5 below par. The following year there was a  $4\frac{1}{2}$  per cent. loan of £630,000 issued below par, and there was an issue of 6 per cent. bonds for £149,000. Two years later the £2,000,000 loan at  $4\frac{1}{2}$  per cent. was issued at  $93\frac{1}{2}$ . In 1896 a £4,000,000 loan at 5 per cent. was issued at  $95\frac{1}{2}$ . In 1905 £1,350,000 5 per cent. bonds were

issued at 95½. In 1906 4½ per cent. bonds to the amount of £5,700,000 were issued at 94½. In 1910 £2,600,000 5 per cent. bonds were issued at 99. In 1911 £4,905,000 5 per cent. bonds were issued at 98½. In 1912 £1,099,468 5 per cent. annuities were issued at little under par. A loan of £4,866,500 was raised in Berlin, and a further sum of £3,500,000 was raised for purposes of national defence. These are all external debts. At the beginning of the year the total funded public debt amounted to £43,056,007, of which £34,728,800 was external and £8,328,007 internal loans. There is also a small floating debt.

It must be remembered that a very large part of this debt has been expended in economic development—railway construction, harbour improvements, sanitation, and so on. While it is true that the state railways are now run at a heavy annual loss, yet their existence has rendered agricultural, pastoral, mining, and commercial developments generally possible. So that even where the expenditure has not been directly remunerative they have largely contributed to national prosperity. At the same time they have found employment for many deserving folk whom the Government would otherwise have been obliged to pension from the public funds. Thus a further saving, although not immediately apparent, has been effected in this direction. When the Longitudinal Railway is completed and provided with the necessary feeder branches, the loss will be materially reduced and, doubtless, some small sum be converted into a profit. Meanwhile, the debt is not felt to be a heavy one for a country with so many rich resources.

REVENUE AND EXPENDITURE.—The national revenues are made up chiefly from the receipts on an export duty on nitrates and iodine, and import, or customs, duties ranging from 60 to 5 per cent. *ad valorem*. The annual expenditure touches close on \$70,000,000 gold. This is made up by \$7,460,000 for the Interior Department; \$1,470,000 Foreign Affairs; \$2,160,000 Justice; \$7,400,000 War Department; \$6,800,000 Navy Department; \$5,280,000 Public Works; \$15,400,000 Government Railways. The Public Debt Service absorbs about \$9,000,000.

BANKS AND BANKING.—There is no Government bank in Chile. Banking business is carried out on rather more conservative lines than in most Latin countries, but interest is allowed on current and deposit accounts, and advances are rather more freely made than is the habit with English joint stock banks. In the German, Italian, and Spanish banks we find a certain amount of co-operation of the home banks supporting the Chilean houses, which adds greatly to their strength and influence, especially in financing big commercial undertakings.

A few particulars relating to the principal banks are given below.

The Anglo South American Bank, Ltd., capital, £5,000,000, has headquarters in London and branches at Santiago, Valparaiso, Chillán, Coquimbo, Serena, Copiapó, Antofagasta, Iquique, and Punta Arenas.

The London and River Plate Bank, capital £4,000,000, headquarters in London, branch in Valparaiso.

The Banco Germanico de la America del Sur, the



Banco de Chile of Alemania, and the Deutsche Sudamerikanische Bank Akt. Ges., represent German capital and enterprise in Chile. French capital is represented by the Société Française au Chile.

The Banco de Chile (formed by an amalgamation of three banks, the National Bank of Chile, the Bank of Valparaiso, and the Bank of Agriculture), has a capital of \$8,000,000, half of which is paid up. It has headquarters at Santiago and Valparaiso, forty-six branches in the provinces, and a branch in London. It is the official banking house of the Government, though not a government bank.

The Banco Español de Chile has a capital of \$40,000,000, three-fourths paid up, headquarters at Santiago and Valparaiso, and thirty-four branches.

The Banco de Santiago has a capital of \$5,000,000. Banco Nacional, \$40,000,000. Banco E. Edwards (established in 1852) with a capital of \$5,000,000. Banco de la Republica, \$14,000,000. Banco Italiano, \$10,000,000.

In the provinces we find such banks as the Banco de Concepción, \$3,000,000; Banco de Talca, \$5,000,000 (with branches at Cauquenes, Linares, Parsal, San Carlos, and Quirihue); Banco de Curico, capital \$3,000,000 (has four branches); Banco Comercial de Curico, capital \$750,000; Banco de Punta Arenas, capital \$5,000,000.

The Caja de Credito Hipotecario is a Government institution, lending 50 per cent. of their market value on lands and buildings, both to private individuals and corporations. The Banco Hipotecario de Chile, a private concern, with a capital of \$6,000,000, carries on a similar business.

The law as to cheques appears to be in a rather unsatisfactory condition. There is no statute law on the subject, but the Courts have held that a cheque not drawn to order cannot be transferred by endorsement. Secondly, it has been held that negotiating an uncovered cheque in order to effect part payment for an immovable does not constitute fraud. The argument is that the drawee, or bank must pay a properly drawn cheque if in possession of funds, belonging to the drawer, but while the bank is at liberty to decline paying if no funds have been provided, the manager may do so if he chooses. The drawer, therefore, is presumed to have acted in good faith.

## CHAPTER VIII

### SOCIAL CONDITIONS

Two outstanding facts influence social conditions in Chile. The population, so far as the governing classes are concerned, is essentially of Spanish origin and conforms to the Roman Catholic faith. We do not find here the tremendous international element so conspicuous in Argentina, both in the moneyed and the labouring classes. It is true that there will be found among high officials, landed proprietors, professional and commercial people, many men bearing British, French, and German names. But this element is by no means overwhelming, and it will be found that, barring certain racial characteristics, these personages and their families are in sentiment as true Chileans as the descendants of the old Spanish conquerors, and that, in fact, their name constitutes the only thing about them which is not essentially Chilean. This admixture of Celtic, Anglo-Saxon, and Teutonic blood, moreover, has had a beneficial effect on the country so far as its commercial development is concerned. The Chilean Spaniard of good birth has, until comparatively recent years, proved himself, as a rule, quite as adverse to trade as the true Castilian. It is mainly to the foreign element that the industrial progress was, in the first instance, due. It will be found that most of the large concerns owe their origin to families of other than Spanish origin. O'Higgins did much to develop the resources of his adopted country, and others

who followed him continued the work. Even in the case of the justly-famous Cousiño property at Lota, with the huge coal-mines, copper-smelting works, brick fields, tile and pottery factories, while this wonderful industrial settlement owed its inception to Don Matias Cousiño in 1855, it was, and is, administered by Englishmen and Germans. It is the same as regards the great meat and wool industries of the south, and the nitrate fields of the north. As regards the retail traders, many of these are either of foreign or Basque origin.

When we come to the working classes, we find that among their ranks there is a strong element of Araucanian Indian blood, which has mixed well with the Spanish element, producing a fine peasantry, capable of hard work when well directed, and of any amount of patience and resistance. The working classes, apart from sudden ebullitions of temper, are a docile, easily-led people, without much social or political ambition. As soldiers they have always proved themselves magnificent fighters, while as sailors they have earned the unstinted confidence and admiration of leaders of such critical temperament and lofty ideals as even the famous Admiral Cochrane, the father of the present efficient national navy.

While the exercise of religious observance is unfettered, the Roman Catholic faith is officially recognised and has predominant influence in social and educational matters. The Anglican Church, however, is well represented in many of the biggest cities as well as in the mission field.

Education, so far as the middle and upper classes are concerned, may be said to be well developed, though in



*Interior of Fine Art Gallery, Santiago*



many districts it scarcely touches the people. At Santiago there is the University with faculties of theology, law, political science, medicine, and pharmacy, natural sciences and mathematics, and philosophy, which are well attended. Here, too, is the National Institute, an excellent high school. There are thirty of these high schools or lyceums for boys and twelve for girls in the capital and in the Provinces. Then there are mining schools at Copiapó, La Serena, and Santiago. Agricultural schools at Chillán, Concepción, Ancud and other cities. And a School of Mechanics, Arts, and Trades at Santiago. Normal schools for male teachers are at Santiago, Chillán, Valdivia, and for female teachers at Santiago, La Serena, and Concepción. Elementary schools are found in all towns. Education is free but not compulsory, and it is found that between 75 and 80 per cent. of the population is illiterate. Private schools, mainly carried on by religious bodies, are permitted, but they mostly conform to the requirements of the Consejo de Instrucción, whose fourteen members supervise education in the higher and secondary establishments. Primary education is supervised by municipalities or other local authorities.

Literature in Chile is in the main concerned with history, politics, and law, though there is a younger generation cultivating *belles lettres*. The Press is free, and conducted rather on British than Latin lines. Much space is devoted to news, and the political and social leaders are unsigned. Though all but the half-dozen publications of the very first flight of necessity enjoy but limited circulation, the newspapers in general have

considerable influence and are well conducted. Among the most notable are the *Mercurio* of Santiago, and the *Mercurio* of Valparaiso. In addition to these very important publications of the central provinces, there are some most influential organs in Concepción and other wealthy cities of the south.

Music is rather a passion with the people. The Opera House at Santiago is a magnificent establishment, one of the centres of social life. The short season is from May to October, when the prices of boxes range from \$1,000 to \$2,000 for the season. Orchestra stall seats are charged at from \$5 to \$4 and stalls from \$3 to \$2. Seats are rarely vacant, which shows that opera is taken seriously.

There are theatres at Santiago, Valparaiso, Concepción, Talca, and Punta Arenas. In Santiago and Valparaiso are also to be found variety theatres. The cinematograph has now become one of the recognised popular features of the republic. Picture palaces, as a matter of fact, abound in all the important towns of the country, but more especially in that quarter of Valparaiso which, having suffered most severely of all from the recent earthquake, has been almost entirely rebuilt.

In Santiago, Concepción, Valparaiso, Viña del Mar, and other less commercially spirited towns the Spanish love of promenading or Paseo of an afternoon is a great social function, a kind of universal drawing-room, where everybody who is anybody meets. In Santiago, Valparaiso, and other large towns there are excellent clubs, some of them instituted on a very lavish scale. Perhaps the most important in all Chile is the Club de



la Union, situated in the centre of Santiago, and owning peculiarly fine premises.

Hotels, outside of Santiago and Valparaiso, are not by any means of the first order. In these two towns prices—although not yet so high as those in Argentina, Uruguay, and Brazil—are approaching the region of the exorbitant. This is owing to the heavy import dues, which make many things in hotels conducted on a European scale extremely expensive. In smaller hotels in the capital and in the provinces the prices are cheap, the charges ranging from 4 to 12 pesos per day. Outside of the nitrate districts, living is fairly cheap and supplies abundant.

It is occasionally said that Chilean society is not quite so expansive to foreigners as society is in other countries of South America. How much actual foundation exists for this statement appears very doubtful. Properly accredited visitors are hospitably entertained, and residents, if they display not only good qualities, but sympathy to local points of view, will be received, not to say absorbed, in the native circles. It has from time to time been introduced as a matter for complaint that the English element in Santiago, Valparaiso, and other centres regard themselves too much as birds of passage, and that they have their own clubs and social reunions, mixing little with the Chilean elements, which is not altogether conducive to permanence of either political or commercial influence. It is possible that of recent years there are fewer instances of Englishmen, Scotchmen, and Irishmen who go out there and take a real interest in local matters, which is one reason why British trade has lost some ground to the Germans, who are more

adaptable. Nevertheless, on the whole, it may be said that visitors from Great Britain are better accustomed to adapt themselves to local conditions in Chile than anywhere else in South America.

Leaving aside the case of men who go out from home to fill posts, there is plenty of room for those who have energy and initiative backed up by a moderate amount of capital. The openings for enterprise are many, but local conditions ought to be thoroughly studied before definite investments are made. As regards the nitrate and pastoral industries, these are well developed, and any designs in their directions would require special capacities and large capital. In agriculture, forestry, and manufacture, however, there are plenty of opportunities. It must be remembered that quite a large part of Chile is still unexplored—that is to say, so far as their commercial treasures are concerned. This is particularly true as regards the middle south, especially in the lake and valley region. The forests and mineral deposits also have many secrets in store for those possessing the knowledge and ability to explore. While concessions are not so lavishly bestowed as of old, still legitimate claims to discovery and development are adequately recognised, and the spirit of the Government towards the pioneer is usually generous. While the policy of attracting immigrants wholesale has been abandoned, facilities are offered for those who come with capital to take up land or develop natural resources. In a word, as far as the European is concerned, it is more a country for the commercial and industrial pioneer than the mere immigrant.

It should be stated that both the Constitution and Statute law are liberal as regards the status of foreigners, who find few regulations to hamper legitimate enterprise.

By Article 16 of the Civil Code it is enacted that property situated in Chile is subject to the Chilean laws, though the owners be foreigners dwelling abroad. This does not prejudice stipulations contained in contracts lawfully executed outside of the country, but the effects of such contracts to be performed in Chile must always be governed by the laws of Chile.

## CHAPTER IX

### INLAND COMMUNICATION AND TRANSPORT

It will be readily understood from the physical features of the country that Chile can possess no very long or important river. We have here no great tablelands or vast plains, but merely a chain of rugged mountains with a strip of comparatively low-lying and sometimes flat coast belt. Nevertheless, even this strangely configured land comprises a few streams which prove exceedingly useful in bringing down certain of the bulkiest and cheapest products of the interior to the seaports.

**NAVIGABLE RIVERS.**—Farthest south of these navigable streams is the Maullin, which flows from Lake Llanquihue, at the foot of the Andes, has a southerly trend and enters the Pacific in the Choronadis Gulf,  $41^{\circ} 36'$  S. lat. About  $2\frac{1}{2}$  miles from its mouth, on the south bank, is Maullin. Vessels drawing not more than 9 ft. of water may ascend the Maullin for 26 miles, and smaller vessels for another four or five. The chief export is timber; but there is also a service of small passenger boats.

Coming north we reach the Bueno, which rises in Lake Rauco, and flows into the sea at Bueno Bay,  $40^{\circ} 16'$  S. lat. It is an awkward river, having a mouth exposed to ocean swell, a bar with not more than 7 ft. of water in the dry season and about 15 ft. in flood. The river itself is deep, with a mild flow. It is navigable for 50 miles to Trumayo.

Next is the Calle-Calle or Rio Valdivia, which rises in a small Andean lake and flows into the ocean at  $60^{\circ} 16'$  S. lat. Not far from its winding and sandbank-obstructed mouth, is the considerable port of Valdivia, which may be approached by large vessels all the year round. Beyond this, the river is only navigable for small craft, but it is of no use in bringing down produce. There is a steamship service between Valdivia and Corral, and the town is a port of call for several coasting lines.

The Cautin, or Rio Imperial, enters the ocean at lat.  $38^{\circ} 49'$  S., and has a bar, but with 9 ft. of water. Vessels drawing 8 ft. may ascend the river for 18 miles, and smaller ones for about 30. Nueva Imperial is not far from its mouth, and farther up is Pitrufulquen.

Our next river, the Bio-Bio, is of importance because five miles from its mouth, on its right bank, is the large town of Concepción, but owing to sand banks it cannot be entered from the sea. Inside of them, however, the river is used by flat-bottomed boats and also serves for floating down rafts of timber from up country. It is about 100 miles long.

Finally, in lat.  $35^{\circ} 19'$  S., between two lofty hills, the Rio Maule enters the ocean. Rather less than a mile from its mouth, on south bank, is the town of Constitución. Here, too, we find a bar, but with a little over 14 ft. of water even at low tide, while there is good anchorage opposite the city in 20 ft. of water. For small vessels, the river is open for about 75 miles, and passes through some fertile country.

Beyond this the Rapel, the Aconcagua just beyond Valparaiso, the Chuapa, and the Coquimbo are open to

small boats and are also used by rafts. But that is all the tale so far as the navigable rivers are concerned.

RAILWAYS.—Chilean railways may be divided into three main classes, (1) The Central, or Longitudinal Railway, with its coastal branches; (2) The Trans-Andine lines, of which three are in operation; (3) the independent, almost sporadic lines of the Nitrate Fields.

- X (1) The Central Railway is as yet chiefly an ideal, although progress is being made. It is partly commercial, but more immediately strategical, for when once constructed from Puerto Montt on the far south to Tacna in the north, it will link up the various provinces which are now more easily approached by way of the ocean, while the branch lines, east and west, will knit the whole republic together, making it possible to mobilise the army and rush up supplies to any threatened spot. But this will be both a long and an expensive job.

At present the matter stands thus: there is an unbroken stretch of line between Puerto Montt, to a point north of Coquimbo, a distance of about 2,700 km. North of this are short sections in working order, which will eventually be linked up and form part of the section which has been planned in detail as far as Arica.

With its head at Puerto Montt in the Gulf of Chacao, protected by the island of Chiloé, the line runs north, skirting Lake Llanquihue, it serves the town of the same name and Osorno. Some miles higher up there is a branch to Valdivia. Then it has a somewhat devious course to Temuco. Just north of the river Bio-Bio is an important branch line to Concepción, whence there is a coastal branch running south past Coronel to Caranilhue.

The main line is continued north to San Fernando, where it forms a junction with a branch coming up from port Pichelemu. At Santiago the line takes a sudden north-westerly bend to Valparaiso. Thence it runs north-easterly to Quillota, where it forms a junction with the Trans-Andine line, linking up with Mendoza and Buenos Aires. Running on close to the coast as far as Ligua, it then trends a little more easterly, and so on to Coquimbo. From Coquimbo to Ovalle is a branch 112 km. long, and from Coquimbo to Rivadavia one of 90 km. Another branch which will presently be linked up is that between Vallenar to Huaseo on the coast, 50 km. Then there is the Ramadilla to the coast at Carrizal Bajo, with short lateral branches. Finally, there is the Copiapó line, from Chanarcillo and Las Juntas (a bifurcation), through Copiapó to Caldera on the coast. This Longitudinal railway is being built by the Government, and then handed over for exploitation to a company, which assumes responsibility, section by section as the line is thrown open for traffic. It is a huge undertaking, being pushed forward with dogged persistency, which must add enormously to the wealth of the country and the comfort of all who travel. There can be no doubt that when once completed it will attract many more visitors from Europe and North America, who are now deterred from venturing far afield in Chile through more or less exaggerated fears of difficulties and expense. This Government railway employs over 20,000 men, and has cost close upon \$40,000,000.

(2) *Andine Lines*.—The Trans-Andine Railway is approached from both Santiago and Valparaiso by way

of Llaillai and Los Andes, where a change is made to the narrow gauge line, carried up steep gradients, over bridges and through tunnels to the summit tunnel of El Cumbre, whence there is a zigzag dip down to Mendoza, where the Buenos Aires and Pacific Railway is joined. Another railway across the Andes some 400 miles north is projected, while plans are being prepared for the construction of others well to the south of Santiago. From Antofagasta, on the coast, a railway runs north-east through Caloma and just north of Tapagalcha, at Oyhue crosses the Andes into Bolivia, to Yuni (where there is a branch to Huancacha), then, skirting Lake Poopo to Oruro where it forms a junction with the Bolivian Railway to La Paz. The distance between Antofagasta and Oyhue is 441 km. It is a narrow gauge railway, but carries some hundreds of thousands of passengers annually, besides much heavy goods traffic, chiefly ores, live stock, and general merchandise. The third Trans-Andine line commences at Arica on the coast, passes through Tacna, crosses the border at Charana, 250 km. distant, and then is carried direct to La Paz, 210 km. beyond. Its route practically coincides with the old Inca road.

(3) *Nitrate Lines*.—First of the Nitrate Railways is that from Pan de Azucar, through Bombas to Carizalillo. Farther north is the Taltal Railway, which runs to Cochinal, 148 km., and to Picacitta, about 200 km. further on, with short branches to different oficinas. About 100 km. further up the coast is Antofagasta. The line to Oyhue has already been mentioned. On that main line there is a branch from Mantos Blancos





to Mejillones on the coast, a distance of 77 km. Others are from Salar del Carmen to Boquete, 111 km., Calama to Chiquicamata 9, Cere to Conchi Viejo 19, and Oyahue to Coyaguasi 95. Then one runs south-east from Antofagasta to Pepita, something like 120 km. The Tocopilla line runs direct from the coast to Toco, 81 km. away on the west bank of the Rio de Loa. It has branches to Santa Isabella and Santa Fé. Considerably further north are the Nitrate Railways, the main line running parallel to the coast, about 20 miles inland, from Lagunas to Tana, where it zigzags to the coast, a total distance of 243 km. From Lagunas there is a branch to Patillas on the coast, and others from Buena-ventura to Chayacollo, Central to Iquique, Guara to Carmen, Negreiros to Caleta Buena, Santa Catalina to Junin and several spurs of half-a-dozen kilometres each. Finally, there is the Arica to Tacna line 63 km. long, which now forms the coastal section of the Arica-La Paz Trans-Andine Railway.

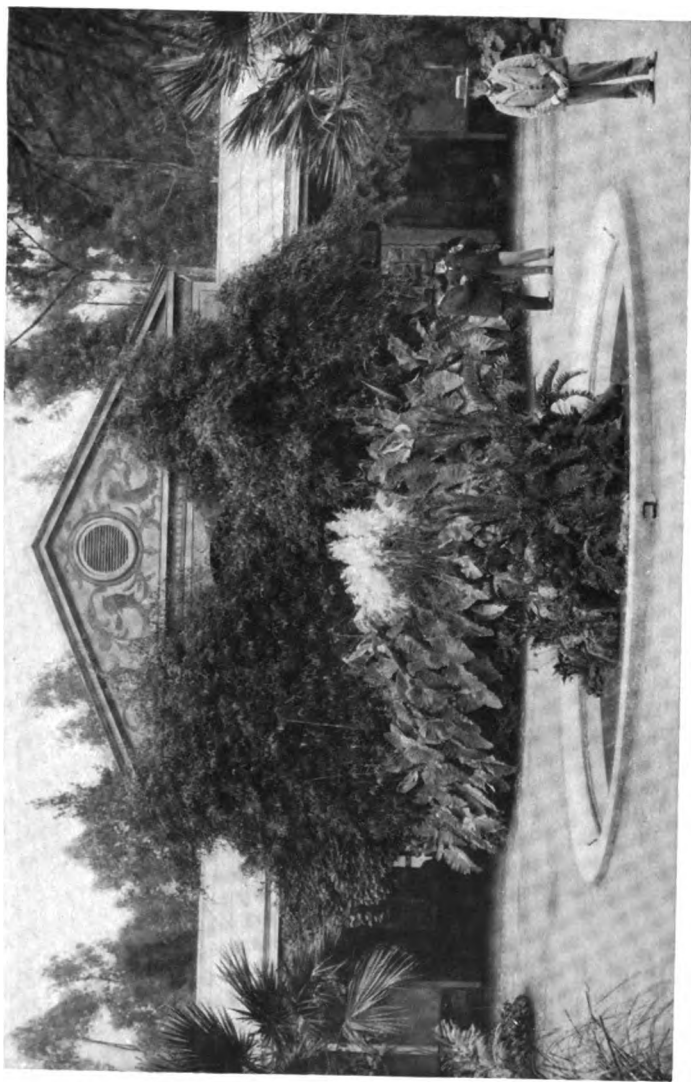
*Other Lines.*—A few other isolated railways remain to be mentioned. The Caleta-Coloso line to Aguas Blancas is 81 km. long, and the branch to Yungai, 94. The Arauco Railway is a branch of that running from Concepción to Curanilhue, and serves the ports and coal-mines of Coronel and Lota. It is a very busy branch, both for heavy goods and passengers. Then on the island of Chiloé is the Ancud and Castro Railway, 90 km. long. Castrh is midway down the island on the eastern or inlet side, Ancud is on a bay in northern extremity looking out on the Pacific. The line carries a considerable amount of timber and grain and cattle.

**ROADS.**—Chile will some day possess good roads. Many are fairly well traced out, and, speaking generally, there is excellent foundation and road-making material. So far as such works are concerned, it has been found in the past that it is population that is wanting. It should be stated, however, that in the north dust and sand are so all prevalent that road-making and maintenance is difficult. In the south, the fertile forest lands and the exceptionally heavy winter rainfall together with the irregularity of river and torrent flow (for they frequently change their beds) is against good road-making. In the vicinity of some towns and timber concessions Corduroy roads (roads formed of logs floating on the mud) are seen. In the mid provinces, pleasant tree-planted roads are the rule ; it is only the upkeep, away from the chief towns, that leaves much to be desired. A splendid road, now threatening to fall into disuse in its upper sections, is that from the plains through the Uspallata Pass in the Andes. The Cumbre, the highest point, is 4,000 metres above sea-level. It was formerly much frequented, being the direct road between Santiago and Mendoza on the Argentine side. The pass is closed by snow and storms for several months in the year, and the road on its higher levels is marked out at short intervals by strong, rock-built refuge houses. Since the Trans-Andine Railway was completed the road has fallen largely into disuse, except for the cattle traffic between the two republics. This Uspallata Pass is, however, one of the worst of the Andean "gateways." According to Chilean official surveys there are twenty-one passes between 36° 41' S. lat. and 37° 41' S. lat., of between

2,558 and 1,732 metres high. Three of these, Zaña Zaña, 1,797 metres, Nuble del Sable 1,738, and Churreo 1,785, lead into the Argentine territory of Neuquen. Going south we come to other passes, such as the Atacalco, El Fuerto, Rahue, Mallin Chileno, and the Lilul, only 1,179 metres high. The Maipu, in the Lago Lacar district, is only 898 metres high. A drawback to these passes, however, is the heavy rainfall already mentioned, and the fierce storms. In the north, the passes are both higher and more difficult, as there is a thicker wilderness of mountains and valleys to negotiate. It is probable that at no long date, an easier rail communication between Chile and Argentina will be carried out by way of one of the southern passes, the railway on the eastern side now being fairly close up to the foothills of the Cordilleras.

TRANSPORT.—Where railways and navigable railways are not available, the pack-horse and mule are generally used. On the coastal belt, especially in the region of towns, where fairly passable roads exist, carts and automobiles are used, the latter in steadily increasing numbers. But for up-country work, and especially for international traffic, pack animals are required. Mules while taking smaller packs are found more enduring and surer footed than horses. In the central provinces, away from the coast, and in the southern, oxen are largely used for draught purposes, the waggons being large and clumsy, with great wheels, often of the solid variety, for the going is always rough, and often swampy. In the south guanacos, and in the north llamas are used to some extent for pack<sup>d</sup> transport work in the Andes. In the

central provinces, the Transportes Unidos, and the Villalonga Company of the Argentine Republic, are always available, and further afield carriers with their strings of pack animals are to be hired by the day or by contract.



*Garden of Hotel, Viña del Mar*



## CHAPTER X

### HARBOURS AND PORTS

WITH its enormously long coast line of over 2,500 miles, Chile naturally has a great many ports and harbours. They are officially stated to be fifty-nine in number. Of these fifteen are "Major Ports," that is to say, ports of entry, with Customs Houses, and upon which the minor ports are dependent. Commencing in the north, these major ports are: Arica, Pisagua, Iquique, Tocopilla, Antofagasta, Taltal, Caldera, Carrizal Bajo, Coquimbo, Valparaiso, Talcahuano, Coronel, Valdivia, Puerto Montt, and Ancud. Punta Arena, the capital of the territory of Magellanes, in the Straits of Magellan, stands proudly apart as a free port, unhampered by export or import duties. It will be necessary to say a few words about the principal of these ports.

Arica, 18° 29' S. lat., is of importance as the only port in the province of Tacna and the terminus of the Arica-La Paz Railway, which now enjoys by far the greater share of outward and inward trade of the Republic of Bolivia. The roadstead is partly protected by the island of Alacran, behind which there is safe anchorage in 8 to 9 fathoms. Loading and unloading is by lighterage. The local exports are borax, copper, salt, sulphur, and cotton. There are both cable and wireless telegraphic stations. During 1912 the shipping movement comprised 432 overseas steamers of 1,335,243 tons, 234 coasters of 295,962 tons, and 5 sailers of 3,090 tons.

Pisagua lies at the foot of lofty hills surrounding the extensive Bay of Huaina Pisagua, 13 miles from the now neglected Mejillones Cove. There is ample anchorage in 10 to 15 fathoms. Loading by lighterage. Fresh water is brought from the hills, but there is also a condensing plant. Other provisions are obtainable, and there are repairing shops. There is railway communication with Iquique. Chief exports: nitrate and iodine; imports: coal and general merchandise. In 1912 the number of vessels entered were: sverseas steamers, 145 of 376,981 tons, 220 coasting steamers of 214,784 tons; overseas sailing vessels, 29 of 59,949 tons, coasters, 2 of 4,392 tons.

Caleta Hunin, 19° 40' S. lat., lies at the foot of steep cliffs, up which an inclined railway is laid. The anchorage is safe, though quite unsheltered. The port has a population of a little over 100, but Alto Junin on the top of the cliff is a fair-sized place. There are engineering shops here, with facilities for ship repairs. There is an excellent supply of water, which is also utilised to work cranes on the mole. Trade is almost entirely confined to export of nitrate and import of coal and provisions.

Caleta Buena, 19° 54' S. lat., in the province of Tarapacá, situated at the foot of a cliff some 19 miles north of Iquique, has replaced Mejillones as an exporting centre of nitrate. Inclined railways are provided for bringing down the nitrate. There is safe anchorage in from 8 to 10 fathoms in the southern part of the bay, and there are two piers 500 ft. long and three smaller piers, which serve to load the lighters. The town itself is built both on the shore and on the bluff.



✓  
† Iquique, the most important of the northern ports, has an excellent harbour, the roads being protected by Iquique island, which lies close to the coast and is connected by a causeway 5 ft. high. The anchorage lies to the north of the island and town, there being extensive accommodation for both sailing vessels and steamships, though at certain seasons the harbour is inconveniently crowded. Sailing vessels have to be berthed by tugs. Loading and discharging is by means of lighters. The loading piers are to the southward of the island, and there is a mole along the rocks practically an extension of the 500 yds. long causeway. The large town has a population of over 45,000, and although almost entirely built of wood, is well planned, and has many conveniences. Railways connect the port with the nitrate fields and with other towns. The exports are chiefly nitrates and iodine, and the imports coal and provisions. Four hundred and nineteen overseas steamers of 1,337,127 tons, 567 coasters of 645,301 tons, 125 sailers of 239,380 tons from overseas, and 25 coasting sailers of 3,962 tons represented the shipping entries for 1912.

† Tocopilla, lat. 22° 5' S., lies in the southern part of the bay of Algodonales in the province of Antofagasta. An English company, owning mines and smelting furnaces, has a long pier, along which the railway from Toco, 50 miles inland, runs. But ore is shipped from Bella Vista and Duendas as well as Tocopilla itself. Coaling is done by means of lighters. Both fresh and distilled water is procurable.

Gatico, 22° 29' S. lat., in the province of Antofagasta

provides safe anchorage in 13 fathoms. A port of call, with copper ore as chief export.

Guayacan, on the north-east shore of port Herradura, 29° 58' S. lat., a safe, land-locked harbour in Coquimbo Bay, exporting copper.

Antofagasta, in Moreno Bay, 23° 29' S. lat., capital of province of the same name, is of importance not only for its export trade of nitrate, silver, and copper ores and borate of lime, but it is the terminus of one of the railways of Bolivia, over which much of the traffic (passengers and goods) to and from that republic passes. Large vessels load and unload by means of lighters : for smaller vessels and passenger boats there are several piers in La Paz Cove, the largest belonging to the Antofagasta-La Paz Railway company. The railway company have repairing yards for ships. Coal, water (brought from the hills by a pipe line), and fresh beef are abundant, but other provisions scarce and expensive. There is a hospital, and telegraphic communication for all ports. For 1912 the entries were : overseas steamers, 471 of 1,485,377 tons, coasting steamers 517 of 792,972 tons ; overseas sailers, 83 of 137,103 tons, coasting sailers, 6 of 8,174 tons.

Caleta Coloso is the port for the nitrate district of Aguas-Blancas, Antofagasta, with which it is connected by rail. There is a good sheltered anchorage in 10 fathoms, and a landing mole.

Taltal, lat. 25° 25' S., is at the bottom of the bay of Nuestra Senora, over a mile and a half across and three-quarters of a mile deep. This bay is well protected. The Taltal Railway has five piers fitted with steam

cranes. Lighters are also provided. It is one of the centres of the nitrate and copper mining industries, these commodities being the principal exports, while imports include coal and foods. In 1912 the shipping entries were: steamers, overseas, 223 of 796,485 tons; coasters, 375 of 427,745 tons; sailing vessels, overseas, 44 of 81,874 tons; coasters, 21 of 19,539 tons.

Chañaral is in the large but exposed bay of Chañaral de las Animas, and lies in one of the richest mineral districts of Atacama. There are large smelting works here, and the exports consist chiefly of gold, silver, and copper, while the imports are coal and general merchandise. The anchorage is close to the southern shore, with about 6 to 8 fathoms, with sandy bottom. Loading by lighters. There are three piers, one 450 ft. long connected with the railway, the town and customs landing-place, and one east of Piedra Negra Point. There is railway communication with Copiapó *via* Puquios, and with Inca del Oro. Supplies are to be procured, but they are all imported. There is a general hospital.

Caldera is the port for Copiapó, capital of the province of Atacama, with which it is connected by rail. It is fairly protected, with anchorage in 12 fathoms off Caleta Point. There is a jetty 740 ft. long, with 20 ft. of water.

Carrizal Bajo in the bay of that name, just a mile north-east of Herradura de Carrizal Bay, 28° 6' S. lat., is chiefly engaged in exporting copper and manganese ores and importing coal and general merchandise. But both Carrizal Alto and Carrizal Bajo are unimportant in themselves.

Huasco, 28° 27' S. lat., lies in a small bay, with

excellent anchorage. The town is the shipping port of Vallenar and the mining districts of Huasco and Santa Rosa. There are large smelting works here. In the neighbourhood are situated some of the best-known Chilean vineyards. The exports are minerals, wine, raisins, and hides. There is a narrow gauge railway to Vallenar, which is carried down a long pier fitted with cranes.

Coquimbo, on the western shore of the bay of that name, is provided with a good landing pier, several cargo piers, and a pier set aside for copper ores. There are good supplies here. It is the terminus of the Ovalle and the Elqui Valleys Railways. In 1912 the shipping entries were: overseas steamers, 341 of 1,082,098 tons, coasting steamers, 608 of 620,824 tons; overseas sailing vessels, 23 of 41,980 tons, coasting sailers, 9 of 6,254 tons.

Papudo is the outlet for large quantities of cereals, timber and copper. Coal is imported in large quantities for the mines and smelting works.

Valparaiso lies in a semicircular bay between Angeles and Gorda Points in lat.  $33^{\circ} 2' S$ . The bay affords safe anchorage for a large fleet in all weathers, except when the winter north winds blow. Then the port is dangerously exposed. But this is fast being remedied by the construction of breakwaters and mooring stages, a sum of \$14,579,500 having been voted in 1910 for these harbour improvements. At present the Fiscal Mole, running from north to south for 1,000 ft., is available for vessels of considerable tonnage, one-half having a low-water depth of 43 ft. and the other of 36 ft. On this mole are large electric cranes, tramways, and other

facilities for quick unloading and loading. There are two floating docks, the "Santiago," 300 ft. long by 49½ ft. wide, 17 ft. over the sill, and having a lifting capacity of 6,000 tons; and the "Valparaiso," 265 ft. long by 80 ft. wide, 15 ft. over sill, and lifting capacity of 2,500 tons. The port is provided with tugs and pilots. There are two general hospitals, also hospitals maintained respectively by the British and German communities. Supplies of provisions, coal, and water are ample. There is a fortnightly service by the Pacific Steam Navigation Company with Liverpool, and a weekly service by the Kosmos line with Hamburg. Several lines of cargo steamers from Europe call regularly. There are also coastal services, from Puerto Montt to Panama, kept up by the Pacific Steam Navigation Company and the Compañía Sud-Americana de Vapores. The Italian Lloyd del Pacifico keeps up communication with Genoa, a Japanese line with Japanese ports, Hong Kong, Callao, and Arica. The leading exports are wheat, flour, bran, alfalfa hay, beans, and cattle. The imports include coal, food products, machinery, and general merchandise. The town has been well laid out since the terrible earthquake in 1906, and contains all the conveniences of a busy commercial port. It is enclosed by cliffs, so that the city is built on two levels, joined together by means of lifts. Valparaiso is in direct railway communication with Santiago, 115 miles off, and by means of the Transandine Railway with Buenos Aires. In 1912 the entries were: steamers from overseas, 560 of 1,731,767 tons, coasting steamers, 568 of 520,137 tons; sailing vessels overseas, 74 of 124,005 tons, coasting vessels, 46 of 9,530 tons.

Puerto San Antonio, often referred to as Puerto Viejo, lies two miles to the north of Maipo river. It has a very restricted and poor anchorage, but provisions are abundant and cheap, and there is a large export of wheat, barley, and wool.

Constitución lies in  $35^{\circ} 19'$  S. lat. at the mouth of the river Maule. A bar has to be negotiated, which has an opening from September to February close to the Lobos Rocks, and has between 11 and 16 ft. of water at low tide. Then from March to April the channel shifts to the north, and has only from 6 to 8 ft. of water at low tide. Once within the bar there is good anchorage off the south shore. There is railway communication with Talca on the Central Railway.

Curanipe, in the province of Maule, exports wheat and timber. It is an open roadstead with few facilities.

Talcahuano is situated in the south-west part of Concepción Bay. There is a fine pier with ample space in 4 to 5 fathoms of water, and every facility for handling cargo. For large vessels there is anchorage in 7 fathoms to the southward of Belen Shoal. It is a pleasant town, with hospital and home for sailors. There is telegraphic and telephone service, and railway connection with the Central line. A railway connects the town with the Government Dry Dock (which is in two sections), 605 ft. long, 83 ft. entrance,  $30\frac{1}{2}$  ft. over sill. It is provided with telescopic anti-earthquake shores. There is a patent slip to take vessels of 2,000 tons. The town is well supplied, and is in a rich agricultural district. The exports consist of cereals, flour, and bran, timber: imports agricultural implements and general merchandise. In

1912 the shipping entries were : steamers, overseas, 342 of 177,871 tons, coasters, 337 of 481,135 tons ; sailing vessels, overseas, 22 of 41,467 tons, coasters, 9 of 8,184 tons.

Penco is a small port in the south-eastern part of Concepción Bay. There is a good pier. Large vessels find anchorage in 7 fathoms to the north of the pier.

Tomé, a busy port in the small bay south-east of Huily Head, with safe anchorage in 8 to 12 fathoms. There is a long pier with a crane having a lifting capacity of two tons.

Coronel, in the province of Concepción, has a very extensive export trade in coal (being connected by rail with Lota), also timber, cereals, wine, cotton, etc. There is good anchorage. Loading is by means of lighters. There are two landing-stages. Railway communication with Concepción. In 1912 the shipping entries were : steamers, overseas, 334 of 1,061,353 tons, coasters, 362 of 750,482 tons ; sailing vessels, overseas, 54 of 151,722 tons, coasters, one of 1,042 tons.

+ Lota lies in Lota Bay, northward of the Lobos Island, and has excellent anchorage in from 5 to 6 fathoms. There is a long iron pier with a depth of 21 ft. at its head, and there is an extensive mole between the inner and outer bays. The Customs House, eastward of the mole, has its own pier. There are large smelting, brick and tile, and other works here. It is the chief port of the coal trade. The towns of Bajo and Alto Lota have a joint population of over 10,000, and afford all conveniences for shipping. The port is in railway communication with the south.

Lebu is a fairly large town at the mouth of the river of the same name on the east side of Tucapel Point. The port is in a bay two miles wide and one mile long, with anchorage in 7 to 8 fathoms. It is the centre of a coal mining and a rich agricultural district.

Valdivia lies some 9 miles up the river Valdivia, which is the name of the lower reaches of the Rio Calle Calle. It is a big city with plenty of conveniences and good supplies. It is in railway connection with Osorno and Temuco. Exports cereals, wool, leather, and imports machinery and general merchandise. Only vessels drawing not more than  $9\frac{1}{2}$  ft. can reach Valdivia. Vessels are usually unloaded and loaded by lighters of a capacity ranging from 60 to 100 tons.

Maullin stands on the south bank at the mouth of the navigable river of the same name, which empties itself in the Gulf of Choronades. It is a small town, but does a considerable trade in timber. The anchorage for large steamers is northward of the town.

Corral lies at the mouth of the river Calle-Calle in Valdivia Bay. It is the chief port of the province, is well sheltered, with anchorage for quite thirty large vessels. There is a pier for passengers, but lighters discharge cargo on the beach. The bulk of the exports are hides, wine, and other agricultural produce. In 1912 the shipping entries were : steamers, overseas, 222 of 706,750 tons, coasters, 150 of 204,294 tons ; sailing coasting vessels, 20 of 11,928 tons.

Puerto Quellon is on the Chiloé shore, has a safe anchorage in moderate depth of water, a large export



in timber and forest products, and provides excellent provisions, which are usually exchanged by barter.

Castro, on Castro Inlet, Chiloé Island, is quite a small place, but possesses a harbour, about half a mile long and a third of a mile wide, the depth shelving from 7 to 3 fathoms.

Calbuco, in lat.  $41^{\circ} 46'$  S., is chiefly of importance on account of its export of timber and other forest products of the province of Llanquihue.

✓ Ancud, formerly known as San Carlos de Ancud, stands on the Huihuen heights on the east shore of the Bay of Ancud on the south-east side of Lacuy peninsula,  $41^{\circ} 51'$  S. lat., province of Chiloé. The entrance to the port is between Cochinos islet and Ahui Point, about two miles apart. The anchorage off the town itself is not very safe, but in fine weather vessels drawing 12 ft. can remain there. For large vessels the best berthage is off Balcurra Point in 5 or 6 fathoms of water. Loading and unloading is by means of lighters. There is a small mole, affording good loading for ships and boats in full tide. Supplies are good, there is railway communication with Castro, 59 miles distant. Direct communication with Europe is maintained by the Kosmos line, and it is a port of call for the Pacific Steam Navigation Company and the Compañía Sud-Americana de Vapores running between Valparaiso and Puerto Montt, and also for a small coasting steamer. There is a large free general hospital and a wireless telegraphic station.

Melinka (or Puerto Arena) is on the south-east side of Guayteca island, off the coast of Chiloé. It is really a sealers' station, but also a centre for lumbering. The

bay affords anchorage in from 20 to 7 fathoms, vessels being well sheltered.

Peña Blanca lies to the northward of Quebrada Honda Bay, and is the port for some rich copper mines further inland. There are two piers and anchorage in 10 fathoms.

Quemchi, another centre for the export of Chiloé forest products, is in telegraphic communication with Ancud and is a regular port of call. The village itself is quite small.

Puerto Montt is situated at the north end of Tenglo Island, separated from the mainland by a narrow channel. It is the capital of Llanquihue, with a growing population and trade, and is in railway and telegraphic communication with the rest of the republic. There is a quite small harbour, with 5 fathoms, sheltered from all winds. The anchorage, on the bank for about half a mile below the town, varies from 5 to 17 fathoms.

† Punta Arenas lies on the north-eastern extremity of Tierra del Fuego, in the Straits of Magellan. It is a well-built town, with fine squares, wide, electrically-lighted streets, and numerous public buildings. Two piers are provided, one for passengers, with 5 ft. of water at the end; the other for cargo, with 6 ft. of water. It is fitted with cranes of a capacity of 5 tons. The anchorage is well sheltered. Ample supplies are available. There is a forge and foundry with three patent slips, one having a capacity of 1,000 tons. There is a busy steamer communication kept up. The Pacific Steam Navigation Company run a fortnightly service from the north *via* Valparaiso, supplemented by visits of cargo steamers. Other callers are the Lamport and

Holt Line, Kosmos Line (San Francisco and Paget Sound), Merchant, and West Coast Lines (running from New York and Guayaquil), Hamburg-Amerika (who also run a local service from Buenos Aires), and the Gulf Line. There are also regular coasting services to Porvenir, Negro in Pecket Harbour, Fenton in Oazy Harbour, Useful Harbour, Delgada Point, Espora Point, Gallegos, Santa Cruz, and San Julian. In 1912 the number of vessels entered were: 527 overseas steamers of 1,125,965 tons, coasting steamers, 131 of 372,850 tons; sailing vessels, overseas, 19 of 1,483 tons.

## CHAPTER XI

### AGRICULTURE

WITH a country stretching from 17° 17' to 55° S. lat., forming a narrow strip of land exposed to a wide ocean, and protected by lofty chains of mountains, we naturally expect a diversity of flora and fauna, whether indigenous or imported. And we are certainly not disappointed when we come to look into matters. In the north, covering the provinces of Tacna, Tarapacá, Antofagasta, and part of Atacama, say to 27° S. lat., we find tropical crops. In the central provinces, from the south of Atacama to the borders of Valdivia we have the produce of the temperate zone flourishing side by side with sub-tropical vegetation. And in the south we find good soil for cereals, for fruits and pasture land. The area devoted to agriculture is fast extending, partly as the result of irrigation in the northern and central provinces, partly through the opening up of the fertile, and in sheltered spots, genial hinterland regions of the middle south, and to some extent owing to the increase of population and the opening up of new markets in Bolivia and Argentina.

WHEAT AND OTHER CEREALS.—Owing to her being so cut off from the world in early colonial days, Chile had to become self-supporting as quickly as possible, and good progress was made in introducing cereal cultivation. Now far more than is needed for self support is raised, and the export trade is fast becoming one of leading importance. It is estimated that there are quite 15,000,000

acres suitable for wheat-growing, and of this scarcely 3,000,000 are as yet under the plough. Excellent wheats are grown in the provinces of Aconcagua, Valparaiso, Santiago, O'Higgins, Curico, Talca, Bio-Bio, Maleco, and Cautin. It will grow in Valdivia and Languihue, but the crops there are uncertain, as heavy rains are apt to prevent ripening. The total yield is about 25,000,000 bushels (averaging from 15 to a little over 20 bushels to the acre). The chief centres of the export trade are Valparaiso, Talcahuano, Valdivia, and Coquimbo. Oats, barley, rye, and buckwheat are grown on an extensive scale, the first three in the higher valleys of the central provinces and also in the south. About 40,000 tons of oats and 30,000 tons of barley are exported annually. The barley is much esteemed by British and German brewers. Maize gives two fine crops annually in the irrigated valleys of Tacha, Tarapacá, Aconcagua, Atacama, and Coquimbo, and does quite well a little south of Concepción. It is chiefly the paucity of labour that prevents an enormous extension in the production of all these grains, which enjoy a high reputation on the foreign markets. According to latest official returns that were issued 406,046 hectares were under wheat (of which 400,000 were in the central provinces), 38,000 under barley, 30,000 under oats, only 2,000 under rye, and 31,000 under maize.

**PULSE AND ROOTS.**—Beans, peas, and lentils receive much attention over a wide area of the republic. These not only form a large portion of the diet of the labouring classes, but also enter into the export trade. Beans and peas are grown in the provinces of Aconcagua, Santiago,

O'Higgins, Colchagua, Curico, and Talca, whilst Concepción, Maule, and Nuble pay special regard to the raising of lentils. The chief purchasers of Chilean beans are, in the order named, Germany, France, Brazil, Great Britain, Peru, and Argentina. Of peas, Germany (a vast importer), France, Great Britain, Argentina, Brazil, Belgium, Holland, Uruguay, and Italy. Lentils are only taken by Argentina. Potatoes, many varieties of which are indigenous to Peru, do exceedingly well in Concepción, Valdivia, Languihue, and the island of Chiloé, yielding from 250 to 350 bushels per acre. There is a valuable export trade in these growing up. Another root which is also being grown and extensively exported is the sugar beet, which is cultivated chiefly in the potato belt. Over 40,500 hectares are under beans, over 900 under lentils, and 51,000 under potatoes.

**ALFALFA.**—Lucern proves an admirable crop, its growth in Coquimbo, Aconcagua, Santiago, O'Higgins, and Colchagua is being extended every year, and it also flourishes outside those districts, though only to a small degree. The plant yields abundant crops of choice hay, and has undergone sufficiently marked modifications since being introduced into the country for it to be now classed as a separate variety, *Medicago alfalfa chilensis*. Its utility as a "pioneer" crop may be judged when it is stated that the tap roots attain a length of 10 ft., and will then send up "grass" some 3 ft. high. In good situations successive crops may be taken in spring, summer, and early autumn. It is this last crop which is considered most fitted for converting into hay for export, being made up into bales of 1 cwt. Suitable land will yield

crops bringing a clear profit of between £11 and £15 per acre. Much, however, depends upon the labour available. There are over 200,000 hectares devoted to alfalfa in the central provinces and over 40,000 in the northern provinces.

**OLEAGENOUS SEEDS.**—There is a considerable export trade in linseed, hemp seed, clover, and alfalfa seeds. Flax and hemp are chiefly grown in Aconcagua, Valparaiso, Santiago, O'Higgins, and Colchagua. There is a slight demand for hemp fibre.

**VITICULTURE.**—Vineyards are planted from the northern extremity to Llanguihue. Of course, in the north, from Tacna to Aconcagua, it is the slopes of the irrigated valleys that are clothed with the luxuriant green of the vines. Here the grapes produce wines possessing the same characteristics as port and sherry. In the central provinces, from Southern Atacama to Concepción, light wines are produced, many of them with excellent bouquet. From Concepción to Llanguihue the grapes are chiefly used for the distillation of alcohol. There is a good local demand for the better classes of wines, but it is a source of complaint that the light wines are produced so abundantly that it is difficult to secure remunerative prices. Probably here, as in Argentina, time and money will result in an improvement in the quality produced, which will not only cause local wines to replace imported vintages, but enable larger quantities to be exported. Of course, it is only the choice wines which will stand travel. At present Argentina buys about 40,000 gold dollars' worth of Chilean wines, Bolivia about 20,000, Peru about 2,000, and other countries a little over 5,000 dollars.

**FRUITS.**—Chilean fruits are rich and varied. In the northern irrigated valleys, as far south as Atacama, abundant crops of figs, olives, and pomegranates are gathered. The central provinces yield peaches, apricots, cherries, almonds, pears, apples, and certain nuts. Strawberries are large and delicious. Some of our best garden varieties of strawberries are derived from indigenous plants from the lower Andean valleys. Farther south, about as far as Concepción, oranges and lemons, and in the valleys, chestnuts, yield heavy crops. There is an increasing demand for dried figs and apricots, which are largely exported to Bolivia and Argentina, and the same remark holds good as regards raisins and nuts. Apples grow wild in large groves in Cautin and Valdivia, yielding abundant and pleasant fruit. It is probable that these might well be turned to industrial use, either in the production of cider or dried rings.

**TROPICAL CROPS.**—In the northern irrigated valleys there is a progressive increase in the acreage devoted to the growing of sugar-cane, cocoa, coffee, cotton, and tobacco. So far these crops are almost entirely for local consumption. Some of the tobacco is quite good, and is made up into cigars and cigarettes. There can be no doubt that all these crops could be raised on a far larger scale, for the yield is usually high and the quality satisfactory, but the scarcity of labour is a serious factor in increasing the cost of cultivation. The Chilean labourer, though hardy and fairly hard working, lacks enterprise and is not easy to transplant; nevertheless, of late years some success has been achieved in settling native-born colonists in the southern provinces.



LAND TENURE AND MANAGEMENT.—It is estimated that over 51.17 per cent. of Chile is capable of being utilised for agriculture. This is divided up as follows: land irrigated or capable of being irrigated, 3,785,200 hectares; hillsides, valleys, and plains not needing irrigation, 10,193,668 hectares; irrigated plains, 1,067,003 hectares; woods, 18,000,000 hectares; natural pastures in Magellanes, 5,500,000 hectares. It is held that when these are taken up, other lands may be planted with trees or made useful as pastures. From Coquimbo to Valdivia, but more especially from Aconcagua to Cautin, practically all the land, away from the Andean regions, is in the hands of well-to-do families of the old Spanish days, or of other nationalities, but absorbed into the local oligarchy. For although the law provides that land shall be divided up into equal shares among all children, a kind of patriarchal system prevails among the wealthy classes, and though a mansion or a hacienda may shelter a group of families, the agricultural estates themselves are not split up. Consequently in these central provinces large estates are the rule. But a peculiar system of management exists. A landed proprietor, in order to attract the labour he requires without keeping all hands permanently on the salaried staff, allows any peon to take up as much of his land as the labourer thinks he can till with the assistance of his family. These are known as the landlords *inquilinos*. They build themselves poor huts, fence in a little ground, and raise what crops they can; they also go in for stock, pig, and poultry keeping on a small scale. They pay no rent and the produce of the land is their own. But in return they

have to sell their labour whenever required to the landlord at about two-fifths of the prevailing local rate. It is not altogether an economically sound arrangement. While the *inquilino* secures the use of land on apparently easy terms, yet he cannot devote much of his personal attention to its cultivation, because when he is most wanted on his own farm, he is called upon by his landlord. The result is, his farm is under-cultivated by women and children. On the other hand, the landlord only secures inefficient and half-interested service. While there is no tyranny, for the *inquilino* is in no way tied to the land, and can move off whenever he likes, for he has sunk very little in his holding, yet the peon always remains poor, and the landlord only makes money because of his large estate and the splendid climate. There is comparatively small modern enterprise in agriculture. Even wheat threshing is still carried out by means of mobs of horses, the patient ass or ox treading out the grain. The same leisurely and wasteful ways persist in every direction. But it must be confessed that life on the hacienda is often very pleasant. Many of them are large, well built, delightfully equipped, and money is plentiful. In the northern irrigated valleys much of the land is also in the hands of the "upper ten" or ruling classes of the republic. The same may be said of Valdivia and also of Llanquihue. But further south and in the hinterland there is much public land which can be acquired on easy terms by settlers. Here land may be purchased for anything between \$5 to \$7 per hectare, of which one-third has to be paid down and the balance by ten yearly instalments. The

purchaser has to defray the cost of survey and registration, must fence the land, and carry out certain work. But much good land is still available on these terms, the chief drawbacks being isolation, lack of transport facilities, and paucity of labour.

**IRRIGATION.**—Irrigation was introduced into certain of the northern and central valleys by the Incas. The system has undergone very considerable development. The water canals are commenced quite high up in the mountains to feed the ramifications in the irrigated areas. These branch canals are divided up into a given number of *regadores*, or openings, each one of which should deliver 35 litres of water gross per second, or, according to another calculation, 0.5 litres per second per hectare. One man is supposed to be able to control such a head by means of previously contrived channels, which are opened and closed as desired by sluices, composed of canvas or reed mats stretched over wooden frames. The lay of the land, the quality of the soil, and the character of the crops are all determining factors in the amount of water required per hectare and, therefore, the time occupied. Water is paid for at so much per regador, day or hour. The river Maipo has been largely used for this kind of work, which now feeds the following irrigation canals: Lo Espejo, La Calera, Santa Cruz, and San Vicente; these serve upwards of 25,000 hectares. The Maipo is also harnessed to provide pumping power to lift the waters of Lake Aculeo, so that they may irrigate tracts of land on three distinct levels above the lake. A total delivery of 300 litres per second is obtained. The cost of the works has been a little over 100 Chilean

dollars per hectare. The Choapa river is being utilised in the same way.

Water conservation and irrigation control are supposed to be very well regulated. As a matter of fact, however, serious forest denudation has been permitted in the past, and is not unknown in the present, which may lead to difficulties in the near future. On the other hand, schemes for irrigation on a most ambitious scale are receiving serious consideration. It would appear that almost anything can be done with these irrigated lands where labour can be obtained. So capital outlay in this direction is well spent.

**LIVE STOCK.**—While Chile is chiefly a mineral and agricultural country, its head of live stock is large and becoming of increasing importance.

**CATTLE.**—Cattle is chiefly found in the central and southern provinces. The original stock, derived from beasts introduced from Spain, is not of a high order, but marked improvements have resulted from the introduction of herds of Durhams, Shorthorns, and Herefords. Although Chile still imports cattle from Argentina, it is fast becoming an exporter of live cattle to Bolivia, and of chilled meat from the southern provinces to the northern districts and abroad. It is estimated that the present head of cattle is over 3,000,000, though this could be increased tenfold, close upon 95,000,000 acres of suitable land being available.

**SHEEP** do exceedingly well in the southern provinces, right down to the northern end of Tierra del Fuego, about Punta Arenas, in lat. 53° S. The meat is considered of the choicest kind on the European market,

chilled carcasses being exported from Punta Arenas and the other centres. The farther south one goes, the better the quality of wool, which improves in length of staple and thickness. Punta Arenas alone exports close upon 25,000,000 lb. of wool. It is estimated that the present herds comprise close on 6,000,000 sheep.

**OTHER STOCK.**—Horses are both cheap and good. In the central provinces, especially on the large haciendas there is much riding. Fairly presentable animals may be purchased in country districts for from £5 to £10. It is estimated that there are about 600,000 horses in the republic, and about 100,000 mules, the latter specially bred for mountaineering work. Goats are largely kept by the peon class. Swine are found chiefly in the southern provinces, where there are about 250,000 of them.

**APICULTURE** is fast assuming importance. Bees thrive and produce abundant honey and wax of excellent quality, thanks to the luxuriant floral growths of the forests and valleys. A hive will produce on the average 23 kilos. of honey, which finds a ready market in the neighbouring republics and in Europe. The industry is considered highly remunerative.

**DAIRY WORK** is steadily extending with improved transport. The yield of milk in the central and southern provinces is high. Good cheese is made, and there is a considerable amount of sterilising and bottling of milk and also condensing, the produce being sent to the distant towns and to the arid regions.

**FERTILISERS.**—Formerly guano was largely used in

Chile, but to-day the chief fertilisers are phosphates (20,000 tons), nitrates (3,000 tons), and imported calcareous and other manures (1,000 tons). This is, of course, supplementary to farmyard manure. The phosphates are employed principally in cereal cultivation.

## CHAPTER XII

### FOREST PRODUCTS

IN addition to their timber, which will be discussed below, the Chilean forests produce many useful and ornamental plants. The Quillay (*Quillaja saponaria*) is exported to the value of about £40,000 per annum. The bark contains a soapy substance useful in cleaning silk and fine linen and known in textile factories as *madera de panamá*. Two Chilean factories prepare the extract, which is exported principally to France. Tannin is prepared from the bark of the Ulmo and Lingue, which is exported mainly to Argentina, Peru, and France. The medicinal plants include *Canchalagua*, used as a substitute for quinine in treating fevers and pleurisy; the *Boldo*, used as a tonic in liver diseases; *Diego de la Noche*, *Matico*, and *Piché*. Many ornamental shrubs and herbaceous plants have been introduced from Chile to Europe, and there are many more of the extensive and peculiar flora of the country which are as yet unknown beyond its limits. Flowering shrubs, such as fuchsias, gordoquias, escallonias, and philesias abound in many parts, as well as many beautiful ferns, orchids, creepers, and epiphytes. A well-known example of the peculiar shrubs is the Chile pine or monkey-puzzle (*Araucaria imbricata*); the seeds were formerly used as a food by the Indians, but it has now almost disappeared from the forests.

The forests of Chile, which at the time of the Spanish Conquest extended as far north as Valparaiso, are now rapidly being confined to the south and to the flanks

of the Andes. Though patches are found near the river Itata, the Bio-Bio may, for practical purposes, be taken as their northern limit. The larger trees are usually matted together by a host of climbing bamboos, bindweeds, and lianas, which form a dense jungle, difficult to penetrate, and the method of exploitation and clearing is wasteful and reckless. In winter the bamboos or quilas (*chusqueia quila*), bindweeds, and smaller trees are cut and left to dry; in February the wood is fired, and all the mass of cut shrubs, now dry as tinder, is consumed. This is termed *rosar a juego*. The growing trees, which suffer to some extent from the fire but are not consumed, are then felled and sent down to the saw-mills, of which there are about 1,000 at work. Each mill, on an average, turns out 80,000 planks, or 1,905 cubic metres of timber per annum; this estimate takes no account of lighter wood used for packing-cases, staves, etc. The method above described serves, of course, not merely to procure timber, but to clear the ground for agriculture; but it seems to be agreed that the destruction of forests is going on far too rapidly and indiscriminately, and that unless the woods are protected at the springheads and in the valleys the rivers will tend to dry up and the fertility of the soil of Central Chile will proportionately suffer. Timber trees grow with great rapidity in this part, and probably it would be wise to re-afforest suitable parts with plantations scientifically managed.<sup>1</sup>

<sup>1</sup> Forest reserves are now being formed by the Inspectors of Woods and Forests on vacant lands ceded by the Ministry of Colonisation; 318,417 hectares out of 408,000 hectares are being thus exploited on Treasury account.



The chief timber trees at present exploited are—

**ALAMO** or **POPLAR**, light wood used for ceilings, doors, matchwood, and cheap furniture.

**ALERCE** (*Fitzroya patagonica*), a tall, long-lived tree, with white stem, growing to 15 ft. diameter and upwards of 200 ft. high ; now almost exhausted.

**ALGARROBILLA** (*Balsamocarpon broifolium*).

**AVELLANO** (*Guevinia avellana*), a wood with variegated markings, used for furniture ; somewhat scarce.

**CIPRÉS** (*Librocedro tetragona*), from Lake Nahuelhuapi southwards, up to 2,000 ft. above sea ; another species (*Librocedro Chilensis*) grows up to 4,500 ft. above sea. Sought especially for fencing and vine-props ; hard timber, resisting rot.

**COIGUE** (*Notofagus dombegi*), used for building and packing-cases.

**ESPIÑO** (*Acacia cavenia*).

**LAUREL** (*Laurelia aromatica*), light timber, analogous to alamo and coigüe.

**LINGUE** (*Persea lingue*), strong wood, used for furniture, carts and carriages, barrels. The bark is the most important tanning material used in Chile ; about 15,000 tons per annum are employed thus.

**LLEUQUE**, for furniture ; valuable and somewhat scarce.

**MANI** or **MAHIU** (*Saxegothea conspicua*).

**NIRRE** (*Notofagus pumilio*).

**OLIVILLO**, light furniture wood ; abundant and cheap.

PIÑON (*Araucaria imbricata*), the monkey-puzzle ; see above.

QUILLAY (*Quillaja saponaria*), see above.

RADAL, like Avellano ; used for furniture ; somewhat scarce.

RAULÍ (*Notofagus procera*), highly valued for building (floors, beams, window-frames, mouldings), for making wine-casks, and for furniture. It is calculated that, unless plantation takes place, it will be exhausted in eighty years.

ROBLE (*Notofagus obliqua*), known in Chile as the Pellin, heavy timber, used for beams, railway sleepers, bridges, and piles ; resists rot, and will last 100 years under water.

ULMO (*Eucryphia cordifolia*), light wood, analogous to Coigüe. Valuable also for the abundant honey secreted in its flowers.

It may be added that plants like the Quila yield paper of fair quality, but are inferior to esparto grass, and would probably be unremunerative. The forests of the Magellanic territory are believed to be largely composed of Ciprés and Roble ; the bulk of the trees diminishes by about one-half in the south. Though the forests are said to cover 40,000,000 to 50,000,000 acres, it is as yet quite impossible to gauge their commercial value. Even the great rivers of the south are little known and the hinterland is still less explored. The actual contents of the forests have not been surveyed nor any reliable estimate made of the costs of exploitation, and the difficulties involved. The latter include low temperature,

almost incessant rain, dangerous navigation on both coast and rivers. At any rate the development of the means of transport and communication should result in making the country largely independent of foreign timber, which is at present imported in considerable quantities.

## CHAPTER XIII

### MINES AND MINING

THE mineral resources of Chile are very great, the most important, as will be seen below, being nitrates and iodine, copper and borates. Gold, silver, copper, lead, manganese, and iron occur abundantly; coal in certain districts; cobalt, nickel, zinc, and mercury are also found, but there is apparently no tin. Other mineral products such as salt, gypsum, sulphur, rock crystal, and lapis-lazuli occur, with large beds of brick-clay.

**MINING LAW.**—Mines may be acquired by all privileged to possess landed property, whether natives or foreigners. A mining claim (*pertenencia*) is a rectangle of unlimited depth and with superficial area of three to fifteen acres; in the case of salt and coal this area may extend to 100 acres or more. An annual rent of about \$3 is paid (less in the case of salt and coal); mines on the land owned by the exploiter are free of rent. The rights include the occupation of necessary ground and the erection of necessary works and houses, the construction of roads, and the use of wood, water, and pasture.

Minerals, by the Mineral Code of 1888, still with some modifications in force, are divided into six classes—

1. Those of free acquisition, *i.e.*, metals, precious stones, and most fossil matters, whether occurring in privately owned, State, or Municipal lands.

2. Coal and other fossil matters, not included in the above class, which are reserved to the landowner.

3. Guano, nitrates, and ammoniacal salts, which belong to the State.

4. Those of free exploitation, viz., stream and placer deposits of gold, etc., and also the waste heaps of abandoned mines.

5. Salt deposits on the shores of the sea, lakes, and lagoons ; these belong to the landowner of the adjoining property.

6. Metals and precious stones found on the surface of the soil ; these belong to the finder.

Gold, silver, copper, and similar mines pay a tax of \$3.50 per hectare ; coal and similar mines, which formerly paid a tax of \$1.75 per hectare, now pay \$0.07 per hectare.

The law secures, on the one hand, full freedom for the miner both for exploration and for the exploitation of his property, and on the other an equitable indemnification to the landowner for any loss which he has suffered. The miner can take all that is necessary for the full exploitation of his *pertenencia* in such things as water, firewood, access and roadmaking, sites for workmen's dwellings, offices, smelting and other works, etc., and the code is designed to foster and encourage the development of the mining industry throughout the country.

Mines may not be acquired by governors and administrators in the districts under their control, nor by judges in mining cases within their circuits.

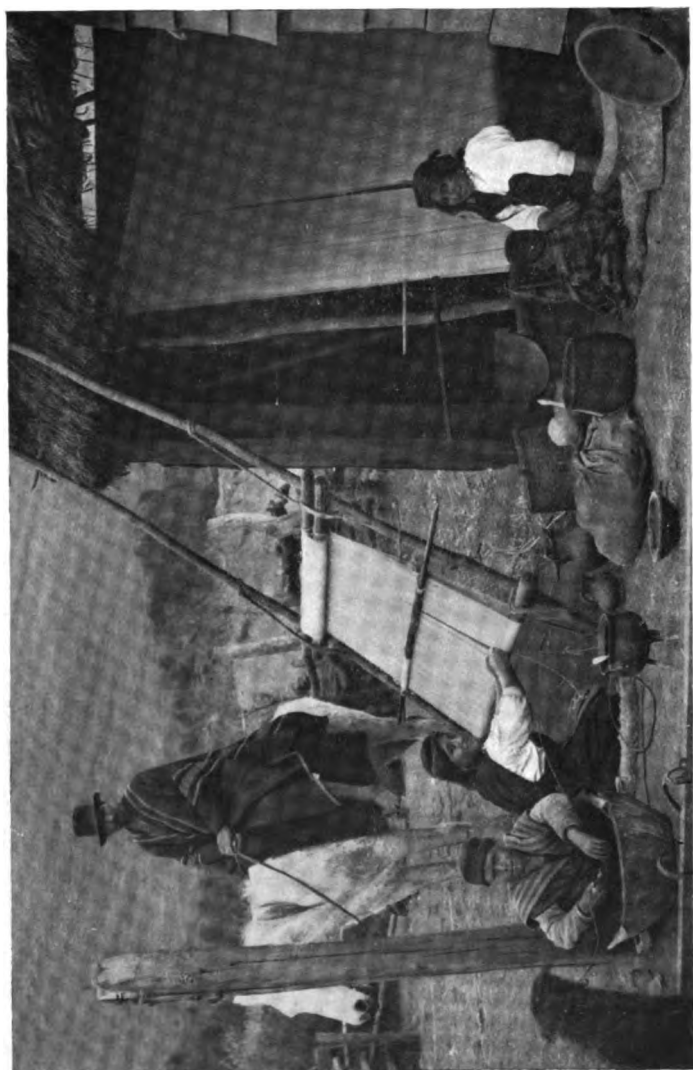
After registering a discovery of mineral, and publishing the discovery in a newspaper of the department, the finder has exclusive rights for fifty days, and must within ninety days dig a shaft at least 15 ft. deep.

Excluding the nitrate works, in 1909 there were 20,632 mines, covering over 500,000 acres, and paying rent of £40,276. Of these 17,296 were metalliferous, 2,488 contained salts of soda and potash, 332 sulphur, 40 coal; the remaining 476 were miscellaneous.

There is a Government service, known as the General Inspection of Geography and Mines, which has been largely engaged in the survey and location of mineral deposits. It is proposed to create a corps of mining engineers and an institute of geology with the duty of investigating the mineral resources of the country on a reasoned and methodical plan, and co-ordinating information on the constitution of the soil.

**NITRATES.**—Far the most important of the mining industries of Chile is concerned with nitrate of soda (*salitre*) and its accompanying products. A few figures will show the preponderance of this industry. The annual export, which now exceeds 2,000,000 tons, amounts in value to about five-sixths of the total of the export trade; the revenue of the export tax (2s. 4d. per cwt.) on nitrates and iodine is 62 per cent. of the total revenue derived from the Customs Houses, and over two-fifths of the general revenue of the country (over £6,000,000 out of less than £15,000,000), over £25,000,000 of British capital is invested in the industry, and occupation is given to over 25,000 workmen.

Nitrate of soda, or Chilean saltpetre, is primarily important as the most valuable fertiliser of the soil as yet known; but it has a secondary value in the production of nitric acid and other chemicals, and in the manufacture of explosives. The natural product is a



*Modern Araucanians*





monopoly of Chile, and its preservation is due to the abnormal rainlessness of the northern provinces of the country. The origin of the deposits has not been satisfactorily explained. One theory attributes it to the decay of seaweed or vegetable matter when the district of the present desert, formerly the bed of an inland sea, dried up; but it is remarkable that the deposits are found only in the western portion of the Tamarugal pampa. Another theory postulates the action of lightning in the upper Andes in producing nitric acid from the combination of atmospheric nitrogen and oxygen; this combined with water would form, with limestone, a nitrate of lime, which in turn combined with sulphate of soda to form nitrate of soda. This was carried down to the pampa, and the moisture was gradually evaporated by the ocean winds on the west side of the plain, but as they passed further east the winds were unable to do the same service for the other side.

Whether this ingenious theory be correct or not, the fact remains that the deposits, known as *salitreras*, occur in Tacna, Tarapacá, Antofagasta, and Atacama from  $19^{\circ} 12'$  to  $25^{\circ} 45'$  S. lat., a distance of about 300 miles. They occur mostly on the eastern slopes of the coast cordillera, at a distance varying from 10 to 80 miles from the coast. The area and quantity is not yet ascertained. A Government department has surveyed 2,242 sq. miles, and estimated the supply in this area at 244,000,000 tons; some 7,720 miles remain to be investigated. It will be seen, therefore, that with an annual output of 2,000,000 tons or a little more, the supply for over 100 years is absolutely certain.

The growth of the industry is shown in the following table—

PRODUCTION OF NITRATE						<i>Metric quintals.<sup>1</sup></i>
1880	.	.	.	.	.	2,239,740
1885	.	.	.	.	.	4,359,880
1890	.	.	.	.	.	10,751,580
1895	.	.	.	.	.	12,604,460
1900	.	.	.	.	.	14,600,995
1905	.	.	.	.	.	16,698,064
1909	.	.	.	.	.	21,109,606
1910	.	.	.	.	.	24,654,152
1912	.	.	.	.	.	25,233,962

Though found occasionally in other forms the usual strata consist of two layers, the upper crust or *costra*, containing some nitrate but mostly earthy matter, and the lower, containing the raw nitrate or *caliche*. The thickness of the latter and the richness of the yield vary; and as the layers are not continuous, some exploratory mining is required.

The operations of mining and purification are thus described: "In some places the *caliche*, which is a regular stratum with all the appearances of a rock formation firmly cemented together, lies on the surface of the ground, and in others it runs in a vein 20 to 30 ft. below the surface. It is extracted by a system of blasting peculiar to this industry. A hole, *cata*, is drilled through the *costra* and the *caliche* to the *coba* or gravelly earth beneath, which is scooped out so as to leave a place for the explosive, the drilled hole being large enough to admit a small boy, whose work is to excavate the *coba* and replace it with the material for blasting. The object

<sup>1</sup> *N.B.* As the production is sometimes quoted in *Spanish* quintals, it is important to note that the metric quintal is rather more than twice the weight of the Spanish; e.g., 2,239,740 metric quintals = 4,969,000 Spanish quintals.

is to throw up as large a mass of *caliche* as possible, and this is broken into bits the size of an apple, the impurities being removed as far as possible. This rude material is then loaded in little carts and taken to the works, where it is run through a crusher and dissolved in hot water, being afterwards discharged into huge settling vats, where it remains till ready to be transferred for the drying process.”<sup>1</sup> Advantage is taken of the different degrees of solubility. The liquid containing the nitrate is run into shallow vessels where it crystallises, and the remainder is then treated for iodine, the superfluous being evaporated. Finally, the refined nitrate is packed into bags for export. It is of two grades: (a) that used in chemical industries, having not less than 96 per cent. sodium nitrate, and not more than 16 per cent. nitrogen; and (b) that used as a fertiliser, having 95 per cent. nitrate, and not less than 15 per cent. nitrogen.

In 1908 there were 135 nitrate establishments and ten other exploring companies. For some years the output was controlled by the *Combinación Salitrera*, which was, however, dissolved in 1909. The chief centres of the industry are: in *Tarapaca*, Iquique, Caleta Buena, Pisagua, Junín; and in *Antofagasta*, Taltal, Mejillones, Caleta Coloso, Tocopilla, and Antofagasta.

This flourishing industry is, in some respects, one of the strangest in the world. Cities enjoying the resources of an advanced civilisation, energetic ports, and well-found settlements have been established in the midst of an absolute desert, in which water has to be brought

<sup>1</sup> Marie Robinson Wright: *The Republic of Chile*. (Barrie & Sons.)

from long distances, and food, fuel, machinery, and luxuries must be imported ; even the soil for the plazas and gardens of Iquique has been brought from Central Chile.

In 1912 the amounts exported were : United Kingdom, 9,746,288 quintals ; Germany, 5,397,697 ; United States, 4,261,841 ; France, 1,296,080 ; Belgium, 959,732 ; Holland, 930,914 ; Uruguay, 581,577 ; Spain, 429,556 ; Brazil, 340,431 ; Egypt, 237,820 ; Japan, 224,122 ; Polynesia, 174,48 ; Portugal, 133,003 ; Italy, 93,058. The remainder went to Mexico, Canada, Peru, Cuba, Argentina, Bolivia, Costa Rica, and Ecuador in descending order.

**IODINE.**—This substance occurs in the *caliche*, and in the course of the refining described above is precipitated from the nitrate solution by means of bisulphide of soda, and drawn off as a dark powder, which is then vaporised and condensed in the form of violet crystals. The production in 1909 was 474,200 kilos, of the value of \$5,571,850 (£418,000) ; and in 1910 was 581,432 kilos, value \$6,831,820.

**PERCHLORATE OF POTASSIUM.**—The production in 1910 was 126,780 kilos, value \$50,712. The greatest production was in 1906, after four years' non-production, viz., 259,600 kilos, value \$38,940.

**BORATES.**—Borax and borates are found in great "salares" on the sides of the Andes ; one such tract, at Punta de Lobos, is estimated to have an area of 79,000 acres, with a thickness of 60 ft. The annual produce amounts to about 34,000 tons ; value £350,000. The figures for 1909 were 32,218,042 kilos, value \$4,510,526 ;

and for 1910, 35,192,280 kilos, value \$4,946,912. Borax is produced by three countries—the United States, Italy, and Chile, and the production is controlled and the price kept up by a trust or syndicate. The share allotted to Chile by no means represents the production possible under conditions of free supply.

Common Salt is produced to the amount of about 18,000 tons per annum. The figures for 1909 were 204,463 metric quintals, value \$1,023,132; and for 1910 236,606 quintals, value \$934,424.

Sulphur, 3,802,730 kilos were produced in 1910; value \$458,728.

Sulphuric Acid, 1,646,000 kilos were produced in 1910; value \$164,600.

Guano, 12,683,400 kilos were produced in 1910; value \$603,096. (All guano is now reserved for Chilean agriculture.)

Petroleum. A strong flow of oil of great purity from a depth of 90 yd. has been recently reported from the province of Chiloé.

COPPER.—Next in importance to nitrates, among the mineral productions of Chile, come the mining and smelting of copper ores. These are found abundantly in the coast cordillera and also on the lower slopes of the Andes from 20° to 36° S. lat. Great fortunes have been built up on this industry, which employs many thousands of workmen. New methods were introduced by the English engineer, Lambert, in 1831, under whose management the mines of Brillador and the smelting works at La Compañía, near Serena, were very successful. The industry was at its height from 1865 to 1875, when

the production averaged 60,000 tons per annum. Later the industry diminished for various reasons, such as war, diversion of capital to the nitrate and other industries, competition from other parts of the world, and introduction of better methods elsewhere ; but it is still great and flourishing.

The following are notable among the copper-producing districts : in *Tarapaca*, Copaquire, 12,000 ft. above sea, with abundant sulphates (used as an insecticide), and salts of copper ; Huiniquitipa, nearly 15,000 ft., with copper silicates and sulphuric acid works ; Collohuasi, over 16,000 ft. ; and Sagasca, with copper silicates. Transport to these high elevations has been the chief drawback. Further south and near or on the coast are the districts of Tocopilla, Cobija, Mejillones, and Antofagasta ; then Taltal, Paposo, Chañaral, Chañarillo, Algarrobo, San Juan, Carrizal, El Morado, La Higuerra, Tambillos, Tamaya (the famous property of Señor de Urmeneta), Panulcillo, Punitaqui, etc. The most flourishing smelting establishments are at Caldera, La Compañía, Guayacan, Tongoy, Chañaral, Taltal, Tierra Amarilla, Volcan, Maitenes, and Lota. The number of mines known and worked in former times is given as upwards of 7,000 ; to-day about 750 are in operation, but their output and organisation are far higher than of old, and the immense beds are almost inexhaustible. The chief drawbacks are speculation, fluctuation in prices, and labour difficulties arising from the superior attraction of the high wages obtainable in the nitrate industry.

It is worth mention that the copper in most countries

is produced from minerals of a lower grade than 4 per cent., whereas in Chile no ore is profitable of less than about 10 per cent. ; this is due to lack of roads and railways (which have been built only by the English Collahuasi Co. and the North American Teniente Co., the others still depending on the old system of transport by mules and bullock carts). Further, Chilean copper stands high in estimation in the market from its combination with gold, silver, and other valuable ores.

The production of fine copper amounted in 1909 to 42,726,145 kilos, value \$26,477,516 ; and in 1910 to 38,231,574 kilos, value \$23,944,373.

**GOLD.**—Gold is found in Chile in various forms and in many localities, from Antofagasta to Punta Arenas, but most commonly in the central district. It is stated that the Incas of Peru levied an annual tribute of 14,500 lb. weight of gold on their province of Chile (*i.e.*, as far south as the River Maule). Gold led to the Spanish Conquest, and was won in great quantities by the Spaniards throughout the sixteenth century at the price of ruthless cruelty to their Indian miners. The forts of Corral were built to protect the mines in the Valdivia valley from English, Dutch, and other privateers. Though most of the old workings are now deserted, the mines are still very numerous. The following are some of the chief gold districts—

Auriferous rock-strata at Loa, Capote, Cañutillo, Andacollo, Punitangui, Barraza, Illapel, Las Vacas, Petorca, Chibato ; in the Cordillera of Mahuilbuta ; and in Tierra del Fuego.

Alluvial deposits near Illapel, Longotoma, Catapilco,

Marga-marga (the first Spanish working, in the valley between Valparaiso and Santiago) Las Dichas, Llampaco, and Melipilla.

The famous gold-washings of Madre de Dios, in the Valdivia valley, abandoned in 1598, were re-opened in 1900. The Sulphur Gold Fields Co. has set up extensive plant near Punta Arenas. The most important mines in the north are "the San Cristobal in Antofagasta, the Guanaco near Taltal, the Cañutillo and Capote in Coquimbo, and Los Sapos in Atacama."<sup>1</sup>

The production of fine gold in 1910 is given as 574,379 grammes, value \$960,751. The average from 1903 to 1907 exceeded 1,000,000 grammes, the best year being 1907, with a total of 1,495,714 grammes, value \$2,484,317.

SILVER.—The output of this metal from Chile has been enormous. It was not much worked or esteemed by the Incas, and the chief development took place in the eighteenth century in the districts of Huanchaca, Huenbajaya, and Santa Rosa, near Iquique, and those of Chancoquin, Zapallor, Pampa Larga, San Felix, and Checo in Copiapó; these latter were opened from 1770 to 1784. Later discoveries were thus, Agua Amarga (in 1811), Arqueros (in 1825), Chañarcillo (in 1832), Caracoles in Antofagasta, Challacollo in the interior of Tarapacá, the Arturo Prat mines near Taltal, and the Florida, Tres Puntas, Ladrillos, and Japonesa mines in Atacama.

The chief silver-smelting works are the Bella Vista and the Playa Blanca in the port of Antofagasta.

<sup>1</sup> Marie Robinson Wright: *The Republic of Chile*.



The unbroken fall in value of silver has led to a great decline in production, that of 1910 being given as 34,957,971 grammes, "having commercial value," and 41,465,468 grammes in all; value \$1,029,969. A large amount is used by the Chilean Mint.

The great diminution shown by the present annual output of gold and silver as compared with that of the colonial period is not due to the exhaustion of the mines. Indeed, little but the outcrops have as yet been worked. Capital has, during the last century, been expended on the development of rich fields in North America, Australia, and South Africa, while the gold and silver resources of Chile have remained virtually untouched by the foreign capitalist.

**IRON AND MANGANESE.**—These metals occur abundantly throughout nearly all the provinces, the richest veins being in Coquimbo, Atacama, Tarapacá, Tacna, and Valdivia. In the last province extensive mining is being undertaken by the *Compañía Siderurjica Francesa*, with large smelting furnaces at Corral.<sup>1</sup> The manufacture here of iron ingots from Chilean ore on the Prudhomine system began towards the close of 1910. The production of that year was 2,321 tons, value \$116,050. Later details are not yet available, but great hopes are entertained of its future development.

No manganese was produced in 1910. It was largely produced at the close of the nineteenth century, over 40,000,000 kilos being exported in 1899; to-day this industry is practically extinct.

<sup>1</sup> Temporarily closed in 1911 owing to difficulties between the Company and the Government.

**COAL.**—Coal-bearing strata are found along the Chilean coast from about 36° S. lat. southwards into the Magellanic lands. Those which have been explored so far and are now being vigorously worked lie between the bays of Talcahuano and Arauco, and the most important mines are at Coronel, Lota, Curanilahue, and Lebu. The leading companies are (1) Messrs. Schwager at Coronel; (2) The Cousiño Company of Lota and Coronel; (3) the Rios de Curanilahue Co., and (4) the Arauco Co., Ltd. Though not of the highest quality<sup>1</sup> it supplies the numerous factories of these towns, and furnishes most of the coal used by the local railways and coastal steamers. The district is served by Curanilahue-Concepción Railway. The production in 1910 was 1,074,174 tons (value \$15,038,436), of which 109,650 tons was consumed in the mines; but this is so far from meeting the requirements of the country that an additional 1,500,000 tons is imported from South Wales, the Newcastle coalfield, and Australia. Coke and petroleum are also imported, and the use of the latter as fuel is increasing rapidly. It would appear that the further development of the southern coalfields is only a matter of time and capital.

Petroleum and natural gas have been discovered at Carelmapu in Llanquihue, about 500 miles south of Valparaiso, but their extent and value has not yet been proved.

The development of Lota from a fishing village to a busy mining and manufacturing town of 15,000 inhabitants, a model of its kind, is one of the romances of

<sup>1</sup> It is said to be from 10 to 20 per cent. inferior to British coal.

Chilean enterprise and organising power, and deserves a more detailed description. The property was bought in 1852 by Don Matias Cousiño, who at once bored for coal and proved its existence in paying quantities. His son, Luis, in 1869 formed the *Compañía Esplotadora de Lota y Coronel*, reserving the majority of the shares. On his death his widow, Doña Isidora, succeeded to the control and bought out the other shareholders. The great fortune thus built up was at one time estimated at \$70,000,000, and Señora Cousiño was believed to be the richest woman in the world. The present capital of the company is about \$20,000,000. It has mines at Playa Negra, Coronel, and Buen Retiro, in addition to those at Lota itself. The great underground (and under-sea) galleries are lit by electric light and served by electric tramways, and are well formed and organised in every detail. The company works also at Lota copper-smelting, pottery, glass bottle, and fireclay brick works, and copper-smelting at Maitenes, and owns a fleet of steamers and sailing vessels plying along the coast, a railway, and several wharves. It employs some 5,000 workpeople, for whom it provides free housing, schools, coal, medical attendance, hospitals, and almshouses. A church and chaplain are provided. Similar measures are being adopted also at Buen Retiro and Coronel.

Much of the Cousiño fortune has been spent on the creation of the great park above the town, one of the wonders of Chile, and among the most beautiful in the world. It contains trees and plants from all quarters of the world, with wild animals, a great aviary, lakes, fountains, and statues (including the well-known statue

of Caupolicán, by Nicanor Plaza). In the centre Señora Cousiño built, at enormous expense, a magnificent palace, which, though roofed at her death, was unfinished internally, and has since remained unoccupied, a melancholy example of a great dream unfulfilled.

## CHAPTER XIV

### MANUFACTURES AND MINOR INDUSTRIES

OF course the chief industries of Chile are agriculture and mining, and in the latter connection the extraction of nitrate from the raw *caliche*, and the mining of coal, are of the greatest importance. But side by side with these, considerable manufacturing enterprise is being displayed in many directions. Agriculture, with which pastoral interests and forestry may be included, gives rise to quite a number of manufacturing ventures ; and so does mining.

**AGRICULTURAL INDUSTRIES.**—Among the industries connected with the exploitation of the land are the following : milk trade ; supply of milk to towns and to the northern provinces, either sterilised in bottles or condensed ; butter and cheese. There are quite large factories devoted to the production of condensed milk and cheese, but the industry is capable of much greater expansion. The same remarks apply to the preservation of vegetables and fruit, both in bottled and dried forms. The export trade in these is already quite appreciable, but the demand for them in some of the less favoured Chilean provinces and in neighbouring countries is steadily on the increase. In connection with the vineyards there are besides the numerous wine-making cellars (producing wines of the character of ports, sherry, Bordeaux clarets, and Burgundies), large liqueur, cognac, and cheap spirit distilleries, and factories for the

production of fancy beverages. Alcohol is also distilled, mainly for industrial purposes, from wheat, rye, maize, and beetroots. A small amount of rum is placed on the market by sugar refiners. There are a large number of breweries, employing both home-grown and imported hops and home-grown barley. These are mostly in the hands of Germans, who use either German machinery or appliances imported from the United States. The beers are mostly of the lager type, though other descriptions are also brewed. Apart from the flour mills, of which there are about 550 in the country, nearly all equipped with modern roller milling machinery, the flour trade gives rise to the manufacture of fancy pastes (macaroni, etc.), biscuits, etc. Oil is produced from olives, cotton seed, linseed, cocoa beans, hemp, and turnip seed.

In connection with the pastoral interests, there are large refrigerating plants in the central and southern provinces, notably at Punta Arenas, where carcasses of cattle and sheep are frozen for export to the northern provinces, to Central America, and to Europe. In connection with these there are also numerous flourishing manufactories for the production of meat extracts and meats preserved in bottles, tins, etc.

Hides are exported dried and salted, but a rapidly growing percentage is now being dressed locally. The tanning industry is extensive. The tannins used are derived from local growths, chiefly algarroilla (*Balsam acarpa brevifolium*) and lingue (*Persea lingue*). Tannin extracts are also made for export. A large part of the leather so dressed is used up in the factories which turn

out boots and shoes, harness and saddlery on a wholesale scale.

There are many quite important, well-equipped saw-mills in the central and southern provinces. These turn out dressed logs, planks, sleepers, etc. Connected with these, though usually situated in the larger towns, are furniture and carriage factories. The forests also yield a certain quantity of fibres, palm straw, and bamboos, which are utilised in the manufacture of cords, sacking, straw hats, sandles, matting, and furniture. (X)

**CHEMICAL INDUSTRIES.**—Both the production of nitrate and coal-mining have given a lively impetus to diverse chemical industries. The distillation of iodine, really a by-product of the extraction of nitrate from the raw ore, is of enormous importance. The laboratories in the north are elaborately equipped and well manned.

Smelting works for silver and copper chiefly, but also for iron are numerous, some of the largest being in the north, and others in the south, notably one at Lota on the celebrated Cousiño estates. Here are the largest coal-mines of the country, turning out about 800,000 tons a year. In connection with these, copper-smelting works have been established. There is a certain amount of coal-washing, and the distillation of coal tar for the production of dyes and other chemicals is carried on.

Another branch of the chemical industry is the soap and candle-making business. There are soap and candle factories to be found in most of the big towns of the central and southern provinces, where animal and other fats are abundant, and alkalies or potashes easily procurable. Some of the soaps are of quite fine quality. The

production of scents and other toilet requisites employs a fair amount of capital and labour.

**SUGAR REFINING.**—Very little sugar-cane is grown, but large quantities of Peruvian raw cane-sugar are imported at Viña del Mar, where there is a flourishing sugar refinery, turning out good quality cane-sugar. In other towns sugar is produced from locally grown beet, and industrial alcohol is also distilled therefrom. In spite of this, much sugar and sugar manufactures are imported annually.

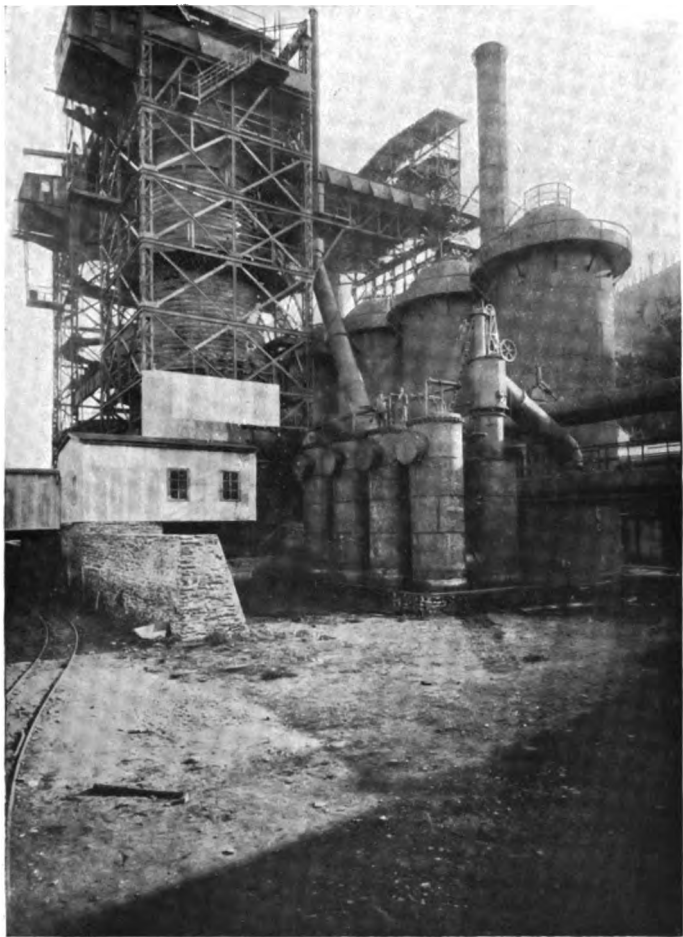
**FISHERIES.**—The fisheries of any note are confined to the southern provinces and the territory of Magellanes, where there is still a considerable population dependent on whale fishing in the Antarctic seas, and the production of whale oil and other saleable commodities. A certain amount of oil is also obtained from the carcasses of seals and sea-lions.

**METALS.**—There are iron-smelting works. There are also some fairly large foundries and machinery shops, galvanising works, besides iron and tinsmiths' shops in most of the big towns.

**TEXTILES.**—The principal centres of the textile industries are at San Tomé and at Santiago.

**TRADE MARKS** may be registered. They may consist of names or designs, but must bear the initials "M. de F." (meaning *Marca de Fabrica*), or "M.C." (*Marca Comercial*). The entry of marks has to be renewed every ten years. The register is kept at the offices of the National Society for Agriculture in Santiago. The note of register must contain the date and the hour of the entry, name of owner, his occupation and domicile, address of factory





*Iron Works Plant, Corral*



or business, nature of industry or trade, and facsimile of sign. The royalty payable is \$12 for a Manufacturer's Mark, and \$3 for a Trade Mark. Each certified copy costs \$1.

TRADE REGULATIONS to some extent vary not only with each province, but with each city, for municipalities have the power of drawing up their own bye-laws for trades and commerce carried on within their own jurisdiction.

## CHAPTER XV

### IMPORTS AND EXPORTS

#### I.—General.

THE following table gives a general view of the import and export trade (including re-exports), from 1907 to 1911 inclusive.

	1907.	1908.	1909.	1910.	1911.
Imports .	22,026,140	20,044,810	19,856,207	22,311,427	26,175,000
Exports .	20,584,140	23,570,545	22,343,367	23,791,009	25,500,000

The *chief imports*, arranged in descending order, are—(1) Textiles ; (2) coal and other minerals ; (3) oil, etc. ; (4) machinery ; (5) paper and its manufactures ; (6) animal products ; and (7) chemicals.

The *chief exports*, similarly arranged, are—(1) Minerals ; followed at a great distance by (2) vegetable products ; (3) industrial articles ; (4) animal products ; (5) timber ; and (6) live animals.

The first place, both in imports and exports, is held by the United Kingdom, the second by Germany, and the third by the United States.

The chief exports from Chile to the United Kingdom are (1) nitrate ; (2) copper and copper ore ; (3) wool ; (4) tin ore. The chief imports into Chile from the United Kingdom are (1) cotton goods ; (2) ironwork ; (3) woollen goods ; (4) coal ; and (5) machinery.

In 1912, the last year for which the verified figures are available, the figures for imports are slightly lower than in 1911, while those for exports are higher. While, of course, details slightly vary year by year, those given below may be taken as generally typical; they are the official figures for the year 1912. They are given in pesos gold; to turn into £ sterling divide by 13.

(ii) *Imports for 1912 analysed—*

	\$ gold.
1. Textiles . . . . .	82,016,280
2. Mineral Products . . . . .	59,710,775
3. Oils, Colours, and Combustibles . . . . .	49,311,612
4. Machinery and Implements . . . . .	44,284,198
5. Vegetable Products . . . . .	36,234,918
6. Animal Products . . . . .	24,813,086
7. Paper and its Manufactures . . . . .	9,383,631
8. Beverages . . . . .	8,711,596
9. Perfumery, Drugs, and Chemicals . . . . .	8,061,707
10. Arms, Ammunition, and Explosives . . . . .	3,026,183
11. Various . . . . .	8,920,793
<b>TOTAL . . . . .</b>	<b>\$334,454,779</b>

(iii) *Imports by countries—*

	\$ gold.	%
1. United Kingdom . . . . .	105,751,49	31.619
2. Germany . . . . .	90,928,960	27.187
3. United States . . . . .	46,844,771	13.767
4. France . . . . .	19,893,317	5.948
5. Peru . . . . .	13,198,441	3.946
6. Argentina . . . . .	11,238,238	3.360
7. India . . . . .	9,144,199	2.734
8. Belgium . . . . .	8,555,204	2.558
9. Australia . . . . .	8,273,280	2.474
10. Italy . . . . .	8,246,082	2.466
11. Spain . . . . .	3,512,705	1.050

The imports from other countries were very small, being less than 1 per cent. each.

(iv) *Imports by classes.*—The official statistics, published annually at Santiago under the title of Estadística

Commercial, are extremely detailed and somewhat intricate. As usual in South America the value assigned to the imports is a somewhat artificial one, being the customs valuation; that of the exports on the other hand is the price actually current in gold. It is inaccurate to balance these one against the other, without making due allowance for the different modes of valuation.

Again, the imports are given under three heads: (a) those of Punta Arenas, (b) those entering through the Post Office, and (c) those entering through the other ports or customs houses of the country. If we disregard the first two of these—a small percentage—we arrive at the following results—

**CLASS 1. *Textile Materials—***

	\$ gold.
Cotton . . . . .	39,967,075
Wool . . . . .	21,400,228
Straw, Palm Leaf, Hemp, etc. . . . .	12,074,328
Silk . . . . .	3,243,393
Linen . . . . .	1,291,142

**CLASS 2. *Mineral Products—***

Iron and Steel . . . . .	32,821,699
Stones and Earths . . . . .	13,685,880
Other Metals . . . . .	6,162,224
Precious Metals and Jewellery . . . . .	471,113

**CLASS 3. *Oils, Colours, Combustibles, etc.—***

Combustibles . . . . .	43,762,871
Industrial Oils . . . . .	2,596,189
Colours, Inks, and Dyes . . . . .	2,123,957
Varnishes and Blacking . . . . .	482,658

**CLASS 4. *Machinery and Implements—***

Industrial . . . . .	23,777,028
Locomotion . . . . .	8,638,996
Agriculture . . . . .	5,423,526
Arts and Sciences . . . . .	3,751,824
Mining . . . . .	1,788,573

# IMPORTS AND EXPORTS

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## CLASS 5. *Vegetable Products—*

	\$ gold.
General Food-stuffs . . . . .	12,909,209
Fruit, Gourds, Vegetables . . . . .	11,312,382
Timber . . . . .	6,327,384
Industrial . . . . .	2,070,355
Tobacco . . . . .	1,590,383
Manufactures . . . . .	1,462,551

## CLASS 6. *Animal Products—*

Live Animals . . . . .	10,937,228
Industrial . . . . .	5,333,875
Food-stuffs . . . . .	4,468,014
Manufactures . . . . .	2,994,463

## CLASS 7.

Paper, etc. . . . .	9,108,514
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## CLASS 8. *Beverages—*

Wine, Spirits, Beer, etc. . . . .	5,385,926
Mineral Waters, Syrups, Vinegar . . . . .	1,144,989

## CLASS 9. *Perfumery, etc.—*

Drugs . . . . .	3,533,376
Chemical Products . . . . .	2,905,460
Perfumes . . . . .	761,488

## CLASS 10. *Arms, etc.—*

Explosives . . . . .	1,721,156
Arms . . . . .	1,084,633
Ammunition . . . . .	184,791

## EXPORTS

The exports for 1912 (excluding re-exports) amounted to \$377,104,530 gold. (Re-exports reached \$6,123,419 gold.)

### (v) *Exports by classes—*

	\$ gold.
1. Minerals . . . . .	336,067,787
2. Animal Products . . . . .	20,769,760
3. Vegetable " . . . . .	19,835,763
4. Beverages . . . . .	172,768
5. Various . . . . .	258,452
<b>TOTAL . . . . .</b>	<b>\$377,104,530</b>

Class 1.—*Minerals* included—CLASS 1. *Minerals*, included—

	<i>Quintals.</i> <sup>1</sup>	<i>\$ gold.</i>
Nitrate of Soda . . . . .	24,985,286	292,327,846
Copper (bars, ores, etc.) . . . . .		30,777,655
Borate of Lime . . . . .		6,145,747
Iodine . . . . .		5,385,578

The value of *nitrate*<sup>2</sup> taken by different countries was as follows—

	<i>\$ gold.</i>
United Kingdom . . . . .	114,031,570
Germany . . . . .	63,153,055
United States . . . . .	49,863,940
France . . . . .	15,164,136
Belgium . . . . .	11,228,864
Holland . . . . .	10,891,694
Uruguay . . . . .	6,804,451
Spain . . . . .	5,025,805
Brazil . . . . .	3,983,043
Egypt . . . . .	2,782,494
Japan . . . . .	2,622,227
Polynesia . . . . .	2,041,042
Portugal . . . . .	1,556,135
Italy . . . . .	1,088,779

Other countries took less than \$1,000,000 each.

Of *Iodine* as<sup>2</sup> follows—

Germany . . . . .	2,807,122
United States . . . . .	1,815,257
United Kingdom . . . . .	642,302
Belgium . . . . .	120,837

Of *Borate of Lime*—

Germany . . . . .	2,168,553
United Kingdom . . . . .	2,152,532
France . . . . .	1,160,355
Belgium . . . . .	373,415
Holland . . . . .	290,878

<sup>1</sup> N.B. A quintal = 220.46 lb.

<sup>2</sup> See also "Nitrate and Iodine," in the Chapter on *Mines and Mining*.



Copper in its various forms was exported mainly to the United States and United Kingdom, in approximately equal quantities.

CLASS 2. <i>Animal Products</i> , included—		\$ gold.
Industrial Products . . . . .		16,553,490
Food Products . . . . .		8,969,584
Live Animals . . . . .		237,053
Manufactures . . . . .		9,633

CLASS 3. <i>Vegetable Products</i> , included—		
Fruits, Grains, Vegetables, and Herbs . . . . .		17,668,574
Other Foods . . . . .		1,175,206
Timber . . . . .		576,875
Industrial Products . . . . .		409,806
Tobacco . . . . .		3,618
Manufactures . . . . .		1,674

CLASS 4. <i>Beverages</i> , included—		
Vino tinto . . . . .		122,442
Beer . . . . .		34,405
Miscellaneous . . . . .		15,921

CLASS 5. <i>Various</i> , included—		
Cream of Tartar . . . . .		122,232
Medicinal Herbs . . . . .		27,015

(vi) *Exports by Countries—*

	\$ gold.	%.
1. United Kingdom . . . . .	150,966,163	40.03
2. Germany . . . . .	76,878,617	20.38
3. United States . . . . .	67,163,193	17.81
4. France . . . . .	21,009,780	5.57
5. Belgium . . . . .	12,632,767	3.34
6. Holland . . . . .	11,604,240	3.07
7. Uruguay . . . . .	7,445,699	1.97
8. Spain . . . . .	5,025,805	1.33
9. Brazil . . . . .	4,742,403	1.25

The exports to other countries were relatively small, being in each case less than 1 per cent. of the total.

The re-exports in 1912 amounted to \$6,123,419 gold, of which \$2,318,862 were to Bolivia, and \$1,438,302 to Argentina. The next largest countries were Germany, United Kingdom, Peru, Italy, and France.

## CHAPTER XVI

### LIST OF PRINCIPAL TOWNS

#### A

**ACHAO**, cap. of dep. of Quinchal, prov. of Chiloé, 42° 27' S. lat., on the north coast of the island of Quinchao, about 14 m. E. of Dalcahue. Pop. about 2,000.

**AGUAS BLANCAS** (prov. Antofagasta), 24° 11' S. lat., on a branch line. A centre of nitrate export.

**ALEMANIA** (prov. Antofagasta), pop. about 200. Important centre of the nitrate fields.

**ALMENDRAL** (prov. Aconcagua), a pleasant town, now become a suburb of San Felipe, cap. of the prov.

**ANCUD**, cap. of prov. of Chiloé, 41° 51' S. lat. A port of over 3,500 inhabitants. Exports: potatoes, oysters, timber. Imports provisions and other merchandise.

**ANGOL**, cap. of the prov. and dep. of Malleco, 37° 49' S. lat., situated at the confluence of the rivers Rehue and Picoiquen; on the Traiguan branch of the Central Railway. Industries: brewery, flour mills, tanneries, and soap factory. Produce: wheat, barley, timber, cattle.

**ANTIHUE** (prov. Valdivia), 39° 47' S. lat., on the R. Calle-Calle, 588 m. from Santiago on the Central Railway, and is the junction of the branch line to Valdivia.

**ANTOFAGASTA**, cap. of the prov. of that name, 23° 27' S. lat. Harbour consists of open roadstead for large vessels, loading and unloading by means of lighters, and for small vessels, of a pier, with a depth of water from 2½ to 5 met. The town has a good supply of water brought from the mountains, is lighted by electricity, and is connected with the nitrate fields, the longitudinal line, and with La Paz, cap. of the republic of Bolivia, by railway. On the Central and South America Cable Co.'s system, and has telephone

service and a wireless telegraphic station. Large silver-smelting works, and in the neighbourhood nitrate and iodine factories. Chief export trade: nitrate, iodine, silver, and copper in bars and ores, borax, and marble. Part of the imports and exports of Bolivia pass through Antofagasta, though the more direct route through Arica has diverted most of this. Pop. over 32,000.

**ANTUCO** (prov. Bio-Bio),  $37^{\circ} 19'$  S. lat., 1,937 ft. above sea-level, about a mile from the R. Laja. Is on the Monte Aguila branch of the Central Railway, 382 m. from Santiago. Produce: cereals, cattle, and timber.

**ARAUCO**, cap. of the prov. of the same name,  $37^{\circ} 15'$  S. lat., on the R. Arauco. Pop. over 3,000. A small garrison town, a few miles away from the sea, though formerly an important port. Is on a branch line to Carampague about  $5\frac{1}{2}$  m. away.

**ARICA** (prov. Tacna),  $18^{\circ} 29'$  S. lat. A pleasant, well-planned seaport, with a pop. of about 6,000. Is connected by rail with Tacna, cap. of the prov., 45 m. away, and so with La Paz, cap. of the Republic of Bolivia, and with Valparaiso, 987 m. away.

**ASCOTAN** (prov. of Antofagasta), on the Antofagasta Railway. The chief centre of the borax industry, and a loading station for the minerals of Huanchacha.

## B

**BLANCO-ENCALADA** or **REMIENDA** (prov. Antofagasta),  $24^{\circ} 22'$  S. lat., one of the principal ports of the nitrate, iodine, and copper exports. Town and vessels supplied with distilled water.

**BUIN** (prov. O'Higgins),  $33^{\circ} 44'$  S. lat., near the R. Llaipo, 1,542 ft. above sea-level; on the Central Railway,  $22\frac{1}{2}$  m. from Santiago. Produce: cereals, alfalfa, and cattle; also copper in the neighbourhood. Pop., 3,000.

**BULNES** (prov. Nuble),  $36^{\circ} 44'$  S. lat., on the Larqui, a small affluent of the Itata. On the Central Railway, 291 m. from Santiago. Produce: cereals, cattle, timber. Pop., 3,900.

**BOCALABU** (prov. Arauca), a centre of the coal mining industry in the dep. of Lebu.

## C

**CACHINAL DE LA SIERRA** (prov. Antofagasta), 24° 58' S. lat. Pop. about 1,600. Connected by rail with Taltal. A nitrate-mining centre.

**CALAMA** (prov. Antofagasta), 22° 28' S. lat., 7,273 ft. above sea-level, on the Antofagasta-La Paz Railway. Important copper mines. Pop., 900.

**CALBUCO** (prov. Llanquihue), 41° 46' S. lat., situated on the island of the same name. Port of call between Valparaiso and Puerto Montt. Exports timber.

**CALDERA** (prov. Atacama), 27° 5' S., lat. situated about 6½ m. n. of the mouth of the R. Copiapó. Seaport of about 3,000 inhabitants, on the Caldera-Copiapó Railway. Industries: silver and copper smelting. Exports: metals, ores, chinchilla furs. Imports: coal, coke, machinery.

**CALETA BUENA** (prov. Tarapacá), 19° 20' S. lat., busy port of about 1,600 inhabitants. Connected by a branch line with Iquique and Pisagua. Chief exports: nitrate, iodine, sulphates, and borax.

**CALETA COLOSO** (prov. Antofagasta), 23° 48' S. lat., port and centre of the nitrate fields, with which it is connected by numerous branch lines. Is on the Aguas-Blanca Railway.

**CALETA JUNIN** (prov. Antofagasta), 19° 14' S. lat. A port on a branch line of Pisagua-Lagunas Railway. Is immediately at the foot of a range of mountains, rising to over 2,100 ft. sheer from the sea. The inhabitants, about 1,700 in number, usually live in Alto Junin, on the top of the cliffs.

**CAMARIO** (prov. Nuble), 36° 58' S. lat., 457 ft. above sea-level on the R. Palpal. Is 342 m. from Santiago on the General Cruz Railway.

**CANETE** (prov. Arauco), 37° 41' S. lat., 199 ft. above sea-level at the confluence of the rivers Leiva and Tucapel.

Pop. over 2,000; was founded in 1557. On the Traiguén branch of the Central Railway. Produce: cereals, cattle, timber, flour mills.

**CARACOL** (prov. Antofagasta), 23° 3' S. lat., 9,220 ft. above sea-level, 27 m. S.E. of Sierra Gorda, a station on the Antofagasta Railway. Centre of silver mining. Pop. over 4,000.

**CARAMPANGUE** (prov. Arauco), 37° 13' S. lat., on the river of same name. Pop. over 1,600. Produce: cereals and timber.

**CARIZALLILO** (prov. Atacama), 26° S. lat., 3,330 ft. above sea-level. Centre of copper mining, the ores being conveyed by a narrow gauge railway to Las Bombas.

**CARRIZAL** (prov. Atacama), Carrizal-Alto is situated in 28° 3' S. lat. some distance from the coast. It has a pop. of about 1,900, and is the centre of a rich copper-mining district. It is connected by rail with Carrizal-Bajo, a small seaport of about 1,000 inhabitants. Here are silver and copper-smelting works. Exports metals and ores, including manganese, and imports coal and mining timber.

**CASTRO** (prov. Chiloé), 42° 28' S. lat. A port connected by rail with Ancud. In the neighbourhood are important stone quarries.

**CAUQUENES** (cap. of the prov. of Maule), 35° 57' S. lat., 454 ft. above sea-level, close to the river of same name. Pop. over 10,000. On the Central Railway 273 m. from Santiago. Fine public buildings, including the leading agricultural school. In centre of rich agricultural district, producing cereals, grapes, cattle, and timber.

**COBRE** (prov. Antofagasta), 24° 15' S. lat. A small copper ore exporting port between Antofagasta and Blanco-Encalada.

**CALLIPULLI** (prov. Malleco), 37° 58' S. lat., near the R. Malleco. Pop. over 3,500. On the Central Railway, 410 m. from Santiago. Great centre of cereal production.

**CONCEPCIÓN**, cap. of prov. of same name, 36° 50' S. lat., on the banks of the R. Bio-Bio, 12½ m. from its mouth. A

city of about 60,000 inhabitants, founded in 1541, and has always held an important political and commercial position. Is the centre of an agricultural and coal-mining district. Possesses fine public buildings, gardens, markets, electric light, electric tramways, and other conveniences. Is the centre of several railways, a branch connects it with the Longitudinal Railway.

**CONSTITUCIÓN** (prov. Maule), 35° 19' S. lat., on the R. Maule. A port of about 10,000 inhabitants on the Central Railway, 238 m. from Santiago. There are shipyards here. Centre of an agricultural district producing grapes, cereals, light, and timber. Also gold mines in vicinity.

**COPIAPÓ**, cap. of the prov. of Atacama, 29° 58' S. lat., on the R. Copiapó. Is also known as San Francisca de la Silva. A pleasant combination of the old and new town. Possesses celebrated church, a School of Mining, and other public buildings. The town is lighted by electricity, has electric tramways and telephone service. Pop. over 12,000. There are smelting works. In a rich mining district, producing gold, silver, copper, and lead. Is united to Caldera by rail.

**COQUIMBO**, cap. of prov. of same name, 29° 58' S. lat. A port of about 13,000 inhabitants on Rivadavia Railway. Possesses extensive copper-smelting works. Exports: gold, copper, iron, sulphur, and alfalfa.

**CORONEL** (prov. Concepción), 37° 1' S. lat. A port of about 6,000 inhabitants on the Arauco Railway. Its chief industries are flour-milling, tanning, and glass manufacturing. It is the centre of the coal-mining of this prov. Exports: cereals, cotton, wine, and timber.

**CORRAL** (prov. Valdivia), 39° 53' S. lat., at the mouth of the R. Calle in the Bay of Valdivia. Safe and much-frequented port, with extensive trade in cereals, wine, hides, and metals. There are here iron and cannon foundries, and whale oil extracting works.

**CUREPTO** (prov. Talca), 35° 5' S. lat., near the R. Molino. Pop. about 1,600. Agricultural and cattle-breeding centre.

**CURICÓ**, cap. of prov. of same name,  $34^{\circ} 59'$  S. lat., 679 ft. above sea-level, on the R. Guaiquillo. Pop. over 18,000. In the midst of a vineyard district. Well built town with theatre, important schools, and two hospitals. Industries: tanneries, flour mills, and breweries. The surrounding district produces grapes, cereals, and timber. Is on the Central Railway, 130 m. from Santiago.

**CHAÑARAL DE LAS ANIMAS** (prov. Atacama),  $26^{\circ} 20'$  S. lat. Pop. over 3,000. Busy port, the outlet for a rich silver, copper, and nitrate district. All the water has to be distilled. Starting-point of the Chañaral Railway.

**CHANCO** (prov. Maule),  $35^{\circ} 42'$  S. lat. Pop. over 2,000.

**CHILLÁN**, cap. of prov. of Nuble,  $36^{\circ} 36'$  S. lat., 367 ft. above sea-level on the R. Toscas, which empties itself into the R. Nuble. Pop. over 43,000. Possesses school of agriculture, electric tramways and light, telephones, etc. Local industries comprise tanneries, flour mills, breweries, straw hat factories, and the only nail factory in South America. Is in an agricultural and cattle-breeding district. On the Central Railway, 273 m. from Santiago. About 2 m. to the S. lies Chillán-Viejo, the old town, with a pop. of over 5,000.

## D

**DUENDAS** (prov. Antofagasta),  $22^{\circ}$  S. lat., port on the bay of Algodonales. Is on the Tocopilla-Toco Railway.

## G

**GUAYACÁN** (prov. Coquimbo),  $29^{\circ} 58'$  S. lat. Pop. over 2,500, on the Coquimbo-Paloma Railway. Possesses important copper-smelting works.

## I

**IQUIQUE** (prov. Tarapacá), one of the chief ports in the republic, lying in  $20^{\circ} 12'$  S. lat. Pop. over 43,000. Is in communication with Pisagua by the Nitrate Railways. Although the town is largely built of wood, it possesses

electric tramways, light, telephone service, etc. There is a supply of water from Pica, which is supplemented by distillation.

**J**

**JUNIN.** *See* Caleta Junin.

**L**

**LAGUNAS** (prov. Tarapacá), 21° S. lat. The southern terminus of the Nitrate Railways.

**LEBU** (prov. Arauco), 37° 36' S. lat., at the mouth of the river of same name. Pop. over 3,000. Chief export, coal. Is on the Traiguén branch of the Santiago Railway.

**LIGUA** (prov. Aconcagua), 32° 27' S. lat., on the river of same name, on the Calero-Cabilde branch line. Possesses copper-smelting foundry.

**LLAILLAY** (prov. Valparaíso), 32° 50' S. lat., on the R. Aconcagua. Pop. over 3,000. On the Santiago to Valparaíso Railway, and forms the junction of the branch line to Los Andes, where it joins the Transandine Railway. Metal-smelting works. Centre of a rich agricultural district, producing wheat, grapes, and cattle.

**LLANQUIHUE**, cap. of prov. of same name, situated on L. Llanquihúe, 41° S. lat., on the Central Railway.

**LOTA** (prov. Concepción), port in Arauca Bay, lat. 37° 5' S. Chief export centre for the local coal mines. Celebrated for the beautiful Cousiño Park.

**M**

**MAIPÓ** (prov. O'Higgins), 33° 46' S., on the river of same name. Produces cereals, grapes, and other fruits and cattle. In the neighbourhood are gold, silver, and copper mines.

**MEJILLONES** (prov. Antofagasta), port in bay of same name, 23° 6' S. lat. On a branch of the Antofagasta Railway. Formerly a leading nitrate port.

**MELIPILLA** (prov. Santiago), 33° 41' S. lat. Pop. over 4,000, on the San Antonia Railway. An agricultural centre, producing excellent wines.



**MÚLCHEN** (prov. Bio-Bio), 37° 43' S. lat., on the river of same name. Pop. over 5,500, on the Central Railway, 409 m. from Santiago. Agricultural and cattle-breeding centre.

**MOLINA** (prov. Talca), 35° 6' S. lat. Pop. over 4,400, on the Central Railway. Tobacco factories.

### N

**NACIMIENTO** (prov. Bio-Bio), 37° 30' S. lat., on the river Bio-Bio. An interesting old town of about 2,000 inhabitants, on the Central Railway. Produce: cereals, fruit, cattle, timber.

**NUEVA IMPERIAL** (prov. Cautin), 38° 42' S. lat., on the R. Cholchol, on a branch line to Carahué, 505 m. from Santiago. Produce: cereals, cattle, and timber.

### O

**OLLAGUA** (prov. Antofagasta), 21° 14' S. lat., on the Antofagasta-La Paz Railway.

### P

**PARRAL** (prov. Linares), on R. Estero de Tarral, 36° S. lat. Pop. over 10,000. Flour mills, tanneries, and foundry. On the Central Railway.

**PETORCA** (prov. Aconcagua), 32° 15' S. lat. Pop. over 1,000. There is here a large metal-smelting works.

**PISAGUA** (prov. Tarapacá), 19° 34' S. lat. A nitrate port of nearly 4,000 inhabitants. It was destroyed by earthquakes in 1868 and 1877 and burnt to the ground in 1903, but is now in a flourishing condition.

**PICA** (prov. Malleco), 38° 20' S. lat. Small town on the Central Railway.

**PUCHUNCAVI** (prov. Aconcagua), 32° 41' S. lat. Pop., 1,500. In the centre of the fruit-growing district.

**PUERTO MONTT**, cap. of prov. of Llanquihue, port on the Bay of Reloncave, 41° 29' S. lat. Pop. over 5,500. On the Central Railway.

**PUERTO VERAS** (prov. Llanquihue, small town on L. Llanquihue, 41° 20' S. lat. On the Central Railway, 744 m. from Santiago.

**PUGUIOS** (prov. Atacama), 27° 10' S. lat. Pop. over 2,000. On the Caldera-Copiapó Railway. Possesses valuable silver and copper mines.

**PUERTO RENA.** *See* Quidico.

**PUNTA ARENAS** (territory of Magellanes), on the northern point of the island of Tierra del Fuego, 53° 10' S. lat. Pop. over 13,000. Is in railway communication with Mina Loreto. Centre of sheep and cattle-rearing district. Large refrigerating works, meat preserving factories, grease refineries, tanneries, etc.

## Q

**QUIDICO**, or **PUERTO RENA** (prov. Arauco), 38° 41' S. lat., on the river of the same name. In centre of agricultural district. In the neighbourhood there is much good timber and also rich coal seams.

**QUILPUÉ** (prov. Valparaiso), 33° 5' S. lat. Pop. about 3,500. On the Santiago-Valparaiso Railway. In an agricultural district. Large sauce, vegetable, and fruit-preserving factory.

**QUIRIHÚE** (prov. Maule), 36° 15' S. lat. Pop. over 3,000. Agricultural district, well known for its vineyards.

## R

**RANCAGUA** (cap. of prov. of O'Higgins), 34° 12' S. lat. Pop. about 8,000. On the Central Railway, 57 m. from Santiago. Agricultural district, producing cereals, potatoes, vegetables, fruit, alfalfa, cattle. Local industries: flour milling, fruit and vegetable preserving.

**RERE**, or **SAN LUIS GONZAGA** (prov. Concepción), 37° S. lat. Pop. over 3,500. On the Arauco Railway. Produce, grapes, cattle, timber.

## S

**SALAMANCA** (prov. Coquimbo), 31° 46' S. lat., on the R. Choapa. On the Los Volos branch line. Pop. over 2,000. In active mining district.

**SAN BERNARDO** (prov. Santiago), on the R. Maipó, 33° 33' S. lat. Pop. about 9,000. On the Central Railway, and also communicates with Santiago by an electric railway. In centre of vineyard district.

**SANTIAGO DE CHILE**, cap. of the Republic of Chile and of the prov. and dep. of Santiago. Situated on the R. Mapocho, 1,770 ft. above sea-level, in lat. 33° 27' S. Large well-built city, with many interesting old buildings. Apart from the Presidential Palace (La Moneda), the House of Congress, Ministries, there is the fine cathedral, Archiepiscopal Palace, the University, Schools of Engineering, Mining, Arts, and many establishments for secondary and primary instruction. There are good hotels, a number of clubs, theatres, etc. The parks are the celebrated Cerro Santa Lucia (a hill in the centre of the city), and the Parque Cousiño. The city has an excellent water supply, telephone service, electric tramway, electric railway to San Bernardo. It is in railway communication with Valparaíso by means of a branch of the Longitudinal line. There are other branches to Barrancas, San Antonio, Melipilla, and El Melocotón. It is a busy industrial and commercial city.

## T

**TALCA**, cap. of prov. of same name, 35° 25' S. lat., on the R. Claro. Pop. over 40,000. Is in a rich agricultural district, producing grapes, excellent cattle. In the neighbourhood are forests with valuable timber, gold, silver, and copper.

**TALCAHUANO** (prov. Concepción), port in bay of same name, 36° 55' S. lat. On the Santiago Railway. Pop. over 16,000.

**TARAPACÁ** (prov. Tarapacá), on river of same name, 19° 55' S. lat. Produces borax, nitrate, iodine, sulphates; also wheat, maize, and alfalfa.

**TOCOPILLA** (prov. Antofagasta), port in the bay of Algodones, 22° 5' S. lat. Pop. over 10,000. Is on a branch line

to Toco. Local industries: copper-smelting works and distilleries.

**TOCO** (prov. Antofagasta), 22° 4' S. lat., near the R. Loa. A centre of the nitrate industry. Pop. over 5,000.

**TOME** (prov. Concepción), port in the Bay of Talcahuano, 36° 37' S. lat., on a branch line of the Central Railway. Local industries, flour mills, sugar refinery, distilleries, breweries etc. Pop. over 6,000.

**TRÁIGUEN** (prov. Malleco), 38° 16' S. lat., on river of same name. On the Angol branch of the Central Railway. Possesses large flour and sawmills. Agricultural produce: wheat, barley, potatoes.

## V

**VALDIVIA**, cap. of prov. of same name, lat. 39° 49' S., situated on R. Valdivia 9 m. from its mouth; was founded in 1552. An interesting city of about 17,000 inhabitants. Is chiefly busy with the timber industry.

**VALPARAISO**, cap. of the prov. of that name, and principal port of the republic, situated 33° 2' S. lat., on an extensive bay. Pop. over 163,000. Was founded in 1536, but has suffered terribly from earthquakes, the last occasion being in 1906, when the greater part of the city was destroyed. It has, however, been rebuilt on a lavish scale. There are good hotels, clubs, hospitals, water supply, electric light, and tramways. Is connected with Santiago by railway. There are numerous flourishing industries.

**VICUÑA** (prov. Coquimbo), situated on the R. Coquimbo in lat. 30° 2' S. On the Coquimbo-Rivadavia Railway. Large copper mines in the neighbourhood.

**VICTORIA** (prov. Malleco), on the R. Tráiguen, 33° 14' S. lat. Pop. about 10,000. On the Central Railway. Flour and saw mills, tanneries and soap works.

**VIÑA DEL MAR** (prov. Valparaiso), a pleasant suburb of Valparaiso, with a population of about 25,000. On the Santiago-Valparaiso Railway. Possesses cotton factories, machinery engineering shops, and sugar refinery.

**Y**

**YUNGAI** (prov. Nuble), on the R. Pangueco, lat. 37° 6' S. Near the station of Cholguan on the Truham branch of the Central Railway. Produce: cereals and cattle.

## APPENDIX A

### POSTAL AND TELEGRAPH GUIDE

THE Postal Service belongs exclusively to the State, and is in the control of the Ministry of the Interior. All the usual classes of correspondence are in vogue ; the charges are low, and newspapers and printed matter under 50 grammes weight are carried free. Generally speaking the service is intended to develop intercourse and encourage commerce and education, not to make a profit ; indeed a considerable annual loss, from a financial standpoint, results. The post offices number over 1,100. Postal orders, both home and foreign, are procurable ; and post office savings banks have been established by the Caja Hipotecaria, the deposits amounting to over £2,250,000. The total correspondence in 1907 amounted to nearly 81,000,000 pieces, including 33,000,000 letters, 36,500,000 newspapers, etc., free of charge, and 6,000,000 pieces for abroad.

The following regulations of the British Post Office are of importance—

Letters may be in size up to  $2 \times 1 \times 1$  ft. ( $2\frac{1}{4}$ d. for the first oz., and  $1\frac{1}{4}$ d. for each succeeding oz.)

Printed matter may be up to  $1\frac{1}{4} \times 1 \times 1$  ft. and not exceeding 4 lb. ; the same limits hold for commercial and legal papers, MSS., etc.

Samples, patterns, and scientific specimens may be up to  $12 \times 8 \times 4$  in., not exceeding 12 oz. in weight.

For parcels the limits are  $6\frac{1}{2}$  lb. in weight, 2 ft. in length, and length  $\times$  girth 4 ft. ; but for articles such as umbrellas, a greater length is allowed. A customs declaration *must* be filled up and signed ; certain articles (*e.g.*, letters, explosives, spirits, etc.) are prohibited. Customs duties are usually collected on delivery, but may be prepaid.

#### TELEGRAPHS

The telegraphs belong in part to the State and in part to private companies. The State service, under a Director-General,

is attached, like the post office, to the Ministry of the Interior. It had, in 1911, some 357 offices, and 16,513 miles of lines ; nine new offices were opened in 1912. It is governed by the same principles as the Post Office, and establishes lines, not in themselves remunerative, in order to foster trade. The Chilean lines have been united with those of Argentina since 1904, and with those of Bolivia since 1907, in accordance with telegraphic conventions of those years. There is also telegraphic communication with the Bolivian Telegraph Co. *viâ* Tacna, with the Antofagasta Railway Co., and with the Southern Railway Co. of Peru, *viâ* Sama. Punta Arenas, in the south, is also connected with the Argentine lines.

The railways and private companies have also authorised telegraph lines, which supplement those of the State. These amount to 5,821 miles of lines. The *American Telegraph Co.* (running from Valparaiso to Temuco, and from Temuco towards Valdivia), and the *Commercial Telegraph Co.* are the most important privately-owned companies.

Through the three cable companies Chile has communication with all parts of the world. They are the *West Coast of America Telegraph Co.*, the *Pacific and European Telegraph Co.*, and the *Central and South America Telegraph Co.* (*viâ* Colón). The first of these has under 1,000 miles of submarine cable along the coast of Chile, and 188 miles of land telegraphs.

The wireless telegraph system is planned to include thirteen stations, and is of growing importance and utility, establishing connection with distant possessions such as Juan Fernandez, and the Magellanic territory. The original stations are at Valparaiso and Talcahuano ; the Marconi Co. is erecting others at Arica, Antofagasta, Coquimbo, Puerto Montt, and Punta Arenas. Supplementary stations will be later placed at Evangelistas, Cape Raper, Huafo, Ancud, Mocha Island, and Juan Fernandez. Doubtless in a few years these will be greatly extended.

#### TELEPHONES

The telephone lines, over 8,000 miles in length, belong mainly to the *Compañía Chilena de Teléfonos*, which has over sixty offices and a capital of \$4,000,000. The State railways have over 45 miles of lines and 250 machines.

## APPENDIX B

### MONEY, WEIGHTS AND MEASURES

THE coins authorised by law are the gold *Condor* of 20 pesos, *Doblon* of 10 pesos, and *Escudo* of 5 pesos ; the silver *Peso*, and pieces of 40, 20, 10, and 5 centavos ; and copper, 2½, 2, 1, and ½ c.

The coins in general use are—

*Silver* pieces of 20, 10, and 5 centavos.

*Copper* alloy, 2½, 2, 1, and ½ centavos.

Since 1898 there has been a large issue of paper notes for \$1,000, 500, 100, 50, 20, 10, 5, 2, and 1. The paper peso, used in retail trade and financial quotations, is subject to fluctuations of value ; *e.g.*, in 1908 to 1910 it varied between 13½d. and 7½d. There are also bank notes issued under State authority.

Silver is legal tender up to \$50 ; but import duties and storage dues must be paid in gold at par, and export duties in gold or London bills. British and Australian-minted sovereigns are legal tender at the par value of £1 = \$13½.

A Caisse de Conversion, similar to those of Argentina and Brazil, has been established to redeem the paper notes ; it is to begin operations on 1st January, 1915.

In Chile, as in the other South American republics, the French metric system has been adopted as the legal system of weights and measures obligatory in the Government offices. The following are some of the old Spanish terms, which are still in fairly common use—

1 Vara or yard	= 0·836 metre.
150 Varas	= 1 cuadra.
36 cuabras	} = 1 legua (= 4·513 km.)
or	
5,400 varas	
1 sq. cuadra	= 15,725 sq. metres.

The fanega, of wheat or barley, was over 1½ times as large as the Castilian ; it usually = 155 libras (or 90·75 litres) ;



# GENERAL TABLE OF SOUTH AMERICAN CURRENCIES

Standard.	Unit.	English & U.S.A. Par Value.	Usual Unit of Commerce.	English & U.S.A. Value.	Remarks.
FALKLAND Islands	(British currency)				



but was 150 libras at San Antonio, and 175 libras at Concepción. The fanega of Indian corn = 160 libras ; of potatoes = 200 libras.

The arroba of wine = 4 cuartos (= 35·21 litres) : this was twice the size of the Castilian arroba of wine.

## APPENDIX C

### STEAMSHIP SERVICES<sup>1</sup>

To reach Chile from Europe or the United States there is a choice of three routes: (1) To Buenos Aires and thence by the Transandine Railway to Santiago; this is the quickest and most convenient, occupying about nineteen days. (2) *via* the Straits of Magellan to Valparaiso or any other port required: this involves a voyage of from thirty to forty-two days from Europe, with the chance of bad weather and cold temperature in the Straits. (3) To Colón, thence by railway to Panama, and thence by West Coast steamer. With the opening of the Panama Canal, no transshipment or change will be necessary.

The lines available for the routes above named are as follows—

*The Royal Mail Steam Packet Co.* and *Pacific Steam Navigation Co.* (combined) have frequent services from Liverpool and Southampton. Services "A" and "D" run to Buenos Aires. Service "O" runs to Monte Video and thence by Magellan Straits to the West Coast; passengers for Buenos Aires must tranship at Monte Video; there is also an "intermediate" service to the West Coast. Another service plies from Southampton and Cherbourg to Colón *via* West Indies; and another to Colón *via* New York. Their West Coast services from Panama run (1) to Colombian ports, (2) to Guayaquil, (3) to Callao, and (4) weekly to Valparaiso and Southern Chilean ports (in connection with the South American Steamship Co.).

The fares to Valparaiso from England are—

	1st Cl. (Single.)		1st Cl. (Return.)		2nd Cl. to B. A., or Colón, Callao <i>via</i> Magellan Str. : 1st Cl. on Transandine or Panama Ry., and on West Coast.	
	£	s. d.	£	s. d.	£	s. d.
<i>Via</i> Andes	51	16 0	87	14 6	34	16 0
„ Straits	54	0 0	81	0 0	30	0 0
„ Panama	60	12 6	108	0 0	50	12 6
„ Straits	28	0 0	50	8 0	—	—

<sup>1</sup> Since the Shipping List was compiled the *Hamburg-Amerika* and *Kosmos* lines have suspended sailings.

The average duration of passage between Valparaiso and some important places is as follows—

Valparaiso to Buenos Aires <i>via</i> Transandine Ry.	38 to 49 hrs.
" " Chiloe . . . . .	6 to 7 days.
" " Rio de Janeiro . . . . .	15 "
" " Panama (many stops) . . . . .	20 "
" " New York . . . . .	28 "
" " Liverpool . . . . .	32 "

A very large number of other lines are available from Europe to Brazil and Argentina; details of these will be found in the volumes on those countries in this series. The lines which especially affect Chile are—

	Fleet.
<i>Pacific Steam Navigation Co.</i> , and <i>R.M. &amp; P. Co.</i> . . . . .	27 vessels.
<i>German Kosmos Line</i> (Hamburg) . . . . .	42 "
<i>Lloyd Pacific</i> (Genoa) . . . . .	
<i>Merchant Line</i> (New York) . . . . .	15 "
<i>Toya Kisen Kaisha</i> or <i>Oriental Steamship Co.</i> . . . . .	
(Yokohama <i>via</i> Honolulu) . . . . .	
<i>Lamport and Holt</i> (Liverpool and Glasgow) . . . . .	12 "
<i>Gulf Line</i> . . . . .	11 "
<i>Roland Line</i> (Bremen) . . . . .	4 "
Various British Steamers on the West Coast . . . . .	17 "
<i>Panama Railroad Steamship Co.</i> (fr. New York)	
<i>Barber Line</i> (New York)	

The lines belonging to Chile are the following—

- (1) The *South American Steamship Co.* (*Compañia Sud Americana de Vapores*, known as the "C.S.A. & V.") . . . . . 21 vessels.
- (2) *Chilean Steam Navigation Co.* . . . . . 4 "
- (3) *Lota and Coronel Co.* . . . . . 4 "
- (4) *Braun & Blanchard* . . . . . 8 "
- (5) *McAuliffe's* . . . . . 2 "
- (6) Various (of Valparaiso) . . . . . 9 "
- (7) Various (of Punta Arenas) . . . . . 4 "

Most of these are essentially cargo boats; but the C.S.A.V. caters for passengers, and has a large fleet of excellent steamers. They run five services, viz.—

- (1) Valparaiso to Panama and intermediate ports 3,200 miles
- (2) " " Eten " 1,960 "
- (3) " " Junin " 1,750 "
- (4) " " Puerto Montt " 1,362 "
- (5) " " Chiloe Channel " 1,740 "

They also ply on the lower navigable courses of the rivers Maule, Imperial, Valdivia, Bueno, and Maullin.

It will be seen that between the P.S.N. Co., the C.S.A.V., and the other West Coast services named above, the traveller has ample opportunity of visiting all the ports on the west side of the continent. Indeed, it is a question whether the supply of steamboat facilities does not exceed the demand.

## APPENDIX D

### TREATIES AND CONVENTIONS

THE following are the most important treaties and conventions concluded since 1902—

<b>ARGENTINA—</b>	
General Arbitration Treaty . . . . .	1902
Limitation of Armaments . . . . .	1902
Telegraph Convention . . . . .	1903
Frontiers . . . . .	1904
<b>BOLIVIA—</b>	
Peace and Commerce . . . . .	1904-5
Arica—La Paz Railway . . . . .	1905
Frontiers . . . . .	1905
Telegraph Convention . . . . .	1906-7
<b>ITALY—</b>	
Postal Conventions (several) . . . . .	1906, 1908
<b>JAPAN—</b>	
Friendship, Commerce, and Navigation . . . . .	1897, 1906-7
<b>PERU—</b>	
Sanitary Convention ( <i>see</i> under U.S.A.) . . . . .	1905, 1909
<b>UNITED KINGDOM</b>	
Parcels Convention . . . . .	1902-3
Postal Orders . . . . .	1906-7
<b>UNITED STATES OF AMERICA—</b>	
Sanitary Convention (for prevention of Yellow Fever, Bubonic Plague, and Cholera) . . . . .	1905, 1909
<b>URUGUAY—</b>	
Extradition . . . . .	1907, 1909
Postal Convention . . . . .	1911
<b>VENEZUELA—</b>	
Sanitary Convention ( <i>see</i> under U.S.A.) . . . . .	1905, 1909

In 1906 a convention dealing with terms of naturalisation, pecuniary claims, and international law was arranged between nearly all the countries of North, Central, and South America, including Chile; and subsequently a similar Pan-American Convention *re* Patents.

## APPENDIX E

### DIPLOMATIC AND CONSULAR REPRESENTATIVES

#### 1. *Of Chile to the United Kingdom :*

*Envoy and Minister*—Agustin Edwards.

*First Secretary*—Enrique Cuevas.

*Second Secretaries*—Ricardo Pepper and Dario Ovalle.

*Military Attaché*—Lieut.-Col. Alfredo Schönmeyr.

*Naval Attaché*—Lieut.-Commander Alfredo Santander

*Financial Attaché*—Luis Waddington.

*Attaché*—Julio Bittencourt.

(*Legation*—48 Grosvenor Square, London, S.W.)

There is a Consul-General in London (94 Gracechurch St., E.C.), and Consuls or Consular Agents at Belfast, Cardiff, Dublin, Edinburgh, Glasgow, Hull, Liverpool (Consul-General), Nottingham, Queenstown, Sheffield, Southampton, and other towns.

#### 2. *Of the United Kingdom to Chile :*

*Envoy and Minister*—Francis William Strong.

*Secretary*—A. C. Kerr.

There is a Consul-General at Valparaiso (Allan Maclean), and Consuls or Consular Agents at Antofagasta, Arica, Caldera, Coquimbo, Coronel, Iquique, Junin, Lota, Pisagua, Punta Arenas, Talcahuano, Tocopilla, Tomé.

#### 3. *Of Chile to the United States :*

*Envoy and Minister*—Sir Don Eduardo Suarez.

*First Secretary*—Sir. Don Felipe Arñat.

#### 4. *Of the United States to Chile :*

*Envoy and Minister*—Henry P. Fletcher.

*Secretary of Legation*—Roland B. Harvey

There is a Consul at Valparaiso.



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