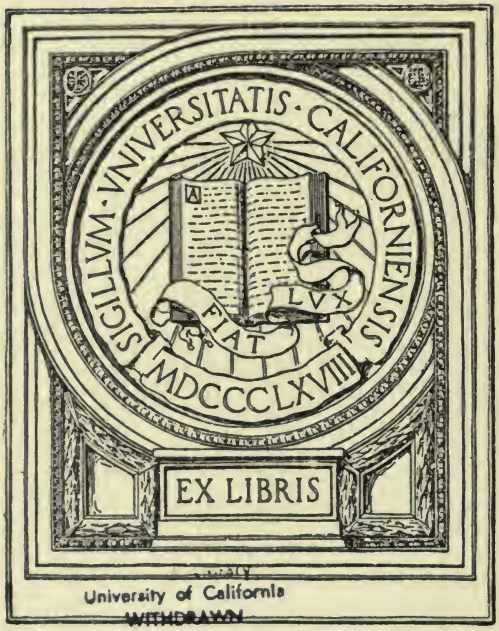
REPUBLIC OF CHILE.



THE REPUBLIC OF CHILE.

THE HILL OF SANTA LUCIA IN SANTIAGO WITH THE ANDES IN THE BACKGROUND.

A SHORT DESCRIPTION

OF THE

REPUBLIC OF CHILE.

According to official data.

With a map and 44 illustrations.

LEIPZIG:
F. A. BROCKHAUS.

1903.

PIER IN VALPARAISO.

FIRST CHAPTER.

SITUATION.—BOUNDARIES.—DIVISIONS.—POPULATION.

SITUATION.—The Republic of Chile is situated on the west coast of South America, and extends from the Rio Sama (about 18° Southern lat.) to the island of Pedro Ramirez (about 56° Southern lat.) South of Cape Horn, the most southerly point of South America.

This long stretch of land along the coast varies in breadth from 170 to 400 km. and is more than 4200 km. long. On the West it is bounded by the Pacific Ocean, on the coast of which are numerous harbours.

By reason of its shape Chile is very accessible, the numerous natural treasures and products being easily transported to the coast and thus put on the markets of the world.

The Government can, if necessary, send troops under the protection of its men-of-war to any part of the country.

Boundaries.—Chile is bounded on the North by Peru, and on the East by Bolivia and Argentina. Since the Pacific War the provinces of Tacna and Arica in the North are occupied by Chile in accordance with a treaty formed with Peru.

The boundary between Chile and Argentina is formed by the main chain of the Andes, from about the 24° to the 41° Southern lat., which at the same time forms the watershed between the Pacific and the Atlantic Ocean.

From the 41° to the 52°, where the Andes are rather irregular in shape and split up into several chains, the boundary line has been definitely fixed by His Majesty the King of England by means of arbitration on the 20th November 1902. The boundary question between Chile and Argentina has thus been finally settled in an amicable manner.

Divisions.—Looked at from the agricultural and economical standpoint as well as regarding the distribution of its natural products Chile may be divided into three large zones.

The Northern zone extends about as far as the 30° and shows for the most part the characteristics of a desert. In this thinly populated zone the chief mineral treasures of the country are to be found.

A European savant, who explored this part of the country being appointed by the Chilian Government compared them to a huge chemical laboratory, because they are stocked with almost every kind of ore. They contain immeasurable quantities of saltpetre and borax and also numerous silver and copper mines, especially the latter.

The central zone, about as far as the 38°, reaching up to the boundaries of the province of Valdivia, is the best cultivated and watered. In many parts it resembles a large, beautiful garden. It is crossed by numerous railways and roads, and on the whole it is fairly well populated.

This is the agricultural zone, and in it thrive wine,

BAY OF VALPARAISO.

olives and corn to a great extent. The climate is considered one of the most agreeable in the world.

The Southern zone is mainly remarkable for its woods. There is in some places good coal, and gold dust has been found in some of the rivers, but the main wealth of this still sparsely populated zone are the woods and the products of the sea. However, cattle raising is developing, and the different branches of industry, pursued mostly by German colonists, are increasing to a great extent and their products are of such a good quality that they are highly valued not only in South America but also in Europe, as for instance the leather manufactured in Valdivia.

The Republic is divided into one territory and 23 provinces, the names and sizes of which are shown on the following table. At the head of each province is an intendant. The provinces are divided into departments which are ruled by governors. The intendants and governors are appointed by the President of the Republic.

Name		Size	
Territory of Magallanes		195 000	sq. kilometres
Province of Chiloé		10 348	„
„ „	Llanquihue	20 260	„
„ „	Valdivia	21 536	„
„ „	Cautin	8 100	„
„ „	Malleco	7 400	„
„ „	Bio-Bio	10 769	„
„ „	Arauco	11 000	„
„ „	Concepción	9 155	„
„ „	Ñuble	9 210	„
„ „	Maule	7 591	„
„ „	Linares	9 036	„
„ „	Talca	9 527	„
„ „	Curicó	7 545	„
„ „	Colchagua	9 829	„
„ „	O'Higgins	6 317	„
„ „	Santiago	13 527	„
„ „	Valparaiso	4 297	„
„ „	Aconcagua	16 126	„
„ „	Coquimbo	33,339	„

PLACE OF ARMS AT SANTIAGO.

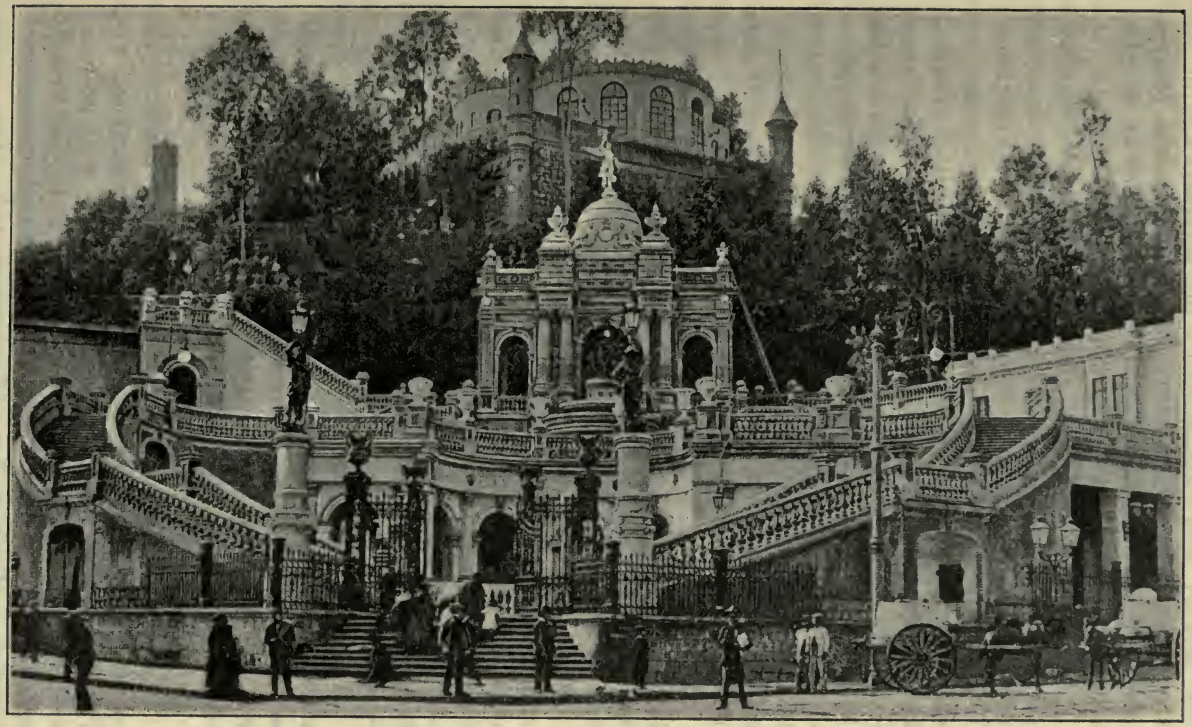
Name	Size
Province of Atacama	73 500 sq. kilometres
„ „ Antofagasta	187 000 „
„ „ Tarapacá	50 000 „
„ „ Tacna	22 500 „
	752 912 sq. kilometres

The price of the ground in the central region, that is in the zone of agriculture, varies between 700 and 1000 pesos of 18d the square cuadra (the *cuadra*, Chilian measure of surface, is equivalent to 125 × 125 metres) and the ground of the best quality in the surroundings of Santiago, the capital, costs from 1000—1500 pesos the square-cuadra. In the southern region it costs 400—700 pesos. In Magellan, the country which has been sold last by the government, the prices varied between 3 and 15 pesos the hectar.

Population.—Owing to the difficulty of taking a census in so large a country the number of inhabitants is not yet accurately known; it may, however, be estimated at 4 000 000 souls. In the middle of the 19th century Chile had a population of at least $1^1/_2$ millions.

The largest towns in the country are the capital of the Republic, Santiago, with 320,000 inhabitants, and Valparaiso, the chief harbour in Chile, with 150,000 inhabitants.

Chile has an area of 752,912 square kilometres, and in this enormous stretch of land there are only 4 million inhabitants. We would here point out that Belgium has an area of 29 456 square kilometres and a population of 6,670,000; France has 38,518,000 inhabitants in an area of 536,408 square kilometres, and Great Britain according to the last authorized census of 1899 a population of 40,559,000 in an area of 314,339 square kilometres. When we consider that the German Empire with its 540,000 square kilometres has to-day a population of 54 million inhabitants, and not too thickly crowded either, Chile with its splendid climate and fertile soil is even in its central portion very thinly populated. Twenty million more people



PRINCIPAL ENTRANCE TO "CERRO DE SANTA LUCIA". SANTIAGO.

can certainly find a livelihood on the mainland and on the large islands in the Southern district by means of agriculture, cattle-breeding, industry, and by more thoroughly working the mines and exploring the forests.

According to the latest statistics issued in 1895 there are living in Chile 6241 Englishmen, 7049 Germans, 1490 Austrians and Hungarians, 8296 Spaniards, 7809 Frenchmen, 7587 Italians and 1570 Swiss (almost all live in the new colony of Araucania), so that according to these statistics there are altogether 42,105 Europeans. The actual numbers however are much higher, especially in regard to the Germans. There are 29,687 souls from the other Republics of America; among these Peru heads the list with 13,695, the Argentines come next with 7531 and the inhabitants of Bolivia come third with 6654. In these statistical data the province of Tacna is not included.

There are no negroes in Chile. Thus the uniformity of the race is explained, which for the most part belongs to the pure white, North Spanish race. Among the rest are about 50,000 representatives of the pure American race.

The Indians are called Araucanians; they are no longer independent wild clans, but work on the farms of the inhabitants of Chile or of those of the foreigners living near the old Araucanian territory. Their children are nearly all baptised and attend the public schools, and those of the Franciscans who are actively engaged in that district with good results.

The Chilian Mestizo, the result of the mixture of Spaniards with Araucanians, is noticeable for his strength and valour and makes a brave soldier and excellent workman; he is much prized in the mines and other enterprises of Chile and other countries in America, where there is a demand for strength and energy.

As we have already stated, the largest towns in the country are the capital of the Republic, Santiago, and Valparaiso, the chief harbour. Both are well provided with public buildings, palaces belonging to the first families of the land, beautiful churches, theatres, monuments, hospitals, schools and a well-organized police force. The

trams in Santiago and Valparaiso are now driven by electricity and the streets and many of the buildings are lighted by it. The Alameda in Santiago, a lovely promenade, divides the capital into two parts; it is 4 kilometres long and 80 metres broad. Trees are planted on it; it is ornamented with numerous monuments and affords a lovely view of the Andes which are forever covered with snow, and appear to be in the immediate neighbourhood.

Almost in the centre of the town rises the hill of Santa Lucia with its beautiful hanging gardens on natural rocks. Elisée Reclus says in his geography that the most wonderful views are to be enjoyed from this hill. Santiago is 560 metres above the sea level.

A considerable number of Englishmen, Germans, French, Italians and Spaniards, are living in both towns, all of whom have their respective clubs, hospitals, schools, fire-brigades and similar institutions.

Valparaiso's trade extends as far as Mexico and California, and constant communication is kept up through the strait of Magellan with Europe and New York. The harbour of Valparaiso is very fine and spacious and offers a continually changing scenery of steamers and sailing vessels, from which nearly all the flags in the world are waving.

A quarter of an hour's distance from Valparaiso lies the little town of Viña del Mar with its 15 000 inhabitants. It is known for its excellent climate, which is so mild that the gardens surrounding the houses and hotels produce the most beautiful flowers the whole year around.

By reason of their industry, agriculture and mines the towns of Concepcion, Iquique, Valdivia, Chillan, Serena and Talca are also of importance.

SECOND CHAPTER.

HISTORICAL SURVEY.—UNDER SPANISH AUTHORITY.—THE REVOLUTION.—INDEPENDENCE.—THE REPUBLIC.

Under Spanish Authority.—The American continent, to which Chile belongs, was discovered towards the end of the fifteenth century by the Italian navigator Christopher Columbus, who had offered his services to Spain when his ingenious plan did not meet, in his own as well as in other European countries, the reception it deserved.

Columbus' successors soon went forth as far as Peru and found the inhabitants to be of a comparatively advanced civilisation. The terror of subjugation, however, and the greed of the Spanish leaders had a most deleterious effect upon the tribes settled in that neighbourhood, and in order to prevent quarreling among the leaders, the country was finally divided among the latter.

Diego de Almagro received the portion situated South of Peru called Chile. He was however unable to take possession of this territory, for he had to deal with a stubborn, warlike people, who refused to give way to the superior arms and the courageous attitude of the Spanish soldiers. Despite the greatest exertions Almagro was forced to retreat to Peru. Then Pedro de Valdivia, a courageous leader, undertook to prepare a new expedition to Chile; he thought that with a better equipped army of considerable size he would be able to conquer the country situated south of Peru. He succeeded, but not without difficulty, in reaching the centre of Chile as far as the bank of the

OFFICE OF THE GENERAL COMMANDER OF THE MARINE AND MOLE PRAT. VALPARAISO

river Mapocho, where he founded upon the hill of Santa Lucia the town of Santiago on the 12th of February 1541, which later on became the capital of the new country.

Horrible acts of cruelty perpetrated by the Spaniards on the inhabitants naturally resulted in the people rising up in countless hordes throughout the whole country to fight for their liberty. The Araucanian chiefs Lautaro and Caupolican attacked Pedro de Valdivia when he had left Santiago to exterminate his stubborn opponents in the South. Pedro de Valdivia was helpless against the new tactics displayed by the Araucanians, which consisted in dividing their forces into many bands and attacking the Spaniards consecutively in order to tire them out and to annihilate them: he was beaten by them in the end.

The Araucanians took advantage of this opportunity to avenge all the acts of cruelty sustained; the Spanish leader with his soldiers were killed in a battle after offering valiant resistance.

The joy of victory of the native Indians was not of long duration; the Spaniards who had remained in Santiago continued the struggle and completely annihilated the enemy. In these battles the leaders Caupolican and Lautaro were killed.

Towards the middle of the sixteenth century, when the conquest of the territory was ended, the Spaniards had extended their sway over the whole country. Until the end of the eighteenth century the history of Chile has no important events to be recorded; all progress was arrested by the poverty of the new colony and the want of interest manifested by the Governors.

This sad state of affairs was at last changed by the appointment of Don Ambrosio O'Higgins as administrator of the new country which then began to make speedy progress. O'Higgins was an Irishman, and came as a trader to Peru: he was sent to Chile as the King's official. The erection of a large number of public buildings is due to his indefatigable activity; he built among others the Cathedral and the Mint, and erected in Santiago damms as a protection against the continual overflowing of the

Mapocho. In the course of his honourable and arduous administration he also founded numerous towns, and facili-

SPANISH HOUSE FROM THE OLD COLONIAL PERIOD.

tated traffic by constructing many country roads which were a blessing in every way to the poverty-stricken land.

During those times of Spanish government poverty and ignorance were astonishingly prevalent among the inhabi-

tants of Chile. All import of books and literature into the American colonies had been forbidden by Royal command, in order to prevent the engendering of all thoughts of freedom. All material progress was moreover quite out of the question because all trade and commerce was monopolised by the King. Direct import of European wares was absolutely forbidden, and colonial products were not allowed to be exported to Europe. In consequence of these conditions dreadful distress prevailed among the population, who had to pay immoderately high prices for the necessaries of life. And so the Spanish state funds increased more and more, while the colonies in their distress suffered the pangs of starvation. At that time Chile was so poor that the Peruvian treasury had to help towards the payment of the cost of administration.

In spite of the great distress and the complete subjugation of the inhabitants of Chile, who believed that blind obedience to the King was a commandment of God, ideas about freedom began to crop up. These being widely spread at that time and traceable to the struggles for liberty in the English colonies in North America towards the end of the eighteenth century.

The declaration of independence on the part of the United States served as an instructive example to the South American colonies, and very soon the results thereof were to be noticed in the Spanish colonies.

The Revolution.—At the beginning of the nineteenth century Napoleon Bonaparte entered into Spain, dethroned the ruler there and proclaimed his brother Joseph King. This event was conducive to revolutionary ideas, which were spreading in the Spanish possessions in America, despite the forcible measures taken by the King's representatives to stifle ideas which they considered contrary to the unconditional subservience to which the colonies were pledged.

The colonies refused to recognise the supremacy of the new King Joseph Bonaparte, and determined to organise an administration of their own and to institute governments of their own, until the usurped throne should be occupied by the lawful ruler.

The latter scheme however was but a pretext to hide the actual aim of the movement that followed upon the complete independence of the colonies.

MONUMENT OF SAN MARTIN.

The representatives of the legitimate King realised the new situation to its full extent and forcibly opposed the realization of the alleged plans, which would necessarily have caused the renunciation of the Spanish supremacy. But it was too late; the revolutionary spirit had taken

possession of the whole population, and henceforth freedom and independence formed the ideal to be sought for and, if necessary, fought for. The only hope was that success would crown such a noble and bold enterprise as that of rendering the country independent.

The first independent government of Chile was instituted on the 18th of September 1810, which day has ever since been celebrated as the anniversary of the national independance. One of the first measures introduced by the first Chilian Congress was the non-importation of slaves into Chile; the Congress determined moreover that the children born of slave parents and living in Chile should be free.

In order to restore the absolute supremacy of the King, the Spanish government in Peru collected the necessary troops to attack the Chilian patriots and at the end of 1812 sent a strong army to the south.

After many battles between Spaniards and patriots, in which the latter almost always remained victorious, a decisive encounter took place at Rancagua not far from Santiago which ended in the annihilation of the troops of the revolutionary party. The leader of the patriots, on this so baneful, but still so glorious day, was the brave General O'Higgins, a son of the former governor Ambrosio O'Higgins.

After this heavy defeat the patriots realised that the aim they had in view had to be abandoned for the present, and in order to escape the revengeful measures of the despotic Spanish government they fled from Santiago to Mendoza across the Andes. Countless acts of violence were perpetrated during the reconquest by the Spaniards. The most prominent inhabitants were banished to the desert islands of Juan Fernandez and secret executions took place in the prisons. Captain San Bruno, whose name has been handed down in Chile to the present day as a prototype of a brutal, bloodthirsty tyrant, was guilty of the most unheard-of deeds of barbarity. The inhabitants were robbed of their possessions, and excessive taxation was enforced.

These circumstances served to strengthen more and

more the wish for a free country at any price in the minds of the victims.

Independence. — The Chilian General, O'Higgins, had

GENERAL BERNARDO O'HIGGINS.
(Reproduction from an old portrait.)

fled after the defeat at Rancagua with the remains of his troops to Mendoza in Argentina, where he met the Argentine General, Don José de San Martin, with whom he was on terms of the most intimate friendship.

San Martin, a strong and honourable officer, had formerly taken part in numerous battles against Napoleon's army, and was Governor of Mendoza at the time of O'Higgin's arrival at that town. Both generals decided to equip a strong expedition to liberate Chile. They spent two years preparing for it, and at the end had gathered an army of 5200 men, 1600 horses and a large number of mules. Despite the watchfulness of the Spaniards they crossed the Andes at the Uspallata Pass, which is 4000 metres high and always covered with snow.

General San Martin, commander in chief of the expedition, surprised the Spanish troops near Santiago on the Chacabuco Hill on the 12th of February 1817.

In this battle and in the following at Maipo, which was the greatest in the war of independence, the Spaniards were completely beaten. This extraordinary success on the part of the patriots brought the Spanish supremacy to an end and assured the independence of the country.

After Chile had freed itself from the Spanish yoke, San Martin and O'Higgins determined to send an expedition to Peru, to drive out the Spaniards from that country also. In order to accomplish this it was necessary to organise a fleet to protect the army. In spite of Chile's great poverty the two plucky generals succeeded in equipping a small fleet comprising 4 men-of-war which was soon strengthened by vessels taken from the enemy. This fleet left the harbour of Valparaiso under the leadership of Admiral Lord Cochrane, one of the most brilliant officers of the English navy, who had come entirely on his own accord from Europe to enter Chilian service. On the 5th of November Lord Cochrane took possession of the Spanish ships lying in Callao harbour under the protection of the harbour guns, by means of a daring *coup de main* and thus cleared the way for the army which was pressing forward under General San Martin.

In June 1821 the army entered Lima.

During these events O'Higgins had remained in Chile at the head of the government and acted as administrator for six years till January 1823.

On perceiving that public opinion was no longer satisfied with his administration he preferred to retire from the government so as to save his mother country from the

MINISTER DIEGO PORTALES.
(Reproduction from an old portrait.)

terrors of a civil war. By this act he gave his fellow citizens an example of the most noble unselfishness and retired into private life in Peru. He died there in the midst of his agricultural work at the beginning of 1842.

The Republic. — After General O'Higgins' retirement there followed some years of anarchy, until General Joaquin Prieto, who was engaged in subjugating the hostile Indian tribes in Araucania, marched to Santiago, beat the governmental troops and with the cooperation of Diego Portales created a strong central government.

Portales, a merchant from Valparaiso, who had already when a young man given proof of an energetic character and indefatigable industry, received the command to undertake the Ministry of the Interior from President Prieto.

He showed great perspicacity in his new position and also a great capacity for his office, so that he succeeded in raising the administration of Chile greatly. Through his energy anarchy disappeared from the Republic and gave way to the development of public institutions, which are now the object of Chile's just pride. In 1833 Chile received the political constitution, which with the exception of unimportant changes that have gradually and quietly come about; has remained unaltered up to the present day.

The organisation of the Republic was finally concluded under the presidency of General Prieto and the administration of the finances satisfactorily arranged.

Under his rule Valparaiso developed into an important trade emporium on the coast of the Pacific Ocean. —

It was also under his administration, that the Bolivian general, Santa Cruz, intended to form a Peruvian-Bolivian confederation, but in reality to take possession of the sister Republic of Peru, in order to gain predominance on the west coast of South America. In this plan Chile perceived a threat to her own existence, and President Prieto sent an army under General Manuel Bulnes to frustrate General Santa Cruz' plans. The latter's army was completely beaten by the Chilian troops under General Manuel Bulnes in the battle at Yungay near Lima.

On his return to Chile General Bulnes was elected President of the Republic; this high office he filled from the 18th of September 1841 till the 18th of September 1851.

During these ten years peace was not disturbed at home or abroad. Numerous educational institutions were foun-

ded; among them the University, the Teachers' Seminary, the Art- and Industrial-School and the Naval-School at Valparaiso. The town of Punta Arenas in the Strait of Magellan was founded during that period of time, and steamship traffic on the coast of the Pacific was also established.

President Bulnes was succeeded by Manuel Montt, one of his best ministers, on the 18th September 1851.

President Montt was obliged to suppress two revolutionary movements which broke out, one at the beginning, the other at the end of his administration. To his honour it must be recognised that he achieved many great works, among which are the railway from Santiago to Valparaiso. A railway from Santiago to the south as well as the artillery barracks and the congress palace in Santiago, were likewise begun at that time.

President Montt paid especial attention to the development of public instruction and the advance of trade and national industry. For the promotion of the latter he founded the colonies of Valdivia and Llanquihue. He had persuaded numerous German families to come there, and they worked these regions for half a century to great advantage to themselves and the country. The foundation of the first banks in Chile also took place at that time; the object of the latter was to take money into their keeping and by means of loans support landowners, mine owners, and manufacturers who needed capital in their undertakings.

On the 18th of September 1871 President Perez succeeded Montt at the head of the government. By his moderate and conciliatory policy he assured internal peace to Chile. Unfortunately he did not succeed in maintaining peace with foreign countries also.

It was impossible for him to avoid war with Spain. This war originated with Spain's attack upon Peru, from which it wanted to take the Chincha Islands. Inspired with the feelings of brotherly affinity Chile allied itself with Peru, Bolivia and Ecuador to cooperate in waging war. During the war the Chilian corvette Esmeralda under

the command of Captain Williams Rebolledo took possession of the Spanish gunboat Covadonga, whereupon the harbour town of Valparaiso was bombarded by the combined Spanish fleet. Valparaiso was an absolutely unfortified commercial town, without guns and without any means of warding off an attack. After the completion of this work of destruction the Spanish fleet left the Chilian coast, and with this the war practically came to an end. In 1867 a truce was agreed upon, and twelve years later peace was definitely agreed to.

After these events the fortification of the harbour of Valparaiso was commenced so as to avoid any repetition of such occurrences. At that time the railways begun during Montt's administration were finished; the southern line was continued as far as Curicó and the lines from Chillan to Talcahuano and from Llaillai to Los Andes were begun. Finally new telegraph systems were laid so as to connect the whole central territory of the Republic.

President Perez' successor was Federico Errázuriz. He governed only five years, in accordance with a law which he himself laid before the Congress and by which the immediate reelection of the President was not permitted.

Like President Bulnes, Errázuriz had the good fortune not to be disturbed during his term of office by either revolutions or foreign warfare; thanks to this circumstance he was able to complete many tasks of the greatest importance to the Republic. The railways that had been begun were completed, the southern line to Chillan lengthened, and a new railway from San Rosendo to Angol laid down.

He completed the building of the warehouses at Valparaiso as well as the congress- and exhibition buildings at Santiago. To him is due the fact that the Chilian fleet, which was only in its infancy, was increased by the purchase of two new iron-clads in 1873, the Almirante Blanco and the Almirante Cochrane, and the gunboat Magallanes. Six years later Chile owed her victory in the war against Peru and Bolivia to these ships.

The next President, Don Anibal Pinto, entered office

on the 18th of September 1876, and governed till the 18th of September 1881. During his administration the country was afflicted by great economical distress: caused by the failure of the silver- and copper mines, the products of which formed the main portion of the annual exports. Besides this there arose serious foreign complications which led to a war with Peru and Bolivia at the beginning of 1879.

MONUMENT OF ARTURO PRAT AT VALPARAISO.

In 1866 a boundary treaty had been signed by Chile and Bolivia in which the former recognised the interests of Chilian citizens resident on the Bolivian coast. As Bolivia did not act up to several articles of this treaty, Chile in 1879 declared the treaty null and void and had

the harbour of Antofagasta occupied with soldiers. The Peruvian government, emphasising their friendship towards Chile and Bolivia, offered their services as mediators in order to avoid war, and with this object in view sent a plenipotentiary on a special mission to Santiago. Soon however it was discovered that there had existed since 1873 a secret alliance between Peru and Bolivia. The Chilian government therefore considered the allied parties as enemies and declared war on them on the 5th of April 1879. The chief event during this war is the naval battle of Iquique, in which the old wooden ships Esmeralda and Covadonga were used by Chile against the Peruvian iron-clads Huascar and Independencia.

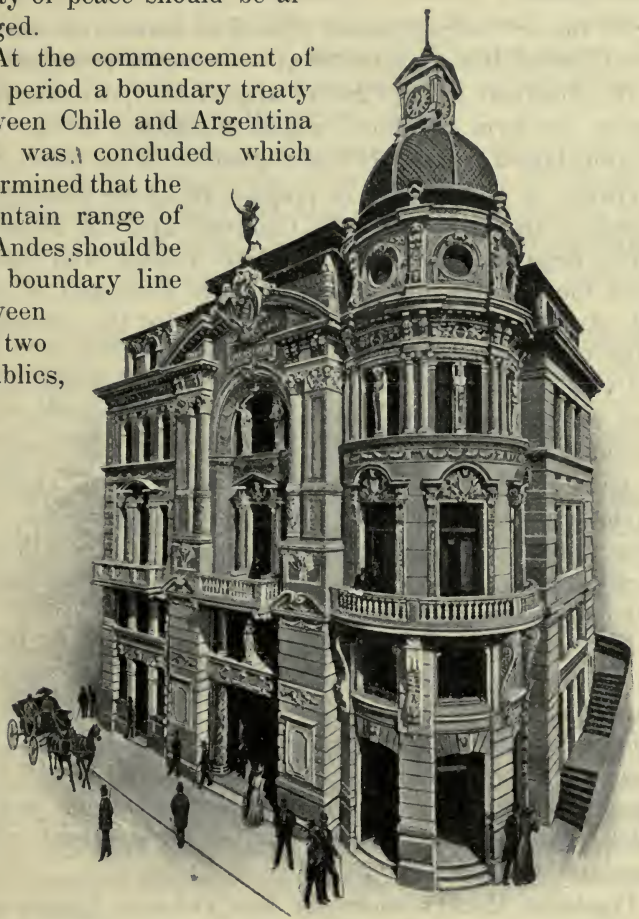
When Captain Arturo Prat, in command of the Esmeralda, noticed that his ship, which was being pressed by the Huascar, was beginning to sink, he leapt with some of his men on board the enemy's iron-clad in order to seize it. His daring act, however, was not crowned with success, and he and his brave followers met with an heroic death on board the Huascar. Soon after this the Esmeralda sank with her flag still hoisted. This heroic deed of the captain had a most inspiring effect upon the Chilian army, which, under the command of General Baquedano, fought numerous battles with the allied hostile troops, and always with a victorious issue, as for instance at Tacna, Chorrillos and Miraflores, the biggest in South America, and entered Lima in January 1881.

On the 18th of September of the same year Domingo Santa Maria, who had been minister under Perez and Pinto, succeeded as President of the Republic.

To his lot fell the difficult task of making peace with Peru. The treaty was signed in April 1884. In it Peru surrendered unconditionally the province of Tarapacá to Chile, whilst the territories of Tacna and Arica were to remain under Chilian government for a period of ten years, after which time the inhabitants of the territories in question on certain conditions were to determine by general vote with which of the two states they desired to be definitely incorporated. President Santa Maria also proclaimed a

truce with Bolivia, according to the terms of which Chile was to maintain possession of the Bolivian coast until a treaty of peace should be arranged.

At the commencement of this period a boundary treaty between Chile and Argentina also was concluded which determined that the mountain range of the Andes should be the boundary line between the two republics,



NEW BUILDING OF THE "MERCURIO". VALPARAISO.

that the Strait of Magellan should le considered as a portion of Chile, the eastern portion of Patagonia as a part of Argentina, whilst the Tierra del Fuego was divided between the two states in accordance with a border line mutually agreed upon. There still remained, though, some important points unsettled.

There were, moreover, a number of important laws passed, among others those on civil marriage and public churchyards.

On the 18th of September 1886 José Manuel Balmaceda, one of Santa Maria's ministers, was elected president.

He governed till the 28th of August 1891, without completing his term of office, which according to the constitution lasted till the 18th of September of the same year.

Owing to a difference of opinion about the constitution a conflict arose between the Congress and the President of the Republic, and this ended in a long civil war in which the country lost many precious lives and a great deal of money. The revolution ended by the overthrow of the central government.

Under Balmaceda's administration large public works were completed; orders were given in Europe for new warships, and the army was provided with new arms.

After Balmaceda's death there stood at the head of the Government a committee elected by the national congress, which arranged general elections for the filling of the presidency, the new formation of the senate, the chamber of deputies and the town boards.

As President of the Republic was elected Jorje Montt, one of the most eminent heads of the navy and member of the government committee. Montt was faced with the difficult task of rendering secure the new government and lessening the hardships of a long and bloody war. Conspicuous among the acts of his administration was his zealous care bestowed on the further development of the army and navy.

President Montt's successor was Federico Errázuriz, a son of the former President of the same name. The country continued under his administration to develop favourably.

President Errázuriz died on the 12th of July 1901. During his illness the Minister of the Interior, Anibal Zañartu, in his quality of Vice-President of the Republic was entrusted with the executive power till the 18th of

September 1901, on which date President German Riesco, elected on the 25th of July, entered on his functions.

The old and difficult boundary question between Chile and the Argentine Republic has been happily arranged under his administration by means of a treaty of arbitration as well as the designation about the equalization of both military forces in May 1902.

By virtue of the former all controversies that may arise between the two states are to be decided by His Majesty the King of England, and the military powers of both states are to equal each other according to this designation, in order to avoid any superiority of one state over the other.

These resolutions, the fairness of which was recognized by the whole civilized world, were crowned by the decision of His Majesty the King of England, by which the contention about the boundary line which had lasted half a century, has been ultimately determined upon.

In consequence of this decision none of the states gained the victory, that is none of the boundary lines which either of them had been fighting for has been decided upon. Moreover the contested tract of land has been divided: Chile received 54,000 and Argentina 40,000 qkm. of it.

Chile received the largest portion of the territory in dispute in the far south (Ultima Esperanza) as well as in the precincts of the rivers Cisnes and Aisen($44^1/_2$—46° southern latitude) and the Argentin Republic received tracts of land in the North in the boundary territory (the valleys Villegas Nuevo, Cholila, 16 Octubre, Frio and Palena or Carrenleufu superior) between the mountain Tronador and the river Palena.

There is a map attached to this book on which the boundary line is marked according to the arbitration.

PALACE OF GOVERNMENT. SANTIAGO.

THIRD CHAPTER.

GOVERNMENT.—POLITICAL LAWS.—PUBLIC EDUCATION.—ARMY AND NAVY.

GOVERNMENT. — The government of Chile is that of the people and representative, the Republic being single and indivisible. It does not consist of Federal States, as is the case with some of the American republics.

There are none of those little feelings of jealousy which arise in the different provinces of the Republic governed from one single point; and herein rests the main political and administrative strength of Chile.

There are three chief powers at work in the nation: executive, legislative, and judicative; this is in accordance with the constitution of 1833, and only very minor changes have been introduced since that date. The executive lies in the hands of a President and the Ministry, which consists of six members, appointed by the President. The latter is indirectly elected by the people, who choose three

electors for each deputy, and they represent the departments of each province.

The President is elected for 5 years, and cannot be immediately reelected. The inauguration of the new President takes place on the 18th of September, the anniversary of the independence of Chile. The President with the Ministers governs with a State Council of 11 members, of whom 6 are elected by Congress and 5 by the President of the Republic.

PALACE OF CONGRESS. SANTIAGO.

The legislative power rests with the Congress, which consists of 2 Chambers, the Chamber of Senators and the Chamber of Deputies. Both are elected directly by the people. One deputy is elected for every 30,000 inhabitants and holds office for a period of 3 years. The senators are elected for 6 years, one to every three deputies, and half the senate is reelected every three years. There are 94 deputies and 32 senators. The voters must be 21 years old and be able to read and write. To be elected as a deputy the same age is required and to be a senator the candidate must be 36 years old. Deputies must have a private income of at least 500 pesos. They receive no

remuneration whatever for their work; they are not allowed to fill any public office, and are not bound by any contract to the Government, but they can always be reelected.

The judicatory power is absolutely and independently exercised by officials, who are appointed by the President of the Republic according to definite rules and cannot be removed from office except on the ground of a legal decision. The power in question consists of:

1. The supreme court of law, consisting of 10 members, who reside in Santiago and exercise jurisdiction over the whole Republic. They possess corrective disciplinary and economical authority over all lawcourts of the nation.

2. Six courts of appeal, which have their centres in the capital of the Republic and in the towns of Concepcion, Serena, Tacna, Talca, and in Valparaiso.

There is moreover a scholarly judge or special judge in the capital of each department. In the subdivisions of the department there are 858 subdelegate judges and 3068 district judges.

The rights and interests of the governments are represented before the courts by public prosecutors or solicitors to the treasury who are in each department.

Political Laws. — In Chile there are no privileged classes, and all are equal in the eyes of the law. There is only one jurisdiction, with the exception of the military one for purely military crimes. The freedom and safety of person and property are guaranteed. No one can be arrested without a warrant unless he be caught in the act.

There exists moreover absolute freedom to assemble in bodies and to form societies. As a matter of fact there are many scientific and political societies as well as unions of artisans, workmen and others. The inhabitants may hold large meetings without announcing these beforehand, but the participants may not carry arms with them.

Freedom of the press also exists, not only on paper but also in reality, and this noble privilege has already been often abused. There are many newspapers and periodicals printed in Chile. The "Mercurio" of Valparaiso, founded in 1827, is the oldest paper in South America.

INTENDANCY AND TOWN-HALL. SANTIAGO.

The Roman catholic, apostolic, religion is protected and supported by the State, although there exists complete liberty of religion and in fact there are Protestant churches, schools and churchyards in different towns. There is an Archbishop, who resides in Santiago. This high office is at present held by Archbishop Don Mariano Casanova, consecrated on the 30th of January 1887. The three bishops reside in Concepcion, Serena, and Ancud, and the two vicars in Antofagasta and Tarapacá.

The prisons now existing in the country number 92; among these are 15 cell prisons with 2180 cells and 7 reformatories for women. There are besides numerous country prisons and police stations.

Prisoners are taught reading, writing and various useful trades. For this purpose there are workshops in most of the prisons. About 1200 prisoners work at different industries and for private persons. By this the treasury gains about 20,000 pesos.

The organisation and privileges of the municipal towns are regulated by the law of the 22nd of December 1891, by which the autonomy of the community was called into existence. All municipalities as well as the police force are to a certain extent under the control of the Minister of the Interior.

The municipalities encourage and superintend the progress and maintenance of their respective localities, the organisation and maintenance of the police force in all the towns, except in the capitals of departments, the health, cleanliness and adornment of the localities, elementary instruction, agriculture, industry, and trade. The budgets of expenses and accounts must be submitted to the assembly of municipal electors for their approval. The municipal towns are authorised to raise loans for the promotion of public health and cleanliness, for the building of roads, for educational purposes, etc.

The income belonging to the municipal towns with which they meet their legal obligations, consists of: a duty on moveable and immoveable property, which however is not higher than 3 per thousand; places where alcoholic drinks are sold also pay duty; the contributions of the treasury, granted every year by congress; the amounts handed over by property owners in the community, the fines and various other sources of income, and finally the

MUSEUM OF NATURAL HISTORY.

patents, or sums of money which have to be paid by industries and trades.

The municipal income of the Republic of Chile amounts to about 10—12 millions of pesos.

The police force in the capitals of the departments is directly under the control of the Minister of the Interior, according to the law of the 8th of February 1896. Its organisation is managed by the President of the Republic, and its expenses paid from the treasury of the State.

In consequence of this law the safety of person and property has improved in the small towns and in the country.

The other police forces not included in the above mentioned law are dependent on the Alkalds or mayors of the municipal towns and are paid by their respective communities.

The entire police force of the Republic consists of 500 officers, 934 noncommissioned officers (gensdarmes of the first and second class) and 5400 police soldiers or policemen.

A special organisation in Chile are the corporations or companies of firemen in nearly all the towns.

These companies own the best apparatuses, buildings, and depots. Their members wear uniform, and only a few companies in small towns receive a subvention from the Government. As a rule the members of the companies bear all the costs and in large towns there are also companies of foreigners of different nationalities.

The total number of these companies is 84.

Public Education.—In Chile there exists absolute freedom in educational matters and everyone can give and enjoy whatever lessons are agreeable to him, provided that such instruction does not militate against good morals and the safety of the State. But to obtain degrees or to be admitted to the University it is necessary to pass examinations before the official committee appointed by the board of public education.

This holds its meetings in Santiago and consists of 14 members; among them are the Minister of Education, the rector and the deans of the University, two members appointed by the University and three by the President of the Republic. The main duty of this board is to superintend the intermediate and the higher or university education.

Education is free in all state institutions from the elementary school to the university, and poor children receive books and other educational material gratuitously.

In Santiago there is a state university with five faculties, namely: theology, law and political science, medicine and pharmacy, natural science and mathematics and philosophy. In the capital there is moreover a Catholic

university with faculties for law, natural science and mathematics.

For the intermediate education there is the National Institute in Santiago, which has a very large number of students, not only from Chile, but also from all other countries of Spanish America. This institute was founded shortly after the Declaration of Independence in Chile. In all the capitals of the provinces and in the capitals of

MEDICAL SCHOOL. SANTIAGO.

the most important departments there are schools for boys and girls.

Special education is granted gratuitously by the State in: an agricultural institute and schools for agriculture and mining; a school for arts and trades; a pedagogical institute for the training of teachers for the intermediate schools; seminaries for the training of male and female teachers for the elementary schools; a deaf and dumb institute; an academy for painting and sculpture; a conservatory for music and declamation; a course for pharmacy, dentistry and midwifery.

The Government has also formed a commercial-technical institute, to encourage the studies in this department.

In 1901 there were 1788 schools for elementary education; of these 678 were attended by pupils of both sexes, while 87 were set apart for intermediate education.

The total number of children registered in all these schools amounted to 113,865.

Besides these schools maintained by the State there are numerous others kept by religious corporations and

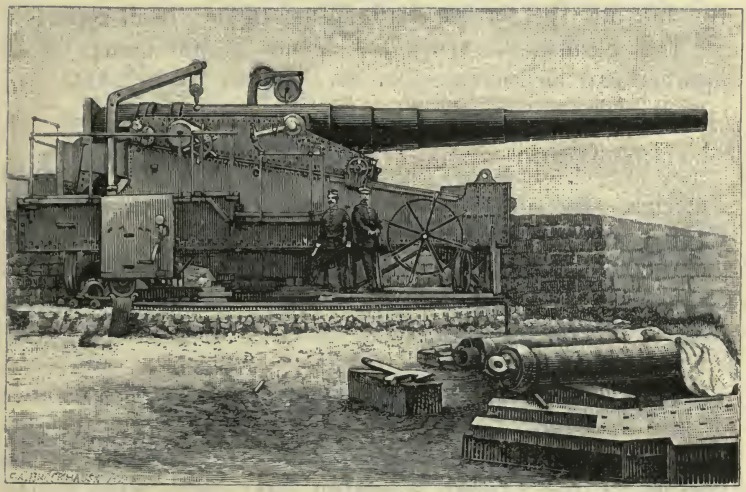
OBSERVATORY. SANTIAGO.

societies (527), where instruction is also free; and finally there are many schools founded by private persons, where instruction is paid for. Some of these institutions are as good as the best in Europe.

There are public libraries in the capital and in nearly all the principal cities of the provinces. The most important is the national library in Santiago, with over 100,000 volumes. There are also small libraries in the capital in various scientific institutes and a large library in the National Institute containing more than 40,000 volumes. In each school and in each seminary in the province there is also a small library.

Army. — The Government has spent a large sum of money and has been trying for years to provide the army with the best weapons and with trained officers. For this purpose a considerable number of European officers were obtained who have acted as instructors to the troops or as teachers in the military academy and in the school for noncommissioned officers.

In military matters, that is in regard to the distribution



FORT VERGARA. VALPARAISO.

of its forces, the country is divided into five zones, the first of which comprises the Northern provinces, the second the central provinces including O'Higgins; the third zone stretches as far as the province of Concepcion which is included in it; the fourth and fifth comprise the large southern remainder of the country. The management and command of the army is under a general staff divided into 6 departments with different spheres of work. The officers' corps in the standing army consisted at the end of 1902 of: 4 generals of division, 6 brigadier generals, 18 colonels, 44 lieutenant-colonels, 91 majors, 225 captains, 279 lieutenants, and 248 second-lieutenants or ensign-

bearers. In addition to these are about 7000 non-commissioned officers and common soldiers. This army consists of 10 regiments of infantry, 8 regiments of cavalry, 5 regiments of artillery, 1 engineer corps and 2 regiments of fortress artillery for defending the coast. In the month of September 1900 universal military service was established in accordance with the German system. All young men capable of serving who have reached their 21st year, are to serve in the active army during a period of 9 months. By this law the former national guard has been replaced.

The permanent army has about 17,500 men, which number can be increased in case of war to 150,000.

Navy. — Chile's navy is one of the strongest in South America. Its organisation is identical with that of the English navy. It consists of 10 cruisers, of which the largest are: O'Higgins with 8500 tons; Capitan Prat with 6966 tons, and the Esmeralda with 7030 tons. Besides these more or less strongly armored men-of-war there are 3 torpedo cruisers, 7 torpedo catchers, 2 gunboats, 7 torpedo boats for the high seas and 7 for the defence of the harbours. There are also several steam freight-ships and one modern trainingship. The majority of the vessels of the Chilian squadron have been built in the best English ship-yards.

The officers of the fleet are: Vice Admiral and commander in chief of the Chilian Navy (this office was once held by the former President Jorje Montt), 7 rear-admirals, 18 sea-captains, 28 fregate captains, 28 corvette captains, 32 first lieutenants, 71 second lieutenants, 19 1st class mariners, 71 2nd class mariners, 19 1st class pilots, 15 2nd class pilots, 38 3rd class pilots, 2 1st class doctors, 7 2nd class doctors, 17 1st class surgeons, 5 2nd class surgeons, 3 chief paymasters 1st class etc. Besides these officers there are also crews of all kinds numbering 4000 men. The Naval School is under the Admiralty in Valparaiso, where young naval officers are trained. This school is attended by the sons of the best families. Its programme

of study is based upon that adopted by the English Admiralty for His Majesty's Naval Schools.

The Admiralty directs the hydrographical office (Officina Hidrográfica), which is mainly occupied in exploring the coast of Chile. It has published numerous valuable maps and issues a year-book every year, comprising an array of the most recent news important to navigators.

Finally, the fact should also be mentioned that recruits, sailors, etc., who are unable to read and write on entering the army or navy, are taught it in special military schools.

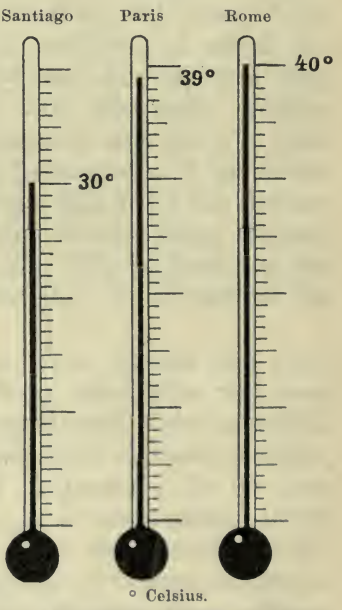
FOURTH CHAPTER.

CLIMATE.—COLONIES.—IMMIGRATION.

CLIMATE. — A wrong and very erroneous idea exists generally, especially in Europe, in regard to the temperature of Chile. By reason of its topographical configuration Chile has a more agreeable climate than any other country in the world.

Its territory represents 3 zones which are marked by special characteristics. These are: 1) the Andes, which modify the trade wind, 2) the proximity of the Ocean, which gives to it the general peculiarities of a climate of the ocean, and 3) the vegetation and the position of the neighbouring mountain chains.

These zones are situated as follows: The first is between the 18th and 27th degree of latitude or in the region of the mines and deserts. It is divided into two parts, the septentrional between the 18th and 27th degree, which is a desert and renowned by its abundance of saltpeter; the other, the meridional, is situated



COMPARISON OF THE HIGHEST TEMPERATURE.

between the 27th and 30th degree of latitude and is notable for its beds of ore and its numerous fertile valleys, that yield rich agricultural products.

The whole septentrional region is characterized by a scarcity of rain. North of the 27th latitudinal degree rain and storms are quite unknown, the soil receiving its moisture from a heavy dew. The average temperature of Copiapó, one of the principal cities of that part of the country, is 17,18° in spring, 22,69° in summer, 17,18° in autumn and 13° in winter.

Often years pass without any rain between the 27th and 30th latitudinal degrees. North of the province of Tarapacá, the last rain fell in the year 1819.

Nevertheless thunder-storms often occur in the Andes, especially from November until February, that is in summer. The lower boundary line of this mountain chain, that is where snow falls, is, according to the statements of the geographer Pissis, situated below the 38° latitudinal degree to 2100 m. above the sea level; below the 36°, 2600 m.; below 34°, 3400 m.; below 32°, 4300 m.; below 30°, 4900 m. and below 28°, it rises to 5500 m.

The cold drifts that come from the south and flow near the coast, diminish the high temperature of the summer all over Chile and partially replace the want of rain.

The climate in the central zone is generally mild, agreeable and healthy. The average temperature does not fall in winter below 5° C. and although on some nights there is frost on the roofs and a thin cover of ice at the shores of stagnant waters, there are nevertheless delicate plants like the magnolie, the locust, and the olive that can stand the winter in Chile.

It rains there only when the north or northeast wind is blowing. Snow is as rare as thunder-storms and it disappears as quickly as it has fallen. Almost all fruit-trees have blossoms at the end of August and although it may rain in September the rising temperature indicates the approach of spring.

During spring the temperature varies between 14,8° and 26°; the air is clear and dry and it rains seldom.

The prevailing wind is an agreeable and refreshing south-western brise.

The average temperature of Valparaiso is 16,62° in summer, 13,73° in autumn, 11,41° in winter, and 13,09 in spring. That of Santiago 18,47° in summer, 12,68° in autumn, 7,39° in winter, and 13,06° in spring. In Concepcion it is 18,70° in summer, 13,61° in autumn, 9,24° in winter, and 14,31° in spring.

PARC COUSIÑO AT LOTA.

In the central zone fruit and cereals commence to ripen in December. Autumn is also very beautiful, although the air loses its clearness.

Santiago being situated high the thermometer often falls to — 6° in winter.

The third or island-zone lies between the 41st and 54th degree. The valley which divides it lengthwise has been partially entered by the sea; it has therefore numerous islands which yield an abundance of wood and many channels in which fishes are plentiful. It is on the whole a very rainy climate; during a large portion of the year

the sky is clouded. The lower border of the eternal snow-region remains 1400 m. high until the 43rd degree of latitude. According to the meteorological observations which have been made all over this region, especially in Ancud and at the coast of the large island of Chiloé, the highest temperature in the course of a year has been exactly 20° C. The rain-gauge has for the same length of time indicated 3,4 meter. It frequently hails and often freezes there, but even in the Strait of Magellan snow rarely falls. The main

MUNICIPAL THEATRE AT VALPARAISO.

rain period lasts from March until August, therefore in winter.

Chile being situated South of the Equator has inter-version of the seasons and when there is summer there, it is winter in Europe, it being situated in the northern hemisphere.

The average temperature of the most southern city of the Republic, Punta Arenas, is 10,97° in summer, 7,03 in autumn, 2,77° in winter, and 8,818° in spring. This city which is the most southern in the world has a very cool temperature.

The climate in Chile is in general remarkable on account of its local peculiarities; in Santiago the thermometer rises on the hottest days about 3 o'clock in the afternoon from 28° to 30° and falls in the evening to 20° in consequence of the agreeable and refreshing breeze which comes from the Cordilleras. At Valparaiso the mercury does not rise any higher than to 20° or 25° at 3 o'clock on the hottest summer days.

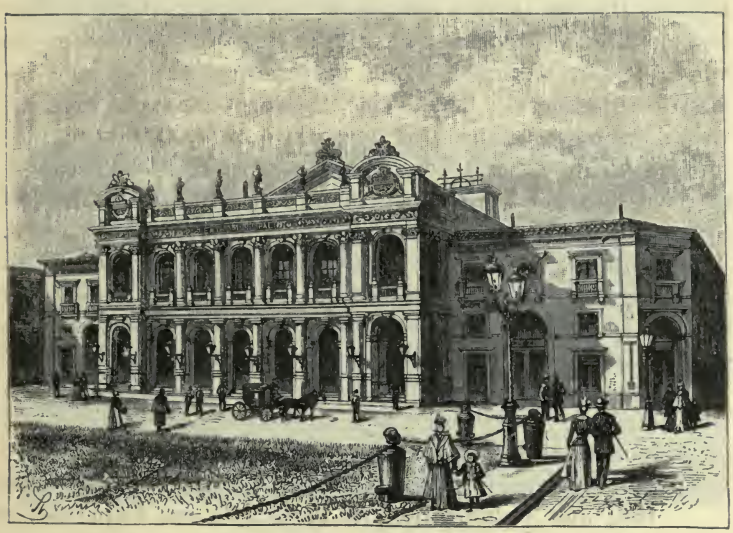
Reference should also be made to earthquakes. The general belief is that they are dangerous and often occur in Chile. This is a mistake, they are on the contrary very rare and hardly perceptible; they have never caused the slightest accident or damage, while accident caused by lightning are quite frequent in Europe.

It is no exaggeration to assert that cloudbursts, storms and floods, which work great havoc among the crops, are almost unknown. The climate is one of the best in the world, and suits most of the inhabitants who have immigrated from almost all parts of Europe exceedingly well. Marsh fever, called Terciana or Malaria, and the yellow fever are unknown in Chile.

Colonies.—The first European attempts at colonisation were made between 1840 and 1850. At that time most of the immigrants were Germans, and their attempt at colonisation proved absolutely successful. Lack of space does not allow us to enter into its history more minutely. By their industry and energy they succeeded in clearing large tracts of land after removing the thickly grown woods. Then villages very soon came into existence with numerous industries, especially breweries and tanneries, which at the present day belong almost exclusively to the descendants of those immigrants and are now worth millions of pesos. The centres of this first German attempt at colonisation are to day: Valdivia, Osorno, and Puerto Montt.

After the last revolution of the Araucanians had been put down with great energy and armed force at the end

of 1882 the government of the Republic determined to offer a large part of the fertile country belonging to the old Araucanians to European colonists. At this second period of colonisation, which lasted from 1883 to about 1890, the government made very favourable offers to the foreign colonists. They had a part of their journey thither paid and were presented with building lots of from 50 to over 100 hectars, according to the number of persons in the colonist's family. They received moreover a yoke of



MUNICIPAL THEATRE AT SANTIAGO.

oxen, seeds and agricultural implements, materials wherewith to build a temporary house and a sum of money to live on during the first year. The Government gave all these materials at cost price and this sum was, with the year's wages which they received, entered as a mortgage on the colonist's little property. The colonist had to pay back this mortgage in annual instalments after three years.

Despite certain mistakes inseparable from a first experiment, the majority of those colonists who understood agriculture soon began to prosper, and where until 1882 only wild savages had roamed freely, there are now

towns, villages, large fields planted with wheat and other kinds of corn, and large gardens in which all kinds of vegetable and fruit trees of Europe are cultivated.

Immigration.—In spite of these excellent climatic conditions and the guarantee offered by a land governed by an excellent legislation, only an insignificant number of immigrants have come there from Europe; the exact number of immigrants in half a century amounts to 40,500. And yet there is a vast territory of 752,912 square kilometres, that is to say half again as large as Germany or France, to be disposed of. This territory offers in its whole extent a rich field for agriculture, mining and industries in general. This vast stretch of land contains, as was mentioned in the first chapter, only 4,000,000 inhabitants. Although this population is hard-working, robust and enterprising, it is nevertheless insufficient to exploit the riches of the land. What Chile needs is population. Few countries are able to offer a greater amount of all kinds of advantages in regard to its climatical conditions as well as to the nature of its soil to the European who desires to live an easy and happy life based on work.

To the independent immigrant, that is to say the man who comes to the country without taking any duties whatever upon himself, following privileges are offered.

1. He receives from the General Agency for Immigration and Colonisation in Paris (10, rue Copernic) a ticket at a considerably reduced price; in many cases a reduced fare upon the European railways is also granted him.
2. Free passage on the Chilian railways as far as his place of destination.
3. Free import of his luggage and tools.
4. If he desires, he may become naturalized in Chile after residing there for at least one year.

The above mentioned agency gives further details.

Colonists going to Chile with their families and receiving from the Government a tract of land, have also the following advantages:

1. A free grant of land, never less than 40 and up to

70 hectares per family in extent, on the sole condition that the colonist cultivates it.

2. Prepaid passage for the colonist and his family and free conveyance by rail in Chile to the colony.
3. Definite pay for the colonist and his family during one year, and sometimes two years.
4. Oxen and implements at cost price.

The following are some of the wages paid at the pre-

GERMAN COLONY. OSORNO.

sent day in the towns of Chile. We may remark that in these statistics the money used is gold standard, so that 1 peso = 100 centavos has a value of 1 shilling and 6 pence, or 1,50 Mark, or 1,87 Franc, or Lire.

Bricklayers earn from 2,50 to 4 pesos per day; carpenters 2 to 5 pesos; engineers 3,50 to 8 pesos; tailors 4 pesos; private coachmen from 30 to 50 pesos per month, besides board and lodging; domestic servants from 15 to 50 pesos per month, besides board and lodging; farm hands from 15 to 50 pesos per month, with free lodgings and a share of the harvest; gardeners from 30 to 200 pesos per month; vine-dressers from 1000 to 2000 pesos per annum,

etc. Living is much cheaper in Chile, especially in the small towns, than in Europe. Butcher's meat, for example, costs only 30 to 40 centavos (Frs. 0,65) per pound; flour costs from 5 to 7 pesos (Frs. 9,40 to 13,20) per 100 lbs. Potatoes are worth from 2 to 3 pesos per sack of about 200 lbs.; haricot beans from 7 to 8 pesos per 200 lbs. An unfurnished room can be had for from 4 to 5 pesos per month; a small dwelling containing 3 to 4 rooms costs from 25 to 45 pesos per month.

Travellers and emigrants have the choice of two routes from Europe to Chile: the Panama route, and the Buenos Aires and Straits of Magellan route. The drawbacks of the former are the necessity of disembarking at Colon, crossing the isthmus by rail often under a torrid sun, and reembarking on the Pacific coast. The second route is by far the most convenient, for the entire voyage can be made direct in one of the steamers plying between Europe and Valparaiso. The journey occupies thirty days, but by crossing the Andes, which can be done only from November to May, the time is reduced to 23 days. There s a good service of steamers between Europe and Valparaiso, and the fare is very reasonable, especially when the fact that the emigrant has no expenses whatever on board is taken into consideration.

FIFTH CHAPTER.

COMMERCE.—IMPORTS AND EXPORTS.—FOREIGN TRADE.—RAILWAYS.—POST AND TELEGRAPH.

COMMERCE.—There are 56 seaports and 21 passes over the Cordilleras for import and export. The most important harbours especially for foreign commerce are situated from the North towards the South: Pisagua, Iquique, Antofagasta, Valparaiso, Talcahuano, Valdivia, Puerto Montt.

All these harbours are connected with the interior of the country by railways.

IMPORTS.—The total commerce, import and export, amounted in 1901 to 311,145,742 pesos, the peso being reckoned at 18 pence. The imports amounted to 139,300,766 pesos and the exports to 172,000,000 pesos.

The import has increased on cashmir, flannel, cotton goods, pocket-handkerchiefs, hats, spermaceti candles, coffee, tea. All these goods are used in large quantities by the poorer classes. Besides this the import has increased for articles used in commerce, for example: steel, leather, iron, raw cotton for weaving, pinewood, machinery, and printing paper. The import has fallen off on certain articles of luxury, which, according to the law of 23^{d} December 1897, have to pay a duty of 60 % of their value. 1,7 millions worth of these goods were imported in 1898 against 4,400,000 in 1897. Besides this the import of cattle from Argentina has decreased, and this can be explained by the increased duty imposed in the interest of Chilian cattle breeding.

Therefore 108,000 heads of cattle were imported into Chile from Argentina, but in January 1899 only 27,500, which made a difference of 8 million pesos.

The imports are divided in the following manner and only the most important countries or those of most interest to our readers are mentioned:

Nations	Value of Import 1900	1901
Great Britain	$ 42,481,942	50,188,344
Germany	34,321,877	34,365,068
United States	12,098,808	16,526,333
France	9,289,642	9,314,536
Argentine Republic	2,538,413	3,385,091
Italy	2,232,361	2,544,807
Spain	798,934	758,818
Sweden and Norway	33,973	3,672
Austria	252	801
Belgium	1,005,616	1,480,991

Exports.—The exports of 1901 showed an increase on those of 1900 of 10 million pesos. The increase of the exports is to be explained almost entirely by the development of mining and by a greater demand for Chile saltpetre which, during the last few years, was sold at a very low price, and by the rise in the price of copper, the consumption of which is becoming greater in the whole civilised world, and which Chile supplies in abundance at a low cost.

Some thirty years ago Chile was the first copper producer in the world.

The exports go mainly by way of Valparaiso and Iquique, and amounted in 1900 to 12,7 million and to 83,2 million per harbour respectively.

We give below a list of those articles and products which in 1901 shewed a remarkable increase in exports: soles, 2,169,729; various seeds, 600,000; nuts, 546,555; manganese, 554,000; wax, 582,085; wool, 1,300,000; borate of lime, 1,302,401; quillay bark, 184,000; hay, 1,200,000; copper in bars, 19,627,114; chinchilla skins, 805,301; honey,

CENTRAL STATION AT SANTIAGO.

1,034,088; copper ore, 1,800,000; saltpetre, 118,860,131; iodine, 3,559,000.

The export in copper continues to increase both in value and quantity, as a result of the rise in price and the great demand for this metal. In 1897 each ton cost £ 49/2/6; in 1898 £ 51/16/7 and in 1899 £ 73. The export amounted to 25 million pesos at 18 pence in 1899 and can be estimated at about 25,000,000 tons. The present price of copper is £ 55 per ton.

The inland or coast trade between the different harbours of the provinces of Chile is most important. This trade can be easily understood when we realise that nearly all the productions of agriculture and cattlebreeding necessary for the food of man and beast in the northern zone of the country are imported from the central provinces, while many productions of the northern mining zone have to go to the other end of Chile to be worked up or shipped.

The Compañía Sud Americana de Vapores, the most important of the companies on the Pacific Ocean, possesses splendid passenger- and freight-steamers, and manages the service between southern Chile and California.

The internal commerce of the country rose in the last statistical year of 1901 from 190,171,600 pesos, an increase of 12,600,000 pesos on the preceding year.

The harbours of Chile are in the most regular connection with all parts of the world. Into these harbours came in 1901 from foreign parts: 549 sailing ships of 796,650 tons, and 1255 steamers of 2,740,952. For the coast trade during the same year there entered: 793 sailing ships of 591,486 tons and 5448 steamers of 7,049,000 tons. Among the sailing ships the foreign ones were: 92 German, 302 English, 47 French, 28 Italian, 19 Norwegian, 17 Chilian. The steamers were: 685 English, 381 German, 15 Norwegian, 8 North American, and 149 Chilian.

The coast trade is carried on by sailing ships belonging to the following nations: English 155, German 64, French 25, Italian 19, and Chilian 516, and by 1930 English, 355 German, 19 Norwegian, and 3147 Chilian steamers.

These data show how important the Chilian commercial

fleet is. The fleet has moreover increased considerably during the last few years.

Before concluding these detailed accounts of Chile's trade,

GALLERY SAN CARLOS. SANTIAGO.

we must say a few words about the destination of the products and wares exported from the country.

In 1900 there was exported to Great Britain an amount worth 116,294,547 pesos; to Germany 26,553,510 pesos;

to France 11,109,399 pesos, and to the United States 14,637,447 pesos.

The reader must know that a considerable amount of the Chilian products imported into Great Britain, especially saltpetre, does not remain in that kingdom, but is again exported to the European continent, especially to Germany, where it is worked up and used.

It can be seen from these data, which are drawn from the statistical service, that the trade of Chile is developing quickly; the foreign trade figures show an incontestable improvement, which is shown in an increase of the export and import.

Foreign Trade of Chile.—The Commercial Statistics Office, in a resumé of the foreign trade of Chile during the first nine months of the year 1902, gives the following figures:

IMPORTS.

Animal materials	5,190,946
Vegetable „	10,365,166
Minerals	14,028,284
Textile materials	29,284,118
Oils, bitumen, fuel, colours	13,665,006
Paper, cardboard, and articles manufactured from the same	3,366,666
Beverages and liqueurs	1,053,218
Perfumes and drugs	2,073,777
Machines, instruments, etc.	11,827,968
Arms, ammunition, and explosive material	462,469
Various	3,468,349
	94,785,967

EXPORTS.

Mineral products	106,851,377
Animal „	5,848,890
Vegetable „	7,894,647
Payments in cash	16,349,514
	136,944,428

Railways.—Great advance has been made of late years with the construction of railways in Chile, most of which

RAILWAY STATION "BELLA VISTA". VALPARAISO.

belong to the State. The value of these railways in 1900 was estimated at 117,463,000 pesos. During the ten years from 1891 to 1901 737 kilometres of railway lines were laid down, which is three times more than was accomplished in the preceding ten years. There are at present 373 kilometres in course of construction. As soon as the resources of the public exchequer permit, the construction of the following lines will be proceeded with: from Vallenar to Serena, from Paloma to San Marcos, from Ovalle to Trapiche, from Choapa to Salamanca, from Cabildo to Petorca, from Curicó to Hualañé, from Quella to Coelemu, from Chillan to Tome, and from Osorno to Puerto Montt. When these lines are completed they will unite, with a powerful band of steel, the north of Chile with her territories in the extreme south. Surveys are already completed for 583 kilometres of new lines, and preliminary surveys are being made for further 2500 kilometres of railway the construction of which will require little time and expense. Most of the new railways are in Araucania, the present agricultural and colonisation centre. The most southerly railway in Chile is that running from Valdivia to Osorno, with branch lines in Araucania.

Besides these railways Chile possesses a network of lines traversing the mineral zone in the north, which yield a good dividend for their proprietors and shareholders. The most important are: the saltpetre line from Iquique to Pisagua for the north and to Lagunas for the south, with various branches, having altogether a length of 482 kilometres; from Antofagasta to the interior of Bolivia as far as Ollagüa, 442 kilometres; from Taltal to Cachinal, with branches, 212 kilometres.

There are, therefore, in the whole Republic of Chile, 4286,5 kilometres of railways in running order, and constructed for the most part since the year 1882. The first line of railway built in South America was the line, 90 kilometres long, which unites the port of Caldera with the town of Copiapó; it was opened for traffic in July, 1852. At the same time the first telegraph lines were laid down. To Chile also belongs the honour of having

"SALTO DEL SOLDADO" USPALLATA PASS. RAILWAY FROM SANTIAGO TO BUENOS AIRES.

installed the first gas works for public lighting in South America.

The number of passengers carried during the year 1901 on the State railways amounted to 7,360,389, and on the private railways to 1,002,561. The weight of the goods carried during 1901 on the entire system of railways was 57,639,154 double hundredweights (of 100 kilograms). One of the most important railways in Chile will be the line which is to connect San Felipe de los Andes with Mendoza, that is to say, the central network of Chile with the chief railways in the Argentine Republic. The greater part of the line is already completed, and a great tunnel is being bored for it, at an altitude of 4000 metres, through the Uspallata pass. Each of the two States concerned will construct the portion of railway on its own territory, and will bring the line to the frontier, that is to say, to the summit of the Andes and the tunnel. The Chilian Congress recently passed a bill guaranteeing an interest of 5 per cent on £ 1,500,000 required for the continuation of this line.

The fares for passengers and the freight for goods on the Chilian railways are very low, lower even than in any country.

Besides its magnificent sea-ways, channels, bays, and harbours, and its considerable network of railways, Chile possesses 70,000 kilometres of public high-roads, 40,000 kilometres of country roads maintained by municipalities and private persons, and 78 watercourses navigable for 4600 kilometres.

Post. — Chile has belonged to the Union Postale since 1881. The postal service is under the direction of the Minister of the Interior. Newspapers are forwarded gratis in the interior of the country, and the carriage is very low. Thus is explained the fact that the receipts of the postal service in 1901 only amounted to 1,296,000 pesos, while the expenses totalled 1,262,333 pesos.

Telegraph. — The length of the telegraph lines, which belong almost entirely to the State, amounts to 19,135 kilometres.

The law authorizing the State to lay a cable between Puerto Montt and Punta Arenas, on the Straits of Magellan, has already been passed.

This is of the greatest importance and highly necessary, especially for trade, since the whole steamer traffic to the Pacific Ocean passes through the Strait of Magellan, whilst only the sailing ships take the longer route round Cape Horn.

HUÉRFANOS-STREET. SANTIAGO.

There exists also along the railway of the north a telegraph system belonging to private individuals and 125,04 English miles in length.

The telephone service is especially good in the towns and is developing also in the country.

The trans-Andes telegraph passes the peak of the Cordilleras in 3 subterranean cables of a total length of 52 kilometres.

A company maintains one cable along the coast of Chile, connecting the harbours from Arica up to Talcahuano with

one another, and by means of which, with the cable crossing the Andes, Chile is connected with all parts of the world.

There exists moreover an American company, the telegraph system of which is situated in the centre of the Republic and which has a length of 1136 kilometres.

The post offices of Chile are celebrated for the regularity and reliability of their service. It very seldom happens that articles committed to the care of the post, either going to or coming from Chile, are lost.

SIXTH CHAPTER.

ANIMAL KINGDOM.—CATTLE-BREEDING.—PLANT-KINGDOM. —AGRICULTURE.—AGRICULTURAL PRODUCTS.

Animal Kingdom.—The animal kingdom (Fauna) of Chile is relatively poor in species, and includes none dangerous to man.

The number of large mammals is especially small. The American lion (Puma, Felis concolor) is a cowardly creature, which however sometimes does harm to cattle and poultry. There are two species of wild cats, Felis pajeros, and Felis tigrina. Amongst larger mammals that can be hunted, there are two kinds of stags in the country, the large one as represented in the Chilian arms "Huemul" (Cervus chilensis), which is especially common in the southern woods, and the very ornamental and small "Pudu" (Cervus humilis) which is found in the woods in the province of Valdivia and in the island of Chiloé. Still more common than this ruminant, which is almost unknown even in the European museums, is the original form of the Llama, called the Guanaco. The Guanaco is to be found on the high table meadow land of the Cordilleras, it is found also along the south coast and forms the main staple of food amongst the Ona-Indians in the Tierra del Fuego.

Amongst the water mammals the most frequent are the sea-lions (Lobos), one species of which (Otaria jubata) is to be found along the whole coast, but has a worthless

skin, whilst two other kinds, the Otaria Philippii, which lives near Juan Fernandez, and the Otaria australis, which lives in the Magellan Strait district, have very valuable hides. A kind of sea otter (Lutra felina) which has unfortunately now become very rare, has a very valuable skin. Along the coast the traveller sometimes has an opportunity, especially in the south, of observing whales; they appear, however, in too small numbers to be worth the trouble of hunting. Whalers' stations are to be found on the island of Santa Maria and in the Talcahuano Bay.

There are several kinds of dolphins to be found in Chilian territory.

The skunk or "stink-animal" which has every right to its name, is interesting, and exists in two kinds in the South. They are hunted for the sake of their beautiful skins, and by way of defence emit a most fearful stink from a gland.

More numerous than any other mammal are the rodents, of which two, the "Chinchilla" (Chinchilla laniger) and the "Viscacha" (Lagotis criniger), are valued on account of their skins. The former has the size of a large rat, the latter of a rabbit. Whilst rats and mice are found wherever man dwells, the voles (Ctenomys magellanicus) love the solitude of the prairies of Tierra del Fuego, where the ground is in parts bored like a sieve.

Birds exist in about 250 different kinds.

The first place among them is taken by the bird found on the Chilian coat of arms, the condor, called Buitre (Sarcorhamphus gryphus), being a large vulture spanning 3 metres, which scans the whole country for miles around from a height of 7000 metres in order to swoop down upon fallen draught-animals and other corpses. There are two other carrion vultures, but not important ones; the waters and coasts are inhabited by geese, ducks, divers, seagulls, a kind of pelican and many other birds, whilst among inland birds sought after by hunters are pigeons, partridges and thrushes, etc.

To mention birds of brilliant plumage, there are 3 kinds of parrot, 5 of humming birds, the latter being observed

PLACE OF THE CONGRESS. SANTIAGO.

in the Andes and close to the glaciers on the Strait of Magellan.

Amphibia are represented by frogs as large as a child's head (Calyptocephalus Gayi) and the Rhinoderma Darwinii. There are no crocodiles in Chile.

Fish are plentiful both in the sea and in fresh water, many favourite dishes being made of them, as for instance Pejerrey; fish is especially plentiful near Juan Fernandez and promises great things in the future for commerce. Quantities of oysters and other sea creatures are found near Chiloé and at other points along the coast.

The insect world in Chile is comparatively poor in species, especially in beautifully coloured butterflies. Mosquitos and sandflies, those pests of the tropics, are unknown in Chile. A large stagbeetle (Chiasognathus Grantii) is common near Valdivia. There are many kinds of crabs which have an excellent taste, of which we will mention here only a kind of river crab and the "Langosta" (Palinurus frontalis), which latter is found in such enormous quantities off the coast of Juan Fernandez that people have often tried to introduce the kind at Valparaiso. The sea is rich in mussels and snails of the most varied kinds, which form the main staple of food for the poor inhabitants on the coast and in the Tierra del Fuego. The larger Mytilides (choros) and oysters (Ostras) are extremely common, very nice to the taste, and extremely cheap, so that they are preserved in great quantities in factories which are arranged according to all the newest methods.

With regard to the exploitation of the riches of the sea as far as fish is concerned, it may be mentioned that the Government has just concluded a contract with a German zoologist who is to examine this question in the south; it is hoped that industry will benefit by it in the future. The whole north coast of Chile, especially the neighbourhood of Iquique, is very rich in fish and most kinds are very nice to the taste.

The catching of the fish by small nets is rendered very difficult by the steep rocky coasts, and by the fact that the bottom of the sea is covered with numerous rocks

which often tear the nets; the sea too is very deep. Dynamite is often used for killing fish, especially on the north coast. After firing off a charge of dynamite, hundreds of fish appear stunned or killed on the surface. It would be worth while to start fishing in the high seas on a large scale and in European manner either from the islands of Juan Fernandez or from a spot on the north coast.—Fishing is often carried on from the coast of Chiloé by erecting

RACE-CLUB. SANTIAGO.

barriers of underwood in the sea parallel with the coast, these are covered by the tide, and when the water goes back again at the ebb, a certain number of fish remain behind these barriers and can be easily caught.

Cattle-breeding.—Domestic animals are the same in Chile as in Europe. The Chilian horse is elegant in shape, possesses great lasting powers and is not over particular about its fodder. It originates from Andalusia. The race itself has been improved during the last 20 years by the introduction of stallions from England, Germany and France.

In order to improve the breed of races and thoroughbreds large races are held every year with big prizes; horse shows are also held with the same object in view.

Every year too shows are held for draught horses, oxen, sheep, goats and swine.

The number of goats and pigs is relatively small, and little has as yet been done for the improvement of the breed of pigs.

The breeding of oxen by no means supplies the needs of the country, but undoubtedly it will increase in time, as high duties are being laid upon the import of oxen from abroad. To improve the breed of bulls the latter are mostly imported from Durham. In the south of Chile, especially in Patagonia, sheep are reared in great quantities both for the sake of their meat as well as for their excellent wool. Sheep and cattle, with the exception of a number of better class milk-cows, which remain in the towns, remain day and night in the open pasture-lands, which is rendered possible by the mildness of the climate of the country.

The milk industry has improved lately too in every respect and in 1900 119,000 kilograms of cheese worth 83,000 pesos were sold from Chilian harbours to the neighbouring republics or to passing ships. The same market had 65,500 kilograms of butter at a value of 78,700 pesos, all of which was exported in the same year.

The bee industry is also very extensive; in 1899 alone 3,279,728 kilograms of clarified honey were exported exclusively to Europe with a value of 855,800 pesos and 267,734 kilograms of wax valued at 401,600 pesos were exported to Europe.

The centre of cattle breeding is at present the southern part of the Magellan territory. Although accurate data respecting the number of oxen and sheep in those regions are lacking, it is maintained, and rightly so, that the breeding of cattle is still capable of great improvement. There are 8 million of hectars of wooded land, suitable for cattle breeding. The Government is endeavouring to form a regular steamer connection between Punta

Arenas and the harbours of the centre and north, in order that the results of cattle breeding may be easily and safely forwarded to the places where they are needed. An English steam-ship company already sends living and frozen sheep regularly to Liverpool.

The land suitable for cattle rearing was formerly not sold, but was leased by the Government to the highest bidder at public auctions. The tenants were almost ex-

ALAMEDA. SANTIAGO.

clusively foreigners, principally Englishmen, and their holdings varied in extent from about 5000 to 30,000 hectares. By the end of the year 1898 193,267 hectares had been surveyed; it was found that 159,966 hectares were let or occupied on a provisionary title of ownership, or without any title, while the leases for 33,300 hectares had expired. Recently, however, the Government has sold by public auction to Chilians and foreigners 800,000 hectares of land for a total sum of 5,562,000 pesos, which was a welcome addition to the public funds. 200,000 hectares still remain to be sold in the same way.

Plant-kingdom.—The number of different plants in Chile is very large, a fact that can be easily explained by the extension of the country towards the north and south and by the change in altitude. Professor Dr. R. A. Philippi, the director of the museum in Santiago, and the doyen of the explorers of the country, has done much towards increasing our knowledge of the Chilian flora. The northern zone is, on account of its scarcity of water, very poor in plants.

FLOCK OF SHEEP.

Fairly rich vegetation in this zone is only to be found on the rough table-land, in the sandy deserts, and in the stretches of country possessing different kinds of salt, where there are a few fresh water rivers and streams.

In the valleys of these watercourses there is for the most part tropical, luxuriant vegetation, and vegetables and fruit trees of the most varied kind prosper there. It can be taken as certain that a large portion of the at the present time absolutely uncultivated high plateaux of Tacna and Tarapacá was covered with woods before the arrival of the Spaniards, and even at the time of the conquest; remains of these woods have been observed in many

places in fossil state. It is supposed, on the ground of careful examination of the subterraneous water conditions that it will be easy to render a large part of these tracts useful for agriculture with the help of artesian wells. It would be still more practical to construct damms or artificial lakes to take up the winter rains so as to make use of the water in the summer for irrigation purposes.

We cannot go further into detail here respecting the rich plant world of the central zone. The climate there is almost the same as in Italy, except for the extremes

HARVEST.

of temperature, which are more moderate in Chile. Of timber there should be mentioned the Quillai (Quillaia saponaria), the bark of which when in water is much the same as our soap, and is therefore generally used for washing purposes; the Peumo (Cryptocaria Peumus) with edible fruit, the Lingua (Persea Lingue), the wood of which is highly esteemed in cabinet-making and the bark used in tanneries; the Roble (Fagus obliqua), a tall tree common to the whole country which supplies excellent timber; the Laurel (Laurelia aromatica), a kind of pine; Leuque (Prumnopytis), which is only met with in the southern part of this zone. Here too is found in great numbers the

Rauli tree (Fagus procera), and also a splendid, tall pine tree for which the whole of Araucania land is characteristic; the Piñon (Araucaria imbricata), the seed of which is edible and the wood much valued.

This whole zone is in consequence of its high state of culture almost entirely free of wood. Woods are only to be seen on the eastern side on the high slopes of the hills where they are utilised for cattle pastures.

Agriculture.—The chief cereals are wheat, linseed, barley, oats etc. Chilian wheat is highly valued in the markets of the world, and up to 25 years ago Chilian wheat flour supplied the countries on the Pacific coast right up as far as Mexico. Lately however it has had to yield to the North American flour.

Vine cultivation extends far and wide, especially in the neighbourhood of Limache and Santiago, and the production is large though little known in the markets of the world. Chilian wines, which gained a first prize at the Paris Exhibition of 1899 and several first prizes at Buffalo, in 1901, deserve to be introduced into Europe, for they are very similar to the best Bordeaux wines. The Chilian vine yards have cost millions, and all in order to attain the best results.

All European vegetables and fruit trees, the enumeration of which is unnecessary, flourish excellently in this zone. This is especially the case with peach and apple trees and potatoes, whose home, as everyone knows, is in Chiloé.

Owing to the extensive, well arranged, and carefully managed irrigation, by means of which the numerous watercourses are held up and utilised as they come down in the spring from the Andes, it is possible to cultivate the land to a relatively high point and without any help from manure, which is used only for gardens.

Several sorts of beans are cultivated; maize too is grown very much. In the southern part of this zone the Quinoa (Chenopodium Quinoa), an old Indian form of food, much like our buckwheat, is produced. Tobacco, flax and hemp thrive well. For fodder extensive use is made of Alfalfa (Medicago sativa), which is the main staple of food for

INTERIOR OF A CHURCH IN SANTIAGO.

animals and is sent to the various northern harbours of the country and to the other harbours of the Pacific Ocean.

Great quantities of the European kinds of fruit are produced in the country and mostly in excellent quality.

Fruit is preserved in the most modern methods and exported to Europe, where it has met with universal approval.

The most common form of food in the country is beans. Ot these there are various kinds, all very nice and most nutritious.

As there is still much fruitful land lying uncultivated between the 34° and 42° southern latitude, agriculture can still improve very much. To do this however it is necessary that there should be continual immigration from Europe and introduction of all the new agricultural acquisitions, for the landowners of the present day are in need of workmen and modern machinery.

There are two agricultural societies and one vine-producers' society in Chile, and they both have their headquarters in Santiago and Concepcion; they publish first class monthly periodicals, and are always ready to give every possible information to persons interested in these subjects.

Agricultural Products.—The following figures show the extent of the agricultural produce for the year 1901—1902:

Nature of the Produce	Number of hectolitres sown in 1901	Number of hectolitres reaped in 1902	Gross value of the harvest in Pesos
Wheat	488,966	3,749,835	22,964,622
Barley	68,551	731,647	3,530,538
Maize	11,070	305,248	1,145,073
Beans	30,546	403,978	3,714,789
Peas	24,763	264,873	2,190,644
Lentils	1,462	20,182	162,205
Potatoes . . .	321,721	4,093,612	7,460,689
Total.	947,079	9,569,375	41,168,560

During the same period 790,203 double hundredweight of lucerne and clover, with a gross value of 1,570,603 pesos,

was harvested for fodder. This branch of industry employed 27 machines driven by water-power, and 82 driven by steam, developing together 742 horse-power.

The vineyards in Chile cover 29,704 hectares, and are planted with 94 million vines. The harvest of 1901 yielded 1,372,000 hectolitres of wine, chicha (a fermented liquor made from grape-stones), brandy, and chacoli (vin de Biscaye), with a gross value of more than twelve million pesos.

A census taken of animals on December 31, 1901, gave the following statistics:

Draught horses	25,562
Riding horses	157,259
Mules	32,443
Cattle	829,953
Sheep	1,335,332
Pigs	135,471
Goats	165,280
Total	2,681,300

SEVENTH CHAPTER.

MOUNTAINS.—WATER SUPPLY.—MINERALS.—
MINING-LAWS.

Mountains.—Chile is a mountainous country, and properly speaking can only be regarded as the western slope of the enormous chain of the Cordilleras de los Andes.

The latter, like those situated north and south of the Andes, are relatively speaking of later origin and owe their existence to volcanic eruptions. Before the appearance of the Andes there existed already the Cordilleras of the coast, consisting of much older rock, and they can be traced about from the valley of the Camarones in the north to the southern end of the territory and again in the islands of southern Chile. The valley situated between these two main chains or masses of hills falls away from the north in a southerly and from the east in a westerly direction and is crossed by numerous side chains from both ranges, especially between the 32° and 35° southern latitude.

North of the 27° the Cordilleras de los Andes divide up into several branches, of which one bounds the Puna (high plain) of Atacama in the east, and another nowadays forms nearly in its whole length the boundary between Puna, which has by the court of arbitration fallen to Argentina, and the Chilian territory.

The northern portion of Chile from the 27° onwards is a high plateau with numerous extinct volcanoes ranged in rows from north to south. From the north down to the Chacao canal (42° southern latitude) the coast is very

poor in bays and natural harbours, and the sea nowhere encroaches on the land.—There is only one little island near Iquique, then the peninsular and bay of Mejillones, then much further south the bay of Talcahuano with the island of Quiriquina, the bay of Arauco with the island of Santa Maria and the broad mouths of the Valdivia and Maullin. From the 42° onwards the coast is very much torn away, numerous canals penetrate far inland, cliffs

PALACE EDWARDS IN THE CATHEDRAL-STREET. SANTIAGO.

rise up from the sea and a very great number of large and small islands congregate in front of the continent. The majority of the islands in question are still uninhabited, and many of them would undoubtedly prove eminently adaptable for cattle breeding.

Chile possesses at various distances from the coast, besides the islands already mentioned, the groups of islands of San Felix, consisting of the islands of San Ambrosio, San Felix and the Easter island or Rapa-Nui (Pascua).

The most important group of islands is that of Juan Fernandez, about as high as Valparaiso, consisting of two islands, only one of which is inhabited. It was on Juan Fernandez that Robinson Crusoe went through his adventures. It is impossible here to enumerate the individual islands and groups of islands of the province of Chiloé.

The main passes, which lead over the Cordilleras and are used by travellers, postmen, and cattle passing between Chile and Argentina, are: the Planchon pass, on the slope of the volcano of Peteroa in the province of Curicó, at an altitude of 3046 metres; the pass of the Valle Hermoso, in the Cordilleras of Aconcagua on the Rio Putaendo, 3637 metres; the pass of Uspallata, on the road on the side of the Rio Aconcagua to Mendoza, 3928 metres. This is the most frequented of all the passes. Close by it the Trans-Andes pass, now in course of construction, will bore through the Cordilleras, so as to connect Santiago with Buenos Aires. The San José pass in the province of Santiago, between the volcanoes of Tupungato and San José, 4200 metres high; the pass of Comecaballos in the province of Atacama on the way to the Argentine province of Rioja, 4423 metres high, and finally the pass of La Laguna on the way to the Argentine province of San Juan, 4747 metres high.

The highest points of the Andes are: Aconcagua, 6970 metres high (according to the measurements of the German savant Guessfeldt), Mercenario 6795 metres (39° 59′ southern lat.), Tupungato 6710 metres (33° 25′ southern lat.), the volcano of San José 6096 metres (33° 41′ southern lat.), and the Juncal 5943 metres (33° 10′ southern lat.). Aconcagua is considered to be the highest mountain in America.

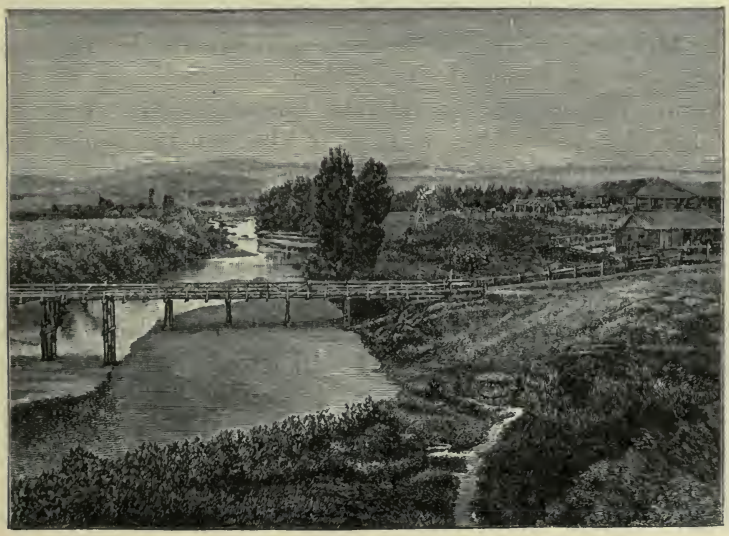
The Cordilleras along the coast, which are characterised by their rounded peaks and gentle slopes, have an average height of 1—2000 metres, and their peaks are covered with snow only for a short part of the winter. These Cordilleras are intersected by numerous rivers, most of which have broad valleys, and are thus divided up

into individual sections. The eastern slopes and valleys thus formed are for the most part very well cultivated.

The highest point of the Coast Cordilleras is the Cerro del Tayo (32° 39′) with a height of 2315 metres.

Water Supply. — Some of the numerous lakes are situated in the mountains themselves, at a height of 4000 metres.

Of these the most important is the Lake Maule, from which flows the river of the same name.



MAULE. RIO CAUQUENES.

The many lakes at the foot of the Andes are, especially in the northern provinces, for the most part dried up, or have assumed the form of salt marshes. These are rich in soda and magnesia.

Of real lakes, from about the 38° onwards, can be mentioned here: the relatively small lake of Guchueltui or Gualletua, from which flows the largest river in Chile, the Bio-Bio. From the lake of Villa-Rica near by flows the Rio Tolten, while the Rio Valdivia rises from a succession of connected lakes.

Rivers.—Chile is favoured with an abundance of watercourses, the most important of which are in the central region. The rapidity of their current often renders them useless for navigation, but, on the other hand, provides power which is of great utility for industrial purposes. Among the navigable and most majestic rivers are: the Bio-Bio, the Calle-Calle or Valdivia, the Maule, the Imperial, etc. Especially in the south these rivers traverse great lakes, and by facilitating the exploitation of immense tracts of virgin country they offer a great future to this region.

Minerals. — It has been long known that the long extent of land called Chile which is intersected by the Cordilleras, contains considerable quantities of nearly every kind of metal. The vastness of the mineral wealth has been statistically proved in a publication compiled by the wellknown National Society for Mining in Chile.

This work, published at the end of 1903 in large-folio, is entitled "General report on the mines of the Republic of Chile 1901". It gives in tabular form on 120 pages all the mines in the different departments, beginning with the North. Definite proof is thus given of the enormous wealth existing in this country and still to be exploited. The above-mentioned tables give the names of the mines, the proprietors, the size of each mine in hectares, the produce of each, and the sum to be paid for the patent according to the law (Title 12, Mining codex of the 20th December 1888). More than 4000 mines for which patents are being or have been paid, are registered in these tables.

There is gold in large quantities in the whole country, but means are lacking for its exploitation, and therefore there are only few mines or washing stations working to any large extent. The production of gold was far larger in the time of the Inkas and at the beginning of the Spanish dominion than it is to-day. As early as the 18th century Chile held the third place among gold producing countries, and produced as much as 300 hundredweights per annum. In 1900 Chile exported 1,860,000 grams of gold, which is equivalent to a value of 2,860,000 pesos. Besides this

8511 kilograms of mineral containing gold, mostly quartz, were exported.

Little or nothing is being done to exploit most of the silver mines here enumerated.

The richest silver ores are found on the slopes and high plateaux of the Andes at a height of from 2—3000 metres; these slopes and plateaux are very poorly supplied with water and woods. Silver is found mostly in alloys

BIO-BIO-RIVER AND BRIDGE OF THE SOUTHERN RAILWAY.

of chlorine, bromine and iodine. Veins of argentiferous galena are very often found on the lower slopes of the Andes. Copper ores also sometimes contain silver.

In 1901 Chile exported 2,6 million pesos worth of silver and 4,9 million pesos worth of silver ores, which, like gold ores, are mostly metallurgically worked in Germany.

It is probable that the country's silver production will increase, as the silver prices have risen and the Government itself has had a considerable quantity of silver money coined.

A cursory glance through the lists in the book mentioned shows that in the department of Tacna there are 24 mines, one of which produces borax, two silver and copper, and the rest sulphur.

The department of Arica produces mineral salt, borax and has one mine each for silver and copper, gold and silver.

In Tarapacá there are very few sulphur- and copper mines, but on the other hand countless silver mines, of which however only a very few are worked. It is striking that the strata of nitric soda and other soda salts (with the exception of cooking salt) remain quite unnoticed in this general list, or at any rate appear only now and then by way of exception. In the list of the community of Pica are tabulated: kali salts, plastic clay, boric chalk, sulphuric soda, chalk strata, sulphur chalk, aluminium and sulphuric copper; also numerous silver mines, mines containing silver and gold, and finally copper.

In the department of Pisagua gold, silver, and copper predominate. In Antofagasta there appear first of all argentiferous lead ore mines, and there is also carbonic chalk, marble, gypsum, clay and green copperas. Copper mines are very prominent here, especially in the department of Calama.

The copper mines throughout Chile have been much more extensively worked during the last few years, as the price of copper has risen quite considerably. This is an excellent field, therefore, for European capital, since there are numerous copper mines in Chile to be bought cheaply or to be received gratis from the Government in pursuance of the very liberal mining laws. In the territory of Cobija only copper is worked, in that of Taltal copper, silver and a certain amount of gold, and in one or two places aluminium.

The same is the case in the other districts.

In the province of Atacama hardly any but copper mines are worked, but some of them produce also gold. Lead is but seldom met with. In the district of Freirina strata of manganese are found in large quantities and here too the first iron mines are worked. In the next province,

CATARACT OF THE LAJA-RIVER.

Coquimbo, the predominant metal is copper, but magnesia, iron, and in smaller quantities silver, gold and cobalt are also found. Here for the first time mention is made of cinnabar, and copper appears mixed with more or less gold. In the province of Aconcagua the number of mines diminishes; most of them produce copper. In the province of Valparaiso there are also copper mines and gold washing stations. Silver, lead, copper and gold are found in the provinces of Santiago and O'Higgins, and for the first time mention is made of silver containing arsenic, and quartz mixed with gold.

In the province of Concepcion there are extensive coal strata and some gold washing stations. Finally, two gold mines in the province of Valdivia and two coal strata in the Magellan district are mentioned.

Chile is well known to be very rich in splendid iron ores. (See Ch. Vattier's beautiful and very detailed work "L'Avenir de la Métallurgie du Fer au Chili." Paris, Légation du Chili, 1890. With numerous maps.) Up to the present day, however, not a single layer has been worked.

Still there is no doubt that the working of the iron ores of Chile will soon be developed to a most satisfactory extent. It is also well known that copper is present in abundance, the main strata being found in greenstone and syenite in the copper districts of the eastern slopes of the Cordilleras on the coast. The copper appears for the most part in the form of oxides, and at greater depths combined with sulphur. Whilst in 1806 only 4 copper mines were working in Copiapó, in 1842 there were already as many as 40, and in 1853 116. In the sixties the copper production in Chile was at its height and the output of the years 1861—64 is reckoned at 3,313,000 cwts. At that time Chile provided 60—67 % of the whole amount of copper produced in the world. As we have already stated, the production of this metal has greatly increased in consequence of the continuous rise in its price, and still there are enormous copper strata, the exploitation of which, if carried out circumspectly and thoroughly, would well repay the outlay of capital.

Coal is obtained also in great quantities in the coast districts of Coronel and Lota. In 1899 coal to the value of 4,800,000 pesos was produced in these two places alone, and was sold to the steamers of the different nations as they passed along the Pacific.

The statistic of the mineral production includes gold-, silver-, copper-, iron-, and cobalt-ores, coals, saltpetre, iodine, guano, and rock-salt. In 1901 these substances were worked in 961 establishments; 535 mines were not working, and 449 only required to be freed from the water which had flooded them. It is noteworthy that only 13 gold-mines were working, 12 were abandoned, and 52 flooded. 837 copper-mines are in full work, 488 are idle, and 382 are flooded. 11,230 double hundredweights of gold were produced in 1901; 466,208 double hundredweights of copper; 4,005,000 of coal, and 13,258,687 of saltpetre. The number of men employed in 1901 in the production of the above-mentioned minerals was 25,919.

Mining-Laws.—The following regulations, taken from the mines-codex of the province of Chile, deserve attention.

The State is the possessor of all mines containing gold, silver, copper, quicksilver, tin, precious stones, and other fossil substances, not including the property of corporations or private persons exploited on the surface of the ground under which these mines lie. Private persons, however, can search everywhere for mines and exploit the mines found, and dispose of the mines in accordance with the regulations of this codex.

"Free acquisition of mines containing gold, silver, copper, platinum, quicksilver, lead, zinc, bismuth, cobalt, nickel, tin, antimony, arsenic, iron, chromium, manganese, molybdena, vanadium, rhodium, tungsten, and precious stones by persons is guaranteed, whatever be the form and origin of the layer in question.

"The working of coal strata and other minerals not mentioned above is left to the proprietor of the ground.

"The right of working salt strata on the sea coast and in lakes or lagunes is left to the proprietor of the ground in question.

"Despite these regulations the State reserves to itself the exclusive right of exploiting all supplies of guano, wherever they may be situated, as also the supplies of saltpetre or "analogous salts of ammonia" in state or municipal land, where no mining right has already been previously acquired by a private person.

"The exploitation of auriferous sand or sand containing tin ores and all other mineral products of the rivers are declared to be free on all unoccupied ground whoever the proprietor may be. But if the works are carried on in established premises the mining property must be certified.

"If the existence of a mine is proved, a definite territory on the surface is granted (for the erection of buildings) for the working. Compensation must be paid to the proprietor for this territory and for any wood that may be taken away.

"The mine proprietor has a right to the pasturage and water bordering on his mine-territory, so far as this land is not cultivated or enclosed.

"The law grants permanent possession of the mines to private persons on condition that they pay an annual tax or patent for the surface land occupied by them. If this annual tax be not paid, the mine reverts to the State.

"The right of prospecting and mining on any property is free as long as the land in question is not fenced in or cultivated. In case it is desired to search for mines in the latter, the permission of the proprietor or administrator must be obtained. If this permission be refused, both parties must refer to the district magistrate, whose decision after he has consulted a mining engineer, is final.

"The searcher must compensate the proprietor of the ground for all the damage caused by his exploration. No mine may be started or worked within 40 metres of buildings or railways.

"All persons who are authorised to possess landed property in Chile may acquire mines in the legal manner.

"Administrators and governors may not acquire mines in provinces and departments under their control. Mem-

bers of the higher courts of law and district judges, who have to pronounce judgment in mining cases, are not allowed to acquire mines in their circuits.

"The person who first presents himself for the purpose of registering a mine shall be looked upon as the discoverer thereof, except in cases of fraud, that is to say in cases where it can be proved that the discovery was made at a previous date, but the original discoverer was in some way prevented from registering.

"A person who discovers a mine while mining under orders or while acting as an employé of some other person, cannot be considered as the discoverer, but the person for whom he is working or in whose name the work is being done shall be considered the discoverer. The discoverer on virgin soil possesses all rights within a radius of 5 kilometres, for fifty days after the registration of the discovery. Each registration must be published three times in a newspaper of the department in question.

"Anyone registering a mine (the registrant), is bound to sink a pit or shaft at least 5 metres deep within 90 days of its entry in the books, whereby the presence of workable mineral or ore is proved.

"A mining claim is a rectangle of unknown depth and covers from one to five hectares of the surface of the ground. In the case of the exploitation of salt and coal strata a claim can cover a surface of fifty hectares.

"A possessor of a mine must apply within 180 days after registering it for a titledeed for the exploration of the ground in the direction already given by him.

"The above-mentioned mines must pay an annual patent of 10 pesos per hectar; coal and salt strata need pay only five pesos annually per hectar.

"A mine worked on the possessor's own land pays no patent. If however it is sold or separated from the land under the heading of real property, it must pay 5 pesos per hectare.

"This annual patent must be paid between the 1st and the 31st March. If this is not done, the mine is sold by public auction to the highest bidder. After the price of

the patent and the costs have been deducted the proceeds of the sale is paid over to the former possessor."

Before closing this chapter on minerals mention must be made of the fact that coal is found not only in the regions of Coronel and Lota but also in different parts of the bay of Talcahuano and the large province of Arauco. Lignite coal is found in Valdivia and three other districts.

The heating power of Chile lignite is equal to or greater than the best European lignite.

EIGHTH CHAPTER.

FINANCIAL SITUATION.—INCOME AND EXPENDITURE OF THE STATE.—SALTPETRE INDUSTRY.

Financial Situation.—The financial situation of Chile, which, as will be shown later, possesses certain special characteristics, has always remained much the same as regards the income and expenses of the State.

As yet no year has shown an appreciable deficit. The last two years have closed with a considerable surplus, which must be attributed to the greater income drawn from the export- and import duties.

As the State has thus considerable means at its disposal, and as besides the armament necessary for the protection of the country is nearly complete, these sums amassed are devoted to public works.

First and foremost amongst these must be mentioned: the completion of the Trans-Andes railway, the building of new harbours on the coast and of new railways in the interior of the country, as well as the improvement of the hygienic conditions of the towns.

Undertakings of this kind are capital well laid out, for they render it possible for a country to exploit and utilize the treasures of nature, so that if this course of action is pursued, Chile will raise itself in a few years to be a flourishing State; for the new elements will create new means, whereby the foreign debts of the Republic may be amortized. When this occurs, Chile will be among the number of those favoured states which have not to depend upon foreign credit. There is nothing special to be men-

tioned about the distribution of the expenses in the administration, except the fact that what in other countries are regarded as extraordinary expenses are considered in Chile as ordinary expenses, viz. the building of railways and fortresses.

The police are paid by the State. As it is not necessary for Chile to maintain a large standing army, only about 16 % of its income in 1900 was spent in the purchase of weapons; in every European country the proportion of income spent in this way is much larger.

Income and Expenditure of the State.—The following passage, taken from the last report of the President of the Republic to Congress (1903) on the condition of the Chilian finances, will give the reader an opportunity of forming his opinion on official data. It should be borne in mind that the Chilian peso is worth 18 English pence, and that the paper money at present in circulation will be replaced by a gold coinage in 1905.

"The state of the public finances is such as to demand the special attention of the executive and legislative powers; heavy obligations have to be met for the purchase of armaments and in consequence of arbitration awards during the past year. The ordinary receipts in gold and in currency during the year 1902 amounted to 95,810,452.17 pesos; the extraordinary receipts, derived from the sum taken from the Conversion fund and from short loans, amounted, in gold and currency, to 42,688,555.44 pesos. The total receipts, therefore, reached the sum of 138,499,007.61 pesos, while the ordinary and extraordinary expenditure, in gold and currency, amounted to 134,267,086.55 pesos. The receipts thus exceed the expenditure by 4,231,921.06 pesos, and after deducting the deficit of 2,277,663.54 pesos with which the financial year 1901 closed there remains a surplus of 1,954,257.52 pesos. The receipts for the current year are estimated at 110,800,000 pesos, which, added to the surplus of the preceding year, gives a sum of 112,750,000 at the disposal of the State. The estimated expenses and those required to fulfil legal obligations already entered into amount to 105,050,000 pesos; the

extraordinary expenses for additions to the navy, the costs of the arbitration award at Lausanne, etc., amount to 15,500,000 pesos, making a total expenditure of 120,550,000 pesos. If all the expenses were met which are estimated in the budget or authorised by special laws the expenditure would exceed the receipts by 7,800,000 pesos, and, moreover, the sums required to augment the conversion funds have not been taken into account. Last year, as this year, the ordinary and extraordinary receipts for 1904 are calculated at 114,800,000 pesos, which will be entirely absorbed in the next financial year.

"It has been considered adviseable to include in that year's estimates both the ordinary and the extraordinary expenditure, in order that Congress and the country may have a clear idea of the condition of the public finances. The estimates thus reach the sum of 114,750,000 pesos, 96,450,000 pesos being for expenses of administration, and 18,300,000 pesos for the obligations that will have to be met during the same period in respect of payment for naval material and short loans.

"The Government is using every endeavour to regulate the condition of the exchequer by observing the strictest economy in the expenditure, and by keeping the collection of taxes and other dues under careful control. It is proposed to economise 3,000,000 pesos on the expenditure authorised by the budget and by special laws already in force."

In our historical survey we have already mentioned that Chile was one of the poorest, perhaps the very poorest colony of the Spanish crown in America. The new Republic however received by its independence a greater motive power so that in the ten years from 1831 to 1840 the receipts amounted to an average of 2,100,000 pesos per annum.

In the following decade, up to 1850, the receipts amounted to as much as 2,400,000 pesos. From 1850 to 1860 they amounted to 6,000,000 pesos, and from 1860 to 1870 to 8,200,000 pesos.

In the 5 years from 1871 to 1875 the average annual income amounted to 14,700,000 pesos.

In 1879 the receipts amounted to 15,300,000 and in 1882 to 28,900,000 pesos. It should be mentioned that these statements were made in old pesos, which were equivalent to 48 pence or 4 marks or 5 francs.

The chief receipts are drawn from the export duties on saltpetre and iodine, and from the high import duties on articles of luxury and all wares which can also be made in the country itself.

It may therefore be said with justice that less taxes are paid in Chile than in any country in the world.

The Chilian national debt consists of a number of loans, which are given in the following table:

Year of the loan	Interest and Amortization	State of the debt on the 31st December 1898
1885	5%	£ 727,000
1886	5%	„ 5,480,000
1887	5%	„ 1,066,000
1889	5%	„ 1,462,000
1892	5½%	„ 1,732,000
1892	7%	„ 139,000
1893	5%	„ 603,000
1895	5%	„ 1,959,000
1896	5½%	„ 3,953,000
1896 (Coquimbo railway)	5%	„ 260,000
1894 (Municipality of Valparaiso)	7½%	„ 184,000
		Sum total £ 17,565,000

In 1898 £ 826,077 was paid for interest, and £ 138,328 for amortization. Chile had previously raised loans abroad, but these debts were collected in 1885 into one great loan.

Chile's chief creditors are Englishmen. It should be stated that Chile has always met her obligations and has always punctually paid off her interest and amortization.

In 1881 the internal debt amounted to 61,1 million pesos at 48 pence. It was at that time especially increased by the 28 million in paper money which Chile issued to cover

OFFICIAL WAREHOUSES. VALPARAISO.

the costs of war. At the end of December 1898 the internal debt amounted to 72,8 million pesos at 18 pence. But of this 46,6 million pesos was paper money issued in 1898, which paper money will have been called in by 1905.

The fund for the redemption of the paper money issued at home and abroad reached the sum of 27,699,635 pesos at 18 pence by the year 1900, not counting the interest added thereto and the 7,160,000 pesos to be recovered by Bonds.

If the 16,500,000 pesos provided in the budget for 1901 for this object be added, ample means to discharge the obligation will be provided well within the legal time limit.

As we have said, the financial situation of Chile has this peculiarity, that direct taxation is almost unknown. Other sources of revenue already employed by nearly every nation, are held in reserve. To these belong taxes on tobacco, alcohol etc., which would easily produce more than ten million per annum. This exaggerated economical liberalism will, however, probably have to be changed at no very distant date. In the first place the exchequer will have to reckon with certain large public works now necessary, such as the drainage of all the big towns, and in the second place the people must become accustomed to paying taxes by the time that the State revenues derived from the export taxes on saltpetre cease.

The Saltpetre Industry.—As the export duties on soda-saltpetre or Chile saltpetre have for the last 20 years been the chief source of income of the State, we will say a few words here about this peculiar industry.

The development of this industry dates from 1883, that is to say when the strata, which are chiefly found in the provinces of Tarapacá and Antofagasta, came into the possession of Chile as payment of the war indemnity.

Chile saltpetre had been exported since 1880 as a manure, and for the production of nitric acid. The consumption since 1883 has increased every ten years on a average of 100 %.

It may be said that about one third of the world's consumption of saltpetre is used in factories, that is to

say in the manufacture of nitric acid, smokeless powder etc. The other two thirds are used for manure. This particular use has greatly increased during the last ten years, for the guano supplies are exhausted, and it has been proved that Chile saltpetre is the most effective of all nitrogenous manures. It contains from 15 to 16 % of nitrogen, which can be easily assimilated by plants. English capitalists especially have erected in the last 18 years model institutions (oficinas) containing the best machinery for dealing with raw saltpetre (caliche).

These oficinas employed 4751 men in the year 1885, and 22,485 in 1895. To-day the number working in them may be reckoned at 25,000.

The State claims two shillings and four pence per cwt. as export duty on saltpetre, and the cost of production and transport to the coast amounts to a similar sum.

As a result of the great production prices had so fallen, especially since 1895, that a great number of the producers sold with a very slight or even no profit.

It was only by the enormous increase of the consumption that this industry was saved from a very grave crisis.

For the prevention of the recurrence of such a state of things the owners of saltpetre supplies residing in Europe have decided to regulate the production in such a way as to attain a fixed price.

The President of the Republic makes the following remarks about this industry in his above-mentioned report of the first of June 1903.

"The export of saltpetre in 1902 reached 28,925,000 Spanish hundredweights, that of iodine in the same period 254,284 kilograms. The duty yielded 45,330,000 pesos, which is 1,172,000 pesos more than in 1901. It is estimated that 31,000,000 hundredweight of saltpetre will be exported in 1903, yielding an increase of duty to the State of 3,000,000 pesos. In November, 1903, the greater part of the saltpetre tracts will be offered for sale by public auction, in accordance with the law of February 28th, 1902. It is hoped that, judging from the estimated value which will serve as a basis for the sale, they will produce at least

6,700,000 pesos. The remaining tracts, which will be sold during the next year, are valued at 1,000,000 pesos."

Saltpetre is regarded as the most important of all manures in all civilised countries, especially in Germany. It forms the main component part of all artificial manures used for the cultivation of plants. Generally it is mixed with other kinds of manures such as phosphate and potash. It has been said that the degree of development that a country has reached in agriculture can be estimated by the amount of saltpetre that it uses.

NINTH CHAPTER.

EXISTING AND POSSIBLE FUTURE INDUSTRIES.— CUSTOM-LAWS.

Existing and Possible Future Industries. — Chile, which is a land rich in agriculture, mines and trade, is developing every day more and more as a commercial state. It produces nearly all raw materials, as we have seen in the preceding chapters. Still this branch has not yet reached that high degree of development which we may rightly hope it some day will; two important factors are lacking: workers and capital. We have already said how important the mining industry is, and what position Chile could take with its enormous natural treasures. Besides exploiting the mines it would be possible to develop to the highest degree the chemical industry, for the raw material is found extensively all over the country and could easily be transformed into useful wares, the numerous rivers and coal supplies forming valuable aids.

We take the following data from the work "Boletin de la Estadistica Industrial", which is under the patronage of the Sociedad de Fomento Fabril; the said data extend up to the year 1899 and relate to these questions.

For statistical purposes the whole Chilian industry has been divided into 13 groups: food, lighting, clay and glass wares, beverages and spirits, carriage factories, wood works, metal wares, building materials, weaving stuffs, paper and printing, hides and skins, chemical and pharmaceutical substances, various industries. Workmen who are their own

masters and who work in their own homes are not included in the lists, nor are the workshops which are on the estates and serve for the needs of the property.

In order not to go too much into detail we will here treat only three or four departments, the statistics relating to which should be sufficient to prove to us the continuous progress of Chile's industry. In the department of Curicó for instance there are 87 workshops and factories, in which in last year raw material of a total value of 1,8 million pesos was worked up. 707 workmen and officials were employed; the mean average of the daily wage amounted to 1,43 pesos. The work was carried on by 349 engines and 22 motors, developing 371 horse-power; 114 pesos worth of heating material was used daily and 397 lamps were used for lighting purposes. It must be mentioned that this department does not belong to the rich industrial category, but represents the lowest state of industry.

We will give a few more special data respecting Valparaiso, one of the main centres of industry.

There are 417 factories and workshops, where in 1895 20 million pesos worth of raw material was used; 2606 workmen and 2203 engines and 162 steam motors, representing 1766 horse-power, were at work. 3642 pesos worth of heating material was used daily and 4822 lamps for lighting purposes.

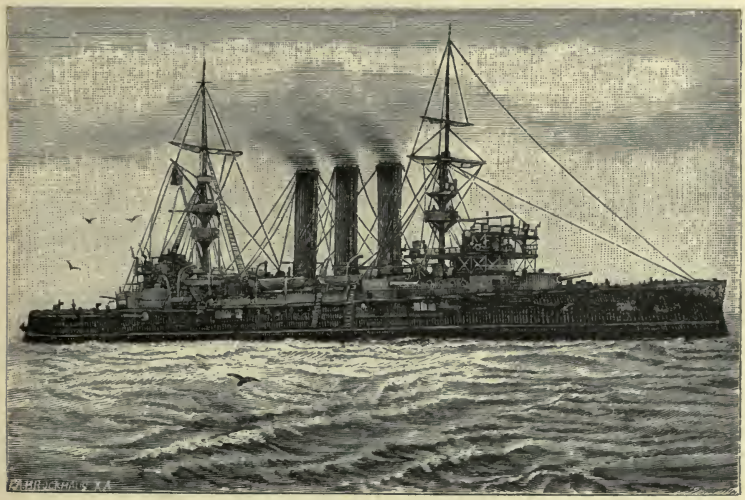
The first group of food, already mentioned by us, includes 51 establishments, which use 8,6 million worth of raw material, and give employment to 1527 workmen. Especial mention should be made of the sugar refinery at Viña del Mar which employs 500 workers and different machines of a total force of 500 horse power.

Under the fourth heading (beverages) there are 4 factories for liqueur, 4 for effervescing and mineral waters, 2 for beer, malt and ice, and 2 beer depots. First among these ranks the National Brewery, which was erected in 1890. The number of workmen in this factory amounts to 359.

In the fifth group we find 2 carriage factories with 18 engines and 83 workmen.

The sixth group includes 27 timber yards, 4 carpenter's shops, 7 saw-mills, 15 furniture-factories, 2 shipbuilding yards, and 2 cooper's yards. In all 764 workmen are employed in these workshops. The number of machines is 167.

In the seventh group are 3 smelting ovens, 1 galvanising factory, 3 machine manufactories or foundries, 16 smith's and locksmith's shops, 25 tinsmith's shops, 11 jeweller's shops, with a total of 560 machines and 2714 workmen.



IRON-CLAD "O'HIGGINS".

The eighth group comprises 25 brickyards, 1 factory for flagstones, 4 marble worker's shops, and 1 tar factory.

The ninth group, which comprises the weaving factories, consists of 16 milliner's businesses, 2 factories for ships' sails, 4 shirt factories, 9 mattress factories, 2 artificial flower factories, 33 tailor's shops and 6 hat-factories, with a total (in the whole group) of 2368 workers of both sexes and 404 machines.

In the tenth group we have 4 bookbinder's shops, 1 cardboard box factory, 4 photographic studios, 9 printing offices, 2 lithographic institutions, 4 lithographic printing

presses, and 1 engraving shop. In this group there are 619 workers and 308 machines.

The eleventh group consists of 12 tanneries, 8 boot factories, 8 saddleries, 43 shoe shops, with a total of 2896 workers and 198 machines.

In the twelfth group there are 2 soap- and candle factories, 1 soap- and perfumery factory, and 2 factories for oils for industrial purposes, with a total of 118 employés and 40 machines.

Finally in the thirteenth group we have various industries comprising: 6 tobacco factories, 24 cigar factories, 3 laundries, 4 dyeing works, and 3 gilding works, with a total of 678 employés of both sexes and 61 machines.

There is a stock exchange in Valparaiso, founded in 1824. The building used for the exchange belongs to the State.

In this chief seaport town there are 8 deposit banks, 3 mortgage banks, and one savings-bank, and besides these there have been since 1895 2 agencies and branches of two German banks, namely the "Deutsche Bank" and the "Diskonto-Gesellschaft".

The most important of all these banks is the bank of Chile, which on the 31st December 1895 notified deposits to a value of 12,7 million pesos and loans worth 16,7 million pesos.

In 1899 a new bank was founded, namely the "Banco Español-Italiano".

Many steamship companies have agencies at Valparaiso, where a commercial fleet is stationed and registered, consisting of: 29 steam barks totalling 23,764 tons and 64 sailing barks of 38,960 tons.

The department of Santiago is the true centre of industry in the country. There are 1052 classified industrial establishments. The value of the raw materials used in the year 1897 amounts to 25 million pesos. The employés number 17,567, the machines 3978 and the motors 249. The latter represent a force of 2769 horse power. The fuel used daily has a value of 2380 pesos, and the number of lamps burning 7305.

In the following list of all the factories, workshops and industrial establishments of the departments of Santiago no mention is made of the smallest, in which only one or two persons work, and in which less than 500 pesos worth of raw material is used per annum.

The industrial statistics which we have before us gives the following data: 1 factory for preserving fruit and vegetables, 1 vinegar factory, 2 butter- and cheese factories, 2 ice factories, 1 chocolate factory, 4 vermicelli factories,

GENERAL VIEW OF PUNTA ARENAS.

7 pastry bakeries, 6 biscuit factories, 3 coffee roasting establishments, 3 grease factories, 13 smoked-meat factories, 57 bakeries, 16 mills, 1 gas works, 1 factory for enamelled iron, 1 for flower pots, 1 for glazed tiles and coloured glass mosaics, 3 breweries, 3 factories for beer and malt, 3 for beer and mineral waters, 5 for mineral waters, 5 for liqueurs and syrups, 6 beer depots, 6 carriage factories, 25 cartwright's shops, 6 factories for large and small carriages, 17 factories for the working of wood, 37 timber yards, 25 furniture factories, 1 billiard-table factory, 9 carpenter's shops, 3 decorative work establish-

ments, 14 cooper's works, 5 bronze works, 3 smelting works, 10 machine factories or foundries, 1 iron chest factory, 51 smithies and locksmith's shops, 41 ironmonger's shops, 21 jeweller's workshops, 1 gunsmith's shop, 2 electrical workshops, 1 ammunition factory, 4 composition factories, 18 factories for ordinary bricks, 31 for tiles and bricks, 3 marble workshops, 2 sculpture workshops, 4 gypsum works, 20 stone masonries, 86 tailor's shops, 3 factories for ready-made clothes, 33 dressmaker's shops, 10 shirt factories, 5 hat factories, 5 ladies'-hat factories, 3 wall-paper factories, 2 lace factories, 1 rope- and cord factory, 1 factory for braids, 4 for imitation flowers, 1 for umbrellas and sunshades, 4 for mattresses, 2 for cardboard-boxes, 12 bookbinder's shops, 6 bookbinder's and printer's shops, 8 photographic studios, 19 printing works, 7 lithographic works, 1 factory for stereotyping and photography, 5 metal engraving works, 14 tanneries, 21 saddler's shops, 2 box factories, 1 glove factory, 1 hide-salting factory, 6 boot factories, 143 boot shops, 4 factories for oils used in industry, 1 sulphur-factory, 1 glue factory, 1 fireworks factory, 18 soap- and candle factories, 3 for chemical and pharmaceutical products, 1 for gunpowder and cartridges, 1 for ink, 1 chemical factory for artificial manures, 6 hay-pressing factories, 2 for bast shoes, 1 for the silvering of metal goods, 1 for springs, 1 for paint brushes and brushes, 1 for feather brushes, 2 for basketmaking, 1 for the preparation of instruments used in midwifery, 2 for brooms, 6 for the working of tobacco, 11 cigar factories, 62 cigar shops, 2 musical instrument factories, 2 dyeing factories and 6 laundries.

If we carefully read through this list we shall have an idea of the steady progress of Chilian commerce.

However, all these factories and workshops could be doubled without too great competition ensuing therefrom, for it must be remembered that a very high import duty is levied upon all these goods, which could very easily be made in the country.

One sees besides that some of the most important industries of Chile, such as the chemical factories and those

for the working of the very numerous and valuable hides, are still in their infancy. There is only one sulphur factory, although the best material is at hand in great quantities. There is also no factory for nitric acid, although Chile supplies the whole world with the raw saltpetre for the preparation of this important acid.

Chile can provide all the countries of America and the whole of Europe with this invaluable acid.

It is incredible that there should be only one glove factory; in 1898 however 32,696 dozen chinchilla skins to the value of 710,679 pesos, and 237,474 goatskins to the value of 94,899 pesos, were dressed.

On the other hand, 3406 kilos of gloves, to the value of 97,820 pesos, were imported in the same year.

Among the employés of the whole district there are 3455 women, 1417 children and 1125 foreigners.

One of the industries which has developed under the most favourable auspices is beer-brewing introduced by Germans.

The coast trade in beer, which in 1871 consisted of 300,000 litres, rose in 1881 to 6 million litres.

In 1898 beer was brewed in Chile to the value of 2 million pesos, and of this 50,000 pesos worth was exported.

At the same time Chile imported from Germany and England 10,873 pesos worth of beer. Chile's beer-breweries can be considerably increased and enlarged, and as Chilian beer is excellent, it is used to provide the States on the coast of the Pacific. As a matter of fact 2 million pesos worth of beer is sent to Central America, Ecuador, Peru and Bolivia.

Another great national industry is sugar-refining; the raw material for this, sugar cane, hails from Peru.

As this industry has increased so much, several sugar-manufacturers have settled in Chile and use beetroot in their factories. The largest of these establishments was in 1900 ceremoniously opened at the town of Parral by the President of the Republic.

The French Consul at Valparaiso sent his government a report in June 1900, which closes as follows:

"Chile is a field of activity of the first rank, and it would prove advantageous to our fellow countrymen to invest their capital here. The Germans have long done this, so much so that for the most part one finds German machinery and German capital. Many mining enterprises, which would develop brilliantly, must remain unworked for want of capital. Agricultural conditions are affected in the same way. Everywhere people are talking of erecting factories and starting all kinds of undertakings."

There is no doubt that there are enterprises which offer certain success; they simply require the proper persons and capital, to give them life. Besides the exploitation of iron, which would be the most profitable and important undertaking, we would mention amongst others the following industries:

The manufacture of perfumes, which are much sought after in the markets of the world. The climate of the towns of Viña del Mar and La Serena on the coast of the Pacific Ocean would for instance be eminently suitable for the cultivation of roses. Then the building and management of good hotels in the bathing centres of Chillan and Cauquenes and even in the capital of Santiago would be speculations worth indulging in, if they were successfully managed on the European or American pattern.

Mortgage bonds also, bearing interest at 8 %, are a safe investment. It is hardly necessary to say that these securities are issued by thoroughly reliable houses, with every possible guarantee. Other securities, such as shares in banks and saltpetre companies, produce from 10 to 14 % interest.

Industrial Establishments. — Statistics collected throughout the Republic early in the year 1902 showed that the following industrial establishments where then in existence:

Textile industries	44
Leather, skins, etc.	374
Wood	431
Metals	308
Potteries	558

Chemical and similar products	268
Provisions	1889
Clothes and millinery	1919
Furniture	172
Building	698
Transport	217
Power production and transmission	23
Letters, arts, and sciences	414
Total	7315

Custom-laws.—The import duties are levied in accordance with the law of the 23d December, 1897. According to this law wares imported from abroad have to pay a duty of 60 %, 35 %, 15 % or 5 % of their value, or a specific duty or are admitted free.

All articles which are not included in the following lists pay a duty of 25 % of their value.

60 % is paid on: brooms and brushes, except toothbrushes and nailbrushes; sheetmetal wares, except tools; picture frames; preserves, except salmon and sardines; cravats; corsets; biscuits; vinegar; carriages of all kinds; window frames; iron balcony railings; iron railings for windows, gardens, or other purposes; copybooks; worked wood; chests; empty baskets; ready-made articles of clothing, except those without seams, or those already subject to other duties; mattresses; masks, except those made for fencing and for miners; needles; dried or preserved fruit; skins; cardboard or paper manufactures; articles of perfumery; raisins; starch; sticks; shoes, except those less than 15 centimetres long and galoshes; hams; syrups; soda; wooden doors; all kinds of spice; arms; wax candles; sugar wares and confectionery, except those of a medicinal nature.

35 % of their value is paid on: albums; battists containing linen; busts; artificial flowers; billiard-tables and appurtenances; bedding; cigarette paper; iron plates for advertising purposes; fans; fireworks; penknives; belts; pictures; coloured or painted glass; gloves; harmonicas; imitation jewellery; hunting ammunition; iron-, steel- or

wooden chests; cristal wares; cages; spermaceti or stearine candles; linen; leather wares; lithographic materials; carriage-lamps; silvered or gilded metal wares; musical boxes; musical instruments; caps; opera glasses; cartridges and cases; artificial plants; powder for hunting purposes; porcelain; travelling boxes and portmanteaus; silk wares and imitation silk wares; boot polish; looking-glasses of over 80 centimetres in length; statues; toys; linen serviettes; fancy feathers; sardines; clocks; woollen wares; iron- or steel fencing; drawings; matches; worked zinc.

15 % of their value is paid on: boats, sloops or small boats driven by electricity or steam; iron or steel bridges; chloride of potassium; portland cement; dynamite and other explosives; glass- or earthenware bottles; goldleaf for gilding; hemp linen; mining powder; umbrella- and parasol-sticks; watches.

5 % of their value is paid on: benzine; bellows for locksmiths and tinsmiths; chromic acid potassium; prepared iron or steel for corsets or clothes; india-rubber for shoes; tinfoil for bottle stoppers; metal capsules for bottles; lead, copper, bronze, iron or steel tubes, together with all belonging thereto; carriages for portable or suspended railways; carriages for chemical or analytical purposes.

TENTH CHAPTER.

CHILIAN PATAGONIA. — AGRICULTURE AND IRRIGATION. — EXPLOITATION OF THE WOODS AND COLONISATION.

Chilian Patagonia.—This chapter may be regarded as a summary of the most important results and observations of the journeys of explorers during the last few years. These journeys were undertaken by the German savants: Professor Dr. H. Steffen, O. von Fischer, Dr. Paul Krueger, Dr. Stange, all of whom are in the Chilian service.

Before describing in detail the region which forms the subject of this chapter it should be mentioned that until quite recently its possession has been the occasion of constant dispute. The question has now been definitely settled by the arbitration award of his Majesty the King of England, to whom was entrusted the regulation of the differences which have for so many years divided the sister Republics.

Agriculture and Irrigation. — The agricultural and hydrographic conditions of the Chilian portion of Patagonia were only very superficially known until about ten years ago. The complicated fjord coast and the adjoining archipelagos were surveyed by the expedition on the "Beagle" and later by Chilian naval officers; but only in a few parts, such as in the river valleys of the Palena and Aisen, had the latter made serious attempts to penetrate into the interior. The only place in which they had succeeded in pressing inland from the Pacific coast over the mountains as far as the Argentinian pampas, was the

mountain pass of Perez Rosales on about the 41° southern latitude, a narrow path known as early as the 17th century to the Jesuit missionaries, and leading up to the Argentine lake of Nahuelhuapi.

Not till practical work was begun in 1891 for the determination of the Chilian-Argentinian boundary line on the basis of the treaty of 1881 were expeditions sent out to study more exactly the Andes region of Patagonia, and the results thereof together with the results of the surveys of the Chilian and Argentinian boundary commission render it possible to form a picture of the orography and hydrography of that neighbourhood on a large scale, although much yet remains to be done in the way of detailed exploration.

The part of Patagonia belonging to the Republic of Chile—from the coast of the Pacific Ocean up to the Andes—is filled in its whole extent with masses of hills, which have been considered since the time of the conquest as a part of the Cordillera de los Andes which run along the whole west coast of South America.

South of Mount Tronador, 46° 10′ southern lat., 3458 metres high, which surpasses all other neighbouring hills both in regard to height and glacial development, the continuation of a uniform main feature of the Cordilleras in the southern direction is interrupted, and the range appears in a large number of short chains and rows of mountains between which lie deep and broad valleys. Most of these valleys run into gulfs of the sea, which branch off from the long trough of the Pacific gulfs and channels (Golfo de Reloncavi, Golfo de Corcovado, Moraleda channel and southern continuations, Golfo de Peñas, Messier channel, Smyth channel, etc.) and penetrate into the interior between steep walls of mountain. Many of these openings into the sea, which resemble the Norwegian fjords, and are called in Chile "esteros" or "estuarios" and "canales" afford good but not very spacious harbours; as for instance the Boca de Reloncavi, at the northern end of which is the harbour of Ralun colonised by Chilotes, and which as early as the time of the Spanish missionaries was important as being

the starting point of the overland route to the district of Nahuelhuapi.

The Estero Pichi Palena too, which is situated north of the mouth of the river Palena (43° 45′ southern lat.) at the western exit of which a little colony has existed since 1889, has a safe harbour, which can become important for the colonisation of the inner Palena valley.

The most important of all the west Patagonian fjords

BRIDGE OF THE SOUTHERN RAILWAY. MALLECO.

is the Baker channel (also called Estero Colén), which is situated in 47° 50′ southern lat., behind high rocky islands, and penetrates over 80 kilometres into the mainland and branches out into a large number of side arms, dividing the western half of the Cordilleras' mass into a maze of separate groups of hills and rocks. Of the hitherto known harbours the one on the northern bank of the channel, the Puerto Azopardo, about 20 kilometres away from the mouth of the channel, is the most important.

Finally the Ultima Esperanza Fjord in the extreme south must be mentioned. It stretches in the 51½° southern

lat., through the whole breadth of the Cordilleras and possesses a beautiful harbour (Puerto Consuelo) on its east side, which is already now being used for the export of wool from the neighbouring sheepfarms of the Magellan territory.

The continuation inland of the large valleys above-mentioned, which are crossed by the Patagonian Cordilleras, is formed by the large streams from the valleys, the little branches of which often reach as far as the low eastern spurs of the Andes. Only a few of these rivers, such as the Rio Yelcho (43° southern lat.), the Palena and the Rio Baker (47° 50′), the greatest of all, offer a clear course of more than 50 kilometres in length; in the case of most of them, even when the tide in the river is no longer perceptible, a wide series of rapids puts an end to all shipping. Further up the rivers wind through a series of low but often steep cañon-like ravines (angosturas), which present to the eye at times hollow boiler-like excavations in the valley and often show beautiful river terraces on the slopes.

The crossing of the Angosturas was always accompanied with great difficulties and dangers for the first exploring expeditions, which had to force their way up stream from the west coast; a closer study however of the lay of the land with a view to the construction of roads will probably result in the avoidance of the main defiles of the valley and the choice of suitable side valleys or of neighbouring heights with flat slopes.

The only really important difficulty is the primeval forest, which stretches from the level of the sea to the snow line, for through it the way must be cut step by step with axe and knife.

Between 41° and 44° southern lat. there appear, in the eastern half of the Andes of Patagonia, valleys of considerable size stretching north and south, from which the Rio Puelo's tributary, the Valle Nuevo, and further south the valleys of Cholila, Perzey and Sixteenth of October, and finally the river Yelcho's Valle Frio and the valley of the river Carrileufu. As they are bounded on the west by mighty mountain masses, reaching often to 2000 to

2500 metres above the level of the sea, and are therefore protected against the rainy winds coming from the NW., W. and SW., a great difference can be noticed here already in the climate and in the vegetation as compared with the dripping primeval forest valleys of the coast zone.

The charming scenery of Patagonia in the Andes, especially in the eastern portion, is increased still more by the numberless peeps of the sea that appear at intervals.

COLONY VALDIVIA.

Most of the large west Patagonian rivers, such as the Rio Puelo and the Rio Manso, the Yelcho, Baker, Pascua (48° southern lat.) and the Serrano ($51^1/_2$° southern lat.), are outlets for lakes, the greatest of which, the Lago Buenos Ayres, from which the Rio Baker rises, being more than twice the size of the Lake of Constance.

Also two large rivers flowing down to the Atlantic Ocean rise in lakes which penetrate deep into the Cordilleras; their names are the Rio Santa Cruz (50°) in the Lagos Argentino and Viedma, and the Rio Senguer (45°) in the Lagos Fontana and La Plata.

On the other hand there are large territories of Chilian Patagonia which must be reckoned among the most desolate regions on the earth, owing to orographic and climatic reasons. Among their number are the ice-bound and glacier-covered portions of the High Cordilleras, which extend north of the Baker fjord as far as the 46° parallel and from these there break forth huge icy streams reaching down some of them as far as the level of the sea, as for instance in the case of the Lago San Rafael (46° 30′ southern lat.) all along the narrow stretch of land connecting the peninsula of Taitao with the continent. Also in many fjords south of the Baker channel (in the Eyre and Peel Esteros), and in many points of the western portion of the Strait of Magellan, glaciers reach down right into the sea and form the icebergs which, appearing in the middle of the fjord bays surrounded by primeval forest, provide a strange picture rich in contrasts.

Although there is a whole row of high Cordillera peaks whose outward form and geographical position point to their volcanic origin, but very few eruptions have taken place in historic times. Activity has been observed in the volcano of Osorno (41° 7′), the Corcovado (43° 10′) and the Chalten or Fitz-Roy (49°), further the volcanoes of Calbuco (41° 20′) and Huequen (42° 20′), which have been in a state of eruption since 1893.

Further details are known certainly only of the eruption of the Calbuco, the surroundings of which are inhabited.

The greatest elevations occur regularly along the various longitudinal zones of the Patagonian Andes. They lie near the sea shore, whilst in other parts the inner peaks, many of which are unnamed and not definitely fixed, dominate. The development and height of the range reaches its maximum between the 46° and 48° parallel. Here are situated, amongst others, the ice-encircled Monte San Valentin, with its 3870 metres, the highest mountain in Patagonia, and, far removed towards the east, Mount Cochrane (3700 metres), flanked by a series of giant mountains of about the same elevation.

Exploitation of the Woods and Colonisation.—The primeval forest, which covers the hills and valleys of Chilian Patagonia, contains a quantity of valuable wood, the exploitation of which by the Chilotic population has been carried on for centuries, but unfortunately in the most unmethodical manner. In no single place does one find one special species; everywhere there is a brilliant mixture of the most various kinds of trees.

In the times previous to the appearance of colonists there seem certainly to have existed in Llanquihue and Chiloé large stretches of forest consisting entirely of Alerze (Fitzroya patagonica); even now the remains of such Alerzals are visible near Puerto Montt in the shape of gigantic stumps.

The Alerze pines, whose trunks sometimes reach a height of 50 metres and a diameter of more than one metre, and whose wood splits so easily that it can be at once worked up into planks and boards where the tree has been felled, are to be found even now in fairly large quantities in the High Cordilleras, and can be recognised at a great distance by their grey-green colour and by the special form of their crests, which stand out above the surrounding woods.

In the mountains on both sides of the Boca de Reloncavi the Boca de Comau and Reñihué, in the hinterland of these fjords and in a few of the valleys made by the tributaries of the upper course of the Rio Yelcho, there are still expanses of Alerzals to be seen, the exploitation of which has not yet been systematically begun. South of $43\,^1/_2\,^\circ$ no more Alerze are to be found.

After the Alerze comes next in importance among building wood the socalled species of Libocedrus chilensis ("cedro" or "Ciprés de la montaña"), which provides most splendid timber. Its chief home is in the inner and eastern valleys of the Patagonian Cordilleras, where however, great quantities have been destroyed by forest fires.

Of other coniferous trees in the Patagonian primeval forest might be mentioned: Libocedrus tetragona or Ciprés, which develops especially well on the Guaitecas- and

Chonos islands, and the wood of which is used for ship-building.

Here too unfortunately the foolish devastation of the forests by fire has ruined the most valuable expanses. The Chilotes have for this reason for a long time already searched through the coast parts of the high Cordilleras for cypress woods and there continue their work of devastation in order to sow in the ashes. The cypresses that are found in the inner valleys of the mountains, are, it is true, for the most part small, weakly trees growing in swampy ground. In contrast to the other coniferous trees this tree extends as far as the extreme south of Patagonia, and is even found in thinly wooded parts of Tierra del Fuego.

The two kinds of the Mañiu fir tree (Saxegothea and Podreaspus) appear in many valleys, as for instance on the Rio Cisnes and Rio Mañinales, a main branch of the Rio Aisen; on the whole, however, the main riches of the south Chilian forests consist not so much in conifers as in trees supplying hard wood, chief among which are the different kinds of beeches (Nothofagus Dombeyi or "Coigue", Nothofagus Pumilio or "Rauli" and Nothofagus antarctica). Coigue and Rauli furnish good heart-wood suitable for building ships and houses, barrels, etc.

Then there is the Muermo- or Ulmo tree in the coast woods of northern Patagonia; the Ulmo is also called the Eucryphia cordifolia; this tree furnishes good tanning bark and wood suitable for burning and building; we must also mention the very solitary tree, the Maiten (Maitenus boaria), which is to be found in gigantic proportions, especially in the more open regions of the eastern valleys.

Many of the plains and expanses of country now covered with primeval forest in the valleys of the Puelo, Yelcho, Palena, Cisnes, Aisen, Baker, Pascua, and the Serrano could be used for the purposes of agriculture and cattle-breeding.

In parts of the first mentioned, near the coast, that is to say about as far as the 47° parallel, there is great abundance of the bamboo jungle called the Quila (Chusquea Quila) and this affords the richest food for cattle.

When the Quila reeds have flowered, they wither away, so that in many parts the surface of the valleys is entirely covered for miles round with the dried stalks and blades of this plant. The clearance of the forest by fire would then be very easily effected, and the first step towards colonisation taken.

South of the above-mentioned latitude the Quila jungle stops and in its place appears the Tepual — still more a hindrance to advance — the underwood of a Myrtacea (Tepualia stipularis), which certainly affords most excellent firing material. The Llanadas, as the Chilotes call the wooded plateaux of the inner valleys, have mostly splendid vegetable soil and also lie beyond the reach of the great floods, which can prove so dangerous to the low land of the lower sections of the valley. Colonists who came as far as this would find the country in many places suitable for agricultural purposes, even if cattle-breeding and forestry should always remain the chief occupation of the settlers.

By far the most valuable tracts of land lie in the above-described longitudinal valleys of the eastern half of the mountain range from Nahuelhuapi Lake southwards as far as about the 43° parallel. Rich supplies of water, luxuriant meadow land, alternating with open bush, protected situations under the brows of scattered hills, and an equable climate which keeps the mean between the excessive rainfall on the west coast and the aridity and extremes of the temperature of the Patagonian highlands, are conditions favourable to colonists, and indeed the success of the few colonists who have lived there up to now confirms this opinion.

The chief group of the colonists who have immigrated here from the east (from Argentina) over the low watershed passes, have remained in the valley of the Sixteenth of October. Starting from this centre, cattle-breeding farmers have also settled in the surrounding valleys, amongst others on the upper Palena. Further north (nearly as far as Lake Nahuelhuapi), an English company possesses several estancias and farms, where they breed large numbers of cattle and sheep.

Chilian Patagonia, the extent of which has not yet been determined, can be compared, as regards the formation and the climate of its coast, with Norway, while the interior reminds one of Switzerland.

The reports of travellers and explorers and the many beautiful published photographic views give us a charming picture of the resemblance between the channels or Esteros of the Pacific Ocean with the fjords of the North Sea, and also of the mountains and lakes of the interior, which remind one everywhere of the well-known Swiss landscapes, where a hard working population has created for itself a multifarious and busy commerce.

BRITISH DIPLOMATIC AND CONSULAR CORPS IN CHILE.

LEGATION:

Envoy Extraordinary and Minister Plenipotentiary:
His Excellency *Gerard August Lowther.*
Secretary: *Allen C. Kerr.*

CONSULATES:

Arica. Consul. *David Simpson.* 27th June 1893.
Caleta Buena. Consul. *A. E. Danks.* 22nd March 1901.
Pisagua. Consul. *George I. Klarke.*
Iquique. Consul. *Herbert Ross Lowe.*
„ Vice Consul. *Charles Noel Clarke.* 28th July 1899.
Tocopilla. Consul. *C. W. Nicholls.* 6th February 1901.
Antofagasta. Consul. *John Barnet.* 23rd December 1880.
Taltal. Consul. *Peter N. Schjolberg.*
Chañaral. Consular Agent. *William Steriff.* 29th November 1901.
Caldera. Consul. *H. Beazley.* 23rd June 1887.
Carrizal Bajo. Consul. *John King.* 24th October 1873.
Coquimbo. Consul. *Thomas Ireland.* 30th December 1901.
„ Consul. *George Lindsay Austed.* 3rd May 1899.
Los Andes. Consul. *Thomas S. Tuffield.* 22nd October 1900.
Valparaiso. General Consul. *Thomas Berry Cusack-Smith.* 28th July 1899.
Valparaiso. Consul. *Robert Helsby Watson.* 29th April 1901.
Valparaiso. Consul. *Arthur L. S. Rowley.*
Santiago. Consul. *Allen Kerr.* 3rd October 1899.
Talcahuano. Consul. *Alfred Steel.* 2nd May 1898.
Concepcion. Consul. *William Borrowman.* 13th June 1901.

Coronel. Consul. *Edward Cooper.* 15th Febr. 1900.
Tomé. Consul. *Mack Savery Pasmore.* 11th Nov. 1896.
Lota. Consul. *Herbert Henry Marquire.* 25th Nov. 1898.
Temuco. Consul. *R. E. Leay.* 14th Jan. 1902.
Traiguen. Consul. *Francis L. Anderton.* 27th May 1896.
Valdivia and Corral. Consul. *C. H. Howard.* 20th Dec. 1899.
Ancud. Consul. *William H. Turner.* 17th Dec. 1902.
Punta Arenas. Consul. *Percy West.*

UNITED STATES.

LEGATION:

Envoy Extraordinary and Minister Plenipotentiary:
His Excellency *Henry L. Wilson.*
Secretary: *Norman Hutchinson.*

CONSULATES:

Arica. Consul. *John W. Lutz.* 8th March 1899.
„ Consul. *David Simpson.* April 1893.
Iquique. Consul. *Charles S. Winans.* 6th October 1900.
„ Consul. *Edward E. Muecke.* 22nd May 1901.
Antofagasta. Consul. *Charles O. Green.* 15th Nov. 1898.
Caldera. Consular Agent. *John C. Morong.* 15th Sept. 1867.
Coquimbo. Consul. *William C. Tripler.* 12th April 1891.
„ Consular Agent. *Andrew Kerr.* 5th Nov. 1898.
Talcahuano. Consul. *John F. van Ingen.* 17th Sept. 1881.
„ Consular Agent. *John O. Smith.* 12th Nov. 1895.
Valparaiso. Consul. *Robert E. Manfield.* 22nd May 1891.
„ Vice Consul. *August Möller.* 23rd July 1882.
Coronel. Consular Agent. *J. H. Downs.* 24th March 1899.
Punta Arenas. Consul. *Moritz Braun.* 14th March 1896.

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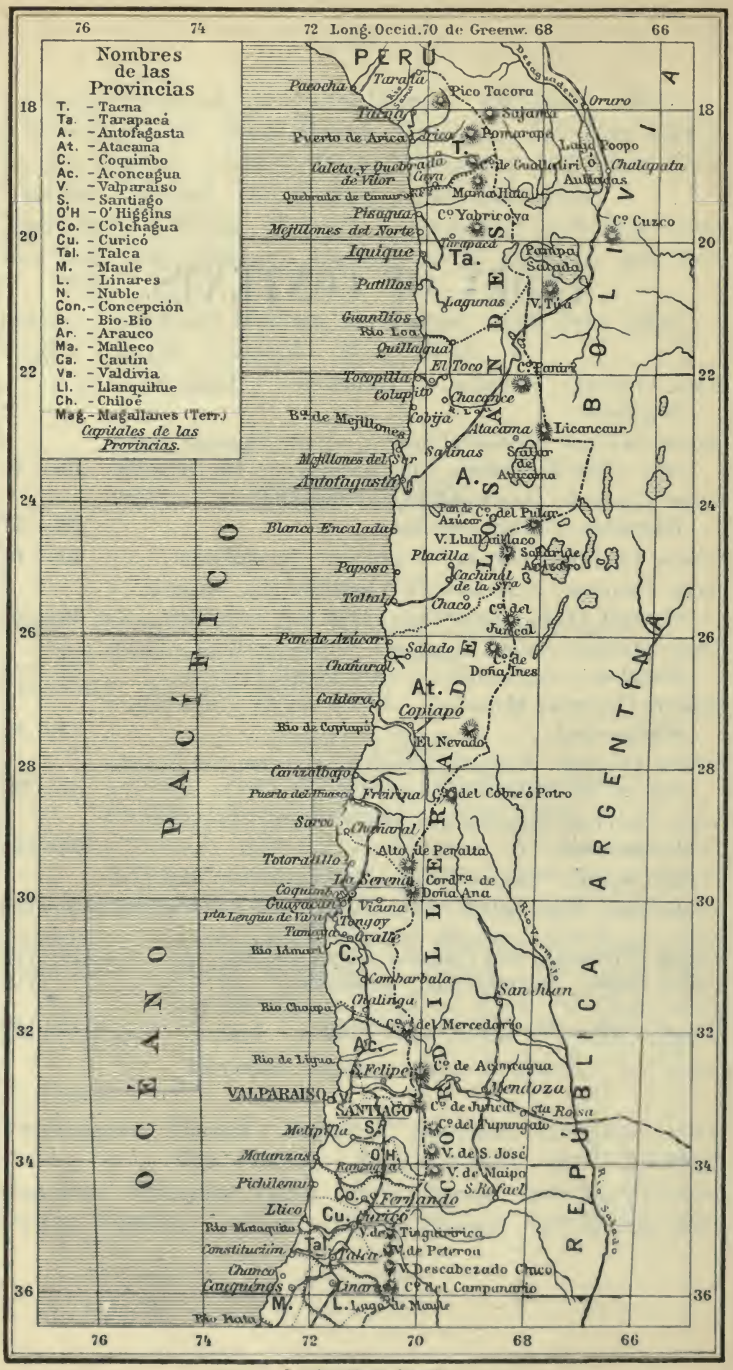

F. A. Brockhaus, Leipzig.

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