

APUNTES

SOBRE

LA REGION SUD-ANDINA DEL ALTO LIMAY

Y SUS AFLUENTES

CON UN CRÓQUIS GEOGRÁFICO

POR EL

Dr. JOSÉPH DE SIEMIRADGKI

Apuntes sobre la region sub-andina del Alto Limay y sus afluentes

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El cróquis adjunto es el resultado de un viaje de cuatro meses, durante los que he recorrido el terreno en cuestion en todas las direcciones. A pesar que no he tenido instrumentos de precision para determinar la posicion geográfica de los puntos principales, me atrevo á creer, sin embargo, que la publicacion de mis apuntes, hechos únicamente á la brújula y cronómetro, no será sin interés, principalmente en el momento actual, en que los argentinos están ocupados de la cuestion de límites, y tanto mas, cuando la carta del señor Rohde, la única que existe, está muy distante de ser exacta. Esta carta no es en verdad mas que un cróquis muy mal levantado, frecuentemente aún sin haber visitado los parages dibujados en la carta, de modo que se encuentran en ella, por ejemplo, grandes lagos, como el Lago de las Manzanas, que en realidad no existe, mientras que no se ven en ella cadenas de montañas muy importantes como la de las Angosturas las que, sin embargo, desempeñan un papel notable en la topografia general del país. Tengo que advertir que la primera edicion de la carta del Sr. Rohde, es mucho más exacta que la segunda, lo que no deja de ser extraño.

Dejando á un lado la polémica, me ocuparé ahora de la descripcion del terreno del alto Limay.

La meseta de arenisca oligócena *Mesotherium Marshi*, que se entrevé en toda la extension del profundo valle del Rio Negro, desde Choele-Choel hasta la Colonia Roca sigue sin interrupcion las orillas del Limay, hasta los alrededores del Fortin Nogueira; solamente, en lugar de la arenisca y conglomeradas de color blanco, está formada por capas mas antiguas, distinguiéndose por su color rojo encendido. No hemos podido desgraciadamente encontrar fósiles, exceptuando troncos de árboles petrificados

en la arenisca superior (blanca) sobre la orilla derecha del Rio Negro, en las inmediaciones de Roca. La edad de la arenisca roja queda aún problemática. La arenisca blanca oligocena le está sobrepuesta de un modo concordante, y las dos tienen una inclinación apenas perceptible hacia el Este, de suerte que la meseta, que no tiene más de 300 metros de altura, en los alrededores de Choele-Choel, á pesar de su estratificación horizontal, se levanta paulatinamente hacia la cordillera, avanzando hasta 900 metros de altura absoluta.

El carácter geográfico de la llanura es siempre el mismo: una superficie completamente plana, cubierta de una capa de guijarros graníticos y porfíricos, ordinariamente cimentada por una masa calcárea que contiene siempre sal marina, la que da un gusto salado á todo depósito de agua estancada formado por las lluvias. Este depósito superficial, esparcido en toda la Pampa Central y considerado por la mayoría de los geólogos como depósito glacial no puede ser según nuestra opinión, más que un depósito marino, probablemente mioceno, pues ocupa en las regiones donde se hallan golfos pliocenos, un nivel superior, coronando la cima de las rocas que limitan los golfos más recientes.

La Sierra Roca no existe en realidad; no es más que el borde escarpado del profundo valle del Limay en su confluencia con el Neuquen.

Solamente después de haber pasado el pequeño arroyo Pichi-Picun-Leufu, cerca del Fortín Nogueira viejo, se entra en la región montañosa, donde el núcleo de gneis granítico, como también las capas terciarias de arenas rojas y blancas, están trastornadas y atravesadas en todo sentido por erupciones andesíticas modernas.

La región comprendida entre el valle pantanoso de Pichi-Picun-Leufu y la corriente del río Collon-Curá está ocupada por numerosas colinas y valles profundos y fértiles. Del paisaje del desierto patagónico, con sus numerosos salitrales y de maleza espinosa, se pasa allí á un paisaje variado, ondulado, desprovisto de maleza, pero cubierto casi en toda su extensión de excelentes pastos, sobre un suelo arcilloso y húmedo. Se encuentra allí en todas partes agua en abundancia y filones metalíferos entrecruzan la región poblada hasta ahora casi exclusivamente por indios *Ranqueles*.

La cima más elevada, situada casi en el centro de la región, es de una altura aproximada de 1500 metros.

Se pueden observar en la parte central hermosos ejempla-

res de metamorfismo por contacto de las areniscas transformadas en cuarcitas y jaspe, en la vecindad de las lavas negras andesíticas, que solo forman rara vez pequeños picos poco elevados, encontrándose ordinariamente bajo la forma de desbordamientos horizontales. Se encuentran en toda la region indicios de la accion glacial, principalmente en la parte meridional. La parte boreal, en la orilla izquierda del Catalin y Collon-Curá superior, forma una meseta horizontal de lavas y escorias, que descansan sobre tobas estratificadas de un color blanco. La meseta se levanta á 250 metros mas ó menos sobre el nivel del rio y presenta bordes cortados á pico, accesibles únicamente por numerosos «barrancos».

Hácia el Norte se estiende una vasta meseta, elevada mas ó menos de 1000 metros, dominada por algunos picos aislados. En el lecho del Rio Catalin están á descubierto esquistos negros, probablemente eretáceos ó jurásicos.

En medio de la meseta, que separa los rios Catalin y Aluminé, se vé elevarse hasta 2000 metros de altura una cadena estrecha, empinada, compuesta de gneiss y granitos, que no se estiende hácia el Norte mas allá del punto á donde le hemos señalado. Mas lejos, hácia el Norte, hasta las fuentes del Bio-Bio, no se ve mas que una sola llanura cubierta de lavas y de escorias, derramadas horizontalmente en una altura considerable, que cae verticalmente hácia el valle del Aluminé.

Los numerosos picos, que se ven en esta region en la carta de Rohde, son pura fantasía.

Los flancos de la Cordillera de Catalin (El nombre de Chachil no es conocido de la gente [del país]) están cubiertos por maleza de hojas, mirtos y manzanos.

Sobre la cumbre se encuentran los primeros bosquecillos de pinos (*Araucaria chilensis*), muy numerosos sobre la caida occidental de la misma cordillera, pero no bajan hasta los valles.

Las dos riberas del Aluminé son desiguales. La izquierda es escarpada, formada por el borde de la meseta alta y la cordillera de Catalin; la derecha, ligeramente ondulada, está literalmente cubierta de numerosos eráteres, cuyos productos han formado un suelo fértil, cubierto de ricos pastos, y en los lugares mas bajos, de maleza de hayas y de mirtos. Recien entre Pulmari y el Lago Aluminé se encuentra un terreno mas árido, compuesto de *lapilli* de piedra-pómez. La ribera izquierda del alto Aluminé, está cubierta hasta la cumbre de bosques de abetos, que son mas escasos en la ribera opuesta.

Después de haber atravesado un desfiladero estrecho, entre rocas graníticas cubiertas de abetos y cipreses, entramos en el hermoso valle del lago Aluminé, que no es, como se creía, la fuente del río de este nombre, el que nace á algunas leguas mas al norte, sobre la meseta, muy cerca del Bio-Bio, y, alimentado por numerosos manantiales, pasa únicamente por el lago sin aumentar la cantidad de agua traida. En la salida como en su entrada al lago, el río Aluminé mide una anchura de veinte á treinta metros, y lleva una cantidad de agua bastante considerable.

El lago está rodeado del lado norte por el borde de la meseta, del Oeste por varios picos poco elevados que forman parte de un volcan vecino, y del sud son una pequeña cadena volcánica. La cordillera chilena pasa un poco mas al oeste.

No he podido visitar la region entre la Sierra de Malleco y el curso del Chemen-huín y no me ocuparé de ella, haciendo únicamente constar que el volcan de Quetrupillan, punto central de las medidas tomadas, está mal colocado en todas las cartas existentes. He tomado todas mis direcciones sobre este pico elevado y visible de muy lejos, y como resultado lo he anotado en un lugar muy diferente del que ocupa en la carta de Rohde, que corresponde casi exactamente al volcan de Rinihue en la primera edicion de la carta mencionada, él no puede ser otro que el Quetrupillan, porque es el único pico que sobrepasa mucho la cresta de la cordillera.

La posicion del pueblo de Junin (Huínca-Meillen) en relacion con los puntos conocidos, es diferente de la que le da el señor Rohde. El hermoso y extenso valle de Chemen-huín, terminado por un desfiladero en su extremidad, tiene la forma que le ha dado en mi cróquis, haciendo una notable vuelta hácia el Norte, no lejos de su embocadura. La distancia en línea recta desde Collon-cura á la embocadura del Quilquihué es de 7 leguas.

En la embocadura de Quilquihué el valle se divide en dos ramas de igual fuerza, la una pasa al Norte y en seguida al Oeste desde Junin hasta el lago de Huechu-Lafquen; la otra sigue la misma direccion occidental hasta el pié de la Cordillera Chilena. El valle de Quilquihue, muy ancho, recibe por la derecha un afluente del arroyo Chapelco y cruza sin interrupcion la primera cordillera traquítica de Chapelco; después de lo cual el valle se divide en dos ramas, una ocupada por el Quilquihué da una vuelta hácia N. O. para concluir á una legua mas lejos en el gran lago Lolo, largo de 5 leguas, y la otra, dirigida hácia

el S. O. pasa al cabo de una legua por el bello valle de Maipú, ocupado por la tribu del Cacique Curu-Huinca y derrama sus aguas hácia el Pacífico.

La cordillera al Norte de Junin es muy baja. Desde la montaña de Chapelco, de 2400 metros de elevacion hácia la embocadura del Traful, se extiende una cadena traquítica continua, empinada, que termina con numerosos picos en puntas y agujas.

Los lagos de Lolo, Traful, Nahuel Huapi, están situados al Oeste de esta primera cordillera.

La altiplanicie, entre la cordillera y el Collon-Curá está cubierta de *moraines* glaciales y cortada en tres terraplenes que descienden gradualmente hácia el Este y que están cubiertas de buenos pastos. Los valles de los Rios, que bajan hácia el Collon-Curá poseen una vegetacion de arbustos de *maiten* (mirtos), la Cordillera abunda en bosques de cipreses hasta la embocadura del Traful, punto donde la cadena traquítica pasa al otro lado del Limay y está casi enteramente desprovista de vegetacion.

Los valles del Traful y Rio de las Manzanas forman en sus partes inferiores desfiladeros cubiertos de peñas, ensanchándose en sus rejiones superiores en hermosas praderas rodeadas de montañas y de bosques. El Lago de las Manzanas no existe.

Desde la embocadura del Traful hasta el valle y lago de Nahuel-Huapi, el Limay forma un desfiladero estrecho y muy pintoresco, pero, con excepcion de las orillas mismas del Rio, casi desprovisto de vegetacion.

La direccióndel Alto Limay es mucho mas torcida hácia el Sud-Este, de lo que aparece en las cartas actuales; por consiguiente, la punta oriental del lago está situada mucho mas al Este. La anchura del brazo oriental del lago Nahuel-Huapi no pasa de 2 leguas y la mayor anchura en el medio del lago no es mas de 5 leguas.

La forma general del lago es la de una media luna, teniendo un apéndice del lado S. O. — un brazo estrecho, encerrado entre rocas escarpadas. El número de islotes rocallosos, de los que no he podido anotar que mas los principales, es más ó ménos de 30.

La ribera Norte del lago es ondulosa y forma dos valles grandes, regados por dos torrentes pequeños, la Sud y S. O. es inaccesible á causa de sus montañas excesivamente escarpadas y casi siempre, aún en pleno verano, cubiertas de nieve y envueltas en neblina.

La ribera S. E. es baja, cubierta de depósitos glaciales y

formando terrados. Hay que notar que generalmente no se encuentran depósitos glaciales en ninguna parte en las Cordilleras mismas, cuyos contornos escarpados no se prestaban para la formación de ventisqueros. No se encuentran moraines sino sobre la meseta entre el pié de la cordillera y los valles del Limay y Collon - Curá.

DR. JOSEPH DE SIEMIRADGKI.

La Plata, Mayo 1892.

DATOS SOBRE TIERRA DEL FUEGO

COMUNICADOS POR EL REVERENDO THOMAS BRIDGES

February 18th 1891.

AL SEÑOR DIRECTOR.

— *Museum La Plata.*

With much pleasure in reply to your request I write the following brief & truthful account of Tierra del Fuego hoping thus to interest the general reader, & to help any who may be thinking of seeking a living there.

First with respect to the natives of the country. These form three tribes, each having its own language, and these are quite distinct, the one, from the other. The Alaculuf tribe occupies the West & North West of the country, the Ona the East & North East, & the Yaligan the Southern district. The Alaculuf are quite untouched by any Christian influences, but are so few in number, & so scattered as virtually to be non-existent, with respect to any difficulties they could raise to the intending settler. They certainly do not number 200. They are a canoe people like the Yaligans, from whom they differ only in language. Sealers from Sandy Point, the Falklands, & North America have for many years decimated them with their fire arms. I have heard of instances even when the sealers finding the natives sealing on islets where they expected good success, have shot off the Indians for spoiling their success. If there is any difference between the Alaculuf & Yaligan tribes physically the Alaculuf are superior somewhat, in size & vigour. They also have more beard & eyebrows than the Yaligans, and are darker in complexion. The three tribes find their chief subsistence on the shores, in the large and varied supplies of excellent mussels, limpets, whelks, sea eggs &c. they find there. They also catch fish abundantly with lines, spears, & temporary weirs. These fish are of many kinds & of very good quality including Rock cod, rock fish, mullets, smelt, sprats, and some 5 kinds of larger fish that prey on the sprats. They materially add to their food supplies by the geese, ducks & other birds of the country & their eggs, which are obtained in considerable quantities. Of animals, the Alaculuf hunt the deer found on the Patagonian coast, and also the guanaco, & other animals of that land. The Yaligans hunt the guanaco found on Navarin Island & Onisin, as do also the Ona, the principal inhabitants of the latter country. The Ona find the Cururas, or Tucutueus a good food supply. From the sea, all three tribes find seals of three or

more kinds, otters of three kinds & many kinds of whales & porpoises, a very large addition to their food supplies, besides making important uses of their bones, for spear heads, splitters & bark strippers; of their sinews, for fish lines, bowstrings, fish nets, & lines for general uses; of their skins, they form mantles, leggings shoes & caps, of the feathers they form head bands, & tinder, of the web feet of larger sea birds they make balls to play with.

Of the baleen of the whales mouth they find the best material for sewing securely together the different pieces of thick bark of which they form their canoes, and for sewing together their bark buckets & bailers, and also for making their nooses for catching birds, & small animals. The natives readily make fire by striking together two pieces of firestone or pyrites, & using the down of water birds, or the fungus Puff ball, as tinder.

Of the wing & leg bones of birds they formed good sewing awls, of the leg bones of guanacos they made excellent chisels like splitters, invaluable in the making of spear shafts, paddles, & edge pieces for strengthening their bark canoes, shoulder blades they found useful as meat dishes, larger shells they used as cups, others as ornaments, whilst of one kind of mussel remarkable for its fine grain & hardness they formed by breaking them in to shape, & grinding them to a good edge knives to cut their hair, & meat, & chippers to shapen their paddles, lances, & bone lance points. These were of different sizes & shapes according to the special object of the maker, whether for killing whales, seals, porpoises, or for fish & birds. Besides the spears the natives of each tribe also used bows & arrows, & slings. The Yaligan tribe used the bow much less than their neighbours, as they were less forest-hunters than they, & formed their fine spears for more effectual in obtaining sea birds, fish, seals, porpoises &c whilst hunting in their canoes. Like the Esquimo the Yaligans also frequently killed seals by spearing them from the shore, having the spear shaft secured to their persons by a thong.

Of the skins of the hair seal the natives cut out good thongs for many uses, especially for use in cliff climbing in quest of eggs & stags of many kinds. They also found the thong of the greatest service in keeping themselves in fit position whilst cutting the bark for their canoes on standing trees, & afterwards lowering it to the ground. I have also seen a seal-net made of hide, and the Alaculuf were accustomed to use such over the mouths of caves.

Of the gullets of seals & fish eating birds the people formed very good bags for all kinds of purposes, chiefly however for sausage & oil bags.

They very dexterously point their arrows with agate flint or glass, preferring the latter. They find the sinewy tail of the otter yields them a fine supply of strong thread for binding the point securely into the arrow or spear head.

The natives before the introduction of iron never attempted to cut a tree down with any stone implement, but resorted to fire as the easier way of getting the tree down. They would then burn off such a length as they wished & then would with bone splitters & stones for driving them in would split the piece into such strips as they wished. They have of course special names for every operation & for every kind of tool, and whilst they attempted no ornamentation, yet took great interest in making their several articles as perfect as possible.

They used no hooks with their fish lines, with which they seldom caught fish more than 3 lbs weight, but they used at the end of the line a tough pliant noose, formed of a strip of the tough covering of the lower end of quills. This is wonderfully strong, and with it they formed a perfect noose, in which they secured the bait. They fished from the canoe, and used round stones, with a groove cut in them to receive the line as sinks, to carry the line down quickly. These sinks the Yaligans call Shashi.

The fish having taken the bait the fish woman hauls the line up, and as soon as the fish is well within reach she deftly seizes it, without attempting to pull it out of the water, in which case the weight of the fish alone would result in the escape of the fish by disgorging the bait. They practised a very effectual way of catching cormorants. They attached 4 or 5 short lines to a wooden hoop. At the end of these lines they tied 3 little splits of wood well pointed, in such manner that the points opened out somewhat. The bait was tied to the outer & bound ends of the splits. When the bait was swallowed from the bound end the points converged & offered no resistance, but when the bird wished to disgorge it could not, because the points now opened being foremost & stuck in the throat.

In using the nooses before mentioned it was customary to erect fences of sticks, leaving here & there spaces for the birds, geese & ducks to pass through. In these gaps were placed nooses well secured. In passing, the geese would be

caught by the neck, & struggle till they died. In this way geese specially were caught in considerable numbers, in the little valleys of pasture leading down to lakes.

The Ona tribe have no canoes, as their coast is without harbours & sheltering islands, and also they have no trees in the major part of their country to make them with. For this reason they have been known by the name Foot Indians, to distinguish them from the Canoe Indians.

The Ona are in language, manner of life, stature, & physical condition of their country identical with their brethren across the Magellan Strait, the Tehuelches of Southern Patagonia. Having gathered some hundreds of Ona words, and compared them with the Tsonaca or Tehuelches they were found largely to coincide.

But the Ona not having horses are not bowlegged like the Patagonians, but are straight limbed active & strong of foot.

They are & have been for a number of years most unhappily circumstanced as regards gold miners & farmers & other visitors to their country. Being found a hindrance, & source of danger by these new comers, they have universally been shot down, as often without cause, as in reprisal for harm done by them, in the way of stealing & killing horses, cattle, & sheep.

And certainly the poor Indians who should be a help, and ought to be made so by the new comers, are found in the way, and a nuisance, and are treated accordingly, and as the country is more & more occupied by settlers so more surely & swiftly the natives that were, be no more. Nothing but the timely & kind, determined action of government will effect a remedy to this improper & unhappy state of things. The natives can be made useful farm hands, and with reasonable masters make faithful & efficient servants for all kinds of work. I speak after many years experience both as a missionary and employer. When paid according to their work they are susceptible of great industry & perseverance. The great difficulty of happy intercourse lies in the difference of language. The Ona are a tall, stout people, and their numbers are said to be thousands. I don't think they are 1000, from investigations I made of their numbers. Their country is a good one, abounding in guanacos, geese, ducks, tucutucus, swans, & flamingos, but their chief supplies they get from the shore, in the way of shellfish, fish, seals, otters, & sea birds.

The Yaligans of whom I have already incidentally said so much I need now say little, further than to state their number

now to be about 320, whilst 30 years ago they were 3000, as fully proved by lists of families then taken by me. This decrease is chiefly owing to imported diseases as measles, smallpox &c.

Among this tribe the Christian Mission at Ooshovia has worked & taught for some 33 years, and with good success as far as improvement in life and manners of the natives and also in their physical benefit every way. Their decimation is not owing to the Christian Mission, but to the sins of visitors to the country, and the arrival of disease through their means not before known by the natives. Also the immorality constantly prevalent among them resulted in a high death rate, chiefly from disease of a scrofulous and pulmonary description, in part no doubt owing to the prevalency of boisterous, wet & cold weather. The natives of all parts had even in former times like diseases, amongst which consumption, typhus fever, itching diseases, were common and even leprosy was not unknown. Cancer was common among persons of advanced life. The Alaculuf are allied to the Chonos Indians south of Chili, but as to the origin of the Yaligans we can find no clue, either in traditions current among them, or in resemblances in their language to any other. Of the three Fuegian languages Yaligan decidedly holds sway for euphony & pronounceableness. It is an ample language every way, and regular in its varied inflexions.

The measles which some seven years ago took away fully 70% of the people who happened not to reach those sequestered in the extreme south of the country, and there accordingly are found more than two thirds of the existing Yaligan tribe, viz.: about 100 in the Wollaston group of Islands, and another hundred in the district called New Year's Sound.

Tierra del Fuego occupies in latitude about 300 miles, and in longitude about 10 degrees. Its extreme southern point Cape Horn borders the 60° South. Thus there is considerable difference of climate in the north and south, but the greater difference of climate is owing to the extreme humidity of the west, & the comparative dryness & clear skies of the east & north, the climate of which is like that of South Patagonia. The land occupied by the Alaculuf, i. e. the west & north west of the country & about three sevenths of the whole is a land that can best be described as Aldean. It is a continuous succession of mountainous land the valleys being tortoise, & narrow, and their sides steep, but richly clothed with forests

of fine growth save on the outer coasts, which are exceedingly rugged and where the vegetation is comparatively scarce, and largely formed of ferns & mosses. Owing to the almost constant gloomy sky the temperature is seldom down to the freezing point, but on the other hand its upward range is very limited owing to the same cause. Few days pass without rain, and winds are frequent & strong, chiefly from the West & South west.

The extensive woods comprise five kinds of trees with an abundant undergrowth of evergreen & other bushes. The trees are 3 varieties fagus or beech, the Winters bark, and the Fuegian cypress. The beeches alone are valuable for timber and attain a fine growth.

One of them is an evergreen, the tree which has the greatest value for the Indian, as it supplies him with bark for his canoe & heavy wood for his spears.

The bushes comprise masses of currants, fuschias lenadura, an arbutus like bush, the scarlet embotrium the white flowering veronica, three varieties of berberis, and the prickly myrtle. Where there are no trees the land is covered with an alpine vegetation of low plants bearing for the most part minute flowers, & there is little or no grass.

In the North east of the country the land called Ouisin is for the most part low & dry, free of wood, with small lagoons here & there. Here the rainfall is abundant, but not too much, sunny days largely predominate, and bird & animal life abounds, Even lizards are found, also the teru-teru, the tucutucu, swans & fleuningos. The camps are well covered with pastures, which improve as you approach the central parts of the island. This island is towards the south west & all along its south coast bounded by a deep belt of high mountain land abounding in glaciers, and dense forests of beech trees. The two culminating points of the country are found in this district, and are some 8000 ft. & are called Darwin & Sarmiento.

This mountainous belt separates the sunny & dry north from the cloudy & cold south, but even here the climate is less rainy & more sunny than in the gloomy west, & there are very pleasant reaches of good grass land fronting the lower slopes of this mountainous range, which runs from Cape San Diego in the East, to Cape Brecknock in the west over 300 miles. This mountain district is difficult to pass, because of the dense woods, the height of the mountains, the steepness of their sides, the moss covered flats full of trees that run among

the mountains over which a horse cannot pass. The belt of mountains extends also a distance of 30 miles or more inward.

South of it are found no lizards, tucu-tucus, teru-terus, nor flamingos. Swans are occasionally seen, also all land birds are much less abundant. Snow lies longer on the low lands & in greater depth, & all lakes are frozen through the winter, but yet cattle & sheep thrive, as proved by many years experience. Also you can grow with success Cabbage, cauliflower, carrots parsnips, lettuce & potatoes, but no kind of grain, nor fruit trees or nuts of any description. Pasturage of many kinds of grasses however are good, and it is not necessary to assist either sheep, cattle, or horses through the Winter either in the matter of shelter or of food. The woods alternating with pasture, and these frontage lands being a succession of hills & Valleys of every description afford abundant shelter, and the ever-greens in the woods supply cattle with excellent fodder. Yet north of the mountains there is much less snow, a far better growth of grass, and a much improved average temperature all the year round, resulting in lessened difficulties in Winter & far better results in the cultivation of the soil, in better crops of the same vegetables and small fruits, and even grain growth for home use, but not for export. Also in no part of Tierra del Fuego can any fruit or nut trees be grown successfully. But very decidedly the pastures of Ouisin are superior to the pastures of the Falklands. The difference between the Falklands and Ona pampa land is less heat in summer and less cold in there than here, but more snow in the Falklands than Ouisin and more rain in summer. The farmers drawbacks in Ouisin will be the same as those in Patagonia as regards fuel & wood.

I believe the best district for settlers in Ouisin will be found the lower slopes, & frontage lying north of the mountain range, where must be abundance of streams and alternating pasture & forest lands, whence the camps northward can be supplied with abundance of wood for all purposes. This district comprises a good camp of 100 miles from North to South, & from the Atlantic to the heads of Useless Bay & Admiralty sound, a large part of which is Argentine territory.

All this district, and the lands also south of it is a large gold district, especially towards the eastern parts. The islands New-Picton & Lennox and the Eastern part of Navarin Island & the South East coast of Ouisin has yielded much gold, especially Sloggett Bay & neighbourhood, where gold is

found in larger flakes & nuggets than elsewhere, & more plentifully. There are at present close upon 50 working men in these parts working & doing very well indeed. Most of these come in small craft with supplies of provisions for six or more months. They seek a good beach, and put up their tents. They remove the upper layers of sand & grit, and wash the lower parts, and in this find the gold. In some parts so fine as to require copper plates washed with mercury. Many thousand pounds worth of gold have been found, often in considerable nuggets. There seems every reason to believe that the gold field at Sloggett Bay is practically inexhaustible, because of the extent and depth of the deposit. This field fronts Sloggett Bay as a sloping and abrupt bank of conglomerate mixed with masses of clay. It is the waste of this barrauca caused by weather and the sea that yields the rich gold deposits of the beach below. Sloggett Bay has been almost continuously worked for 3 years, and yet continues to yield good results. I like not to make a random guess at the amount gathered but I know it has been very large.

The fish of Tierra del Fuego must eventually become important, as they are large in quantity, and variety, but are scarce through the winter.

As regards other metals than gold there is every reason to believe that in so extensive a region of varied mountains much valuable metal must be stored up for the future. No one need be afraid of the climate, as the coldest weather in winter is also the calmest, clearest & pleasantest, and the winters are much less windy than the summers. Cresses for salads, & celery for soups abound, and the berries are not to be despised. The supply of firewood is most plentiful, and sheltered positions for camps are readily found.

The chief difficulty of gold workers in Sloggett Bay & neighbourhood are the lack of sheltered coves for landing & securing Vessels. Two vessels have already been lost in Sloggett Bay, & boats have been overturned by the rollers that almost constantly get on the shore, yet these parts in spite of these drawbacks present the best prospects to miners, as the yield is so much greater. Persons going to these parts should provide themselves with stout clothing and boots. I should have said that continued frosty weather in winter seriously interferes with the winters work, but this does not extend over 3 months.

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