

## A VISIT TO THE PUERTO BORIES FREEZER

by Thomas Dick, Manager of Puerto Bories Freezing Works

Taking the workman's train to Bories in the morning, we found ourselves in a carriage surrounded by social reformers, but were somewhat relieved to hear, that no local question was requiring attention and that their ideas of reorganization were world-wide in scope. Prohibitionists were there in force, though the atmosphere hardly bore out their preachings. We felt almost selfishly glad that "the need for bread" did not force us to have to deal with labour in that district, for where everyone imagines he is a Lenin, of at least the chrysalis stage, delicate situations must frequently spring up. We walked round to the radio station and had a few moments conversation with the official in charge, who informed us that his station is singularly happily situated for sending or receiving messages from all quarters, and that is specially attended to shipping in the canals.

As we noted the approach of a flock of sheep, along the public road, we crossed over, to watch its arrival.

We were eyed none too invitingly by a hard-visaged man, who evidently expected us to blunder ahead of the point. However, as we knew enough to keep a respectable distance away and well to one side, no more attention was paid to us. The sheep kept breaking away from the corrals, but at that moment, a gaunt solemn-looking person arrived leading a decoy lamb. On reaching the gate, he let the lamb go ahead of him, then walked back, leading the decoy in the direction of the sheep race, with all the flock in hot pursuit.

He soon arrived at the race, which is a species of bridge four hundred and fifty yards in length, which unites the corrals with the sheep-shed, and allows the animals to arrive free of mud at that building. In the space of half-an-hour four thousand sheep had raced down, and were carefully shut up in safe numbers in the corrals, into which the shed is conveniently divided.

We noticed that another decoy-sheep was used to lead the sheep from the shed to the catch-pens, which are in a lower level, and decided to follow the operations, till the frozen mutton was loaded for England, should we obtain permission to do so.

We had been accustomed to freezers in Buenos Aires, where noise and shouting never cease and were struck by the quietness prevailing, so near the butchering department. It seemed incredible that strenuous work was going on so close at hand. We entered the killing floor and were flustered for a few moments by the intense activity displayed, then the chain unravelled itself and we noted how smoothly and naturally everything was running. Six half-stripped giants were catching and holding for the stickers, who proficiently and painlessly did their work. Thirty-six butchers were sending sheep along the sheep-rail at the rate of twelve per minute, whilst twenty-three workmen kept the floor clear of all offal, etc., so much so that the floor could be completely cleared a few minutes after killing ceased.

The butchering as far as the carcase was concerned was very good, though one noted the effect of the Patagonian butcher's short season, in the scoring and in some cases, cutting of the skins. This is a constant complaint against Patagonian freezer skins. We dallied a few minutes in the casing department and noted with interest, the pulling, fermenting, scraping, classing, salting and barrelling operations, and thought of how few people know of the labour involved in preparing even the covering of the sausages which grace their breakfast table.

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A person who showed great skill was the youth cutting out tongues: whilst we watched him, he was taking out tongues at the rate of fifteen per minute - three swift cuts, and the tongue was dropped in the receptacle at his side.

After the butcher has finished with the sheep it passes through many hands, in the process of washing and dressing it. The carcass is now moved on to the cooling chamber, where the meat-classer passes or rejects it, for he is at the same time municipal inspector. Every animal is carefully examined inside and out, for any signs of disease, and is classed first or second, according to its quality. We had the luck to see a magnificent point of wethers hung up, and have seen nothing better in the freezers of La Plata: over ninety per cent. were classed as first class.

The carcasses are left in the cooling room till the following day, when they are weighed; on their way to the freezing chambers during this cooling-room stage they lose two per cent. of their weight, by evaporation.

We should like to make a digression here and remark, that, considering the care and hygienic measures at force in Bories, we decided to buy with preference Bories Brand mutton, on our return to Europe.

We followed the men pushing on the carcasses to the weighing machine and witnessed a real "tour de force." An electric scale is in operation, with the usual tape arrangement and set of keys for weights and grades, a drawer springing out with the respective tag, marking class and grade, on the pushing in of the respective key. What drew our attention was the skill displayed by the employee weighing and the youth who was putting on the tags.

Sheep were passing over the scale at the rate of one thousand two hundred per hour, with no undue hurry and the ticket man was attaching to each sheep its respective tag. These tags are attached to the tendon of the hind leg by a loop of string, so the deftness of fingers necessary may be appreciated.

We ventured to ask the weighing clerk whether it was really possible to weigh accurately, whilst going at such a speed. He kindly had half-a-dozen of the sheep already weighed, taken to a steelyard scale, when we found that the weights agreed absolutely. We complimented the two experts and passed on to the freezing chambers, calling in on our way at the well-kept and well-appointed sheep shirt store, where the employee in charge explained to us the system of grading and other interesting points connected with his work. We understand that the rail taking the sheep to the freezing chamber is being replaced by an endless chain, which will remove the only antiquated system we noted in Puerto Bories.

The man in charge of the cold stores, a veritable giant, now took us in hand and showed us the graded sheep in the freezing chambers. We had here refuted the argument, that washing destroys the bloom of the sheep, for on examining both firsts and seconds we found the colour and bloom perfect.

There are twelve freezing chambers with capacity for hanging fifteen thousand sheep, which easily allows of an average kill of four thousand per day, which has been the average during the present season.

We next visited the cold floors below, which have storing capacity for 3,500 tons of mutton. The men were working here like busy bees, the cold store gang lowering frozen mutton from the freezing chambers and a stevedore gang loading trucks for the next meat ship.

The truck, after being weighed and the number of carcasses tallied, is given a push and reached the ship's side, carried down by its own momentum. A small locomotive brings back

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the empty trucks. We understand that in all Chile, only in San Antonio, Bories and Natales can large ships lie alongside the mole and load.

On walking along the jetty we met the electrical engineer, who showed us his electrically driven centrifugal pumps, which though small in size, drive singly eighty tons of sea water per hour, to a large tank behind the works, for use in the fellmongery department.

We had a look in passing at the fire station with its full complement of scaling ladders, hose, helmets, axes etc., and its powerful stationary fire engine ready for use. A small portable Merryweather is also kept constantly in readiness for reality or practice. We were informed that a well organised fire-brigade exists among the employees and that regular practices are held during the off season months.

As we were with an engineer, we expressed a desire to see the engine room; we were taken there and introduced to the chief. The impression made on us, on entering, was that prosperity and good management reigned there, everything was beautifully clean. The Haslam freezing machines and the 150 h. p. dynamos were running perfectly, with no knocks or other noises to denote uncared for bearings. The dynamos supply current for motors of the fellmongery, sawmill, barrel-making plant, motor winches and radio station.

The engineer, in a few succinct phrases, explained the theory of freezing and the workings of the Haslam direct expansion freezing engine. His words made us recall our schooldays when Joule's and other physical laws seemed to have been invented for nothing more useful than to give us more to worry about. Could the schoolboy have the practical use of physical and chemical laws intelligently pointed out, then these sciences would become live and interesting ones for him.

The fuel used is wood, which is very economical and will probably not be superseded till the forests are razed, far inland from the coasts. The works were freezing 500 tons of mutton per week and had still a considerable reserve of freezing power. We were shown over the workshops, fitted with every convenience and type of machinery necessary to do all repairs, and from there passed on to the works office, a large well ventilated and well lighted building, with its employees absorbed in mighty ledgers. The head book-keeper at once despatched a boy to find the manager, and judging by the zeal displayed in finding that gentleman, we inferred that the office staff was very busy, so begged leave to withdraw and had the good luck to find the looked for person, on our return to the slaughter house.

We suggested to him that something might be done with the blood, offal, etc., which at present flows out to sea. He replied that the general management and directorate felt, that time spent on excising pituitary, thyroid or other glands, or separating serums from the blood did not pay so well as concentrating and devoting all energies on the freezing, trying down of grease and treatment of skins and wool.

At that moment a string of men set off from the killing floor, each pushing a large bucket loaded with grease, sheep's heads, stomachs, trotters etc., along a rail, which led to the grease department. This is cooked four and a half hours under forty-five pounds pressure in large digesters, the resulting grease being refined and barrelled according to quality, the first quality clear as water, the second, slightly amber-coloured in appearance. The trotters are cooked a shorter time and give the trotter oil, which we believe is used in gold refining.

As a few of the fellmongery gangs had finished for the day, the manager invited us to return the following morning in order to see that department in full swing.

The genial chief of the fellmongery accompanied us round his section next day, and took great pains to point out all of interest. The recently butchered skins are collected and

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dropped through a trap in the slaughter floor. They are now in the fellmongery and are hurried on to the soaking vats, where after being thoroughly soaked, the skins are passed various times through the burring machines. These resemble large, reversible mangles with water passing through a perforated pipe at high pressure and playing on the wool side of the skin as it passes between the rollers. At a lower level the skin is beaten and the wool opened out by rotary blunt knives striking against rubber pads mounted on boards which are held in place by spiral springs. This treatment removes most of the foreign matter from the wool, and leaves it beautifully clean.

From there the skin passes to the centrifugal machines or hydro-extractors which extract most of the water. The skin now passes, classed, according to its wool, to the painters, who give the flesh side a coat of a mixture, composed of china clay and sodium sulphide. The sodium sulphide loosens the wool-fibre roots and so allows the wool to be readily removed. The object of the china clay is to give the paint a better working consistency and to prevent the crystallization of the sodium sulphide in solution. The painters now double the skins lengthways, wool out, and place them in piles five high on the floor, where they are left till the following day.

The wool is now removed by the pullers, who spread the skins over pulling beams, scoop up the clean wool into one basket, and any touched by depilatory, which may occur, round the edges of the skin, into another. Various of the pullers are able to pull one hundred skins per hour, when the skins are soft.

The slipped skins are now wheeled away and dropped through the floor into large revolving wooden drums, where they are washed in clean water before passing to the lime pits. This is the only backward movement in the works, all the others being forward and downwards until the finished products arrive at the mole ready for shipment. The slipped wool passes direct to the wool drying machines, which are formed of five travelling trays made of iron latticework in an insulated iron casing. The wool is carried slowly along the highest tray, dropped to the second, and is finally passed out at the bottom-end of the machine, perfectly dry. The drying is the result of hot air passed through the wool and lattices by electric fans, which drive the atmospheric air heaters and on through the drying machine.

The wool is left until it has lost all heat, when it is dropped through a trap door into the Fawcett Preston press which turns out a beautifully shaped bale four hundred odd pounds in weight. We were not surprised to see a catalogue with the freezer's last season wool, fetching as high as 23d. and averaging around 19d., for the buyers were certainly getting clear wool. On the pulling floor is installed the wool-washing plant, consisting of three bowls, with a capacity for treating twenty-four thousand pounds of dirty wool in the twenty-four hours. Here are washed the locks and stained pieces from the Sociedad Explotadora's farms.

We now follow up the pelts, which, having been washed, are thrown, carefully opened out, into lime pits, where they are left for eight days. The lime has the effect of swelling the fibres and dissolving the animal matter in them; it gives the skin more substance and produces a softer leather when tanned.

On removing the skins from the pits, they are again washed in drums. Out of the drums they pass to the trammers, who trim them to shape, and dump them in the bran drench vats, the liquid of which is kept in movement by paddles. The action of the drench is due to the fermentation of the bran, which neutralizes all free lime and leaves the skin ready for the process of pickling.

Washed again in paddles, the pelts pass to the pickle vats, where a solution of sulphuric acid and salt leaves them pickled and bleached; the bleaching is caused by the action of

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free chlorine, set free by the chemical interaction of the salt and sulphuric acid. The pickled pelt is at this stage passed through a fleshing machine, which removes all fat or other substance adhering to the flesh side.

Nothing now remains but to class them, according to weight and quality. The pelts are piled up in bundles of half-dozens, left to drain for some days and are finally barrelled and shipped for England.

All the men working in the fellmongery, as in the other departments, were doing so with a swing and good-will, which certainly made us change our first impressions, formed on the railway journey. The opinion of the management, is, that there are very sound elements among the workmen, who would never allow trouble to take place for trouble's sake, and that there was no reason why the four years of calm just passed, should not be continued indefinitely.

The barrel-making plant and saw-mill work during the off-season months and help to pass over the critical winter months for many families in Natales.

We had occasion to note the productivity of the soil, in the excellent vegetables and potatoes grown in the district; fruit trees are being planted and first-class apples will no doubt be produced once a suitable kind is introduced.

Golf is one of the freezer recreations and we had pointed out to us the lie of the course. What the greens may lack in quality is compensated for by the wonderful scenery. Thirty miles away looms out of the mist the magnificent Balmaceda glacier, whilst the mountains Ballena, Prat and Dorotea form a three-sided wall, and meet; most picturesque of all, the Canal of Ultima Esperanza, dotted with flocks of black-headed swans, duck and other water-fowl, is kept always in view from the course.

We had intended visiting Cerro Castillo, in order to see the camp and famed Paine Range, but as the freezing boat was ready to sail, and as we had been fortunate enough to obtain permission to return by her to Punta Arenas, we had to forego our inland trip till another occasion, should the vagaries of fortune bring us again to these parts.

The ship blew three silvery blasts and was promptly answered by the freezer's gruffer whistle, then we set off down stream on the three hundred miles run to Punta Arenas.

Some thirty miles from Natales is reached the dreaded Kirke Narrows, which cause such anxious moments to captains and pilot. The distance between island and rocky mainland is three hundred feet, but from the mainland runs out a submerged rock for one hundred and fifty feet clear of navigation. As the breadth of beam in a fair-sized ship is over fifty feet, there is little space to spare. Should the ship sheer, disaster would be a certainty, so slack water has to be waited for. As the tide seldom runs true to time, depending as it does on the state of the weather outside, the freezer tug-boat is sent ahead to study the state of the tides and give the signal at slack water, which in many cases only lasts for a few minutes.

The approach from either side is narrow and a large ship would have difficulty in turning, so, once entering, until the narrows are passed, is a time of anxiety for those responsible.

The Kirke Narrows are in the rainy belt, where the camp is of little or no value for stock purposes, but from samples of mineral we had the opportunity of studying, we feel sure that those wooded, snow-capped and rain-swept mountains must hide enormous stores of mineral wealth. Good anchorages there are none, so as the weather was good we travelled all night, letting go anchor in the Bay of Punta Arenas the following day at noon. We shall

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carry away very pleasant memories from this furthest south town and region, for we had met cordiality and attentions everywhere.

We felt a continental regret that the old name of Sandy Point has fallen into disuse, a name which recalled the fact that so many of our countrymen were amongst the early pioneers of this rich, though inclement, soil.

Note — The biggest steamship, which passed through the narrows, is the British liner "Magallanes" of 9,000 tons.

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