

THE WINE INDUSTRY.

THE cultivation of the vine and the manufacture of wine are two of the oldest industries known; the existence of wine has been proved from the earliest times; it was one of the most important adjuncts at the feasts held in Babylon, it was known throughout the East at an even earlier period, while coming down the ages it is mentioned in most of the writings now extant dealing with the history of the various civilisations which have ruled the world.

That the wines manufactured in the days of Babylonian and later civilisations were materially different to the modern production is fairly certain, and it may be accepted that the product of the press was not drunk in the comparatively pure state it is at the present day; the wine, from the accounts which are to be found in the writings of the historians of those days, was more generally adulterated with spices and other foreign ingredients to strengthen its character, as well as to increase the percentage of alcohol. These methods have been forgotten or ignored, the modern palate not requiring the artificial flavouring so admired by the ancients. This simplification in taste is noticeable in many other ways, as can be readily realised when the description of, say, one of the Lucullan banquets of latter Rome is compared with a banquet held in the early Victorian days. At the former, wine was an essential, and the Sybaritic Roman was as particular in the changes of the wine during the courses of the feast as the most dainty epicure of modern times.

As already mentioned, the character of the wine was very different in the days of the Roman or Egyptian civilisation. The product was more of the nature of a syrup, and the whole process was of course simple in the extreme, and with the exception of the treatment of the grape juice during and after fermentation, the machinery was of the same description where presses were used. One of the best descriptions to be found in Roman writings is that of Mago, writing about the year A.D. 500. He says: "Let the bunches of grapes, quick ripe, and scorched or shrivelled in the sun, when the bad or faulty ones are picked out, be spread upon a frame resting on stakes or forks, and covered with a layer of reeds. Place them in the sun but protect them from dew at night. When they are dry (sufficiently shrivelled), pluck the grapes from the stalks, throw them into a cask, and make the first must. If they have well drained put them at the end of six days into a vessel and press them for the first wine.

"A second time let them be pounded and pressed. This second wine is to be placed in a pitched vessel lest it become sour. After it has remained twenty or thirty days, and fermented, rack into another vessel and stopping it close immediately, covering with a skin." This method was in constant use not only throughout Italy, but also in Carthage six hundred years earlier, the Romans learning from the Phœnicians, who were the mercantile and industrial people of the then known world. They in turn, as they spread over Europe, carried with them this method and introduced it to those countries where the vine was unknown, and in this way the cultivation of the vine was implanted in Britain, where the manufacture of wine was continued until comparatively

modern times, indeed the wine grown and manufactured in Essex being well known not only in England but in Northern Europe as well, where it competed with the imported French article.

The country, however, where viticulture took firm root was France, and that state has for years headed the list of wine-producing countries, the total output far exceeding that of any other kingdom. It is to France that the world is mainly indebted, not only for the manufactured article but for the vine as well, the export of cuttings and plants having at one time been exceedingly large. South Africa, to mention but one country, owes her best wines to French stocks imported in 1685 by the French refugees, who settled in the Drakenstein Valleys and planted them with vines and gradually taught the Dutch inhabitants to make wine.

In South Africa at least the earliest date when viticulture was commenced was contemporaneous with the arrival of Van Riebeck, who, in 1659, imported a number of vines from the Rhine, France, Spain, Greece, Madeira, and Shiray, with the object of starting wine-making as an industry. His laudable intentions bore fruit but slowly, and it was not until eight years had passed that the Cape finally became a wine-producing country. From that date the industry continued to expand, a larger output being obtained each year; but though the Cape wines were consumed in the Colony they were barely known in Europe, though small quantities were occasionally sent home. With the advent of the English the industry received a fillip, and in 1859 the exportation of Cape wine touched the highest figure, 781,581 gallons being despatched. This sudden increase was due not to the natural excellence of the wine, but rather to the fact that in that year the tax on wine generally was raised, colonial wine, however, remaining on the lower scale. This state of affairs only lasted for three years, and then on the general reduction of the tax the Cape export fell to 182,282 gallons, or, in other words, from 10·84 per cent. of the total amount of wine imported into England to 1·8 per cent. It must be remembered that at that time the article sent home was not the finished product of the present day; the wine was sirupy and sweet, and was used more to blend with drier foreign wines than to be used as a beverage; in fact, but little was disposed of as Cape wine, the liquor sold being an adulterated concoction called Sherry or Madeira though having few of the characteristics of either the one or the other.

This in itself was sufficient to condemn the output from this Colony as the reputation then gained has not until very recently been reversed, and even now the progress made is slow owing mainly to the fact that the Cape wines have not been so freely advertised as those coming from Australia or California.

There is little doubt, however, that the period of inanition is now passing off, and in the near future Cape wines will take that place among the wines of the world to which they are entitled. For this to happen in the immediate future, however, it will be necessary for the wine growers to make a more united effort to produce standard wines, the present uncertainty in the bouquet and flavour having much to say to the low estimation in which they are held among those who habitually drink the

imported article. If the wines cannot be made so that any one blend is consistent in quality then it will be impossible to find any permanent market in the world. That this can be obviated is clear. The same trouble has been met with in other and younger wine-producing countries and it has been overcome, and the produce placed on the market is now of a consistent quality and has created for itself a steady demand, in the case of Australia the export to the Mother Country amounting to some hundreds of thousands of gallons. This example is easy to follow; the methods adopted were not complicated and are easily in reach of the Cape producers. Already, to a small extent, is the exportation of wine becoming increasingly popular, but there remains that prejudice against these wines, and that will have to be met and broken down.

In the Colony the industry has now grown to be the largest, employing more labour and indirectly supporting a larger number of people than any other industry. Some figures in support of this statement may not be out of place at this point, which will show conclusively the extent to which viticulture has grown since its first introduction by the early Governors of the Cape.

At first, as has been said, this branch of agriculture was mainly in the hands of a few French refugees, but with the fluxion of time and their amalgamation with the original inhabitants, it passed into the hands of the Dutch, who have since then been the principal producers. From that time the yearly output slowly increased until 1859, but from 1862 to the present day the export trade may almost be considered as negligible, but the production continued, the wine being consumed in the Colony. At the present time there are some 77,000,000 vine stocks in all, of which some 22,000,000 are grafted, representing a value of £342,000; these are all phylloxera proof plants, while there are 55,000,000 ungrafted vines which would require something like £1,044,000 to replace. The destruction of the vines by phylloxera entailed a cost on the farmers of over a million and a half to reconstitute the vineyards, and this work is by no means completed. It will be seen from these figures that this industry is yet a growing one, and when it is taken into consideration that practically the whole of the Cape Division, to say nothing of the outlying districts of Caledon, Ceres, Clanwilliam, Ladismith, Malmesbury, Oudtshoorn, Piquetberg, Swellendam and Tulbagh, derive a large majority of their trade and prosperity from the wine farmer, some idea can be formed of its value to the Colony as a whole. To particularise, the four districts of Paarl, Stellenbosch, Robertson and Worcester, with a population of 87,000, all earn their living directly or indirectly from the wine and brandy industries, while the Cape Division, with a population of 213,000, draws the bulk of its trade from the neighbouring districts, which are large producers, notwithstanding the fact that there are four and a half million vine stocks within its own area.

In connection with this industry, as with nearly all others, the great question is labour. For many years it was hard to obtain and consequently wages were high, but with the advent of the Chinaman a larger number of Kaffir labourers seek work on the farms, and this has enabled the farmer not only to increase the number of his vines, but to attend better to those in bearing. Another factor tending towards a greater output has been the opening of the railway through the Drakenstein Valley. With the increased supply of labour the farmer is now

able to employ natives at a rate of 2s. to 2s. 6d. per day, where formerly 3s. to 3s. 6d. was the recognised wage. Out of this the labourer finds his own food, but the farmer provides quarters and a patch of ground on which vegetables can be grown. In some districts only 1s. a day is given, but in this case food as well as quarters are found by the employer, and he also gives a certain amount of rough wine to each labourer. On these wages the labourers are at present thriving; they are well dressed and well fed, and many are enabled to make extra provision by the sale of mealies, pumpkins, onions, sweet potatoes, peas, beans, &c., which they raise on their own patches of land. This state of prosperity is generally confined to the Cape Boys, who are the more largely employed as being better, Kaffirs not proving so adaptable in the more delicate work involved in the manufacture of wine; the Kaffir is used for the rough work of breaking fresh ground and preparing it for planting young stocks.

Hand in hand with the wine industry is that of brandy, and this in its way is almost as extensive. For many years the Cape has been renowned for the production of a peculiarly virulent spirit known as "Cape Smoke," but this spirit is only the roughest kind of brandy made from the husks and stalks of the grapes after the wine has been extracted. The two forms of spirituous liquor are dop and brandy; the former has a peculiar flavour and is distinctly an acquired taste, the latter, if well matured, is equal if not superior to the best French Cognac. The manufacture of Cape brandy has been carried on for many years in districts which did not produce any wine worthy of the name, the whole output, in fact, being kept for the distillation of brandy, and in these districts the quality when kept for some years won a reputation throughout the whole country. As in the case of the wine, there is nothing to prevent Cape farmers competing with the foreigners in this respect, the main obstacle being again want of capital, for before the manufactured spirit can be placed on the market it must be matured and this takes from seven to ten years. This means locking up, year after year, a large proportion of the profit of the farm, besides which in keeping brandy there is a considerable ullage, about $3\frac{1}{2}$ gallons per hogshead of $63\frac{3}{4}$ gallons per year, equivalent to a loss of something over 21 gallons in the seven years. As to the monetary side of the question, on manufacture the brandy is worth 2s. 6d. a gallon, but when matured the retail price is from 3s. 6d. to 4s. 3d. per bottle according to age and mellowness. This brandy is more of the nature of a liqueur, all the fieriness has departed, leaving a delicate aroma of the wine which is so often wanting in the imported article. Another point which tends towards keeping up the price of brandy is that when made from wine four leaguers of the latter are required to make one leaguer of brandy.

With regard to the one class of Cape brandy, dop, the consensus of opinion is that it does not improve with age and that after three or four years it is no better than when first distilled. Recently a certain amount of this was sent to England by the Cape Government to be reported on by the experts there, and this report was on the whole favourable, but that a similar statement would be made on a thoroughly matured brandy is highly improbable. This of course has not been done officially, but doubtless steps will soon be taken in this direction, when it is hoped that an export

trade will gradually grow up between South Africa and Europe.

Leaving a problematical European trade to consider the possibilities of South Africa as a wine and brandy consuming country, what is to be found? In the Colony itself there is a marked objection to placing the colonial product on the table when strangers are present. This in itself is fatal to the encouragement of home industries, and the same may be said of home made spirit. The objection is largely a matter of false pride, for there are obtainable now many varieties of wines which are equal in flavour to Hock, Claret, Burgundy, and also some of the sparkling Rhine wines. These are all sound, well-matured wines which would soon find a ready sale in England if they were efficiently advertised. This is the secret of the success of the Australian and Californian wines. When these countries first started exporting they instituted a series of advertisements which were scattered broadcast over the country; the Government representatives do all in their power to enhance the sales, the consequence being that now nearly a million gallons are yearly consumed in England of each variety.

Taken as a whole the wine industry of the Cape may yet be regarded as in its infancy, notwithstanding its age, and this is the more surprising when the comparative simplicity of the operations is taken into consideration. It has been said by one of the most successful wine farmers of the Cape Division that anyone endowed with ordinary common sense can with little or no training become a successful wine farmer, if he is not above taking advice and studying the industry by the aid of the numerous handbooks on the subject. This statement is amply substantiated by the fact that the man who made it started work with absolutely no knowledge of the business.

There is another point which so far seems to have escaped the eye of the investor, and that is, that there are vast possibilities before anyone willing to invest in the work on a large scale. If taken up sufficiently largely, that is, if big cellars were erected and supplied with modern appliances for bottling as well as for maturing wines and brandies, then there is nothing to prevent him opening up a direct trade on a much more extensive scale, while the wines themselves would gain by being under the direct control of the producer, which would tend towards the production being of a more consistent character, thus doing away with one of the principal objections to Cape wines.

Of the many districts which produce wines in the Cape Division there are none so well known, either for the excellence or their products on their brandy, as the two Drakenstein Valleys, generally known as Groot Drakenstein and Klein Drakenstein.

Nestling at the foot of the rugged range of mountains of that name, they are situated between Paarl and French Hoek, and afford to the jaded traveller from the Karoo a welcome change from the aridness of that extent of the Colony. The first view of the whole of the Groot Drakenstein is one of unparalleled beauty—a broad expanse of vivid green, the brilliant colour of the young vines contrasting sharply with the darker trees surrounding the various homesteads which gleam whitely through the sheltering branches of innumerable gum trees, while the older vines give the necessary shading between the three

predominant colours. Through this runs the Berg River, winding here and there between steep sides or between stretches of silvery sand. This is the principal source from which the farmers derive their water. Here, again, is another striking difference from the more northerly parts of the Colony. The ground is closely cultivated, the homesteads are in closer proximity, and there is a greater similarity with the old country, where every inch of land is cultivated. In this valley the holdings range from about 100 acres to 400 acres, seldom larger and rarely much smaller. One of these farms is occupied by the Hon. C. W. H. Kohler, M.L.C., who commenced wine farming some fifteen years ago.

Riverside, the name of the property, is one of those through which the Berg River runs, and from it he obtains all the water he wants by means of a powerful pump. On his property, or, to be more accurate, between two portions of it, there is a fine stretch of water giving him good fishing and swimming, the depth ranging from nothing to 10 or 12 feet. The farm in all consists of about 250 acres, of which he has nearly 100 acres under vines, the remainder being taken up with grazing ground, orchards, and cornfields. Since taking over the farm he has gradually broken up fresh ground, which he now has under vines, and it is his intention to slowly increase this amount year by year until he has the majority devoted to wine farming. This plan he has found better than breaking open a large area at once; besides which this has been the experience of other successful farmers.

The young grafted vine stocks are planted at a distance of five feet from each other, which gives about 1,750 vines to the acre. If planted closer, as the vines grow they are liable to crowd each other too much, and the crop suffers accordingly. Another point which requires careful attention on the part of the farmer is the proper manuring of the stocks. This operation should be done at least every three years; if left longer the ground deteriorates to such an extent that the crops suffer considerably, and the output is lowered by an incredible amount.

This has already been the main trouble of the producers of the Drakenstein Valley, for, owing to the scarcity of labour and the expense of obtaining suitable manure, the farmers have been chary of enlarging their vineyards. Now, however, owing to the introduction of chemical manure, the opening of the railway throughout the valley, and the increase in available labour, more land is yearly being brought under cultivation, and the total output of wine is increasing correspondingly. Since the opening of the line from Paarl through the valley, manure has been steadily imported to the amount of about 1,000 trucks a year, no train leaving Paarl without two or three truck-loads consigned to the different farms on the route. The chemical manure, too, is more easily handled than that used before its introduction, and Mr. Kohler is of the opinion that with its advent the output of wine will be materially improved in quality as well as quantity; but much is yet needed to raise the position of the Cape to an equality with other wine-making countries. Concerted action on the part of the farmers, with some help from the Government, is needed to gain this goal, and, in Mr. Kohler's opinion, this is not now far distant.

When Mr. Kohler first purchased Riverside there were then only some 99,000 vine stocks in bearing, and none of these were then phylloxera proof, he has now about 150,000 vines, all grafted, from which he obtains about

90 leaguers of wine, a leaguer equalling 127 gallons. This he sells in bulk to the wine merchants, who do all the bottling and blending, but he thinks that in many ways it would be more satisfactory if the grower could do his own bottling, as it would tend to preserving more consistency in the wines of any vintage. This, however, requires the outlay of more capital than the farmer can afford, want of capital being the great drawback; such a course of action would also necessitate larger and more commodious premises for the storing of wines, for, however well made, all wines require keeping for a year or more, the fresh wine having a certain harshness, as is only natural.

On his farm Mr. Kohler has cellarage for some 160 leaguers, and though this is more than sufficient at present, he will be forced to extend his buildings in the course of the next year or so, when those vines which are now just beginning to bear, and the yearling stocks are in full bearing, the estimated output in two years being from 200 to 300 leaguers. The average price of the wines produced in this district is about £5 per leaguer, but as much as £15 per leaguer has been obtained, while the output from one farm last year only fetched £2 10s. a leaguer.

The wine produced throughout the Drakenstein Valley is, generally speaking, of a light character, only hock and hermitage being made; on Mr. Kohler's farm a light hermitage is made, but the greater quantity is what is known as Drakenstein, the whole output being of the highest grade. When he first commenced work his neighbours derided the idea of any outsider making a success. Two years after taking up the work Mr. Kohler competed at the Kimberley Exhibition, and there was awarded the gold medal for light wines. Since then he has successfully competed at the Paarl, Rosebank and Government shows, carrying off gold medals and several first and second prizes for his wines.

As a proof of the excellence of his wine, and the good repute in which it is held, it may be mentioned that a couple of years ago, when the average price of wine was £10 a leaguer, he obtained £15; in 1905 he received £10 10s., when the average price paid was £5, while his present vintage was sold, before manufacture, at £5 10s. a leaguer.

Though many vine growers also manufacture brandy, Mr. Kohler practically confines his attention to wine, only making a small quantity of the rough dop, which he obtains from the husks and stalks of his grapes after the wine has been pressed from them.

It will be seen from the above that the wine industry of the Cape Colony has more possibilities before it than almost any other country; it already supports directly or indirectly the majority of the population of the Cape Division, as well as that of several of the outlying districts, and it is capable of great expansion, for vines will flourish where other crops fail. With the advent of fresh capital, the industry will be enabled to take rank as one of the most paying in the whole country.

The name "Collison" is synonymous with worth and purity in Cape wines and brandies, and has been associated with the industry in the Cape Colony since the year 1816. The foundation of the business of Henry C. Collison, Ltd., was laid by Mr. John Collison, who, in the year 1820, was awarded a gold medal by H.R.H. the Duke of Sussex for the excellence and purity of his wines.

Henry C. Collison, Ltd., is an offshoot of the colonial wine and brandy firms of "Francis Collison" and "Collison, Sons & Co.," and this business was established by the late Mr. Henry C. Collison, who was the maker and originator of the well-known brand "F. C.," so styled after the initials of his late father, Francis Collison. The Company is now managed by a board of directors, with Mr. Harry Collison (only son of and successor to the late Henry C. Collison) at its head as chairman, and its experience in the manipulation, maturing, and blending of Cape wines and spirits has been gained through the long period during which the late Henry C. Collison was the manager of the old-established wine business carried on by his late father, Mr. Francis Collison.

These wines and spirits have been submitted to the critical judgment of experts appointed to taste and award distinctions of merit at most of the great exhibitions held in Europe of late years.

The greatest awards were gained at the Vienna Exhibition, 1873; at Bordeaux, 1882; and London, 1886. Gold medals were awarded at the Exhibition at Amsterdam, 1883; Paris, 1878; and Philadelphia, 1876. The firm also possess numerous gold and silver medals, certificates of merit, and diplomas awarded at exhibitions held at Natal, Cape Town, Kimberley, Port Elizabeth, Worcester, Rosebank, and at Grahamstown, where, in 1898-1899, nine gold medals were obtained; and at various agricultural shows special prizes and gold medals have also been awarded. At the Western Province show, held at Rosebank, and at the Agricultural show, held at Worcester as recently as February, 1904, nine gold medals and other awards were gained. The wine depôt for storing, blending, and maturing the Company's wines and brandies is situated at Nos. 126-136, Sir Lowry Road, Cape Town, and, together with special brandy stores adjacent, cover an area of over 100,000 square feet.

The casks employed for storage purposes number 250, and consist of ryders, stuk vats, and splay vats of a capacity ranging from 200 to 10,000 gallons each. The main depôt covers one entire block, extending from Sir Lowry Road in front to Francis Street at the back, and is one of those old-fashioned Dutch premises, with flat roof supported by heavy timbers, and is beautifully cool, spacious, and airy, indeed, an ideal storing place for wines and brandies. The storage capacity is enormous, being about half-a-million gallons. One of the busiest scenes is the bottling department, which is truly a sight worth witnessing. Here can be seen the various processes of washing, drying, bottling, corking and sealing, labelling, and packing, either for local customers or to be sent to different parts of South Africa.

They say that "Cleanliness is next to Godliness," and there is no doubt that Messrs. Henry C. Collison, Ltd., are strict believers in that adage. Every bottle is thoroughly washed, soaked in big tanks, scoured out with brushes, then rinsed with clean cold water, and afterwards drained perfectly dry. So well is the washing process carried out that it is utterly impossible for anything deleterious to remain in the bottle, a guarantee for perfect cleanliness.

Another busy department is the manufacture of casks for wines, which are all made on the premises. The timber for this purpose is stacked in the yard until thoroughly seasoned. Each cask is afterwards washed and steamed to take away the woody taste, and tested with boiling water, the hot water being supplied through

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an automatic heater. Russell Street separates the main depôt from a sub-depôt—another old Dutch building, delightfully cool and airy, which is also used for storing, maturing, and blending purposes.

The trade-mark of the firm is a demi-lion rampant, holding a "cinquefoil" between his paws, with the letters "F. C." beneath, indicating Francis Collison; and it is interesting in this connection to recall a circumstance which led to the initials "F. C." first being used or associated with the particular blend of brandy, sherry, and pontac. It was at the time Mr. Francis Collison determined to retire from the Cape that he expressed a wish to his son, the late Henry Collison, to have a ryder each of brandy, pontac, and sherry set aside from which supplies were to be sent to London as required for his private use. This was done, and at the head of each ryder was chalked the mark "F. C." Shortly after a friend visited the depôt for the purpose of tasting and selecting suitable wines, and seeing the chalked initials, he asked, "Do you call this F. C. sherry?" The explanation followed, but the

remark subsequently led to the adoption of the brands F. C. Brandy, F. C. Pontac, F. C. Sherry, which soon became very much in demand.

Messrs. Henry C. Collison, Ltd., are sole agents for the Cape Government wines, which are matured in the celebrated cellars at Groot Constantia.

The sub-agencies for the sale of these wines are as follows:—Port Elizabeth, King William's Town, Messrs. Dyer & Dyer, Ltd.; East London, Messrs. Dyer & Dyer, Ltd.; Durban, Messrs. Jas. McIntosh & Co.; Kimberley, Messrs. Henry C. Collison, Ltd.; Johannesburg, Messrs. Henry C. Collison, Ltd.; Bloemfontein, Messrs. R. Hiten & Co.

The Head Office of Henry C. Collison, Ltd., is at 9, Castle Street, opposite the Railway Station, Cape Town; and the following are town and suburban branches:—Cape Town: 11, Castle Street, 120, Plein Street, 136, Bree Street, 45, Buitenkant Street, 33, Long Street; Wynberg, Piers Road and Main Road; Claremont, Main Road; Woodstock, Albert Road.



A WONDERFUL VINE: GROWN BY MR. PEWTRESS, WYNBERG.



HARVESTING COMPETITION AT CALEDON.

THE BREWING INDUSTRY.

THE first essentials of brewing are water and malt, and in the production of high-class beer only the best barley and the purest water may be used. The breweries, therefore, all over the world are so situated as to fulfil these requirements, as witness the famous examples of Burton, Edinburgh, Munich, and Pilsen, where a plentiful supply of spring water, rich in soluble salts, can with equal facility be obtained.

Now Newlands, with its celebrated Newlands and Albion spring, which, acquired many years ago by Mr. Anders Ohlsson, has more than once been the saviour of Cape Town and its suburbs in times of drought, bears the same relation to Cape Colony that Burton does to England in respect to its water supply; and the owner was very quick to perceive the relation, and the advantages accruing from it, when he decided on Newlands as a site for the erection of his first brewery. This was built about 1883, and was named the Annenberg Brewery. Since then the business has been augmented by two larger breweries to cope with the immense increase in trade, namely, the Mariedahl and Newlands Breweries, which are fitted with the most modern machinery and brewing appliances, while it may here be mentioned that adjoining the old Mariedahl Brewery there has been erected a complete block of buildings, comprising a lager and English brewery equipped with the most up-to-date machinery and plant.

By the kind courtesy of Mr. Ohlsson, who, we may state, became Managing Director of the breweries bearing his name when they were converted by him into a Limited Company, we were permitted to see for ourselves the perfected processes now employed in the manufacture of beer, and for that purpose and under the enlightened guidance of Mr. Meacham, the managing brewer, without whose explanation the art of brewing would else have remained a sealed book to our lay mind, we started by a general survey of the exterior of the premises. Within the yard, round which runs fully a mile of railway owned by the Company, are seen two large buildings; one of them, built of blue brick and standing 120 feet high, is the Mariedahl Brewery, devoted exclusively to the production of lager beer and high-class pale ales. On close inspection the foundation stone is observed, which the inscription tells you was well and truly laid by Mrs. A. Ohlsson, on the 2nd June, 1900. The other building near to it is faced with red brick, and though not so high, has much the same capacity; this is what is technically known as the "maltings," or popularly the malting-house. Here the barley is turned into malt, an interesting process to be described fully later on. Under the sheds in the yard are many casks; some are being repaired in the cooperage repairing shop, others washed and prepared for filling, for which purpose, so thorough in every detail is the firm where cleanliness is concerned, they are taken practically to pieces. Lager beer casks undergo a process of pitching on the pitching-machine, which from a reservoir beneath throws into each barrel through the bung a small jet of transparent resinous "pitch" which, flowing out as fast as it enters, leaves the barrel finally coated with a thin hard film, thereby ensuring not only preservation from leakage, but absolute sterilisation of the wood. Other objects of interest noticeable on the premises are the well-appointed houses occupied by the manager and brewers, rows of cottages for the use of employes, the little locomotive engine owned by the firm which does

all the shunting work, store sheds where thousands of barrels lie in reserve, large coal sheds, carpenters' and fitting shops. Beneath the yard, also, are located two reservoirs, fed from the springs through 6-inch pipes, and with a capacity of 54,000 gallons of water.

We shall now pass at once to the malting-house. In this important department of the brewery the barley is malted; that is to say, by undergoing a process of steeping, sprouting, curing, and drying, its composition is so altered by germination as to fit it for subsequent treatment. To take the various steps of this initial process just as they occur, we must pass to the back of the premises where some truck loads of barley are being off-loaded on the Company's railway siding. The sacks, each containing 150 lbs. of barley, are emptied into a hopper and their contents fall on to an automatic weighing machine, which, on receiving a certain quantity, registers the amount on a dial, and tilts the grain into a bin, whence it is caught up by an elevator, consisting of an endless band with small buckets or scoops attached, to the top of the building, and is there deposited in 32 bins 24 feet deep, eventually passing down a pipe on to a receiving belt and so on to a barley dresser. This machine consists of revolving screens, of which one is cylindrical in shape and arranged spirally, while the other is set transversely to it. On barley being fed into these, the waste matter is retained, the good barley passes through the apertures, while a fan ejects the fine dust into a closed dust-box, this latter ensuring cleanliness. The grain is, however, not yet in a fit state for further operations, as a large quantity of split barley has to be eliminated, otherwise it would interfere with the malting. This is effected in a special separator which, revolving, allows the half grains to settle in depressions, from which they are finally thrown by an automatic hammer which taps the cylinder at short intervals. The good grain is now, we will suppose, free of impurities, and no "skinning" is apparent. From the separators it is then hoisted by means of another elevator on to a higher floor, and is here passed through a movable weighing machine running on rails the length of the room, whence after being weighed it is allowed to fall into a series of six steeping tanks partly filled with water, into which compressed air passes, throwing the grain about and thoroughly aerating it. These steepers hold thirty quarters of barley each. After remaining in a steeping tank for some forty-eight hours or more the barley is forced by means of air through a pipe connection into another steeping tank, where the same process of washing is repeated, after which it is returned to the first steep. The process of steeping lasts for two or three days. The grain is then allowed to fall into germinating drums, of which there are eighteen. These are large vessels set transversely on a shafting. In the sides are several holes large enough to receive a man. Underneath is a shafting fitted with worm screws, which by gearing can be brought into connection with a cog-wheel band fitted round the drum. By this means a slow motion is imparted to the drum, the effect being to bring all the contents into contact with the air blast as it passes through. Recording clocks in a corner of the room connected by a lever arrangement with each drum, show how many revolutions it has made in an hour, and this constitutes a check on the man in charge. It is necessary now that we should glance at those tall chambers called coke-towers. In the bottom

of these are gratings on which is the coke, the use of which is to filter and purify the air. Only moist cooled air is allowed into these chambers, and for this purpose there is an arrangement outside the air vent by which the air as it enters is moistened by a spray of water, and on coming in is further impregnated with a cloud of water vapour emanating from three jets, which are so arranged that a rush of air meets at the moment of ejection and dissipates it in a fine mist. Of these towers there are three, and the air, thus cooled and moistened, is allowed to pass from one to another till it finally reaches two central chambers situated beneath the two rows of drums. A powerful fan revolving at a great rate is the means employed to impart motion to the air, which is sucked, not forced, through the barley and water, from the air chambers, and thus, while the drum revolves, thoroughly aerates its contents, supplying the oxygen which is necessary for germination. The barley remains in the drums from ten to fourteen days, when the germinating process is complete. The capacity of these drums is thirty quarters each, which gives a total malting capacity of 16,000 quarters a year. The now sprouted barley passes to the kilns where it is spread over the specially constructed, closely-grated floor about 12 inches to 14 inches deep and dried. A patent kiln-turner (Boby's patent) moves along from end to end of the room, and by a rotary movement several arms turn over the grain. From the kilns the malted grain passes to the curing room, where it is received into three curing drums and is further dried. It then falls into bins, through a conveyor, up elevator to a dressing machine on a high floor, and after being again weighed is conveyed to the malt bins, of which there are twenty. From these bins it is finally bagged up and sent to the brewery. It may be of interest at this stage to note that of, say, 400 cwt. of barley passed through at one end, only 300 cwt. of malt is recovered, the loss in weight being due to germination, &c., as well as matter rejected by the screens. The process just briefly and perhaps inadequately described constituted the pneumatic system of malting, and involves the latest scientific principles, by which malt of the very finest quality can be made all the year round independent of external temperatures. The maltings are constructed to make 16,000 quarters of malt per annum, and to obtain this quantity 64,000 cwt. of barley are required.

We will now follow the sacks of malt as they are taken from the cool, dry store to the Mariedahl brewery, where lager beer, export and light ales are made. The malt on being received is cleaned again and is then taken to the mill for grinding. The dust formed by this process is blown into a tank and mixed with water and steam to lay it. The malt first goes to the malt hopper, down one elevator and up another to a higher storey, passing into the malt-cleaning machine, thence to the mill, and afterwards falls into the grist hopper, when it is ready for "mashing."

To accomplish this it is mixed with water in a copper mashing machine or mash-tun, in the bottom of which is a bronze sieve to prevent the malt getting through. The extract settling at the bottom is then drawn off into coppers, whose holding capacity is from 150 to 200 barrels, where it is boiled for some time. The process here varies according to the character of the beer to be made. At the end of the mashing process

it is drawn off through special reversible air-tight taps, which allow it to run faster or slower as desired, and enable the brewer to judge of its brilliancy, into a big copper, when it is boiled with hops for from two to four hours. The remains of the extract are repeatedly washed out of the tun by means of a "sparge," through which water falls as a spray on to the malt, and at the same time machinery is set in motion inside to mix it up. When the last of the extract is got rid of, a special machine in the "tun" ejects the now treated malt through a hole in the bottom, and a worm screw carries it along and finally throws it out into the open, where it falls in a heap, to be subsequently sold to farmers. The three coppers just mentioned are heated, one directly by steam and the others by fire. The extract which has been boiled is now run into a hop-back, from where, after being filtered, it is pumped to the top of the brewery, and is there received into what is called a "first cooler," then into a big collecting vessel, where it is still further cooled to the required temperature. Into the sealed collecting vessel, which has a capacity of 300 barrels, cold sterilised air is forced from the compressor engine down below, so as to give the extract sufficient oxygen to enable yeast to form in it afterwards. Inside the vessel is a pipe-shaped float which ensures that the top layers, receiving most air, are sent down first. The extract is then run through a pipe over the refrigerators. These consist of two parts. In the higher section ordinary cold water flows inside the corrugated chamber, whilst in the lower section brine water, reduced to a temperature of 17 degrees below freezing point, circulates freely. The effect of the extract or "wort" flowing over the large surface of cold metal thus exposed is to gradually chill it until it reaches the desired temperature for the next stage. The "wort" then passes to the fermenting tanks, where the temperature is slowly raised to the desired degree, when it is again allowed to fall. From this point we must follow the process of lager beer-making independently. On leaving the refrigerator the "wort" goes to special fermenting tuns, where it is mixed with yeast, and undergoes the process of fermentation, and here it may be as well to say a word about yeast and its production. All the yeast used by the brewery is made on the premises in the so-called pure yeast room. This, on account of its importance, is always kept locked. The apparatus employed consists of two pure-yeast propagation cylinders, wherein the yeast, which is built up from a single cell, is sterilised for some hours, no air but what is absolutely immune from deleterious germs being allowed access. The resulting culture is then increased in quantity until it is used to ferment a large quantity of "wort," and thus goes on producing itself.

There are some 24 fermenting tanks in use, each holding from 90 to 100 barrels. During the process of fermenting a low temperature is maintained, and to that end a system of pipes is run through certain chambers in the building, containing a flowing mixture of brine and freezing water, the latter being produced in the refrigerating engines below by the ammonia process. On staying the required time in the fermentation vats, the beer is run into another set of vats in the store cellars for secondary fermentation, where it remains about three to four months. Here again we find the ice-pipes, coated with snow on all sides, with double doors and outer

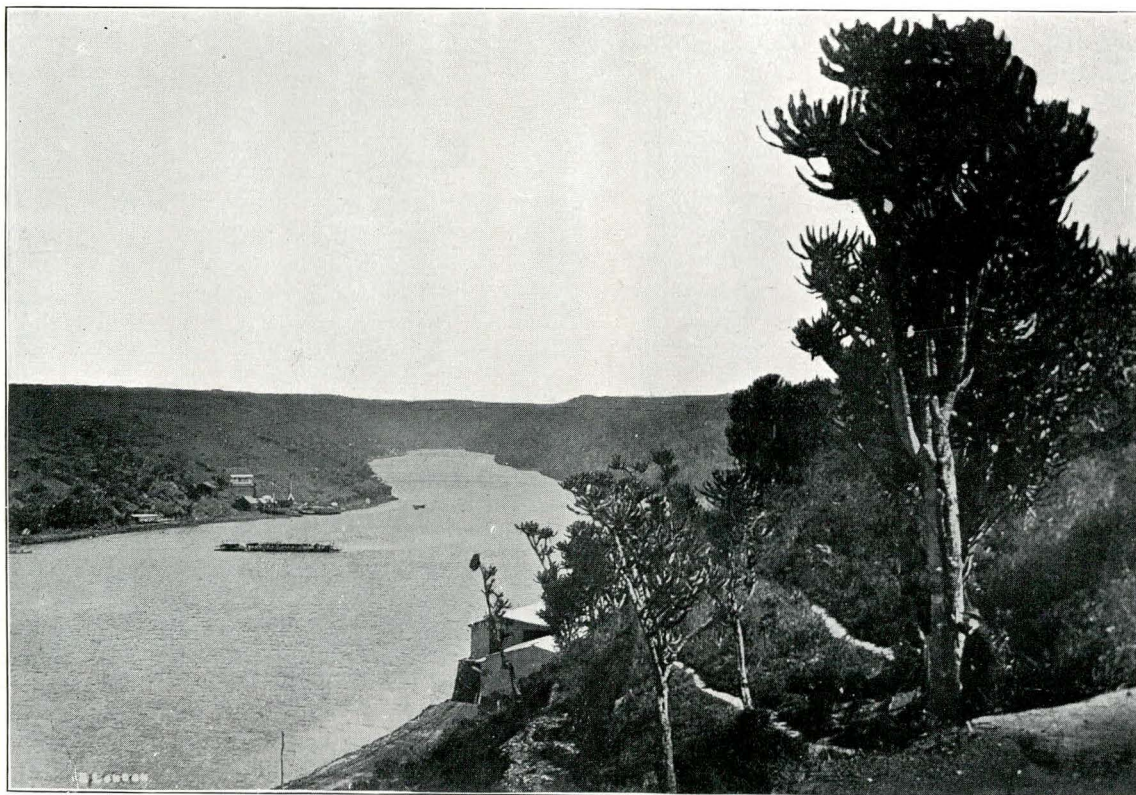
walls 4 feet 6 inches in thickness—every precaution, in fact, to ensure an equal cold temperature. Of these store vats, 70 altogether are in use, and as they are each capable of holding 2,880 gallons of beer, some idea of the huge storage capacity of this brewery alone will be gained. In another room we were shown the machine used for filling barrels. This is connected with the storage vats by means of a rubber hose, and itself has two short lengths of rubber hose terminating in an automatic tap, which not only prevents the barrel from overfilling, but is so arranged that the beer passing down one pipe displaces the air in the barrel which passes up through the other. In the bottling department, beer is now bottled under pressure, instead of the old method of corking down "still" beer, and is at once fit for consumption in consequence. The bottles, after being thoroughly washed, brushed and examined, are filled under guards, then passed on to be corked, covered and labelled, and finally placed in boxes, after which they are conveyed to the lager store.

We must now return to the English beer, which we left at the coppers. From here it is sent down through pipes into 27 fermenting tanks, square in shape, and made of cedar wood and having a capacity of 75 to 100 barrels. Here, on yeast being added, the "wort" is allowed to stay for three or four days, until the newly-formed yeast rises to the top, when by means of a sliding valve it is passed through and is caught in a corresponding set of yeast tuns in the room below, where it is collected for subsequent use. From the tanks the beer is sent to the storage vats, from which the beer flows through pipes to the racking apparatus already described, when the barrels are filled and raised by a cask hoist to the store-rooms. In the bottling department much the same process of cleaning, filling, corking, and labelling is undergone. Thus it will in some measure be seen to what perfection of cleanliness and method the latest theories and improved machinery have raised the art of brewing. The lager beer made by Ohlsson's Breweries has no superior on the Continent or in the world; while the ales, beers, and

stout manufactured by the firm have for several years more than held their own on the South African market. In the Newlands Brewery stout, porter, and tickey beer are made, into the details of which, however, it is not necessary to enter, as the principles involved are, with certain modifications, the same as already narrated. But we can scarcely leave this large industry without taking a glance at the engine-room, where one sees a powerful pump, which, being fed from the subterranean reservoirs, forces water to the top of the building, where it is contained in five cold-water tanks for distribution to the various floors beneath. Here are also a driving engine and three refrigerating engines as well as pumps in connection with these, an air compressor, and four dynamos. The total horse-power amounts to something like 220. There are four boilers, three of these registering 40-h.p. each, and one of 65-h.p. All the brewing houses and cottages are lit with electric light, for the production of which there is a complete installation of plant. Accumulations of refuse are collected from the bins, &c., into large underground tanks, where steam pumps are placed for that purpose, and the rubbish is conveyed through 6-inch pipes to a sewage farm on the Cape flats, which is 650 acres in extent, and distant several miles from the breweries.

We have now said all about this thriving industry that is possible or convenient in a short article, and it only remains to add, in conclusion, that only the most efficient men are employed by the Company; and living as they do so close to the scene of their labours, and forming a colony of their own, it is no wonder that they take great interest in their work, and supplement all those ingenious contrivances by the clear intelligence that controls them.

[EDITOR'S NOTE.—It is to be regretted that, although the quality of the best barley grown in Cape Colony is equal to that of Californian, such a small quantity should be available at the Cape, as we were told that Ohlsson's Breweries are willing and anxious to give preference to barley of colonial growth, and would purchase it if possible up to their full malting capacity.]



BUFFALO RIVER, EAST LONDON.



SUNRISE FROM DASSEN ISLAND.

RUSTENBERG FARM.

RUSTENBERG FARM is one of the oldest and largest in the Stellenbosch district, and was, before the phylloxera plague, one of the most successful wine farms in the Cape, but this parasite ruined all the vines, and Sir Jacob Barry, who afterwards bought the property, recommenced work practically afresh and planted some 200 acres of fruit trees, devoting the remainder, about 1,250 acres, to general farming and breeding of cattle and sheep. He did not, however, exclude vines entirely, but put down a few acres of the grafted vines, which the present owners, Messrs. O. & N. Barry, have increased to a large extent. The fruit, which at present is the chief product of the farm, is now noted throughout South Africa and England.

In 1904 Sir Jacob's two sons took over the farm jointly and have, thanks to their unremitting care and energy, greatly improved the quality of the fruit, and they are now in a position to export largely to England. This branch of the work is mainly in the hands of the younger brother, Mr. Nat Barry, the elder, Mr. Oswald Barry, devoting his time principally to the financial cares of the estate. Apart from the fruit farm is the ordinary farm, and it is here that is seen the energy of the brothers, for everything is done to increase the value of the land by modern methods; the best machinery is imported and the land is thoroughly treated with chemical manures, the effect being to greatly increase the size and value of the crops, while the introduction of pure-bred cattle and sheep has enabled the brothers to take a leading place among the farmers of the surrounding districts. Besides being renowned for its fruit, Rustenberg Farm is now ranking as one of the leading dairy farms in the Stellenbosch district. This is the direct outcome of the far-sightedness and enterprise of Sir Jacob, who recognised that there were great possibilities before a properly equipped dairy drawing its raw material not only from the home farm but from the neighbouring farms as well, the result, so far, of this policy has been most satisfactory. Already the dairy produce has gained for itself a prominent name and the prices obtained are among the highest, while numbers of the surrounding farmers send their cream to Rustenberg to be made into butter, realising that it is better to do this than obtain lower prices for their home made articles. The dairy is a picture of what a dairy should be and recalls those of the Old

Country; everything used is of the best and latest, labour-saving machinery has been introduced wherever possible, with the result that the output is eagerly sought after, the demand in fact exceeding at the present the capabilities of the farm. Such a state of affairs is highly creditable to the two young men in whose hands the whole management lies; they oversee everything and pay personal attention even to the smallest details.

The elder brother, Mr. Oswald Barry, who was born in 1871, after receiving a sound preliminary education at Grahamstown, was sent to England to enter the Royal Navy, which he did, and in due course was gazetted to ships. Shortly before his father's death he resigned his commission and returned to the Cape to take up the care of the farm in conjunction with his brother. Since then he has devoted himself entirely to his work and has had the pleasure of seeing the farm improve under his and his brother's management.



MR. OSWALD BARRY.

Mr. Nat Barry is the practical man. Born some years later than his brother, he chose agriculture as his profession, and after completing his studies at Grahams-town he went to England and thence to Australia, where he joined the Hawkesbury Agricultural College. Here he acquired a thorough practical and theoretical training in all branches of farming, but paid special attention to the culture of fruit, which he made his speciality and in which he has since proved highly successful at Rustenberg, the crops from that farm amply rewarding him for the time spent in Australia.

Both brothers are energetic, hard-working men who are determined to make their farm the best in the country, and nothing is too minute to receive personal attention; they overlook every detail and personally supervise the packing of the fruit for export to their agents in England. In this respect, as in all others, they endeavour to make the farm self supporting, and the boxes in which the fruit is packed are made on the premises by a machine. There is little doubt that the fruit industry will soon take a more prominent place in the industries of the Colony, and this will be largely due to Messrs. Oswald and Nat Barry, who have proved that the Cape can and does grow fruit of a character which will compete on equal terms with any grown in America, Australia, or Canada.

A WELL-KNOWN ESTABLISHMENT.

THE HOTEL NATIONAL, the oldest first-class hotel in East London, has appealed to us as worthy for inclusion in this volume for several reasons, the chief being, it is considered the busiest, the best known, and the most talked-of, both favourably and adversely, hotel in the town.

It is the meeting-place of the border wool and agricultural farmers, than whom there is no more interesting body of men in South Africa. The hotel has been for years the headquarters of the East London Farmers' Association, which meets every Saturday. It was here the late Farmers' Co-operative Company held its directors' meetings; and where all branches of commercial men daily gather and meet in business intercourse. "I will meet you at the National," is a sufficient and not unusual direction passing between parting friends, and they are likely to meet many more of their acquaintances there at the appointed hour. The management we have found a generous and kindly one, quite deserving of the place's liberal patronage. There seems always to have been a diversity of opinion regarding its political associations, and the establishment has been the occasion of much mixed comment in consequence.

That the National has played a conspicuous part in politics is unquestionable, and a few years ago when political parties were so keenly divided, and the system of government generally championed, the establishment was viewed with rigid aversion as the hot-bed of independence; for all that, it has always been a well-patronised and interesting hotel, where opposing factions gather and discuss their approaching battles as it were on neutral ground.

The hotel is a solidly-built staple-looking place, with large, lofty rooms, wide corridors, and a general air of freedom and space, unencumbered by showy or tawdry decorations, and gives the impression of having been built to stand for an age. The ground floors are laid with tessellated tiles throughout, and the woodwork is of costly, though plain, panelled oak—strong looking and massive, yet never suggesting any attempt at ornamentation. The rooms are comfortably furnished, look simple, but scrupulously clean, and from between a long row of them you wander into perhaps the finest balcony in Africa—longer and wider than an ocean steamer's, and overlooking the whole of the busiest street in the town. For the establishment is so situated, that by using it as a centre, the post and telegraph offices, Law Courts, Harbour Board offices, Town Hall, and railway station could be said to form round it a sort of circle.

The National has always been conducted on strictly correct and ethical principles, which in a great measure accounts for its popularity.

The management enthusiastically informed us that some day, not very far off, we will see three or even four stories contained in its solid design.

WILLIAM ANDERSON & Co.

THIS firm, one of the oldest mercantile and shipping firms in the Peninsula, was established in the early thirties at Simonstown by Mr. William Anderson, the father of the late senior partner, Mr. Wm. Jas. Anderson. About 1850 the Cape Town house was opened in premises at the corner of St. George's and Church Streets, on the site where the "Cape Times" establishment now stands.

The agency of the Union Steamship Company, on its first introduction to African waters, was taken up by the firm, and Mr. Wm. Jas. Anderson, by his indefatigable industry, forethought, and sound judgment, was successful in building up a large passenger, goods, and produce trade between Cape Town and Southampton, gradually extending to all the coast ports to Durban, the trade increasing year by year as the Colony grew in producing power and importance. In those days wool was the staple export, with skins, ivory, aloes, and occasionally wheat. Copper ore was brought down in small coasters from Port Nolloth as ballast. In 1862-3 the fine new offices, warehouses and trading stores, erected at Central Causeway by the firm (then Anderson, Saxon & Co.) were occupied. This was a noble looking building of granite and freestone of three stories, on the site where Garlick's fine building now stands.

All landing and shipping of passengers and goods was then done at the Central Wharf by means of large cargo boats manned by a hardy and daring race of boatmen (now practically an extinct species in Table Bay). The temporary Queen's Warehouse adjoined the business premises of the firm; into this warehouse all the cargo was landed from the steamers, and a busy scene it was. The outdoor establishment of H.M. Customs was close to the entrance to the jetty at the foot of Adderley Street, and the port captain's offices and signalman's quarters were on the foreshore opposite, on the ground now occupied by the railway department as the goods station. Meanwhile, the breakwater commenced in 1860 was being pushed out seawards and the Alfred Dock excavated. In 1864 Captain Saxon retired, and the firm's name changed to William Anderson & Co. as at present.

In December 1881 the firm's premises were burned to the ground, no adequate fire-extinguishing appliances capable of dealing with a three storied building being then available. After some time the firm built and occupied their present offices in Lower St. George's Street and devoted their main attention to coaling operations and steamship agencies, and are now the local agents for the following large and important steamship owners and companies:—Ismay, Imrie & Co., White Star Line; the Peninsular and Oriental Steam Navigation Company; the Shaw, Savill and Albion Co., Ltd.; Geo. Thompson & Co., Ltd., Aberdeen Line; Wm. Lund & Sons, Blue Anchor Line, Ltd.; the British-India Steam Navigation Company; the Orient Steam Navigation Company, and the "Hansa" German line of steamers between New York and South Africa.

NOOITGEDACHT WINE FARM—
STELLENBOSCH.

NO OITGEDACHT, known to residents of the Cape Peninsula as "Rhodes Fruit Farm," is now one of the show places of the Colony. This fine estate is over 2,000 acres in area, and has a plentiful supply of spring water laid on, fifty acres of fertile land being planted with various kinds of sub-tropical and temperate varieties of fruit trees. The manager of this fine property is Mr. Edward Lange, who is an expert in viticulture. Born at Uitenhage, near the busy port of Elizabeth, he was educated in his native town, and at an early age struck out for the Kimberley Diamond Fields, and on the discovery of gold in the Witwatersrand, was one of the pioneers of that great industrial centre, and subsequently proceeded to Rhodesia with the late Cecil Rhodes, Esq., who for many years was a personal friend of Mr. Lange. Afterwards he was engaged by the Chartered Company, Kimberley, for some years, and also held an important post on the staff of the Consolidated Gold Fields, Johannesburg, and eventually deciding to settle in Cape Town, was again employed by the Chartered Company in the latter town. Mr. Lange was then appointed to the post on Mr. Rhodes' farm at the "Drakenstein," Paarl, remaining there eighteen months, from there was transferred to the picturesque fruit farm at Bosman's Crossing, staying there for eighteen months, and finally settled at "Nooitgedacht."

When first Mr. Lange arrived here, this now fair estate was in a sad way; phylloxera, the vine pest, had made terrible ravages among the valuable vines; but under his able management it has become one of the first wine farms in the Colony, Mr. Lange making in the month of February last over 250 leaguers of wine. An additional 150,000 vines are in course of planting, and when these are bearing, he will be producing 600 leaguers of wine annually. He wisely intends in the near future to take the estate over himself, and it already has become the most carefully kept wine farm in the Stellenbosch District. All the latest mechanical and chemical appliances for wine making have been installed, and luxuriously cool cellars have been built for storage purposes, the wine being bought by Messrs. Sedgewick & Co., Cape Town.

The property contains pretty shining duck ponds, and pure bred poultry of the finest strains strut about the ancient domain and the tranquil old homestead, which is of great historical interest, having formerly been the residence of the well-known Cloete family. These old and beautiful abodes testify to the great artistic taste possessed by the early settlers at the Cape, and are a pleasing contrast to the gorgeous and ornate palaces now built by the prosperous financiers on the Rand and elsewhere.

The old Huguenots appear to have adopted the style of architecture of the country of their birth to the needs of a sub-tropical climate. Slaves were imported from Madagascar for unskilled labour, teak and ebony from India, the tiles from Holland, and the solidly constructed furniture was made from the valuable trees found in the Colony, such as stinkwood and yellow wood, the whole combining to produce a beautiful effect not easy to be described by words.

The visitors to the farm will observe with pleasure the beautiful paintings on the walls of the homestead, and will thank the late Mr. Rhodes for the great care

taken by him to preserve such interesting relics of the old Huguenot pioneers of Africa.

When he took over the property an artist was engaged and instructions were given him to touch these paintings up, but not to interfere more than would be absolutely necessary with the work of the original artist.

The old slave bell is still used, and its peals can be heard at intervals throughout the day, calling the workmen on the estate to and from their labours.

The writer of this sketch was kindly shown over this property by Mr. Lange, and anyone calling here is most hospitably treated by the generous host and his charming wife, who is a daughter of C. J. Hones, Esq., late manager of the Stellenbosch Bank.

MR. ADOLF ANGEHRN, the managing director of The Federal Supply and Cold Storage Co., Ltd., was born in Switzerland on the 18th January, 1868, and subsequently received his education in that country. After working at his trade in Cape Town with different firms, he proceeded to the Transvaal, arriving there in 1891, where he started business on his own account, and after carrying it on prosperously for a couple of years, he took in Mr. Albert Piel as a partner, with whom he was associated thenceforward as Angehrn and Piel, a partnership, we may say, that proved a great success.

Some time after the Federal Cold Storage took over the business, Mr. Angehrn being appointed managing director, and Mr. Piel also being a member of the Board.

Eventually the amalgamation of other cold storages took place, Messrs. Verster, Piel, and Angehrn forming the South African Board of Management, Mr. Verster being chairman of the local board, and Mr. Edward Nelson of the London Board, which also consists of Messrs. Tom Nelson and Moritz Bergl. The capital of the company is £500,000, practically the whole of which is issued.

Mr. Angehrn, who very kindly showed us over the works, is of opinion that if good seasons continue in Cape Colony we shall soon be able to do with less imported meat. Should this desirable consummation come to pass, however, the old method of distributing meat to customers would have to be changed. Instead of killing the meat early in the morning and sending it out hastily while still hot and quivering for consumption, in order that the climate should not have a chance of tainting it, the meat will in future have to be chilled, and kept till wanted. The advantage of this method, which is adopted throughout Europe, lies in the fact that whereas the bullocks and sheep killed in summer are in prime condition, those killed in winter are lean and scraggy, owing to want of food. By killing off a surplus in summer, therefore, a reserve is maintained which would augment or altogether supersede the winter stock, which, as invariably happens, is scarce.

The same remarks apply to better the surplus milk, which it is the habit of many Cape farmers to literally throw away, not even being economised in the way of feeding pigs. This might be turned into butter and cheese, which in times of plenty, when the market was low, could be stored till the demand became active again. As Mr. Angehrn remarked, supply and demand can be regulated through our cold storages. There must no longer be a feast and famine style of existing with starvation prices, alternating with prices too low to pay the importer.

The Federal Cold Storage has the distinction of being the only cold storage in this country that has paid a dividend every year since it started. At Tullbagh, Cape Colony, the company has a farm where all the live stock is kept and the slaughtering done; and in the Transvaal there is another farm owned by the Company. Since the war there has been a great deal of cutting in the trade, due to the fact that the cold storages had entered on freight engagements, relying on the expected increase in the population, which on this account they found it difficult to fulfil, and as a result cold storage was overdone, and meat had to be sold at even below cost prices. The shares, in consequence, went down to next to nothing and the public can scarcely be blamed, therefore, for inveighing against and losing confidence in cold storages. Mr. Angehrn does not think that much competition needs to be looked for. All meat importers have come to the conclusion that there is not much advantage derived from sending meat to South Africa. The prices ruling are so low as to compare favourably with the English and American markets, and thus there is no encouragement to intending competitors.

A VISIT to the Imperial Cold Storage and Supply Company's works, which are situated in Dock Road, Cape Town, proves beyond doubt that South Africa can boast of possessing one of the most comprehensive and up-to-date cold storage concerns of the world. These huge works—which are the repository for a very considerable proportion of the large shipments of beef, mutton, lamb, veal, pork, sundries of all descriptions, hams and bacon, poultry, game and fish, &c., which come into South Africa—one can see at a glance, have been designed by experienced men, and that capital has been freely, but judiciously, expended with the object of providing cheap supplies for all classes of the public.

Through the courtesy of the manager we were permitted to make an exhaustive inspection of all that there was to be seen. First we entered the despatching yard, from whence in the "wee sma" hours of the morning, whilst most of the good citizens of Cape Town are still abed, men are busily engaged in catering for their wants, and forwarding large quantities of meat to all parts of the towns and suburbs, and in loading up the large Cape Government Railway refrigerator vans for despatch up-country.

A railway siding connects the works with the docks and the main line, thereby enabling the goods to be conveyed direct from the ship's side to the stores of the Company, and from the latter to the up-country towns with a minimum of handling.

Descending, as it seemed, into the bowels of the earth, we came to the cold rooms, which are especially interesting, and by the mere turning of a key and pushing open of a door, one is immediately transported into an atmosphere strongly suggestive of the polar regions. Everywhere, on the ceilings, on the walls and on the meat, are snow and ice, here forming pretty crystal incrustations, there rising as long icicles like stalagmites in a cave.

The coldest rooms, of course, are those kept solely for the storage of beef, mutton, and similar goods, in addition to which there are others constructed specially for the purpose of storing produce, and in these rooms the temperatures are maintained at slightly over freezing point. We were informed that each of the latter compartments acts independently of the other at temperatures varying from 32 to 40 degrees Fahrenheit, so as to meet the need of the particular nature of the article to be preserved, and in one room we saw thousands of boxes containing plums, peaches, fish of all sorts and descriptions, and provisions such as cheese, butter, &c.

Ice-making forms an important part of the business, and we saw huge oblong blocks of ice being turned out, clear as crystal, demonstrative of the care that is taken in the manufacture of this article.

The Machinery.—Passing to the engine room, the familiar sound of running machinery greets our ears and we find here installed a British Linde refrigerating plant, and, judging by the quantity of snow on the pipes, it is evident that satisfactory cold producing work is in execution.

Close by stands a much larger refrigerating machine known as the "Hercules." This, we are informed, has been but recently erected, and is intended to cope with the extensive summer trade.

The freezing is effected by means of the expanding of liquid ammonia in iron pipes, fixed in the cold chambers, in which pipes the ammonia changes from its liquid form to that of gas, thus absorbing the heat in the chambers. After doing its work the gas returns to the refrigerating machines, which convert it back into its liquid state. This liquid is stored in large iron condenser coils above the engine room, over which water is always flowing.

We were particularly struck with the extreme care that is evidently paid to the goods being preserved and handled in the cleanest possible manner. We read a great deal in the papers about the way in which our meat is treated, but we are bound to admit in fairness to the Imperial Cold Storage Company that the most exacting epicure could not be otherwise than pleased with the scrupulously clean method adopted by this concern. The carcasses of beef and mutton are covered with two wrappers, one of hessian and one of calico, and, we were informed, the Company specially stipulate in all their contracts with their suppliers that the meat must be thus covered.

Before leaving, we were shown over the office of the Company, which gives employment to a large number of clerks, and the rattling of typewriters, the incessant tinkling of the telephone bells, and the hurrying to and fro of feet, were all illustrative of the fact that the Imperial Cold Storage Company is a busy concern. Besides their large depôt in Dock Road, the Company has thirty-five others, large and small, distributed throughout the Peninsula, and also branch establishments at Durban, Delagoa Bay, Johannesburg, Bloemfontein, Pretoria, and Kimberley, and depôts at East London, Port Elizabeth, Beaufort West, Worcester, and other towns in South Africa.