Emu Plains

THE HISTORY AND DEVELOPMENT OF THE
EMU PLAINS TRAINING CENTRE

Compiled by
KERRY BENSON
Overseer, Emu Plains Dairy
for the
Official Opening
of the
Emu Plains Milk Processing & Packaging Facility
With many thanks:

Marlene Shaw
Secretary
Emu Plains Training Centre

and

Terry Norberry
Assistant Superintendent Industries
Emu Plains Training Centre

for your valued assistance.
“THIS TRACT OF LAND IS SO EXTREMELY FERTILE, AND SO PECULIARLY WELL SITUATED FOR A GOVERNMENT AGRICULTURE ESTABLISHMENT, THAT I CANNOT RESIST THE DESIRE OF MOST RESPECTFULLY RECOMMENDING TO YOUR LORDSHIP NEVER TO PERMIT THIS FINE TRACT OF LAND TO BE ALIENATED FROM THE CROWN, AND TO INSTRUCT THE PRESENT AND ALL FUTURE GOVERNORS ACCORDINGLY.”

M.G. MACQUARIE

to EARL BATHURST

27 July, 1822
Emu Plains is located on the west side of the Nepean River extending to the foot of the Blue Mountains. Part of this name (i.e. "Emu") is thought to have originated with the sighting of emus there when the country was first explored by Europeans in the late 1780’s. The locality was first known as “Emu Island” as early as 1808 – the name originating with Captain Watkin Tench (1758-1833), who first explored the region. In 1814 Governor Macquarie referred to “Emu Plains (hitherto erroneously called Emu Island)”, which officially heralded the area’s change of name. Up to this date the area had obviously been thought of as an island.

Field noted that Emu Plains had been called “Emu Island” because the plains had, at times, been turned into an island by the “washing of the mountains when the Nepean ... flooded”.

Emu Ford was the area on the eastern bank of the Nepean River close to where the early settlers and explorers crossed the Nepean to get to Emu Plains before the bridge was built. These early crossings were first made by Ford and Weir, then Punt, which ferried chaises, carriages, bullock carts, stock and people. Although it is not certain where the exact point is from which these departures took place, we do know that it was near the point where William Cox’s road across the Blue Mountains began. The name is not longer in use.

Emu was the name of a small town laid out by the Government in 1832. It was a town of an agricultural and pastoral nature, the area and town eventually became known as it is today – Emu Plains.
“EDINGLASSIE” was the first private house erected at Emu Plains on a grant of about 50 acres selected by the colony’s first Chief Justice, Sir Francis Forbes (1784-1841). It is believed that there must have been some sort of dwelling on this grant as early as 1827, as Captain William John Dunaresq described it in his journal as “the picturesque and romantic retreat of Edinglassie”.

Edinglassie was named after one of the Forbes’s estates of Scotland and is a combination of Edinburgh and Glasgow.
The area measured 2000 acres, with 800 acres cleared of timber and separated into large fields and 500 acres under crops in 1828.

The crops for which Governor Philip had sighed in vain were already producing more than could be handled, on that fine fertile tract of ground. Maize and wheat were the staples, and it was here that the first cash crops of tobacco were grown. In 1824, a receipt from the Colonial Treasurer's Office, dated 16th August, read: “Received from J. Ovens Esquire the sum of Twenty Eight Spanish Dollars being for tobacco sold at Emu Plains for account of the Govt.”

After the arrival of Governor Brisbane, the Emu Plains Prison Farm was enlarged. Women from the overcrowded Female Factory at Parramatta were sent there, by way of an experiment – an unfortunate one as it later proved, for several persons in high places, including the Governor himself.

A Broadside of 1835 describes some of the sufferings of convicts at Emu Plains: “The delinquents are employed in forming new roads by cutting through mountains, blasting rocks, cutting the trees up by the roots, felling and burning off. They are attended by a Military Guard day and night to prevent escape, wear Irons upon both legs and at night are locked up in small wooden houses containing about a dozen sleeping places: escape is impossible”.
In 1819, Governor Macquarie decided on establishing an Experimental Prison Farm at Emu Plains. His Government and General Orders, dated Government House, Sydney, Saturday, 11th September, 1819, read as follows: –

"His Excellency the Governor, deeming it expedient to form an Agricultural Establishment on the Part of this Government, In Order to give employment to the numerous servants of the Crown not otherwise disposed of, and to secure additional supplies of grain for the Public Service, has determined on the Occupation of Emu Plains, on the Western Bank of the River Nepean, for this Purpose; and has appointed Mr Richard Fitzgerald to be Superintendent of the Said Establishment, with a Salary of One Hundred Pounds Sterling, per Annum, commencing from the 1st of the present Month of September, and to be paid from the Colonial Police Fund."

"His Excellency will cause Mr Fitzgerald to be furnished with written Instructions for his Guidance in the Conduct of the said Agricultural Establishment".

"By His Excellency's Command".

The little village inhabited by the convicts responsible for the cultivation of that Government reserve; consisted of 25 to 30 huts where 140 men were grouped under the direction of an overseer, a convict himself.
The establishment at Emu Plains was reduced in 1830 and closed in 1831 at the Edict of Lord Bathurst.

Emu Plains was broken up into lots and sold privately, with the exception of a few reserves held by the Government.

In the year Nineteen Hundred and Fourteen Emu Plains Prison Farm came into being again.

The Prison Farm was officially opened on the 12th April, 1915.

This farm consisting of about 107 acres, was acquired for the purpose of growing vegetables and general farm work by prison labour and it was proclaimed a Place of Detention on 30th December, 1914 and young first offenders were transferred there for the work.

The Department of Prisons remained in control of the prisoners and the Department of Agriculture supervised and directed the work.

In August 1916, the farm was disestablished as a Place of Detention and was carried on solely under the control of the Department of Agriculture. The labour was carried out by the same class of prisoner who were Released on Licence by the prison to remain at the farm for a specified period. Work was carried out under the supervision of Overseers who were appointed by the Department of Agriculture, and the prisons had no further concern with the working of the farm or with the workers that held licences after they left the gaol.

The Government, however, decided to place the farm entirely under the control of the Prisons Department and on the 12th November, 1917 the farm was re-established as a Place of Detention. The report was as follows:

There are forty two (42) roomy, comfortable huts at this farm and each prisoner occupies a single hut. The principal class of prisoner employed is the first offender, under the age of 25. They are engaged in raising all kinds of vegetables, forage crops, tending pigs and cattle, and general farm work. The officers chosen to take charge of the farm and control the prisoners, are specially trained for these duties.

The scheme had passed experimental stage and dairying was considered as a new industry.
Emu Plains Prison Farm – Ploughing.

Emu Plains Prison Farm – Laying Irrigation Pipes, Engine-house in background.

NOTE: Photos reproduced from photocopies.
MEMO TO PRISONERS AT EMU PLAINS PRISON FARM

The changed conditions in which you now find yourself, will I trust appeal to you and your sense of honour, and you will realise that special opportunity is now afforded you to improve yourself in every way, and to get away from gaol life for good and all, and that you will show by your conduct during the remainder of your sentence that you appreciate in the fullest degree the efforts made to enable you to regain your self respect, and to fit you for a fresh start in life, along better lines than those that caused your temporary lapse.

You can see and no doubt realise, by your new surroundings what is before you in the great change effected for your welfare; and with yourself rests the effect of it upon your future. It is scarcely necessary, I hope, to remind you of your duty and contact whilst finishing up here; of the respect and obedience to those in authority above you, and the strict adherence to Rules and Regulations, which are simple, clear and for the general benefit of all. Cleanliness in both mind and body, also in the manner in which your living place and articles are kept, is looked for as a matter of course, and I trust that results will be shown in the future of your life, that will be in accord with my best wishes.

S. McCauley
Comptroller-General of Prisons
12th November, 1917.
During the period from the 12th April, to the 31st December, Emu Plains maintained a daily average of 14 prisoners on the farm, with an average of 9 prisoners employed in agricultural work.

The work carried out during the year by prison labour consisted of general farm work, including cultivation of the land for vegetable growing, oaten and lucern hay, and maize crops etc. 10 huts were also constructed at Goulburn Gaol and forwarded to Emu Plains. On the 12th April, 1915, 10 prisoners were sent there and the number increased to 20 by October, 1915. Extensive work was carried out on the irrigation system to accommodate the growth. The old wrought-iron suction pipes (11 inch) were removed and replaced by 12 inch cast iron pipes 8 feet long (400 feet in length overall) measuring from suction-well to pump-well. A temporary sand-bag weir was thrown across the Nepean to ensure a good supply of water in the suction-well during the present dry spell. Their weir had been a boon to the neighbouring farmers by supplying water for household purposes, and watering their stock. The Emu Plains Gravel Company, and McGrath's woolwash, have benefited considerably by the weir. The entire project (labour included) only cost 12 pounds.

44,000lbs of vegetables were produced by prison labour and 145 tons of lucerne hay was harvested. In addition, there were 3½ acres of tomatoes, which were marketed, 2 acres of water melons, 13 acres of corn, and 12 acres of lucerne.

1919 — 1926

During this period, the farm suffered setback due to little or no rain, or at times far too much. The irrigation system was an advantage and although crops were damaged the farm’s takings were considered quite good. Milk and vegetables were supplied to the prisoners, forage was harvested, 113 pigs were sold as well as 45½ tons of tomato pulp.

Prisoners were generally of good behaviour and left the farm in robust health. Many letters of gratitude were sent from parents expressing gratitude for the improvements in their sons after being sent to the farm.
A tractor, plough and chaff cutter were purchased in 1924.

The construction of new buildings, animal shelters, fly screens, concrete duck ponds, painting and renovations were all performed by prisoner labour.

The pigs, eggs and jam that were produced at the farm, were distributed to other gaols as well as supplying their own needs at Emu Plains.

Further enhancement during this period included a saw bench that was improvised and a supply of palings that were produced. Also duck breeding was a new venture, resulting in table birds that were produced in 10 to 11 weeks.

The construction of 2 brick silos and a gristing mill along with the purchase of a melon slicer, improved the efficiency of operations at the farm.

Galvanised iron was used to line store rooms which guarded against the rat plague prevalent at that time.

1926 — 1936

1927. The daily average of prisoners confined during the year was 32.7. 4 prisoners were transferred to Parramatta due to misconduct. Most prisoners appreciated the privilege of the farm and there were no attempts at escape. All prisoners gave their word of honour they would not attempt to escape.

The crops suffered under a prolonged dry spell, however, bounteous rains had fallen later in the year and there was no reason not to expect good crops. In addition to pig raising and general farm duties, the beginnings of poultry farming were established.

That year also saw the introduction of physical drill and organised games. Meals were taken in huts an opposed to collectively and also efforts to secure employment for those nearing discharge were increased. Footwear was also repaired on the premises at the time.
On working days the prisoners wore dungarees with leather leggings and brown kip boots, while on non working days, they were clad in white suits and shoes. For drill the garb was flannel shorts and white shoes.

Discipline was strict without harshness and on one day's parole, 2 prisoners could enjoy the privilege. One went to his mother's funeral, while the other went to visit his sick wife.

Organised sports kept the prisoners healthy and out of mischief.

Only one case of serious illness was reported which was typhoid fever, treated in hospital.

The closure of Cowan Creek Camp resulted in surplus material for Emu Plains. The material used to construct huts was brought to Emu Plains and used to build additional huts. Accommodation was increased and promptly, the prison application rose from 42 to 78 inmates. The construction was completed by the inmates and all gained considerable experience which benefited them upon their release.

The vegetable garden was improved by the use of a 'mman' spray irrigation system. A large crop of tomatoes was ruined by a severe hailstorm, however, a large crop of jam melons was converted to jam which proved to be a profitable venture as large quantities of the jam was used. 16 tons of tomato pulp was produced and 10 tons of tomatoes were sold directly to the factory.

The piggery section was extended to allow the pigs that were raised, to be slaughtered for bacon. The poultry section had also been extended and improved with the addition of an incubation system. However the great demand for eggs was unable to be met.

New additions that were constructed during the time included, pig stybes, cow bails, a cooking shed for pig feed, sheds and a bath for brood sows, a hay shed, seed bed, garage and feed store rooms.

Bush timber, bark and corn stalks were utilised where possible to teach inmates how to improvise.

Electric light was installed on the farm. Extensions were added to provide accommodation for at least a dozen inmates.

5 cows were kept and milk was largely used for the pig feed. Horses were used on the farm for ploughing and harvesting.
Emu Plains Prison Farm – Office, Officers Quarters, Recreation Room and Kitchen.

NOTE: Photos reproduced from photocopies.
In 1951 replacement of the old wooden huts commenced using cement bricks made at the Centre by inmates. Remodelling of the Centre, comprising 120 brick huts and other facilities, was completed in 1957.

The inmates ate alone in their huts and each had a safe made from a kerosene tin with a hinged wire door that could be locked. They then could safely store the items of food their relatives brought for them on Saturday visits.
In 1937 dairying was introduced to the existing operations. The adjoining property known as “Inverleigh” was acquired which consisted of 89 acres. This acquisition also included a herd of Australian Illawarra Shorthorn Dairy Cows. In 1938 a further 30 acres was acquired by way of lease.

The herd consisted of some 44 cows and averaged well over 2 gallons per milking cow per day. Nepean Dairy Company stated that Emu Plains was the only dairy to maintain its average through a dry spell. Milk receipts from the 30th of July, 1938 totalled 934 pounds – 17 shillings – 5 pence.

The dairy was remodelled and concrete buildings replaced the wooden ones. Bails and feeders were constructed out of reinforced concrete and all yards were concreted. Drainage systems were installed, so that the cows would not be affected by the mud and slush that was present during adverse weather conditions. A high standard of hygiene was therefore ensured. The stock also had ready access to grazing lands.

At that time there were 12 acres under lucerne and 20 acres under oats. Grazing lands were topdressed with cow manure, harrowed in and cultivation lands treated with superphosphate and lime.

32 cows could be housed in the main feed shed and prisoners rose at 4 a.m. to complete the milking, feeding and general duties required. 298 tons of fodder valued at 581 pounds was produced. Calf sales amounted to 11 pounds – 9 shillings – 9 pence.
THE DAIRY — Continued

A site was chosen adjacent to the old dairy building, on which a new dairy building was erected.

An important event for the dairy was the installation of electricity. A new switch room was erected and a feed store which housed a five horse power motor for driving the chaff cutter.

A boiler, hot water service and a can steamer were also installed to ensure the utmost cleanliness. The bails were constructed with plans for the future installation of milking machines.

An additional 93 acres, known as “The Island” was also purchased, adjacent to Inverleigh, for the purpose of grazing.

A property known as “Evandale” was also purchased, the residence thereon being occupied by the dairy overseers.

By the end of 1938 some 30,087 gallons of milk was produced at Emu Plains. Most of the milk was supplied to Nepean Dairy Company whilst the remainder was supplied to other Government institutions.

The herd had grown in number to 61 head, comprising 2 bulls, 49 cows, 5 heifers and 5 calves.

The herd increased to a total of 58 cows with at least 50 in milk by the end of the year.

Agricultural work carried out during this year, produced 920 tons of forage, of which 510 tons were sealed in silos.

THE DAIRY 1968 — 1991

A new dairy building was commenced in 1969, Officer Allan Horton supervised all work which was performed by prisoner labour. This building is in use today.

Milk during this period was delivered to Hawkesbury Dairy Co-op for processing, and was then repurchased by Emu Plains and supplied to other institutions. The milk was delivered in milk cans by the farm’s
milk truck. Some time later, the milk supply was returned to the Nepean Dairy Company.

During 1974 the friesian breed of milking cow was first introduced to Emu Plains. 12 cows were brought with the aim of lifting the levels of production. It was such a successful venture, that in 1978 Mr R. MacDonald who was then the new Senior Overseer of the dairy, increased the Friesians in number and gradually called the Australian Illawarra Shorthorns. The last Australian Illawarra Shorthorn cow died in 1990.

15 Jersey Cows were also introduced into the herd with a view to retaining the butterfat content of the milk at the required level. At the present time approximately 33% of the herd are Jersey Cattle.

Mr Keith Weeks has been herd recording at Emu Plains for the last 20 years. Herd recording is a procedure devised to inform us of each cow's performance.

A major achievement for Mr MacDonald and the Emu Plains Dairy Section was the purchase of a calf from the Laurie Allen Dispersal Sale, named “Loralee Ebony Countess”. She was reared at the farm and calved to the sire Roybrook Tempo. At 8 years she recorded 14, 163 litres of milk over a 300 day lactation, 3.5% test and 513kg of butterfat.

“Countess” averaged 47 litres of milk per day and at the end of her lactation produced 30 litres of milk per day.
What is Milk.

LEGAL STANDARDS

Milk secreted by the mammary gland of all the higher animals, is the sole food of the young of the species during its first critical months of development after birth.

Milk must contain all the nutrients necessary for the purpose and contain them in the optimum proportions.

Many humans continue to use milk as a food throughout their lives.

In New South Wales the only legal milk is cows milk.

The New South Wales Pure Food Act defines milk as follows:

- The Lacteal Secretion obtained from a cow during a period other than 15 days before expected parturition (birth to calf) and 10 days following parturition.

Freezing point will not be greater than -0.517 celsius.

Milk shall contain not less than 3.21% milk fat
8.5% milk solids
not fat
3.1% of milk protein

Milk shall not contain Antibiotics in excess of 0.002 mg/litre
Milk shall not contain Iodine in excess of 500mg/litre

Average composition of cows milk:

One Litre of Milk weighs
1kg (or 1000mg) and contains

- Fat 3.78%
- Lactose 4.55%
- Proteins 3.30%
- Minerals 0.68%
- Water 87.69%
Pasteurisation is a heat treatment of sufficient temperature and time which is applied to milk to inactivate the most heat resistant pathogen (bacteria) with minimum damage to the milk’s basic characteristics of nutrition and flavour.

Louis Pasteur first applied this principle to wine and beer between 1860 and 1864. It was called Par Boiling and under boiling.

Of all the bacteria that can be present in milk, Mycobacterium Tuberculosis, is the hardest to kill, therefore the time and temperature system that kills Tuberculosis will ensure that all other bacteria are destroyed.

The time and temperature system that is used in this type of pasteurisation is known as short time pasteurisation which means that the milk is kept at a temperature of not less than 72 degrees celsius for not less than 15 seconds. The milk is then shock cooled to a temperature below 4 degrees celsius.

Various tests are performed on milk samples to ensure the pasteurisation process has been successful. These tests are:

- **PHOSPHATASE TEST**: To show not more than 10 micrograms of PnitrophenoL
- **COLIFORM COUNT**: To be less than 1 per ml.
- **STANDARD PLATE COUNT**: To be less than 50,000 per ml.

The objectives of pasteurisation are as follows:

1) Milk will have been made safe to drink or to convert into products.
2) The keeping quality (shelf life) will be improved.
3) The nutritive value, appearance and flavour will have been retained as closely as possible.

There are many objections to the lowering of milk’s nutritive value through the pasteurisation process, however milk’s nutritive value is so high that a little lost during the process will not affect its value to humans.

A 600ml bottle of pasteurised milk will provide an adult with the following daily needs requirements.

- **CALCIUM** ........................................... ALL
- **RIBOFLAVIN** ...................................... 3/4
- **RETINOL** ........................................ 1/3
- **NIACIN** .......................................... 1/3
- **PROTEIN** ........................................ 2/5
- **THIAMIN** ........................................ 1/5
- **ASCORBIC ACID** ................................. 1/6

To effectively destroy the nutritive value of the milk would require a heat treatment so severe that the milk would be so brown and caramelised the milk would be unpalatable.
Pasteurising and Processing


The pasteurisation process in its most basic form is as follows:

Milk contained in the Storage Vat flows into the Balance Tank which allows the flow of milk to be maintained at a steady speed. The milk then flows through the Regeneration Section to the Heat Exchanger.

Homogenisation is the next step, which enables the fat globules of the milk to be spread throughout the contents of the milk, thus preventing a "cream plug". This cream plug was often seen at the top of bottled milk before milk was homogenised. Homogenisation consists of two actions, one of which is Cavitation, the other is Shear Action.

Milk is then transferred from the Heating Section to the Holding Tube which is where the milk flows through the tube in a time rate of not less than fifteen (15) seconds, the holding tube is heated to not less than 72 degrees celsius.

This short time pasteurisation ensures all bacteria is removed from the milk.

The milk passes a Diversion Valve which acts as a safe guard, if the milk has not reached the required temperature it is automatically returned to the balance tank.

A computer maintains the correct temperatures and when the milk has been through the holding tube it then returns to the cooling section.

Milk after pasteurisation is shock cooled to a temperature of not greater than 4 degrees celsius then stored in the vat until flowing on to the packaging machine.

Milk is packaged in 300ml cartons and then delivered to institutions.
The dairy herd today is comprised of Friesians, Jerseys and some Swiss Browns. At the present time there are approximately 340 head of cattle, cows in milk number 146 whilst the remainder are calves, Heifers, Springers, Dry Cows and Bulls and Cows that are agisted at a property at Luddenham and St Heliers Prison Farm at Muswellbrook.

Heifers are reared on the farm and become part of the herd. Bull calves are sold at auction.

Previous to the implementation of the milk pasteurising and processing plant, milk was supplied to United Dairies Nepean, the quota supplied was 7,500 litres per week.

Land surrounding the dairy section is pastured with lucerne, oats and pasture grasses. Approximately 700 tons of silage and 2,500 bales of lucerne hay is produced each year. It is stored and fed to the cattle at appropriate times throughout the year. The cattle are also fed dairy meal.

Inmate labour is employed on the farm and the dairy gang consists of 15 trainees. These trainees are trained to perform various duties which include milking, feeding, de-horning, branding, worming, vaccinating and general care of the cattle.

Other duties include tractor work, maintenance, fencing, irrigation, ploughing, seeding and harvesting.

Hygiene is an important factor in dairying as with any industry concerned with food production. The Emu Plains Dairy has a high standard of hygiene and cleanliness which is kept at a maximum level at all times. Trainees are experienced in these duties which involve cleaning of the milking machines, bails, vat room, production plant and surrounding areas of the dairy.