SOME HISTORICAL NOTES ON YORKE PENINSULA - WITH SPECIAL REFERENCE TO THE KADINA DISTRICT EARLY DAYS

Yorke Peninsula was named by Captain Matthew Flinders on March 30th, 1802, after one of the First Lords Commissioners of the Admiralty, the Right Honourable Charles Philip Yorke who - after an active naval career which included the suppression of piracy in the Mediterranean - became one of the First Lords. Later on he was a member of the House of Commons, but moved to the House of Lords when his uncle died. Yorke succeeded him to become the 4th Early of Hardwicke. (Rodney Cockburn).

From Robert Cock "South Australian Gazette & Colonial Register"

15th June, 1839

"Victoria Harbour - this safe and capacious harbour situated on the west side of Yorke's Peninsula is at that place named Point Pearce by Captain Matthew Flinders. It certainly combines the greatest extent of fertile country (especially for agricultural purposes) yet discovered in South Australia.

The soil is composed of decomposed limestone, and is generally rich and fertile and, I am satisfied, would raise heavy wheat crops. The timber is principally she-oak, but other timber is in abundance for fuel and fencing purposes, although not generally adapted for building. It is sufficiently open for the immediate commencement of agricultural pursuits.

The other portions of the district bear generally a light soil, and are covered with scrub. Fresh water is found almost everywhere from six to ten feet from the surface. There appeared to be few natives but kangaroo, emu and wallaby are plentiful.

About 25 miles further northward the country is occasionally belted with scrub and grassy plains, and generally of a lighter soil; still, it is of a productive nature".

From (1) A.J. Perkins - "The First Decade 1836-1846" and

(2) Lands Department files

The Sixteenth Special Survey of lands for allotment was taken up on 10th May, 1839 in the names of John Barton Hack and John Russell on behalf of the "Special Survey Association" in Adelaide. It was described as being 4,000 acres at £4,000 to be selected from 15,000 acres at or near Point Pearce (near Pt. Victoria).

On the 18th August, 1840 Mr. David McLaren stated publicly that the Port Victoria survey was quite a failure - and that both this, and another of the same size at Port Vincent were both quickly and "ignominiously discarded by the disillusioned proporietors".

Hack and Russell, the applicants, giving evidence of why they had discarded these surveys, to the Resident Commissioner in Adelaide on 24th February, 1841, said that they had arrived at "a lamentable conviction . . . . of the utter incapacity of that part of Yorke Peninsula ever being available for the purpose of civilised lif". "The absolute sterility of the place, presenting to the observer the appearance of a stony ledge . . . was literally incapable of yielding support for the few tufts of wiry spear grass . . . . and this and the total absence of fresh water within the limits of the survey . . . were sufficient-reasons for us withdrawing our capital". And so failed the first attempt at settling Yorke Peninsula.

The Coming of the Sheep

After the relinquishing of the first two surveys the district was gradually explored by people looking for sheep and cattle country. In spite of the lack of water and the earlier unfavourable opinions which had been expressed, most of the area was taken up by the 1850's as leasehold sheep runs.

On the 1st July, 1851 the country in the vicinity of, and enclosing what is now the three towns of Moonta, Wallaroo and Kadina, was taken up by Robert Miller under the Waste Lands of the Crown Lease No. 147. This lease, which comprised 104 square miles was held at an annual rental of 10/- per square mile.

In 1857 Miller surrendered his lease and requested that a new lease be issued to Walter Watson Hughes of "The Peake", Watervale. Hughes was a retired master mariner who had taken up Occupation Licences near the Hummocks the Broughton in 1844 and 1845 respectively.

From (1) Lands Department files, (2) Oswald Pryor - "Australia's Little Cornwall" 1962, (3) W. Hareus - "South Australia" 1876 and (4) E. Hodder - "The History of South Australia - Part I" 1893

In the language of the local Naranga tribe, the station name of the country comprising Hughes' new lease was Walla-waroo - meaning "Wallaby Urine". Later on this was to be corrupted to Wallaroo and become the name of the town and the port developed to smelt and ship out the copper from the nearby mines.

The property was not an exceptionally profitable one, for there was no permanent surface water. As the only water obtainable came from wells among the sand dunes along the coast, sheep could be grazed there only in the winter months. In the usual custom of the time, the flocks were protected from aboriginals and wild dogs by shepherds, who watched the sheep by day and yarded them beside their huts at night.

In 1860 there was another depression, the result of a widespread drought and of falls in the prices of wheat and wool on the overseas markets. . . . "the discovery of huge mineral deposits saved the day - the two major finds being indirectly the work of native animals".

The Finding of Copper

In December, 1859 James Boor, a shepherd on the Hughes run, found copper outside the burrow of a marsupial rat and reported this to Mr. Duncan, the outstation manager. Duncan's fifteen year old son, John (later Sir John Duncan), accompanied by an aboriginal, took the specimens to Hughes head station at Watervale, 80 miles away, and reported the find. By February, 1860 Hughes had arranged for four Cornish miners from Burra Burra - Walter Phillips, William Pascoe, Richard Walter, and Richard Truran - to test the site. This "Home" shaft, the first to be sunk at Wallaroo, struck the heart of the main ore body, and a private company was formed, which developed the mineral lease taken out by Hughes. Wallaroo Mines had commenced.

Other shepherds on the run kept looking out for more deposits and a few months later one of them, Patrick Ryan, found a heap of copper ore which had been thrown out by a burrowing wombat, in a patch of scrub known to the aborigines as Moonta - Moonterra (said by Rodney Cockburn in his "Nomenclature of South Australia" 1908 - to mean "patch of impenetrable scrub").

Ryan, a dull witted illiterate, brooded over the fact that no one believed in his find for several months until he at last convinced Mr. Johnston, the proprietor of the Port Wakefield hotel. Johnston took Ryan to Adelaide to make application for a mineral lease but found that this could not be granted unless he could give more specific data regarding the site. Forming a Syndicate in Adelaide they then returned to Moonta to define the actual site of the find.

In the meantime Captain Hughes, who was in Adelaide at the time, found out about the attempted taking out of a mineral lease. Hughes took out a somewhat illegal blanket lease over the supposed area of the find and went to Moonta. There he interviewed Ryan, who went back on his agreement with the Syndicate, and showed Hughes where he had found the copper.

After Hughes and a surveyor had defined the site a young man named William Horn made an exciting round about horse back ride of 164 miles in 22 hours - using up several horses on the way - to get the information to John Taylor, of Elder, Stirling and Company, who were Captain Hughes' agents. Although members of the rival syndicate were actually in the land office waiting to register their lease when Taylor arrived, his application was dealt with first by the Chief Clerk because Taylor

was known to him. As soon as Taylor left the office Mills of the Syndicate tried to register his lease and found he had been forestalled by 10 minutes while he was standing nearby. Later on the taking out of this lease on behalf of Hughes became the subject of a court action which finally resulted in the Moonta Company, in 1868, paying the Syndicate several thousand pounds.

The First Mining Companies

From these beginnings came the Wallaroo and Moonta group of copper mines, which in their subsequent life of 63 years, produced copper worth nearly £21,000,000, and gave Hughes the money to found the Adelaide University.

Ironically enough, before the Moonta Mines began to pay their first dividends Patrick Ryan was dead, having drunk himself to death on the £6 per week finding reward Hughes paid to him. The Company, however, continued to pay the money to Ryan's widow as a pension while she lived.

"Prior to 1860 Wallaroo had been part of an almost uninhabitable sheep run, on which there were only a few shepherds' huts" - within 15 years it had a large smelting works, railways, jetties, many mines, and there were three thriving towns, Wallaroo, Kadina and Moonta said William Harcus, writing about the district in 1876.

News of the richness of the Wallaroo and Moonta lodes spread like wildfire and hundreds of claims, many of them "get rich-quick" fraudulent ones, were taken out and publicised in the next few years, but others were successful and thousands of men came into the district and found work.

Early Living Conditions

Living conditions were tough. The greatest hardship a shortage of water. Only salt water had been struck in the mines. Whenever a rain fell all the water which ran from the roofs of the miners shacks was caught in every available receptacle. Women and children hurried with pannikans to dip up the water which collected in the wheel ruts in the roads.

Miners dug underground tanks and lined them with masonry, made watertight with a mixture of tallow and sand, applied hot. As these tanks were filled by surface drainage there were the inevitable epidemics of typhoid, and in one terrible week alone 110 deaths were registered. The heaviest mortality was among the children, and rows of small mounds appeared in the cemetery.

To meet the desperate need for drinking water the mining company erected a still and sold condensed water at "tuppence a bucket and fetch it yourself", until in this, and in other ways, the conditions were eventually considerably improved.

Description of the Country in 1866 from "The South Australian Gazetteer" 1866

Yorke's Peninsula comprised a vast extent of pastoral country which was taken up as sheep runs. It was almost destitute of surface water and had no running streams. By 1866 numerous wells had been sunk by stockowners and water was also obtained from the swamps which were full during, and for some time after, wet seasons.

The country generally comprised dry, scrubby, undulating sandy rises, and salt lagoons and swamps with samphire, mesembryanthemum, teatree and patches of rank swamp vegetation; also thinly grassed plains, lightly timbered with oak, cherry, tea tree, dwarf mallee, peppermint, spinifex and black grass; and patches of dense scrub and native pine.

Parts of the district, especially along the coast, were almost unavailable to stock because of the malarious exhalations which arose from the mangrove swamps. These caused a dangerous malady known as "the coast disease".

The entire area was full of burrowing animals which dug large holes in the calcareous crust of the soil.

Around Moonta the country was undulating, with low sandy hills which varied in height. There was no running water in the neighbourhood but about 12 miles south of the town there were some remarkable springs at Tipara. They lay in a group of sandhills, not high, but covering a considerable area, in the centre of which was a hollow like the crater of a volcano, in which were met a number of springs of clear, fresh water.

From Moonta to the bottom of the Peninsula there were then a number of dry, but fairly well grassed sheep runs. Wells sunk at various places had produced water. Near the coast the wells were only a few feet deep and the water was fairly good, but further inland water, which was frequently brackish, was only found at depths of 150 - 180 feet.

Around Kadina the land was described as barren and sterile, with no good water. The district was never considered suitable even for the profitable depasturage of sheep, and agriculture was never thought of until after James Boor found copper.

The Mining Towns

The town sites of Kadina and Wallaroo were surveyed in 1861, and the one for Moonta in March, 1863.

In 1866 Kadina and the surrounding mines had a population of 4,000 - Wallaroo had about 2,000 - while the Moonta district which was then producing the richest copper had about 5,000 people.

William Rounsevell opened the first coach-line between Kadina and Adelaide in July, 1864, with coaches leaving Mondays, Wednesdays and Fridays, and returning on the alternate days. The fare was £2 and in the next year a daily service was started. This was taken over by Cobb & Co. in 1867. They provided well

built comfortable coaches, speedy horses, and drivers who had to measure up to a high standard of proficiency. Passenger carts ran between Kadina and Moonta at irregular intervals and tramways were put on to convey the ore to Wallaroo-Kadina in 1866 had a post and telegraph office, a police station and court, several churches and chapels of different sects and demonimations, 2 banks, 5 hotels, 3 lodges, one insurance company and an aboriginal depot in the town in addition to numerous shops.

Wallaroo was developed as the port for the mining towns. It had a fine jetty, so that although the water close to the shore was shoal, vessels of 1,000 tons or more could load and discharge safely at the jetty, which was connected to the railway and through this to the mines.

The smelting works were the largest in the Colony and thought to be the largest outside of Swansea in Wales. There were 22 furnaces under a galvanised iron roof 695 feet long and 55 feet wide. When rain fell the water from this roof was collected into a series of 50,000 gallon tanks and materially helped bulk up the local supplies.

In August, 1865, before the railway was built, a large quantity of ore was wanted at Port Wallaroo for shipment -a distance of about 10 miles from Moonta - and 1,700 tons was delivered by means of drays in 10 days.

At this same time there was considerable criticism because the Government had done nothing about the roads and were doing nothing about the "mad water". This was water which was pumped out of the mines. Because there were no proper drains it covered many acres to a depth of 2-3 feet, while waiting to percolate back into the light, porous soil. In the meantime it was feared that the health of the inhabitants would suffer as a result of all the stagnant water around.

Closer Settlement Begins

From (1) "Australia's Little Cornwall" - Oswald Pryor 1962 and (2) Lands Department Records

When the first miners arrived, the district was covered with a dense growth of mallee and native pines. The demand for domestic firewood, fuel for the boilers, and pit props for the mines, as well as the ravages of the mobs of goats which were brought in by the miners to provide their families with milk and meat, made such inroads into the growth that within thirty years the whole area was a treeless plain.

Houses and fences on the mining leases were erected without any sort of street alignment. Dotted around among dumps of over burden, slime dams, and old shafts, without roads or footpaths, they completely bewildered any stranger trying to find his way.

All such work as house building had to be done "out of coor" - after a man had finished his usual shift of work on the mine. A few houses had wattle and daub walls made by erecting a framework of sticks, and then giving both sides a thick plastering of clay. Others were built by placing two planks 12-15 inches apart, and filling the space between them with a mixture of clay, loam and broken stone. The mixture was well rammed in and then allowed to set before the boards were raised for the next course. The best walls were built from previously made straw bricks. Rafters and purlins were usually mallee saplings, and roofs and floors were made from any available material. Everybody kept fowls and some even had a pig. In the earlier days wallabies and kangaroos were plentiful in the nearby scrub and at the weekends PARTIES ~~DRIBS~~ of men in spring carts went out and caught or shot the family meat supply.

When the land was surveyed and thrown open for selection there was no lack of applicants; and blocks were soon taken up. Settlers close to the mines were fortunate. They sold mallee roots and rougher timber for fuel, and the long straight saplings for mine timber. This helped them to pay the cost of clearing the land. They were also able to barter eggs and butter for groceries in the towns.

The First Wheat

There doesn't appear to be any record of the country in the general Kadina district having been used for crop growing before the proclamation of the Hundreds of Kadina and Wallaroo on the 12th June, 1862. Lands Department records do show selections after this date, including a number in 1865.

According to Oswald Pryor Thomas Tait and James Butler each sowed about 150 acres of wheat at Green's Plains in 1866, and he says that this was the beginning of farming in the district. This agrees fairly closely with Edgar Dunsdorf's findings after his researches into Australia's historical wheat growing statistics, although according to what he found out it would have been 1868 before 300 acres was sown.

Green's Plains was named after John Green, who lived in a hut in the district and worked as a shepherd for Hughes. He might have been the lessee of this country earlier because some records show a John Green as having a sheep run here in the 1840's.

Wheat was only 1/6 a bushel when the farmers of Moonta reaped their first crop and in 1868 it had risen to half a crown. But red rust attacked the crops, reducing the yield of grain. The miners pitied the "poor cocky farmers" who lived mainly on eggs and bread, and regarded a tin of treacle as a luxury. Their wives and children often had to wear clothing made from the calico of used flour bags.

But gradually the lot of the farmers improved. With increasing numbers of horses used at the mines a good market for hay developed. The growing population of miners bought eggs at twopence a dozen and butter at sixpence per pound.

When a flour mill was established at Kadina the farmers had a ready local market for wheat, although many thousands of bags still went overseas in the big sailing ships which loaded at Wallaroo. And at last, in 1878, the railway was extended across the Hummocks enabling farm produce from the Kadina district to be railed to Adelaide.

Early Farmers

From (1) "Cyclopaedia of South Australia" - Burgess, 1989
(2) "Australia's Little Cornwall" - Oswald Pryor, 1962,
(3) Lands Department records, and (4) "Rural Development in South Australia" by W.S. Kelly

Among people who took up land in the Hundred of Kadina in 1865 are such names as Colley, Spence, Charnock, Prankerd, Stuckey, Skipworth and Rounsevell, Tait, Butler and perhaps others had moved to Green's Plains in that same year, and in 1872 Nicholas Pedder also farmed there.

Undoubtedly many names of early settlers have been forgotten or overlooked, but in 1867 W.H.-J.- and T. Thomas, Fowler and Broadstock took up selections not many miles from Thrington and Scoble, Nugent and Harrop followed in 1868 and 1869.

From 1872 onwards farmers poured down the Peninsula. Much of the country was covered with very strong mallee which had to be "nicked" or cut down, because it was too heavy for the rollers of those days. Such areas today include some of the best farms in the State.

In 1873 James & William Cross settled near Kadina and in the next year Rodda went to Green's Plains, where he had to "Mullenize" most of the scrub that he got ready for cropping in the first few years.

In 1875 John William Thomas, who might have been one of the family members of that same name who moved into the district between 1867 and 1869 had a farm on the Moonta-Green's Plains road which is recorded as being 7 miles from both Kadina and Moonta. Between then and 1881 Sanders, Manuel Reid, Kaines, Dickinson, Jeffery, Willshire and Herbert were added to the roll of settlers in the Hundred of Kadina.

He is named as one of the pioneer agriculturists of the district who met with considerable success.

In 1876 Dennis Clarence Trainor settled on "Pine Farm", Barunga Road, Kadina and carted pines and firewood from the surrounding districts to the town and the mines.

In the same year Maitland and Curramulka districts appear to have been opened up although there were a few people there earlier. Curramulka - a corruption of the native names for the emu, and a deep waterhole - was said to have been given this name because there was a deep water hole in the vicinity into which emus sometimes fell when they were getting a drink, and so became easy prety to the aborigines. At this time Curramulka was said to have been covered with thick scrub, and over-run with kangaroos, rabbits and other animals. W. McDonald, who was one of the early settlers of the district was among the first to introduce the seed drill to Yorke Peninsula. One of his rules was never to sow crop except on fallowed land.

Paul Roach, who had worked underground on the mines for eleven years took up a selection in the Hundred of Kadina in 1876 and began pioneer farming attended by numerous difficulties and hardships. He laid out most of his money in buying a waggon, and one of the best teams of bullocks available in the district, and carted thousands of tons of timber to the mines. This provided the money to buy farm implements and a small flock of sheep. His country was covered with heavy forest, and in addition to clearing scrub and carting timber, he worked hard to exterminate the wallabies and kangaroos which abounded. Dry seasons were a challenge to Roach and his family and for years he had to spend a good deal of time carting water over long distances. As he made money he bought up land from his neighbours until he became one of the most prominent and successful farmers in the district. He then had a comfortable house and an up-to-date dairy, sheds and stables, and took pride in his merino sheep and his teams of Lincolnshire and Clydesdale horses.

In 1878 Albert Henry Bruce took up land in the Hundred of Bruce and soon became noted for his merino sheep and his wheat growing.

In 1880 Daniel Tucker started a blacksmith shop and implement manufacturing company "The Curramulka Agricultural Implement Manufactory". In the next year Joseph Parsons, later to be one of the Australian pioneers in the regular use of phosphates as fertiliser, took up a farm in the same district. He was always closely connected with the development of the Peninsula for agricultural purposes. In his business of general farming and sheep raising he was always willing to learn, and try new ideas, and help other people to adopt those which were successful.

In 1881 Alexander Davidson McDonald took up land in the Hundred of Tickera, where he developed 4,000 acres of first class land into a large scale wheat and sheep farm which became known as "Strathneath". The scrub on this block was said to be so

thick that McDonald, when he first shifted out to his selection, had to clear some of it away, before he could erect his tent.

Water, which was once so desperately important, both in the towns and on the farms, was reticulated to the copper mines many years ago. It was gradually extended to adjacent farming lands until today it reaches to most parts of Yorke Peninsula.

Statistics

From Dunsdorf's "Historical Statistics of the Australian Wheat Industry" 1956

"In the wake of the miner came the farmer" says a newspaper report of 1898 - and if the sheep run owners and their shepherds are not regarded as farmers, then this is almost literally true.

According to Edgar Dunsdorf the first 58 acres of wheat was sown in County Fergusson in 1856. From then until 1866 - 6 years after the opening of the mining fields - the combined wheat area sown in the two Counties of Yorke Peninsula (Fergusson and Daly) each year was always below 100 acres.

It was 1867 before County Fergusson had over 100 - actually 125 - acres of wheat sown and by 1872 there were only 522 acres. But from then on the area rapidly expanded.

1871 - 3,518 acres
1874 - 31,558 acres
1876 - 66,788 acres
1878 - 113,222 acres
and in 1884 - 180,071 acres.

This has since only once been exceeded for wheat (1930 with 182,655 acres), although for many years now barley has been the principal crop. The present area sown to wheat is about 125,000 acres.

The picture in County Daly is much the same. The first 6 acres of wheat was recorded in 1866 but from then on there were -

1870 - 6,460 acres
1874 - 41,164 acres
1876 - 75,011 acres
1879 - 105,135 acres
and in 1889 - 313,952 acres which was the biggest wheat area sown in the County until 348,288 acres was cropped in 1932. Since then barley has also here become quite important, but wheat is still sown on some 250,000 acres each year.

The few acres of wheat harvested in Fergusson in 1858 was recorded as yielding 20 bushels to the acre but from then on until 1905, when the use of superphosphate "revolutionised" wheat growing in South Australia, yields in the two counties varied between 2.1 bushels per acre (Daly 1896) and 14.7 bushels per acre (Fergusson 1874). In 1905 - with super - yields in Fergusson averaged 14.9 and in Daly 15.4 bushels per acre, but it was to

be 1939 before they rose to over 20 bushels, with 20.8 in Daly and 23.6 in Fergusson.

In 1866 there were 1,959 acres enclosed of which 1,172 acres had been purchased from the Government, and 175 acres of this was under cultivation. Of the cultivated land 67 acres was in wheat, 90 acres in hay, 12 acres in fallow, 5 acres in garden and 1 acre in vines. The crops produced 374 bushels of wheat and 90 tons of hay. Livestock numbers for this year were given as 942 horses, 1,578 horned cattle, 135,554 sheep, 2 goats, 23 pigs and 483 head of poultry. Excluding the mining areas there was a population on the Peninsula of 423 people living in 106 houses.

The Story of Harvesting Machinery

From (1) Various articles by William Angus, Director of Agriculture, 1908, (2) "Australia's Little Cornwall" - Oswald Pryor, 1962, and (3) "The Wheat Industry of Australia" - Callaghan & Millington, 1956

Over the years many ideas had been tried in different parts of the world to get grain harvested quickly. In 1843 a prize of £40 was offered in Adelaide for the best model or plans of a mechanical harvester.

No award was made but the judges considered a machine, entered by R. Swingler, to be the best. John Wrathall Bull exhibited a machine which combined as a new principle a comb and beaters, to beat off and thresh the grain in one operation. The idea was not taken seriously and the disappointed Bull left his model in a city office for public inspection and development by anyone interested in it.

John Ridley had been trying to develop a harvesting machine but had not been successful enough to enter in the competition.

When he inspected the model made by Bull he saw the value of it and got his mechanics to develop a machine using the principle contained therein.

When completed, Ridley's machine was regarded very suspiciously by farmers, who thought it would be so wasteful of grain that they refused to make their crops available for trial reaping.

Ridley was forced to buy a crop to try out the machine. On the 14th November, 1843, he successfully harvested an acre an hour in a crop on the plains near Adelaide, and later that season it harvested several other crops, including 30 acres for Bull at Mount Barker.

The mixture of grain and chaff had to be dumped out of the machine and hand winnowed. As there was no word previously in use in the English language for such a reaping machine, it became known as a "stripper" - a name which has continued.

The extensive development of the wheat areas in South Australia and Victoria was largely made possible by the stripper.

This machine not only reduced the cost of harvesting but it was a relatively simple machine which could be made by the hundred in even small engineering works. Consequently, factories were erected throughout the South Australian wheat belt, and these established the tradition of farm machinery built in Australia for local conditions.

Later on the stripper-harvester - a machine which took the grain off by means of a comb and revolving beaters, was developed. In 1883 Hugh Victor McKay, of Raywood in Victoria, successfully developed a machine which not only took the heads off the standing grain, but also threshed out the grain and cleaned it ready for market. This was publicly demonstrated in 1885 and in the next few years McKay began building harvesters, which were later sold all over Australia, and in a number of overseas countries.

Between 1905 and 1910 three South Australians, Charlton, Chapman and East, developed the idea of reciprocating knife to cut off the heads of grain and part of the straw, and this grew into the reaper-thresher.

Later again Headlie Taylor, of Henty in New South Wales, improved the capacity of harvesters to handle lodged and tangled crops, gave them better mechanical reliability, and reduced the draught requirement. Later still he developed the auto-header to which the makers of today's big "self propelled combines" owe so much.

An up-to-date stripper in the early 1900's could harvest 15-20 acres a day under fair conditions at a cost of 2/- to 2/6 per acre. After harvesting the mixed grain and chaff had to be winnowed to separate the chaff, foreign seeds, straw and other waste from the grain. Hand winnowers were first used and winnowing was a hot, heavy, dirty job, particularly when there was no wind, or when the wind kept changing backwards and forwards. When the power winnower was introduced, the job was greatly speeded up and a good deal of the hard work taken out of it. With this machine 3 men could clean and bag over 1,000 bushels of wheat each day.

The stripper-harvester was heavier and slower than the stripper and could not harvest quite so much crop in a day, but soon there were 12 foot cut, 8 horse pulled, machines which harvested 25-30 acres a day.

Clearing the Mallee

By 1867 most of the open Savannah woodland, which naturally carried little or no timber, had been developed for wheat growing in South Australia, and in that year 3,000,000 acres of mallee scrub were made available for selection.

In that year not much over 100 acres of wheat was grown on Yorke Peninsula, but the scrub lands were beginning to be

developed. The native pines were easily felled and burned but the mallee stumps had to be levered out, and this was really hard work.

About this time a quicker method of clearing mallee scrub for cereal growing was introduced by Charles Mullens of Wasleys. Later known as "Mullenizing", this method consisted of cutting the mallees off at ground level and burning up the fallen timber when it was dry. Soon this method began to be used on the Peninsula.

For several years this "scrub country" produced good crops of grain, even when the seed was simply harrowed in among the stumps with rough home made harrows. The stones and stumps, being at ground level, presented little difficulty in harvesting with a stripper. As crop yields fell off and it became necessary to cultivate properly to grow payable crops and the ordinary fixed ploughs of the day were unsuitable.

This need for an implement, to cultivate ~~sumpy~~ STUMPY country led to a number of agricultural blacksmiths devoting their attention to developing a plough which would ride over such obstructions. This eventually led to the development of the "stump-jump" plough.

The Stump-Jump Plough

There is a story that the idea for this type of plough came to Richard Bowyer Smith, a farmer of Kalkabary, north of Maitland, when he broke one of the bolts holding the arm carrying the mouldboard to the beam of a plough he was using on stumpy ground. To his surprise the broken plough tended to ride over the stumps and do a better job.

Be that as it may he produced the first successful stump-jump plough, the three furrow "vixen", in June, 1876. In November of that same year he exhibited a single-furrow plough at the Moonta Show. This had the draft chain directly attached to the arm carrying the mouldboard, designed to keep the share to its work. This "bridle draft" principle was the idea of Heithersay of Peterborough in South Australia, and he later extended it to the multifurrow stump jump plough.

The stump-jump plough was constructed in such a way that the body carrying the share, instead of being a fixture on the beam, worked on a pivot. This allowed the body to rise above any obstruction such as a stump or a stone, and ride over it, until the weight of the body and the share, aided by the pull of the bridle draft chain, caused the share to again re-enter the ground as soon as the obstruction was passed.

R.B. Smith's life was largely one of personal tragedy. His claim to be the inventor of the stump-jump plough was contested, and he was unable to patent the idea. In spite of this the Government of South Australia awarded him £500 in 1882, after

considerable investigation, and it seems that the honour should rest with him.

Although Charles Branson and J.W. Stott of Alma unsuccessfully contested Smith's claim to priority there is no doubt that they were early and successful producers of the Stump Jump plough.

In 1885 Smith moved to Western Australia where he manufactured stump-jump ploughs and managed the Western Australian Manufacturing Company. He died, aged 80, on the 2nd February, 1919, and was buried in the Karakatta Cemetery in the West.

From (1) "Sunny South Australia", May Vivienne, 1909 and
(2) "Cyclopoedia of South Australia", Burgess, 1909

Smiths' of Ardrossan established a plough manufacturing industry prior to 1877 and in addition to making stump-jumping ploughs the firm rapidly came to the fore in supplying agriculturists with the most approved and reliable appliances for tilling scrub ground. Mr. Clarence Herbert Smith started the business in a little tin shop with one assistant. His establishment grew with the increase and prosperity of agricultural settlement and before his death in 1904, he had the satisfaction of owning the most extensive works of its kind on the Peninsula. In 1909 the factory covered three-quarters of an acre of ground and regularly employed about 70 men. It was producing a 9-furrow stump jump plough with an in-built seed and fertiliser drill and had turned out many thousands of other ploughs and cultivators. The firm was solidly established with a go-ahead policy and it had an annual wages bill of some £6,000.

From William Angus, Oswald Pryor & Callaghan Millington

By 1906 the stump-jump mouldboard plough began to assume its modern form, and in 1930 a mechanical lift was fitted. Later again it was re-designed and strengthened to enable it to be used by tractor haulage.

With the stump-jump plough available the last check to the development of the mallee scrub was removed and quicker methods of clearing were sought.

Scrub Rolling

This brought about the idea of rolling the scrub down with a heavy roller, and many of these (oft-times consisting of the shell of a worn-out steam boiler) and pulled by a team of bullocks or horses, came into use.

When the rolled scrub was dry enough in the autumn, a firestock was put into it and it was burned.

A "good burn" resulted in the whole of the fallen timber, except the big trees, being burned, while a "poor burn" meant a lot of hard, dirty work gathering the unburnt timber into heaps to again be fired. This whole operation was cheaply carried out and the ashes, mixed with the surface soil, made a good seedbed and fertilised the soil. Ordinary mallee could be rolled down

in this way at a rate of 8-12 acres a day. Early in the 1900's when traction engines first came in, a more rapid method, dragging a heavy chain between two traction engines and so pulling down the scrub, was adopted by some people, and by this method 120-150 acres of scrub a day were treated.

Grubbing of mallee lands had cost from £2 to £7 per acre - sometimes more than the market value of the land - but rolling brought costs down very considerably.

Later still long steel cables were drawn in a trailing loop behind two powerful tractors and claims of 400-500 acres of clearing a day have been made, by operators using cables.

After burning the soil was given a light ploughing or scarifying, and the wheat was sown. Most of the mallee soils were light and easy to till and this soon led to the development of bigger ploughs. One-two-three furrow ploughs gave way to 5 and 6-furrows and it was not long before there were hundreds of multi-furrow ploughs, many with 8-12 furrows, in use.

Weeds, Diseases & Rabbits

From "Remembered Days" - W.S. Kelly, 1964

"With our slow methods of cultivation we were almost forced to begin seeding early. This meant often that the weed seeds had not germinated so that weeds gradually gained on the crops as they grew. Wild oats, in particular, often almost smothered the wheat and ruined the crop.

But wheat diseases were the greatest handicap. Some years rust spread through all the wheat growing areas and there were no rust resistant varieties, although it is interesting to recall that as early as 1867 Purple Straw had been found to resist rust quite considerably and this variety was keenly sought by many farmers.

Smut was even more dangerous. The method of control in the early days was to pickle the wheat with bluestone (copper sulphate). Bluestone had to be mixed to the right strength. If the mixture was too weak it would not destroy the smut spores and much of the crop would be smutty and useless. If it was too strong it would weaken the germination of the wheat. When this was done by men tired out after a hard day's work, in the light from a smoky lantern, it is not surprising that the job was not always done properly. It is impossible to calculate how much crop yields in the 1880's were reduced as a result of faulty pickling.

But the most dreaded disease of the early days was "take-all", for which farmers of those days knew neither cause nor cure. It often affected promising crops very late in the season and because of it many fine looking crops were ruined before harvest."

Rabbits were also a serious problem, eating such big quantities of feed and crop, that the so-called "rabbit edge" to a crop became a general sight in many districts.

In the 1940's, before this pest was reduced in numbers by myxomatosis and other improved control methods developed out of extensive research, Sir Ian Clunies-Ross of C.S.I.R.O. calculated that there were 600 million rabbits in Australia compared with our then population of 6.6 million people and 100 million sheep.

On Yorke Peninsula, with its areas of light sandy soil, rabbits had reduced production quite considerably, and their decimation has allowed the farmer to reap more of what he now grows.

The Superphosphate Story

From W.S. Kelly, May Vivienne, William Angus, Oswald Pryor and Gallaghan & Millington

Even where the rainfall was good yields of grain from crops in the newly cleared lands began to decline after 15-20 years. In the lower rainfall country around the mining towns yields fell allarmingly and after a while farmers ceased to blame it on the fact that "We don't get the rains like we used to" and realised that there was a real loss in fertility.

In an attempt to solve this, and other problems the Government established the first agricultural college in Australia in mallee country at Roseworthy.

When things were at their worst several practical farmers, including Marshall of Wasleys, Hawke of Tiparra and Baker of Dublin, began to collect bones from nearby butchers' shops and grind them in a bone mill worked by a horse walking in a circle towing a boom. These farmers distributed the ground bonedust on their paddocks with seed-sowers. They found that the manured land not only gave them heavy returns of grain, but in the following year there was a fine growth of grass and clover. Not many farmers could do this, however, because there was not enough raw material. Marshall later found that he could make the plant food more readily available by sprinkling the ground up bone dust with dilute sulphuric acid.

At about this time Elder Smiths' were importing basic slag from Britain; small quantities of Lawes superphosphate ~~was~~ WERE also being imported; and the Adelaide Chemical Company was making a phosphate manure. Charles Deland, one of the Roseworthy students of the day had seen the increased yields got by Marshall, Hawke and others, and he persuaded Professor Lowrie, the Principal, to try some superphosphate experiments.

In 1890, after seeing the results of these, Lowrie became an enthusiastic advocate of superphosphate and he carried the good news all around the Colony until the idea was widely accepted.

At first farmers were wary of following his recommendations and it wasn't until 1892-93 that Messrs. Oudmore and Parsons, and the Correll Brothers of Curramulka and Minlaton adopted the practice of drilling seed and phosphatic manure together as a standard practice.

The change was now at hand. Nothing could alter the fact that farmers using phosphate were reaping up to 10 bags of wheat an acre, while the reactionaries were lucky if they reaped 3 or 4 bags.

From then on, large areas believed to be worked out began to yield surprising returns. A large extent of virgin soil, once believed valueless, was brought under cultivation, and a wave of prosperity began to sweep the land.

In 1899 the demand for superphosphate and the availability of sulphuric acid from the smelters led to the formation of the Wallaroo Phosphate Company. By 1913 output had risen to 30,000 tons and in that year the company was amalgamated into the Wallaroo-Mt. Lyell Fertilisers Limited, along with the Birkenhead plant of the Mt. Lyell Mining and Railway Company.

Conditions in 1909

May Vivienne, writing in her book "Sunny South Australia" says that Kadina on a Saturday night in 1909 was in great form. All the miners and their wives seemed to have come in to do their shopping, and to have a lot of amusement at the same time. Thousands of people flocked the streets, the footpaths were crowded, and it was quite a work of art to get through the crowd, even though they were sober and good humoured. The band played in the park, and a very good band it was, too. The Salvation Army was also holding forth; and fruit shops, lolly shops, cooked meat shops, and shops selling Cornish pasties were all doing a good trade.

In addition to its mineral riches, the district was wonderfully rich in cereal production and from Kadina to the lower end the Peninsula was almost one vast wheatfield.

One of the hazards she quoted as applying to the lower end was the strong tornadoes which sometimes blew across the land. They caused trees to fall, fences to come down and become torn into pieces and whirl through the air at great speed. At such times it was as well for a pedestrian or the driver of a vehicle, to seek shelter as quickly as possible.

Near Minlaton, where wheat seemed to grow to an enormous size, some of it, called La Huguenot, attained a height of seven feet. It was a beautiful wheat for hay, and Mr. Correll, the grower, told Miss Vivienne that he had got rid of the beard from this variety by selection. He also said, that as far as he knew, this was the only beardless wheat of its kind in the world. At

one time, troublous times had seemed in store for the Peninsula. The good land was exhausted, and the wondrous virtues of the drill and fertilisers had not yet been recognised, but now all this had changed.

Writing about Bute, she said that the little township was surrounded by beautiful pastoral and agricultural lands, which were between the Hummocks and the sea. The paddocks around the town were described as a chessboard, evenly laid out, with golden grain and green grass producing a very effective picture. The pretty farm houses looked more like villa residences than farm houses. The settlers were mostly the holders of large areas and carried on farming and lamb raising on a large scale. She was impressed by the lovely position of the town, with salt lakes and salt bush sheep country on one side, and a successfully farmed, fifty mile wide, grand agricultural area on the other. She quoted the 1908 wheat deliveries to the town as 80,000 bags and said that 6 wheat buying firms had representatives there.

Present Day Agricultural Machinery

Many of the earlier blacksmith-machinery manufacturers have either amalgamated with others to create big firms, or they have faded away over the years.

But the ~~making~~ MAKING of agricultural machinery is still a big and proud industry in South Australia. There are still many firms producing machines of one sort or another and without giving a complete list I have gathered some of the names which come readily to mind.

Anders of Freeling and Cavan - Bourne Engineering of Pine Point - East Brothers of Mallala - A.W. Fewings and Sons of Findon - Alf. Hannaford and Company of Woodville - Horwood, Bagshaw of Mile End and Dry Creek - Kaesler Brothers of Hahndorf - Landmasters of Woodville - Nelson Bulk Equipment of Cavan - Port Implement of Gepps Cross - Primary Implements of Hackham - Salisbury Engineering - David Shearer of Mannum - John Shearer and Sons of Kilkenny - Southern Cross of Brompton - Welding Engineers of Richmond - Western Implement of Clarence Gardens.

A list such as the above doesn't include the irrigation equipment and other manufacturers and it doesn't include all of the firms - both big and little - who import and distribute agricultural machinery.

It does, however, indicate that South Australia is still doing something about its own, and other peoples, requirements.

F.B. Pearson.