Sugar section of Chapter 5 Extracted from Boileau, Joanna (2004). Tweed Shire Council: Community Based Heritage Study - Thematic History





COMMUNITY BASED HERITAGE STUDY

THEMATIC HISTORY

Joanna Boileau

Sugar section of Chapter 5 Extracted from Boileau, Joanna (2004). Tweed Shire Council: Community Based Heritage Study - Thematic History

Illustrations in this report are drawn from the resources of the Daily News, The Australian Railways Historical Society, the Tweed Heads, Murwillumbah, Uki & South Arm and Yugambeh Museums.

Cover: Photographer Ray Duke with merged photograph from the Bray Collection.

TWEED SHIRE COUNCIL COMMUNITY BASED HERITAGE STUDY

THEMATIC HISTORY

Report for Tweed Shire Council September 2004

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CHAPTER 5

Harvesting the Land and Sea

5.1 SUGAR

As the supply of easily won cedar on the Tweed River dwindled in the 1860s, and the costs of obtaining and shipping it multiplied, settlers turned to farming the rich alluvial soil as an alternative source of inc ome. But they were hampered by the poor communications on the Tweed and the difficult bar at the mouth of the river, the cause of leng thy shipping delays. The settlers had already been growing maize as a substitute for flour when they were unable to obtain supplies due to shipping delays, but it was not suitable as a commercial crop. They could not rely on getting their produce to market, and when ships were delayed, the maize was left to rot on the banks of the river. After experimentation with a variety of crops such as coffee, tobacco, cotton, millet and even opium, sugar emerged as the most suitable crop.¹

The first experiments in growing sugar cane in the Tweed Valley were carried out around 1869 by two early settlers in the district, Joshua Bray at Kynnumboon near the present town of Murwillumbah and Michael Guilfoyle at Cudgen. The diaries of Joshua Bray and Samuel Gray, held in the Mitchell Library in Sydney, record that they planted sugar cane as early as 1865, and ent ries made in November 1868 descr ibe the results of their sugar making experiments:

Saturday 21st: Rowland (step brother of the Brays) went over to see sugar made November 23rd Rowland returned with a sample of Mr Gray's treacle not sugar.²

Michael Guilfoyle took up 600 acres at Cudgen in 1869 to establish a sugar plantation and tropical nursery. He and his son William brought with them forty-one varieties of sugar cane and a rare collection of tropical plants. William Guilfoyle was a skilled botanist and in 1873 he left the district and eventually became Director of the Botanic Gardens in Melbourne. The house that he and his brother built at Cudgen no longer exists, but as an old resident of Cudgen described, it was built of fine timbers growing on the plantation such as cedar, teak, rosewood and beech. '*The orchard and gardens were some of the finest in Australia and contained some of the rarest plants to be found anywhere*'.

A major factor in growing sugar cane is that it requires expensive machinery to crush and refine it, and to obtain the best sugar yields the cane must be crushed within a short period of harvesting. Michael Guilfoyle found it difficult to raise enough money to produce cane in commercial quantities and build a mill to process it. After about 1875, when the sugar mill built by William Julius at Cudgen was in operation, Guilfoyle was able to crush his cane there.³

During the early 1870s individual farmers such as Henry Scammell at Bilambil and Robert Cazala at Cudgen buil t small mills on their properties and produced sugar with varying degrees of success. Henry Skinner operated a mill at 'Inglewood' near Tumbulgum between 1875 and 1885, and Alexander Pringle, Thomas Shankey and Patrick Byrne also operated a mill at Tumbulgum, known as the Abbotsford mill. The latter was probably the most successful mill of its time and continued production until 1895. The early mills were primitive affairs operated by hand rollers and after the juice crushed from the cane was boiled over an open fire, a 'crude mixture' regarded as sugar was produced. Horse power and later steam were used to drive the mills. Many of the small mills did not survive, hampered by inefficient production methods, the lack of a reliable supply of good quality cane and the lack of a ready market for the crude sugar they produced.⁴

In 1872 sugar growers on the Tweed, dissatisfied with the production of the small mills, saw the need for a large scale milling operation. They made approaches to the Colonial Sugar

Refining Company (CSR) to build a mill on the Tweed River. CSR was experiencing problems with its mills on the Clarence and Macleay Rivers, but sent two of its officers, E.N. Stephens and E.W. Hayley, to assess the prospects for a mill. The report they submitted to the Manager of CSR in June 1872 was favourable:

In conclusion we venture to remark that as the result of our inspection, we have a very high opinion of the 'Tweed' as a promising district, both with respect to climate and soil, for the successful cultivation of sugar cane: in fact, if the difficulties of the navigation could be overcome, we should have no hesitation in fully recommending it to your favourable notice.⁵

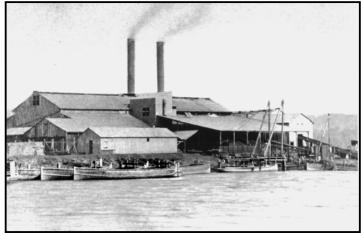
Florence Bray, daughter of Joshua Bray, recalled in her memoirs the discussions that preceded the opening of the sugar mill at Condong.

In 1878 Mr Haley and Mr W.R. Isaacs came to the Tweed to find out the possibilities of growing sugar cane for a large mill. They stayed at our house and my father went with them to all the farmers whom he thoug ht would be likely to grow sugar cane. There was a great dea l of discussion as a few of the farmers were doubtful about trying a new crop, instead of the corn and potatoes they had always put in, although some had already grown cane for Pringle and Shankeys mill, but eventually the matter was decided and Condong Mill was built on the South Arm and Mr Isaacs became the first manager.⁶

E. W. Knox, Superintendent of the CSR Mills on the Clarence, visited the Tweed in May 1877 and commented on the miserable existence lead by farmers on the Tweed.

The district has reached the lowest depth of poverty ... The farmers appear to be quite dispirited by the failure of their efforts to make a living and are dragging on a miserable listless existence. The Arakoon had not been to the river for four months when I arrived and the few Sydney craft that came for timber brought few supplies – there was therefore great scarcity of flour, the staple diet being hominy (coarsely ground maize boiled with water or milk) and pumpkins.⁷

Knox was concerned to ensure a reliable supply of sugar cane in the Tweed Valley before any mill was built and in 1 877 he convinced his superiors that CSR should purchase la rge areas of land in the Tweed and lease farms at low re nt to farmers who would grow cane for the proposed mill. CSR initially bought 2,435 acres. including a site at Condong for a mill. In 1880 th e mill at Condong was completed and began crushing.



c.1898 Punts which were towed by droghers, carried the cane to the wharf at the Condong Mill. Photo: F. J. Davey

A fleet of tugs towed strings of cane punts to the mill, and various methods were used to carry the cane to the wharves along the river. Aerial ropeways, tramways and drays hauled by bullocks were all employed, depending on the terrain. The injection of the large amounts

of capital that CSR was able to provide greatly assisted the growth of the fledgling industry, particularly in providing the transport network that was necessary for large scale production to be effective.⁸ The opening of the mill at Condong also accelerated the shift in focus of settlement from Terranora upriver to The Junction and Mu rwillumbah, that was already beginning to occur as cedar resources nearer the mouth of the Tweed were depleted. Knox took over as Managing Director of CSR in 1880 and under his stewardship the company greatly expanded its operations in Queensland, New South Wales and Fiji. In the 1 890s the CSR owned much of the land on which the town of Murwillumbah now stands. Some of this land was sold by auction in 1888, but CSR retained 17 acres in the centre of the town, to be used for recreation purposes by the municipality. In 1896 th is land was purchased by the Crown and gazetted as a public park, named Knox Park.⁹

Charles Sydney Bell, in a series of articles written in 1945, recalled a journey he made in 1903 from Murwillumbah to Tweed Heads in the Skinn er and Lowe steamer piloted by Frank Lowe. As they passed downstream from Stotts Island, he noted the tramway on Joubert's cane farm.

As we passed Joubert's farm on the hillside and summit we watched from the ferryboat just below the two-way cane-carrying tramway running up the hill to the top; the full loads fetching cane down to the mill barges below. As the full trolleys descended they pulled the empty ones up, quite automatically, under a brake control. These passed halfway up the points being set for such, via a loop line.¹⁰

William Julius was an important figure in the sugar industry in the Tweed Valley as an independent producer. Julius had considerable experience growing sugar cane in the West Indies, but his first ventures on the Macleay River failed due to frosts and floods. In 1869 Julius moved to the Tweed Valley and took up large areas of land at Cudgen. He planted sugar cane and built a mill to process it.

Most of the workers on Julius' plantation and mill were South Sea Islanders or 'Kanakas', who had been lured fr om their islands bv the infamous 'blackbirders' as in dentured labourers on t he sugar cane plantations of north Queensland. Sugar cane production was both capital and labour intensive and a large cheap, unskilled labour force was needed as the industry developed in northern NSW in the 1870s. The critical need was for labour to clear and drain the land and grow and harvest the sugar crops.



c.1920 Before mechanisation. Cudgen farmer Dick Price employed this group of cane cutters to hand harvest his crop. L to R –Laurie Peate, Fred Peate, George Slockee, John Mussing, Ben Long, Mart Watego. 8 man team could cut & load 128 tonne in a day. Photo : Simpson Bell

Julius brought about 200 Islanders who had completed their contracts from Queensland and got them to completely clear and grub the land. All the stones they removed were used to build stone walls. Some of the stone walls built by the Islanders can still be seen today, bordering the red soil fields in the Cudgen area. Julius then leased out the land in lots of

around 10 acres to Island ers to grow sugar, which was processed in the mill by other Islanders.

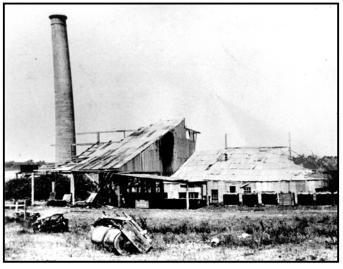
Of the 348 Islanders so far identified who arrived on the Tweed between 1874 and 1918, the majority came from islands in the Solomon and Vanuatu groups. They came with diverse linguistic and cultural backgrounds. This was reflected in their pattern of settlement; the Solomon Islanders originally settled in Chind erah while those from Vanuatu settled in Cudgen and Duranbah. The few men who could speak English or French were highly valued as foremen. But it was not till the 1890s that a determined effort was made by the wife of a clergyman to teach the adult Islanders English.¹¹

In 1892 Julius sold his plantation and mill to a Victorian firm, John Robb and Co. John Robb, born in Northern Ireland, was an entrepreneur who arrived in Victoria during the 1850s when the gold rushes were at their height, and was later involved in railway construction in Tasmania, South Australia and Queensland. In his Cudgen venture he was in partnership with a Victorian Judge, J.J. Casey.¹²

Robb laid narrow gauge train lines through the Cudgen cane fields and employed over 300 men to harvest cane and work at the mill. The mill operated until 1911, when Robb died. The CSR bought the plantation and closed the mill. From then on the cane was taken to Chinderah (known as Cudgen Wharf) and transported by punt to the CSR Mill at Condong.¹³

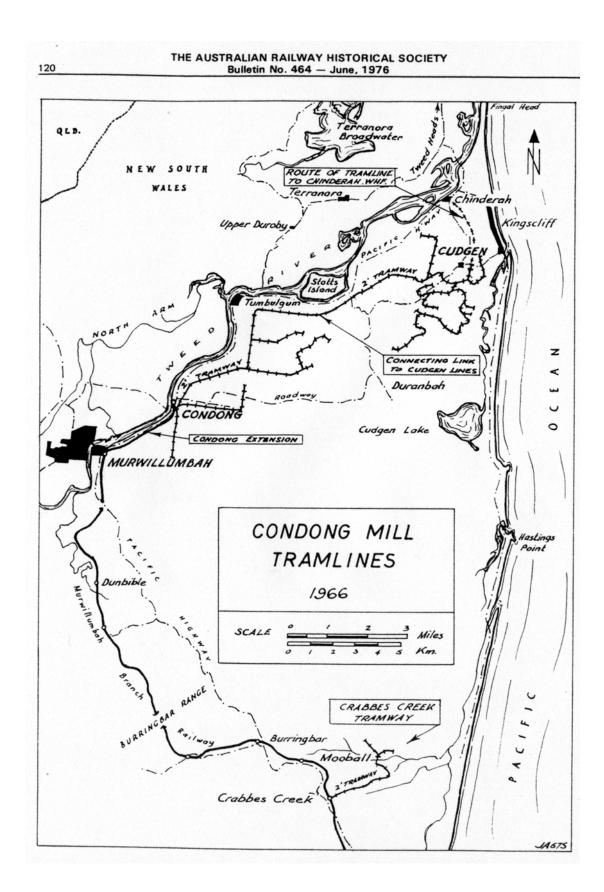
Robb and his predecessor Julius developed good relationships with the Islanders and were rewarded with a conscientious and stable workforce, a rare thing in those days. In 1903 the Islanders were paid wages of around £1 per week and food. On the plantation site, there were barracks for housing, a dining hall, Post Office, a pub, Police Station. guesthouse, workmen's cottages, as tore, a school and three churches. The Robb Estate was so well thought of that it becam e known as a major place of refuge for Islanders

escaping from the harsh regimen and discriminatory labour laws of Queensland.¹⁴



c1950. The old sugar mill at Cudgen built by William Julius around 1880 was bought by John Robb & Co in 1892. The Mill closed and was demolished in 1962.

For recreation the islanders formed a choir and cricket team. They also spent what leisure time they had on the beaches and estuaries, swimming, fishing and catching crabs. An undated article published in the *Daily News* in the late 1950s recalled that picnickers at Kingscliff at the turn of the century were greeted by the sight of naked Kanakas spearing fish in Cudgen Creek.¹⁵



Unlike Robb, other far mers who supplied cane to CSR em ployed white labour almost exclusively. To protect employment for white Australians, the Go vernment imposed an excise of 4 pounds per ton on all cane, then paid a bounty of six shillings per ton of cane if they used white labour exclusively. The cane growers, feeling they were not receiving a fair return for the cane produced with black labour, pressured the Government to remove the excise and it was ultimately abolished.¹⁶ On 16 September 1898 the *Tweed Herald and Brunswick Chronicle* reported:

*Murwillumbah: Monday: Mr John A. Robb Proprietor of the sugar mill and plantation says t hat if the retention of the sugar duties is hampered by the Premier with black labour conditions he will cease operations.*¹⁷

Writing in *On The Land* in September 1903 the 'Special Commissioner' spoke approvingly of the benefits of the bonus paid for white harvested cane:

To this [the fixed price for the 1903 season of 9s 9d per ton] must be added the bonus on cane grown by white labour, or almost all the sugar cane brought to the company's mill is thus produced. In this case th ere appears to be sufficient white labour to cut the canes, the sugar company having used white gangs for many years. These gangs are sent o ut by the company to the farmers, and are made up of 13 men each. The men cut the cane at a contract price, which varies as the crop is heavy or li ght. The cutters make good wages, and many of them are very old hands at the business on the Tweed, some have cut cane here for 20 years. Before the bonus was established by the Federal Government, the farmers used some kanakas and other black labour, the kanakas being mostly 'boys' who had come in from Queensland. Now most of the farmers are registered for 'white cane', and draw the bonus. The small men have their families to grow and cut cane and they also get the bonus, and it is popularly believed that the White Australia scheme has substantially increased the returns of these small men.¹⁸

The same writer highlighted an interesting twist to the bonus paid for white harvested cane, which in some cases resulted in South Sea Islanders employing whites to harvest their cane.



By the way, there came into a view a few small *habitations* – *properly* speaking bush hovels – occupied by kanakas, who have become 'men on the land', and cane-growers. Some of t hese are, I believe, registered for the bonus. so that in su ch small instances there is a singular reversal of former practice. The black man employs the white, and draws the bonus for helping to keep himself out of the labour market, and assisting to make a

white continent. In this district 'Tommy Tanna' is a prosperous looking person of colour. The specimens we met on the road were well-fed, well-clothed, and very cheerful.¹⁹

The White Australia Policy was expressed in the *Immigration Restriction Act 1901*, which was designed to keep non-Europeans out of Australia and the *Pacific Islanders Act 1901*, which provided for the deportation of the Islanders to their original islands. The *Islanders Act* did allow for Islanders who had married in Australia or who had been in Australia for 20 years or more to remain. These provisions appear to have allowed about half the Islanders in the Tweed to stay. But many had to go. One local resident, Christine Mann, regretted their departure, saying:

'I can remember t hem coming to say goodbye when they were deported and singing a farewell hymn and we would all feel sad because they were a thoughtful and kindly lot...'²⁰

The Islanders intermarried with local Aboriginal people and their descendants live in the district today. The legacy of the Island ers is recorded in Togo's Hill and mango trees in Duranbah. James Togo and his family came to the Tweed in 1912 and settled on what was then known as 'Islanders Hill'. They built a grass hut, made from bladey grass. It was typical of the homes built by the Islanders in the Duranbah district, with a sl ab floor. Nothing remains of the grass hut built by James Togo, but the mango trees he planted survive as reminders of the contribution the islander community made to the sugar industry in the Tweed.²¹ Les Togo, a descendant of James Togo, was born in the grass hut on Togo's Hill. He recalls:

All over the ridges and all over the hills the Islanders had houses built on them and at the top part of O'Keeffe's Paddock.²²

Indians also played a significant part in the sugar industry in New South Wales. During the 1890s and 1890s Indian Hawkers and pedlars settled in rur al areas in NSW and Victoria. They were collectively known as 'Hindoos' although the majority of them were Sikhs. Other Indians found work as labourers in sugar cane cultivation and some rented farms to grow sugar cane. In 1893 information tabled in the NSW Parliament showed that there were 521 'Hindoos' in the Richmond, Tweed and Clarence River districts, with the largest number living on the Richmond River.²³

Since 1911 the Condong Mill has processed all cane grown in the Tweed Valley. During the 1880s and 1890s most cane was grown on the river flats and crops on low lying areas were susceptible to frost damage. Cane growing was extended to areas of volcanic soil on higher ground at Terranora, Duranbah, Duroby and Bilambil.

The introduction of sweeter and earlier maturing varieties of cane with higher sugar yield during the 1920s reduced the risk of frost damage, and CSR conducted successful trials growing cane on reclaimed swamp areas at Condong, Mooball and Crabbes Creek. Farmers on the volcanic hill soils around Terranora and Duranbah reverted to growing bananas and dairying as the reclai med swamp areas supplanted these areas as the principal source of sugar cane.²⁴

In 1891 an ornithologist, Archibald Campbell of Sydney, made a trip from Melbourne to Tenterfield via Sydney by train and then by mail coach to Murwillumbah and Southport. Mr Campbell described his journey down the Tweed River in the newspaper *The Australasia*, as

a correspondent writing in a column called 'The Naturalist'. He records the sugar industry in full swing.

At half past eight we leave by a small steamer for Tweed Heads 22 miles away. The river is commanding being about 100 yards broad, with a tidal influence eight or nine miles above the town. We soon pass the CSR mill in full swing at Condong. Acres and acres of sugar cane grow al ong the rich alluvial banks of the river. As we pass barges or punts, about 60 t ons each are being loaded at convenient stages to be towed to the mill, where, with white labour for a season of five months about 3,500 tons of raw sugar is crushed and forwarded to Sydney to refine. We pass a landing called Cudgen which leads to Robb's sugar mill.²⁵

Kathleen McIlrath arrived in the Tweed Valley in 1898 as a six month old baby and lived in the district her whole life. In an address to the Tweed Heads Historical Society in 1988, she recalled the droghers hauling the sugar cane down the Tweed River and the sweet tooth of her childhood:

The cane came past in the barges drawn by some of the droghers. I think someone I spoke to tonight had knowledge of these cane punts. We had a sweet tooth, we liked a stick of sugar cane grown along the banks. We'd call Mr! Mr! give us a stick of sugar cane and they would obligingly hurl a stick onto the bank. I think a few teeth were broken off because the cane was so tough.²⁶

Mechanisation on sugar ca ne farms and developments in transportation were the key to the expansion of the sugar industry. In the mid 1950s light rail networks in Cudgen and on the south central flood plain supplanted river transport. Mechanical excavation of drainage channels and the installation of high volume flood reduction pumps on main canals made it easier to expand cane growing i nto the back swamp areas of the flood plain. From the 1960s nitrogenous fertilisers were used in increasing quantities and growers made the change to



1945 At Chinderah Wharf, cranes lifting the cane onto punts for transport up river to Condong Mill.

mechanical harvesting and bulk road haulage. The construction of the road bridge at Condong in the mid 1960s and the installation of a longer ferry at Tumbulgum, which could accommodate bulk ha ulage tractor-trailer combinations, enabled significant expansion of cane growing into Ty galgah and Dulguigan. By the mid 1970s cane harvesting was completely mechanised and semi-trailers transported cane in bulk bins directly from farm to mill.²⁷

Cane growers in the Tweed established a Tweed Riv er Canegrowers Union in 1892 to protect their interests. The CSR could not guarantee to take all the cane the growers could produce and as early as 1894 there was discussion about the possibility of establishing a co-operative and building additional independent mills.²⁸ However, the CSR was to dominate the industry for many years. In 1973 the Tweed Canegrowers association approached CSR to purchase the Condong Mill, but CSR was not willing to sell a single mill. The NSW Canegrowers Association commissioned a feasibility study to investigate the purchase of the three mills in NSW operated by CSR, Broadwater Mill on the Richmond River, Harwood Mill on the Clarence River and Condong Mill on the Tweed River.

After protracted negotiations, in January 1978 CSR a greed to sell the mills, including all equipment and the land necessary for their operation, on the understanding that the Growers would form a co-operative to purchase and manage them.²⁹ With the advent of the co-operative, growers responsibilities no longer ended when they delivered their cane to the mill; they now had an interest in all aspects of processing, transport, refining and export. In the 25 years of its history the NSW Sugar Mil ling Co-operative has developed the industry, researching and developing new varieties of cane through plant breeding programs, building a refinery at Harwood and introducing renewable energy plants at Broadwater.

Sugar cane farmer Robert Quirk's great uncle arrived in the Tweed in 1867 and settled at Tumbulgum. Today Robert Quirk is recognised internationally for his work on managing acid sulphate soils. This problem, in low lying flood plains, has only been recognised in Australia relatively recently. The fine oc ean sediments that were deposited in the Tweed Valley when sea levels rose around 10,000 years ago contained sulphides. When exposed to air and water, these sulphides form sulphuric acid. When the water table rises to a certain level, the sulphuric acid can be discharged into the waterways via the drainage canals that criss-cross the cane fields, killing many forms of aquatic life. A serious incident occurred in 1987 after a lengthy dry period was broken by heavy rains, and the sulphuric acid released into the waterways of the Tweed devastated the fish population for over eighteen months.³⁰

Working with scientists from the NSW Department of Agriculture, Robert Quirk has developed a successful technique of laser levelling the cane fields and filling in some of the drainage canals on his property, and planting the cane on mounds above ground level so as not to disturb the acid containing soil layers. During heavy rains the water runs down the

drains and is pumped into t he river as relatively neutral water, before it has a chance to percolate into the subsoil and mix with the acid and bring it back to the surface. Quirk has found that he has been able to increase his productivity by nearly fifty per cent, and by filling in the drainage canals he has been able to plant additional rows of cane, further increasing productivity.³¹

Sugar remains the largest agricultural industry in the Tweed, occupying the greatest area of agricultural land within Island cuts 100 tonne per hour.



2000 This mechanical harvester working on Quirk's farm near Stotts Island cuts 100 tonne per hour. Photo Louise Devine

the shire (7 per cen t), mainly on the alluvial floodplain areas between Kingscliff, Murwillumbah and Wooyung.³² In 2001- 2002 sugar production in the Shire was valued at \$12, 373, 902.³³ To the casual observer agriculture, particularly sugar cane farming, appears to dominate the rural landscape of the Tweed. However, only ten percent of the land area of Tweed Shire is classed as pri me agricultural land and used for sugar and horticultural production.

The overall contribution of agriculture to the economy of Tw eed Shire is small and declining. A recent study commissioned by the Tweed Economic Development Corporation estimated that only five p er cent of regional economic activity and employment relates directly to agriculture. The rural landscape provides greenspace between the urban centres and the setting for the expanding tourist industry.³⁴

TWEED SHIRE COMMUNITY BASED HERITAGE STUDY

ITEMS FOR CONSIDERATION

Dry Stone Walls, Plantation Road, Cudgen. 9

Togo's Hill and Mango Trees, Duranbah Road, Cudgen. 1

Condong Sugar Mill (as part of the Condong Mill Precinct Conservation Area), McLeod Street, Condong. 9

Manager's Residence (as part of the Condong Mill Precinct Conservation Area), McLeod St, Condong. 10

Tennis Court & Gazebo (as part of the Condong Mill Precinct Conservation Area), McLeod St, Condong. 9

Tram Tracks (as part of the Condong Mill Precinct Conservation Area), McLeod St, Condong. 1

Residence (as part of the Condong Mill Precinct Conservation Area), 65 McLeod St, Condong. 1

Fig Tree (as part of the Condong Mill Precinct Conservation Area), Corner Tweed Valley Way and Cane Road, Condong. 1

Fig Tree (as part of the Condong Mill Precinct Conservation Area), Cnr Tweed Valley Way and Clothier's Creek Rd, Condong. 1

Railway Siding, South Murwillumbah - Condong. 1

Remains of Cudgen Sugar Mill, Chinderah Road, Cudgen. 1

Bails and Dairy, 440 Smith's Creek Road, Smiths Creek. 1

Garage ([former Butter Factory] as part of the Tyalgum Village Conservation Area), 6 Coolman Street, Tyalgum. 1

Norco Co-op Butter Building (as part of the Uki Village Urban Conservation Area), Kyogle Road, Uki. 10

Flying Fox Remains (as part of the Uki Village Urban Conservation Area), river bank, Milsoms' Lane, Uki. 1

Border Fence Posts, Boundary St, Point Danger. 1

Cattle Bridge (Highway Overpass) Tweed Valley Way, Burringbar. 1

Dip Site, Dungay Rd, Dungay. 1

Slaughter House [former], Stokers Road, Stokers Siding. 1

Mustering Yard and Lilly Pilly Tree, Numinbah Rd and Pat Smith's Creek, Numinbah. 1

Boyd's Fishermen's Shed, Tweed Heads Maritime Museum, Pioneer Park, Kennedy Drive, Tweed Heads West. 9

Bridges made by Forestry Commission, Mt Jerusalem National Park. 1

Log loading Ramps, Amaroo Flora Reserve, Wollumbin Forest. 1

Steam Engine (as part of the Murwillumbah Main Street Urban Conservation Area), 2 Queensland Road (Murwillumbah Historical Society), Murwillumbah. 1

NOTE

Numbers at the end of each item refer to existing heritage listings and registers. Refer to page 3 for an Index of Sources.

Sugar section of Chapter 5 Extracted from Boileau, Joanna (2004). Tweed Shire Council: Community Based Heritage Study - Thematic History

NOTES

- ¹ Arthur, D., *An Economic History of Shipping on the Tweed River*, Master of Economics Dissertation 1998, p. 61.
- ² Diaries of Samuel Gray and Joshua Bray, quoted in NSW Cane Growers Association, *The Sugar Industry* 1865 1972, 1973, p. 2.
- ³ Turnock, T.H., *Turnock on Tweed*, self published, 1989 p. 19.
- ⁴ Denning, H.W., *Historical Manuscript of the Tweed*, Tweed Shire Council 1998, p. 96.
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