

## **Sketch notes on South Australia's Onkaparinga threshing roller, and some antecedents**

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### ***Part 1***

#### **An introduction**

South Australia's Onkaparinga threshing roller was the subject of a shorter and even more tentative paper given at a History Trust of South Australia (now History SA) State History Conference several years ago. Interest in tracing a history of the South Australian use of the roller, and its ancestry, was first excited when the author undertook a cultural assessment of agricultural work sites on Ironstone Hill, Kangaroo Island, and when residents of Penneshaw identified the threshing floor there as important in local memory and heritage. Through their perseverance, Baudin Conservation Park, which includes Ironstone Hill, was eventually proclaimed, and opened in April 2002.



**Fig. no. 1.** Murray's threshing floor at D'Estrees Bay, Kangaroo Island, was used for treading-out crops to about 1920. It is believed that the horses' hooves were covered with

hessian bags to soften their blow on the grain.<sup>1</sup> The wooden fence is a later addition.

Photo: author, January 2002.

Among celebratory activities suggested for South Australia's centenary in 1936 was a showing of pioneer industries: one was of 'grain threshing by means of the ribbed log, drawn around a central pivot by a pair of slow-plodding, patient bullocks.'<sup>2</sup> The following observations bring together a history of the local threshing roller that, although far from exhaustive, offers lines of descent for an ancient method that in its 'modern' form was still in South Australian memory in the 1930s as a defining agricultural technology.

### **The conical threshing roller**

In February 1864, William Lillecrapp went to the [?South] Rhine for a load of wheat: the first news he heard there was that 'poor old Finn' had been run over by a roller which 'broke one of his legs above the knee and that the Doctor said there was but very little hope of his recovering.'<sup>3</sup>

Given the season of which William wrote, this presumably was not a field roller, but a threshing roller, an implement that ten years previously Francis Duffield (1800-1888) of Cobden Grange, Mount Barker, had described. Duffield did not claim to have been the creator, yet he has recently been credited as the inventor of this 'inexpensive but very efficient threshing machine'.<sup>4</sup> Duffield probably bestowed the name 'Onkaparinga' on the roller that he promoted in Adelaide's *Observer* in 1854:

It is simply a fluted cone of wood (say) 3 feet diameter at base, and 15 feet long to the extreme apex of the cone ... the small extremity truncated to ... about 18 inches ... This frustum of a cone is fluted so as to present 16 stout longitudinal ribs, extending from the base to within about a foot of the small extremity, the grooves being at the base of the cone 3 inches deep, and gradually diminishing ... A simple iron apparatus is requisite to connect the cone with an iron stake at its apex, around which it revolves, and another at the base, to which the cattle are attached ... It may easily be made by any person accustomed to the use of an axe, an adze, and an augur ... and will occupy a fair workman about a fortnight in its construction.<sup>5</sup>

Duffield advocated wide South Australian use of this roller, so extensively and successfully used in his district and which deserved to 'be ... generally adopted where hand-threshing is employed, especially by ... the yeomen and small holders of agricultural

land.<sup>6</sup> Importantly, in the colonial economy, the roller cost little to make and its use required few attendants. Duffield cited other advantages: a clean thrash and unbruised grain; broken ears not mixed with the thrashed wheat; nor was straw cut up and mixed with the grain but was rendered admirable bullock feed. The roller Duffield described was in a somewhat experimental stage. He suggested that its 'power' (or action) might be increased by giving 'the cone greater altitude', and therefore increased weight to the apex and the area exposed to threshing. Already a leviathan, this improvement would have made more formidable an implement that, in its varied forms, claimed several lives.

In 1859, an employee of Mr Cheriton of Angas Plains, although crushed severely by a roller when a young horse attached to it was startled, had no bones broken and probably recovered.<sup>7</sup> But, 'Least false reports might get into circulation', Robert Ross, his wife, and neighbouring settlers requested an inquest into the death in 1863 near Kersbrook of Alexander Ross. The young boy's body showed only 'slight discoloration' of his forehead skin, small indication indeed of his death by a 'threshing roller passing over him.'<sup>8</sup> The child of Mr C. Miller at Langhorne's Bridge was killed the previous year by entanglement in the horse trappings during roller threshing inside the barn. In Victoria, near Tumut, in 1873 two children were crushed to death by a threshing roller, and at St Arnaud, a twelve-year old boy was killed in 1887 when he tried to save his young brother, who became seriously injured, from the path of a threshing roller being used by his father.<sup>9</sup> Although the instrument of human deaths, the roller, which combined the beating action of the hand flail and the shearing action of treading-out by horses or oxen, was more gentle on crops than treading-out, and produced greater quantities of grain than by flailing.

The threshing roller came into use after the appearance of South Australia's Bull-Ridley harvesting machine,<sup>10</sup> and continued to be used during the slow local development of mechanised harvesting, threshing, and winnowing of cereal crops. Although an agricultural boon, and early dubbed the 'locomotive thrasher', the early stripper-harvester was not altogether satisfactory.<sup>11</sup> When in 1863, James Clark harvested wheat and barley at the 'Horseshoe', one mile from the mouth of the Onkaparinga River, a correspondent noted that 'a very fair crop of barley was taken off with Ridley's reaper; ... reaped clean enough, but ... too much smashed and striped for malting purposes. He suggested that the Onkaparinga roller would answer the need for a clean thrash and unspoiled fodder straw.'<sup>12</sup> A report a decade later conceded that Ridley's stripper 'takes the grain off cheaply, but with great waste and foul effects on the ground.'<sup>13</sup>

### **Further recorded roller use in South Australia**

Thomas Hair arrived in South Australia as a twenty-two year-old. For his second crop year (1853) at 'Crofton', at Nairne, instead of harvesting his forty acres of wheat with a stripper which he could not afford, or threshing with the flail, Hair 'cut down a large gum tree with the assistance of ... W. Otto, and made ... what was called an Onkaparinga Roller.' The 'splendid' threshing floor, laid with flag stones from Scott's Creek, 'was used more or less for many years; more especially for malting barley.'<sup>14</sup> Hair's roller lay in the paddock until about 1970, although by then it had been split for firewood.<sup>15</sup>

In a history of 1939 of Hoffnungsthal, near Lyndoch, we are told that over the period of the settlement, 1847 to 1853, the German farmers successfully grew:

wheat, barley, rye, oats, peas, beans, lentils, and potatoes ... The threshing was done by flail and roller. The common threshing floor was located at the southern end of the village beneath a huge spreading red gum tree ... The threshing floor was circular, about forty feet in diameter and laid out on hard ground ... The roller ... was twenty feet long and conical ... At the one end it had a diameter of four and a half feet, at the thin end it was only a foot in diameter ... At the thick end a hook was fixed on a swivel. To this end ... a couple of oxen were yoked and they drew the roller round and round. The roller was fluted with six-inch grooves, and was constructed from a single tree trunk.<sup>16</sup>

In the harvest months of 1856, several rollers were being used in the Strathalbyn district.<sup>17</sup> To the north, at Tarnma (north of Eudunda), the young Christian Zerna (born Milkersdorf, Germany, in 1838), with Friedrich Pfitzner (who arrived in South Australia in 1855), made a ribbed conical threshing roller, about 7 metres long, by working a seven tonne River Murray red gum log with their German axe, adze, and cross-cut saw.<sup>18</sup>



Figure 2

**Fig. no. 2.** Zerna and Pfitzner's 'Onkaparinga' threshing roller made in 1859. Donated by Otto and Roy Pfitzner to the Saddleworth and District Pioneer Park (Photo: author, November 2001).



Figure 3

**Fig. no. 3.** Zerna and Pfitzner's ribbed threshing roller. 1859. Saddleworth and District Pioneer Park (Photo: 2001).

In reply to Duffield's letter in the *Observer*, William Masson of Dry Creek, South Australia, described the solid gum 'thrashing' roller he had made: 3.5 metres long, 'having eight pieces of quartering secured with spikes to its surface longitudinally'. It was pulled by horses; with it two boys could thresh 100 bushels a day (one bushel of wheat is 60 pounds, or some 27 kg). The straw was not 'torn to pieces as in treading out by cattle', and was much cleaner.<sup>19</sup> This was not an Onkaparinga roller, and seems to have derived from the Netherlands type of threshing roller. Although much longer than those used from the eighteenth century in the Netherlands, Masson's and the Onkaparinga types were apparently used concurrently in South Australia.

Duffield's very clear measurements and description were absorbed further a field. It was reported in the *Bathurst Free Press* of 28 October 1854 that Henry Ewen of King's Plains, New South Wales, 'borrowed the idea' for a new threshing method – his 4.25 metre-long



tapered roller – 'from the Empire'.<sup>20</sup> Was this Henry Parkes's 1850s publication, *The Empire*?<sup>21</sup> Had Parkes, the journalist and liberal politician, noted within it Duffield's earlier description? Ewen gave the 'exorbitant wages' of threshers and great difficulty in getting labour as compelling reason to adopt the roller.

Bush-carpentry gave various solutions. A roller photographed on Kangaroo Island in 1907 was yet again another variant form of threshing roller.<sup>22</sup> A red gum threshing roller left on a farm in about 1870 at Sheoak Log Plains (north of Gawler), which had ribs fixed on the log with coach screws, similarly to Masson's, was described by the Rev. William Gray.<sup>23</sup> In 1900, a Spring-time farmers' meeting at Gumeracha was advised that a 3.8 metre long tapering roller could easily be fashioned for field pea threshing by fitting timber pieces to wheels having had their boxes knocked out, with hardwood beaters fastened longitudinally. With each end bound with fencing wire a 'splendid roller' resulted.<sup>24</sup>



Figure 4

**Fig. no. 4.** Double threshing roller, Dudley Peninsula. The original photograph, on a post card (with a franked one penny stamp) dated 13 February 1907, is owned by Vernon Trethewey of Penneshaw. The Sawyer brothers, working here on the threshing floor, annotated the post card: 'Threshing grain back in the hand-reaping days.' A 'double roller' was likely to have had an undressed log as a core (most likely a trunk) fitted within a frame of wooden battens (beaters) attached to it by screws or bolts (Photograph courtesy of Jean Nunn).

Duffield's letter was re-published in the *Maitland Mercury & Hunter River General Advertiser* on 8 April 1854. A response came from William Gardner of New England, who asked to know how to form both the iron centre stake and the cattle attachment (with a sketch, please). If these descriptions could be provided, he said, there was 'no doubt but that the roller would be introduced by many in this district.'<sup>25</sup> The practice of conical roller threshing was presumably then unknown in Gardner's region.

In 1854, after some years as a sheep-herder and overseer for Angus McLaine, Duncan McCallum moved onto his land east of Woodside. His sons 'detested' hand-reaping with the sickle; they threshed the stacked wheat crops with a flail, but 'after a few years' their father had a twelve foot long, grooved red gum roller made by 'a Mr. Sinclair'.<sup>26</sup> It was about two and a half feet in diameter at one end and some nine inches at the other.

The small end was attached to a strong post in the ground ... [A] strong bolt was driven into the small end of the roller with a swivel and ring to go over the post.<sup>27</sup>





**Fig. no. 5.** An Onkaparinga threshing roller with intact iron centre post and pivot attachment at Gum View, near Kuinto, photographed in 1983. The property was originally owned by W. and J. Michelmore (Mount Barker Community Library: PH-V6-00027).<sup>28</sup>

A roller made at Dawesley, west of Kanmantoo, was cut down 'a foot or two ... to overcome a split in the log',<sup>29</sup> and its apex was later metal-capped. William Gray wrote in 1929 or 1930 that this roller was then the property of John Frame of Mount Barker Springs, having been 'bought at a sale of a neighbouring farmer by Mr. Frame's grandfather, and was last used not many years ago for thrashing "heads"'.<sup>30</sup>

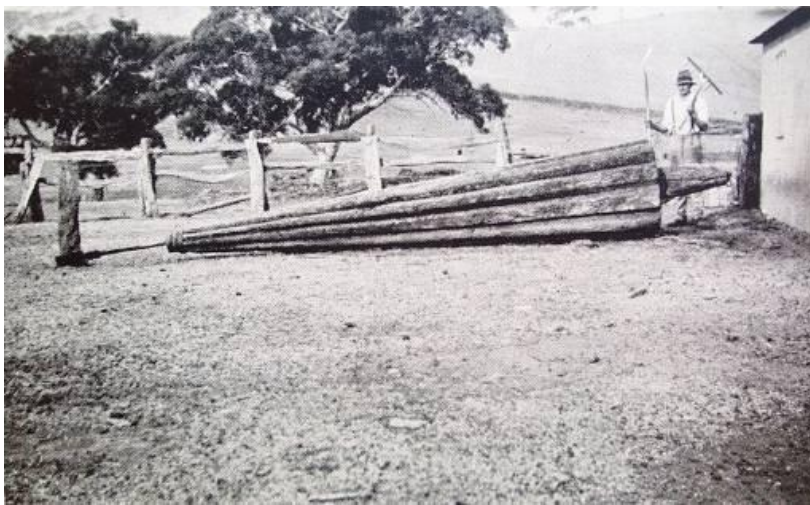


Figure 6

Andrew Brown made this threshing-roller at Dawesley in about 1848.<sup>31</sup>

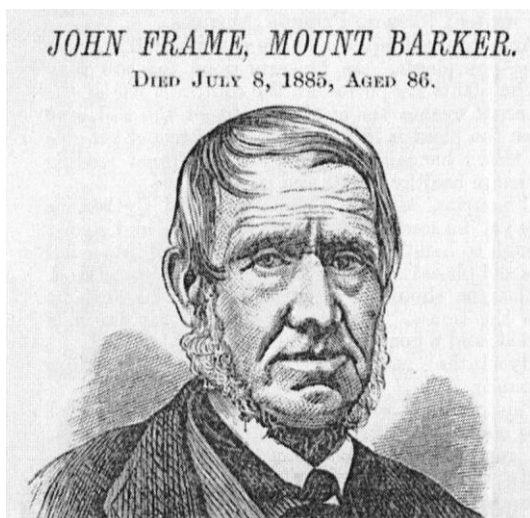


Fig. no. 7. The Mount Barker farmer, John Frame, from *The Garden and Field*, 1886.<sup>32</sup>



Figure 8

Onkaparinga threshing roller, Windmill Hill, Mount Barker Road.<sup>33</sup> Part of an un-related horse-works is in the background (Photo: author, 2002).



Fig. no. 9. Onkaparinga threshing roller originally used in the Inman Valley. (Photo: author, 2000). For some years before coming to the Yankalilla District Historical Museum it was exhibited at Encounter Bay. This roller's location in a paddock near the crest of the main road over Bald Hills, Yankalilla district, before it was removed to Victor Harbor, is remembered by Adrian Lush, local historian of the Yankalilla area.<sup>34</sup>

## Continued in part 2

<sup>1</sup> Daniel Rowley, pers. comm., Apr 2001. I warmly thank the several people who have pointed me in directions that led to interesting information on this subject.

<sup>2</sup> 'The Days of the Pit-Saw', *Advertiser*, 16 Feb 1935, p.11.

<sup>3</sup> Paul Depasquale, ed, *William Spettigue Lillecrapp's Diary September 1863–April 1864*, Oaklands Park, South Australia, Pioneer Books, 2008, entry for 29 Feb 1864, p.51.

<sup>4</sup> 'Mr Francis Duffield inventor of the Onkaparinga Roller', *Littlehampton Community Newsletter*, August 1999, p.14. Francis Duffield bought section 4226 of 74 acres, Mount Barker, Hundred of Onkaparinga, on 9 July 1849.

<sup>5</sup> Francis Duffield, 'Onkaparinga Thrashing Roller', *Adelaide Observer*, 4 March 1854, suppl., p.2e. Duffield's letter was dated 23 Feb 1854; it was also printed in the *Register* of 28 Feb, and was reproduced in 'Colonial News', *Maitland Mercury & Hunter River General Advertiser*, 8 Apr 1854, p.4.

<sup>6</sup> Duffield, 'Onkaparinga Thrashing Roller', *Adelaide Observer*, 4 March 1854, suppl., p.2e.

<sup>7</sup> 'Strathalbyn', *Advertiser*, 23 Dec 1859, p.3.

<sup>8</sup> 'Abstracts of Inquisitions for August 1863', Attorney-General, GRG 1/2/1863, box 4, State Records of South Australia (SRSA); Henry Dawson, JP, Gumeracha, 11 Aug 1863, 'Relative to claim for compensation for holding inquest', Attorney-General, GRG 1/2/437, 1863, SRSA; 'Inquest', *South Australian Register*, 5 Feb 1863, [p.123a].

<sup>9</sup> *Sydney Morning Herald*, 16 Mar 1873, p.5; 'Country News', *Argus*, 7 Jan 1887, p.6.

<sup>10</sup> John Wrathall Bull (1804-1886) had demonstrated in model, description, and priority, the fundamental principles of the collecting combs and a revolving beater or thrasher of his catcher-thresher. The author believes that John Ridley (1806-1887) adopted these principles for his own harvesting machine, hence the use here of the hyphenated name. Bull's *Early Experiences of Life in South Australia and an Extended Colonial History* (Adelaide, E.S. Wigg & Son, 1881), and George L Sutton, 'The Invention of the Stripper', *Journal of the Department of Agriculture of Western Australia*, vol. 14, no. 3, Sep 1937, pp.193-247 are central, but not exclusive, sources for believing the South Australian precedence of Bull's invention.

<sup>11</sup> Graeme R. Quick and Wesley F. Buchele, *The Grain Harvesters*, St Joseph, Michigan, American Society of Agricultural Engineers, 1978, p.115.

<sup>12</sup> 'Agriculture. Mr. James Clark's Farm, Noarlunga', *Observer*, 3 Jan 1863, p.2g.

<sup>13</sup> 'The Leader Office [J.L. Dow], *Agriculture in South Australia by the Special Reporter of 'The Leader'*, Melbourne, E. & D. Syme, 1874, p.57.

<sup>14</sup> A.R.Mills, *Kungna Tuko. A History of Kanmantoo*, n.p., 1981, pp.52-53. Treading-out damaged barley, that then was likely to contract mould on the malting floor. Injured germ is useless for malting, and even in the early twentieth century slow machine-threshing was advised to avoid this problem (See W.H. Clarke, comp., *The Farmers' Handbook*, Sydney, William Applegate Gullick, Government Printer, 1911, p.294.) J.B. McPherson of Eidsvold recalled that as a boy in South Australia he and his father used a heavy tapered roller hooked to four or six bullocks, a better method than the machine-threshing that damaged seed grain (Letter to the editor, *Brisbane Courier*, 6 Dec 1892, p.3).

<sup>15</sup> Mills, *Kungna Tuko*, p.53. Mills includes a latter-day diagram of the roller in use on page 54. A similar drawing, based on Francis Duffield's description, is in 'Threshing-Roller', *Torrens Valley Historical Journal*, no. 39, December 1991, p.19; on p.18 is a photograph (of Apr 1983) of an abandoned Onkaparinga roller on the floor at Rockleigh (east of Mount Torrens and Dawesley).

<sup>16</sup> 'The Story of Old Hoffnungsthal in South Australia', <homepage.mac.com/graememoad/.../Old\_Hoffnungsthal.htm> (accessed 9 Aug 2009) (As told by G.R. Juers in 'Kirchen-Blatt', published in the *Australian Lutheran Almanac*, 1939).

<sup>17</sup> 'South Australia', *Courier* [Hobart], 18 Mar 1856, p.2.

<sup>18</sup> Stan Rowett, comp., *Marrabel and District Revisited*, Marrabel, Marrabel Rodeo Committee, 1999, p.79. A reconstruction diagram of a threshing floor is given on p. 79. Marshall and Dreckow call Christian Zerna the 'instigator of the Ribbed Roller used around Friedrichswalde [Tarnma]', and illustrate his roller, giving it the date mid 1880s, possibly a date for the roller's retirement (Betty Marshall and Betty Dreckow, comps, *Friedrichswalde. Tarnma*, n.p., 1987, n.p.). Rowett illustrates the same roller more fully from a different view-point as it lay next to a rubble-stone out-building (Stan Rowett, comp., *Marrabel and District. The Legend of Curio*, Adelaide, printed by Lutheran Publishing House, [1987], p.155.

<sup>19</sup> William Masson, 'Thrashing Roller', *Adelaide Observer*, 8 Apr 1854, p.8b. As a guide, one bushel of barley is 50 pounds. Masson's 107 acres in section 3041, Yatala, abutting the northern boundary of the former Enfield Mental Hospital, was transferred to him from Angus McLaine on 25 Oct 1854. In May 1860 Masson took up land further north, eventually farming at Wild Horse Plains (Memorials 479/80 and 258/164, Lands Titles Office, Old System, Adelaide).

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<sup>20</sup> Noted in 'New Mode of Threshing', *Maitland Mercury & Hunter River General Advertiser*, 8 Nov 1854.

<sup>21</sup> *The Empire*, edited by Henry Parkes (1815-1896) of Ryde, New South Wales, was published weekly from 1850 to late 1858; later re-vivified, its title changed to *Evening News*.

<sup>22</sup> In 2000, at Roseworthy Agricultural College I saw a small model, made in South Australia, of a roller which appeared to be based on the shorter Netherlands type either from Groningen or Friesland.

<sup>23</sup> The Rev. W. Gray, ed., 'Autobiography of Hugh McCallum', Royal Geographical Society of Australasia (South Australian Branch), *Proceedings*, vol. 31, 1931, p. 47. Hugh McCallum (1841-1923) wrote his life story in 1919.

<sup>24</sup> W. Cornish, 'The Cultivation and Harvesting of Field Peas', *Journal of Agriculture and Industry of South Australia*, vol. 4, Oct 1900, p.302. The Yankalilla District Historical Museum holds a fine parallel roller formerly used for field pea threshing (probably also as a tillage roller).

<sup>25</sup> William Gardner, 'The Onkaparinga Thrashing Roller', *Observer*, 8 Jul 1854, p.10g.

<sup>26</sup> Gray, ed., p.47.

<sup>27</sup> Gray, ed., p.47.

<sup>28</sup> The copyright holder of this photograph has not been able to be located. In a round-a-bout fashion the photograph was sent from Noarlunga council to Meadows council, and then to the Mount Barker council and its local history collection.

<sup>29</sup> Gray, ed., p.47.

<sup>30</sup> Gray, ed., p.47.

<sup>31</sup> Illustration from Gray, ed., opposite p.48.

<sup>32</sup> In vol. 11, no. 132, May 1886, p.139. An earlier obituary, 'Death of John Frame', was published in *The Garden and Field*, vol. 11, no. 123, August 1885, p.36.

<sup>33</sup> The roller on Windmill Hill, Mount Barker area, may have been John Frame's roller; yet it was noted that it 'is thought to have been owned by the Michelmore family in the Prospect Hill area' ('Hills History', *Adelaide Hills Weekender*, Feb 2006, p.4).

<sup>34</sup> A. Lush, pers. comm., Apr 2002.