

### 8.03 *Morewood & Rogers*

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Morewood & Rogers were important British patentees and manufacturers of galvanized iron, iron roofing tiles, corrugated iron, corrugating and curving machinery, and complete prefabricated iron buildings. All of these had a particular impact in Melbourne, where the firm maintained an agency. This impact was not confined to the products themselves, for the wife of their agent, Jane Dorothea Cannan, was a gifted amateur artist whose sketches provide valuable documentation of Melbourne, as well as a little of Adelaide, in 1853 and 1854.

#### *a. Edmund Morewood*

The introduction of galvanized iron in Britain was surrounded, as we have seen, by dispute and litigation until manufacture actually commenced in 1843. Meanwhile a variant form, in which the iron was coated first with tin and then with zinc, rather than with zinc alone, seems to have been conceived in France by J B A Dumas in 1831.<sup>1</sup> This is supposed to have been used in America as early as 1838,<sup>2</sup> and in the East and West Indies from at least 1841.<sup>3</sup> 'America' doubtless means the United States, where there is evidence of the use of galvanized iron - of one sort or another - from at least 1839.<sup>4</sup> Edmund Morewood & Co are said to have been experimenting with galvanized iron in England at this time, but at about this time had an importing agency in New York which specialised in supplying zinc wire and other products required for telegraph lines. Given the legal impediments to English manufacturers it is by no means impossible that they might have first put the galvanizing process into effect in the United States.

Zinked tinned iron had the smooth crystalline appearance familiar in modern galvanized iron, as opposed to the plain zinc-like look of Sorel's process.<sup>5</sup> In 1841 Edmund Morewood took out an English patent on this zinked tinned iron,<sup>6</sup> together with other matters, all of which were disclaimed by him in 1845,<sup>7</sup> apparently in the

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<sup>1</sup> P F B Alsop to the President of the Geelong Historical Society, 7 February 1971.

<sup>2</sup> *Builder*, I, 45 (16 December 1843), p 537.

<sup>3</sup> Wyatt Papworth [ed], *The Dictionary of Architecture* (London, 1853-92), sv Galvanized Iron.

<sup>4</sup> D S Waite, *Architectural Elements* (New York, no date [1972]), p 8.

<sup>5</sup> *Builder*, III, 137 (20 September 1845), p 456.

<sup>6</sup> *Mechanic's Magazine*, XXXVI, 971 (19 March 1842), p 238: specification enrolled 26 February 1842. An account in the *Civil Engineer and Architect's Journal*, VIII, 31 (1845) is mentioned in Papworth, *Dictionary*, sv Morewood's Patent.

<sup>7</sup> P F B Alsop to the President of the Geelong Historical Society, 7 February 1971.

course of a court action in which his firm was unsuccessfully claimed to have infringed Craufurd's patent.<sup>8</sup> Morewood entered partnership with George Rogers some time prior to 1850, and in 1851 they showed specimens of their work at the Great Exhibition.<sup>9</sup>

Marshall Lefferts, who worked for Morewood & Co in New York and had been elevated to partnership, established his own company in 1852. In 1853 he was joined by his brother John A Lefferts under the style of Marshall Lefferts & Brother. Lefferts's catalogue of 1852 refers to galvanized tinned iron, indicating that he was still making the Morewood & Rogers product. The firm's catalogue of 1854 refers to 'patent galvanized iron' for roofs, gutters, spouts &c. Though it is described as 'imported and manufactured' by the Lefferts company, and Waite accepts that John Lefferts was in 'the galvanizing business',<sup>10</sup> it is safer to infer from this that they were importing their galvanized sheet, and that if they were themselves doing any galvanizing it was confined to minor components. This is the situation that applied in Australia four or five years later.

Meanwhile at least one British manufacturer, A Whytock, sent buildings of Morewood & Rogers iron to California in 1850.<sup>11</sup> By 1852 'plates' of galvanized tinned iron had been used on a number of major New York buildings and 'in nearly every principal city in the Union'. By 1854 Marshall Lefferts & Brother seem to have been dealing only in ordinary untinned galvanized iron,<sup>12</sup> and must have severed their connection with Morewood & Rogers. Certainly in their 1854 catalogue the flat iron roofing is not of the Morewood & Rogers tile form, which was by now well established in Australia, but of sheeting laid in the traditional way over boarded sarking and timber rolls.<sup>13</sup>

### ***b. Morewood & Rogers tiles***

The process of galvanizing under Morewood's patent was for many years was carried out exclusively by or on behalf of the firm of Morewood & Rogers, and various other patents to do with galvanizing and corrugating (some of which are mentioned below) were subsequently taken out by Morewood in conjunction with his partner George Rogers.<sup>14</sup> It does not appear that Morewood & Rogers were actually the makers of the galvanized iron, but rather that the Walkers of the Gospel Oak sheet mill at Tipton

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<sup>8</sup> Patteson & Others v Holland & Others: *Builder*, III, 108 (1 March 1845), p 106. The plaintiffs are presumably the Craufurd patentees, including the British Galvanisation of Metals Company, and the defendants are Morewood's associates - an S or T Holland was an agent for Morewood & Rogers between 1843 and 1845.

<sup>9</sup> Great Exhibition of the Works of Industry of all Nations, 1851, *Official Descriptive and Illustrated Catalogue* (3 vols, London 1851), II, p 657.

<sup>10</sup> Waite, *Architectural Elements* pp 7, 17; Marshall Lefferts & Brother, *Patent Galvanized Iron ...* (New York 1854) [reproduced in Waite].

<sup>11</sup> *Builder*, VIII, 370 (9 March 1850), p 120.

<sup>12</sup> Waite, *Architectural Elements* pp 7-8.

<sup>13</sup> Lefferts, *Patent Galvanized Iron*, pl 1.

<sup>14</sup> *Builder*, I, 345 (16 December 1843), p 537; 33 (23 September 1843), p 403; II, 74 (6 July 1844), p 30; III, 146 (22 November 1845), p 562; VI, 268 (25 March 1848), p 154. See also John Gwilt (revised Wyatt Papworth), *An Encyclopaedia of Architecture, Historical, Theoretical, & Practical* (London 1888), p 520, & Alsop, *op cit*, p 3.

in Staffordshire were contracted to manufacture it under the Morewood & Rogers patent.<sup>15</sup> It was later to be claimed that manufacture began in 1842,<sup>16</sup> but it seems unlikely that the process was in commercial use quite so early. By 1844, however, 'Morewood's Patent Galvanized Tinned Plates' were on sale in England, and it seems that these must have been tiles of the standard form which was later seen so commonly in Australia.

The first evidence of Morewood & Rogers tiles in Australia is perhaps at 'Clarendon', Tasmania, but this is difficult to accept. The present roof of the house is a rebuilding, but a raking Morewood & Rogers tile from the former roof is embedded in the side of the chimney. The house bears a date of 1838 on a column base, which is impossibly early for these tiles, but according to Clive Lucas (who was responsible for the restoration), the house is not otherwise dated and might have been finished much later, so that the tile could yet be original. On balance however, as Morewood and Rogers tiles appear on the outbuildings, which are known to be later, it seems safer to assume that all the tiles are of the same period, and that the house had earlier been roofed in some more ephemeral material.

It seems that Morewood & Rogers tiles reached a number of the Australian colonies in 1850, as they did also Natal, South Africa.<sup>17</sup> By 1851 the firm had a branch in Adelaide,<sup>18</sup> and probably at about the same time in Melbourne. We have seen that the first report of galvanized iron in the Port Phillip District appears in 1850, when a roof of the new material was being put up on a building in Elizabeth Street, Melbourne, for H W Mason, who had imported a quantity of it for sale.<sup>19</sup> The architect was George Wharton, and though the report does not indicate which type of galvanizing is referred to, we know that Wharton was soon to be involved in the prefabricated buildings of Morewood & Rogers. At some time which has not been precisely established it seems that the company established its agency in Melbourne, conducted by Andrew J Pollock.<sup>20</sup>

The oldest surviving Morewood & Rogers tiles date from the same year as the report of Mason's store, and are still on the roof of 'Coryule' near Drysdale, built in 1849-50. The La Trobe Library holds the original drawings by the architect Charles Laing, and they show the roof as being of slate, indicating that a change to the newly-arrived material was made during the course of the contract. There is an unusual personal touch about the Coryule tiles, in that a few of them have red painted lettering on the underside in a distinctive hand, the same as on tiles from five other Victorian sites -

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<sup>15</sup> *Argus*, 29 October 1860. For the Walkers, see also J Owen, *Report of J. Owen Esq., Supervisor of Metals to the Admiralty, of the Results of Experiments made at Gospel Oak, Tipton, (at the Messrs. Walker's Works,) on the Relative Strength of Common Cast Iron and Toughened Cast Iron, &c* (London 1847), cited in Elton Engineering Books, Catalogue Number 13 (London 1998), p 44.

<sup>16</sup> Sydney International Exhibition 1879, *Official Catalogue of the British Section* (London 1879), p 58.

<sup>17</sup> Brian Kearney, *Architecture in Natal* (Cape Town 1973), pp 19, 107, refers to and illustrates the building of Middleton & Wirsing, built in 1850, and using the tiles.

<sup>18</sup> E & R Jensen, *Colonial Architecture in South Australia* (Adelaide 1980), p 107.

<sup>19</sup> *Argus*, 21 August 1850.

<sup>20</sup> Cannan correspondence, National Library of Australia, MS 401. We know of Pollock only from this source and from MCC permit application no 1416, cited below, which gives the forename.

Mills Cottage at Port Fairy; an outbuilding of the former Orrville Hotel at Muckleford; and a Singapore-made wooden house built in East Melbourne, subsequently moved to Mentone, and now at Collingwood;<sup>21</sup> 'Wattle House', St Kilda; and the George Robertson's second house at 'Warrock', near Casterton. The first three of these are believed to date from the 1850s, and while 'Wattle House' dates from 1846 the roofing (which also includes five inch corrugated iron) may be later. The cottage at Warrock was possibly built in the 1840s, but this would have been the portion which is still shingled beneath the later sheeting, and the tiled extension may well date from the 1850s.

The lettering reads, for example,<sup>22</sup>

$$\frac{24 \times 24 \text{ [?Best]}}{1 - 0 - 19}$$

MR

or

$$\frac{24 \times 24 \text{ Best}}{1 - 0 - 20}$$

MR

or

[obscured]

$$\frac{1 - 0 - 18}{\text{MR}}$$

It seems that the tiles were sold in bundles, and the English despatcher must have painted on the lettering indicating the manufacturer (MR = Morewood and Rogers), and perhaps the number of tiles in the bundle and/or the price.

The lettering is sometimes in black or in a colourless faded outline rather than red, and this is the case with all but one of the tiles obtained from a large roof of the Wesleyan Chapel at 300 Church Street, Richmond, Victoria. This was built in 1854 to the design of Wharton & Burns - the product of the George Wharton / Wesleyan / Morewood & Rogers nexus discussed below - though there are some later tiles present, suggesting that there may have been a staged development. The roof was replaced in 2003 and Andrew Muir obtained a number of tiles, and has recorded second lines of the seventeen inscribed ones as follows:

x - x - x  
1 - 0 - 19  
1 - 0 - 20  
x - x - 21  
1 - 0 - 22  
x - x - 24 [red]  
1 - 0 - 24  
1 - 0 - 26

<sup>21</sup> See Miles Lewis, *The Essential Maldon* (Melbourne 1983), pp 14-15; Miles Lewis 'The Construction of Mills Cottage' (mimeographed typescript report to the National Trust, Victoria, 1986), p 2.

<sup>22</sup> From 'Coryule', Drysdale; Mills Cottage, port Fairy; and the old stables at 'Murndal', near Hamilton, demolished in the 1960s: tile kindly supplied by Mr Sam Winter Cook. An incomplete example in the same batch recorded by Paul Roser, 2000, is '24 [?] R[?]'.

x - x - 27  
 x - 0 - 27  
 1 - 0 - 27  
 1 - 0 - 27  
 x - 1 - x  
 1 - 1 - x  
 1 - 1 - 1  
 1 - 1 - 10  
 1 - 1 - 27

This may be the Rosetta stone which will unlock the riddle. It appears that the first digit is always 1, the second is always 0 or 1, and the third is between 1 and 27. This is too limited a range to be a code for use in a bill of lading, and with a third digit of 27 it cannot be a price in pounds, shillings and pence. But if we think of it as similar to pounds, shillings and pence, where the maximum in the pennies column is 11, because 12 makes an extra unit in the shilling column, here the maximum may be 27, and 28 makes a digit in the centre column (or just feasibly, 29 and 30 respectively). If the last inscription in the list can be taken to be an error or aberration, the range is from 1- 0 - 19 to 1 - 1 - 10, or eighteen 'pennies'. If the last two inscriptions are erroneous, the range is only nine 'pennies'.

The likely units are in fact tons, quarters (4 = 1 ton) and pounds (28 = 1 quarter), which is consistent with the early nineteenth century practice of selling articles such as nails and lead shot by weight rather than by unit. The tiles would have been in bundles containing a set number, probably twenty-four as suggested by the first line, but varying in weight due to idiosyncrasies in the manufacture. Each tile would weigh about 6 lb, and the variation in bundle weight would be about 6%, if the range was from 131 to 141 lbs.

The change to printed brands probably marks the end of this archaic practice of selling by weight. None of the tiles with the painted lettering is formally branded, but in other cases there are stencilled or printed brands, and these tiles usually seem to be of a later date. The first form of the printed brand is probably that which Muir found on 120 branded tiles of the Richmond church (suggesting that it was built on the cusp of the change):

MOREWOOD & ROGERS  
 PATENT TILE

The same type is found at 'Murndal', Victoria, along with unbranded tiles, and at 'Longeronong', Victoria. Fragments of iron surviving from the steeple of Matanaka station, New Zealand, are reported to have the brand:<sup>23</sup>

BEST QUALITY  
 MOREWOOD & ROGERS  
 PATENT TIN

Given that the material is iron it seems likely that this is an incomplete or mistranscribed version of the same text reading 'patent tile'.<sup>24</sup>

<sup>23</sup> Hardwicke Knight & Peter Coutts, *Matanaka: Otago's First Farm* (Dunedin 1975), p 3.

<sup>24</sup> In fact it is reported elsewhere as 'Morewood & Rogers Patent Galvanized Tinned Iron': N P Bevin, 'Corrugated Iron: a NZ Perspective' (BArch, University of Auckland 1983), pp 21-2.

On the Bachelors' Quarters at 'Warrock' and at Cooma Cottage, Yass, New South Wales, were tiles of a type which may be later, branded:<sup>25</sup>

BEST [rampant lion] BEST  
MOREWOOD & ROGERS  
PATENT TILE

Even later brands, as we shall see, reflect the dissolution of the original company at about the end of 1854.

Morewood and Rogers tiles must have reached New South Wales at about the same time as Victoria, and 'The Cottage' at Mulgoa seems to have been re-roofed with zinc-coated tiles, probably of this make, in about 1850.<sup>26</sup> Most examples have not been precisely dated, and nor have documentary records been researched, but there are some clear references, such as the advertisement of Weeks & Co of George Street, Sydney, in 1855, for 'Galvanized Tinned Iron Tiles for Roofing, 3' x 2', weights from 90 lbs. to 130 lbs. per square'.<sup>27</sup> The combination of galvanizing and tin can refer only to the Morewood & Rogers patent, though the size is somewhat overstated. Tiles of this character, though not demonstrably those of Morewood & Rogers, appear in Professor John Smith's photograph of a house in Glebe in the 1850s.<sup>28</sup> Although Morewood & Rogers tiles seem to have been less common in New South Wales than in Victoria, one of the largest surviving roofs of them is that of the Woolwe woolshed near Berridale, and they were also used elsewhere in the vicinity.<sup>29</sup> There are branded tiles at Wiangerie, near Kyogal in Northern New South Wales.

Many other buildings have surviving metal tiles which have not been reported in detail, though they are probably by Morewood & Rogers in most cases: moreover they are so often recycled, or used to replace earlier roofing, that the date can rarely be established with certainty. In 1853 Archdeacon Wollaston noted that the Anglican church at Toodyay, Western Australia, was 'covered with galvanised iron plates, very hot I fear they will find it'.<sup>30</sup> In South Australia there are iron tiles at 'Collingrove', Angaston, which probably date from the 1850s,<sup>31</sup> and on the kitchen at 'Padthaway'.<sup>32</sup> In Tasmania they are found at 'Brickendon' and on the outbuildings of 'Clarendon' as referred to above. In Queensland they were used at 'Milton House' in McDougall

However it must be said that this is an extremely unreliable source, and is itself derived in part from Knight & Coutts.

<sup>25</sup> Warrock from inspection; Cooma Cottage from Clive Lucas, *Conservation and Restoration of Buildings* (Sydney 1978), p 15.

<sup>26</sup> Helen Proudfoot, *Exploring Sydney's West* (Kenthurst [NSW] 1987), p 105.

<sup>27</sup> C J Mitchell, *Hunter's River* (Sydney 1973), p 8.

<sup>28</sup> Reproduced in Brian Turner, *Australia's Iron Lace* (Sydney 1985), p 28.

<sup>29</sup> I have not entered the woolshed to inspect brands or other details. Suzannah Plowman of Berridale, who showed it to me, advises that the Settlers' Arms at Bunyan, north of Cooma, is also roofed in these tiles.

<sup>30</sup> J R Wollaston [ed C A Burton & P U Henn], *Wollaston's Albany Journals (1848-1856)* (Perth 1954), p 169.

<sup>31</sup> Information from David Gilbert, Adelaide, 1991.

<sup>32</sup> Elaine Lawson, 'Padthaway, South Australia', in John Moore et al, *Historic Homesteads of Australia Volume 2* (Stanmore [NSW] 1976), p 288.

Street, Brisbane, by 1859,<sup>33</sup> and at 'Cressbrook' they have been placed over shingles, and then in their turn have been overlaid with shingles at a later date.<sup>34</sup>

The Morewood and Rogers tiles (as measured at Wattle House, St Kilda, Victoria) are 900 x 571 mm, with end and side laps of 51 mm and 38 mm. They overlap with a roll at either side and a small ridge across the surface at either end, with four more ridges between, no doubt to improve the rigidity of the sheet in situations where it was required to span between rafters, rather than being laid on boarding. They are designed to be laid over moulded timber roll members, though these are often missing in surviving examples. When these rolls do exist they are used in two different ways. At Mills Cottage the battens are checked in to the rafters to leave a flush surface, and the rolls are fixed along the tops of the rafters. At the Warrock cottage the battens are laid on top of the rafters in the usual way, and the roll members are checked over them, for which reason they have a greater overall depth.<sup>35</sup>

In 1856 and 1857 Morewood & Rogers took out New South Wales and Victorian patents for, *inter alia*, the system of pressing these tiles.<sup>36</sup> However the patent specification also covers a number of other matters, as will appear below, and cannot be taken to indicate the tiles were now being made in Australia. In fact tiles of the Morewood & Rogers type are hardly to be found in Australia after the 1860s, though even in the 1890s they were still being shipped to the West Indies, in a size of 36 by 24 inches (914 x 610 mm) after pressing, with a roll at either side, and four equally spaced semicircular transverse ribs<sup>37</sup> (the McGavin improvement, see below).

### *c. the Melbourne agency*

The biggest deal negotiated by the Morewood & Rogers agent in Melbourne, Nathaniel Pollock, was probably with the Wesleyan Methodists. They decided at a public meeting in 1852 to import five iron churches of various sizes and 'one large church of elegant design' to be erected where the present Methodist church stands in Lonsdale Street. The smaller churches, it would appear, were to be imported as bundles of standardised components, but the larger building was to be specially prefabricated to the design of George Wharton, the contract being made with the local agent of Morewood and Rogers - Pollock - for 'thirty tons of iron, together with a church fitted in England and prepared for erection upon its arrival in Victoria.' The minutes of the meeting state:

After much anxious thought and lengthened conference with our friends on this most important subject, it has been resolved to make a general and strenuous effort to increase our church accommodation in different parts of the colony. Our friends have entered upon the matter with great earnestness: and as there is no possibility of erecting stone or brick buildings, have taken upon themselves

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<sup>33</sup> Information from Peter Marquis-Kyle, 1991.

<sup>34</sup> Raphael Cilento, 'Cressbrook, Queensland', in J McClemens et al, *Historic Homesteads of Australia* (North Melbourne 1969), pp 167-8.

<sup>35</sup> A J R Billman, 'The Timber Vernacular' (BArch, Deakin University 1992), diagram 72.

<sup>36</sup> New South Wales patent no 4 [old series] of 1856; Victorian patent no 9 of 1857.

<sup>37</sup> James Davies, *Galvanized Iron. Its Manufacture and Uses* (London 1899), p 90.

the responsibility of ordering from England, SIX IRON CHURCHES of different dimensions, which will enable us to provide additional sittings to the extent of about five thousand persons. Since the district meeting about £6000 has been promised in Melbourne and Geelong for this purpose.<sup>38</sup>

The thirty tonnes of iron were received only after some delay<sup>39</sup> and a classically pedimented iron church was erected in Commercial Road, Prahran.<sup>40</sup> It subsequently became a schoolroom when a stone church was built in 1865.<sup>41</sup> Another iron church measuring about eighteen metres by twelve was put up at St. Kilda, but a larger church supposed to have been ordered from England - presumably one of the Morewood and Rogers consignment - never eventuated, and a bluestone building was put up in 1857-8.<sup>42</sup> In fact a number of churches had been built during the interval, and when the iron finally arrived some of it was diverted to roofing the new stone church at Richmond and the enlarged church at Brunswick Street, Fitzroy, while the rest is said to have been sold at a profit of £800 or £900 through the prominent ironmonger and equally prominent Wesleyan, Walter Powell, who charged no commission on the transaction.<sup>43</sup> The fact that the other churches did not proceed, it was later said, 'was a fortunate thing, as iron is not the material suited to this warm climate, as [the Prahran church] soon made manifest'.<sup>44</sup>

One of Pollock's last activities in connection with Morewood and Rogers was to put up a building for himself. On 23 August 1853 he applied to the Melbourne City Council, as both owner and builder, to put up an iron house at the corner of Gertrude and Napier Streets, Fitzroy.<sup>45</sup> The Melbourne agency was now been taken over by David Cannan, who arrived with his wife in August 1853, and found temporary accommodation while awaiting the arrival of their own iron house. Jane Dorothea Cannan was a gifted amateur artist whose sketches provide valuable documentation of

<sup>38</sup> J C Symons, *The Life of Rev. Daniel James Draper, &c* (London 1871), pp 157-8.

<sup>39</sup> Symons, *Life of Draper*, pp 157-8.

<sup>40</sup> The building is referred to in J B Cooper, *The History of Prahran* (Melbourne 1912), p 205. David Cannan writes home about it in August 1853, enclosing a newspaper report of the Wesleyans moving a vote of thanks to Pollock: David Cannan to James [?Cannan], 24 August 1853, NLA no 5. Jane sketched a view of the building: J D Cannan, 'The Wesleyan Chapel Prahran', no 17 in the Cannan sketches held by the Royal Historical Society of Victoria. McDougall gives the date of opening as 21 August 1852, but 1853 is certainly correct. The building was at the corner of Commercial Road and Margaret Street, cost £1,600, and was criticised as being too hot. When a new church was built at the corner of Commercial and Punt Roads the iron one was moved to the new site. Jill McDougall, *Church, Community and Chapel* [Prahran Historical Series no 6] (Prahran [Victoria] 1985), pp 21-2.

<sup>41</sup> Symons, *Life of Draper*, pp 157-8.

<sup>42</sup> Cooper, *History of St. Kilda*, I, p 355.

<sup>43</sup> Symons, *Life of Draper*, pp 157-8. The Richmond church is apparently that at 300 Church St, discussed above. The Fitzroy church stood behind the 1860-61 church in Brunswick Street, but both were demolished by the Housing Commission in the 1960s; it was built to the design of James Webb in 1849-50 and extended in 1854-5. See J M Freeland, *Melbourne Churches 1836-1851: an Architectural Record* (Melbourne 1963), pp 88-90; W L Blamires & J B Smith, *The Early Story of the Wesleyan Methodist Church in Victoria* (Melbourne 1886), pp 60, 80; *Spectator*, 6 April 1900. Symons gives £900 as the profit, but Benjamin Gregory, *The Thorough Businessman*, (London 1871), p 133, gives £800.

<sup>44</sup> Blamires & Smith, *Wesleyan Methodist Church in Victoria*, p 60. See also C I Benson, *A Century of Victorian Methodism* (Melbourne 1935), p 419.

<sup>45</sup> Melbourne City Council building permit application no 1416, 23 August 1853 [Burchett Index].

Melbourne in 1853 and 1854.<sup>46</sup> She compiled a sketchbook of Morewood & Rogers buildings for the company, and though this is not known to survive, more than forty other of her sketches do, and a number show iron buildings.

The Cannans' own house in Prahran appears in Jane's drawings as a smallish rectangular cottage with a relatively low gabled roof. The façade, which is a flank rather than a gable end, contains a central doorway with one window on either side. These windows are probably of cast iron and are divided into 4 x 4 panes, and it appears that the top row of four formed a separate unit, which could pivot. Jane described the house as 'lined with metal so it will look rather funny like it is papered - but I expect it will be a very snug little place'.<sup>47</sup> David said '... We have been in our house for some time now. It is galvanized tinned Iron outside + inside (being double) and is very comfortable, better than wood a great deal.'<sup>48</sup> Finally Jane wrote in March 1855 'I have such an affection for the little ugly iron house that I am half afraid to leave it.'<sup>49</sup> It is also possible to infer from the latter that the cottage was one of four rooms, without a passage.

David Cannan wrote home in August 1853, shortly after his arrival, 'Our business is very brisk and we have no stock + our only complaint is that we have too little stuff sent out from London'.<sup>50</sup> In 1854, the year in which the patent would normally expire, the company displayed at the Melbourne Exhibition 'Specimens of Galvanized Tinned Iron, in various forms exhibiting the numerous purposes to which the article may be applied.'<sup>51</sup> In 1856 Lachlan Mackinnon of the *Argus* was advertising for sale three 'first class' iron stores which had been made to order by Morewood & Rogers of Birmingham, each of 48 by 20 feet [14.4 x 6 m] by 22 feet [6.6 m] high, with an upper floor, and lined throughout.<sup>52</sup>

#### *d. other metal tiles*

Other types of metal tile are occasionally found, and may be the product of local tinsmiths or metalworkers (like Archibald Allan, referred to above), using Morewood & Rogers or any other galvanized iron. In other words, the brand may be that of the manufacturer of the sheet rather than that of the tiles. A house believed to date from the 1850s, at 84 Studley Street, in the Melbourne suburb of Abbotsford, was long since inspected by the writer and found to have what seemed to be hand-made metal tiles underneath later roof sheeting. They measured about 555 mm long by 335 mm wide, with about 65 mm lap at the end and 25 mm at the side.

Robert McGavin of the Clyde Galvanizing Works, Glasgow, was granted a Victorian patent in 1859 for making tiles with 'transverse ridges or corrugations of a curved or angular figure.' The design has the usual rolls at the sides, and the small ridges across

<sup>46</sup> See Joan Kerr [ed], *The Dictionary of Australian Artists* (Melbourne 1992), p 133.

<sup>47</sup> Jane Cannan to Jeanette [Cannan], 27 November 1853, NLA no 10.

<sup>48</sup> David Cannan to Hannah [Cannan], 22 January 1854, NLA no 11.

<sup>49</sup> Jane Cannan to Mrs Cannan [mother-in-law], 8 March 1855, NLA no 15.

<sup>50</sup> David Cannan to James [?Cannan], 24 August 1853, NLA no 5.

<sup>51</sup> Morewood, Rogers and Co of 26 Flinders Lane East, importers: *Official Catalogue of the Melbourne Exhibition 1854*, p 14.

<sup>52</sup> *Argus*, 10 November 1856, p 3.

the ends, but the four intermediate ridges run across in a curve which is convex as viewed from the upper end.<sup>53</sup> This local patent may have been somewhat belated, for there are indications that these tiles had already reached Victoria. Muir found some on the Wesleyan church in Richmond, discussed above, though they conceivably date from after the original work of 1854. One bears the remains of a brand, apparently reading '... IZING', though there is no trace of the second line of lettering which would be expected.<sup>54</sup>

Tiles of this type were also to be seen in recent years on the roof of George Ferries's monumental masonry works at Castlemaine, Victoria, and it is reported to have been common in New Zealand in the 1870s and 1880s.<sup>55</sup> Although there is no suggestion of any connection with Morewood & Rogers in the first instance, by the 1890s (as noted above) that firm had adopted this improved form. In Britain Frederick Braby, in the 1880s, was manufacturing a tile with two downward-pointing chevrons stamped into the surface.<sup>56</sup>

#### *e. Morewood's corrugated iron*

Morewood and Rogers also produced corrugated iron, possibly from not long after the expiration of H R Palmer's original British patent in 1843, for their major patent in 1845 included corrugating machinery, discussed below. Various others of their patents were to do with corrugating, including one in 1852 covering matters such as corrugating on the diagonal which are of no apparent significance.<sup>57</sup> It seems probable that the first galvanized iron they sent to Victoria was in the form of tiles, but in 1854 the company displayed at the Melbourne Exhibition 'Specimens of Galvanized Tinned Iron, in various forms exhibiting the numerous purposes to which the article may be applied.'<sup>58</sup> Later in the year a local specification calls for verandah roofs covered in 'Morewood and Rogers patent galvanized corrugated iron let into a mortar joint and built to the shape shown in the drawings.'<sup>59</sup> Morewood & Rogers corrugated iron does not generally survive today - certainly not in the quantities of their ubiquitous tiles - but 1.8 m branded sheets are reported at Glenside Hospital [Adelaide Lunatic Asylum].<sup>60</sup>

It is not certain that they were the makers of corrugated curving machines which had been available in Melbourne in 1856, but their Victorian patent of 1857<sup>61</sup> included machinery for both corrugating and curving, as well as various aspects of galvanizing. This seems likely to have been connected with the establishment of some local agency, and most probably that of John Carter, whose works opened in 1859 with a

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<sup>53</sup> No 197 to Robert McGavin, 10 February 1859.

<sup>54</sup> Tile supplied by Andrew Muir, 2003.

<sup>55</sup> Martin Hill, *Restoring with Style* (Wellington 1985), p 16.

<sup>56</sup> *Frederick Braby & Co. No. 9* [catalogue] (London 1883), p 34, inserted page, presumably somewhat later in date.

<sup>57</sup> *Builder*, X, 507 (23 October 1852), p 679.

<sup>58</sup> Lewis, op cit, III, p 374.

<sup>59</sup> Russell, Watts & Pritchard, 'Specification for ... Dwelling Houses ... at Elwood ... for Joseph Docker', 13 December 1854, Docker papers, Manuscript Collection, SLV, p 20.

<sup>60</sup> Information from Bruce Harry, 1991.

<sup>61</sup> No 9 to Edmund Morewood & George Rogers, 18 March 1857.

very complete range of machinery for curving, corrugating &c, which will be discussed below. Carter sold 'Morewood and Co.'s and other good brands of Patent Galvanized Tinned Iron and Fittings'<sup>62</sup> - that is, he did not apparently sell the rival untinned varieties.

### *f. Morewood & Co*

By this time the original firm of Morewood and Rogers had failed financially, and the business had been bought by a new company which styled itself Morewood & Co. Soon after this the Walkers of the Gospel Oak mill, who had been the manufacturers on Morewood & Rogers's behalf, abrogated their exclusive connection with Morewood & Co and began to sell through all London merchants. This was no doubt possible because the original patent of 1843 would, assuming the normal term of fourteen years, have just expired. This is also why John Carter was able to stock 'other good brands of Patent Galvanized Tinned Iron'. Morewood & Co. now began buying iron from various makers and doing their own galvanizing, and they produced galvanized iron of the untinned as well as their original tinned variety.<sup>63</sup>

By 1861 Morewood & Co were producing at least some of their own sheet iron, for they announced that improvements in their machinery now enabled them to produce galvanized tinned iron superior to any made so far, and they could produce 26 gauge [5 mm] corrugated sheets in seven and eight foot [2.2 and 1.4 m] lengths, which would henceforth bear the Lion brand. It appears that the former Anchor and Star brands continued to be produced as well.<sup>64</sup>

In 1862 Morewood & Co produced 'Morewood's patent continuous galvanized roofing', said to be cheaper than felt.<sup>65</sup> This was probably much the same product as was described by James Davies in 1899: flat thin sheets [26, 28 or 31 gauge] in lengths of six to nine feet [1.8 to 2.7 m], with the end edges locked together mechanically to produce continuous strips of 30 to 60 metres, which were rolled up and packed in kegs for transport.<sup>66</sup> This material has not so far been reported in Australia. In 1869 Morewood & Co were advertising galvanized tinned roofing and tiles, patent tin plates &c, from their premises at Dowgate Dock, Upper Thames Street; the Lion Works, Birmingham Heath; and Bilston.<sup>67</sup>

Although it appears that Morewood & Co was established by Edmund Morewood, erstwhile partner of Rogers, a brand of 'A Morewood & Co' has also been found - probably representing a later form of the firm, and most likely another generation of the family, at a date no earlier than 1870. This appears on iron tiles at the Star Hotel,

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<sup>62</sup> C B Mayes, *The Victorian Contractors' and Builders' Price-Book* (Melbourne 1859), p xxvii.

<sup>63</sup> F W Laxton, *Laxton's Builder's Price Book for 1863* (43rd ed, London [1863]), advertisements, no page.

<sup>64</sup> *Argus*, 25 May 1861, p 8.

<sup>65</sup> International Exhibition, 1862, *Illustrated Catalogue of the Industrial Department* (2 vols, London 1862), I, p 27. See also Laxton, *Price Book for 1863*, no page.

<sup>66</sup> James Davies, *Galvanized Iron. Its Manufacture and Uses* (London 1899), p 89.

<sup>67</sup> J L Steinhardt, *The Illustrated Guide to the Manufacturers, Engineers, and Merchants of England, Scotland, Ireland and Wales* (London 1869), pp 236, 313-4.

Stanley, Victoria, and at Kleusendorlffe's Inn, Tahmoor, New South Wales, in the form:<sup>68</sup>

[upward arc of lettering:  
A. MOREWOOD & CO  
]  
PATENTEES  
LONDON

### *g. Gospel Oak*

The Walkers also continued to manufacture, but branded their product 'Morewood's patent, Walker's G [anchor] O Brand'<sup>69</sup> until about 1862, after which the reference to the Morewood & Rogers patent was omitted.<sup>70</sup> This is the origin of the Gospel Oak iron which was to become very well-known later in the century. At a Victorian house of the 1860s it appears as:<sup>71</sup>

[ellipse containing  
WALKERS  
G [anchor] O  
]

Walkers' GO Gospel Oak iron - the exact form of the brand is not noted - is also found in the front wing of Glenside Hospital, Adelaide, of 1870.<sup>72</sup> Their seconds brand, the eagle, is known in Australia from at least 1873.<sup>73</sup> In 1879 the company showed its products at the Sydney exhibition.<sup>74</sup>

A British guide of 1884 illustrates as a current product tiles of essentially the Morewood & Rogers form, but apparently of the Gospel Oak brand. The measurement is 3 by 2 feet [900 x 600 mm] with side rolls, double transverse ridges at top and bottom, and three single transverse ridges in between, and they are described as 'Patent Galvanized Tinned Tiles'. They are punched with nail holes at the top end, and are not designed to be nailed at the bottom, which simply overlaps the plate below. At the sides they are nailed into the wood rolls, except that it is recommended that a screw be used for the bottom fixing, 'nails alone being apt to

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<sup>68</sup> The former from inspection, the latter from Clive Lucas, *Conservation and Restoration of Buildings: Preservation of Roofs* (Sydney 1979), p 12.

<sup>69</sup> *Argus*, 29 October 1860.

<sup>70</sup> *Weekly Argus*, 25 April 1862, p 1 col 3: the advertisement announces that the galvanised tinned iron Gospel Oak brand, formerly sold under the name of Morewood and Rogers patent is manufactured solely at the Gospel Oak Sheet Mills, Tipton, and should be identified by the 'Walker's G. Anchor O.' brand.

<sup>71</sup> Caldwell house, Merricks Road, Merricks North, Victoria.

<sup>72</sup> Information from Bruce Harry, 1991.

<sup>73</sup> Old police station, Burra, South Australia: illustration supplied by Linda Barraclough.

<sup>74</sup> Sydney International Exhibition 1879, *Official Catalogue of the British Section* (London 1879), p 58.

spring in hot climates'. The maker is not specifically named, but other illustrations in the series bear the 'G [anchor] O' brand.<sup>75</sup>

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<sup>75</sup> J W Browne, *Hardware - How to buy it for Foreign Markets* (London 1884), illustration no 2 & p 39.