Bulletin of

Maitland and District Historical Society Inc.

(Established March 1977)

Affiliated with Royal Australian Historical Society and

Museum and Galleries Hunter Chapter

Author Noel Mead

Volume 25, Number 4

November 2018

The Aims of the Society are to
Discover, Record, Preserve, Advise on and Teach the History of Maitland and the District

Cover: The photograph was taken by Chas Keys and shows his co-author nonagenarian Noel Mead.

Correspondence : P.O. Box 333, Maitland NSW 2320

Telephone : 0438 623 299

Email : maitlandhistorical@gmail.com

Website : http://www.maitlandhistorical.org

Location: 3 Cathedral Street Maitland (opposite Bishop's House)

Lecture meetings are held on the first Tuesday of each month from 5:30-7.00pm as a forum for lectures, talks and presentations.
Business meetings are held on the third Tuesday of even months from 5:30-7.00pm.
Committee meetings are held on the third Tuesday of odd months from 5:30-7.00pm.
Members are invited to attend all monthly meetings.
Meetings are held at the Society's rooms, 3 Cathedral Street Maitland.

Membership fees : $20 (single) and $30 (double / family)

Patrons: The Hon. Milton Morris AO
NSW Member for Maitland 1956-1980
NSW Minister for Transport 1965 – 1975
The Most Reverend Bill Wright, Bishop of Maitland-Newcastle

Current Office Bearers :

President : Kevin Short
Vice Presidents : Allan Thomas, Peter Smith
Treasurer : Jennifer Buffier
Secretary: Beverley Bailey
Bulletin Editor : Lisa Thomas
Consultant Editor : Kevin Short

Bulletin contributions are being sought. Please contact the Society via email maitlandhistorical@gmail.com

Society Updates

In the last month Kevin Short replaced Graham Dark as president of the Maitland and District Historical Society. We wish to thank Graham Dark for his contributions to the Society during his tenure.

The Society's annual end of year get-together will be held at the Walka Water Works on Sunday 2 December, starting at 4 pm. It's BYO picnic food and refreshments.

Recently the Society has been the recipient of a fine collection of old irons. We have also been given the old switchboard from the Maitland Hospital.

++

Further information on Christopher Eipper from Society member Steve Bone

Steve came across the following article which relayed the thoughts of Christopher Eipper, the one-time editor of the *Maitland Mercury*, who was featured along with his family in the August Bulletin. Steve's find throws more light on Christopher Eipper's character. The article had to do with the Maitland Half-Holiday Association and can be found using Trove in the *Maitland Mercury* of 1889, 25 July, p. 8. Steve has also found several other references to the Eippers for those who would like to research this interesting family more fully.

"Mr. JAS. McLAUCHLIN proposed a Vote of thanks to the proprietors of the Maitland Mercury, who had uniformly helped the society ; and he coupled with the resolution the name of Mr. Eipper, who represented this journal at the meeting.
Mr. DODDS seconded the resolution, which the CHAIRMAN supported. It was carried with applause.
Mr. EIPPER was glad of the opportunity afforded him of congratulating the Association upon its vigour, and upon the secure foundation upon which the half-holiday now rested. He also took occasion to say that he thought it desirable for the committee of the Association to arrange, if possible, some entertainment in the way of music, etc., for the Friday evenings, at least during the winter months. He believed something could be done in the way of co-operation with the committee of the School of Arts."

++

The Evolution of Rural Levee Building in the Lower Hunter Valley: From Farmer Self-Help to the Work of the Hunter Valley Conservation Trust and the Public Works Department

By Chas Keys and Noel Mead

Floods were a threat to farmers in the lower Hunter Valley from the time of the first European settlement above Newcastle, which took place on the banks of the Paterson River in 1812 and along the Hunter River in 1818 on the site of today's Maitland. Farm operations were affected frequently and crops ruined even in comparatively minor floods. Big floods, though not common, usually brought catastrophic losses including the destruction of farmers' simple dwellings and the loss of livestock, sheds and fences. Not surprisingly, the farmers sought to limit the damage that flooding wrought. Especially after the breaking up of the large land grants like the Lorn and Bulwarrah Estates led to the proliferation of small farms, they did so by means of digging drains through the low-lying areas and building levees close to the river. Thus began a long period of building, maintaining and improving farmers' defences against floods.

In the Maitland area, the first embankment whose origin can be precisely dated was built in 1857 (Hawke, 1860, p1). This bank blocked off Halls Creek (just north of Mt Pleasant St) with what was called in local parlance a "dam". The creek had drained local Oakhampton rainwater to the river but during floods it took water from the river and inundated farmland in what is now known as the Oakhampton Floodway before draining it back to the river as the flood level fell. Soon after, other banks were built nearby and along the Paterson River in the vicinity of Woodville. By the end of the 1860s embankments were being built on both sides of the Hunter River downstream of Oakhampton, and before the end of the nineteenth century many miles of rural levees had been constructed in the area of today's City of Maitland and downstream in what are now the Port Stephens and Newcastle council areas. During the 1860s, too, the first embankments were built to protect the burgeoning town of West Maitland from floods. Drains were dug as well in Oakhampton, Bolwarra, Louth Park and elsewhere to claim farmland from swamps and to speed the drying out of farms after floods.

The Bolwarra Embankment Committee

On the Bolwarra Flats, levees were built in 1867 by local farmers along the Pig Run meander (roughly opposite the today's confluence of Wallis Creek and the Hunter River), but some might have been constructed on the Flats several years previously by the landlord of the Bolwarra Estate, David Dickson (Abrahams, 1984, pp 38, 41). These structures, soon extended to the high ground of Bolwarra and Largs to enclose the whole of the Bolwarra lowlands, were probably built in the first instance to keep water off individuals' farms and direct it to neighbouring properties but in due course sought to protect the interests of an

entire farming community which at times numbered more than sixty separate farm holdings. No later than 1888, and possibly as early as the 1870s, some of these farmers decided to form the Bolwarra Embankment Committee and encourage others to join them. By doing so, levee-building endeavours likely to be of benefit to the whole local community could be undertaken. Eventually there were to be more than twenty such committees in the lower Hunter between Oakhampton and Hexham (Keys, 2008a, p73).

The recent discovery (by the last secretary of the Bolwarra Embankment Committee, Ian Mead) of meeting minutes and correspondence covering the period 1914-2004 has made it possible to construct a history of the activities of the Committee for most of the period of its existence. This article describes that history and the transfer of the flood mitigation effort from the Committee to the Hunter Valley Conservation Trust and the New South Wales Public Works Department after the disastrous floods of the 1950s. The levees built by the Bolwarra Embankment Committee on the left bank of the Hunter River began near Bolwarra House on Harts (or Bolwarra) Hill, largely circled what became from about 1889 the urban centre of Lorn and continued along the river past McKimms Corner to the high ground at Largs (Figure 1).

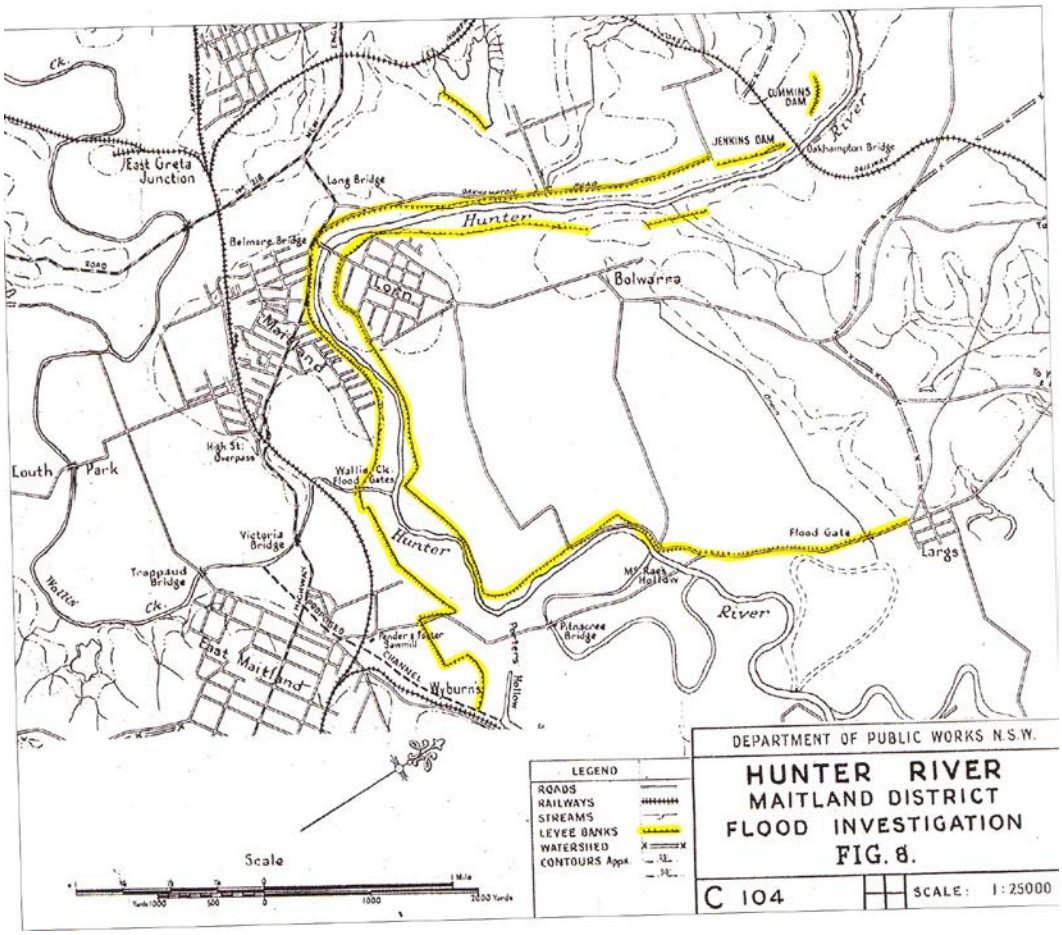

Figure 1: The locations of levees on the right bank (Oakhampton and Maitland) and left bank (Bolwarra) of the Hunter River in 1953 (Hulcome and Harrison, 1953)

When the Pig Run meander was cut off by a flood in about 1875, a new embankment was constructed along the new course of the river. Part of the original (now 'stranded') bank can still be seen along Glenarvon Rd (Figure 2).

Figure 2: A nineteenth century levee on the Pig Run meander, next to Glenarvon Road

Just who built the section that protected Lorn is unclear, but it is likely to have been farmers rather than townsfolk because keeping water out of what was to become a suburb would have been necessary to protect the adjacent farms. In 1891 there were only about 30 dwellings in Lorn and there is no clear evidence of any of them having been affected by inundation in the great flood of March 1893, the highest flood to have assailed the Maitland area since 1820. This implies that a Lorn embankment was already in place in 1893. At some stage, possibly soon after the flood, a Lorn Vigilance Committee apparently took over the maintenance of the embankment that partly surrounded the built-up area. Not long into the new century this group, like the Bolwarra Committee, was to be helped in its flood mitigation endeavours by the Bolwarra Shire Council which was created in 1906.

The creation of the Bolwarra Embankment Committee represents a formalisation of community endeavour in seeking flood protection. The Committee had an executive elected by the members, it held regular meetings in the Bolwarra Hall and in the local school and levied members on a per-acre basis to obtain the money that allowed the embankments to

be built and maintained. In 1930, the sum charged was five shillings per acre 'protected'; this charge was changed periodically depending on need. Like similar committees elsewhere in the lower Hunter Valley (including the one in the Oakhampton area across the river), Bolwarra's was not a statutory body , and the levies could thus not be enforced: this was a problem that was solved in part by allowing members who were not financial to work off their contributions by providing their labour to what amounted to working bees. Men who had paid up worked for wages, too, and were remunerated for horses and drays supplied. Work on the embankments was frequent after floods had caused breaches, and the defences were periodically strengthened by being raised and widened. On being raised, the crests of the banks were 'ploughed down' to facilitate the bonding of the old soil with the new, and cracks that emerged during dry periods were filled with loam.

Initially the work itself was done with shovels and wheelbarrows to win and transport soil to the sites of the embankments. In due course, horses and tip drays were used and eventually, after World War II, bulldozers were employed and some of the work was done by contract. For the majority of the life of the Committee, though, all the work was done by the local farmers using their own barrows, drays and horses. A 'tunnel' with a trapdoor (in today's terms a floodgate) was constructed through the bank near Largs: this was to allow flood drainage back to the river from the downstream edge of the Flats. On one occasion, when an embankment located on the outer edge of a meander fell into the river during a flood, a 'ring levee' (or 'loop bank') was built 'inland' from the line of the original structure.

Detailed financial records were kept by the Committee showing who had paid the levy, who owed money and what hours had been worked by members, and workmen's insurance was obtained. Five 'section committees' (each with a works foreman) were formed to monitor the banks between defined points and recommend to the main committee the work needed by way of repairs and other maintenance when breaches occurred, or when cattle wore down the crests or rat-holes and rabbit and bandicoot burrows were discovered. Stocks of jute sandbags were held in farmers' sheds for use in blocking leaks or raising crests when floods occurred. At such times members would patrol the banks, sometimes on a 24-hour basis and with kerosene lamps and torches at night, to identify weak points at which failures might occur as floods rose.

Real-time monitoring took up much of the time of members during floods. Afterwards, especially after severe events, there was always much repair and improvement activity to be undertaken. The minutes book is full of lists, section by section, of the problems that needed attention.

On occasions, large numbers of men would be working at the same time at a site, repairing or augmenting the banks (see Figure 3).

Figure 3: Fourteen men, thirteen horses and six drays working on a Bolwarra embankment in 1950: in the foreground are Bob Hungerford (with pipe) and Les Mead

There was also a heavy workload on members of the executive in terms of meetings, letter writing and participating in deputations especially to the local council (and perhaps the government) from which help was sought. The Committee showed itself to be aware of the need to make its case to the wider community of the Maitland area, and to this end it appointed a publicity officer and organised a media tour of the Flats after the 1949 flood to demonstrate the damage done to primary producers. The Committee was evidently well attuned politically to the need to ensure its activities were known in the community.

From the first decade of the twentieth century and perhaps even earlier the Committee sought external help, first from the local council (Bolwarra, later part of Lower Hunter) and also from the government. Lobbying by letter and deputation sought funding, but it also brought to council attention the Committee's concerns when blockages like fences were erected across the former Largs meander (which had been cut off in 1890 and silted up thereafter), potentially interfering with flood drainage. The lobbying brought some success,

funding being made available and the council installing stonework to armour bends at which erosion and meander extension were most likely. Public Works contributed not insignificant sums to mitigation works as well and from quite early times (Public Works Department, 1892; 1903-04). Periodically there were contributions from community donations, too: these were administered by the Maitland Flood Relief Committee after big floods and were reported in the Maitland Mercury with donors named along with the amounts given.

The embankments undoubtedly kept many floods at bay, and the farmers of Bolwarra owed much to the leadership of men like Walter Worboys and Ray Vercoe who each spent years on the Committee's executive. Minor floods were excluded completely from the farms and the frequency of inundation was thus substantially reduced: crops were lost less often and growing seasons were less prone to interruption. Roads, too, were exposed to damage less frequently, saving the council on repair costs. Undeniably, the impacts of the embankments on the rural economy and on the financial wellbeing of the farm community were positive. But there were substantial failures too, when the banks proved not to be equal to the task of keeping the water out of the Flats. On those occasions the costs in lost crops and livestock caused by levees being overtopped or breached were substantial.

In the end the embankments were found wanting: they had not been built to high engineering standards and their deficiencies were identified by the bigger floods. Failures occurred all too often, in floods like the 1949 event affecting embankments in all the five sections and necessitating very large-scale repair works. The damage was severe in this case: in all, several hundred metres of embankment were washed away fully or in part. This flood was said in the minutes book to have been "the worst in the history of the present generation", there having been at least eight separate levee breaches. Objectively, only the 1893 flood (when most of the embankments would not have been as high as later) could have had such severe consequences for the farmers of the Flats.

The 1949 flood ushered in a period of frequent, often severe floods over the next seven years. The repetitive damage exhausted the farmers' ability to maintain their investments in the maintenance and repair of the embankments. Much work was required after the many floods between 1949 and 1954, and much of what was done was promptly undone by the Great Flood of 1955. Sandbagging was attempted as this flood rose, but it was soon abandoned as hopeless in the face of the huge event that was unfolding. Serious levee breaches led to massive deposits of sand on the farms between Glenarvon Rd and Flat Rd and near the site of today's Harry Boyle Bridge: these were highly damaging to the farmers. Indeed the 1950s sequence of floods threatened the commercial viability of the Flats, a vital supplier of food to Sydney and elsewhere, and in 1955 several families lost houses, barns and milking sheds as well as crops and livestock. Some were forced out of agriculture altogether. The resident population of the area was much reduced after 1955 (Abrahams,

1984, p66; Mead, c2004, p 54). Exhausted both emotionally and financially, the remaining farmers were ready to see a change in the ways by which the mitigation of the flood problem was sought.

Incidentally, no fewer than ten formal investigations into the alleviation of the flood problem on the lower Hunter River had been commissioned by the colonial/state government between 1868 and 1913 (Clarke, 2015). The reports that resulted from these investigations were sometimes critical of the means by which flood mitigation was being sought by farmers and councils, but it is indicative of the limited nature of the governmental role of the time that regulation of mitigation activity was not sought.

Towards a New Approach

By the middle of the twentieth century the state government had become concerned about the environmental damage that was being done to the Hunter Valley by wholesale deforestation, inappropriate farming practices (including overstocking in some areas upstream of Maitland) and sub-optimal practice in the building of levees, and it was recognising that new approaches to land and flood management were necessary. A major report (Huddleston et al, 1948) was influential here: new legislation was enacted, the Hunter Valley Conservation Trust Act 1950-52 bringing the Trust into being in 1950 with the ability to levy councils for land conservation and flood mitigation works (Keys, 2008b, pp28-30). The Bolwarra Committee sought to have one of its members made a trustee in this organisation, but it was unsuccessful. Various farmer organisations in the lower Hunter (including the drainage unions) in effect competed for a few positions on the Trust.

In 1956, Public Works was designated by the Hunter Valley Flood Mitigation Act as the agency that was henceforth to carry out flood mitigation activities, the department being required to build the necessary levees and drains below the limit of tidal influence on the Hunter River. Its area of operation included all of the areas in which the lower Hunter embankment committees had operated. Gradually, as the new management regime took hold, the Bolwarra Embankment Committee and the other like organisations faded from the scene.

From 1957 the building of flood levees and drains in the lower Hunter Valley was taken over by Public Works and a new flood mitigation philosophy took root. Departmental engineers like Bill Hulcome, Bill Harrison and Eugene Kazimierchuk had studied flood regimes and embankment performance for several years and had found many deficiencies in the design of the levees developed by the embankment committees over the decades. Their banks had been built too close to the river, hemming floods in and forcing them higher, and they lacked consistent crest gradients and batter slopes. Moreover they incorporated no spillways: the intent had been to keep all floodwater in the river's channel, so no allowance

was made to have it 'spill' onto the floodplain. This restricted the periodic laying down of small amounts of silt on the farms and encouraged the disastrous deposition of coarser material when the bigger floods breached the embankments at any weak points. Worst of all, it was clear that the embankment committees had in effect been competing with each other to keep water off their own members' lands and divert it to neighbouring farms: they sought to 'outbid' each other by building their banks ever higher. The banks had been unsophisticated, even haphazard in design and completely lacking in co-ordination between those who 'owned' them.

It was apparent that new approaches to flood management were needed. Floodwater had to be admitted to the floodplain in a planned manner, more equally 'shared' by the various groups of farmers and drained away as quickly as possible. Design criteria were developed to govern batter slopes, heights were made consistent on both sides of the river (the height of the Oakhampton levee had to be reduced to achieve this end), crests were sloped to mirror the average gradient of floods in the river, spillways were built into the embankments and control banks were constructed across what became known as the Oakhampton and Bolwarra floodways to reduce flow velocities and thus erosion. In some places the levees were relocated to allow the river more room to 'store' floodwaters, though this could not be achieved to the optimal degree because of the presence of dwellings (for example at Lorn) which would have had to be removed. Compromises were made, the old embankments being taken as a starting point for redevelopment rather than being discarded wholesale. What resulted by the early 1970s is shown in Figure 4.

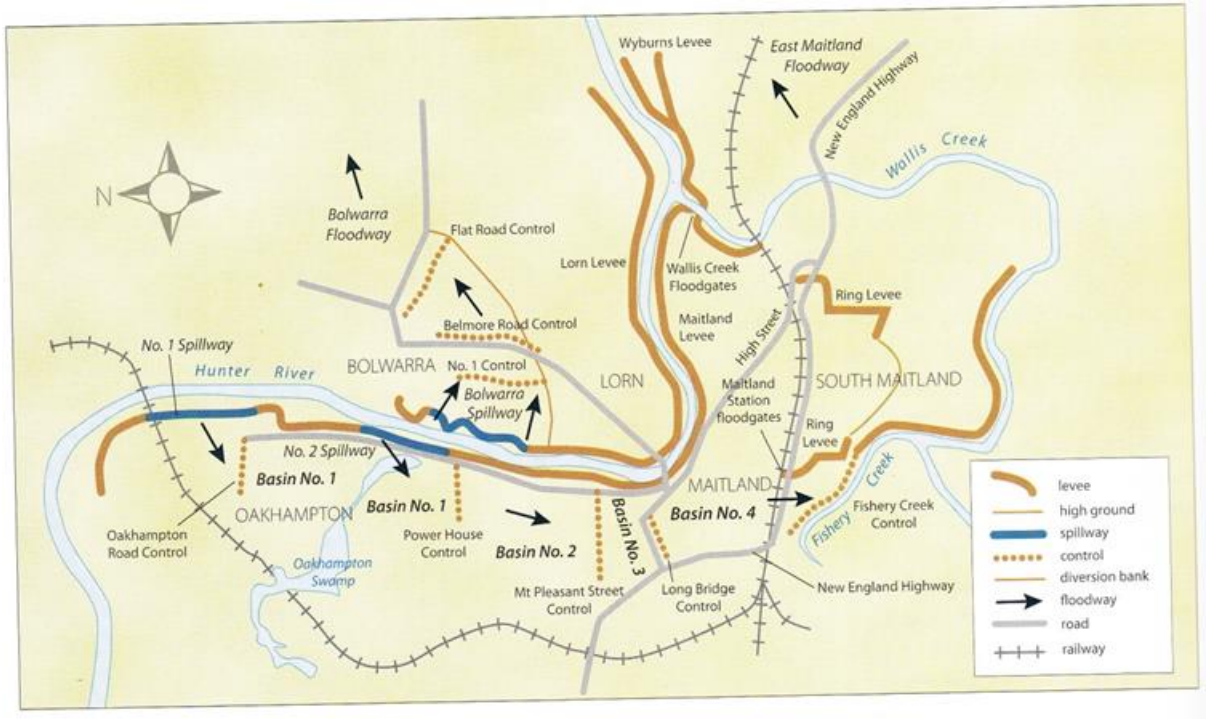

Figure 4: The modern flood mitigation scheme in the Maitland area

Investment much greater than could have been made by the embankment committees was provided by the state government and the Conservation Trust, and the net result has been, nearly five decades after the completion of the Lower Hunter Flood Mitigation Scheme, a much more efficient management of floodwaters. Works were carried out in consultation with the members of the embankment committees, and a unified mitigation scheme was developed over a period of about fifteen years. The Scheme has not had to deal with flooding of the frequency that was experienced in the 1950s, nor anything as severe as the flood of 1955, but it has contained the damage done by the floods that have occurred (including two of the eleven highest floods ever recorded in the Maitland area) while allowing periodic silt deposition on the farmlands. Moreover the degree of repair and rebuilding that had previously been needed after floods has not been necessary.

The embankment committees, including Bolwarra's, retained a role as the 'eyes and ears' of Public Works, reporting on flood damage when it occurred and giving advice on remediation as they saw fit. Members also took opportunities to learn about modern flood mitigation methods: at one stage a Bolwarra group inspected a scale flood model which Public Works had constructed at Manly to simulate floods on the Hunter River. But the Committee met only infrequently after 1957, and in 2004 it wound up its affairs. Its remaining funds, only a few thousand dollars and suggestive of the fact that it had tried to do a big job with little money, went to two local public schools, the Largs School of the Arts and Maitland Palliative Care.

Conclusion

The Bolwarra Embankment Committee was a creature of its time. It began as a wholly volunteer local self-help initiative in a period when flood mitigation was only to a limited degree within the remit of governments, and it garnered considerable support for its activities from its local council and community. Eventually, when the task had become too big for it and new methods were clearly needed, the Committee made way for a public authority with more expertise and a far greater funding capacity. This was a case of local community endeavour seeking to manage a task for which the farmers lacked the necessary technical knowledge but nevertheless doing work which benefited them before being replaced by a governmental body which was able to carry the task much more effectively. Flood mitigation was in essence placed on a sounder, more scientifically appropriate footing by the change. Public enterprise, this instance makes clear, can do better than private.

References

Abrahams, H (1984) A History of the Landscape at Bolwarra, 1801-1983, BSc (Architecture) thesis, University of Sydney

Clarke, M (2015) Devastation, Disaster and Distress: living with floods in the lower Hunter Valley, unpublished manuscript held in the Maitland City library (Maitland City Council)
Hawke, WC (1960) Levee Banks in the Lower Hunter, Hunter Valley Conservation Trust
Hulcome, WE and Harrison, EW (1953) Hunter River flood mitigation: report on the flooding of Louth Park, New South Wales Department of Public Works, Harbours and Rivers Branch
Huddleston, G, Green, EOK and Kaleski, LG (1948), Report of Hunter River Flood Mitigation Committee, New South Wales Government, Sydney
Keys, C (2008a) Maitland, City on the Hunter: Fighting floods or living with them? Hunter-Central Rivers Catchment Management Authority, Tocal
Keys, C (2008b) Making Communities Safer in Times of Flood: the Story of the Floodplain Management Authorities of New South Wales, the Authorities, Wollongong
Mead, N (c2004) Reflections on a Time Gone By: a Look Back at Farming on the Bolwarra Flats Over the Past 70 Years, the People Who Lived There and the Location of Their Farms, unpublished manuscript held by the Maitland City Library
Minutes and correspondence of the Bolwarra Embankment Committee, 1914-2004
Public Works Department (NSW Government) (1892, 1903-04) Annual Reports

About the authors: Chas Keys is a floodplain management researcher and a former Deputy Director General of the NSW State Emergency Service, and Noel Mead is a retired Bolwarra Flats farmer who belonged to the Bolwarra Embankment Committee for about fifty years. They thank Michael Clarke, former Resident Engineer Morpeth (Public Works) for his helpful comments on the draft of the paper.

++

The Maitland and District Historical Society Inc. has a number of publications for sale at the rooms at 3 Cathedral Street Maitland. For details of the publications for sale, or to purchase, please visit the rooms during open hours Wednesday and Saturday between 10 AM and 3 PM. Alternatively, contact the Society on 0438 623 299 or email maitlandhistorical@gmail.com.