Australian Society for Historical Archaeology .....
Newsletter ..... Vol. 6, I April 1976.

I. Editorial

ASHA publication We hope our members enjoy the Newsletter's new look. The new format (A4 paper size) will be used not only for all subsequent issues of the Newsletter, but also for the new Occasional Papers - small excavations and research reports - which will be available at a modest price. The first of these will be an enlarged version of the Mashman Pottery article at the end of this Newsletter (with additional catalogue and illustrations). The second will be the report on the Old Sydney Burial Ground tombs found and recorded in April 1974. The third will be the report on the Hill End recording and excavation work carried out by full-time and adult education students of Sydney University 1974-6.

The Heritage Commission. The orderly transition from the Interim Committee for the National Estate to the Heritage Commission has not yet taken place. Mr. David Yencken, Chairman of the Interim Committee, will remain in office but no appointments have yet been made to the Commission. However, in response to a question in the Senate, the coalition government has confirmed that commissioners will be appointed in due course. It is reassuring that this commitment has been made, but since the powers and finances of the commission may fall far short of the original plans, vigilance and proselytizing from interested bodies such as ASHA will remain as necessary as ever. The key to the immediate future of many urgent projects will only be known when the Budget is brought down in August.

Meanwhile it is pleasant to report that Sydney University has benefited from last year's National Estate grants in two distinct areas. The Department of Fine Arts has received an award for the purpose of a report on the state and the techniques of architectural history in Australia. The Faculty of Arts course, Historical Archaeology, which now runs both an undergraduate second year course and a postgraduate Diploma also received a substantial sum to further training and research.

Cessnock A recent development of some interest concerns the future of the remaining coal-mines, head gear etc. in the Northern Coalfields, Cessnock area. Virtually all the older mining structures and machinery in this area have disappeared. What remains is largely 1900 and later, but is still the oldest to survive at all.

The Department of Mines, for some time concerned about the rehabilitation of these inactive mining sites, appears pleasingly receptive to preliminary thoughts on their selective, imaginative and useful future.

It is worth adding that of the Lithgow mining area the only head gear still surviving is the timber one at Oakey Park colliery, while extremely little trace now survives of any of the Wollongong coal mines.

Friends of the Gore Hill Cemetery are much encouraged by progress to date, following the establishment of a three-man Parliament back bench committee. Willoughby Council has relinquished its control of the cemetery, and it is hoped a new perpetual Trust, with

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members from Institute of Architects, Historical Societies and National Trust will be set up. A Landscape Committee has been formed and working bees in the cemetery will be held on the first Sunday of every month, The Archivist, iss Simms, is anxious to obtain any biographical information concerning those buried there, Phone Hon. Secretary, Mrs. Swain, 42 5551.

II. Forthcoming Events

This year's major Exhibition at the University of Sydney's Macleay Museum will be entitled The Moving Frontier. It should be opened on 15th June. The Museum hours of opening are normally 8.30 a.m. to 5.00 p.m. Mondays to Fridays, but parties can be accommodated at other times by arrangement with the Curator, 692 2274.

This year's ANZAAS conference will be held in Hobart, on May 10th-14th.

An Exhibition of Australian Antiques will be held by the Women's Committee of the National Trust of Australia (N.S.W.) at Lindesay, Darling Point, during October. The Exhibition will be a definitive display showing the range of useful and decorative arts made in Australia during the 19th century. Furniture, pottery, silver, ironwork, needlework, scrimshaw are among the fields covered.

Hill End Excavation There will be a further excavation season at Hill End from Monday 17th to Saturday 22nd May. All ASHA members and friends are welcome. Enquiries Miss J. M. Birmingham, Department of Archaeology, University of Sydney 2006, (692 2763).

Recently opened for public inspection is The Arms of Australia Inn at Emu Plains. The inn, dated to c. 1833, licensed first in 1841, has been restored by the Nepean District Historical Society. It is open on Sundays from 10.00 a.m. to 5.00 p.m. Admission cost is 50 cents, children 20 cents or $1 per family. On display are artefacts collected by the Nepean District Historical Society and rooms furnished in Colonial style.

On Thursday 29th April, Judy Birmingham will give a lecture entitled "Industrial Archaeology Sites and Museums in the U.K. 1976" at Sydney University, Philosophy Room, Main Quadrangle at 8.00 p.m.

On Thursday 24th June Don Godden will give a lecture entitled "Joadja : A Nineteenth-Century Shale Mining Site" at Sydney University, Philosophy Room, Main Quadrangle, at 8.00 p.m.

On Thursday 22nd July, Maureen Byrne will give a lecture entitled "Ross Bridge, Tasmania" at Sydney University, Philosophy Room, Main Quadrangle, at 8.00 p.m.

Elizabeth Farm House, Parramatta, will certainly be visited : in conjunction with this is is hoped to visit Camden Park.

An excursion will be arranged to Yerranderie, the ghost silver-mining town in the Warragamba catchment area.

A visit to Boydtown and Bittangabbee Creek will be arranged, travelling by Airlines of N.S.W. leaving Sydney at 7.05 on a Saturday morning, and returning from Merimbula at 4.35 p.m. on Sunday afternoon. Travel by coach in the area, and stay overnight at the Seahorse Inn at Boydtown.

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III. News Items

Local History Competition Following last year's successful Sydney Morning Herald local history prize, the New South Wales Permanent Building Society has announced a welcome new competition in the same subject. Generous prizes ($500, first prize) have been set aside, and the range of topics - on childrens' local suburb - is wide. Maps, models, films and tapes can be used to supplement the written entry.

Ross Bridge, Tasmania - Maureen Byrne.
I was hired by the Ross Bridge Restoration Committee to work with the Public Works Department in recording the construction of the Ross Bridge.

The bridge was in danger from water seepage; the Public Works Department realised that the only way to save it was by waterproofing. Accordingly the filling material was removed to the masonry below; this was then replaced.

It is interesting to note that the Lennox Bridge at Lapstone N.S.W. has also just had its masonry structure exposed by the N.S.W. Department of Public Works. Here a concrete bridge is being built inside the old stone one; the end result will be that the weight of the traffic will be taken by the concrete bridge but the stone will be all that is visible.

Irrawang : December 1975 - Maureen Byrne
Once again we had a very successful two-week season. A new structure was located and the first excavation here commenced. It is hoped that this is a workshop related to the rectangular kiln dug last December (74/12).

Patterns of brambles and Patterson's Curse marked this structure last August. Although mowing had removed this vegetation by December it was still possible to estimate where it should be and a grid was laid down. Excavation was begun in four squares by students and ASHA members. Much broken pottery was recovered with a great proportion of broken saggars, setters, spurs, and clay rolls; there is also some structural evidence in the form of two posts and some laid brickwork. As well we found the first candlestick, although broken, that we have discovered of King's.

As the whole site was unexpectedly drier than it had been for two years, some work was also done on the northern end of structure H, the other workshop. This area is normally waterlogged and very often flooded. A few queries were solved, the most important of which was locating the northern end of a water drain that runs beneath the structure from the north to th south. It ends in a soak pit that itself needs further investigation. Solutions to old problems usually present new ones.....

This season we also explored a new system of recording. Grahame Wilson, from the Sydney University Film Unit, recorded the site and work in progress on both 16 mm colour film and black and white videotape. It is hoped that in the near future ASHA members will be able to see them.

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Tour of U.K. Sites and Museums on Industrial Archaeology - Judy Birmingham.

A recent three month tour of sites, museums and libraries concerned with many aspects of industrial archaeology proved immensely rewarding, and I hope to give brief descriptions of some of these in this and subsequent newsletters. Particularly interesting were the living-site museums - restorations (where necessary) and re-openings of traditional industrial sites - pumping stations, watermills, mines, iron-working complexes, potteries, presses - only recently closed down.

Some of these are on a large scale, the greatest of them of course the superlative Ironbridge living site, or the much smaller yet well-diversified Abbeydale hamlet in Sheffield. Some again concern one activity only - Cheddleton Flint mill, Wheal Martyn clay mine, Kew Pumping Station or the Gladstone Pottery Museum at Longton.

More conventional museums could still prove unexpectedly stimulating and informative - the Woodstock Museum near Oxford, the Bridewell Museum at Norwich, and of course the Reading Museum of Agriculture. All offered excellent displays of rural crafts and agricultural technology. The Bradford Museum of Technology is well on the way to a superbly informative display on spinning and weaving; and the Stoke Bruerne Waterways Museum has a working canal, locks, bridges, barges, weighbridge and a variety of small items of interest.

These are but a small slice of the riches that the U.K. has to offer - what of the Holman Mining Museum in Cambourne, set in a very forest of Cornish engine houses and their characteristic round chimneys. Or the unique sensation of boarding the SS Great Britain in Bristol with Brunel's fairy-tale suspension bridge floating overhead. Not to mention the fact that most museums have a wealth of publications, postcards, prints and the like that are unobtainable anywhere else. If you are planning a trip to Britain, and are interested in visiting some of these sites, ASHA can send you an annotated list of sites and museums we found impressive (Occasional Papers No. 4, price $1.00 plus 25 cents postage).

Industrial Sites of N.S.W.

However, Britain is by no means unique in having industrial sites. Our index of interesting industrial sites in N.S.W. is growing - not only of the better-known kind such as mining, poppet-legs, chimneys and engine foundations, railway bridges and old mill structures, but also of lesser known examples.

The following random selection is intended to stir the minds of readers to let us know of any more :

Camden : a fine tank, silt dam and stone-lined cattle trough with entry ramp. Also flowing through this area (North from Cataract) a 56-mile long canal, largely stone-lined, built in the 1880s.

Windsor : a timber viaduct for the old railway line.

Hill End : A pair of stone-built cone-shaped roasting pits used to calcine ore before stamping, and a hill-slope chimney of traditional design.

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Blayney : two lime kilns.

Singleton and Newnes : remains of early brick coke ovens.

Moredun : an impressive timber and rubble dam of near-prehistoric construction used to facilitate tin-dredging upstream.

Cadia : probably the only Cornish engine-house in New South Wales with an excellent Cornish-style chimney.

Also scattered innumerably throughout mining sites (where they have not gone for re-use or scrap) are boilers - Lancashire boilers with two flues, and the rarer Cornish boiler with one, often with invaluable foundry names on them.

Please send any thoughts to the Editor (Judy Birmingham) ASHA Newsletter.

IV Book Reviews

John Vader and Brian Murray, Antique Bottle Collecting in Australia. Sydney, Ure Smith, 1975. Recommended retail price $9.50.

No archaeologist running his eye over the contents page of this book could fail to go straight to the chapter "How to Dig". The four full-page photographs of diggers at work (pages 106-110) are enough to show that stratification and other accepted archaeological concepts have no place here. What is even worse is the organisation behind this ransacking of sites. Belzoni had nothing on these people, with their probes, metal detectors, battery operated pulse induction detectors, and garden forks - "The perfect digging implement."

If that seems bad enough, one reads in the Introduction of "Australia's unique lack of any archaeological remains, other than stone-age axe-heads or boomerangs."

Move onto the first chapter and one learns more. Obsidian is made from volcanic heat fusing sand; the first bottles were made in Egypt 4,000 years ago from sand, lime and soda; Roman glass is opaque. Move on again to the chapter on ceramic bottles, and one finds that salt glazing is achieved by throwing salt over the pot; that the Lithgow Pottery closed forever in 1896; and that Thomas Field was making pots in Sydney in 1839. One could go on; the book is liberally supplied with doubtful "facts", and there is no bibliography or referencing system by which to check them.

The photographs of bottles are good, but the captions often rather inadequate. Few provide a date for an illustrated object, while the captions for the frontspiece and the plate opposite p.10 transposed. Text and illustrations are parallel rather than integrated, which can lead to frustration in trying to relate an illustration to the text. The book has an index, but would have been more useful with a listing of bottle manufacturers, bottle types and brands in an appendix.

Of course, this book is not aimed at archaeologists or historians, but at that great band of bottle collectors who go

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out digging up bottles and bringing them home for display on the mantlepiece or in the china cabinet. For them it will provide enjoyment and information. It has many good illustrations and many useful pieces of information, although they are not always to be relied upon. Yet it is a matter of concern to see how much valuable knowledge is being lost by the failure to take account of context, and the failure to record this information. It is surely up to archaeologists and historians to get the message across.

John Wade - Museum of Applied Arts and Sciences.

John Coles, Archaeology by Experiment, Hutchinson University Library, London, 182 pages, 18 illustrations.

Although this book is concerned with experimentally reconstructing the life and techniques of early man, its approach is equally valuable for all periods.

The book is arranged in three sections - food production, heavy industry, and light industry - with a fourth concluding chapter. Coles details the type of experimentation that has been done under each category. His examples range from those concerned with artefacts, as the section on horns (p.162-167), through agricultural techniques such as ploughing (p. 27-34), to houses and house building (p.55-68). An understanding of this type of experimentation is essential to all who are attempting to physically reconstruct past ways of life as well as to those who are interpreting excavated materials.

Even though "Archaeology by Experiment" is basically concerned with the European past from Neolithic to Medieval times, the theory and ideas are applicable elsewhere, not the least to Australian historic materials.

Kenneth Hood, English Pottery - from the Fifteenth Century to the Nineteenth Century, National Gallery Booklets, Oxford University Press, 1966. 27 pages, 22 illustrations.

The physical size of this book plus the time span announced in its title leave one in no doubt that it is intended to be little more than a survey, and a sketchy one at that. The illustrations are good, though restrictive, with concise informative captions. Predominance is, not surprisingly, given to late eighteenth and nineteenth century painted wares; they are however put into a context that reaches down to the beginning of this century. The text is well written and presents a historical breakdown of English pottery development with mention being made of the main pottery and the techniques they developed or introduced. Although not a new book it still remains a useful introduction to the subject.

Phillip A. Rahtz (ed). Rescue Archaeology, Penguir 1974, 299 pages, 42 illustrations.

In this book twenty people involved in RESCUE write on the problems facing them and the solutions reached as they attempt to salvage as much as possible of Britain's past in the face of developers and the environment. The papers, grouped in five sections, range from the theorising behind and background to RESCUE, to specific case studies of York and Scotland, and to the necessity for public awareness and public support. Although the underlying theme of an inability to adequately counteract much of the destruction is a depressing one,

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the final impression one gets is that at last something is being done, that the government is acting, and that the public is becoming aware that it too has a role to play. Australia could certainly learn something for much irreplaceable material will continue to be lost here until legislation for the protection of historic material is passed.

Museums in Australia 1975 Report of the Committee of Inquiry on Museums and National Collections including the Report of the Planning Committee on the Gallery of Aboriginal Australia.

Taking rather less than two years from inception to publication the Committee has produced a readable and competent report which sets out (2.1 - 2.17) some largely unassailable recommendations concerning the setting up of an Australian Museums Commission, the co-ordination of national funding to museums which are to be divided into the categories of major museums, associated museums and local museums (the latter preferably formed into regional networks) and the organisation of a national fund for emergency acquisitions. Stress is placed on the need for funds and training programmes (a post-graduate course in the first instance at the Canberra CAE) to combat the appalling state of deterioration in a very large number of the national collections, together with the creation of the Cultural Materials Conservation Institute for research into the problems of conservation in the Australian climate. Other recommendations concern the role of museums in education, the need to tie museum funding to the proper care of exhibits as well as to a suitable selection of a building, the foundation of a national maritime museum in Sydney (plus two other specialist museums), the formation of a National Register of museum objects of national significance, and certain legislative and tax pro isions.

Elsewhere there is more room for controversy and discussion. The recommendation (2.11) to set up the proposed Museum of Australia in Canberra on the history of man and his environment in Australia, may seem to many a less urgent priority, particularly in view of the devastating statistics on space, conservation and financial resources in existing State museums as set out in Appendix III. Similarly the terse comment on University collections is doubtless deserved, but opinions may differ as to whether the removal of such collections from the teaching area is a better solution than adequate funding to keep them where they are.

Historical archaeology gets pallid encouragement. In 5.14 it is considered to be primarily "a technique for dating artefacts of the colonial era", and in 4.27 it is incorrectly stated to be absent from the academic curricula. The major contribution on the museums of N.S.W. appears to be a far from impartial or informed report, of dubious relevance, on the shortcomings of the Old Sydney Town reconstruction in its first year of operation. This is quoted at length explicitly to influence the Australian Government adversely as this venture (together with Lachlan Village) is "at present pressing heavily for sums of a magnitude which could transform several old and famous Australian Museums".

Whatever views are held by individuals, the philosophy of historical reconstructions (not museums as cited) such as Plimouth

Plantation (Mass.) or Old Sydney Town is normally accorded serious discussion among professionals in the museum world both here and overseas. The omission of fundamental data from the consultant's report on public and student attendance figures, on the nature of the projected Federal 15% investment (not 'hand-out') and on the explanatory literature available to the public is inexplicable, apart from any professional assessment of the O.S.T. educational programme, craft apprenticeship schemes, publications in train by the five-man research unit etc.

It is a matter of some concern that a Government publication can present so biassed a view in what must become a standard work of reference, and the committee's uncritical acceptance of this account must cast at least a shadow on the objectivity and level of enquiry in other less obvious areas of the Report as a whole.

J. M. Birmingham

V. The Mashman Bros. Pottery E. Ungar.

The firm of Mashman Bros. was founded in 1885 at North Willoughby, New South Wales on a site bounded by Victoria Avenue and Jacques Street in what is now called Chatswood. Behind this development lies the story, skill and enterprise of two London potters.

William and Henry Mashman were the sons of James Mashman who was born in London in 1824. (1) At an early age he was apprenticed to Sir Henry Doulton the head of the renowned Doulton Pottery at Lambeth, where he became skilled in the potters art and continued his association with that company after he had served his time. In due course, as was common practice in those days, James Mashman had his sons William and Henry and later John also apprenticed to the Lambeth Pottery where they each learned to be skilled in different aspects of the craft. William became a small ware thrower, Henry a fancy thrower, and John an expert at turning and sticking. (2)

After the death of their father at Tooting in 1876 the Mashman family moved to Leigh on Sea where the brothers were able to find employment at the Regal Pottery where a relative, George Day, was already employed as a mould maker. (3)

Hearing of the opportunities available in Australia for artisans, William and Henry decided to emigrate leaving John behind to look after their mother and the rest of the family until such time as they could be sent for.

The brothers arrived in Sydney on the steamship "Windsor Castle" (4) in 1885 and looked carefully around for a suitable area in which to set up in business. The East and South side of the Harbour seemed to have enough potteries to cater for the needs of the inhabitants but on the North side of the Harbour there was only one small pottery owned by John Boyd situated in Fullers Road, North Willoughby. (5) The brothers decided to inspect this district and were pleased with what they saw. There were plenty of good red clay deposits of excellent quality, virtually no competition and this was an area which seemed poised for a building boom to house the families who were already looking for land away from the bustle of the big City.

They were fortunate to find a site which was ideal for their purpose, the land consisted of three small allotments 50' x 2000' and already had erected upon it a small 8' updraught kiln and a workshed of 30' x 30' which contained two potters hand wheels. (6)

This site had originally been used in 1882 by William and Bradley Willoughby who were brickmakers who remained in business until 1884 (7) when the site was taken over by the potters William and Robert Abbott. (8) They failed to make the business profitable and in 1885 sold the site to a Mr. Alexander Dodds (9) who in turn leased the land to James Sandison a potter who built a house called 'Ferntree Cottage' (10) on the Victoria Avenue frontage and lived in it.

William and Henry Mashman entered into partnership with Sandison and in July 1885 the firm of Mashman and Sandison came into being. (11)

The first output of the new company consisted of Ginger Beer bottles, Bread Pans, Squat Jars and various other kinds of small hand made household utilities, all of which were saltglazed, the clay being dug out of the pottery site. (12) These items were eagerly sought after by the local inhabitants and the Company, having virtually no competition soon began to flourish.

To meet a new demand by drainers and builders who were increasing their activities in conjunction with the settlement expansion on the North Shore the company purchased a small pipe machine driven by horse power, the pipe being flanged by hand. Mosman and Neutral Bay contains many hundreds of thousands of feet of those pipes made long ago, and still as good today as when they were manufactured. (13)

The firm soon increased its land holdings and the Sandison and Mashman Bros. horse drawn drays loaded to the brim with clay were a familiar sight trundling to and from the new clay pits located in what is now called East Roseville. (14)

In response to a request from his now successful brothers in Australia, John Mashman together with his mother arrived in Willoughby in 1888, and took up residence in a second house which had been erected on the Jacques Avenue frontage to the pottery site. (15)

With John Mashman's skill in turning and sticking to aid them, the business expanded at a rapid rate and by 1890 Steam Power was added in order to drive a more sophisticated pipe machine which was imported from England and manufactured by Pullman and Mann which made a pipe complete with the flange in one operation.

In the same year, John Mashman opened a branch manufactory at Auburn, and took over an already established small pipe and red ware works owned by Alfred Poulton, situated along the Parramatta Road near Short Street. (17)

In 1892 James Sandison was induced to sell his share of the Pottery to John Mashman and the name of the Company was changed to Mashman Bros. Victoria Pottery, the brothers having an equal third share of the enterprise. (18)

By a stroke of good fortune a copy of the catalogue issued by the company about this time has survived, and by painstaking inquiries families have been located who still have some of the items illustrated in their possession. (19) In 1895 George Day who had worked with the brothers at Leigh on Sea together with his brother William (who was married to Harriette Elizabeth Mashman) arrived in Australia with Charles Mashman and they all settled in homes around the pottery. (20) George Day worked as a moulder, William Day became a carrier and Charles Mashman became a clergyman although he also at times worked in the family business. (21)

Flushed with their success the Mashman Brothers brought out from England Mr. Thomas Stevens, an artist potter who was employed at the Doultons Lambeth Manufactory where the Mashmans had served their apprenticeship. (22) Stevens created some beautiful artistic stoneware. Amongst his favourite designs were ornamentations executed with gum leaves which were applied to the items before glazing and which left a reddish colour in the shape of a gum leaf under the final glaze. A few rare examples of Stevens' art have been located, together with a beautiful example of a jug

appliqued with rural scenes after the Fulham ware style. Mr. Stevens' creations were very successful but the time was not ripe and the work abandoned. (23)

Gradually many of the utility items manufactured were dropped because of the increased demand for drain and agricultural pipes and for a time the pottery became solely a pipe works.

By the turn of the century all the Mashman family had ceased to live on the pottery site. Henry and William lived in Roseville, (24) John and the Rev. George Mashman (C of E) lived at Auburn, (25) and Charles had moved to Enfield where he went into business on his own account and opened a pottery in Water Street in 1904. (26)

The Mashman Pottery was a major employer of people in the Chatswood area for many years and one photograph taken about 1906 shows 29 employees outside one of the work sheds. (27)

William Mashman died in 1912 and his son Frederick Albert Mashman left the family business to found his own pottery at Kingsgrove and later Sutherland. John Mashman died in 1918 but the Auburn plant still remained under family control, and Henry Mashman died in 1922 with his son Ernest J. Theodore Mashman becoming chairman and managing director of the company. (28)

Gradually over the years new lines were introduced. 1932 saw the commencement of "Regal Art" ware which was designed to cater for the middle income people who were becoming 'house proud' and wanting low cost vases and ornaments etc., with which to decorate their homes. A Catalogue of this era has also survived and most of the lines manufactured have been traced and the names of the present owners recorded. (29) 1932 also saw the production of "Bristol Gloss" ware, the white clay necessary for this product being brought from clay pits in Orange and Gulgong. Items made from this ware included Acid Jars and W.C. Sanitary ware items for which there was a considerable demand. (30)

In 1935 Mr. Frank Mills, who had learned the trade with Fowlers at their Marrickville Pottery, joined MashmanBros. He introduced the mass production methods so necessary for a modern factory to survive and virtually changed what was an improved cottage industry production, into a modern factory. He was frequently sent overseas to study the latest technical processes and developments and to buy, and bring back, machines which would increase the efficiency of the pottery. (31)

In 1957 the Royal Doulton Co. of England decided to open a vitreous china pottery in Australia and sent out a Mr. C. J. Brookes a director, to arrange details of a merger with Mashman Bros. His negotiations were successful and a company known as Doulton Mashman Pty. Ltd. was formed, 1959 saw the complete take over of the Pottery which became The Royal Doulton Chatswood Pottery. (32)

Theodore Mashman died in 1964 and Mr. Frank Mills became the managing director. Shortly afterwards he moved from Chatswood and Royal Doultons to continue in business at the Auburn works with Bill Mashman who was the son of John, one of the original founders.

References Mashman Pottery

1. Info, G. Mashman. Document written by his father, Rev. G. Mashman.
2. ibid.
3. Details supplied by Mrs. Day
4. Photo in possession of F. Mills, Auburn Pottery.
5. Sands Dir. 1884 p.250 Called Blue Gum Creek in those days.
6. Document in possession of G. Mashman.
7. Sands dir. 1882 p. 236
8. Rate Book Nth. Willoughby 1884 Folio 137 p.22
9. Rate Book Nth. Willoughby 1885 Folio 190 p.12.
10. Sands Dir. 1886 p.276
11. Document in possession of G. Mashman (Also Sands Dir. 1886 p. 276)
12. ibid.
13. ibid.
14. Information supplied by Mr. Ronson.
15. Rate Book Nth. Willoughby 1888 Folio 906 p.56
16. Information supplied by F. Mills
17. Sands Dir. 1889 p.148
18. Document in possession G. Mashman
19. Orig. cat. in possession of F. Mills
20. Sands Dir. 1895 p.451
21. Info. G. Mashman
22. ibid.
23. Examples owned by G. Mashman, E. Hewson.
24. Sands Dir. 1902 p.1282
25. Sands Dir. 1904 p. 981
26. ibid.
27. Photo F. Mills
28. Information from Mrs. C. Whitehead
29. In possession of F. Mills
30. Information from G. Mashman
31. Information F. Mills
32. S.M.H. 12.5.1959 p.20

An enlarged edition of this paper, with more illustrations and descriptions of early Mashman pieces and a full reproduction of the Catalogue will be available shortly from ASHA as Occasional Paper No. 3.

Stoneware Chimney Pots, &c.

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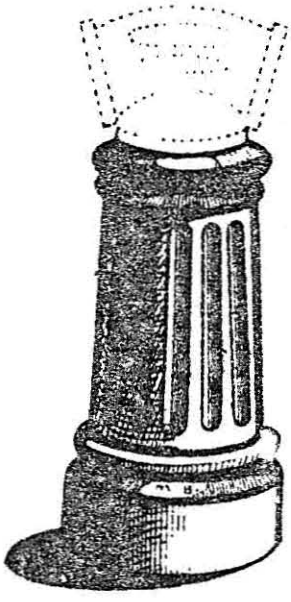

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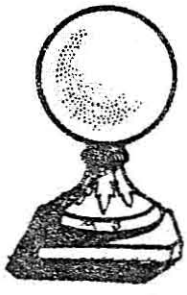

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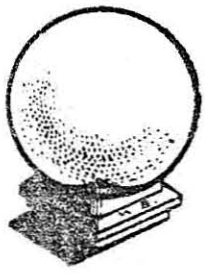
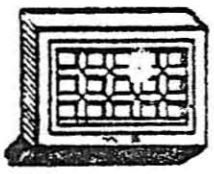


MASHMAN BROTHERS.



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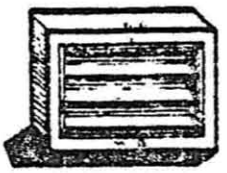

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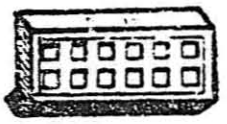

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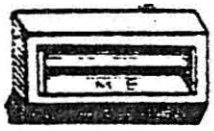

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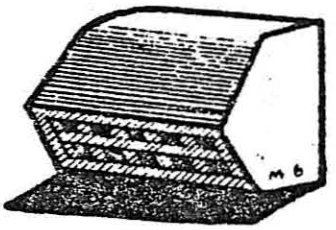

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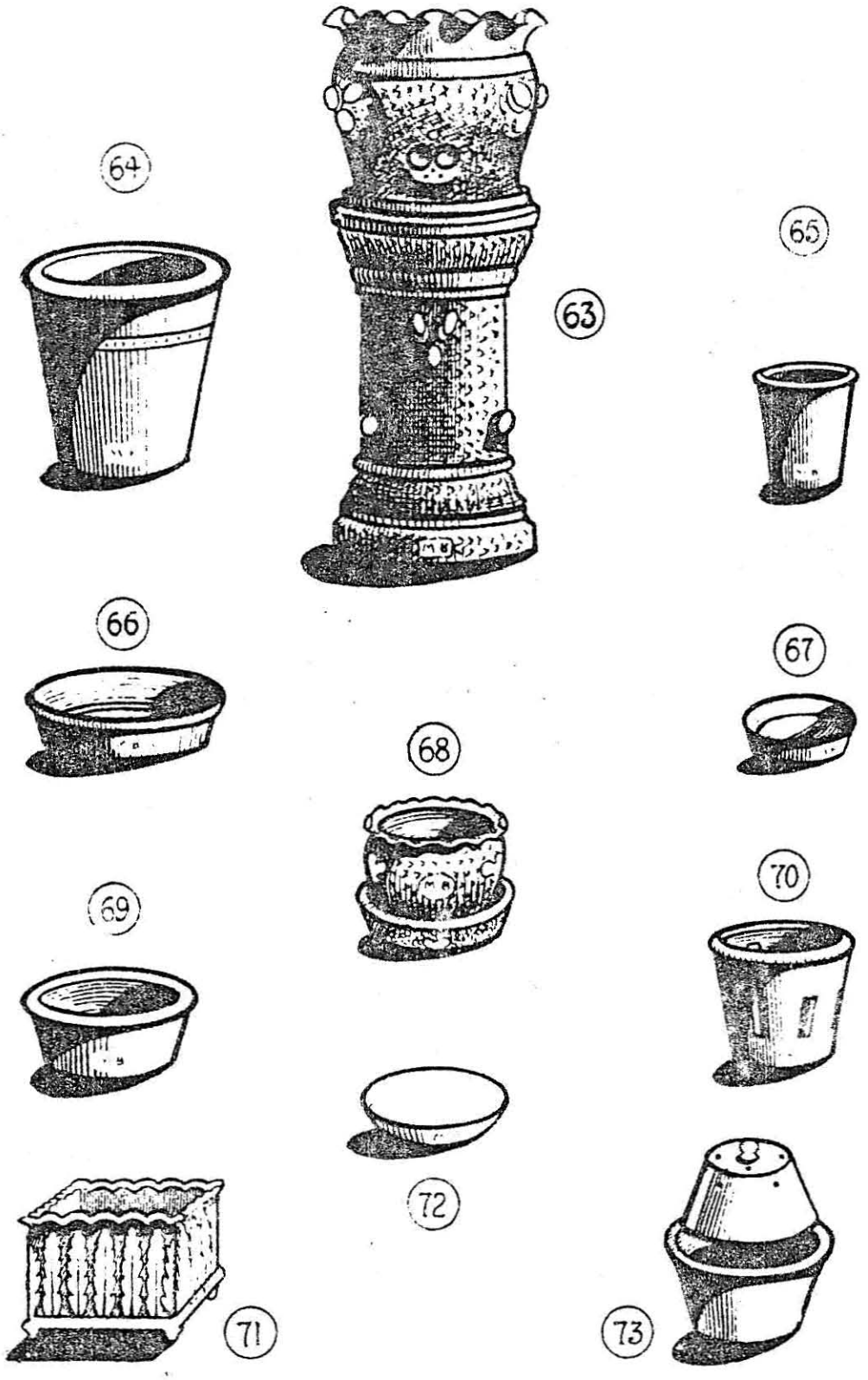
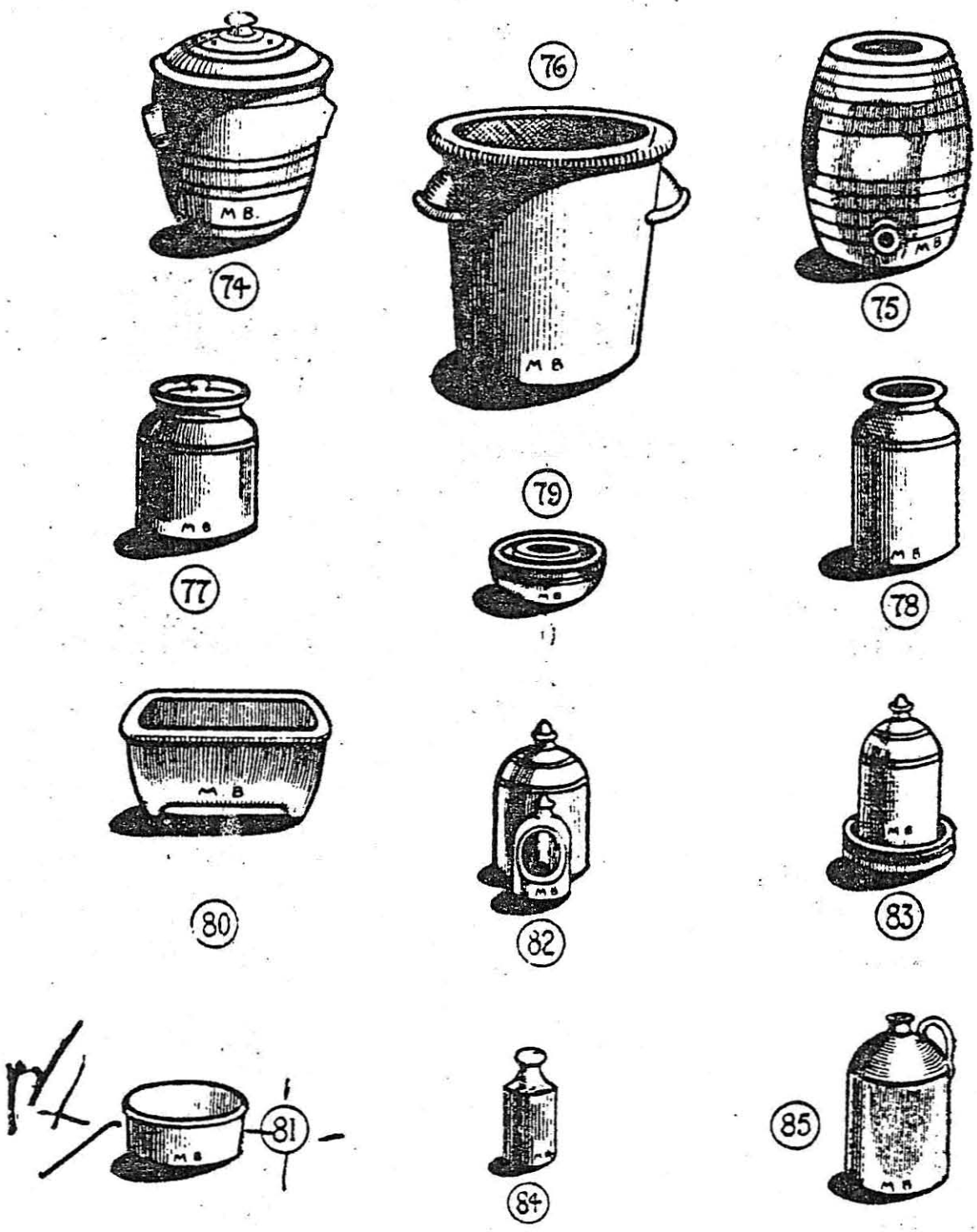
Victoria Pottery, Willoughby. Carrington Pottery, Auburn.

MASHMAN BROTHERS.



Victoria Pottery, Willoughby. Carrington Pottery, Auburn.

Bread Pans, Jars, &c.



Victoria Pottery, Willoughby. Carrington Pottery, Auburn.

Australian Society for Historical Archaeology .....
Newsletter ..... Vol. 6, 2 September 1976.

I. EDITORIAL

Heritage Act of N.S.W. News of the proposed N.S.W. Heritage Act with its heavy penalties for destruction of scheduled historic structures is welcome indeed. It is certainly to be hoped that the Act will have the widest possible coverage, i.e. areas adjacent to historic structures where these contribute information and atmosphere to the site, structures of industrial importance like old foundries, tanneries and waterworks as well as those of greater elegance, as well as sites which may be wholly underground or underwater.

Old Sydney Town Debate on the issues raised by the Museums Report on O.S.T. continues in the recent issue of the KALORI Newsletter. Correspondence is also included below in this issue. Meanwhile a report (March 1976) commissioned by the former Australian Department of Tourism and Recreation offers an objective study of the market potential of"man-made tourist attractions, outdoor museums and historic sites" (by the Economic Research Unit, Middle Park, Victoria.)

News from Overseas Our exchanges with the U.S.A. and Canadian journals continue to yield interesting news. One recently sent to us is the Society for Industrial Archaeology Newsletter from the Natural Museum of History and Technology, Room 5020, Smithsonian Institute Washington DC 20560. This eight or twelve page leaflet is packed with information about American industrial archaeology activities, publications and museums with a good emphasis on 19th century material. The Research Bulletins, and Occasional Papers of the Canadian National Historic Parks and Sites continue their extremely high standard; and R.B. 33 gives an account of the historic park at L'Anse aux Meadows, a Norse settlement of the Viking period (800 - 1060 A.D.) and R.B. 34 of the Fortress of Louisberg, 1713 A.D. and later. The Occasional Papers offer both excavation reports (several of fort and battle sites) and special studies (including canals, lighthouses, table glass, glass beads, clay pipes in specific issues). A new arrival also is the A.P.T. Newsletter (Association for Preservation Technology) and the A.P.T. Bulletin (details Box 2682, Ottawa 4, Ontario, Canada); Vol. V, 1 (1973) sent to us contains industrial archaeology , a study of early U.S. wrought iron hinges, and a discussion of Mr. Smart's Circular Saw Mill c. 1815, also book notices, abstracts, etc.

The Mitchell Library, Sydney A revised guide (April 1976) to the MSS collection is a welcome aid to intending researchers.

Old Sydney Burial Ground 1974 A.S.H.A.'s latest monograph on the emergency excavation of some burial vaults near the Town Hall in April 1974, has now appeared. Orders and enquiries to the Hon. Secretary, A.S.H.A., Department of Archaeology, University of Sydney, N.S.W. 2006.

II. FORTHCOMING EVENTS

On Wednesday 20th October, at 6.00 p.m., A.S.H.A. members are invited to meet at Tooth's Brewery, Broadway, for a preview of the museum that Tooths is setting up. The museum covers a general history of the liquor industry in New South Wales, and they have a display of old bottles (with the background of bottles and glass making in Australia), and old advertising mirrors. Refreshments are available adjacent to the museum in Tooths.

From 9th October to 17th October the National Trust of Australia (N.S.W.) Women's Committee will be presenting "Antiques Australia", a collection of Colonial Antiques, at Lindesay, 1 Carthona Avenue, Darling Point. Weekdays the exhibition will be open from 11.00 a.m. to 5.00 p.m. and weekdays from 11.00 a.m. to 7.00 p.m., with lectures on Colonial Antiques each week day at 1.00 p.m.
Cost is adults $1.50, Children 50 cents, Pensioners 75 cents, Students 75 cents.

On Saturday 6th November, there will be a coach trip to the Hunter for members and friends, visiting industrial and historical sites in Cessnock, Maitland and Newcastle. Meeting at 7.30 a.m. outside Scots Church in York Street, and returning at approximately 7.30 p.m. the same day. The cost will be $7.50 a person, and we would appreciate your telephoning 692 2763 between 9.15 a.m. and 2.45 p.m. any week day to inform us who will be coming. Bring a picnic lunch; we will be stopping somewhere en route.

There will be an excavation at Irrawang in the first two weeks in December. Those interested in coming should let me know on 692 2763.

In March 1977, the Macleay Museum at Sydney University will hold an exhibition on the history of photography. The exhibition will cover photography from the daguerreotype to the holograph and be on display until May 1977. Some emphasis will be placed on early Australian photography and examples from the Holtemann and Kerry collections displayed. The Museum would like to borrow any old photographs or photographic equipment, especially 19th century material. In conjunction with the exhibition, the Macleay will publish a book on the history of photography, and collectors may be interested to know that it will contain a formidable list of all known Australian photographers by decades from 1840. If anyone has items they would be willing to lend, contact Alan Davies at the Museum on 692 2274.

There will be an excavation at Port Arthur, Tasmania during January and February 1977. Volunteers welcome. Enquiries to be addressed to Maureen Byrne, Historical Archaeology, University of Sydney, 2006. Phone 692 2840 or 77 6254 after hours.

III. NEWS ITEMS

"Hobartville" at Richmond has been restored and is now open to the public. Once the home of William Cox jr. (1788-1850), it was completed in 1828 and is a fine example of an early nineteenth century country house.

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III. NEWS ITEMS (cont.)

Eucalyptus Distilleries - Judy Birmingham

Among the more picturesque survivals of an earlier technology are the eucalyptus distilleries still to be found in parts of western Victoria and New South Wales. One which still operates commercially and is also open to the public (on Sundays) is the Hartland distillery a few miles north of Bendigo, the area in which several of those still surviving are to be found.

The Hartland distillery was begun in 1890 by Albert Hartland and Matthew Hodgson, and is still operated by Mr. O. W. Hartland, son of the founder. One process only appears to have changed very recently. The underground vat in which distilling used to take place, twelve feet deep, eight feet in diameter and lined with a double row of bricks is now no longer used. Its heavy iron cover, and the five chained bundles of leaf which were packed in and out of it for each distillation were moved by a small crane turned by hand. This labour intensive process has now been replaced by using the truck which collects the leaf as a mobile vat. It is driven under a lean-to roof, and a tight-fitting cover fits over the back of the truck. Steam is piped into this from below, just as in the brick-lined vat from an old Cornish boiler superannuated from the gold-fields and fuelled by the dried residue of leaf after distillation.

An outlet pipe from the upper part of the vat (or truck) leads via the adjacent dam into a small receiving shed. The dam acts as a cooler, and the condensed steam and oil vapour flow out into an oil can sunk into the ground.

The leaf used in this distillery is the blue mallee, a leaf of moderate oil yield but of high medicinal value. The yield is 20 lb. of oil per 1,000 lb. of leaf, but the percentage of cinede, the campherous pharmaceutically-valued component, is 80%. Other varieties distilled in this area are the red mallee and the blue gum.

The economics of the processes are interesting. The Hartland distillery has its own blue mallee lands extending some 12 - 14 miles, which it systematically harvests by mechanical means. About five acres is stripped at a time to yield a truckload of leaf, which can then be distilled in about four hours, the whole process taking a day. One truckload yields from ten to thirty gallons of oil according to quality and the current price is $21.60 per gallon.

The blue mallee can only be stripped once every two years or it will die. The mechanical strippers now used are heavy duty cutters; previously hand cutters were used.

The distilling process is considered completed when the flow of oil and water in the receiving shed changes from about 80% oil (which floats on top) to about 10% or less.

That the "mobile vat" system of the truck distillery is gaining ground is clear. A similar example can be seen at Inglewood (north west of Bendigo). Equally it seems likely that the brick-lined

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subterranean vat of considerable size (holding 1 - 2 tons of leaf producing 80 - 100 lb. of eucalyptus oil each load) was common in the same region earlier.

Another smaller scale of distillation is mentioned as being common in 1911.* Two 400 gallon iron ship's tanks were coupled together, each holding about 800-1,000 lb. of leaf. Eighty gallons of water was placed in each tank, a grid being raised about 12" above the bottom. A fire was then lit directly beneath and the vapour led off as described above through an iron pipe and condensed. Distillation time for this process varied from 3 to 18 hours. These tanks were small enough to be mobile following supplies of leaf; the larger fixed tanks seem to have come into wider use about 1911 when eucalyptus oil began to be used for the flotation process of mineral separation in Broken Hill and elsewhere. One of these for example was the iron still of Mr. Burgess in Kangaroo Island which held 5,000 lb. of green leaf. Using E. cneorifolia, a slightly higher-yielding leaf than E. polybractea also used for medicinal purposes, Mr. Burgess was able to distil 100 lbs. of oil in favourable conditions from each distillation.

It seems likely that Burgess' still on Kangaroo Island still exists if indeed not actually working. At least three are still operating in the Bendigo-Wedderburn-Inglewood region of Victoria, another in the environs of Melbourne, another in Gippsland, and at least one more near West Wyalong in south east New South Wales. Not all these distilled blue mallee; the New South Wales varities are mainly the industrially useful E. dives and E. phellandra rich in phellandrene (used in disinfectant), thymol and menthol apart from West Wyalong where blue mallee is abundant.

Anyone who can should attempt to record such distilleries in detail - full ground plan of lay-out, plus photographs and/or drawings of each item of equipment or machinery; then a simpler flow chart of the processes involved, plus an account of the sources of leaf, methods of collection, frequency of operations, transport of product, and capacities and yields of all containers. Note fuel and recycling of waste, and the variation in economic viability.

* Smith, H. G. Present State of Eucalyptus Oil Industry, Techn. Gaz. of N.S.W. August 1911, p. 20-22.

Courses in Marine Archaeology

The Western Australian Museum is investigating the need for a training course in maritime archaeology. Full and part time courses at a local institution are under review.

The courses under consideration would exist at three levels :

. A course specifically in maritime archaeology, involving subjects such as survey and exploration, excavation, recording techniques, recovery, documentation, cataloguing, publication.

. An introductory course in history, which would be taught with a specialised course in maritime history, and

. A course in materials science to provide an understanding of the properties and conservation needs of maritime materials.

It is proposed that the course be made flexible enough to allow students to pursue all three aspects or to specialise. Practical experience would be gained and students would be encouraged to carry out their own projects.

The museum has prepared a questionnaire to estimate potential interest and demand for the courses, interested people can write for the questionnaire to : Western Australian Museum, Francis Street, Perth, W.A. 6000.

Excavations of Elizabeth Farm House, Parramatta : August 1976 - Maureen Byrne.

A group of university and W.E.A. students spent four very profitable days last August excavating part of the north lawn at Elizabeth Farm. David Frankel had investigated part of this area in 1972 but all of his trenches lay to the west of the centre of the front. The trenches dug to the east revealed a parallel system of garden wall as well as a collapsed drain.

Before publication of the results of the excavations in this area more digging must be done here. This will probably take place before the end of the year. The results of these excavations, along with an historical account of the development of the house written by Ian Jack, will be published in an A.S.H.A. monograph early next year.

Macleay Music Museum of Australiana

Sunday September 26th will be long remembered by those fortunately present in the Great Hall of Sydney University for "An Evening of Colonial Delights". Lilting waltzes, gay gallops and the "Chusan Polka" written to welcome the first ship of the first Steam Navigation Line to Australia provided fine local music for an audience who came to enjoy elegant nostalgia in a handsomely decorated setting. It was surely a grand occasion too for the ghosts of those who inaugurated the Great Hall in 1859 with a weeklong Music Festival - Madame Sara Flower was one who was charmingly reimbodied on 26th September 1976 by Miss Margot Adelson singing "Shells of Ocean", once taught to Dame Nellie Melba by her Mother.

"Colonial Delights" were presented by the Macleay Museum to launch their proposed Music Museum of Australiana - Aboriginal, Colonial, Ethnic - and we wish them many more evenings such as this.

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IV. BOOK REVIEWS

Although the following two books are not new they form a useful pair of handbooks for the guidance of those wishing to do some practical work in the field of industrial archaeology. NB it should be appreciated that the term field work in this context does not include excavation or indeed any form of disturbance of the structures concerned.

Heinemann Educational Books/Schools Council, Industrial Archaeology for Schools Project Technology Handbook 10.

Primarily intended for school teachers in England where such studies are widespread, this small book sets out succinctly the aims of I.A., types of project to be undertaken by all ages of school children and suggested frameworks within which to carry out selected examples. It is equally applicable to adult groups, or individuals, and can with a little adaptation be used in Australia. Projects range from recording abandoned industrial activities to those still operating with traditional techniques. Examples given include brickworks, lime kilns, horse-drawn ploughs, timber yards, roads and bridges, old shops, water pumping stations and many more. Recording methods suggested comprise photography, measured drawings, models, tape recording, cine photography (or video tape). The use of flow charts to record processes as well as detailed methods of recording structures is discussed. For those who want to carry out either long term or emergency recording of industrial complexes this book is invaluable.

J. Kenneth Major, Fieldwork in Industrial Archaeology, B. T. Batsford Ltd., London and Sydney.

A valuable hand book of advice on techniques on observation and recording in industrial archaeology. The chapters on types of field work, making measured drawings, photography for the industrial archaeologist and publication of the results of field work are especially valuable. There is also a useful bibliography.

Museums in Australia 1975

Further to the review of the Museums Report in the last issue we have been asked to publish the following letter from Professor D. J. Mulvaney, Department of Prehistory and Anthropology, School of General Studies, The Australian National University.

"There is a serious error of fact in your reviewer's comments on Museums in Australia 1975 (Newsletter 6(1976) p.8). I trust that you will publish this correction, as otherwise readers may draw a most erroneous conclusion.

Your reviewer refers to 'the projected Federal 15% investment' in Old Sydney Town.

In fact, the Australian Government purchased a 25.5% equity in the company with an investment of $317,000.00 in 1974. (Department of Tourism and Recreation news release, 21 April, 1974).

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Subsequently, and at the time the Committee of Inquiry was conducting its inquiry, it was announced that another $3.5 million was to be invested over the next three years (Department of the Prime Minister Press Statement 435, 26 January, 1975).

In 1974 Old Sydney Town also received a loan of $700,000 which at first was interest bearing, but subsequently was made interest free. During financial year 1974.75 a further $1,000,000 interest free loan was advanced, and this was later increased to $1.2 million. Consequently, the present Australian Government interest free loan amounts to $1.9 million.

Some of these transactions were described and commented upon adversely in the Report of the Auditor-General... for the Year ended 30 June, 1975, pp 122-3.

(Reviewer's note : I am grateful for the above information: the fact remains that it would have been helpful had this kind of detail been included in the original report.)

V. ROASTING PITS AT HILL END

One of the most unusual industrial sites in New South Wales is the pair of roasting or calcining pits or ovens some seven miles from Hill End. Built of shale and sandstone with a very soft almost limeless clay mortar they are built against a hill slope to facilitate loading, and consist of two conical pits with gratings at the bottom. Each has a small arch opening below this; their reported use was for heating the quartz before crushing to make it brittle enough to go easily through the battery.

In 1974 the area around these pits was planned and investigated by a team of archaeological students from Sydney University, at a time when we knew very little of some aspects of gold mining technology. Since then we have learned more. A chance visit in Britain to the Cheddleton Flint Mill in North Staffordshire revealed a pair of flint calcining kilns of the late 18th century obviously closely comparable in both function and design to those at Hill End. These kilns were built against the canal bank in a stone emplacement. Flints were loaded by crane from canal barges into the top, with alternative layers of flint and coal. Each burned for about three days, and the calcined flints were drawn from the bottom of the kiln. One hundredweight of coal was used for one ton of flints. The calcined flints were then taken by skip across to the water-powered flint mill, the final product being used as an additive in cream-coloured earthenwares. Such calcining pits were certainly not unusual in Britain for various processes, including ore-roasting.

Another chance find was the discovery of more roasting pits at Maldon in West Victoria. Here at the north side of a small gold mining town which originated in the Tarrengower gold rush of 1853 is a set of four calcining kilns or ovens again built against a small slope, near the end of a well-known feature called Carman's Tunnel. These again are of the same essential design - conical pits in a stone emplacement, with a grating and emptying hole at the bottom. At present the date of these is not known. The town ceased gold production in 1926. We have heard of another set of such ovens in Maldon, but confirmation and details are still awaited.

Obviously there are more such calcining pits to be found in the many gold towns of Australia, and considerably more to find out about them. It is particularly useful to have Aedeen Madden's thoroughly researched contribution on at least one of these sites, the Hill End Roasting Pits.

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USE OF MACHINERY ON THE GOLDFIELDS OF LOUISA CREEK AND TAMBAROORA, NEW SOUTH WALES, 1851-1855

Aedeen Madden

A factor which was to have a considerable influence on the development of mining law and technology in Australia was that the first finds of gold came not only from river beds, but also from veins of auriferous quartz. The first public report of an alluvial gold find was made at Bathurst on 6th May 1851, by Edward Hargraves, (1) and this was followed very quickly by the announcement of the discovery of a "great Nugget" from a quartz vein on the land of Dr. Kerr at Louisa Creek, published on 16th July 1851. (2) The first quartz mining claims were filed on 14th August of that year (3) and a company was formed to exploit the "Kerr Vein" on 1st September 1851, the Great Nugget Quartz Vein Mining Company, formed by Gideon Scott Lang (better known in later years for his secessionist activities) and a number of prominent businessmen, among whom were Robert and Edwin Tooth, and T. S. Mort. Regulations on the mining of quartz veins were very strict right from the start and appear to have been enforced with some severity. One requirement was that the claim should employ at least twenty persons, or machinery of not less than three horse-power. (4) Many companies therefore claimed in their prospectus to have, or to be about to obtain, machinery, but, nevertheless, it seems that few of them ever erected any. The Great Nugget Co. for instance, claimed in its prospectus to have "a steam engine of six-horse power for experimental purposes" and had asked the Gold Commissioner for an extension of time in order to import machinery from England. (5) As the extension was refused, it would seem that no machinery was ever used by this company which eventually folded, as did so many other "bubbles". (6)

The machinery required to extract gold from quartz is basically designed to reduce the bulk of the ore, so as to separate the very small quantity of gold from the siliceous material. In the early days this was done by crude stampers, or "batteries", whose function was to reduce the ore to the point where the gold could be readily picked out, in much the same way as it is sieved from sand in placer mining. A preliminary operation, which seems to have been employed in Australia with some success, is to fracture the ore by heating the quartz in "calcining kilns", then quenching it quickly with cold water; the quartz granulates, through a series of both physical and chemical effects, and is thus reduced to more manageable proportions. The principle is similar to the well-known primitive method of mining by fire-setting, where heat is applied directly to the mine walls; the use of the method for the extraction of a mineral from ore was known in the 19th century (and had indeed been mentioned by Agricola in 1556) but it was not described in detail in the mining manuals of the time. (7) It is possible therefore that the "Roasting Pits" now visible at Tambaroora were designed expressly for Australian conditions. There seems little doubt that the man responsible for their building, and possibly also for their design, was Edward Spence, manager of the Colonial Gold Mining Co. which was operating at both Louisa Creek and Tambaroora in 1854. (8)

A peculiarity of the Tambaroora machinery was that it was erected on ground leased especially for that purpose ("Thirty acres of land on Fighting Ground Creek 1½ miles N. of Dirt Hole Creek, in order to erect a crushing mill and to purchase the auriferous quartz from claim Holders or grind from them"). (9) Work started on 4th May 1854:

"The Co. are building crushing works on a large scale, on this claim" (10) and the machinery was reported to be in "full operation" by the next year, with a yield of "about an ounce of gold to a ton of quartz". (11) The Company ran into difficulties shortly afterwards, however, (12) and is said to have folded in 1856. (13)

I have not been able to trace any contemporary description of the Tambaroora kilns but kilns mentioned in a rather grandiose account of the Colonial Gold Company's works at Louisa Creek: "An enormous dam has been constructed, holding back some thousand of tons of water. Permanent kilns for calcining the quartz have been made, and numerous buildings erected. The labour under ground has also been considerable, and numerous piles of the matrix await the commencement of regular operations, the principal aim hitherto having been directed to one end, of preparing everything for continuous working, when once enabled to commence crushing." (14) The machinery was said to be capable of crushing two tons of quartz per hour, which compares very favourably with the performance of Messrs. Cole and Company's machinery at "The Royal Vein" (Dirt Hole, Tambaroora), which was grinding only one ton a week "the gold in this vein being so fine that the matrix must be completely pulverised before the quicksilver can do its work". (15)

An uniquely complete description of the Colonial Gold Mining Co's Tambaroora battery is available from 1855: "A large and capacious dam has been erected and a reservoir formed, which the recent heavy rains have filled with excellent water. A number of well-built substantial huts for the men to reside in surround the works, giving them the appearance of a village. The men, thirty in number, employed on the works are of a superior character, good mechanics, and thoroughly masters of their trades. The engine is of 16 horse power, performing about 40 revolutions a minute, and the quartz is crushed by stampers placed perpendicularly in a strong wooden frame. A nut of the fly-wheel shaft drives a spare wheel to lessen its speed. This shaft is attached to the drum or barrel, that is placed horizontally in front of the stampers. The drum is studded with sappets that raise the stampers vertically by its rotatory motion. Each stamper, and there are 12 in number, weighing two hundredweight each, rises and falls 55 times per minute. The quartz is reduced as fine as powder, and the gold separated from it by its being washed in toms, the same as alluvial soil. A temporary trial of the engine and machinery was made last week; it worked exceedingly well and gave great satisfaction. When in full working order, it will crush from 12 to 18 tons of quartz in 24 hours." (16)

The fate of this equipment is unknown, but clearly Spence had considerable ambitions for it, ambitions which were undoubtedly fed by the discovery of the quartz vein at Hawkin's ridge (now Hill End). (17) This was, it turned out, the last of the Tambaroora strikes: it was made in January 1854, and the claim leased by the publican of the "Bald Hills", a man described variously as Joseph Withers or Joseph Wythes who appears to have started a company in March 1854 (18) but later sold his claim to S. B. Sergeant, a Bathurst solicitor, who had prospected at Ophir at the very beginning of the gold rush, (19) and who formed, with much publicity, the Tambaroora Cornish Quartz Vein Company in February 1855. (20) This company also seems to have failed; at any rate by June 1855 it was reported that "at the Bald Hills very little is being done". (21)

The frequently made claim that Sergeant had a seven-mile lease, from Tambaroora to the Turon, is completely unfounded: a Gold Commissioner's

letter of 1858 refers to it as the usual 160 acre lease. (22) Similarly there seems to be no evidence that Sergeant ever constructed any machinery, although he of course promised to do so, as did every other would-be mining entrepreneur. As the account of the Tambaroora battery quoted above also refers to Sergeant's company ("Two of our principal quartz ranges will be developed on a gigantic scale - one situated on the Dirt Holes by the Colonial Gold Co. -- the other in the vicinity of the Bald Hills, by a Bathurst Company, now in the course of formation.") (23) it is very likely that both accounts became confused: possibly also the statement in the original report of the Hawkin's ridge discovery that "The locale of the new discovery is not more than 300 or 400 yards from the head of the Golden Gully .. and is supposed to be a continuation of the same vein or 'lead' extending thence to the Turon" may be the basis for the seven-mile lease story. (24)

Footnotes

(1) Edward Hammond Hargraves, Australia and its Goldfields, London 1855.

(2) Correspondence Relative to the Discovery of Gold in Australia (Colonial Papers) London 1852-1855, I, 35.

(3) Papers of Gold Commissioner (Mitchell Library 4/6975.2), Applications for Auriferous Quartz Veins. Documents Nos. 1-22. The first claim was claimed by Charles Blakefield (No. 17), and R. J. Want made the second, with Lang claiming third; a dispute arose between Lane and Want in January 1852, and Want then wrote a full account of the day's claims to the Colonial Secretary (Document No. 16). This file also lists the transfer of most of the early claims to the Great Nugget Co. in 1852.

(4) Correspondence (above n. 2) 29th March 1852, Additional Regulations.

(5) Applications (above n. 3) 29.7.1852 and 30.8.1852.

(6) The Company was in trouble by 1853 (Correspondence..II, 323) and was taken over by the Colonial Gold Co. (Simpson Davison, The Discovery and Geonosy of Gold Deposits in Australia, London 1860, Appendix E, 431.

(7) Agricola, De Re Metallica, trans. Hoover and Hoover, London 1912. The calcining of quartz is not mentioned in the Lectures on Gold (J. Jukes and others), London 1852. See particularly Lecture 4, on the dressing or mechanical preparation of gold ores, by W. W. Smyth. Calcining was used in 1858 at the Port Phillip and Colonial Gold Mining Company's works at Clunes, as reported in The Star newspaper of 7th and 8th April, and was recommended, on the basis of the Victorian experience in Henry Rosales' Origin and Distribution of Gold in Quartz Veins, Melbourne 1861, 21-22.

(8) Correspondence, III, 63, Letter from Green, Commissioner of Crown Lands to Colonial Secretary, 17.5.1854. Spence is mentioned in the Commissioner for Crown Lands, Letters to Colonial Secretary 1851-52 (Mitchell Library 4/422), letter No. 119, from J. R. Hardy, August 1852, "Spence has sent in an application wherever he hears that there is a piece of visible quartz", and again in the same month, letter No. 145, in

relation to the need to provide regulation for alluvial lands as the large English companies represented by Spence and others are losing time. In the Applications (above n. 3) for 20.7.1852, Edward Spence is described as Superintendent of The Australian Gold Amalgamation Co. (Tambaroora).

(9) Mines Department. Letters from Gold Commissioners, 1853-1875 (Mitchell Library 2/3511), Commissioner Green to Acting Surveyor General, letter No. 54/110, 1.3.1854.

(10) Green to ASG, 54/163, 24.10.1854.

(11) Sydney Morning Herald 19.5.1855.

(12) Sydney Morning Herald 9.6.1855.

(13) Davison (above n. 6)

(14) Green to Colonial Secretary. (above n. 8)

(15) Green to Colonial Secretary, (above n. 8)

(16) Bathurst Free Press and Mining Journal, 17.2.1855. This and other items quoted appeared in a regular column, "Mining Intelligence", some of which were (with spelling corrected) reprinted in the Sydney Morning Herald. This article appeared in the Sydney Morning Herald of 23.2.1855.

(17) Bathurst Free Press .. 7.1.1854 and Green to Colonial Secretary, (above n. 8).

(18) Bathurst Free Press .. 4.2.1854, 25.3.1854, 3.2.1855. See also Green to ASG (above n. 9), referring to a claim at Golden Gully ceded by Wythes to Sergeant, "who neglected to renew his application and another party having made claim to it the matter has now been referred for His Ex. Gov. Gen's decision", 24.10.1854. I have been unable to trace this dispute in the Governor General's papers.

(19) Hardy to Colonial Secretary (above n. 8), 28.12.1852 (letter No. 179) refers to a Waterhole claim by "a Mr. Serjeant". The waterhole is also referred to in Letters received by the Commissioner of Crown Lands for the Gold District (5.1.1852 - 31.12.1852), Mitchell Library 2/2174, Letters 530-532.

(20) Bathurst Free Press .. 3.2.1855.

(21) Bathurst Free Press .. 9.6.1855.

(22) Commissioner for Crown Lands. Letters to Assistant Gold Commissioners (Mitchell Library 4/421) Fitzpatrick to McLean, Sofala, 12.11.1858.

(23) Above n. 16.

(24) Bathurst Free Press.. 7.1.1854. The seven-mile claim story is given in N.S.W. Dept. Mines, Geological Survey, Mineral Resources, No. 27: Hill End and Tambaroora Gold Field (L. F. Harper, 1918). H. Hodge attributes the building of the "Roasting Pits" at Fighting Ground Creek to the company formed by Sargent (Historic Hill End and its Environs, Newcastle 1969 and 1973, 41) but as he also mentions that this was "the first reef-mining company in the neighbourhood when it commenced operations in 1856", his information was obviously inadequate.

Historically Interesting Deep-Sea Wharves in Sydney

Sydney is an estuarine harbour with only a small number of bays on the southern side of the harbour easily accessible to main roads, railway and the central city. The pattern of settlement and the nature of the Australian economy resulted in intensive use of the natural bays from the early nineteenth century and almost all the sites now in use have a long history of successive restructuring and land reclamation to provide additional facilities. Changes in volume of shipping, sizes and types of ships, and volume and types of cargoes; the necessity for quicker turnarounds; facilities for emerging specialised trades such as coal, frozen meat and wheat at the end of the nineteenth century; and ageing of existing structures; are some of the factors which have influenced rebuildings. The result has been that the visible features of Sydney's wharves now catering for deep sea shipping are all twentieth century, except for Circular Quay 7A and 7B built in 1898, and interesting structures such as the Iron Wharf, Darling Harbour (built 1872-4), have disappeared. Changes taking place within the shipping industry at present are as devastating in their demands for rebuilding as those occurring at the end of the nineteenth century.

Control of the wharves is vested in the Maritime Services Board, a statutory body dating from 1936 formed from the Sydney Harbour Trust (which was set up in 1900/1 to provide complete government control of the Harbour), and the Department of Navigation. The Board is responsible for shipping facilities at the ports of Sydney, Botany Bay and Newcastle and for control of navigation throughout New South Wales.

The wharves remaining in Sydney (with the one exception noted above) fall into three chronological groups which are not fully representative of wharf building in Sydney. The groups are :

(1) World War I Vintage, constructed immediately before or shortly after the War.

(2) Post-World War II vintage.

(3) Modern container, roll-on-roll-off, and Circular Quay passenger terminal.

Wolloomooloo falls within the first group.

The wharves which were built immediately before or after World War I are all of a distinctive type of modular timber construction, which has proved easy to repair, alter or add to within the modular dimensions. The wharves are constructed of turpentine piles at 10'0" centres, above this is a 14" x 14" headstock and 12" x 12" girder at 3'4" centres, then timber or concrete decking. The sheds are framed with timber columns (or on stronger wharves with iron columns) at 20'0" centres infilled with a combination of timber weatherboards, galvanized iron or glass windows. The floor of the upper deck is typically supported on trusses formed with a timber beam as upper chord and an adjustable steel tie as the bottom chord. The topography of each bay has influenced the approaches and design of wharves.

There was very little equipment installed at any of the wharves; ships used their own derricks for unloading.

The wharves still standing at the time of writing are :

Woolloomooloo 2-4 of which 2 and 3 were originally built in 1897-8 and the complex formed when they were lengthened and remodelled in 1913. Cowper's Wharf Road originally served as a central roadway between the single storey unlined timber sheds behind the quay and the sheds on the eastern side of the road. These wharves have no unique features but they nestle under a high cliff and do not form a visual obstruction.

Woolloomooloo 6-9 commenced 1910, completed 1913 and later extended by 100 feet. These are the longest wharves of those considered being 1040 feet long and 203 feet wide. There is a central concrete roadway 53 feet wide flanked by double storied unlined timber cargo sheds 40 feet wide. There is a deck to ships of about 35 feet. These wharves have a unique set of eight pairs of electrically driven freight conveyors which are as originally installed. A modern passenger terminal dating from the 1950s has been built into No. 7 wharf and passenger and cargo gantreys installed. Gate posts (two damaged) dating from the earlier Cowper's Wharf are still standing. They were cast at Hudson Bros., Clyde; one set is dated 1889, the other 1897. These wharves form a visual obstruction to the Bay although the view has been cleared a little by the demolition of Nos. 5 and 10 which were quays abutting Cowper's Wharf Road.

Walsh Bay 1 - 9 built at different periods from 1913 (Nos. 8 and 9), 1918 (Nos. 6 and 7) and 1922 (No. 1). No. 10, now being demolished, was built in 1906. There is no uniformity in appearance from the land, most sheds have brick facades to Towns Place or Hickson Road. From the water they are more uniform in design forming a set of double storied unlined timber sheds. These wharves nestle under a high cliff which required substantial excavation at the time of building. They do not form a visual obstruction from the Rocks area. The cliff has been exploited with an upper level approach from Pottinger Street for the four pairs of wharves remaining and a low level road cut from rockface to form Hickson Road. Number 1 Wharf has a fine observation deck to the main harbour. The dual level approaches to the wharves was to facilitate the movement of goods on and off the wharves simultaneously and thereby reduce the length of time spent in port by the ships.

Jones Bay or Pyrmont Nos. 19-21 and 22-23 built in 1919. Nos. 18-21 are double storied iron and timber sheds in close proximity to a fine set of navy Royal Edward Victualling Stores. These wharves are of heavier construction and have a filled central roadway at two levels. Lighting to the lower level is partly natural with oval light wells protected at the upper level and lined with white tiles to the bottom level. The deck to shipping has a railway. Nos. 22-23 have single storey timber sheds.

Each set of wharves represents the general pattern of wharf building introduced at the end of the nineteenth century in Europe and a little later in Sydney. The distinctive features are :

Woolloomooloo 6 - 9	electrical freight elevators
Walsh Bay 1 - 9	high and low level vehicular access, verandah deck on no. 1, complete set of wharves in close proximity isolated from modern wharves.
Pyrmont	railways on decks, filled central roadway, heavier construction.

The sub-committee recommends as follows :

Woolloomooloo 2-4 to be given a recorded listing.
Woolloomooloo 6-9 to be given a recorded listing.
Woolloomooloo 5 and 10 (demolished) to be filed.

Walsh Bay 1-9 to be classified
Walsh Bay 10 (demolishing) to be filed.

Pyrmont 19-21 to be recorded.
Pyrmont 22-23 to be recorded.

We would like to draw to the committee's notice the two organisations actively interested in the future of these buildings. The actions of one will determine their future. The Maritime Services Board is concerned with providing facilities for a large modern port and, although in the past it has had officers with an active interest in the port's history, it is not conscious of its place in Sydney's industrial history. From the Board's point of view these buildings are obsolete and it may find it difficult to find sympathetic maritime alternatives for them. Woolloomooloo is a less vital site in the growth of the Port of Sydney because it is the most easterly bay in an increasingly residential area without direct roads to industrial areas. With the decline of passenger shipping except at peak seasons for cruise ships it is unlikely that there will be demand for modern passenger terminals. Woolloomooloo 7 and Pyrmont 21 both have passenger terminals which are used at the peak season and they are therefore not likely to be demolished in the near future. Walsh Bay does not have this protection.

The other organisation with a strong interest in the future of the wharves, because they effect their environments, is the Sydney City Council. It may wish to see Walsh Bay retained because of its close proximity to the Rocks area in which historical interests are already well represented. Woolloomooloo 6-9 may be of less interest because of its interference with the enjoyment of the harbour.

The presumed interests of these two bodies did not influence the sub-committee's recommendations.

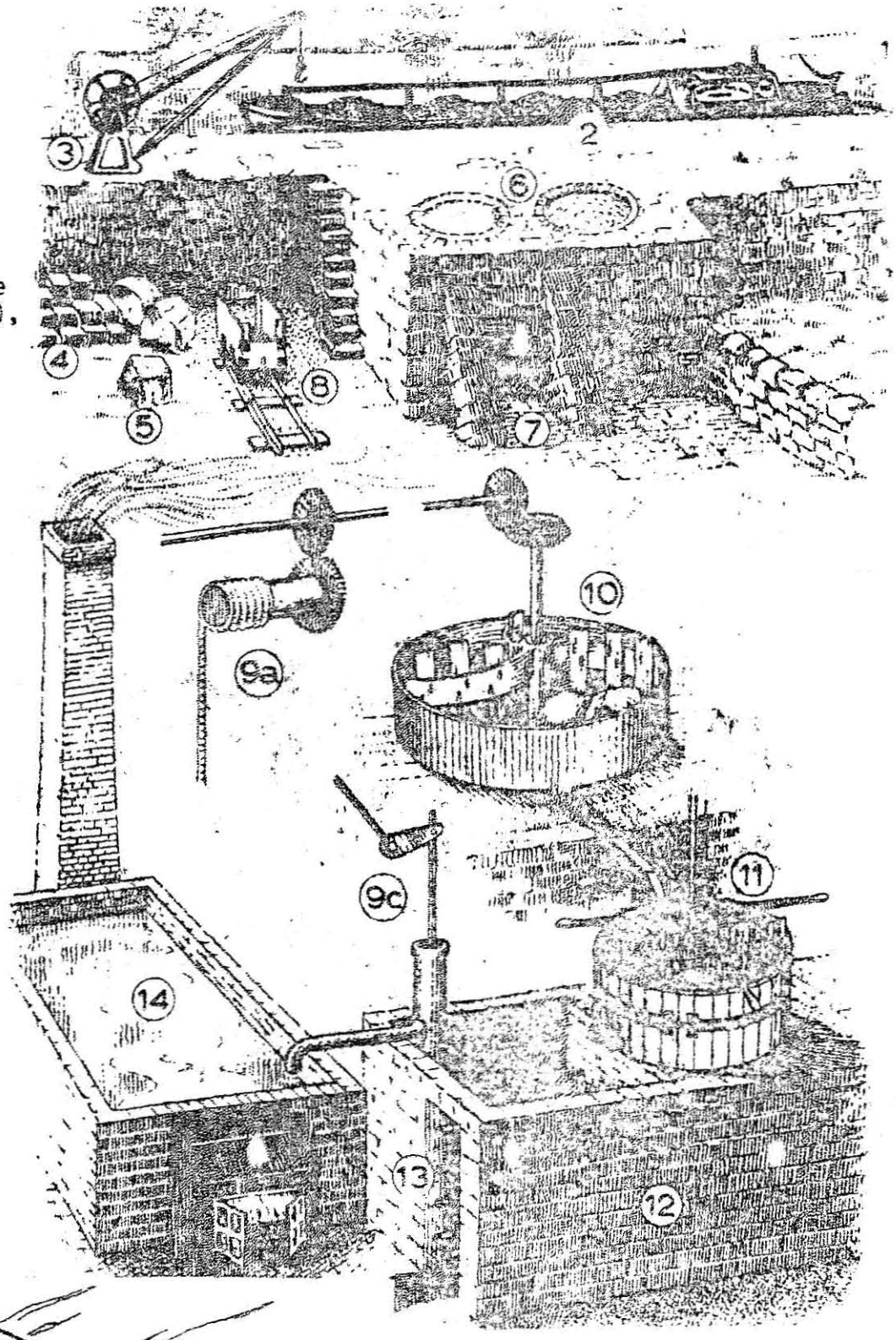
We would like to draw the following features of Sydney Harbour to the committee's attention :

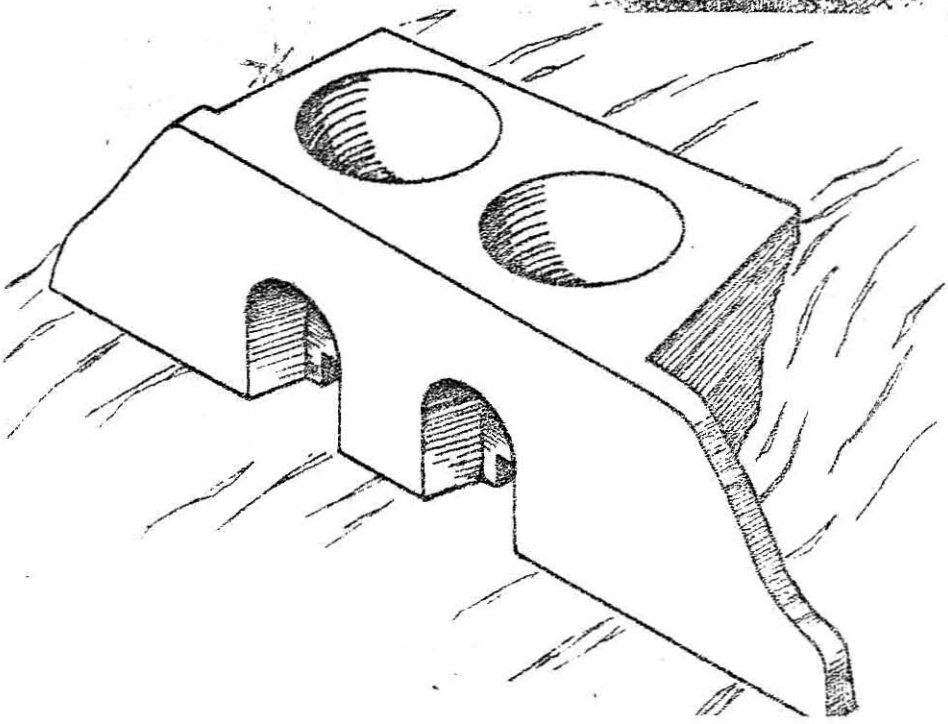
(1) Circular Quay 7A and 7B which could be considered for classification as the only nineteenth century wharves.
(2) Darling Harbour Nos. 26-39, small wharves for local ships, with doubtful futures.
(3) Pyrmont 12 and 13, the only remnants of post-World War II refurbishing.
(4) Royal Edward Victualling Stores, Pyrmont.
(5) Vehicular ferry wharf at Dawes Point.
(6) Glebe Island coal wharf (built in the 1950s and still working).
(7) Pyrmont Bridge and Glebe Island Bridge.

This report was presented as an Interim Report of the Industrial Archaeology Committee of the National Trust N.S.W. (Aust.) as part of an enquiry into historically interesting deep-sea wharves in Sydney : a report was tabled on Woolloomooloo wharves 6-9 and the Committee wished to consider them with other Sydney wharves built at about the same time.

FLINT CALCINING KILNS AT CHEDDLETON MILL, STAFFORDSHIRE, U.K.

Diagram showing the arrival of flints by canal barge (2), loading by crane into the calcining pits (6), outlets for calcined flints (7), tramways (8) for their transmission to the water mill and crushing pans (10). After crushing they are washed and dried (14), before use in pottery making.





Quartz Roasting Pits near Hill End, N.S.W. (left)

Hoist
flue
mud bucket
mud tray
eucalypt pile
5'2"
sealing lugs
3" supply pipe
1500 gall. still
4'
fall
water pipe
pply from
rage tank
2"
fire box
wood pile
44 gall drum
3" pipe in water trough
earth wall of water trough
control valve
collection bucket and drip tray

ling lug
timber wedge
mud seal

EUCALYPT STILL NEAR BRAIDWOOD N.S.W.

LONG SECTION.

SECTION AT TANK EDGE.

hoist
flue
3" outlet pipe
leaf
control valve
3" water supply
44 gall. drum
water level
1500 gal. tank
2" header feed pipe
fire box