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The Conservation and Digitisation of a Curious 19th Century Military Training Manual.

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ABSTRACT

The book, A Military Training Syllabus for the Resolute Divisions of the Huai Army was produced in the 1890's for the instruction of certain key divisions in the personal army of one of the most powerful figures in the late Qing dynasty, Li Hongzhang. This manual was intended to provide a western style of instruction for the use of the instructors and officers of these divisions. The item came into the possession of the War Memorial, in 1955, as a mixed collection donation from the estate of a veteran of the Australian contingent to the Boxer Rebellion of 1900. Over the years conservation work has been carried out on these rare and valuable, traditionally bound volumes and they've been reformatted to provide access to their informational content. The rapid advances in digital capture, storage and presentation options means that these largely unknown but fascinating and beautiful works will gain a new life,

accessible electronically to scholars and also to the public via an online exhibition.

This item is a jewel in an otherwise workmanlike digitisation program which is predominantly geared towards providing on-line access to the raw materials on which the War Memorial is constructed; the First and Second World War's Official War Diaries, the Official Histories of the World Wars and the records through which the people of Australia can access the experiences of their families throughout Australia's conflicts.

ACQUISITION OF THE SYLLABUS

The War Memorial Bill, passed by Parliament in 1925, specified that the Australian War Memorial was to be a Commonwealth memorial commemorating those Australians who died in the First World War. Over the subsequent years however this rigid proscription was seen to be an awkward limitation, particularly in

the Second World War. Donations were offered from pre-WW1 conflicts and, because of the Act's narrow definitions, could not be accepted. For some, the frustrations must have been palpable; veterans of the Sudan Contingent, Boer War, the contingent to the Boxer Rebellion and similar 19th century conflicts were aging and their stories, diaries and mementoes were potentially lost to the national collection. The director of the Memorial in the late 1940s, John Treloar, recognised the urgency of collecting from pre WW1 conflicts. He was already championing the need for a review of the Memorial's Act and finding himself in conflict with those who regarded the institution as one dedicated specifically to the sacred memory of those who served in the First World War (McKernan, 1991). As early as 1947 Treloar was urging Norman Baglin, head of the AWM's Melbourne branch to ask a contracted model maker, who was also a former member of the China Contingent, "whether he is in touch with any other members of the Contingent. It will no doubt be best to take him fully into your confidence and to explain that you are making the enquiry because we would like to...[obtain] records of the Contingent" (28/09/1947; AWM File Ref 419/019/002). Communication was subsequently established with the Victorian China Naval Contingent Association. John Treloar's ill health and death in mid 1952 meant that this matter slid off the agenda.

The new Memorial Act of 1952 broadened the scope of the institution to include all wars and war like conflicts involving Australians. A key institutional goal at that point was to attempt to strengthen the collections' holdings of pre WW1 materials including such "relics and records...[from] the Australians who served in the Boxer Rebellion, 1900-01"(16/02/1955; AWM File Ref 749/019/003). The acting director, Jim McGrath, anticipating the signing of the new Memorial Bill, wrote to the Honorary Secretary of the Victorian China Naval Contingent Association to re-establish communication and to try and track down any surviving veterans. The path was frustrating; the list of survivors was

diminishing monthly and many of those who'd had relics and records had long since disposed of them. McGrath writes

Unfortunately, although we have contacted all known survivors by letter and many personally, we have had practically no luck. (16/02/1955; AWM File Ref 749/019/003)

It was at this dispiriting point that the Bert Blyth collection was offered to the AWM. In 1955 the Memorial was approached by a willing donor, a Mr. B. Armour, who'd come into a collection of the effects of a Boxer War veteran. Mr. Armour's sister in law, Florence Armour (nee Blyth), was the sister of a veteran of the China Contingent. Florence and Bert Blyth grew up in New Zealand and emigrated to Australia. Little is known of Bert beyond a photograph, his collection and his enlistment details. He was 32 years and nine months of age on enlistment in February 1900 and is listed as formerly of Christchurch, New Zealand. Although his trade is recorded as 'soldier', his entry into his squad book records his trade as 'Adventurer' (Blyth Papers, AWM Accn. 3DRL/2181)). His attachment to the NSW Contingent was as Sergeant Major in B Company of the Marine Detachment. He had seen previous service in the Boer War and subsequently went on to serve in the First World War; it was during this conflict that he disappeared. Florence never heard from him again and was left with his effects which, upon her death in 1952, were passed to Mr. Armour. The effects included a collection which was an extensive and eclectic one including a nominal roll, punishment books, squad book, Chinese newspapers, Chinese flags, books in Chinese on

....geographical and celestial matters, a Chinese dressmakers book, Chinese currency, Chinese curios and 1 set of 7 Chinese books - obviously military training. (03/06/1955; AWM File Ref 419/004/009).

The Director, Jim McGrath met with Mr. Armour when he visited the Memorial in early 1955 and wrote,

[he] stated that he would be prepared to hand this collection over 'provided that it

wasn't just dumped somewhere.
(16/02/1955;Ref 749/019/003).

When a listing of the material was sent to McGrath he expressed concern that "Mr. Armour appears to be somewhat pernickety about this collection and I hope he takes the hint implied in my last paragraph where I use the word 'assessment.' In short, it appears that most of the relics are no more than souvenirs and it may be that we will eventually return them to him rather than suffer continual enquiries as to when we intend to display them" (06/06/1955; AWM File Ref 419/019/002).

What is unfortunately missing from the Memorial's files is any explanation of how and where the material was collected. It is not known whether Bert Blyth souvenired it himself or collected it perhaps via other means such as gambling or purchase. It is known that Bert Blyth departed Australia with the rest of the NSW Contingent on the 8th of August, 1900, that the Contingent served in the mopping up operations in the latter part of what became known as the Boxer Rebellion, and that he returned with them on the 25th April 1901.

A selection of the material was acquired (AWM Accn. 3DRL/2181 and REL/00743.001-011) and, although much of it was well known within the Memorial as a collection of curios, little of it was displayed. The military training manual has never been displayed and was not completely catalogued till recently (AWM Acc. 3DRL/2181.002). The distinctive nature of the object and its aesthetic appeal attracted the attention of the historian, Gavin Young who published a brief paper where its general history and purpose were outlined. (Young, 1983).

The book is a Qing (Ching; see Author's note) dynasty military training manual called *Huajin wuyi gejun kecheng* (Military Training Syllabus for the Resolute Divisions of the Huai Army) and dates probably from the 1890s (Young, 1983). These Resolute Divisions were trained in Western tactics and with Western armaments, unlike the bulk of the Qing

period armies. The Boxer Rebellion, the conflict in which this item was souvenired, was essentially the last gasp for much of these forces and of the Qing dynasty itself.

THE RESOLUTE DIVISIONS OF THE HUI ARMY

The Resolute Divisions of the Huai Army were born out of the lessons learned by Li HongZhang (Li Hung Chang) during the Taiping rebellions of the mid 19th century. Although social unrest was rife in China from early in the 19th century, the Taiping Movement was formally launched with the declaration of a new state named the T'ai-P'ing T'ien-kuo (Heavenly Kingdom of Great Peace) in early 1851. The Taiping army was a disciplined and feared force, driven by strict religious precepts based on the combination of a messianic peasant movement overlaying Protestant fundamentalism. Qing Dynasty armies had great difficulty withstanding the Taiping forces and most of the fighting was borne by the local northern militias of Zeng Guofan (Tseng Kuo-Fan) and Li Hongzhang. These armies, known respectively as the 'Hunan Braves' and the 'Huai Braves' after the provinces they derived from (modern Hunan and Anhui), were the only effective resistance. The first westernised Chinese forces to confront the Taiping appear to have been put together by an American adventurer, Frederick Townsend Ward, newly arrived in 1859 as a ship's mate (Spence, 1969). In 1860, Ward, encouraged by the lucrative possibilities of a mercenary army, put together a succession of such armies with modern armaments. Although not very successful at first he finally realised, from observation of his adversaries that a fearsome force could be assembled with native Chinese soldiers, drilled and led by Western officers. The Western community in Shanghai found this concept laughable; their racist preconceptions were of an indolent, corrupt and incompetent race. His venture however proved lucrative and his force was sufficiently successful that Li HongZhang referred to him as

Ward who valiantly defends [Sungkiang] and [Tsingpu], is indeed the most vigorous of all [the foreigners](Spence, 1969, p 64).

Western traders, on the other hand, began to feel concern at his 3,000 strong force (known as the Ever Victorious Army) and see in him a dangerous freebooter who must be controlled. In 1862 Ward consolidated his position by marrying into the family of a Shanghai Chinese banker who had helped bankroll his army and also by taking out Chinese citizenship. For his loyalty, he was rewarded with the ranks of general, that of admiral and a place in the official Chinese hierarchy (Spence, 1969). Ward died during a battle later that same year, a few months after Captain Charles George Gordon (later Gordon of Khartoum) had arrived in Shanghai. Gordon was soon placed in charge of the Ever Victorious Army and, where Ward had led by talent and trial and error, Gordon was a highly trained professional. His strict discipline and forbidding of looting made him unpopular and his leadership tenuous. Li Hongzhang noted the powerful combination of advanced armaments and disciplined drill and decided to meld these together with the fierce loyalty of his own regional army. The Taiping world eventually imploded partly from attrition, partly due to internal conflict and partly also with the inflexibility of their guiding ideology, particularly where diplomacy and negotiation was required.

Li Hongzhang subsequently experienced successes in the Huai Army's suppression of the Nien Rebellion in 1868 and of the Muslim Rebellions in 1873. The human cost of this succession of civil conflicts is estimated to be more than 30,000,000 lives. The military successes of these regional armies and the strong decentralisation of financial power that resulted meant that later conflicts including the Sino-Japanese war of 1894-5 were essentially fought by these regional armies on behalf of the imperial court.

It was understood by progressives in the imperial court and its bureaucracy that modernisation was essential for survival; thus was born the 'self strengthening' movement. Feng Kuai Fen (Feng Kuei-Fen), described as 'the ideological champion of the movement' is quoted as urging

the use of the barbarians' superior techniques to control the barbarians (Britannica, 1984, p 361).

There was an initial thrust towards the modernisation of the army and the setting up of factories to produce armaments however these were not as effective as subsequent strategies which focused on broader manufacturing and mercantile initiatives, approaches championed by Li Hongzhang (Spector, 1964). Li's impressive record whilst governor of Hebei (Chihli) province included steam navigation companies, mines, railways, telegraph lines, textile factories, various arsenals including a large one at Tianjin (Tientsin) and the Tianjin Military Academy (Spector, 1964). Li built up the Huai Army essentially to serve this business empire and, at its peak, this army consisted of over 80,000 men costing 6,600,000 liang (about 240 metric tonnes of silver or US\$6,500,000) per year to finance. (Spector, 1964) The crack troops in this army were the Resolute Divisions, the most westernised in equipment and training. They formed the left division in the later Qing army with the Bannermen forming the core and Yuan Shih Kai commanding Huai troops on the right division (Corfield, 2001)

Tensions between the Qing and the Japanese government over Korea precipitated the Sino-Japanese war in which the land and sea forces of the Qing were comprehensively beaten with the Huai army and the northern fleet bearing the brunt of the conflict. The Huai army was left severely weakened and Li Hongzhang was appointed envoy to Japan where he negotiated the peace treaty of Shimonoseki. This imposed crippling sanctions including the cession of territories and an indemnity of about 7,800 tonnes of silver. Disastrous crops and environmental disasters compounded the resulting misery and it was out of this misery that the Yi he tuan (I'ho chuan; Righteous and Harmonious Fists), or Boxers as they came to be known, arose.

The Boxer's primary focus was against Christian converts but soon their

antagonism was turned towards all things foreign. This clearly threatened the commercial empire of Li HongZhang and the Huai army was turned towards its protection and of Qing interests in general. The Qing however had been secretly supporting the Boxers from May 1900 and openly advocated war on foreigners in early June of that year. The siege of the Beijing (Peking) Legation quarters began within days of that decree. During this period, in an attempt at damage control, the regional governors, including Li Hong Zhang, struck an informal pact with foreign consuls to provide for the safety of foreigners in the southern and coastal provinces with the exception of Hebei in the north. It was in Hebei, the province containing Tianjin and Beijing, that the foreign military activity was concentrated and a proportion of the Huai army (about 20%) were caught up in that activity.

The relief of the Beijing Legation occurred on the 14th August 1900, bringing to an end the famous 55 day siege. The resulting looting rape and destruction went on for weeks with the first few days described by an observer as a "wild orgy of slaughter and burning, of rape and looting" (McWhinney, 1974, p 109). It was during the relief and its aftermath that national treasures such as the great library of the Han Lin Academy were looted (Davis and Cheng, 1996). The NSW Contingent didn't arrive in Tianjin till the following September and were based there for about a month. The nearby Tianjin Military Academy is one possible source for the souveniring of the Syllabus. The NSW Contingent marched from Tianjin in October 1900 arriving in Beijing well after the lifting of the siege and subsequent looting. They were garrisoned in Beijing over the following winter, carrying out police work when much of the international forces had already been withdrawn from the region. They were the only white, British-commanded troops left in Beijing (McWhinney, 1974). The Indian forces were also in Beijing but the British command did not consider them suitable for the role of policing (McWhinney, 1974).

Much of the literature from this period

which is available in English consists of the memoirs and records of the Western powers and their allies. There are very few Boxer sources at all. Any reading of the events shows up a general level of confusion in the shifting alliances between the various anti-Western forces and some deviousness between the Western allies themselves. Those elements of the Huai and Jiangxi (Kiangsi) armies in Hebei province appear to have been alternately attempting to subdue the destabilising forces of the Boxers and repelling what they saw as an invading Western force. Western sources do note that the largest of the Huai forces, those under Nie Shicheng, were clearing Boxer forces on one instance and subsequently offering unexpected resistance to Western forces (Colfield, 2001). What was probably not clearly understood was that these regional armies were intensely loyal to their leaders and their leaders' interests as well as to their regional roots. The Huai forces in Hebei province were therefore in an invidious position where they were not likely to survive. Those elements of the Huai army in Shandong (Shantung) and further south survived this conflict and formed the basis of the army of Yuan Shi Kai's army. Yuan was a protégé of Li Hongzhang's and, after the Chinese Revolution of 1911, President of China.

THE STRUCTURE OF THE SYLLABUS

The Syllabus consists of seven soft cover fascicles with a bound cardboard case (fig. 1). Typical of many such Chinese cases it is covered in yellow damask and constructed in a traditional wrap-around style, the construction of which has been well documented (Martinique, 1983; Ikegami, 1986). The Syllabus was received into the collection in fairly sound condition apart from missing a few large illustrations. These may have been missing when it was souveniried or subsequently lost. The case was in poor condition. The thread binding of the fascicles had broken down to varying degrees but the bound fascicles were complete. The fascicles consist of 10 juan (chapters) in the six thread-bound fascicles and an appendix of large folded sheets held loose between covers pasted

to the unfolded verso of the first and last sheet (fig 2). This loose fascicle is the appendix to juan 4.



Fig. 1. Five bound fascicles and one unbound with the parts of the damaged case; before treatment.

A full listing of the fascicles, juan contained in them and contents is as below (Young, 1983).

| Fascicle | Juan | Contents |
|----------|------|---|
| 1 | 1 | Contents and preface. Commands. |
| 2 | 2 | Small arms, marksmanship and ballistics. |
| | 3 | Tactics. |
| 3 | 4 | Manoeuvres in formation. |
| | 5 | Technical aspects of small arms. |
| 4 | 6 | Artillery. |
| 5 | 7 | Artillery. |
| | 8 | Bugle calls and signals. |
| 6 | 9 | Flags and semaphore. Signaling by lanterns. |
| | 10 | |

The pages are woodblock-printed, folded leaves (fig 3) with some longer leaves containing fold-out diagram sheets; these are up to four times the width of the fascicle. Although most illustrations are monochrome, fascicle 6 and the appendix to juan 4 have hand-colouring. The folded leaves are double leaved printed sheets with a centre block bearing details of the page number and contents (figs 3 & 4).

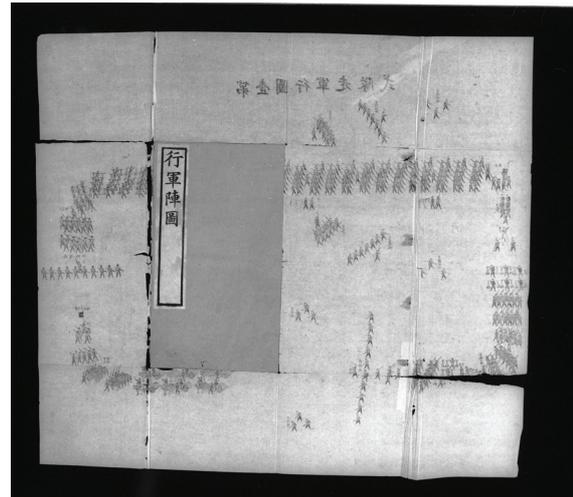


Fig. 2. One of the sixteen large manoeuvre sheets (verso) from the unbound Appendix to juan 4. Note the book cover pasted to the sheet and damage to the fold lines.

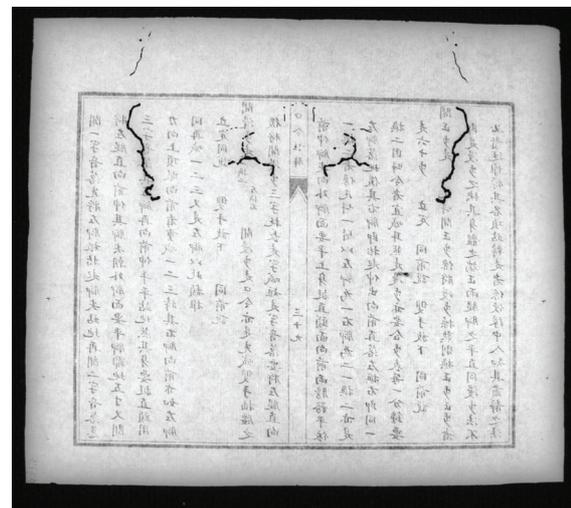


Fig. 3. An unfolded leaf, verso view, showing bookworm damage and the translucency of the paper.

The fascicles are Chinese style, four hole, silk thread bound books (fig 1). The text block was held together by paper twist staples prior to trimming of the spine head and tail; this is referred to by Ikegami (1986) as the inner binding. The fore-edge has not been trimmed adding strength to this edge (Martinique, 1983). The fascicles are portrait format measuring 262mm in height and 150mm wide. The Appendix pages measure 510mm by 585mm when fully opened.

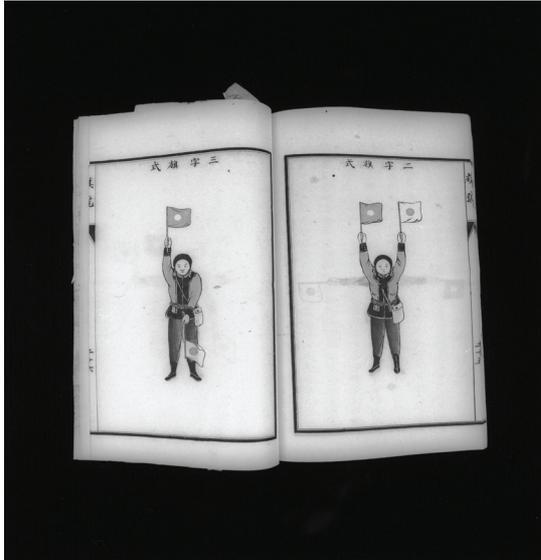


Fig. 4. Open view of fascicle 6 (juan 9) showing hand coloured woodcut illustration

From dating of the armaments in the volumes, the book is no earlier than 1895 in manufacture (Young, 1983). Fibre analysis of small samples of the printed leaves yielded a pulp composed predominantly of rice straw cells with some fibres and vessels characteristic of bamboo (Cote, 1980, Collings and Milner, 1978). There was also a small proportion of bast fibres which were characteristic of *than* fibres (*Pteroceltis tatarinowii*) as described in Mullock (1995). Given that the subject matter of the volume relates to forces raised in Anhui, it is possible that the paper is one of the many varieties of paper produced in that region and collectively known as Xuan (Hsuan) paper (Mullock, 1995). The paper is certainly of a fine and even quality; this is obvious in Figures 2 and 3 where the translucency and evenness are evident. Laid lines are spaced at almost exactly millimetre intervals with chain lines spaced at an average of 20 millimetres. The basis weight of the printed leaves is an average of 19.7 gsm with a thickness averaging around 0.06mm.

CONDITION OF THE SYLLABUS

The first recorded survey of this item was in 1982 when a condition survey was carried out by Memorial staff (AWM File Ref; 02/2327). At this time one of the volumes was partially disbound. The major

damage to the fascicles was bookworm (Anobiid beetle) tunneling (misidentified at the time as silverfish), wear on chart folds, tears, damage to the fascicle labels, discolouration of leaves from the brown paper fascicle covers and breakdown of the silk threads. Four of the charts from the Appendix were missing and a blood stain is noted for the cover of fascicle 1 (AWM File Ref 02/2327). The wrap-around case was borer and silverfish damaged and broken through the hinges. The Syllabus was photographically documented at this time and the first volume was completely pulled down with the pages numbered on the binding edge.

As AWM corporate priorities focused in on a series of anniversary commemorations and on major building works and refurbishments, further work on the Syllabus was shelved. Soon after the author's commencement at the AWM in 1985 he realised the need to progress the conservation of this work and the need to establish what the importance of this object was, both to the collection and in an academic sense. This item is a classic case of that kind of object which may have significant academic interest but which, although being aesthetically intriguing and appealing, is both culturally inaccessible to the broader target audience and fairly marginal to the fulfillment of the purpose and goals of the institution.

In 1995 a paper conservation student, Carolyn Murphy, from the then National Centre for Cultural Heritage Science Studies Program at the University of Canberra, was encouraged by the author to take on the repair of the Syllabus as a Heritage Conservation Project (Murphy, 1995). Carolyn readily agreed to the proposal and the work was carried out in that year. The Memorial is indebted to her for the extensive investigations, documentation and repairs that she carried out for that project.

Detailed condition reporting was carried out on the object and an estimate arrived at for the scale of work involved. Fascicles 1-3 had the most severe worm damage (fig. 3) with 11 leaves badly affected.

Overall 273 leaves had some worm damage with all of the covers affected. Tears were a less serious problem but all of the large sheets were damaged (fig. 2). Pigment friability was a problem with the white and red pigments. The white was poorly adhered so consolidation was required. The red pigment is by nature slightly friable but, since its adhesion was good, this was not seen to be enough of a problem to require remedial action.

The pigments used for hand-colouring were submitted to only simple identification techniques. To our conservation student's frustration, and to our regret, the lack of a budget for this project meant that instrumental examination of the pigments was not carried out. A spot test of the white pigment using a hierarchy of tests developed for painting grounds (Adams, 1984) identified it as lead carbonate (Murphy, 1995). The yellow pigment was applied as a thin wash and so could not be sampled. Testing for solubility in ethanol suggested that it might be gamboge (Murphy, 1995). Preliminary testing of the red pigment suggests that it may be vermilion. The green pigment is characteristic of malachite and the blue is almost certainly Prussian blue. These and the other pigments used in the Syllabus await further analysis.

The discolouration of endpapers and contiguous leaves was not serious enough to warrant treatment.

Not all of the bindings were sufficiently damaged to require the fascicles to be pulled down however, to facilitate treatment and subsequent reformatting, the decision was made to do so. All materials removed during disbinding (including the paper twists) were archived for analysis.

CONSERVATION OF THE SYLLABUS

The delicacy and translucency of the pages meant that repair papers and adhesives needed to be well matched to avoid distortion, disfigurement and bulking of the text block. The scale of the task also meant that the treatment (and student

project) offered the opportunity for the development of a mass treatment process for damaged oriental papers (Murphy, 1995).

To determine the best combination of paper and adhesive for repairs, experimental work was carried out using paper samples of a similar weight and appearance, dating from the early twentieth century. These papers were blank sheets and miscellaneous scraps removed for research purposes from a mixed collection of pre WW2 documents prepared in Hong Kong and Shanghai. The samples were torn and cut to simulate the Syllabus' damage. A range of adhesives and papers were tested (Murphy, 1995). The following adhesives (in a variety of concentrations) were tested in various combinations against the following papers;

| Adhesives (at various concentrations) | Paper |
|--|-----------------|
| Methyl cellulose | Suruga torinoko |
| Sodium carboxy methyl cellulose | K-25 Kozo |
| Hydroxy propyl cellulose | Kitakata |
| Silverstar laundry starch | Usamino |
| Silverstar and Hydroxy propyl cellulose | Tengujo |
| Silverstar and Methyl cellulose | |

Of the tested papers, Kitakata was the most similar to the object's paper. A commercial heat set tissue was also trialed.

Single and double sided repairs were tested with the thinner papers however the time involved in the double sided repairs and the consequent increase in thickness did not recommend this approach. Pulp applications were also tested but found to provide an inferior result on such fine paper and the time frame in which the work was to be carried out did not support extensive testing. Such a technique is also very dependent on the skill and experience of the conservator. Lining was investigated but ruled out as a general treatment since even the thinnest tissues

changed the paper characteristics significantly. Such treatments were only justified on pages with very serious damage such as the torn and worm-damaged fold-out sheets (Murphy, 1995).

The most effective combination of paper and adhesive was 4% methyl cellulose with Tengujo paper, applied as pasted repair strips. Although Tengujo was a thinner paper than that of the Syllabus it provided the most satisfactory results. This combination of paper and adhesive required no subsequent humidification and flattening of the repaired leaves. Repairs for scarfed tears used the same adhesive. (Murphy, 1995).

Consolidation of the lead carbonate was with 1% methyl cellulose. Cover repairs were carried out with toned sekishu. Terylene tension lining was used with badly damaged sheets.

Subsequent to the repair of the loose sheets, the volumes were left unbound for reformatting. Again, the low priority of this item when weighed against the larger corporate priorities meant that funds were not available for anything more sophisticated than simple photocopying. With the use of a volunteer, two archival copies were made with the intention of binding them into similar fascicles as the original and issuing them as working/loan copies. Where colour is an element of the diagrams, colour copying of those images was investigated, The results however were not encouraging, particularly when compared to the quality of photographic copies. The in-house colour copying results were not satisfactory and there was no budget for this project to go outside the institution. Progress in digital imaging was advancing rapidly and it was very soon evident that this technology could capture the entire volume quickly and cheaply making it internet ready and perhaps even easily distributable via writable CD technology. The Syllabus has received a preliminary scan by Research Centre staff using an overhead camera and light stand to scan the unfolded leaves. It is scheduled to be re-scanned at a higher resolution by flatbed scanner. The

scanning of the manoeuvre sheets from the Appendix was carried out at 600DPI by the AWM's Multi-Media unit. Proposals have been submitted for a web exhibition of this item. When re-scanned, the fascicles will be re-bound into their original format.

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AUTHOR'S NOTE.

Given the difficulty of tracking Chinese names through the literature, they are given in Pinyin romanisation with Wade-Giles romanisation in parentheses.

AUTHOR BIOGRAPHY

Bernard Kertesz is the senior paper conservator at the Australian War Memorial and has greatly enjoyed working at the AWM since he started there in 1985. As well as a bachelor degree in his specialisation he also has a BSc in plant systematics.

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