

Title: Garling Conservator Project: Documenting the TAL & Dai-ichi Life Derby Collection of Natural History Watercolours

Author: Kate Hughes

AICCM National Conference 2013, Adelaide 23-25 October

Abstract

This paper presents the preliminary phase of an in-depth research and conservation treatment project by the Garling Conservator of the Derby Collection which was acquired by the State Library of New South Wales in 2011 with the support of TAL and Dai-ichi Life and the State Government of New South Wales. The collection consists of six bound volumes that were compiled by Aylmer Bourke Lambert and is comprised of 745 watercolours of Australian natural history subjects including works by and after Thomas Watling, the Port Jackson Painter, The Sydney Bird Painter, and others with the majority dating from the late 18th century.

The objective of the project is to investigate and document the entire Derby collection, including a condition survey, photographic documentation, develop a conservation treatment strategy and to perform technical analysis. The watermarks have been documented through transmitted light photography to establishing connections of paper stock across the Derby Collection and related collections at State Library of New South Wales and National Library of Australia. This research supports curatorial research into the history of the Derby collection and related collections. The research is ongoing with X-ray Fluorescence analysis set to commence and treatments underway in preparation for a 2014 exhibition at the State Library of New South Wales. This project involves collaborations between the Garling conservator, curatorial staff, foundation staff and exhibitions staff along with the engagement of Foundation members, library visitors and colleagues from the National Library of Australia.

Key words: First Fleet, Natural History illustrations, watercolours, watermarks

Background

The Garling Bequest

Ilma Jean Garling (1907-1998) developed a close relationship with the State Library of New South Wales (SLNSW) throughout her life. In 1983 she acted as a founding member of the Library Society and was titled a Governor Benefactor of the Library Foundation in 1992. On bequeathing her estate to SLNSW she set as a condition that the funds be committed to the care of the Library's collections. In 2013 Kate Hughes was appointed as Garling Conservator to undertake the documentation, analysis and treatment of the recently acquired TAL & Dai-ichi Life Derby Collection of Natural History Watercolours.

The TAL & Dai-ichi Life Derby Collection of Natural History Watercolours (PXD 1098 vol. 1-6)

The Derby collection is comprised of 745 watercolour illustrations in 6 volumes compiled by Aylmer Bourke Lambert in the late 1790s and early 1800s Volumes 1 and 5 are shown open in Figure 1. Aylmer Bourke Lambert was a well connected naturalist and vice president of the Linnean Society of London for 50 years (*New South Wales Drawings* 2011). His collection of natural history watercolours included contributions from Governor Arthur Philip, Surgeon General John White, Colonel William Paterson, Major Robert Ross, Major Francis Grose and Philip Gidley King (Discover Collections 2012). Natural history illustrations were essential to the work of naturalists and were widely circulated, copied and discussed. These drawings were treated as

serious evidentiary documents and were used as the basis for determining species names (Neville 2011; Neville 1997).

Upon Lambert's death in 1842 the six volumes were purchased from the estate sale by Edward Smith Stanley the 13th Earl of Derby (*New South Wales Drawings* 2011). The State Library of New South Wales purchased the volumes from the 19th Earl of Derby in 2011. The volumes were purchased by the Library with the generous support of TAL & Dai-ichi Life, the New South Wales Government and the Library's Foundation. The collection represents the Library's most significant acquisition of early colonial material since the 1930s.(Neville 2011). Researches have occasionally been granted access to the volumes while they were in the Earl of Derby's Library. The only record of their display prior to acquisition by the Library is their inclusion in the exhibition *The Earl and the Pussycat* June-September 2002 at the Walker Art Gallery Liverpool (*New South Wales Drawings* 2011).

Volumes 1-3 of the Derby Collection titled *New South Wales Drawings* contain watercolours copied from the Watling Collection now held by the Natural History Museum. Thomas Watling was a convict artist who was assigned to Surgeon General John White for whom he produced natural history illustrations (Di Tommaso 2012). Also in the Watling Collection c are drawings by a group of unidentified artists working in the colony who are collectively known as the Port Jackson Painter (Di Tommaso 2012). After returning from Australia in 1795 White loaned his collection to Lambert who had an artist make copies. These three volumes were later lent by Lambert to Dr John Latham to be used as the basis for his description of some new species of birds in the supplement to his General *Synopsis of Birds* (*New South Wales Drawings* 2011). Volume 1 contains a letter from Latham dated 26 January 1800 addressed to Lambert regarding Latham's return of the three albums. All the watercolours except one have been bound into the volume. Plate 5 has been trimmed and fully adhered to a bound page.

Volume 4 *Zoology of N. [New] Holland etc* contains 146 watercolour illustrations, 32 of fish and 114 of birds. Some of these share subjects with the Watling collection but many have no known direct copies either predating or after them. The watercolours are tipped onto or adhered to a light weight laid blue album paper that is bound forming the text block of the album.

Volume 5 *Drawings of Plants of New South Wales* is comprised of 259 botanical watercolours including some unfinished drawings. One watercolour (f.238) has been signed twice by Thomas Watling. One inscription, on the reverse of f140 is dated October 1794. The watercolours have been bound together with a few adhered to guards.

Volume 6 *Drawings of Plants From New South Wales* contains 113 botanical watercolours adhered to album pages or bound directly into the volume. The watercolours have been arranged by the month in which the plants blossom, from January to December.

Related collections at the State Library New South Wales

The State Library of New South Wales has a premier collection of First Fleet and early colonial materials including many collections of natural history watercolours. The existing collections provided a unique context for the Derby collection where research can be undertaken across collections. Other collections examined as part of the research were:

- PXD 226 *Drawings of birds chiefly from Australia*, attributed to Sydney Bird Painter This collection of 100 drawings contains two watercolours with dated inscriptions of December 1791 and June 1792.
- PXD 680 *Collection of Australian bird illustrations*, three drawings ca. 1792 and attributed Sydney Bird Painter. The attribution has been made based on stylistic comparison to PXD 226.
- DL PXX 1 *Flora of Norfolk Island*, collection of 42 drawings ca. 1790s. 39 are attributed to John Doody and drawn for Captain William Patterson on Norfolk Island 1791-93(Neville 1997). This

volume also contains three drawings of orchids in a different hand one dated 1790 and a Drawing of the Cumberland Tree which is in another hand again.

- PXD 17 *Australian flowers*, 33 watercolours dated 1787-1799 and attributed to George Raper and an unknown artist.
- PXD 18 *Australian fishes*, 16 watercolours and 2 prints attributed to George Raper, and unknown artists dated 1770-1794. This collection contains three watercolours signed and dated by George Raper. One is dated 1790, one 1794 and the other date has been trimmed leaving just July.
- PXA 678 *Natural history illustrations of Australian flora & fauna*, a collection of 15 watercolour and wash drawings some dated 1797 compiled by Richard Pulteney.
- DGD 38 *Botanical drawings of Australian plants*, a collection of 7 watercolours dated 1788 -1810 by unknown artists.

Information about collections has been adapted from catalogue entries in SLNSW Manuscripts, Oral Histories and Pictures catalog (Manuscripts, Oral Histories and Pictures catalog 2013)

Project Plan

In planning the year long project the requirements of stakeholders across the library needed to be taken into consideration. The stakeholders were identified as the Library's Foundation who manage the Garling Bequest, Exhibitions branch who are designing the exhibition scheduled for March 2014 and the curator of the exhibition SLNSW's Head of Pictures Louise Anemaat who is also publishing a book in 2014 on the Derby collection. The project also needed to meet the Collection Preservation and Storage Branch's objectives to document and preserve the collection.

The scope of the project was limited to the Derby collection, DL PXX1, PXD 226 and PXD 680 however all collections listed above were examined to some extent.

The aims identified:

- Condition reporting of all watercolours
- Documentation of Watermarks
- Pigment analysis using X-ray fluorescence
- Conservation treatment of the collections
- Comparative examination of the Ducie collection of First Fleet Art at the National Library of Australia

These aims would not only meet the conservation needs of the items but assist in the curator's research into artist attributions or schools of artists working in the colony.

Documentation of Condition

A uniform and efficient approach needed to be designed for condition reporting the 745 watercolours in the Derby collection and a further 145 watercolours included in the project's scope. Photo documentation had previously been undertaken by the Library's Imaging Services branch.

The tables were broken down into rows for each page/watercolour with columns for documenting:

- Folio number and title
- Dimensions
- Image from catalog
- Paper description
- Watermark
- Media description

- Condition
- Treatment required
- Ultra-Violet light examination

Uniform language was used throughout to ensure that searching the documents would be as effective as possible. Condition reporting proved to be the most time consuming part of the project.

Condition PXD 1098 vol. 1-6

Overall the Derby collection was acquired in excellent condition. Volumes 1-3, 5 and 6 have been well preserved with damage limited to handling staining, pale staining from adhesives used, some areas of foxing and tears at edges. Volume 4 came to the library in the most damaged state with the first section of the binding detached and the sewing failing. While exhibiting the same types of damage as the rest of the collection Volume 4 has much more extensive foxing than the other volumes. The foxing is greatest on the blue album paper and transferring to the watercolour papers to a lesser extent.

The watercolour media throughout the collection appears to be in excellent condition, remaining very vibrant. The media in many watercolours is showing evidence of both deteriorating and buffering of the paper with both darker and paler areas on the verso of pages associated with specific media areas. Lead white discolouration is visible throughout the volumes with many of the small highlight details now discoloured grey, brown or black. Volume 4 exhibits the most extensive lead white discolouration with the extensive lead white used in some backgrounds having entirely discoloured to black. This has significantly altered the appearance of the drawings. The lead white has been identified using Ultra Violet analysis but will be tested with portable X-ray Fluorescence at a later date.

Binder research

All six volumes contain a binder's ticket reading *Hodgson Binder Liverpool*. As the Earl of Derby's family seat Knowsley Hall is located near Liverpool it was thought that the volumes were rebound after the Lambert estate sale. This assertion is supported by multiple catalogue and sale records for volumes containing both the Hodgson Binder Liverpool ticket and the Earl of Derby's bookplate. Searching Liverpool directories revealed advertisements for a Sarah E Hodgson advertising as a bookbinder between 1870 and 1900 (*A. Green & Co.'s Directory for Liverpool and Birkenhead* 1870; *Gore's Directory of Liverpool and its environs* 1900; *The Commercial directory of Liverpool, and shipping guide [afterw.] The Commercial directory and shippers' guide [afterw.] Fulton's commercial directory and shippers' guide* 1871).

National Library of Australia's Ducie collection

The NLA's Ducie collection of First Fleet art contains many drawings with subjects that are shared by the Derby and related collections at SLNSW. Attributed to mid shipman George Raper the Ducie collection is dated 1769 -1796 (Groom 2009). Some of the most notable shared subjects are the Cumberland Tree, the Brush bronzewing, the Common bronzewing, the Swamp lily, the Rock lily, the Laughing Kookaburra and the Dollarbird. Extensive documentation of the papers, the media and the condition was undertaken with the assistance of NLA conservator Susanne Wullen, including documentation of dimensions, inscriptions and condition; transmitted light photography of watermarks, XRF analysis of media and microscopy. The watermarks found in the Ducie collection are tallied in Figure 2 This data was collected to enable comparisons of the materials and techniques with the SLNSW's collections.

Watermarks

The documentation of watermarks was a major component in the project. Transmitted light photography was used as an efficient method to document the hundreds of watermarks present in the collections. Tracings were also created to allow for fast accurate comparisons of watermarks across collections.

The watermarks found were tallied by occurrence in each volume or collection. These tallies were then entered into a Microsoft Excel spreadsheet with a column for each volume/collection and row for each watermark description (see Figure 2). This made the huge amount of data collected more manageable and enabled comparisons of the range of watermarks occurring across volumes and collections allowing the research to be targeted to specific areas of interest.

Volumes 1-3 Lambert Drawings

These volumes contain very uniform paper with the watermark *1794/J Whatman* occurring 111 times in the 226 watercolours see (Figure 3). The letter in Volume 1 is on laid paper with an unidentified watermark/1798.

Volume 4

Examination of the majority of the watermarks in Volume 4 was more difficult due to their being adhered in eight points to the blue album paper which blocked the transmission of light. Watercolours bound or tipped in could be viewed with transmitted light but the remainder were observed in reflected light or in raking light.

The full page drawings in the album are all on wove papers. There are also smaller drawings on cut down light weight wove papers. The wove papers vary in weight with none of the heavier weight wove papers having visible watermarks. Wove papers in the album include 9 papers with *J Whatman* at centre, 47 with *J Whatman* appearing twice; one at the center of each half of the sheet and 3 cropped *J Whatman* watermarks. The papers with single *J Whatman* watermarks were likely cut down from larger sheets with the two *J Whatman* watermarks.

The majority of smaller drawings adhered to album pages are on laid papers. The laid papers include watermarks of *Horn in Shield/GR* cut in half with six papers containing the top half and five containing the bottom half. There are five laid papers with *R Williams* watermarks, four *T French* watermarks and twenty five *I Taylor* watermarks. One additional *I Taylor* also has *Crown/Britannia in Oval* watermark in the same sheet. There are thirty five more laid papers with the *Crown/Britannia in Oval* watermark.

Volume 5

Wove papers in Volume 5 include ninety two papers with *1794/J Whatman* at edge plus seventeen pages with this watermark cropped at the edge. Two papers have *J Whatman* at the edge and one with *R Williams* at the edge.

Volume 5 contains a wide variety of laid paper watermarks including four of *Crown/Britannia in Oval*, four more of *Crown/Britannia in Oval* but with *B* to right, three of *Crown/GR* one of which has a *W* to right, two of *Crown/GR/1795*, one of *Horn in Shield/GR*, one *J Whatman* at centre, one *J Whatman/1794* at centre and one *C Taylor/1794* at centre. The watermark *Horn in shield/GR* occurs in the drawing signed by Thomas Watling (see Figure 4).

Fly leaves at the back of the volume are laid papers with a *J Whatman/1794 watermark*, a *J Larking/1794 watermark* and two *Crown/Britannia in Oval* watermarks. Folio 221 is attached to a laid paper guard with a watermark of a *C* in a circle.

Volume 6

The same range of watermarks that are in PXD 1098 Volume 4 occur in Volume 6 both for wove and laid. There are fourteen wove papers with *J Whatman* in centre. Laid papers include eleven *I Taylor* watermarks, twelve *T French*, eleven *R Williams* and thirty four watermarks of *Crown/Britannia in Oval*. Also similar to PXD 1098 vol.4 is the occurrence of *Horn in Shield/GR* cut in half with thirteen papers containing the top half and fourteen containing the bottom half. There are two dated watermarks in Volume 6 that do not occur in

Volume 4, a wove paper with *H/1806* and laid paper with *J Whatman/1794*. These drawings are at the front and back of the volume and appear to be late additions to the collection. The album pages are a uniform laid paper with a *Fleur de Lis* in one half and *M.J.L/1802* in the other half.

Watermarks found in associated collections are tallied in Figure 2.

Watermarks across collections

Using the Excel spread sheet commonly occurring watermarks across the collections were identified. Tracings were then made of these watermarks to make fast and accurate comparisons. Exactly matching watermarks indicate that the paper was formed in the same paper mold. Exact matches within volumes or collections were found to be common but of more interest was whether exact matches could be found across collections. As some collections are known to be drawn in the colony and some have dated inscriptions finding matches to these in other less well documented collections could assist in discovering if their origin was in New South Wales or the United Kingdom.

The similarity of the range of watermarks that appear in PXD 1098 Volume 4 and Volume 6 invited closer examination. Tracings were made of a representative selection of watermarks in Volume 4 with a focus on the wove papers with two *J Whatman* watermarks in each half, four variants of this watermark were found to occur. The tracings were then laid over watermarks in Volume 6 finding extensive exact matches. Three of the watermark variations were found but with only one half present as the paper had been cut down. The tracings were then compared to other occurrences of single *J Whatman* watermarks in the centre of wove papers. Exact matches were found in PXD 226 (see Figure 5) and DL PXX1. See Figure 6 for folio numbers of the watermarks occurrence. The strong provenance and documentation of DL PXX1 taken with the exact watermark matches is a key piece of material evidence that Volume 4 and Volume 6 were drawn in the NSW colony where the range of papers available would be much more limited than in the United Kingdom.

The origin of PXD 226 had itself been in question. It is attributed to Sydney Bird Painter, a group of unidentified artists who worked in the colony. Stylistic similarities to natural history illustrations produced in India were seen and the possibility of the watercolours being drawn there from prepared skins was raised (*New South Wales Drawings* 2011; Neville 1997). A further comparison of the watermarks in PXD 226 and DL PXX1 was made. A *J Whatman* watermark at the edge of paper sheets was found to be another exact match between the two collections, See Figure 7 for folio numbers of watermarks occurrence. The frequency of matches between these two collections indicates that PXD 226 was unlikely drawn entirely in India as the same papers that were available on Norfolk Island in the 1790s were used. Along with this, two watermarks in laid papers in PXD 226 *Fleur de lis/Shield/W* (See Figure 8) and *J Whatman* at centre were found to be exact matches to a watermark in DGD 38. One of the wove papers in DGD 38 with a *J Whatman* watermark at the edge was found to be an exact match to watermarks in DL PXX1. The three watercolours in PXD 680 had been attributed based on stylistic comparison with PXD 226 due to this the watermarks were also checked against these watercolours finding matches to PXD 226, DL PXX 1 and DGD 38 (see Figure 7). This begins to form a network of connections between the papers in the collections indicating that the artists had access to a limited range and shared supply of paper stock such as would have occurred in the NSW colony.

Very little was known of the origin of Volume 4 and Volume 6 with many unique subjects in both volumes that had no clear relationships to known collections. The earlier undated watermarks present indicated that they predated Volumes 1-3 and Volume 5 but little was known about their production or collection by Lambert. Lambert documented in an 1808 letter his receiving a collection of about 260 natural history illustrations from Francis Grose who attributed them to a draughtsman named Jones working in Australia (Neville 1997). This may be a reference to the watercolours in Volume 4 and Volume 6 which together total 259 but there is not yet strong evidence for this. The multiple watermark matches between these two volumes, DL PXX 1 and PXD 226 demonstrates that they were most likely drawn in the colony and would therefore meet the description of Australian drawings in Lambert's letter.

This watermark identification and comparison feeds into curator Louise Anemaat's research into the place and time of origin of the Derby collection. As this research has been undertaken she has been working on a forthcoming 2014 publication with New South Press. She will be outlining the copying story behind the multiple recurrences of subjects in the forthcoming 2014 exhibition at SLNSW. Throughout this project the research has involved extensive collaboration between conservator and curator.

Exhibitions

The exhibition of these items is scheduled for March 2014 at the SLNSW. An exhibition component focusing on the conservation research undertaken in the Garling Project is planned. A short film showing different stages of the research will be produced and displayed in the exhibition space. Other methods of incorporating the conservation perspective in the exhibition are under discussion, including the use of augmented reality technology to allow exhibition visitors to see the watercolours with overlays of information about the paper, pigments and deterioration. The Library's recently launched mobile app Curio also allows Library visitors to access additional contextual information about items including, text, video and audio for this exhibition that may include conservation information.

Conclusion

The Garling project has ensured that the materials and conditions of these significant collections are thoroughly researched and documented. A large photographic resource of watermark data has been created through this project. Making the watermark documentation available and linking it to the collection records in the catalog is a high priority. The results of the watermark comparisons link PXD 1098 Volumes 4&6, PXD 226 and DGD 38 to DL PXX1 which has a strong provenance placing it on Norfolk Island 1791-93. This has strengthened the argument that PXD 1098 Volumes 4&6, PXD 226 and DGD 38 were drawn in the colony demonstrating the importance of this research in establishing the history and context of the collections. The Garling project is still underway and the watermark comparisons continuing. Treatment of the collections is being undertaken in preparation for the 2014 exhibition which will reveal the role conservators play in the describing of collections to Library visitors.. The procurement of a portable XRF analyser has just been completed and work analyzing the media across the collections is set to commence.

Acknowledgements

This project was funded through the Garling Bequest and State Library of New South Wales Foundation. Acknowledgement is also due to my Collection Preservation and Storage Colleagues Anna Brooks and Steven Bell. The work of Robin Tait and Susanne Wullen from the National Library of Australia was greatly appreciated in facilitating the research into the Ducie collection which will be further examined in a forthcoming paper along with David Hallam and staff in the National Museum of Australia's Conservation Section who provided essential support for materials analysis. A final acknowledgement to SLNSW's Head of Pictures Louise Anemaat for her encouragement of this research and generosity regarding her own.

Author Biography

Kate Hughes completed a Master of Cultural Material Conservation at the University of Melbourne in 2010 focusing on paper conservation. Prior to being appointed the Garling Conservator in January 2013, she was employed by the State Library of New South Wales as a Conservator.

Kate Hughes
State Library of NSW
Garling Conservator
Macquarie St
Sydney, NSW, 2000
Tel. +61 2 9273 1683

Fax. + 61 2 9273 1265

Email. kate.hughes@sl.nsw.gov.au

References

A. Green & Co.'s *Directory for Liverpool and Birkenhead* 1870, A Green & Co, London.

Di Tommaso 2012, *The Art of the First Fleet*, Hardie Grant Books, Melbourne.

Discover Collections: TAL & Dai-ichi Life (Earl of Derby) collection of natural history watercolours 2012, Available from: <http://www.sl.nsw.gov.au/discover_collections/natural_world/derby/index.html> . [1 September 2013]

Gore's Directory of Liverpool and its environs 1900, Kelly's Directories Limited, Liverpool

Groom, L 2009, *First Fleet Artist: George Raper's Birds & plants of Australia*, National Library of Australia, Canberra.

Manuscripts, Oral Histories and Pictures catalog 2013, Available from <<http://acms.sl.nsw.gov.au/search/SimpleSearch.aspx>> [1 September 2013]

Neville, R 2011, 'Land Mark Acquisition: At First Glance' *SL Magazine*, vol.4 no. 3, pp.11-15.

Neville, R 1997, *A Rage for Curiosity*, State Library of New South Wales Press, Sydney.

New South Wales drawings: the property of the Earl of Derby : important early Australian watercolours from the library of the 13th Earl of Derby at Knowsley [catalogue] 2011, Christie's, London.

The Commercial directory of Liverpool, and shipping guide [afterw.] The Commercial directory and shippers' guide [afterw.] Fulton's commercial directory and shippers' guide 1871, Published by R.E. Fulton & Co, Liverpool

List of Figures

Figure 1 Derby Collection PXD 1098 Volumes 5 and 1 shown open



Figure 2 Spreadsheet of watermarks found in all collections examined

Paper	Watermark Group	Watermark	Derby	Derby	Derby	Derby	Derby	album	Derby	album	PXD 1098 Totals	
			1	2	3	4	5	pg	6	pg		
Wove	J Whatman	1794/J Whatman at edge	40	51	20		92				203	
		1794/J Whatman at edge cropped					17				17	
		J Whatman centre				9			14		23	
		J Whatman x 2 centre				47					47	
		J Whatman at edge					2				2	
		J Whatman cropped at edge				3					3	
	R Williams	R Williams					1				1	
	Unidentified	H/1806							1		1	
	No watermark		41	44	29	6	131		2		253	
Laid	Horn in shield/GR	Horn in shield/GR					1				1	
		Horn in shield cropped				6			13		19	
		Horn in shield/GR cropped				5			14		19	
	I Taylor	I Taylor				25			11		36	
		S Lay	S Lay/1794									
	T French	T French				4			12		16	
	Britannia	Britannia in oval crown at top				35	4	2	34		75	
		Britannia in oval crown at top with WS										
		Britannia in oval crown at top and B to right					4				4	
		Britannia in oval crown at top with I Taylor				1					1	
		Britannia in oval crown at top and WK to right										
		WK										
	Crown/GR	Crown/GR						2			2	
		Crown/GR with W with crossed bars to right						1			1	
		Crown/GR/1795						2			2	
		R Williams	R Williams			5			11		16	
	Fleur de lys	Fleur de lys								52	52	
		Fleur de lys/shield/cursive W										
		shield/cursive W cropped										
		Fleur de lys/shield cropped										
		Fleur de lys/shield/GR										
		crest/Fleur de lys in shield/GR										
		crest/fleur de lys in shield cropped										
		Fleur de lys in shield/GR cropped										
		crest/fleur de lys in shield/1794						1			1	
		Fleur de lys in shield/1794 cropped										
		Crest/Fleur de lis in shield/(LVG?)										
		J Whatman	J Whatman centre						1			1
			J Whatman cropped									
		W King	W King									
	J Whatman/1794							1	1	1	3	
	J Larking	J Larking							1		1	
	C Taylor	C Taylor/1794						1			1	
	M.J.L./1802	M.J.L./1802								50	50	
	C	C in circle							1		1	
	ZOONEN?	ONEN cropped										
	Portal	Portal										
		I x Portal										
	PORTAL & BRIDGES?	PORTAL & BRIDGES? Cropped										
	C&I Honig	C&I Honig with Pro Patria (crown/lion in circle)										
	Budgen	C&I Honig										
		Budgen cropped										
T Budgen	T Budgen											
WS	WS cropped											
Unidentified	Unidentified/1798		1							1		
	cropped letters											
	?											
	No watermark									0		
Total			82	95	49	146	261	5	113	102	853	

PXD 226	Ducie	DL PXX 1	PXD 17	PXD 18	DGD 38	PXA 678	Totals
						1	204
10							17
2		3					33
10		34			1		52
1						1	47
							5
							1
							1
11	3			2		1	270
							1
							19
	5						19
						4	41
							4
	1			1		4	16
		3					81
							3
							4
							1
	2						2
	2						2
							2
							1
						2	4
							16
20	1				1		52
1							22
2					1		1
	5						3
4	1	1					5
3	5			1		1	6
	4	1					10
							5
						1	1
			18	3			1
18			1		3		21
6					1		23
			12	5			7
							17
							3
							1
							1
							50
1							1
	5						1
	1						5
4							1
	4						4
	2						4
	2						2
	9						2
	1						9
	2						1
7	2						2
			1	3			1
			1	3			9
							4
	1						5
100	56	42	33	18	7	15	1124

Figure 3 1794/J Whatman in PXD 1098 Volume 1 f23 viewed with transmitted light

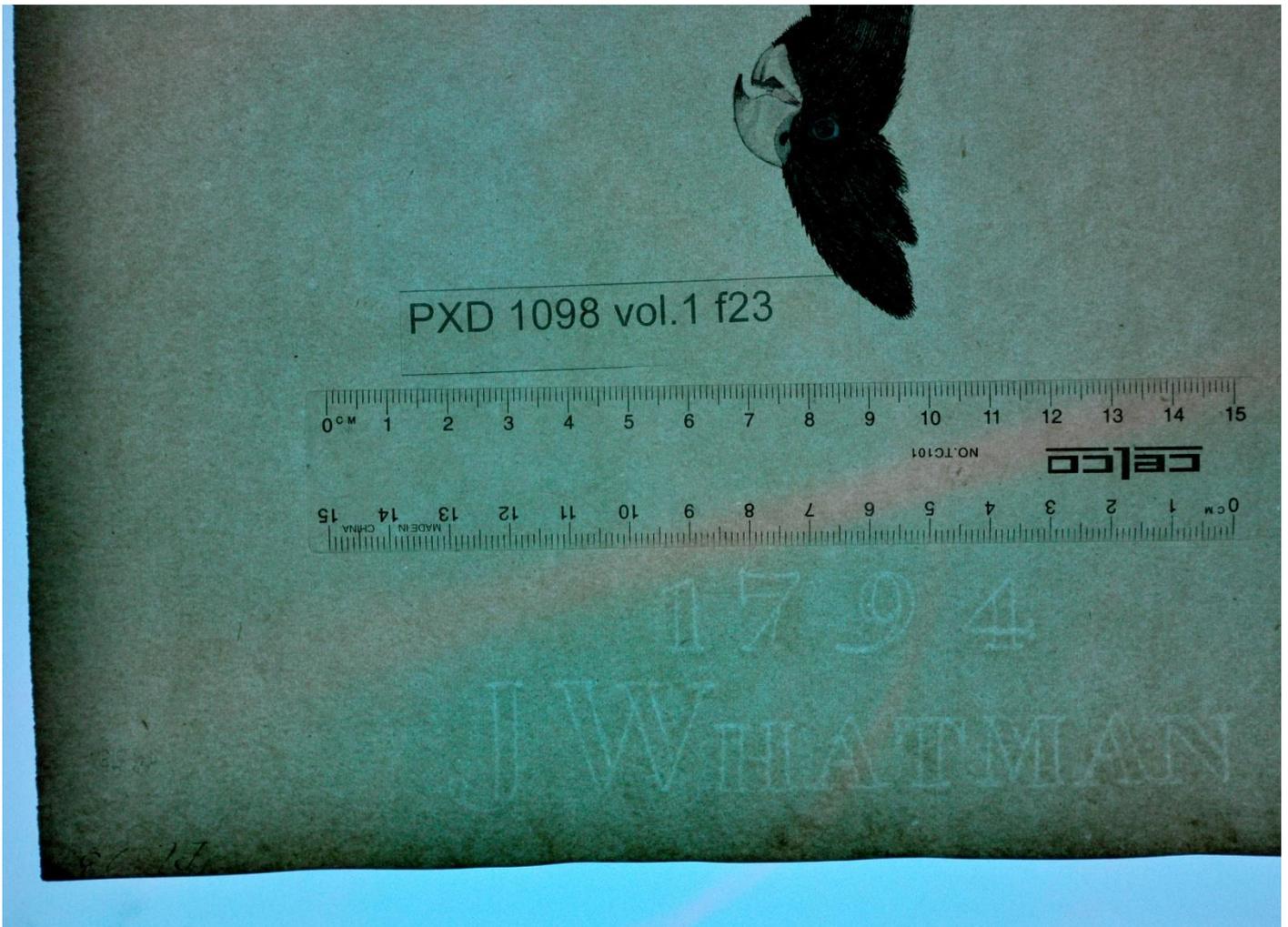


Figure 4 Horn in shield/GR in PXD 1098 Volume 5 f238 viewed with transmitted light



Figure 5 J Whatman watermark in PXD 226 f41 viewed with transmitted light

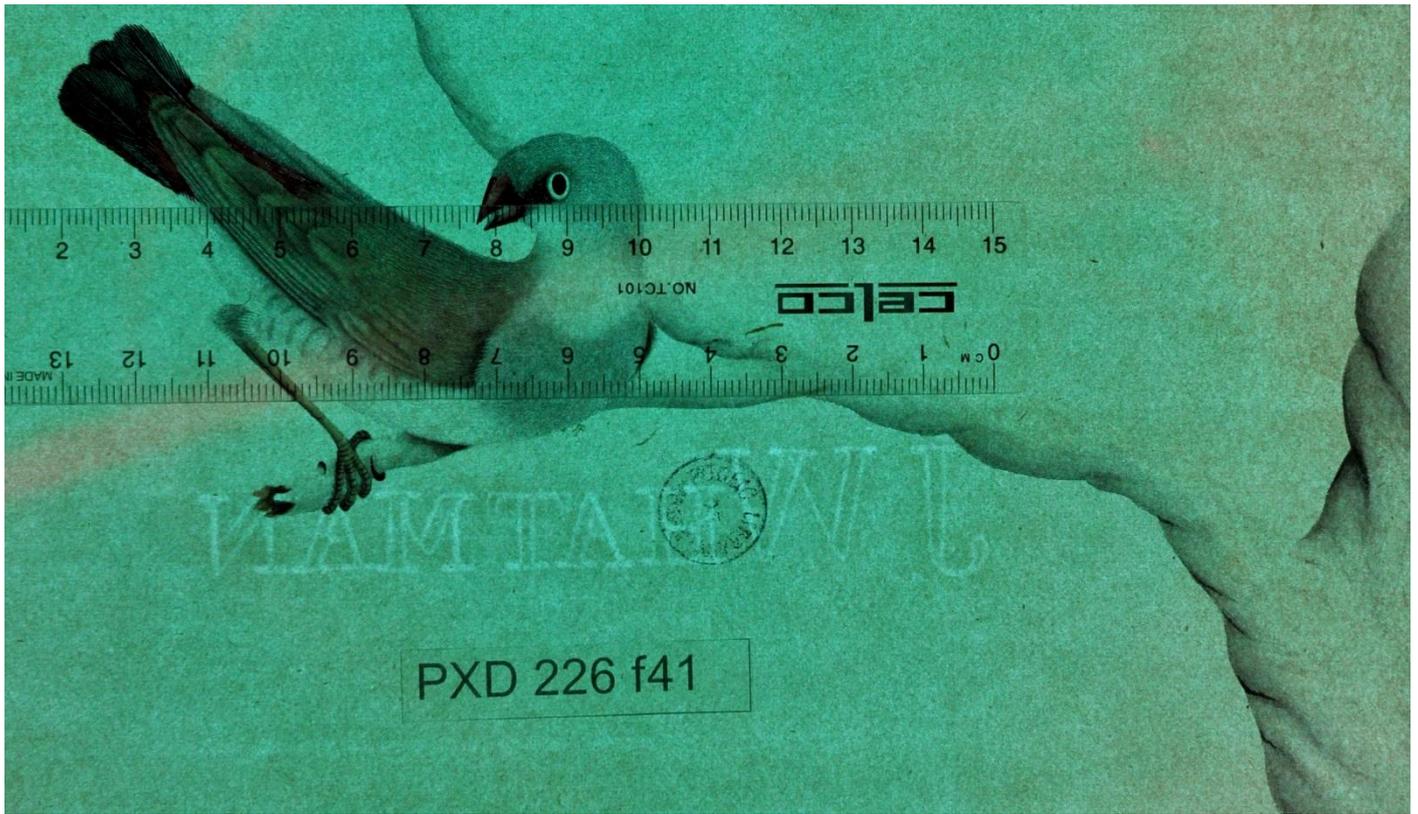


Figure 6 Table Occurrences of J Whatman x2 wove papers

Figure 6: Occurrences of J Whatman x2 wove papers			
J Whatman x2 on wove paper (one in centre of each half of sheet) Variant 1			
PXD 1098 vol. 4	PXD 1098 vol.6	DL PXX1	PXD 226
f.24	f.61 left half only	f.38	f.30 left half only
f.27	f.64 right half only		f.31 right half only
f.28	f.66 left half only		f.38 right half only
f.36	f.73 right half only		f.70 right half only
f.38	f.111 left half only		
f.41			
f.51			
J Whatman x2 on wove paper (one in centre of each half of sheet) Variant 2			
PXD 1098 vol. 4	PXD 1098 vol.6	DL PXX1	PXD 226
f.31	f.68 left half only	f.37	f.41 left half only
f.37	f.80 left half only		
f.40	f.81 right half only		
f.42	f.94 right half only		
f.45			
f.46			
f.53			
f.54			
f.55			
J Whatman x2 on wove paper (one in centre of each half of sheet) Variant 3			
PXD 1098 vol. 4	PXD 1098 vol.6	DL PXX1	PXD 226
f.35	f.71 left half only	f.36	f.24
f.43	f.75 right half only		f.36 right half only
f.44	f.77 right half only		f.88 left half only
f.47			
J Whatman x2 on wove paper (one in centre of each half of sheet) Variant 4			
PXD 1098 vol.4	PXD 1098 vol.6	DL PXX1	PXD 226
f.23	n/a	n/a	f.29 (cropped)
f.25			f.54 right half only
f.29			f.67 right half only
f.49			
f.50			
f.60			

Figure 7 Table Watermark matches across PXD 226, DGD 38, DL PXX1 and PXD 680

Figure 7: Watermarks shared across PXD 226, DGD 38, DL PXX1 and PXD 680			
Fleur de lis/Shield/W on laid paper at centre			
PXD 226	DGD 38	DL PXX1	PXD 680
f.7, f.12, f.14, f.17, f.22, f.23, f.57, f.58, f.65, f.72, f.81, f.85, f.98	f.7		Item 3
J Whatman on laid paper at centre			
PXD 226	DGD 38	DL PXX1	PXD 680
f.1, f.11, f.13, f.15, f.27, f.32, f.39, f.43, f.46, f.66, f.69, f.75, f.76, f.78, f.84	f.6		
J Whatman on wove paper at edge			
PXD 226	DGD 38	DL PXX1	PXD 680
	f.1	f.3, f.4, f.6, f.7, f.10, f.11, f.16, f.18, f.19, f.20, f.24, f.25, f.26, f.28, f.30, f.31	Item 1, Item 2

Figure 8 Fleur de lis/shield/W in PXD 226 f17

