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The procedure of wax-resin linings by the painting restorers Johannes Albertus Hesterman (1848-1916) and sons

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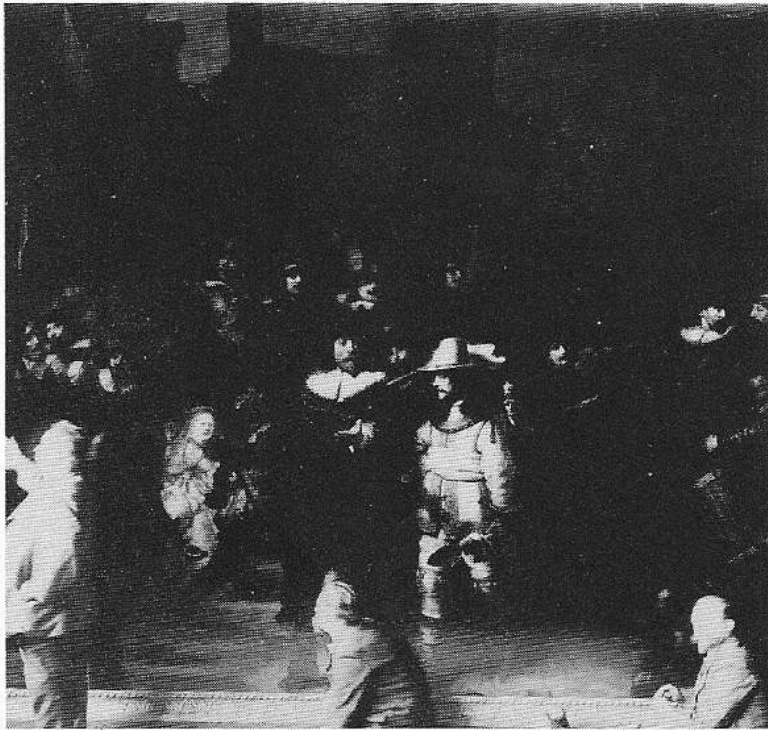
The procedure of wax-resin linings by the painting restorers Johannes Albertus Hesterman (1848-1916) and sons

Saskia van Oudheusden

The author thanks: Esther van Duijn (University of Amsterdam), Katrien Keune (Cultural Heritage Agency of the Netherlands/RCE), Michel van de Laar (Rijksmuseum Amsterdam), Lidy Visser (The Netherlands Institute for Art History/RKD), Norbert Middelkoop (Amsterdam Museum), Kate Seymour (Stichting Restauratie Atelier Limburg), Emilie Froment (University of Amsterdam).

- 1 'Lined, cleaned and retouched the disturbing losses'
'Lined, cleaned - restored paint losses etc.'
'To line - to refresh - to repair hole'
'Lined the torn painting and restored the tears completely'¹
- 2 The descriptions above are mentioned in the logbook of the restorers Johannes Albertus Hesterman and sons. J. A. Hesterman (1848-1916) worked as a restorer in both the private and public sectors in The Netherlands, including the Rijksmuseum in Amsterdam. From about 1905 onwards, Hesterman was assisted by his sons Frederik Coenraad (1873-1932) and Johannes Albertus Jr. (1877-1955). Together, they formed the firm: 'J. A. Hesterman and sons'². (see ill. 1 and 2).

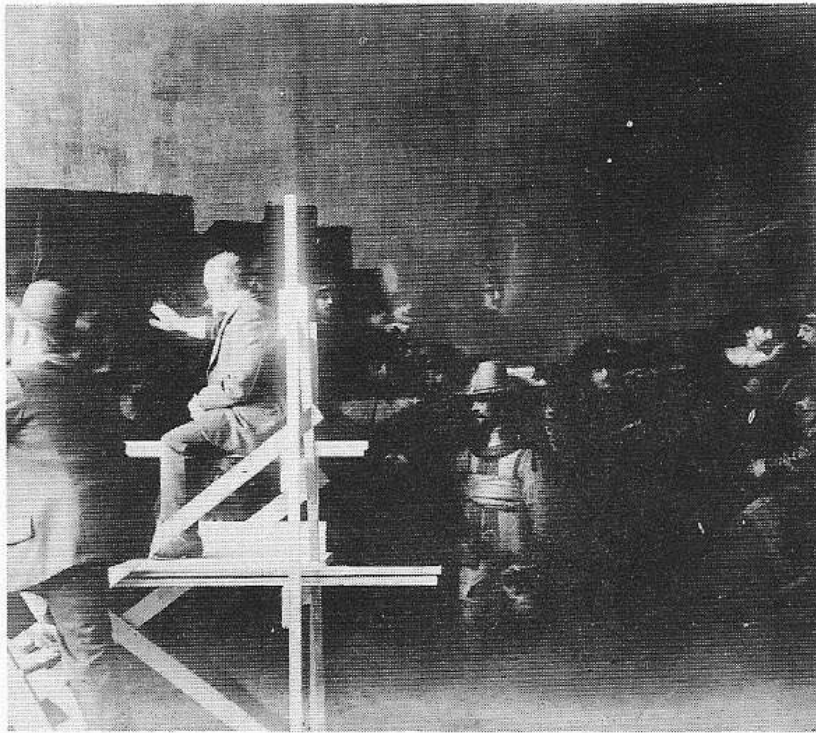
Fig.1 Johannes Albertus Hestermans and Sons



Johannes Albertus Hesterman Sr. (left) with his sons Frederik Coenraad and Johannes Albertus Jr. during the restoration of the *Night Watch* in 1911. It is not clear which of his sons is positioned in the middle or to the right.

Credits: HIJMANS, W. et. al., *Rembrandt's Nightwatch: the history of a painting*, Leiden, A. W. Sijthoff, 1978, p.114.

Fig. 2 Johannes Albertus Hesterman Sr. with one of his sons



The restoration of the *Night Watch* in 1911.

Credits: HIJMANS, W. et. al., *Rembrandt's Nightwatch: the history of a painting*, Leiden, A. W. Sijthoff, 1978, p.114.

- 3 The Hestermans, as the descriptions in the logbook might already make clear, frequently lined paintings. Lining is a treatment method applied to damaged paintings in which an additional canvas is attached to the original support by means of an adhesive. In the case of a wax-resin lining, this adhesive consists of a mixture of wax and resin. The bond between the two canvases is made when the heated wax-resin cools. The development of the wax-resin lining, also described as 'The Dutch method', is attributed to the Dutch restorers Nicolaas Hopman (1794-1870) and his son Willem Antonij Hopman (1828-1910).³ Restorers in the Netherlands and abroad have practiced this method on a large scale since the end of the nineteenth century.⁴
- 4 Wax-resin lining was intended as a treatment to both reinforce the original canvas and to consolidate the ground and paint layers.⁵ While damage to the paint layers, caused by the application of pressure to a heated surface, may have been immediately visible, the harmful effects of this conservation treatment, such as the darkening of the paint surface, only became clear on ageing. Criticism on executing wax-resin linings has thus grown stronger into the twenty-first century.⁶ The consequences of wax-resin linings on the appearance and condition of paintings have been researched extensively since the 1970s. Critical comments on wax-resin lining have eventually led to a strong decrease of its use and a search for alternative reversible lining methods.⁷
- 5 In the study of the history of the development of wax-resin lining, the method of Nicolaas and Willem Antonij Hopman has central place.⁸ However, the procedure practiced by other contemporary restorers lacks investigation and still requires further research. Although the Hestermans did not formally publish about their restoration

practices, they did keep a record in a logbook of work carried out in their private studio. In addition to this logbook, several diaries, receipts for materials and correspondence with customers and suppliers of the Hestermans are left behind. In this article, the lining method of the Hestermans will be reconstructed based on these archival records. This is the first step in establishing comprehensive understanding of their studio practice.⁹

Rijksmuseum

- 6 In 1898 Hesterman Sr. was commissioned as a restorer to the Rijksmuseum by the then director, Barthold Willem Floris van Riemsdijk (1850-1942).¹⁰ From 1901 onwards H. Heydenrijk worked alongside Hesterman Sr. as a restorer. Both restorers worked on a freelance basis. While Heydenrijk almost exclusively executed linings and regenerated old varnish layers, Hesterman also carried out other treatments.¹¹ For example, Hesterman and his two sons regenerated the varnish layer of the *Night Watch* by Rembrandt in 1911, after the painting was deliberately damaged by Mr. Sigrist (see ill.1 and 2).¹²
- 7 Other treatments that were carried out by Hesterman for the Rijksmuseum were the removal of old overpaint, old varnish layers and old glue paste linings, the consolidation, retouching and varnishing of paint layers and the cradling of panel paintings.¹³ The treatments that were performed by Hesterman and sons were quite diverse, however one third of the treatments carried out consisted of lining paintings.¹⁴

J. A. Hesterman and sons

- 8 The private restoration studio 'J. A. Hesterman and sons' was located in Amsterdam (see ill. 3).

Fig. 3 Lable



Lable showing the address of the private studio of the Hestermans.

Credits: BURG, J. VAN DEN., "Onderzoek en restauratieverslag Otto Heurnius", Amsterdam: University of Amsterdam, 2011 (unpublished), p.112.

- 9 The Hestermans kept a logbook from about 1913 until 1921, in which restored paintings are described according to the following headings: 1) 'Owner'. 2) 'Image and dimension of the art work'. 3) 'Price'. 4) 'To do (or completed) work'. 5) 'Receive date'. 6) 'Studio number'. 7) 'Return date'. 8) 'Inventory number or brand'. 9) 'Individual characteristics'.¹⁵ Additionally, in some cases the composition of the treated objects was drawn from the original. This logbook, which was specially printed for their studio,

can be seen as an early example of documentation in restoration practices (see ill. 4 and 5).

Fig. 4 Logbook

| Eigenaar (es) | VOORSTELLING en naam van het kunstwerk. Naam van den voorzitter. | Aanvraag- prijs | Soort of gedom- me | Datum van ontvangst | Atelier- nummer | Intim na aflevering | Inventaris nummer of merk | BIJZONDERHEIDEN |
|----------------------------------|---|--------------------|-----------------------|---------------------------|--------------------|---------------------------|---------------------------------|---|
| De heer van Hof Hof Hof | Levensportret. Heer van Hof gekleed in een blauw en witte kostuum. Het gezicht is zeer dood. De achtergrond is groot. De afmeting is 120 x 100 cm. De prijs is 75 g. | 75 | Levens- portret | Februari 1915 | 315 | 15 Januari 1916 | | De achtergrond moet geheel opnieuw worden gekleurd. |
| de heer van Hof Hof | Levensportret. Heer van Hof gekleed in een blauw en witte kostuum. Het gezicht is zeer dood. De achtergrond is groot. De afmeting is 120 x 100 cm. De prijs is 75 g. | | Levens- portret | Februari 1915 | 316 | 15 Januari 1916 | | |
| de heer van Hof Hof | Levensportret. Heer van Hof gekleed in een blauw en witte kostuum. Het gezicht is zeer dood. De achtergrond is groot. De afmeting is 120 x 100 cm. De prijs is 75 g. | 40-50 | Levens- portret | 7 Januari 1916 | 321 | 27 Febr. | | De achtergrond moet geheel opnieuw worden gekleurd. |
| de heer van Hof Hof | Levensportret. Heer van Hof gekleed in een blauw en witte kostuum. Het gezicht is zeer dood. De achtergrond is groot. De afmeting is 120 x 100 cm. De prijs is 75 g. | 40-50 | Levens- portret | | 322 | | | De achtergrond moet geheel opnieuw worden gekleurd. |

Pages from the logbook of J. A. Hesterman and sons.
Credits: The Netherlands Institute for Art History (RKD).

Fig. 5 Detail from a page of the logbook

| | | | |
|---------|---|----------------------|-----|
| 40 à 50 | Verdoeken - de sterk geblakerde verf boven aan 't hoofd en achter- grond opnieuw gehecht schoongemaakt en geheel geretoucheerd | 7 Januari 1916 | 321 |
|---------|---|----------------------|-----|

Detail with the price (40 à 50 guilders), the return date (7 January, 1916), the studio number (321) and the performed treatment: 'To line - to consolidate the severely detached paint above the head and background - cleaned and retouched in total' (Translation by author. The original text is as follows: 'Verdoeken - de sterk geblakerde verf boven aan 't hoofd en achtergrond opnieuw gehecht - schoongemaakt en geheel geretoucheerd').

Credits: The Netherlands Institute for Art History (RKD).

- 10 It is remarkable that the logbook of the Hestermans as well as the diaries they kept, start in 1912/1913 and continue until the 1920s. Correspondence, between Hesterman Sr. and his customers, shows that their private studio was in use before 1912, however it was not until this date that the three restorers start to organize their administration efficiently.¹⁶ The increased efficiency may be due to the termination in 1913 of the contract with the Rijksmuseum, resulting in an important loss of income and thus a rise in significance of their private studio.¹⁷
- 11 In the logbook there are 230 records of restorations. The book is not complete. The pages of the book that dates after June 1921 have been cut out. However, it is not certain if these pages were ever written at all. Moreover, not all treatments are recorded in the logbook. Only four restorations are described between 1917 and 1921, while the diaries make clear that between these dates many more paintings were treated. The lack of administration after 1917, seems to be related to the death of Hesterman Sr. who died on 29 November 1916. Evidently his sons were less diligent in their record keeping. However, it seems that Hesterman Sr. himself was not meticulous in record keeping, as gaps exist between studio numbers indicating that paintings were not always registered in the logbook.

Restoration treatments

- 12 The restoration treatments that are described in the logbook correspond for the greater part with the treatments they performed for the Rijksmuseum. In addition to the treatments already mentioned above, the restorations in their private studio also included the cleaning of paintings, the restoration of tears and holes, the repair of frames and the re-joining of panel paintings. The description of the treatments in the logbook is very short and seems not to be complete in every case. For example, for some objects the following descriptions are given: 'to line etc. etc.', 'cleaning etc.' or 'to restore further and to retouch'.¹⁸ Although the descriptions are rather abbreviated, the logbook is still a unique source of information when looking at the restoration history from the beginning of the twentieth century in The Netherlands.

Wax-resin linings

- 13 Of the 230 paintings mentioned in the logbook, 120 paintings are wax-resin lined. It seems that no linings were mentioned for just eight paintings on canvas out of the 230 paintings in total.¹⁹ In general the number of lined paintings is rather high. The Hestermans' tendency to line or not to line in private practice appears to be the same as when working for the Rijksmuseum. Likewise very few paintings on canvas were not lined.²⁰ The records, thus, suggest that lining was standard practice for the Hestermans'.
- 14 The specific methodology for lining is never explicitly described in the logbook by the Hestermans, perhaps because it was considered a standard procedure. However, the method can be partially reconstructed. Where lining was mentioned, around half of these were carried out in combination with other treatments used to deal with structural problems. Consolidation of flaking paint, or the removal of old glue paste linings was mentioned for some paintings as prior steps. In most cases the treatment of

tears and holes is described. The linings seem to have been applied to preserve the structural unity of the painting, after which aesthetical treatments could be carried out. The reasons for lining and the decision making process mostly remain unclear, especially if a structural treatment is not described explicitly. While the preservation of the painting must have been of paramount importance, the financial benefits of lining on such a great scale must have undoubtedly played a role.

- 15 Relatively new canvases, painted after 1850, appear to have been excluded from lining as standard practice by the Hestermans. This supposition seems reasonable to accept, since of all the paintings on canvas mentioned in the logbook just three contemporary ones were lined because their support was damaged.²¹ Moreover, of the eight paintings that were not lined, four were relatively young.²² These paintings were probably still in a good condition and therefore did not need to be lined.

Lining method

- 16 The wax-resin lining of paintings was not a fixed process and the way in which these were performed, differed among contemporary restorers and between subsequent generations.²³ As the restorations in the logbook are only described by keywords, it is difficult to ascertain in which way the Hestermans carried out their linings. It is not unlikely that Hesterman Sr. was familiar with the lining method of W. A. Hopman. Hesterman worked for more than ten years with Heydenrijk at the Rijksmuseum. Heydenrijk was trained as a restorer by Hopman and might have passed on the principles of this innovative method to Hesterman.²⁴
- 17 While there is no description of the lining process itself in the records, these do mention that after the lining the Hestermans replaced old strainers with new stretchers. In spite of only two references in the logbook, the existence of many receipts in the Hesterman archive clearly indicate that they ordered these in large amounts from the carpenters C. B. Wagenaar and W. C. van Riemsdijk, who both had their workshop in Amsterdam.²⁵

Wax-resin mixture

- 18 Just as many recipes for the wax-resin mixture exist as the ways in which the procedure was implemented. Not only the primary ingredients could differ, such as the kind of wax, resin or additives used, but also the proportion between these materials.²⁶ Although the recipe of the wax-resin mixture is not mentioned by the Hestermans in their logbook, a reconstruction of the components they used can be made.
- 19 Based on the receipts that are found in the Hesterman archive, the lining mixture of the Hestermans seems to have included yellow beeswax, colophonium and Venetian turpentine.²⁷ This assumption is reinforced by the results of recent chemical analysis. Py-TMAH-GCMS analysis of the wax-resin mixture of five seventeenth-century portraits, which were lined by the Hestermans in the years 1907-8, confirmed the presence of these three materials (for one of these linings see ill. 6).²⁸ It is remarkable that this recipe shows quite a similar composition to the lining mixture that Hopman Jr. used, which consisted of three parts of colophonium, four parts of white wax (possibly bleached beeswax) and two parts of Venetian turpentine.²⁹ Considering this resemblance, it can be assumed that the Hesterman used the same proportions between

the lining components as Hopman did, confirming further the direct influence of Heydenrijk.

Fig. 6 Artist Unknown. *Pieter Pauw (1564-1617)*. 1600-1620. Oil paint on canvas, 81 x 65 cm. Amsterdam: Amsterdam Museum. SA 1121



Reverse of the portrait, showing the wax-resin lining of J. A. Hesterman and sons, carried out in 1907/1908.

Credits: F. van der Knaap.

Lining canvas

- 20 The Hestermans ordered their lining canvases at *Maison Mommen, Fabrique de Couleurs, Toiles, Panneaux, Vernis* in Brussels. The receipts in the archive show three different types of canvases, differing in strength, dimensions and prices. In addition, one receipt found shows an order from the sailcloth manufacturer *F. Zeilinga* in Amsterdam.³⁰ Considering these different types of canvases, it seems that the Hestermans made a distinction in what kind of fabric they used for their linings. In this distinction the size of the original canvas, the condition of the painting or the customer (private or museum) might have played a role.

Conclusion

- 21 Since a large part of the Hesterman archive is still to be uncovered, more knowledge of their lining practice and in general into the restoration practice of the Hestermans may still be gained. In addition to archival research, linings carried out by the Hestermans that are still preserved, should be visually examined and described. This will bring

more insight into the materials used and the technique employed and thereby into the consequences such materials and technique may have had on the condition of the paintings they treated. With this knowledge, the presence of different types of damage can be clarified and predictions can be made about the durability of these linings. In the long term, this knowledge will contribute to a more considered selection of compatible materials and methods in future conservation treatments.

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 - 1913: Archive Hesterman (0699) inv. no. 10-22.
 - 1920-1: Archive Hesterman (0699) inv. no. 45-54.
 - 1922-1: Archive Hesterman (0699) inv. no. 77-84.
 - 1923-2: Archive Hesterman (0699) inv. no. 105-117.

NOTES

1. Netherlands Institute for Art History (RKD), Archive Hesterman (0699) inv. no. 175. These descriptions correspond with the paintings with studio numbers: 287, 296, 315 and 331. Translation by author. The original text is as follows: 'Verdoekt, gereinigd en de hinderlijke kalen plekken bijgeschilderd', 'Verdoekt - schoongemaakt - afgevallen verfplekken hersteld enz.', 'Verdoeken - opfrisfchen - gat (...) herstellen', 'Het aan flarden gesneden schilderij verdoekt en de scheuren geheel hersteld'.
2. Van Duijn, E. 1996: 15.
3. Te Marvelde 2001: 143 - 149.
4. Te Marvelde 2012: 424, 427, 428.
5. Ibidem: 425.
6. See for example: Villers, C (ed.), *Lining Paintings. Papers from the Greenwich Conference on Comparative Lining Techniques (1974)*, London, Archetype Publications, 2003.
7. Te Marvelde 2012: 430, 431.
8. Te Marvelde 2001; Te Marvelde 2012; Van Duijn 1996; Van Duijn 2006: 34-36.
9. Since the Hesterman archive is not fully disclosed yet, only one image of the logbook of the Hestermans could be included in this article.
10. Van Duijn 1996: 15.
11. The regeneration of varnish layers is a restoration treatment whereby a painting is exposed to vapours of alcohol in order to soften the varnish and restore its transparency. See: Pettenkofer, M. von., *Über Ölfarbe und Conservirung der Gemälde-Gallerien durch das Regenerations-Verfahren*, Braunschweig, Vieweg, 1870.
12. Elbers 1998: 31-33.
13. Ibidem: 7, 9. A paste lining is a lining method whereby the adhesive consists of an animal glue and cereal flour mixture.
14. This number is based on all the requests for authorization of restoration treatments which the director of the Rijksmuseum Van Riemsdijk addressed to the Minister for Home Affairs. These requests have been worked out in the doctoral thesis of Elbers (see: Elbers 1998: 61-77). From the total amount of requests, there are 50 restorations that are executed between 1900 and 1913, from which it is not clear who performed these (see: Elbers 1998: 94-103). Possibly, these also include restorations by Hesterman Sr.
15. Translation by author. The original text is as follows: 'Eigenaar(es)', 'Voorstelling en maten van het kunstwerk. Naam van den vervaardiger', 'Te doen (of gedaan) werk', 'Datum van ontvangst', 'Ateliernummer', 'Datum van aflevering', 'Inventarisnummer of merk', 'Bijzonderheden'.
16. It is unlikely that the Hestermans kept a logbook before 1913 since the numbering system given to paintings entering the studio in the logbook starts with the Roman number 'I'.
17. Although from 1914 onwards, restoration treatments are at least for some years taken over by the staff of the Rijksmuseum (see: Elbers 1998: 4, 10) a few records are found that refer to restorations by the Hestermans after 1913. For example, a handwritten tag by J. A. Hesterman Jr. at the verso of the painting *Jacob's dream* (SK-A-704) by Arie de Vos describes the fixation of loose paint, the removal and application of varnish in February 1922 (thanks to M. van de Laar for noting this).
18. Translation by author. The original text is as follows: 'Verdoeken enz. enz.', 'Schoonmaken etc.' and 'Verder herstellen en bijwerken'.
19. RKD, Archive Hesterman (0699), inv. no. 175. In the logbook these eight paintings correspond with studionumbers: 44, 47, 228, 252, 326 and with inventory number 220. However, the number of unlined paintings is possibly higher. In the logbook 63 paintings are mentioned from which it is not clear whether the support is a canvas or panel. In addition, a number of these 63 paintings

do not contain a description of restoration treatments. For a further 39 paintings it is certain that the support was another material, such as panel, cardboard or copper.

20. The Hestermans restored 89 paintings for the Rijksmuseum from 1901-1913; of these 89 paintings, 28 have been wax-resin lined. No lining was carried out on only 7 canvases. These paintings correspond with inventory numbers: SK-A 454, SK-A 1882, SK-A 570, SK-A-2083, SK-A-380, SK-A-1411, SK-C5. See: Elbers 1998: 61, 64, 66, 67, 70, 72. However, the number of paintings that are not lined is possibly higher. There are 6 unlined paintings, from which is not clear whether the support was a canvas or panel and there are 22 canvases where no treatment is mentioned. It is certain for 26 paintings that it contains a panel as support.

21. RKD, Archive Hesterman (0699) inv. no. 175. These paintings correspond with studio numbers: 236, 284, en 287. Among these contemporary lined paintings, one is painted by J. H. Neuman (1819-1898) in 1881, another is painted by J. Sluyters (1881-1957) in 1903 and the last (undated) painting is by F. Lebret (1820-1909).

22. RKD, The Hague, Archive Hesterman (0699), inv. no. 175. Among these four paintings, two are painted by J. Veth (1864-1925), one painting is by T. van Starckenborg (1859-1936) and the last one is painted by J. Maris (1837-1890). These four paintings correspond with studio numbers 47, 234, 252 and inventory number 220.

23. Te Marvelde 2012: 429, 430.

24. Elbers 1998: 7, 9.

25. RKD, Archive Hesterman (0699), inv. no. 175. In the logbook the replacement of the old strainer is described with the painting corresponding with studionumber 234 and with the painting corresponding with return date 'dec 1919'.

26. Te Marvelde 2012: 427-430.

27. RKD, Archive Hesterman (0699). Two receipts mentioning yellow beeswax are present, one concerns an order of ninety kilos at *Heerkens Schaepman & Co* in Zwolle and the other lists an order of hundred kilos at *Oldenboom & Lely* in Amsterdam (see: notes with diary 1912, month June & notes with diary 1913, month May). In addition to beeswax, different receipts with 'resin' from *Koninklijke Pharmaceutische Handelsvereniging* and *Oldenboom & Lely* in Amsterdam are found. Only in one case the type of resin is specified as 'colophonium' (see: notes with diary 1922, month March). Venetian turpentine, which is known to function as a plastizicer in the wax-resin mixture, was ordered by the Hestermans several times (see for instance: notes with diary 1913, month April).

28. This series of portraits which depicts various doctors is in the collection of the Amsterdam Museum and corresponds with the inventory numbers SA178, SA179, SA 894, SA 1121, SA 3339. Py-TMAH-GCMS analysis (Pyrolysis - tetramethylammonium hydroxide - gas chromatography - mass spectrometry) is a research method used for analyzing the molecular composition of waxes, resins and binding media. The Py-TMAH-GCMS analysis of the wax-resin mixture of the Hesterman linings was carried out in 2012 by Katrien Keune (RCE Netherlands) as part of the Master's thesis: Van Oudheusden, S. "De uitvoering van was-hars bedoeingen door Johannes Albertus Hesterman (1848-1916) en zonen. Een onderzoek naar hun werkwijze en materialen", Master's thesis, University of Amsterdam, 2012 (unpublished). Results of the chemical analysis, can be obtained from the author.

29. This recipe is mentioned by the restorer Alois Hauser Jr. Hauser was taught the wax-resin method directly by Hopman Jr. himself. See: Te Marvelde 2012: 427; Te Marvelde 2001: 145, 147.

30. RKD, Archive Hesterman (0699). For the receipts of *Maison Mommen* see: notes with diary 1912, month December; notes with diary 1913, month June-July; notes with diary 1920, month March and May; notes with diary 1922, month September, October. For the receipt of *F. Zeilinga* see: notes with diary 1923-2, month December.

RÉSUMÉS

Cette étude concerne le rentoilage à la cire-résine. Ce traitement de conservation est employé pour consolider les peintures structurellement fragiles. Cette intervention consiste à coller une toile de rentoilage au dos de la toile originale en utilisant un adhésif composé d'un mélange de cire et de résine. Plus particulièrement, cet article présente la méthode de rentoilage du restaurateur néerlandais Johannes Albertus Hesterman (1848-1916) ainsi que de ses fils Frederik Coenraad (1873-1932) and Johannes Albertus Jr (1877-1955). L'étude implique la mise en oeuvre pratique de la méthode de rentoilage en se basant sur des documents d'archives.

This research concentrates on wax-resin lining, a treatment method applied to damaged paintings in which an additional canvas is attached to the original support by means of an adhesive of wax and resin. In this article, the lining method of the Dutch restorers Johannes Albertus Hesterman (1848-1916) and his sons Frederik Coenraad (1873-1932) and Johannes Albertus Jr (1877-1955) will be reconstructed based on archival records.

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Mots-clés : cire-résine, conservation-restauration, Hesterman, histoire, peinture, rentoilage

Keywords : conservation, conservation history, Hesterman, lining, logbook, painting, wax-resin

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