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Ali Hamdy Abu Hamed

Variation vis-à-vis Standardization: Investigating the Writings of Imn , $\text{pr-}^{\prime}3$ and $\text{w3h-}^{\prime}mw$ in Theban Abnormal Hieratic and Early Demotic Documents

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Variation vis-à-vis Standardization: Investigating the Writings of *Īmn*, *pr-ʿ3* and *w3ḥ-mw* in Theban Abnormal Hieratic and Early Demotic Documents

ALI HAMDY ABU HAMED*

ABSTRACT

This paper deals with the difference between two scribal traditions, abnormal hieratic and early demotic, in terms of palaeography. These two distinct scripts were used side by side to write administrative and legal documents in Thebes for a period during the second half of the Saite 26th Dynasty, interacting with and influencing each other. The study focuses on the variation and standardization in abnormal hieratic and early demotic through a detailed comparison of how *Īmn*, *pr-ʿ3* and *w3ḥ-mw* were written in Theban administrative and legal documents of the 25th and 26th Dynasties. The aim of this article is to analyze the forms of these words and to trace their writings through the earlier palaeographical stages, not simply to classify them but rather to explore the factors influencing them. Six main forms of abnormal hieratic *pr-ʿ3* have been used in contrast to the standardized form deployed by the early demotic scribes to write this title. Furthermore, the study provides a preliminary list of abnormal hieratic homograph signs with their hieroglyphic counterparts.

Keywords: uniform writings, variant writings, palaeography, scribal tradition, homograph signs, Amun, pharaoh, choachyte.

* Assistant Lecturer at the Egyptology Department, Faculty of Archaeology, Fayoum University.

RÉSUMÉ

Cet article traite des différences entre deux traditions sribales du point de vue de la paléographie. Hiératique anormal et démotique ancien furent utilisés conjointement à Thèbes pour rédiger des documents administratifs et juridiques pendant un certain temps au cours de la seconde moitié de la période saïte, interagissant et s'influençant mutuellement. La présente étude examine la variation et la standardisation de ces deux traditions sribales en comparant la graphie des termes *Ḵmn*, *pr-ꜥ* et *w3h-mw* dans les documents administratifs et juridiques thébains des XXV^e et XXVI^e dynasties. L'objectif de cet article est d'analyser les formes de ces mots et de retracer leurs évolutions à travers les étapes paléographiques antérieures, non seulement pour les classer, mais aussi pour explorer les facteurs qui ont contribué à les faire évoluer. Six formes principales du *pr-ꜥ* hiératique anormal ont été déterminées, contrastant avec la forme standardisée utilisée par les scribes du démotique ancien pour écrire ce titre. De plus, l'étude fournit une liste préliminaire des signes homographes en hiératique anormal avec leurs équivalents hiéroglyphiques.

Mots-clés : écrits uniformes, variantes d'écrits, paléographie, tradition sribale, signes homographes, Amon, pharaon, choachyte.



INTRODUCTION

During the 25th-26th Dynasties (722-526 BC), abnormal hieratic or late cursive hieratic was mainly used to write legal and administrative documents in Upper Egypt, while early demotic made its first appearance at the beginning of the 26th Dynasty in the north of Egypt during the reign of Psamtik I (P. Rylands 1 and 2, el-Hibeh, 644 BC, P. Cairo GEM 66796, Illahun [El-Lāhūn الالهون], 639 BC).¹ After nearly a hundred years, at some point in the Saite Dynasty, early demotic took its path south (Louvre N 706 [Thebes], 592 BC; P. Louvre E 7841/E 7855 [Thebes], 559 BC). The two scribal traditions lived side by side, interacting with each other for a period until early demotic replaced abnormal hieratic in the south of Egypt (the last abnormal hieratic document is P. Cairo CG 30665, Thebes, 544 BC; the last witness signature is P. Louvre E 7837 verso, Thebes, 535 BC), and it grew to become the predominant script used for administrative and legal purposes throughout Egypt.²

¹ For the most recent state of abnormal hieratic studies and texts, see VITTMANN 2015, pp. 383–433; for the publication of P. Rylands 1 and 2, see GRIFFITH 1909; for the preliminary edition of P. Cairo GEM 66796, see ABD-ELLATIF, EISSA 2020, pp. 49–64; Cary Martin kindly mentioned to me via E-mail that Günter Vittmann has recently revised his reading of the date of P. Cairo GEM 66796 to be year 26 (639 BC) rather than 16 (649 BC), see VITTMANN 2023, pp. 596–597, and footnote 56.

² About the replacement of early demotic in the south of Egypt, see MARTIN 2007, pp. 25–38; and the second part of DONKER VAN HEEL, MARTIN 2020, pp. 23–27; see also DONKER VAN HEEL 1994, pp. 115–124.

The difference between abnormal hieratic and early demotic has been the subject of much research. One of the foremost scholars to study this matter was Sven P. Vleeming.³ In his inspiring article, Vleeming set out a number of various criteria to distinguish abnormal hieratic from early demotic, i.e., A) appearance, B) palaeography, C) orthography, D) language, E1) dating, E2) witnesses, F1) legal formula, F2) buying price and F3) oath. His work was followed by several other authors, including Bernadette Menu,⁴ Koen Donker van Heel,⁵ Cary J. Martin,⁶ Tomasz Markiewicz⁷ and Petra C. Hogenboom.⁸ All of these scholars have contributed to our understanding of this issue.

The present paper focuses on the second of Vleeming's criteria (palaeography) for distinguishing between abnormal hieratic and early demotic, it being specified that Vleeming mentions only a few signs.⁹ However, he later provided, in his *excursus* I, a valuable palaeographic investigation of some challenging early demotic signs and groups often alongside their (late) cursive hieratic equivalents.¹⁰ In her demotic palaeographical study, Ola el-Aguizy¹¹ included abnormal hieratic counterparts for a number of demotic signs and sign groups, whereas here I will use complete words. Donker van Heel¹² has subsequently developed this analysis and has argued that the best method for illuminating and understanding the difference between abnormal hieratic and early demotic is to look at the level of standardization in both scribal traditions. He noted that early demotic was much more standardized than abnormal hieratic, not only in terms of legal formulary but also in terms of the number of ways in which a word or a sign could be written.

This study aims to investigate variation and standardization in the two scribal traditions in terms of palaeography¹³ by focusing on three frequently occurring words in the 25th and 26th Dynasties' legal and administrative texts from Thebes. It meticulously analyzes how *ḥmn, pr-ʿ3* and *w3h-mw* are written in abnormal hieratic and early demotic. It goes beyond simply documenting the multiple ways or uniform/unified writings in which some of these terms were written by analyzing the factors affecting the variations and attempting to present alternative explanations for the standardization process. Furthermore, the study explores the possible existence of standardized practices among abnormal hieratic scribes and the presence of variations in early demotic texts. It also presents a preliminary list of abnormal hieratic homographs.

³ VLEEMING 1981.

⁴ MENU 1988.

⁵ DONKER VAN HEEL 1995, pp. 48–71; DONKER VAN HEEL 2020, pp. 590–604.

⁶ MARTIN 2007, pp. 29; 33–34, notes 40–42.

⁷ MARKIEWICZ 2019.

⁸ HOGENBOOM 2019.

⁹ VLEEMING 1981, pp. 37–38.

¹⁰ VLEEMING 1991, pp. 191–252.

¹¹ EL-AGUIZY 1998; limited to a selected number of abnormal hieratic sources, see also a review by VITTMANN 2000, pp. 189–192.

¹² DONKER VAN HEEL 2020, p. 595.

¹³ For variation and standardization in middle hieratic, see KRAUS 2022; and from the perspective of Egyptian linguistics, see the contributions of Stéphane Polis and Jean Winand in CROMWELL, GROSSMAN (eds.) 2018; LOPRIENO 2020.

I. AN ANALYSIS OF THE FORMS OF *Īmn*, *pr-ꜥ* AND *wꜥḥ-mw*

This study discusses how the deity Amun's name *Īmn*, the kings' title *pr-ꜥ* "pharaoh" and the individuals' title *wꜥḥ-mw* "choachyte" were written. These three words are regularly found in the abnormal hieratic and early demotic legal and administrative documents of the 25th and 26th Dynasties from Thebes, as almost no document is without them (Table 1).

Abnormal Hieratic Sources
1. P. Vatican 38595(2038/10547), 2. P. Louvre E 3228 étiq. E carton D, 3. P. Louvre E 3228 étiq. D carton A, 4. P. Louvre E 3228 étiq. G carton G, 5. P. Louvre E 3228 étiq. F carton B, 6. P. Louvre E 3228 étiq. C carton C, 7. P. Louvre E 3228 étiq. B carton E, 8. P. Louvre E 7852, 9. P. Louvre E 7856 verso, 10. P. Louvre E 7856 recto, 11. P. Louvre E 7851 recto, 12. P. Louvre E 7851 verso, 13. P. Cairo CG 30859 etc, 14. P. Vienna D 12004, 15. P. Brooklyn 47.218. 3, 16. P. Vienna D 12003, 17. P. Vienna D 12002, 18. P. Turin Cat. 2121, 19. P. Louvre E 7858+(E 7845 fr. 6-7 + E 7857 C), 20. P. Louvre E 7849+7857 A-B, 21. P. Louvre E 7860, 22. P. Louvre E 7859, 23. P. Louvre E 7861, 24. P. Louvre E 7848, 25. P. BM EA 10432, 26. P. Louvre E 7845 B, 27. P. Louvre E 7847, 28. P. Louvre E 7846, 29. P. Cairo CG 30657, (30. P. Leiden F 1942/5.15, 31. P. Louvre E 3228 étiq. A carton F, 32. P. Louvre N 3168, 33. P. Cairo CG 30884+30864+31182, 34. P. Cairo CG 30907+30909, 35. P. Cairo CG 30886, 36. P. Cairo CG 30865, 37. P. Louvre N 2432, 38. P. Turin Cat. 2020, 39. P. BM EA10113, 40. P. Cairo CG 30665, 41. T. Leiden AH 155)
Early Demotic Sources
I. P. Louvre E 7855, II. P. Louvre E 10935, III. P. Louvre E 7844, IV. P. Louvre E 7845A, V. P. Louvre E 7840 recto, VI. P. Louvre E 7842, VII. P. Louvre E 7835, VIII. P. Louvre E 7838, IX. P. Louvre E 7834, X. P. Louvre E 7836, XI. P. Louvre E 7843, XII. P. Louvre E 7833, XIII. P. Louvre E 7837, XIV. P. Louvre E 7839, XV. P. Louvre E 7850 (XVI. P. BM EA 10120 A+B, XVII. P. BM EA 10450, XVIII. P. Turin Cat. 2122, XIX. P. Turin Cat. 2123, XX. P. Turin Cat. 2124, XXI. P. Turin Cat. 2125, XXII. P. Turin Cat. 2126, XXIII. P. Turin Cat. 2127, XXIV. P. Turin Cat. 2128, XXV. P. Louvre E 3231 C, XXVI. P. BM EA 10449, XXVII. P. Berlin P 3110)

TABLE 1. The primary abnormal hieratic and early demotic sources of this study.¹⁴

I.1. *Īmn*

An analysis of twenty-nine abnormal hieratic Theban documents reveals eight different forms in which the name of the deity Amun was written, either individually or in personal names (Table 2). These variant writings are major and minor forms, and they are also present throughout the earlier palaeographical stages.¹⁵

¹⁴ This study will primarily use sources from the 25th and 26th Dynasties. However, additional sources, even if they date to the 27th Dynasty, were added as necessary to ensure that the results are accurate and complete. The documents listed in Table 1 will be referenced using bold numbers henceforth.

¹⁵ Cf. JANSSEN 2000, p. 53.


















































	1	2	3	4	5	6	7	8
Individually	 1.9	 1.3	 2.7	 10.6	 15, E: 16.11	 7, II.10	 2.7	 8.6
In PN	 4IvO, 15	 II.2	 II.II	 7, II.5	 6, II.5	 2.5	 25.7	 7, I. 14
Individually	 3.2	 5.12	 15, E: 16.11	 15, D: 13.21	—	 21.7	 6, I.8	—
In PN	 18.14	 3.5	 12.6	 8.2	 13.12	—	—	—

TABLE 2. Abnormal hieratic variant writings of *Īmn*.

1. The first example of *Īmn* ( I. 9/ ) is the (semi) full form which is close to its normal/late hieratic forms (e.g.,  P. Brooklyn 47.218. 3, col. A.1, 2). This shows differences mostly in the sign group  (G. Y₅+N₃₅), in which some details may appear as  15, D: 11.10, or with just the upper sign written as a dot, like  5.18. A dot is often placed behind the divinity as in /  3.2.¹⁶
2. This form of *Īmn* ( 3.5) is more cursive than the first one because of the ligature between the flowering reed and the *mn*-sign. It seems that this form came directly from the Ramesside hieratic, especially that in the Late Ramesside Letters , .¹⁷ It can also be found in the Oracular Amuletic Decrees, from the first half of the Third Intermediate Period, like .¹⁸ The change that took place with the ligaturing of the *i*-sign with the *mn*-sign can also be seen in P. Wilbour from the end of the 20th Dynasty, for instance, the handwriting of scribe C ,  and scribe D , .¹⁹
3. The third shape ( 2.7) is more simplified than the second one. It is characterized by a loop in the upper left part of the main sign. This is also found in the Third Intermediate Period administrative documents, , , .²⁰
4. The fourth form ( 15, D: 13.21) is similar to the previous but without the loop. It looks like an open semi-circle from the top. Moreover, this also appears in the proto cursive (abnormal) hieratic P. Berlin P 3048 verso A, text 36, 12 ().²¹

¹⁶ This dot can also be found in other forms. The abnormal hieratic scribes are used to writing it after divine beings; for more details about the functions of abnormal hieratic dots, see ARCHIDONA RAMÍREZ 2020, pp. 23–24: Type b: dot after divine beings.







¹⁷ MIYANISHI 2016, pp. 76–81, 194–195.

¹⁸ GASSE 1988, pl. XII.







¹⁹ VON BOMHARD 1998, p. 87.


²⁰ GASSE 1988, pl. XII.



²¹ EL-AGUIZY et al. 2023, p. 242.

5. The fifth form ( 15, E:16.11) is very close to the preceding type but it is characterized by a tiny stroke above the semicircular shape. It seems that this was written in two movements (.
6. The sixth form ( 7, II.10) is distinguished by a small horizontal stroke at the top left side of the sign, which is sometimes ligatured with the divine determinative.
7. The seventh form ( 2.7) is more abbreviated. The speed of writing may have joined the strokes, resulting in a rounded shape for the main sign in the name.
8. The eighth form ( 8.6) is very abbreviated; it is written as if it were a huge dot. The same scribe wrote the name of *Īmn* once more clearly at the beginning of his text inside a personal name  8.2 (the fourth form).

The observation that the same patterns appear in the writings of various scribes in different documents, despite some similarities among the forms, suggests their independence from each other.

On the other hand, the great differentiation in how *Īmn* was written in abnormal hieratic contrasts with the great standardization in early demotic; in the early demotic Theban documents for this analysis, *Īmn* was written uniformly, both individually (II.2 ) and in personal names (XII,vo,10 ) by different scribes. There are just slight differences in some shapes (XV.3 , XI.3 , V ro, col.2. 6 , XV.1 .

In addition, there is another difference between abnormal hieratic and early demotic forms of the name of *Īmn*. The name of Amun—and masculine deities in general—was written without the divine determinative () in abnormal hieratic personal names, unlike early demotic proper names,²² particularly during the 25th Dynasty and the first half of the 26th Dynasty, that is the period of the so-called “classic” Theban abnormal hieratic. However, during the same period outside Thebes, this determinative is written in personal names, e.g., in O. Mut 38/70 (750-650?), from Dakhla Oasis,²³ and in an earlier papyrus, P. Vienna D 12011, presumably from Heracleopolis (Ehnasya el-Medina).²⁴ But this changed during the reigns of the kings Apries and Amasis, when the divine determinative began to be written behind the name of Amun—and masculine deities in general—inside the abnormal hieratic personal names. This may have been an early demotic influence.²⁵

Furthermore, abnormal hieratic and early demotic were used alongside each other in Thebes for some decades, and they influenced each other during this time. This interaction can be clearly seen in the forms of *Īmn*. In the sources studied, there are two abnormal hieratic forms in the early demotic texts, i.e.,  IV.11,  XIII, vo.9. The early demotic influence on abnormal hieratic is more visible due to the abnormal hieratic scribes gradually acquiring early demotic

²² VLEEMING 1981, p. 38; with regard to the individual's names containing the name of the deity Horus VLEEMING 1980, pp. 10–11; 12, note j; VLEEMING 1981, p. 38, adopts an alternative method for transcribing the left-hand vertical stroke in the name of *Hr*; he sees it as a flowering reed sign (M17) rather than the divine determinative.

²³ VITTMANN 2020a, p. 727.

²⁴ VITTMANN 2015, p. 395.

²⁵ DONKER VAN HEEL 2020, p. 601.

during the period of transition to demotic in the south. The best example is the forms written by the scribe *P3-di-Hr-Rsn s3 P3-di-Īmn-Īp*'s family²⁶ (Table 3).


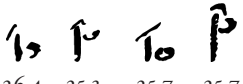
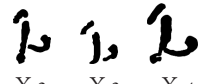


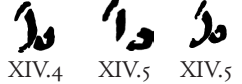
<i>P3-di-Hr-Rsn s3 P3-di-Īmn-Īp</i>	<i>P3-di-Īmn-Īp s3 P3-di-Hr-Rsn</i>	<i>Ns-Hr-p3-hrd s3 P3-di-Hr-Rsn</i>
The father Abnormal hieratic and early demotic	The eldest son Abnormal hieratic and early demotic	A son Early demotic
 23.II 24.2 24.2 24.3	 26.4 25.3 25.7 25.7	 X.2 X.3 X.4
 24.8 27.2 27.3 27.9	 25.8 27.II 29.5	 XIV.4 XIV.5 XIV.5

TABLE 3. The interaction between abnormal hieratic and early demotic in writing *Īmn*.

1.2. *pr-ʿ3* (‘.w.s.)

The title *pr-ʿ3* “Pharaoh” always precedes the names of the ancient Egyptian kings in abnormal hieratic and early demotic documents, within the same cartouche as the king’s name, in separate ones, or simply after the opening cartouche sign. It is also found in the abnormal hieratic oath. Palaeographically, *pr-ʿ3* was written in various forms in abnormal hieratic. An analysis of thirty-two documents brings to light six distinct forms that the abnormal hieratic scribes used to write this title (Table 4).




















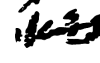


































1	2	3	4	5	6
 3.1  36.4	 2.7	 6, col. I, 1	 17, col. I, 10  17, col. II, 9	 18.7  18.II	 19, col. I. 8
 16, col. II, 13	 13.I	 17, col. II, 4	 20.I	 22. I	 19, col. II. 3
 20. II	 15, H: 26. II	 15, D: 9. 5	 1.9	 23.I  28.9	—
 38.58	 38.29	 18.I	 38.45	 38.50	—

TABLE 4. Abnormal hieratic variant writings of *pr-ʿ3*.

²⁶ For the texts written by this family and their role in the transition to demotic in the south, see PESTMAN 1994, pp. 158–160; DONKER VAN HEEL 1994; DONKER VAN HEEL 1995, pp. 51–54; MARTIN 2007, pp. 28–30.

1. The first abnormal hieratic *pr*- ζ is the full form. It was written with uncial signs, whether the *pr*-sign is above (e.g., 38. 58 ) or below (e.g., 36.I )²⁷ the ζ -sign. This form can be compared to the normal hieratic *pr*- ζ forms, with double or single *pr*-sign, such as P. Brooklyn 47.218.3, col. G, 5 , P. Brooklyn 47.218.3, col. C, 7 . It can be traced back to the proto-abnormal hieratic P. Berlin P 3048 verso F, text 14, 2 .²⁸
- 2-3. The second and the third forms are more abbreviated than the first one; all the signs are ligatured. Although these two forms were written similarly, a difference between them can be seen in the starting stroke in the bottom, which could be the opening of the cartouche sign as in the second form (2.7 ) or it may represent the beginning of the *pr*-sign as in the third form (15, D: 9. 5 ). The last one may be an abbreviation of the *pr*- ζ that we find in the Late Ramesside Letters (e.g., P. Turin Cat. 202I verso, 1 ).²⁹ In both these forms, the upper sign is not the *pr*-sign but seems to be the ζ -sign. There is a problem in identifying the lower group; is this a *pr* sign plus *nh wdz snb* as in the Late Ramesside Letters or a double *pr*-sign as in 36.4 ? Donker van Heel³⁰ assumes that the scribe of P. Louvre N 2432, *Hr sz Hnsu-i. ir-di. t-s sz Pz-iry*- ζ , who also wrote P. Turin Cat. 2118 A and B, had a peculiar way of writing *pr*- ζ (i.e., P. Louvre N 2432, col. I, 1 , P. Turin Cat. 2118 A, 34 ), which was copied by the witnesses of P. Louvre N 2432, 12, 15. This way (the third form) can also be found in 15, D: 9, 5 , 17, col. II, 4 , 18.I , 38.21 , 38.33  (by a witness), 6, col. I, 9  and 33.5 . This can be traced back to P. Berlin P 3048 verso E, text 17, 1 .³¹
4. The fourth form is a mix of the second and the third forms, but here the scribes have added a tick on top of the *pr*- ζ sign group (38.45 , 17, col. II, 9 ). Juan José Archidona Ramírez³² classified this tick as a diacritical stroke, but he thinks that it does not make sense, as there are no other abnormal hieratic signs with or without a stroke on top that could be confused with the *pr*- ζ sign. He was uncertain whether this tick should be considered as a trace of an earlier hieratic form that contained a diacritical stroke, or whether it just had another unknown function. The present study could not offer a clear explanation for this tick, but the stroke on top of the *pr*- ζ sign can be seen in (if it is not a part of the ζ -sign) P. Berlin P 3048 verso A, text 36, 4 , E, text 20 ,³³ G, text 5, 2 .³⁴ Moreover this dot is found in the Late Ramesside Letters, where it is transcribed by Černý as a separate element from the ζ -sign (P. Berlin P 10487 recto, 1 ). However, Mizuki Miyanishi took it as part of the formulation of the ζ -sign.³⁵
5. The fifth form (18.7 ) may be a simplified form of the first (3.I ). (23.I ) is more common in the late documents (docs. 21-25; 27-28). The lower sign is a clear ζ . This form

27 This facsimile was reproduced after VITTMANN 2001, pl. 10.

28 VITTMANN 2023, p. 588.

29 ČERNÝ 1939, p. 61.

30 DONKER VAN HEEL, MARTIN 2020, p. 17, note 1b.

31 This facsimile after VITTMANN 2023, p. 603, pl. 2.





32 ARCHIDONA RAMÍREZ 2020, p. 46.




33 The facsimiles were reproduced after VITTMANN 2023, pp. 590; 601–602, pl. 1a–b.

34 The facsimile was reproduced after MÖLLER 1921, p. 300.

35 ČERNÝ 1939, p. 36; MIYANISHI 2016, p. 305, note 86.

made the transition easier for the Theban abnormal hieratic scribes when they wrote in the early demotic tradition.

- This form is found in a document from the reign of Necho II, 19, col. I. 8 . In this unique form, the *pr*-sign has been written in a peculiar way, ligatured with the ʕ-sign. It appears again in the second column of the same papyrus line 3 .³⁶ These forms were written by two witnesses; the other witnesses wrote it in different ways, 19, col. I. 15 , 19, col. II. 8 .

In contrast to the variations in the writing of *pr-ʕ* in the abnormal hieratic documents, the early demotic scribes standardized their way of writing this title, as shown by an analysis of the early demotic Theban materials examined in this research (e.g., II.8 , XIV.I , XVIII. I )³⁷

As in the writing of *Īmn*, the abnormal hieratic scribes were influenced by early demotic in their writing of the title *pr-ʕ*. This can also be seen in the texts written by the family of the scribe *P3-di-ĪHr-Rsn ʕ P3-di-Īmn-Īp*, especially the eldest son *P3-di-Īmn-Īp ʕ P3-di-ĪHr-Rsn*, as shown in Table 5.


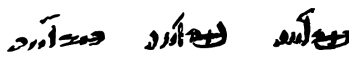
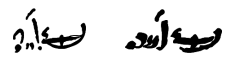



<i>P3-di-ĪHr-Rsn ʕ P3-di-Īmn-Īp</i>	<i>P3-di-Īmn-Īp ʕ P3-di-ĪHr-Rsn</i>	<i>Ns-ĪHr-p3-ḥrd ʕ P3-di-ĪHr-Rsn</i>
The father Abnormal hieratic	The eldest son Abnormal hieratic influenced by early demotic	A son Early demotic
 23.I 24.I 27.I	 25.I 26.I 29.I	 X.I XIV.I

TABLE 5. The interaction between abnormal hieratic and early demotic in writing *pr-ʕ*.

1.3. *w3h-mw*

Unlike the writings of *Īmn* and *pr-ʕ*, the abnormal hieratic scribes seem to have deployed uniform writings of *w3h-mw*. This is evident by an analysis of thirty-three abnormal hieratic documents in which this title can be found (Table 6). In addition to the differences resulting from various individuals' handwriting, only two forms of this title can be found: a short form (2.2I ) and a long form (3I. col. I, 2 .

³⁶ The two examples of this form are really similar to the early demotic forms.

³⁷ According to ERICHSEN 1937, p. 44, the demotic sign () which is main sign in this title, is similar to five other demotic words and sign groups.
















 30.2	 2.5	 2.21	 4.2	 5.2	 6. col. I, 2
 6. col. II, 4	 6. col. II, 5	 7. col. I, 13	 7. col. II, 9	 31. col. I, 2	
 8.3	 9.2	 10.2	 11.3	 12.1	 32.2
 33.2	 13.2	 34.2	 35.3	 14.5	
 16. col. I, 2	 16. col. I, 3	 16. col. I, 7	 16. col. II, 4	 16. col. II, 10	
 17. col. I, 3	 18.7	 37.2	 37.6	 37.14	
 19.1	 20.2	 39.2	 22.10, 3	 23.3	
 24.1	 24.2	 24.3	 24.4	 25.2	 25.3
 25.4	 25.5	 25.7	 27.3	 28.1	 40.2
 40.3	 29.1	 29.2			


TABLE 6. Abnormal hieratic writings of *wḥ-mw*.


Unfortunately, there are no clear examples of *wḥ-mw* in administrative and legal documents written in proto-abnormal hieratic during the first half of the Third Intermediate Period which would allow us to follow this standardization, although there are  in P. Louvre AF 6345 + P. Ashmolean Museum 1945.94 (Griffith Fragments), verso, col. V, 20 and  in col. V, 21 for which a possible reading as *wḥ-mw* has been suggested.³⁸ This reading is by no means certain, but it may be understood by comparing some of its elements in the proper name *Wḥ-[/...]* (P. Berlin P 3063 (P. Reinhardt), col. IV, 35 )³⁹ and *ʿw-mw* “water-chief”⁴⁰ (P. Berlin P 3063 (P. Reinhardt), col. IV, 36 ).⁴¹

38 GASSE 1988, p. I, 20; II, pl. 27; SHEIKHOESLAMI 2017, p. 433; Table 1: nos. 1 and 2.

39 VLEEMING 1993, p. 21; pl. 3.

40 VLEEMING 1993, pp. 56–57.

41 After submitting this manuscript, I became aware of a word written in late Ramesside or post-Ramesside administrative hieratic (P. Leiden F 2015/9.347, 1b recto, 3 ) which DONKER VAN HEEL, GOECKE-BAUER 2022, pp. 82–83; 84: note g/L. 3, questionably read as *wḥ-mw*. If their reading is accurate, the writing palaeographically resembles—except for the absence of the phonetic complement *b*—the short form of the abnormal hieratic *wḥ-mw* (see *supra*). It may represent the transition from writing this title in late Ramesside hieratic to abnormal hieratic.

This standardization also can be seen in some Ramesside hieratic forms of this title (Table 7), but with a different spelling () to that of the 25th and 26th Dynasties, as follows:
















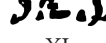
















		
P. BM EA 10054 vo, col. I, 7	P. BM EA 10068 vo, col. I, 6	P. BM EA 10053 ro, col. III, 4
		
P. BM EA 10053 ro, col. IV, 7	BM EA 10053 ro, col. VI, 1	O. BM EA 50744, 2

TABLE 7. Some Ramesside hieratic writings of *wʕh-mw*.

Concerning the early demotic *wʕh-mw*, this (XI.2 ) seems to be the most usual form that the demotic scribes settled on to write this title, but in twenty-one early demotic documents from Thebes (Table 8), one can find other forms, i.e., II.1 , III.3 , IV.2 , VI.1 , VII.2 , VIII.2 , IX.2 , X.2 , XI.1 , XI.2 , XIV.2 , XVI: A.1 , XVI: B.1 , XIX.1 , XX.2 , XXI.1 , XXII.3 , XXIII.1 , XXIII.4 , XXIV.1 , XXV.2 , XXVI.2 , XVII.3 , XXVII.2 , XXVII.2 

					
II.1	III.2	III.3	IV.2	VI.1	VII.2
					
VIII.2	IX.2	X.2	XI.1	XI.2	XIV.2
					
XVI: A.1	XVI: B.1	XIX.1	XX.2	XXI.1	
					
XXII.3	XXIII.1	XXIII.4	XXIV.1	XXV.2	
					
XXVI.2	XVII.3	XXVII.2	XXVII.2		

TABLE 8. Early demotic writings of *wʕh-mw*.

42 See also PESTMAN 1994, p. 11.

a fairly uniform shape. The early demotic scribes standardized one form for the writing of *Īmn* and *pr-ꜥ*, but used multiple forms for *wꜥh-mw*; six variant writings are collected here. That is, although there is standardization in the writing of early demotic and abnormal hieratic, there are also variations. The study also revealed that the abnormal hieratic forms of *Īmn* and *pr-ꜥ* can be traced back to legal and administrative documents of the Third Intermediate Period (or what is known as proto-abnormal hieratic) and (late) Ramesside hieratic. This is in contrast to *wꜥh-mw*, for which no clear examples were found from the Third Intermediate Period, and its forms differed in Ramesside hieratic. The interaction of both scribal traditions and their influence on each other is evident in the writing of *Īmn*, *pr-ꜥ* and *wꜥh-mw*.

These findings are consistent with those of Donker van Heel,⁴⁴ who has pointed out that the abnormal hieratic scribes could choose six different ways to write *Īmn*, while the early demotic scribes had settled for one uniform writing for the same word. He suggests that (early) demotic may have been the subject of a conscious design or standardization process—not fully investigated here⁴⁵—while abnormal hieratic was the result of organic development. In fact, the present study has added two more forms, bringing to eight the number of ways in which the name of the deity Amun was written in abnormal hieratic. It also provided an additional piece of evidence for the lack of standardization (differentiation) in abnormal hieratic (*pr-ꜥ*: six different forms), by contrast to early demotic. It also suggests that the variation in abnormal hieratic is due to its gradual development over time. In other words, the abnormal hieratic scribes maintained and developed different ways of writing words that existed prior to abnormal hieratic, as evidenced by the fact that the forms of *Īmn* and *pr-ꜥ* can be traced back to administrative and legal documents of the Third Intermediate Period; the Late Ramesside Letters scribes wrote these two words in different ways as well.⁴⁶

But was early demotic really subject to a conscious design or standardization process? However, it is not only about *Īmn*, which was written uniformly in late or normal hieratic as in P. Brooklyn 47.218.3,⁴⁷ where seventeen witnesses wrote *Īmn* in the same form (𓂏𓂏). Does this mean that the normal hieratic was subject to a standardization process? Maybe this suggests that early demotic also became more formal and standardized over time. It was essential for the demotic scribes to have a single, unified style of writing so that they could communicate effectively with each other—which could be explained as ‘intelligibility’⁴⁸—or simply that the standardized forms of demotic words developed during the earlier palaeographic stages of early demotic in northern Egypt. To present a clear-cut answer supported by palaeographic evidence, we must study the texts found in or that presumably originated in the north of Egypt (precisely, northern Upper Egypt), which are called proto-demotic,⁴⁹

⁴⁴ DONKER VAN HEEL 2020, pp. 595–596.

⁴⁵ Much has been written about the rise and origin of demotic. The generally accepted opinion is that the demotic script was a natural progression from the late Ramesside cursive hieratic of Lower Egypt, see MALININE 1953, pp. XIV–XVI; VLEEMING 1981; MARTIN 2007, p. 26; DONKER VAN HEEL, MARTIN 2020, p. 23; or it derived from the second of two hieratic styles used in Lower Egypt with well-formed hieratic signs, as was assumed by EL-AGUIZY 1992, p. 94.

⁴⁶ Cf. MIYANISHI 2016, pp. 76–81; 303–315.

⁴⁷ Cf. PARKER 1962, p. 14.

⁴⁸ ‘Intelligibility’ is the term Cary J. Martin has recently used to explain the transition of early demotic to southern Egypt, see DONKER VAN HEEL, MARTIN 2020, p. 26, which may also be relevant here.

⁴⁹ The term proto-demotic has been used by VITTMANN 2020b, pp. 331–332, to describe the handwriting of the scribe who wrote P. Köln 5632.

through to early demotic. Unfortunately, the northern proto-demotic or mixed/transitional documents are still rare; three papyri have come to light so far, i.e., P. Köln 5632, P. Duke 648 and P. Cairo GEM 66796, from the regions of Fayoum (Illahun *اللاهون*) and Heracleopolis.⁵⁰ The writings of *Imn* and *pr-ʿ3* in these documents (Table 10) show a gradual development and change through unified forms, as follows:⁵¹

Proto-demotic (mixed script)	Early demotic		
 P. Köln 5632 x+III, 9	 P. Rylands I, A, 3	 P. Rylands VI, F, 1	 P. Philadelphia E 16339, 1
 P. Köln 5632 x+III, 10	 P. Rylands I, D, 4		 P. Philadelphia E 16339, 1
 P. Köln 5632 vo x+II, 16	 P. Rylands I, F, 3		 P. Rylands 9, I, 4
 P. Duke 648 ro, 4	 P. Rylands II, J, 3		 P. Rylands 9, VI, 21
 P. Duke 648 ro, 6	 P. Rylands II, D, 9		 P. Rylands 9, VII, 8
 P. Cairo GEM 66796, col. I, 6 (A, 6)			
 P. Cairo GEM 66796, col. I, 10 (B, 3)			
 P. Cairo GEM 66796, col. II, 9 (D, 3)			
 P. Cairo GEM 66796, col. I, 1 (A, 1)	 P. Rylands I, A, 1	 P. Rylands V, 1	 P. Cairo CG 50068, 1
 P. Cairo GEM 66796, col. I, 2 (A, 2)	 P. Rylands I, D, 6	 P. Rylands VI, A, 1	 P. Rylands 9, XVI, 16
 P. Cairo GEM 66796, col. I, 8 (B, 1)	 P. Rylands II, H, 9	 P. Rylands VII, 1	 P. Rylands 9, XIV, 17
 P. Cairo GEM 66796, col. I, 8 (B, 1)	 P. Rylands II, K, 8		 P. GEM 66797 text A, 1
 P. Cairo GEM 66796, col. II, 8 (D, 2)			

TABLE 10. Writings of *Imn* and *pr-ʿ3* in proto-demotic (mixed/transitional script) and early demotic documents from Fayoum (Illahun) and Heracleopolis regions.

⁵⁰ For these documents see VITTMANN 2020b; VITTMANN 2015, p. 419; ABD-ELLATIF, EISSA 2020.

⁵¹ Certainly, these are individual cases that cannot be generalized but require a systematic study of a larger number of demotic words.

As a matter of fact, the early demotic scribes had another kind of standardization. To put it another way, they were not limited to writing a word in a single way, but they could render more than one hieroglyphic sign or group with a single demotic sign. The best example of that can be found in Wolja Erichsen's *Schrifttafel*⁵² (Fig. 2), as it can be seen that the same demotic sign in column three, from numbers 3 to 17, represents various hieroglyphic signs and groups. However, all of this does not mean that a demotic sign or group cannot appear in different representations, depending on many factors such as scribal hand, region, period and in what type of text they were written,⁵³ for instance, the demotic \equiv sign in P. Louvre E 10935, 11 \curvearrowright , 12 \curvearrowright , P. Louvre E 7850, 1 \bigcirc , 5 \bigcirc , P. Loeb 41 (= P. Hou 7), 3, \bigcirc (early demotic), P. BM EA 10027, E, 2 ρ , P. BM EA 10413, 13 \curvearrowright , 13 ρ (Ptolemaic demotic).⁵⁴

















Schrifttafel			Anhang					
16.	γ	Δ	\mathcal{R}	1.	λ \mathcal{R}	3.	\equiv	Λ
\bigcirc				2.	λ \bigcirc	4.	\equiv	\equiv
1.	γ	\bigcirc		3.	λ \curvearrowright	5.	\equiv	\curvearrowright
2.	γ	ρ		4.	λ \equiv	6.	\equiv	\equiv
3.	γ	\bigcirc		5.	λ ρ	7.	\equiv	\equiv
4.	γ	ρ		6.	λ ρ	8.	\equiv	ρ
5.	γ	ρ		7.	λ ρ	9.	\equiv	ρ
6.	γ	ρ				10.	\equiv	ρ
7.	γ	ρ	\mathcal{S}	1.	\equiv \equiv	11.	\equiv	\equiv
8.	γ	ρ		2.	\equiv \bigcirc	12.	\equiv	\equiv
				3.	\equiv ρ	13.	\equiv	ρ
ρ				4.	\equiv ρ	14.	\equiv	ρ
1.	ρ	ρ		5.	\equiv ρ	15.	\equiv	ρ
2.	ρ	ρ		6.	\equiv ρ	16.	\equiv	ρ
3.	ρ	ρ		7.	\equiv ρ	17.	\equiv	ρ
4.	ρ	ρ		8.	\equiv ρ	18.	\equiv	ρ
5.	ρ	ρ		9.	\equiv ρ	19.	\equiv	ρ
6.	ρ	ρ		10.	\equiv ρ	20.	\equiv	ρ
				11.	\equiv ρ			
1.	ρ	ρ		12.	\equiv ρ	\mathcal{Z}		
2.	ρ	ρ		13.	\equiv ρ	1.	\mathcal{Z}	ρ
3.	ρ	ρ		14.	\equiv ρ	2.	\mathcal{Z}	ρ
4.	ρ	ρ		15.	\equiv ρ	3.	\mathcal{Z}	ρ
5.	ρ	ρ		16.	\equiv ρ	4.	\mathcal{Z}	ρ
6.	ρ	ρ				5.	\mathcal{Z}	ρ
7.	ρ	ρ				6.	\mathcal{Z}	ρ
8.	ρ	ρ	\mathcal{J}	1.	\mathcal{Z} ρ	7.	\mathcal{Z}	ρ
				2.	\mathcal{Z} ρ	8.	\mathcal{Z}	ρ



























FIG. 2. Erichsen 1937, p. 43, shows a number of standardized demotic signs.

























⁵² ERICHSEN 1937, pp. 41–46; for the updated list, see VLEEMING 1988.

⁵³ See QUACK et al. 2020, p. 607; EL-AGUIZY 1998; *DPDP*.

⁵⁴ For more shapes of this sign visit the *DPDP* at: <http://129.206.5.162/beta/palaeography/palaeography.html?q=%F0%93%87%AF> [last accessed 11/11/2023].

As many abnormal hieratic signs and sign groups have multiple forms, it is difficult to discuss all of the variations in detail here. However, here are a few examples. To begin with the *š*-sign , which is usually written as in P. BM EA 10907 ro, 4 () , P. Louvre E 3228 G|G, 4 () *ps*), but sometimes it is written as *Hry-šf*, as for example in P. BM EA 10907 ro, 6 () , P. Louvre E 3228 E|D, 19 () , 22 () . The walking legs sign  can be written in two ways, as in T. Leiden AH 155 ro, 20 () and in T. Leiden AH 155 ro, 9 () , 23 () . Both forms are similar to other signs. There are two abnormal hieratic forms of : the first form () P. Louvre E 7856 vo, 9) is often used in the writing of *p3 mtr-sh*, while the second form () P. Louvre E 7856 vo, 7) is used in other contexts. However, there are some exceptions to this pattern, i.e., *p3 mtr-sh* in P. Leiden F 1942/5.15, 9 () , *p3 sh pr hd* in P. Leiden F 1942/5.15, 10 () ,⁵⁵ *n3 sh(.w)* in P. Louvre E 3228 D|A, 17 () .

The abnormal hieratic scribes also wrote *it* in *it-ntr* in four forms, e.g., P. Vienna D 12003, col. I, 2 () , col. II, 9 () , P. Brooklyn 47.218.3, col. C, 8 () , col. E, 6 () . Another variation can be found in the writing of *nh*, as in P. Vienna D 12003, col. I, 3 () , col. II, 1 () , P. Louvre E 7848, 6 () . Furthermore, compare the variations in the sign group , as in *b3ky* in P. Louvre E 3228 F|B, 5 () , *t3-b3* in P. Louvre E 3228 D|A, 19 () , and the sign  in *b3k* in P. Vatican 38595, 5 () , P. Brooklyn 37.1799 E ro, 1 () . The abnormal hieratic filiation sign ()⁵⁶ was written in a variety of different forms, as follows: P. Leiden F 1942/5.15, 2 () , P. Vatican 38595, 18 () , P. Louvre E 3228 E|D, 2 () , 11 () , 21 () , P. Louvre E 3228 D|A, 10 () , 11 () , P. Louvre E 7851 vo, 7 () , P. Louvre E 7861 ro, 2 () , 3 () , P. Louvre E 7847, 2 () , 11 () .

Despite this wide variation that one can find in the abnormal hieratic tradition, the abnormal hieratic scribes did show a kind of standardization; they were able to standardize some of their signs, as we saw in the writings of *w3h-mw*. Donker van Heel⁵⁷ also drew attention to two abnormal hieratic signs as examples of standardization in the abnormal hieratic script. The first sign () , which he described as a multifunctional sign,⁵⁸ could be used for numerous hieroglyphic signs and groups (Appendix, no. 1), as follows: , , , , , , , , , , , , , , , , , , , , , . The second sign () was also used to write several hieroglyphic signs and groups as in Appendix, no. 2. However, he argues that this standardization may not have been a conscious choice, but rather the result of a gradual, natural development. It goes without saying that very similar or identical signs are found in late hieratic, which usually reflects the hieroglyphic models, which would have had certain characteristics in common or equally different hieroglyphic forms may also have been reduced to uniform hieratic abbreviations by chance.⁵⁹ The scribes may have had a role in abbreviating similar hieroglyphic signs and groups to similar hieratic signs. It is possible that this also applies to abnormal hieratic signs that are similar to each other. Here, the study presents another seventeen abnormal hieratic


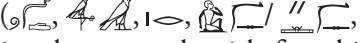











⁵⁵ The facsimile was reproduced after VLEEMING 1980, p. 11.

⁵⁶ For more detail on the transcription and the derivation of the abnormal hieratic and early demotic filiation sign, see VLEEMING 1991, sec. 51: pp. 214–217.

⁵⁷ DONKER VAN HEEL 2013, pp. 12–14; DONKER VAN HEEL 2015, pp. 376–377; DONKER VAN HEEL 2020, p. 598.

⁵⁸ The multifunctional sign is a single abnormal hieratic sign used for a multitude of hieroglyphic signs, sign groups and words. For more details about this sign, see DONKER VAN HEEL 2013, pp. 12–14; DONKER VAN HEEL 2015, pp. 376–377; and more recent DONKER VAN HEEL, ARCHIDONA RAMÍREZ 2022.

⁵⁹ VERHOEVEN 2001, pp. 257–271.

signs (Appendix, nos. 3-19), which are homographs with numerous hieroglyphic signs and groups, e.g., the sign  (Appendix, no. 3) could be used to write six hieroglyphic sign groups (, , , , , ).⁶⁰ Another abnormal hieratic sign  (Appendix, no. 7) is a homograph with four hieroglyphic sign groups (, , , ). However, it must be stressed that some signs in the Appendix may be written in more than one form, for example, the walking legs sign , and some differences can be found in some signs that are homographs.

3. CONCLUSION

In summary, this study has attempted to shed light on palaeographic differences between abnormal hieratic and early demotic to provide a more comprehensive understanding of how a word could be written in the two scribal traditions. Both variation and standardization existed in abnormal hieratic and early demotic; the extent of standardization in abnormal hieratic may have been more widespread than previously thought. In fact, we are dealing with scribal practices that are influenced by different factors such as diachronic and geographical dimensions and a scribe's emotional state or idiosyncrasies. In the case of this study, the historical (development) factor is clearly evident. In addition, the current paper has provided a preliminary list of abnormal hieratic homograph signs with their hieroglyphic counterparts. This is not exhaustive and there are likely to be more abnormal hieratic homographic spellings that have not yet been identified. It also suggests that further research is needed to better understand the use of abnormal hieratic homographs.




























ACKNOWLEDGMENTS



























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


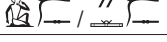











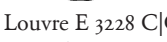












⁶⁰ It is important to emphasize that many of the homographic spellings must have been clear to contemporary readers, and often also to the modern scholar, from the specific context and/or the words in which they occur.


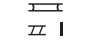
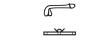






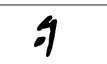
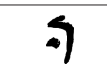
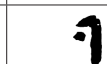





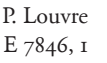
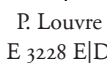
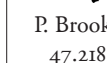
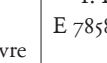
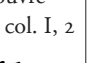
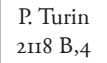

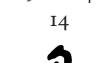



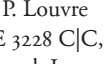


APPENDIX




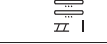







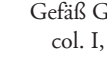
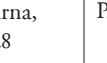



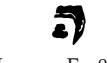
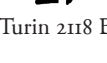

A preliminary list of abnormal hieratic homograph signs, along with their hieroglyphic counterparts.

1. 												
												
 P. Vienna D 12002 col. I, 1	 P. Brooklyn 47.218.3, col. D, 15	 P. Louvre E 3228 C C, col. I, 4	 P. Louvre E 3228 D A, 4	 P. Louvre E 3228 D A, 4	 P. Vienna D 12002 col. I, 2	 P. Vienna D 12003 col. I, 2	 T. Leiden AH 155 ro, 2	 T. Leiden AH 155 ro, 12	 P. Louvre E 7851 ro, 2	 T. Leiden AH 155 ro, 2	 T. Leiden AH 155 ro, 14	 P. Brooklyn 47.218.3, col. C, 8

2. 							
							
 P. Louvre E 3228 H H, 3	 P. Louvre E 3228 C C, col. I, 18	 P. Louvre E 3228 E D, 11	 P. Louvre AF 6345+ Griffith frag. ro. XII, 14	 P. BM EA 10113, 1	 P. Louvre E 3228 C C, col. I, 7	 P. Louvre E 3228 C C, col. I, 2	 P. Brooklyn 47.218.3, col. E, 19
 P. Louvre E 3228 G G, 11	 P. Louvre E 3228 E D, 14	 P. Brooklyn 47.218.3, M, 6; E, 16	 P. Prachov, vo. III (pEremitage St.Petersburg 2969)		 P. Louvre E 3228 C C, col. II, 7	 P. Louvre E 3228 C C, col. I, 15	 T. Leiden AH 155 ro, 9; 23
	 P. Vienna D 12002, col. II, 3				 P. Louvre E 3228 H H, 14		

3. 					
					
 P. Louvre E 7851 vo, 1	 P. Louvre E 3228D A, 7	 P. Louvre E 3228 D A, 10	 P. Louvre E 7848, 2	 P. Vienna D 12002, col. I, 12	 P. Louvre E 3228 E D, 3
 P. Louvre E 3228 F B, 2	 P. Louvre E 7859 vo, 2	 P. Louvre E 3228 C C, col. I, 7	 P. Louvre E 3228 C C, col. I, 16	 P. Brooklyn 47.218.3, col. E, 16	 P. Louvre E 3228 E D, 13
 P. Louvre E 3228 D A, 2	 P. BM EA 10432, 4	 P. Vienna D 12002, col. I, 2	 P. Vienna D 12004, 8		 P. Louvre E 3228 D A, 3
	 P. Leiden F 1942/5.15, 10	 P. Vienna D 12003, col. II, 14	 P. Louvre E 7859, ro, 4	 P. Brooklyn 47.218.3, col. I, 8	 P. Louvre E 3228 C C, col. I, 7

4. 							
							
 P. Louvre E 7846, 1	 P. Louvre E 3228 E D, 14	 P. Brooklyn 47.218.3, col. C, 10	 P. Louvre E 3228 A F, col. I, 15	 P. Louvre E 7858, col. I, 2	 P. Turin Cat. 2121, 4	 P. Turin 2118 B,4	 P. Louvre E 7858, col. I, 13
 P. Louvre E 3228 C C, col. I, 2	 P. Louvre E 3228 F B, 17	 P. Brooklyn 47.218.3, col. E, 9		 P. BM EA 10432, 3	 P. Brooklyn 47.218.3, col. C, 8		 P. Louvre E 7846, 10
 P. Vienna D 12002, col. I, 3	 P. Louvre E 3228 C C, col. II, 14			 P. Cairo CG 30657, 5	 P. Vienna D 12003, col. II, 9		 P. BM EA 10906 ro, 14
 P. Louvre E 7858, 1				 P. Louvre E 7847, 9			 T. Leiden AH 155 vo, 16

5. 				
				
 Gefäß Gurna, col. I, 48	 P. Brooklyn 47.218.3, col. K, 7	 P. BM EA 10113, 5	 P. Louvre E 3228 E D, 11	 P. BM EA 10432, 1
 P. Brooklyn 47.218.3, col. K, 7	 P. Louvre E 7852, 2	 P. Turin 2118 B, 5	 P. BM EA 10906, 6	
 P. Louvre E 7846, 13	 P. Louvre E 7846, 13	 P. Louvre E 3228 F B, 17	 P. BM EA 10432, 4	

6.						
 P. Louvre E 3228 C C, col. I, 7	 P. Vienna D 12003, col. I, 4	 P. BM EA 10907, II	 P. Vatican 38595, 20 P. Louvre E 3228 C C, col. I, 16 T. Cairo JdE 94478, 1	 P. Brooklyn 37.1799 E ro, 5	 P. Vatican 38595, 8	 P. Louvre E 3228 D A, 19 P. Louvre E 7856 vo, 7 P. Vienna D 12003, col. I, 3
 P. Vienna D 12002, col. I, 2	 P. Vienna D 12003, col. II, II					
 P. Louvre E 3228 E D, 14	 T. Leiden AH 155 vo, 10					

7.			
 P. Louvre E 7858, col. I, 1	 P. Louvre E 7851 ro, 13	 P. BM EA 10907 ro, 8	 P. Louvre E 7856 vo, 3
 P. Vienna D 12003, col. I, 3	 P. Turin 2118 B, 6	 P. Louvre N 2432, col. I, 2	 P. Vienna D 12003, col. II, 3
 P. Louvre E 3228 C C, col. II, 20	 T. Leiden AH 155 ro, 22	 P. Louvre N 2432, col. I, 10	 P. Turin Cat. 2121, 2
 P. Louvre E 7846, 2			

8.				
 P. Brooklyn 37.1799 E ro, 2	 T. Leiden AH 155 vo, 7	 P. BM EA 10906 ro, 2	 P. BM EA 10906 ro, 3	 P. Louvre E 7851 ro, 4
 P. Turin 2118 B, 2	 P. Brooklyn 37.1799 E ro, 8	 P. BM EA 10906 ro, 3	 P. BM EA 10907 ro, 3	 P. Louvre E 7856 ro, 4
 P. BM EA 10113 ro, 2	 P. BM EA 10113 ro, 6	 P. BM EA 10907 ro, 3	 P. Vatican 38595, 2	 P. Louvre E 3228 G G, 7

9.					
 P. Louvre E 3228 C C, col. I,15	 P. Cairo CG 30657, 1	 P. Louvre E 3228 D A, 3	 P. BM EA 10432,	 P. Louvre E 3228 C C, col. I, 1	 P. Louvre E 3228 D A, 20
 P. Brooklyn 47.218.3, col. E, 16	 P. Louvre E 3228 C C, col. I, 4	 P. Louvre E 3228 C C, col. I, 11	 4 P. BM EA 10432, 11	 P. Louvre E 3228 E D, 16	 P. BM EA 10432, 2
 T. Leiden AH 155 ro, 1	 P. Louvre E 3228 C C, col. I, 18	 P. Louvre E 3228 C C, col. I, 20		 P. Louvre E 3228 D A, 1	 P. Louvre E 7848, 4
 P. Turin 2118 B, 6	 P. BM EA 10432, 3			 P. Brooklyn 47.218.3, col. H, 3	

61 Note this sign group in *md.t* 𓂐 (𓂐 P. Louvre E 3228 D|A, 7) and *bat* 𓂐 (𓂐 P. Louvre E 3228 D|A, 6).

10.							

11.					

12.						

13.			14.	
<p>P. Louvre E 3228 C C, col. II, 9</p> <p>P. Vatican 38595, 7</p> <p>P. Vatican 38595, 19</p>	<p>P. Louvre E 3228 C C, col. I, 15</p> <p>P. Louvre E 3228 C C, col. II, 9</p> <p>P. Louvre E 7860, 9</p>	<p>P. Louvre E 7852, 2</p>	<p>P. Brooklyn 37.1799 E ro, 4</p>	<p>P. Louvre E 7845B, 2</p> <p>P. Vienna D 12002, col. I, 4</p> <p>P. BM EA 10113, 1</p> <p>P. BM EA 10432, 4</p>

15.			16.		
<p>T. Leiden AH 155 ro, 11</p>	<p>P. Louvre E 7851 ro, 11</p>	<p>P. Leiden F 1942/5.15, 8</p>	<p>P. Brooklyn 47.218.3, col. E,</p>	<p>P. Vienna D 12002, col. I, 8</p>	<p>P. Vienna D 12003, col. I, 5</p>
<p>T. Leiden AH 155 ro, 20</p>	<p>P. BM EA 10906 vo, 7</p>	<p>P. Louvre E 3228 H H, 13</p>	<p>P. Vienna D 12003 col. II, 3</p>	<p>P. BM EA 10113 ro, 7</p>	<p>P. BM EA 10113 ro, 2</p>
<p>P. Turin Cat. 2118 B, 9</p>	<p>P. Louvre E 3228 G G, 20</p>		<p>P. Brooklyn 37.1799 E ro, 3</p>	<p>P. Louvre E 7848, 3</p>	
<p>P. Vienna D 12002, col. I, 6</p>			<p>T. Leiden AH 155 ro, 8</p>		

17.		
<p>P. Louvre E 7858, col. I, 11</p>	<p>P. Vienna D 12002, col. I, 9</p>	<p>P. Louvre E 3228 D A, 2</p>
<p>P. Brooklyn 47.218.3, col. H, 3</p>	<p>P. Brooklyn 37.1799 E ro, 18</p>	<p>P. Louvre E 3228 C C, col. I, 4</p>
<p>P. Louvre N 3168, 11</p>	<p>P. Louvre E 7846, 1</p>	<p>T. Leiden AH 155 vo, 18</p>

18.			
 P. Brooklyn 47.218.3, col. F, 12	 P. Vienna D 12003, col. I, 6	 T. Leiden AH 155 ro, 16	 P. Louvre E 7851 ro, 10
 P. Vienna D 12003, col. II, 1	 P. Louvre E 3228 D A, 6	 T. Leiden AH 155 ro, 17	 P. BM EA 10906 ro, 9
 P. Vienna D 12002, col. I, 4	 P. Louvre E 3228 C C, col. I, 22	 T. Leiden AH 155 vo, 11	 P. Louvre E 3228 C C, col. I, 4

19.									
 P. BM EA 10906 ro, 4	 P. Louvre E 3228 D A, 1	 P. Louvre E 3228 D A, 1	 P. BM EA 10906 ro, 5	 P. BM EA 10906 ro, 3	 T. Leiden AH 155 ro, 8	 P. Turin Cat. 2118 B, 2	 P. Brooklyn 47.218.3, col. E, 6	 P. Louvre E 3228 C C, col. I, 4	 P. Brooklyn 47.218.3, col. C, 8
 P. Louvre E 7856 ro, 3	 P. Louvre E 7856 ro, 5	 T. Leiden AH 155 vo, 5	 P. Louvre E 3228 D A, 1	 P. Brooklyn 47.218.3, col. L, 12	 T. Leiden AH 155 vo, 2	 T. Leiden AH 155 ro, 10	 T. Leiden AH 155 ro, 8/9	 P. Louvre E 3228 C C, col. I, 23	 P. BM EA 10906 ro, 11

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