

RECONSIDERING THE AUTHENTICITY OF THE BEREKHYAHU BULLAE: A REJOINDER

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Summary: Reconsidering the Authenticity of the Berekhyahu Bullae: A Rejoinder

In a recent article Goren and Arie (2014) concluded that the two unprovenanced bullae of Berekhyahu the Scribe “are modern creations, reflecting a series of technological misconceptions, anachronisms, and technological errors.” Both bullae were impressed by the same seal and contain the Palaeo-Hebrew inscription: *LBKRYHW BN NRYHW HSPR*, i.e. “Belonging to Berekhyahu, Son of Neriyaahu, the Scribe.” Their use is confirmed by the imprints of material texture and cords on their reverse sides. Having previously studied the bullae, and having recently reexamined “Bulla 1” in particular, the current authors have come to the conclusion that the arguments presented by Goren and Arie do not stand up to scrutiny. Naturally, this does not prove the authenticity of these bullae. In addition they also respond to epigraphic questions raised by Rollston (2003; 2016) which they believe do not stand up to close scrutiny eit-

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her. What can be said is that the last word has not been spoken. Regardless of the fact that the bullae lack provenance, the very fact that they refer to a well-known biblical character (the scribe Baruch) necessitates a fair examination.

Keywords: Seals and sealing – Ancient Judah – Authenticity – Palaeography

Resumen: Reconsiderando la autenticidad de los Bullae de Berekhyahu: Una réplica

En un artículo reciente, Goren y Arien (2014) concluyeron que los dos *bullae* sin procedencia del escriba Berekhyahu “eran creaciones modernas, reflejando una serie de conceptos tecnológicos falsos, anacronicos y errores tecnológicos”. Ambos *bullae* estaban impresos por el mismo sello y contenían la inscripción paleo-hebreo: *LBRYHW BN NRYHW HSPR*, i.e. “Perteneciente a Berekhyahu, hijo de Neriya, el escriba”. Su uso está confirmado por las impresiones de material texturado y cuerdas en los reversos. Habiendo estudiado previamente los *bullae*, y reexaminado recientemente el “Bulla 1” en particular, los autores de este artículo llegan a la conclusión de que los argumentos presentados por Goren y Arie no resisten el escrutinio. Naturalmente, esto no prueba la autenticidad de estos *bullae*. Además, también responden a los problemas epigráficos postulados por Rollston (2003; 2016), las cuales tampoco resisten mayores escrutinios. Lo que se puede decir es que no se ha dicho la última palabra. A pesar del hecho de que los *bullae* carecen de procedencia, el mismísimo hecho que estos refieren a un conocido personaje bíblico (el escriba Baruch) necesita un examen justo.

Palabras clave: Sellos – Judá – Autenticidad – Paleografía

1. DESCRIPTION AND ALLEGED PROVENANCE

The first Berekhyahu bulla (henceforth: Bulla 1¹) originally belonged to a hoard of some 49 Hebrew seal impressions, which surfaced on the antiquities market in Jerusalem in 1975. These were acquired by Dr. Reuben Hecht of Haifa. Subsequently in 1976, Hecht donated them to the Israel Museum in Jerusalem² (whilst a replica of Bulla 1 remained on exhibition in the Hecht Museum). Several more bullae surfaced about this time and were acquired by Yoav Sasson, a Jerusalem antiquities collector and dealer.³ Both groups allegedly had been part of one

¹ Avigad 1978; Deutsch and Heltzer 1994: 37–38.

² Avigad 1986: 13.

³ Avigad 1986: 13.

and the same assemblage. The entire hoard, together with some additional specimens that had been sold to further individuals, was published by Nahman Avigad in 1986. Because of the significance of Bulla 1, Avigad already published it in 1978, soon after its original discovery.⁴

The second bulla (henceforth: Bulla 2) also surfaced in Jerusalem during the 1970's and was purchased by Rafi Brown, a former collector, dealer, and restorer at the Israel Museum. This bulla was sold in 1991 to Shlomo Moussaieff and was subsequently published by Robert Deutsch and Michael Heltzer.⁵ As Avigad was not aware of its existence, he did not include Bulla 2 in his publications.



Fig. 1 (a)

Bulla of Berekhyahu or “Bulla 2”
(courtesy of and © S. Moussaieff Collection;
photo by R. Wiskin).



Fig. 1 (b)

Bulla of Berekhyahu or “Bulla 1” (courtesy
of and © by the Israel Museum, Jerusalem,
Dr Eran Arie; photo by R. Deutsch).

Both Berekhyahu Bullae (**Fig. 1 a and b**) were apparently impressed by the same seal and display similar (albeit not identical) imprints of a coarse cord and of texture on their reverse sides. This

⁴ Avigad 1978: 52–56. Republished by Avigad 1986: 27–28. See also Shanks 1987; Ahituv 1992: 129; McCarter 1996: 149–150; Avigad and Sass 1997; Renz and Röhlig 2003: 178; van der Veen 2014: 102, fn. 415.

⁵ Deutsch and Heltzer 1994: 37–38.

could imply that they had originally been affixed to the same artifact. The phenomenon of multiple bullae, sealing the same document (papyrus, parchment or wood, see below) is well attested, for instance in the Wadi ed-Daliyeh⁶ and Elephantine archives.⁷ Close examination of an unprovenanced bulla, belonging to “Ga’alyahu, Son of the King”⁸ also reveals very similar characteristics (see below), as it too contains the imprints of a thick and coarse cord and of apparently the same texture.⁹ Its close similarity to the imprints on Berekhyahu Bullae renders a mutual provenance likely. An additional detail, overlooked by Yuval Goren¹⁰ and Avner Eilon in their report written for the Israeli forgery trial¹¹ and by Yuval Goren and Eran Arie in their recent article on the Bullae¹², are the imprints of a sunken frame around the impressions in Bullae 1 and 2, indicating that the original seal had been set in a metal bezel ring or pendant.

2. USAGE AND PURPOSE OF THE BEREKHYAHU BULLAE

Before we deal with the criticisms raised by Yuval Goren, Eran Arie and Christopher A. Rollston, the current authors wish to emphasise that they welcome any thorough research on ancient Judahite bullae, both provenanced and unprovenanced. As a consequence, an objective discussion on the pros and cons of the authenticity of unprovenanced bullae is not only preferable but also a requirement in any objective scholarly debate.

⁶ E.g. Cross 1974.

⁷ E.g. Porten 1996.

⁸ Avigad 1986: 25–26, no. 6; Avigad and Sass, 1997: 174, no. 413.

⁹ Avigad made the following observation: “Some of the fibres of the string have been preserved in the imprint of the string on the back of the bulla [of Ga’alyahu]” (Avigad 1986: 25).

¹⁰ Yuval Goren expressed his critical views in court during the Israeli forgery trial (dealing with a number of artefacts believed to have been fakes) on only **one** of these specimens, *i.e.* on Bulla 2 (from the S. Moussaieff Collection).

¹¹ Goren and Eilon 2004.

¹² Goren and Arie 2014.



Fig. 2

Back of “Bulla 1” with imprints of wood texture and of the cord to which it had been affixed (courtesy of and © by the Israel Museum, Jerusalem, Dr Eran Arie; photo by R. Deutsch).

2.1. Who Was Berekhyahu, the Son of Neriyaahu?

The person referred to on Bullae 1 and 2 is believed to be one and the same as the biblical Baruch, the son of Neriah, the personal scribe of the prophet Jeremiah (Jer 32: 12f., 16; 36:4ff., 43:3ff.; 45:1f; 51). His brother Seraiah was apparently a high ranking official at the court of king Zedekiah (Jer 51:59). The palaeographic traits of the inscription suggest a date late during the 7th century (*e.g.* the letter *he*, whose upper horizontal bar crosses the vertical shaft on the right).¹³ There can be little doubt that the names Baruch and Neriah are short versions of the longer theophoric names Berekhyahu and Neriyaahu respectively.¹⁴ Both individuals worked as scribes.¹⁵

¹³ See van der Veen 2014: 34–35.

¹⁴ Avigad 1986: 29; Deutsch and Heltzer 1994: 38.

¹⁵ Mykytiuk 2004: 190.

2.2 *How Were the Bullae Used?*

Goren and Arie have stated in their article on the authenticity of the Berekhyahu Bullae that their microscopic analysis of the imprints on some 200 legally excavated Judahite bullae from the 8th century B.C.E. onwards revealed that these had “almost always” been affixed “(to) papyrus” documents, such as deeds or even complete parcels¹⁶ and that the cord imprints were those of their attachment to the rolled up papyrus.¹⁷ Yet at the same time they seem to be aware of other uses also, as earlier they write: “Other bullae apparently sealed basketry or fabrics, most likely small bags containing commodities, evident by the impressions on their reverse sides.”¹⁸

Only recently **many** hundreds of “new” bullae, especially so from Jerusalem, have been discovered through wet-sieving the soil of controlled excavations, first introduced by the Temple Mount Sifting Project in 2004.¹⁹ Most of these have not yet been published.²⁰ Over 300 bullae and bullae-fragments alone were found in and near Area G of the City of David, which have recently been published by Eilat Mazar.²¹ Interestingly (especially so as Yuval Goren and Shira Gurwin have a chapter in that same volume),²² close inspection of the several

¹⁶ Goren and Arie 2014: 150; also Goren, Gurwin and Arie 2014: 148.

¹⁷ Goren and Arie 2014: 147–158 (esp. p. 151). Goren and Arie relate that they were invited by the Israel Museum’s curator to investigate “Berekhyahu Bulla 1,” but a discussion of Bulla 1 was not previously included in the report written by Goren and Eilon presented to the Jerusalem court during the forgery trial.

¹⁸ 2014: 147; also Goren, Gurwin and Arie 2014: 143.

¹⁹ Some 200 bullae were found by Ronny Reich and Eli Shukron in and near the “Rock-Cut Pool.” See Reich, Shukron and Lernau 2007: 153–169; Reich 2011: 216–219. Several hundreds of bullae were found in the excavations of Eilat Mazar in and above Yigal Shiloh’s Area G as well as in the Ophel, while some others have come to light in other areas of the City of David, as well as in debris from the Kidron Valley. Several bullae, including one fiscal bulla was found by Gabriel Barkay and Sachi Dvira (Zweig) in the Temple Mount Sifting Project. See Barkay 2015.

²⁰ All of these are currently being processed systematically for publication by Othmar Keel for Volume 5 of the *Corpus der Stempelsiegel-Amulette aus Palästina/Israel*, in prep. Already Keel 2012: 317–342.

²¹ Mazar 2015.

²² See 441–452.

hundreds of bullae published in that report reveals that many of them indeed bear imprints of fabrics other than papyrus including wood, cloth and rushes. This is not only confirmed by Goren and Gurwin,²³ it is also discussed by them and illustrated with the help of photographs.²⁴

There can be little doubt that many bullae were attached to rolled papyrus sheets. Even so, many bullae were **not** attached to papyri,

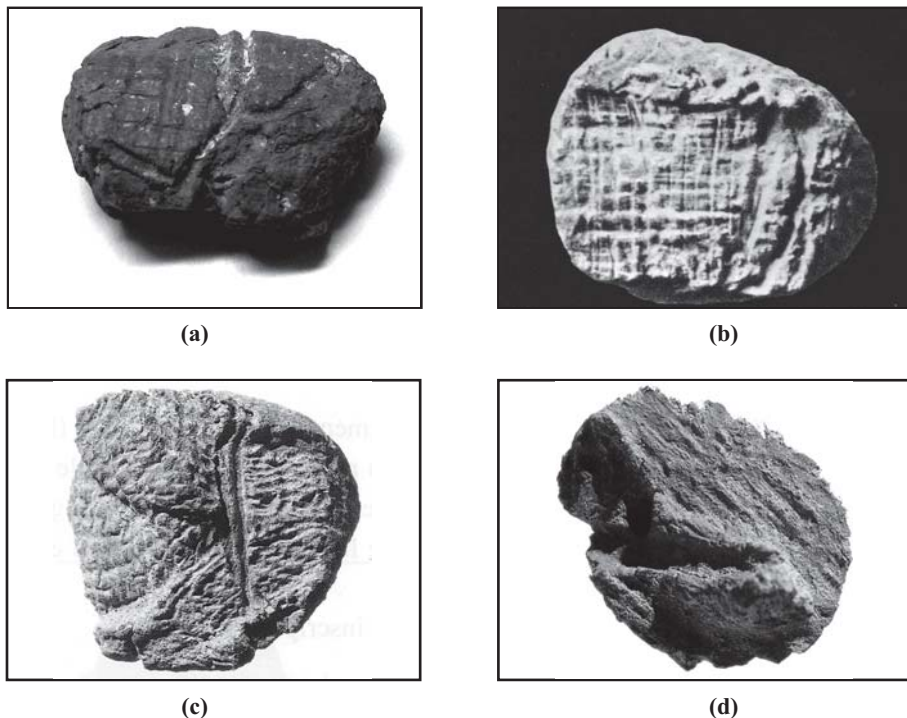


Fig. 3 a-d

Reverse sides of Judaeen bullae with papyrus imprints (a-b), cloth imprints (c) and imprints of wood texture (d) (a: courtesy of private collection in Germany; b (CWSSS 405): courtesy of the Wellcome Library, London; c and d: courtesy of the H. Kaufman Collection, R. Deutsch).

and as we now believe, neither were the Berekhyahu Bullae. This has serious repercussions for our interpretation of these bullae. For if the Berekhyahu Bullae were not attached to papyrus, but to some other material, a crucial part of Goren and Arie's argument,

²³ See their table 9.1, 443–445.

²⁴ 9.1–2 “papyrus;” 9.3–4 “wood;” 9.5–7 “woven material;” 9.8 “leather or parchment.”

- a) how Judahite scribes produced bullae attached to **papyri**,
- b) what type of **string or cord** they used **for papyri**, and
- c) how the string was affixed to the bullae and the **papyri**, is severely weakened.

As seems clear from so many bullae that have survived from the Ancient Near East, bullae were used for all kinds of different purposes. Sometimes bullae were used to seal parchment scrolls and therefore the imprints on the reverse are quite different.²⁵ Other bullae (even in Jerusalem the number of bullae not attached to papyri may likely have been much higher),²⁶ were tied to wooden objects (*e.g.* boxes, containers, crates, doors, shelves, and wooden writing boards;²⁷ see **Figs. 3d, 4 and 7**), textiles (*e.g.* little bags and sealed cloth attached to different kinds of vessels, some containing precious liquids,²⁸ see **Fig. 3c**), smooth surfaces (*i.e.* perhaps of cosmetic luxury boxes made of bone, ivory or costly stone such as alabaster),²⁹ and objects made of leaves or

²⁵ *E.g.* Goren and Gurwin 2015: 446–447. Already Deutsch 1999: 19. The royal bulla of king Qosgabr of Edom probably also sealed a parchment scroll. See van der Veen 2012b: 79–81; van der Veen 2014: 213–250.

²⁶ Even in the detailed list published by Goren and Gurwin 2015, more bullae from the recent excavations by Eilat Mazar at the City of David (which they classify as having been tied to papyrus) were likely impressed on materials other than papyrus. Close inspection of the bullae in the same volume reveals that some of these were affixed to objects made of wood (*e.g.* Goren and Gurwin 2015: 443, B. 23023, see Mazar and Livyatan Ben-Arie 2015: 323, B 27). While Goren and Gurwin are not certain about the material to which B. 27042 had been affixed, a closer view of that bulla suggests that it too may have been affixed to a wooden board, as is rightly interpreted by Ariel Winderbaum (2015: 386), who suggests that the “long protrusion ... was probably the space between two wooden planks.” The same may be true for B. 28881 (Goren and Gurwin 2015: 444), whose sides—though unclear—may suggest attachment to some wooden object (Winderbaum 2015: 400). For this type of sealing, see also Martin 2004: 105 Type III. Contrary to Winderbaum 2015: 402 (who argues that B. 29540 was affixed to papyrus), Goren and Gurwin rightly recognised that it was affixed to wood (Goren and Gurwin 2015: 445, B. 29540).

²⁷ For the discovery of pieces of wood together with an Egyptian bulla, see Teeter 2003: 161.

²⁸ See for instance also Veenhof and Eidem 2008: 114–117 on the multiple use of sealings during the Old Assyrian period, among others at Kültepe. On Egypt, see *e.g.* Teeter 2003: 159–161.

²⁹ Or possibly on writing boards made of ivory, also attested in Assyria, see Wiseman 1955: 3. Also see Herrmann and Laidlaw 2009: 104–106, Pls. 14–15. For a specimen from Assur, see Klengel-Brandt 1975: 169–171. For the possible use of wooden boards in Jerusalem and Judah see below.

rushes (e.g. baskets).³⁰ Indeed, many scholars, who have studied the subject of seals and sealing in the Ancient Near East,³¹ have pointed out that bullae served a great variety of purposes.³²

To cut things short, the situation is far more complicated than Goren and Arie describe in their article. Whilst they suggest that the person, who made (or faked³³) the Berekhyahu Bullae, impressed the

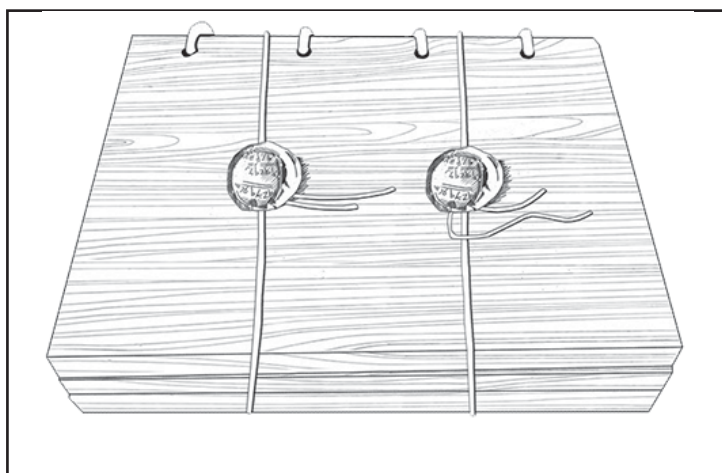


Fig. 4

Possible fastening method of “Bullae 1 and 2” to a wooden wax tablet
(line-drawing by M. van der Veen).

³⁰ Esp. Mazar and Livyatan Ben-Arie 2015: 356–359. Already Deutsch 1999: 14–15.

³¹ E.g. Ferioli and Fiandra 1990: 221–229; Herbordt 1992: 33–70; Gerlach 1997: 18–21; Nadali 2009–2010: 223–228; Keel 1995: 116; Ehrenberg 1999: 33–37; Bietak 2004: 43–55; Martin 2004: 103–106; Müller 2004: 141–149.

³² Tombs in Egypt were sealed, as known from the sealing of the tomb of Tutankhamun, when it was opened by Howard Carter and Lord Carnavon in 1922. As for the sealing of specific buildings, see Gerlach 1997: 19. This type of sealing is for instance also referred to in Middle Assyrian letters from the time of Shalmaneser I (Herbordt 1992: 53). A biblical reference to the sealing of a door or gate of a garden with a cistern, may be found in Songs of Songs 4:12. On this see Keel 1995: 116; Keel 1986: 162. See already: Newberry 1906: 20–21.

³³ Also some other scholars have previously expressed suspicion (e.g. Sass 1993: 242–246), even if no definite conclusions were drawn. Joseph Naveh (who is often uncritically cited, see e.g. Wolfe 2006: 143) listed some unprovenanced seals and bullae in his preface to Avigad/Sass

leather hard clay lump on **papyrus** documents, our own study of the original bullae (most recently of Bulla 1 at the Israel Museum) has revealed that they contain the imprints of **wood** rather than of papyrus fibers (**Fig. 2**).

Indeed wood imprints look rather different from those produced by papyrus fibers (for papyrus imprints, see **Fig. 3a-b**). As Goren and Arie refer to the attachment of bullae to objects other than papyrus and as Goren and Gurwin actually deal with bullae attached to wood, it is suprising why the former do not consider the possibility that the Berekhyahu Bullae could have been affixed to a wooden object.³⁴ Whilst papyrus imprints are shallower and usually reveal fine criss-cross imprints on the rear side of the bulla (sometimes also including the imprints of raddled papyrus fibers, see **Fig. 3b**), the impressions of wood are deeper and their texture of more or less parallel lines is more irregular. The imprints on the Berekhyahu Bullae indeed show the imprints of this same kind of texture (**Fig. 2 and 5b**).³⁵ The most likely interpretation, therefore, appears to be that the bullae under question had been tied to some wooden object.

The string imprints (**Figs. 2, 5b and 8**), which as Goren and Arie argued revealed “only a single cord and, significantly, a crude one as opposed to the delicate strings that left their impressions in most of the provenanced bullae that we analyzed.”³⁶ They also compared the

1997 (henceforth as CWSSS): 12. It also includes Berekhyahu Bullae 1–2. Naveh, who merely states that “there were rumours among scholars concerning their authenticity,” and that these related to “peculiar iconography and letter forms, presumably produced by a limited number of engravers,” however left the issue open: “no scholar thus far has proven that they are recent fabrications ... Avigad was confident that they are genuine.” As for seals engraved by the same hand or by a small guild of engravers, see van der Veen 2012a: 21–33. Sass’ prudent conclusion should therefore be heeded: “On the other hand, it is well known that controlled excavations yield from time to time unusual finds that, if acquired on the antiquities market, would raise suspicion.” (Sass 1993: 246).

³⁴ But their conclusion does not stand in isolation. Also Wolfe, who rightly concluded that imprints of papyrus fibers look different, merely considered the deviant imprints on Bullae 1–2 as evidence of possible forgery (Wolfe 2006: 149–150). He blatantly writes: “there is no criss cross pattern merely a ploughing pattern in one direction.”

³⁵ Also Goren and Arie 2014: 149, fig. 2.

³⁶ Goren and Arie 2014: 153.

crudeness of the cord with that of another unprovenanced bulla, which surfaced at about the same time as Bulla 1, *i.e.* the one bearing the seal impression of “Ga’alyahu ben hammelek (or) Son of the king.”³⁷ It too—contrary to the interpretation of Goren and Arie—reveals imprints of the same texture, and therefore it too likely had been impressed against wood.



(a)



(b)

Fig. 5 a-b

“Bulla 1” with the cord-channel as viewed from the top and bottom of the bulla (courtesy of and © by the Israel Museum, Jerusalem, Dr Eran Arien; photos by R. Deutsch).

³⁷ CWSSS 413, see above.

The imprints of single cords on the backs of Bullae 1 and 2 (like those on the Ga'alyahu bulla) are indeed thick (coarse), but it would be wrong to assume that even on all bullae attached to papyrus, they were always of the “delicate” kind as Goren and Arie presume.³⁸ This surely is a misrepresentation of the evidence. Especially when the bulla had been attached to some other kind of material, cord imprints can be rather thick and coarse.³⁹ On Bulla 1 the cord(s?) entered the bulla at the top and left it towards the bottom (or vice versa), where it (they?) may have been knotted, while the tail end seems to have hung more or less loose in a bow. The cord of Bulla 2 seems to have been attached in a similar way. It is difficult to know, how precisely, these bullae were affixed (for a possible fastening, see **Fig. 4**). Imprints of texture on the reverse of yet another inscribed bulla (bearing the image of a grazing doe and the name of the female owner)—recently found at the City of David—with a thick groove left by the cord that affixed it, also bears the imprints of wooden texture.⁴⁰ A fragment of an unprovenanced bulla from a private collection in Germany also bears the imprints of wood, and as it was precisely broken in the middle at the point, where the cord (or perhaps a bundle of cords) run through the inside (see **Fig. 7**) it might give us a somewhat clearer impression of how these bullae are to be interpreted (for a possible interpretation, see **Fig. 4**).

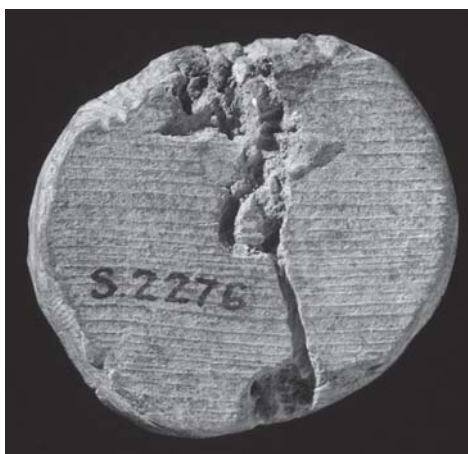
Although it is difficult to ascertain to what kind of wooden object the Berekhyahu Bullae could have been attached, one particular option does stand out. In her book on Neo-Assyrian seal impressions (among others from Nimrud and Nineveh), Susanne Herbordt discusses, that a specific category of bullae was attached to wooden writing boards (or “wax coated wooden tablets”).⁴¹ The backs of these seal

³⁸ See for instance the bulla of Netan[yahu], found during the Yigal Shiloh's excavations, Shoham 2000: 39, no. 16. The imprints on the reverse, give rise to the assumption that it may not have been affixed to papyrus, but it is difficult to tell for sure.

³⁹ E.g. Mazar and Livyatan Ben-Arie 2015: 318, no. B18 (“fairly thick cords”).

⁴⁰ Mazar and Livyatan Ben-Arie 2015: 336, B59. The authors themselves did not, however, identify the thick grooves on the left side of the reverse as those of cords.

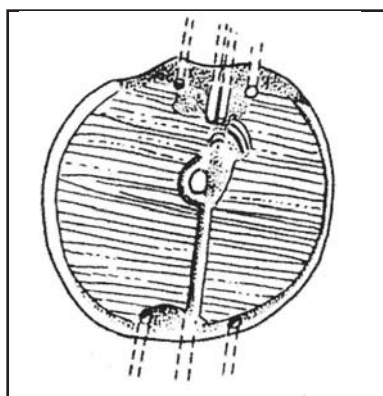
⁴¹ Herbordt 1992: 60, Type 4a. Also see Radner 2008: 481–515. According to Postgate the sealing of writing boards is, however, already attested in the Hittite archive of Ḫattuša, see Postgate 2013: 64, fn. 67. Postgate also refers to the smaller writing board from the Uluburun



(a)



(b)



(c)

Fig. 6 a-c

Neo-Assyrian royal bullae from Nineveh; left: Sm. 2276 (reign of Sargon II); right: bulla BM 84874 (reign of Sennacherib). Bulla S. 2276 was placed on the cord and its knot, but also contains the channels of the string inside. Bulla BM 84874 is broken in the middle and shows the channel of the inner cord (Courtesy of the trustees of the British Museum; photos by and courtesy of Dr K. Radner). Above: line-drawing of bulla Sm. 2276 (after Herbordt 1992: 61, fig. 10.4, with kind permission from Prof. Dr S. Herbordt).

shipwreck (Postgate 2003: 134). For images of writing boards from the Neo-Assyrian period and from 5th century B.C.E. Egypt, see Avrin 1991: 69. See also Wiseman 1955: Pls. II–III. Wiseman also refers to an Etruscan writing board found at Marsiliana, which may have been imported from Assyria (1955: 9–10). It dates to *c.* 700 B.C.E. For the description of “wax coated wooden tablets,” see Millard 2010: 110.

impressions reveal the very same imprints of wood texture.⁴² While referring to the work of Herbordt, Karen Radner also argues that this method was widely practiced in Assyria.⁴³ As some of these Neo-Assyrian bullae bore cuneiform inscriptions (referring to deliveries of wine, wood, textile and even horses);⁴⁴ Herbordt proposes that they had been attached to writing boards containing lists of commodities, which were sent along with the deliveries. A lot more has been written on the subject in recent years. It seems that writing boards were used widely, and that they could contain different kinds of texts.⁴⁵

Although the bullae studied by Herbordt were of the “royal type,” their shape (oblong and disc shaped) with a more or less flat back (with the imprints of wood, cords and knots, **Fig. 6 a–c**)⁴⁶ recalls that of the Berekhyahu Bullae.⁴⁷ What is especially striking is that the orientation of the wood texture imprints—both on the Neo-Assyrian and Berekhyahu Bullae (as well as on the bulla shown in **Fig. 7**)—run diagonal to the imprints of the cords.⁴⁸ This is exactly how they would have been attached to writing boards, whose textures always appear to be oriented lengthwise, when the boards are held upright. A bulla from the City of David, which bears the impression of a Neo-Babylonian official seal, also shows the imprints of a thick rough cord (or multiple strings), and as Ariel Winderbaum suggests, it too may have been attached to a wooden tablet.⁴⁹

⁴² Radner 2008: 492–493 and fig. 5, a–b (BM 84874). Also pers. comm. with Radner, August 2015.

⁴³ She confirms that “a considerable number of these sealings can be identified as having once been fixed to writing boards, securing the string used to tie them shut...”; Radner 2008: 482. As they were not dangling, but were tied closely to the boards, it is understandable why the wood imprints are so clearly visible.

⁴⁴ See Herbordt 1992: 60–61; Radner 2008: 484, 491, 494, 508.

⁴⁵ Radner 2008: esp. 491; Postgate 2013: 64.

⁴⁶ See also Nadali 2009–2010: 235–244 (tables).

⁴⁷ The wood used in Assyria for writing boards ranged from tamarisk, cypress, cedar to walnut. See Wiseman 1955: 3.

⁴⁸ This is also evident on the so-called Uluburun writing board from the late second millennium B.C.E., see Payton 1991: 99–106.

⁴⁹ Winderbaum 2015: 375, 1. The imprint of a thick cord can also be seen in the same chapter by Winderbaum on a bulla possibly depicting royal figures (Winderbaum 2015: 384, 6), as well

Fig. 7

Back of an unprovenanced Judahite bulla with imprints of wood texture and the central channel created by the cord (courtesy of private collection in Germany).

**Fig. 8**

“Bulla 1” smeared with remains of wax (courtesy of and © by the Israel Museum, Jerusalem, Dr Eran Arie and S. Moussaieff Collection; photo by R. Deutsch).

as on a seal impression which bears the imprint of a seal with the standard of Sin of Harran (Winderbaum 2015: 387, 8). Although Winderbaum suggests that it could have been affixed to papyrus, the imprints at the top right rather suggest attachment to wood. Another bulla with the impression of the same seal was apparently also attached to wood as Winderbaum rightly suggests, even if it may have been affixed to wooden shelves, doors or crates rather than to a smaller object like a writing board (Winderbaum 2015: 385–86, 7).

As the size of the grooves on different bullae varies, it seems that different fixture methods were in use. Assuming that diptych tablets were employed in Judah like in Assyria, the cord would have been tied around the boards (often more than once), whilst the bulla was pressed on it (but with part of the string also going through the bulla, as in the channels of Neo-Assyrian seal impressions (**Figs. 6a** and **6c**) and Bulla 2 appear to indicate),⁵⁰ sometimes directly over the knot (but when more than one bulla was used, only one of them was placed over it). This also seems to have been the case with Roman writing boards.⁵¹ Alternatively, as some seal impressions appear to indicate, sometimes the bulla was not impressed on the cord, but directly on the wooden tablet and the cord went through the bulla (more than once?) to tie it shut (as seems to be the case with Bulla 1). The Berekhyahu Bullae seem to comply with this evidence so well that its very recognition by a potential forger would have demanded indepth knowledge of fixation methods to wooden writing boards, information that only became more readily available after 1992, when Herbordt dealt with it in detail. What is more, bone and ivory hinges of wooden writing boards have been found in Iron Age contexts, including their recent discovery in Jerusalem, proving that these boards were in use in Judah at the relevant time.⁵²

2.3 The Clays Used for Production

According to Goren and Arie⁵³ the Berekhyahu Bullae were made of clay taken from a geological formation described as Moza marl. We plan to reexamine the bullae in the near future at an independent laboratory as we are not totally convinced of the accuracy of the former tests. In both cases, however, it must be stated clearly that the examinations cannot prove or disprove their authenticity. All they can show is from what geological formation the clay of the bullae had been taken.

⁵⁰ For the back of “Bulla 2” see Goren and Arie 2014: 149, fig. 2, bottom right.

⁵¹ We are grateful to Professor Alan Millard for this suggestion. For the Assyrian fixtures, see Herbordt 1992: 34, 60 with fig. 10.4. Radner 2008: 491–494.

⁵² Barkay forthcoming.

⁵³ Goren and Arie 2014: 156.

Alleged contradictions in some publications by Goren's team dealing with a number of artefacts suggest that caution must be exercised.⁵⁴ For instance Goren's methodology for determining the clays of some Amarna Letters (especially those from Alashiya) has been severely criticised by Robert Merrillees and his colleagues.⁵⁵ Similarly, a number of presumed inconsistencies in the publications by Goren and his team on the bullae examined at his laboratory still demand further clarification. In 2011 Arie, Goren and Samet argued that the clay of the 17 bullae found in a juglet at Lachish was taken from the so-called local "alluvial loess" formation.⁵⁶ In 2014, without any further clarification, Goren and Arie state that these bullae were "made of local rendzinal soil."⁵⁷ This discrepancy may either indicate a simple slip of the pen or some uncertainty about the **precise** nature of the soil from which the relevant bullae were taken. But there are also other flaws in Goren's and Arie's line of argumentation. Although clay from the Moza marl formation has been extensively used for pottery production, according to them it was **not** employed for the production of bullae.⁵⁸ Whilst (as we shall discuss later) there may be evidence of the use of Moza marl geological formation clay for at least one provenanced bulla from Jerusalem (whose date remains however uncertain), Goren and Arie conclude that Jerusalem scribes made exclusive use of *terra rossa* soil for their production of bullae.⁵⁹ Whilst on the one hand we cannot be certain that the

⁵⁴ Also Ussishkin 2014: 25.

⁵⁵ Robert S. Merrillees critique relates to the provenance of the Amarna Letters from Alashiya (as expressed in Goren, Finkelstein, Na'aman 2004: 48–75), see: Merrillees 2011: 255–64. See also the geoarchaeological and geological criticisms by his colleagues Allan Gilbert and Coostas Xenophontos (in the same publication, 259–262) dealing with the methodological shortcomings of these scholars working at the Tel Aviv University lab (esp. p. 261).

⁵⁶ Arie, Goren, Samet 2011: table 1, nos. 46–61 and 63.

⁵⁷ Arie, Goren, Samet 2014: 155. We thank geologists Dr Martin Ernst and Mr. Michael Kotulla for their help to explain us these terms in September 2015.

⁵⁸ "It should be emphasized that **none** of the Iron Age bullae **that we have examined so far were made of clay and marl geological formations**, such as the **local Moza and Teqiye**." (Goren and Arie 2014: 155, emphasis added; for a similar statement see Arie, Goren, and Samet 2011: 7). The same petrographic conclusions concerning Berekhyahu Bulla 2 can be found in the report by Goren and Eilon, Results, Point 3.

⁵⁹ "Based on the petrographic data ... the raw material of all the examined bullae from Jerusalem **is readily identified as fabrics which are** ... Quaternary alluvial beds derived from

“Jerusalem” bullae were made in Jerusalem (noting that any documents, commodities and letters to which they had been attached would have been “incoming mail” sent to Jerusalem from either inside the city or from the Jerusalem environs, or else from areas further afield), we also possess no proof that the Berekhyahu Bullae themselves originated in Jerusalem.⁶⁰ How then can the former serve as a point of reference for the latter? As Goren *et al.* have stated, *terra rossa* was not the only clay used for bulla production, even within the Kingdom of Judah. For their examination revealed evidence of different kinds of soil, including rendzina and alluvial loess soils.⁶¹ As stated earlier, Arie, Goren and Samet argued in 2011, that the 17 bullae from Lachish, as well as another bulla from the same site published by Olga Tufnell, were made “of alluvial loess.”⁶² Indeed, the examination of clay from this Shephelah site seems to suggest that scribes tended to select soil that was readily available to them near their place. We simply cannot accept that ancient scribes working in Judah and the ancient Levant (including Mesopotamia and Egypt)—who used a great variety of clays for making bullae⁶³—felt **always** bound to use the same clays at all times. As we know, they in fact did not.⁶⁴ Surely the choice of which clay to use would have been frequently dictated by which quality of soil was readily available. *Terra rossa* soil may have proved especially suitable to the scribes, who sent the “Jerusalem bullae” to Jerusalem.⁶⁵ Closer inspection, however, of the hundreds of bullae and bulla fragments now available from control-

Terra Rossa soils” and “having a more or less constant mineralogical composition of silt and temper inclusions.” (Goren and Arie 2014: 155, emphasis added).

⁶⁰ Quite to the contrary, in their 2004 report written for the IAA and the court of justice, Goren and Eilon state: “The bulla under discussion is made of clay originating in Judea, as would be expected from a Judean bulla.”

⁶¹ “Based on the petrographic data ... the raw material of all the examined specimens are readily identified as derived from soil deposits which are, in fact, Quaternary alluvial beds **derived from terra rosa, rendzina, or loess soils.**” (Arie, Goren and Samet 2011: 7, emphasis added).

⁶² Arie, Goren, Samet 2011: table 1, nos. 46–61 and 63.

⁶³ See for instance Rothman and Blackman on prehistoric Mesopotamia (1990: 19–43). Also see the more general study by V. Messina on seal impressions from the Mediterranean world (including cultures as far as India), 2007: 195–200.

⁶⁴ *E.g.* see Blackman 1999: 51–56. Also Rothman and Blackman 1990.

⁶⁵ Indeed also at other Judean sites, sometimes *terra rossa* soil is found, as seems to be the case

led excavations in Jerusalem and Judah (let alone the great many unprovenanced bullae) shows that various kinds and qualities of soil formations were employed over time.⁶⁶ Even clay taken from the Moza marl formation has been found for **at least** the production of one bulla from the City of David as we shall see below.⁶⁷

More importantly, however, why would the scribe who made Bullae 1 and 2, have chosen *terra rossa* soil to produce them? As it seems, Goren's and Arie's problem with the Bullae appears to be of their own making. For their belief that (at least) Bulla 1 came from Jerusalem is merely based on a simple rumour that it had been found in the area of the "burnt chamber" of Area G (Stratum 10) of the City of David, near the place where Yigal Shiloh excavated some 50+ bullae in 1982.⁶⁸ Based on this very shaky (probably misleading) "evidence," they compare the clay of the Berekhyahu Bullae with that of other specimens found at Jerusalem. Consequently, they stress with confidence that the consistent use of *terra rossa* clays in Jerusalem conflicts with the clay used to produce the Bullae, which according to them were "made of clay from the Moza formation." Whilst we do not know for certain where the Bullae were made, we also possess no evidence where Baruch resided when the Bullae were made. Although apparently his brother Seraiah served as a high ranking official at the court of king Zedekiah (Jer 51:59), it is completely unknown from where the

with the late 7th century B.C.E. bulla of "Ga'alyahu ben hammelek" found at Beth Zur in 1931 in a Persian or Hellenistic period cistern (Loc. 67/228). See van der Veen 2014: 85–103. Also see Sellers 1931: 59. Moreover, see Arie, Goren, Samet 2011: table 1, no. 62. One must note, however, that the bulla could have arrived at Beth Zur from elsewhere, possibly from Jerusalem, where this official could have been based.

⁶⁶ See for instance the photograph in Mazar 2015: 420. Already see Deutsch 1999: 15. For fine and coarse clays used for bullae in Egypt, see e.g. UC69537 and UC69530 in the online catalogue of the Petrie Museum in London. Another fragmentary bulla found in area D3 of the City of David in a secondary deposit in April 2013 is made of "unified gray" clay.

⁶⁷ A **second** specimen, which initially was believed to be a bulla, was subsequently determined to be a stamped sherd. However, no explanation was given. A reexamination will therefore prove to be necessary.

⁶⁸ Goren and Arie 2014: 148. See Shoham 2000: 29–57. On two of the bullae found there, which can be attributed to historically known personalities from the Hebrew Bible, see van der Veen 2014: 125–150.

Neriah family had originated or where Baruch himself had his office.⁶⁹ Nor is it certain that he had been an official Judahite scribe serving on the highest bureaucratic level.⁷⁰ After the Fall of Jerusalem, Baruch took up residence at Mizpah (Gedaliah's seat of government in Benjamin) along with Jeremiah and others, who had stayed behind in the land.⁷¹ Subsequently, after Gedaliah's murder, they took refuge in Egypt (Jer 43: 2–7). We simply do not know where the Bullae were made.

2.4 Evidence of Moza Formation Clay even at Jerusalem

Most recently, Goren and Gurwin⁷² have shown that Moza marl clay was also sporadically used for bullae production (in Jerusalem?), as at least one anepigraphic bulla found by Eilat Mazar in the City of David Stratum 10 (*i.e.* from basket 10-4) confirms.⁷³ This fragmentary buff coloured bulla measures 8.5 x 14 x 15 mm.⁷⁴ The bulla depicts a so-called hieroglyphic *neb*-basket (without diagonal stripes) above which the legs and feet of a standing person or deity can be seen. Although Keel has suggested a Middle Bronze Age II date for the bulla,⁷⁵ depictions of standing figures above *neb*-baskets can also be found on late Egyptian scarabs and local imitations throughout the Mediterranean world. For instance, a scarab with a virtually identical depiction was found in a tomb at San Montana in Italy dating to the 7th century B.C.E., which likely had been produced at Memphis, Egypt.⁷⁶ Multiple parallels

⁶⁹ On the genealogy of Baruch, see for instance N. Sacher Fox 2000: 311.

⁷⁰ Cf. Goren and Arie 2014: 150.

⁷¹ On the history of Gedaliah and the discovery of possibly relevant epigraphic finds, see van der Veen 2007.

⁷² Goren and Gurwin 2015: 441–452.

⁷³ Goren and Gurwin state: “The clay is recognized as the upper marl layer of the Moza formation, mixed with dolomite sand from the Aminadav formation.” (2015: 451).

⁷⁴ Keel 2015: 430, no. 13.

⁷⁵ Bullae with similar impressions have been found for instance at Tell Jemmeh, where they were securely dated by their contexts to the Middle Bronze Age. See Ben-Shlomo and Keel 2014: 857–866, esp. fig. 20.1: a-d.

⁷⁶ Gorton 1996: 24–245, no. 17c.

(including those from the late 7th–6th century B.C.E. Naukratis workshop)⁷⁷ can be listed.⁷⁸ These types of seals date to the 7th–5th centuries B.C.E. (thus some are clearly contemporary with Stratum 10 at the City of David).⁷⁹ Their late date therefore coincides with the date of the stratum in which the relevant bulla was found. Further study of this bulla will however be necessary.

3. SOME ADDITIONAL OBSERVATIONS

3.1 *Palaeographic Traits*

Some scholars have also questioned the palaeography of the Berekhyahu Bullae. Whilst the overall impression of its letter types well fits the period under consideration, *i.e.* the late 7th to early 6th centuries B.C.E.,⁸⁰ the writing of *samek* followed by *pe* (third register) has caught the attention of some epigraphers as will be shown below (**Fig. 9**). Firstly, it should be noted that the script on the Berekhyahu Bullae does not reveal the work of an especially skilled engraver. The letters

⁷⁷ See Gorton 1996.

⁷⁸ For similar depictions on Levantine and Punic scarabs and scaraboids from the relevant period, see e.g. Gorton 1996: 45, 23; 52, 20 and 53, 26 (found at Tharros), 116, 7 (found at Lindos made at the Naukratis workshop); Reyes 2001: 53, 60 (Cypriote), 99, 204–205 (both from Kition), etc. For a similar scaraboid from the coastal plain at Tell Jemmeh, see Keel 2014, 1015, fig. 27.7:a. Keel dates this seal to Iron Age IIB.

⁷⁹ Keel has argued (pers. comm. August 2015) that Middle Bronze Age seals are more commonly found than late Egyptian or Egyptianizing scarabs and scaraboids, especially so in the Judean hills. But this cannot be taken as proof for an early date. Also it should be noted that, whilst possible reuse of more ancient scarabs during later periods is attested (see Keel 1995: 263; Gorton 1996: 9–10), late Egyptian scarabs have been found in Jerusalem. For a late Egyptian (or Egyptianising) scaraboid only recently discovered in City of David Stratum 10, see Keel 2015: 425, 4.

⁸⁰ See for instance the diagnostic letter *he* (in all three registers) with its upper horizontals crossing the vertical stem. Especially in the central register its lower horizontal bar is somewhat bent, which is an additional feature of mid to late 7th century B.C.E. types of *he*. The writing of the nondistinctive intermediary *waw* (especially in the central register) corresponds well with 7th century diagnostic traits of this letter, as described by Vaughn 1999: 43–64. See also van der Veen 2014: 35, 59, 75–77, etc. Also note that the overall layout of the Berekhyahu Bullae in three registers divided by double dividing lines corresponds closely with a seal found at Tel Arad (CWSSS 111), as well as with multiple fiscal bullae (Barkay 2015: esp. 19–26, with tables 1 and 2).

are unevenly spaced, whilst the letters themselves are rather carelessly executed and do not follow a comprehensible consistent pattern. But nor do many provenanced seals and bullae display such a consistency.⁸¹ We assume that only the most well-trained engravers—employed in the highest ranks of office—were capable of engraving such beautiful scripts into small stone objects, especially when the seals were made of hard semiprecious stone. Secondly, we would like to stress that inconsistencies and “unparalleled writing” is also frequently found in other ancient West Semitic inscriptions and therefore cannot reliably be used



Fig. 9

Lowest register of “Bulla 1” with the writing of *samek* and *pe* (courtesy of and © by the Israel Museum, Jerusalem, Dr Eran Arie and S. Moussaieff Collection; photo by R. Deutsch).

⁸¹ Compare for instance the strangely crafted letters depicted on bullae B1–2 from the recent City of David excavations (Mazar and Livyatan Ben-Arie 2015: 304–306. Also *e.g.* B12 (Mazar and Livyatan Ben-Arie 2015: 314), or on the seal of *Šlomit* from the same site: Winderbaum 2015: 366–368, no. 2. Also see CWSSS 162 (from Makmish) and 638 (again from the City of David).

to prove or disprove the authenticity of inscriptions, even if its peculiarities must be addressed. For unusual execution of letters can also be found in **provenanced** inscriptions. This is especially true for tiny inscriptions like seals, as the execution of their letters (often not larger than 1–3 mm) demanded much experience on the part of the engraver.

In their article Goren and Arie refer to Christopher Rollston's epigraphic work on the Bullae.⁸² Based solely on palaeographic considerations, Rollston believes that the Berekhyahu Bullae can be proved to be modern forgeries.⁸³ Believing that the forger used "script charts as a model for his forged letters" he further assumes that the forger "did not discern the importance of the relative positioning of the *samek* and *pe* in sequence," a point previously also noted by Joseph Naveh.⁸⁴ For according to Rollston *pe* in apposition to *samek* (cf. the third register of the Berekhyahu Bullae) is too large and its upper "ceiling-line" is not situated below the lower horizontal line of the large head of the *samek* (Fig. 9).⁸⁵ Rollston lists a number of 8th–early 6th century inscriptions from ancient Israel and Judah in order to corroborate his view. But the parallels he adduces are predominantly from lapidary inscriptions (the Royal Steward Inscription found at Silwan) and cursive scripts on ostraca (from Kuntillet Ajrud, Samaria, Mešad Ḥashavyahu, Arad, and Lachish). As we see it, the validity of this approach is seriously flawed. Lapidary inscriptions and ostraca are **not** seals. In fact Rollston only finds one single seal which he believes supports his view.⁸⁶

⁸² 2003, 2016 with further literature on the subject.

⁸³ 2016: 83*.

⁸⁴ Rollston 2016: 83*–84*.

⁸⁵ Rollston (2016). Goren and Arie refer to his article even though it had not yet appeared in print (Goren and Arie 2014: 157). Now that his article has appeared, we were able to compare its content with previous articles by the same author. As a matter of fact, Rollston does not really present any new evidence. Already in 2003 Rollston claimed: "In every single case, *samek* is substantially higher than the *pe* that follows, and normally the *samek* actually towers over *pe*." (2003: 161). Rollston's main source for comparison are ostraca. But even on ostraca, the situation is less clear than he claims. Here too different sizes of *samek* are found when compared with other letters that appear in apposition (e.g. *beth*, *he*, *mem*, and *waw* as for instance on the Mešad Ḥashavyahu and Arad ostraca). Frequently *samek* does not tower above the succeeding letter (Heide 2007: 151, 154, 163–166 with figs. 3, 16 and 17).

⁸⁶ CWSS 85, see below.

Firstly, by looking closely at the Berekhyahu Bullae, it should be stressed, that contrary to Rollston's criticisms the head of *samek* in apposition to *pe* is fairly compatible with the writing of these letters on other Judahite seals (see below). Problematic for Rollston's view is the virtual absence of **provenanced** Judahite seals containing successive *sameks* and *pes* (let alone containing the word *hspr*, "the scribe," again see below).⁸⁷ The only seal he presents as evidence is a provenanced Israelite seal bearing the name "Asaph" (CWSSS 85). It was found at Megiddo in 1905. But not even this seal proves his case. Firstly, it dates to the 8th century B.C.E. and is therefore considerably older than the Berekhyahu Bullae. Secondly, the head of the *samek* only contains two horizontal lines rather than three (due to the lack of space in the lower register, a point which Rollston acknowledges). Moreover, the head of *pe* on the Asaph-seal is not placed below the lowest horizontal bar but rather between the upper and lower horizontal bars. On another albeit unprovenanced (but almost certainly genuine) 8th century inscribed Israelite scarab containing the same name,⁸⁸ the upper horizontal line of *samek* is inscribed on precisely the same level with the ceiling line of the *pe* and hence there can be little doubt that the form of these tiny letters was regularly predetermined by the space that was available on such seals. Notably the height of these letters hardly ever exceeds 1–3 mm.

It is also difficult to see why the phenomenon of the *samek-pe* sequence applies to *samek* and *pe* only. By looking at various other letter combinations including *samek*, we have detected that the ceiling-line of *samek* is in fact frequently found on the same or virtually on the same level with the ceiling-lines of these letters.⁸⁹ A nice **provenanced** instance may be found on a bullae from the City of David.⁹⁰ It is inscribed with the names "Šema^cya[hu], Son of Maḥseya[hu]." Here the head of the *samek* is placed even lower than on the Berekhyahu Bullae and

⁸⁷ As for the Berekhyahu Bullae, it is not hard to understand why the *samek* was not made larger. There simply was not enough space left between the head of *samek* and the dividing line above the third register.

⁸⁸ Deutsch and Lemaire 2000: 8, no. 2.

⁸⁹ This, however, does not mean that elevated heads of *samek* do not also occur (see e.g. Deutsch 2003: 132–133, no. 108). But there just does not seem to be a general rule for this.

⁹⁰ Shoham 2000: 38–39, B14.

is actually found to be on the same level with the *yod*. One would imagine, that like on the Berekhyahu Bullae, the engraver did not find enough space to place the head of *samek* higher, as the dividing line on the seal above it was in the way.⁹¹ Similarly engraved *sameks* (followed by *lamed*, *waw* and *aleph*) can be found on a number of bullae recently excavated at the City of David.⁹² Their ceiling-lines also are found to be on the same level.⁹³

As for Judahite seals and bullae, where *samek* and *pe* appear in succession, the comparative material is very limited indeed, let alone for seals where the title *hspr* is actually written. Worse, we do not possess one single **provenanced** Judahite seal or bulla containing the title *hspr*. One **unprovenanced** Judahite seal containing the title *hspr*⁹⁴ shows the ceiling-line of *pe* on the same level with the central horizontal bar of *samek*. Therefore, the head of *pe* is placed higher than Rollston suggests.⁹⁵ We do, however, possess non-Judahite seals and

⁹¹ The head of the *samek* on the seal impression of an official on the *lammelek* type jar handle from Beth Zur is also placed rather low, even though there would have been enough space towards the top—see CWSSS 674A (*samek* followed by *lamed*, first register). Also see CWSSS 670 from Beth Shemesh (*samek* followed by *dalet*, first register); 689A from Lachish (*samek* followed by *mem*, placed above the winged uraeus); 694 from Beth Shemesh (*samek* followed by *mem*, bottom line).

⁹² E.g. the bullae of Sal'a ben 'Eliramah and of Salu'a(?) (including the same patronym), presumably of the same person using different seals: see Mazar and Livyatan Ben-Arie 2015: 315–317, nos. B14 and B15. The central horizontal of the *samek* on B14 is virtually on the same level with the ceiling-line of the succeeding letters, whilst it is the top horizontal of the *samek* on B15 which is on the same level with the following letters. On the other hand, a *samek* of the “elevated” type is found on bullae B16 and 18 (Mazar and Livyatan Ben-Arie 2015: 317–318).

⁹³ The same trait can be found on non-Judahite seals. On an Aramaic bulla, belonging to a servant of the Neo-Assyrian monarch Sargon II found at Khorsabad (CWSSS 755), the ceiling-line of *samek* is also on the same level in all three registers in apposition to the *reš* (first line), to the *reš* and *zayin* (second line), and once again to the *reš* (third line). The same is true for the famous Edomite royal bulla of Qosgabr found at Umm al-Biyara, as well as for a seal with the same name found at Merkez/Babylon (CWSSS 1049). See van der Veen 2012b: 79–81; van der Veen 2014: 214–220.

⁹⁴ CWSSS 22.

⁹⁵ The same may be true for CWSSS 23 of which unfortunately only a line-drawing exists. It was published in 1919 but was misread at the time. The drawing is very imprecise. A bone-seal acquired in 1979 (CWSSS 253) also contains the succession of *samek* and *pe* (in the name Asaph). The ceiling-line of *samek* is placed on the same level with that of a rather large *pe*. The

bullae with the title *hspr*, whose *sameks* contain similarly shaped heads. On a provenanced Phoenician bulla from Acco⁹⁶ the ceiling-line of both characters is again on the same level. But as the specimen dates palaeographically to the 5th century B.C.E., it is about one century later than the Berekhyahu Bullae. A number of **unprovenanced** non-Judahite seals which appeared on the market as early as the 19th century—when the intricacies of palaeography were not yet well-known—also contain low-headed *sameks* as part of the title *hspr*: CWSSS 754 (Aramaic seal, published in 1857) and CWSSS 1007 (Moabite seal, published in 1887). The same is true for CWSSS 1009 and 1010 (Moabite seals), but these were acquired later during the 20th century.⁹⁷

Unfortunately, whilst the comparative seal material is sparse, there is no clear consistency in the way how *samek* is written in apposition to *pe*. Both raised and lower stances occur. Any definite conclusions, therefore, remain immature at best. Moreover, the script as found on the Berekhyahu Bullae is crude. As on many provenanced seals and bullae, engravers often did not pay close attention to standard conformities.⁹⁸

There is yet another point we want to raise. Our knowledge of bullae has greatly improved in recent years, due to the many provenanced bullae that have recently surfaced in controlled excavations thanks to the Wet Sifting Project first introduced in 2004 by Gabriel Barkay and Sachi Dvira (Zweig). Their discovery has completely changed the ratio between provenanced *vis a vis* unprovenanced bullae. We currently do not only have many more bullae to compare with, but we also possess provenanced bullae that actually find duplicates in the already existing corpus of unprovenanced bullae. Some of these contain the names of biblical personages (including king Hezekiah). We should

shape of the crudely carved seal (and its letters) leaves little doubt about its authenticity. Both letters are also found similarly written on a bulla published by Avigad 1986: A 131 (= CWSSS 587). Again there is nothing to suggest that the bulla would be a fake.

⁹⁶ CWSSS 732.

⁹⁷ CWSSS 1009 was bought in Jerusalem in 1982, while CWSSS 1010 was acquired in Lebanon back in 1946. The authors cannot find fault with either of them. See also the Phoenician seal published more recently in 1977 which contains the title *hspr* (CWSSS 720).

⁹⁸ Cf. provenanced: e.g. CWSSS 162, 253, 638; unprovenanced: e.g. CWSSS 253, 265.

therefore be careful not to reject unprovenanced bullae **simply** because they are unprovenanced or bear names of known historical characters. This approach is certainly inadequate.

3.2 Former Conservation and Harsh Handling

Rafi Brown, the former owner of Bulla 2 testified before the court during the forgery trial, that the bulla was indeed authentic and how it had been conserved after its original discovery. As a professional conservator, he explained what had been the accepted conservation routines, which he had applied to the bulla.⁹⁹ As the first step, the bulla had been completely cleaned. Then, as a second step, it had been treated with a chemical solution, called Pearloid. This was done to strengthen its surface in order to preserve the object. Subsequently as a third step, white powdery material (frequently made of very fine crushed patina retrieved from broken potsherds) was applied to it, to yield a clearer “contrast” between the letters and its surface background. This would make the bulla more attractive during display, whilst it would also help to take better pictures. The same method also used to be applied to seals and coins.

When later the bulla was sold to Shlomo Moussaieff, it would come to suffer its most brutal treatment. The owner frequently held the bulla with bare hands, rubbed it between his fingers and showed it to hundreds of visitors during the 13 years he kept it in his London collection (between 1991 and 2004). Not surprisingly therefore, when Goren received the bulla for examination, he found it to be contaminated. It was covered with the remains of the chemical treatment, while the surface was found to be greasy, mostly due to the careless handling of its owner. Yet, what Goren did not find was evidence of modern contamination in the clay itself, something one would have expected to find if the bulla indeed was a modern forgery. Despite its eventful history, Goren compared it with sterile parallels found during controlled excavations.

⁹⁹ See pp. 3019 and 3063 of the trial protocol.

During our recent examination under microscope of Bulla 1 at the Israel Museum, we also found it to be completely covered by a waxy or greasy material (**Fig. 8**), with which it had been formerly treated. Again, during earlier days of conservation, the application of wax to fragile artifacts was commonplace.¹⁰⁰ This specimen too had been completely cleaned beforehand as could be clearly seen, even though some patination seemed to have survived inside in the channel formed by the thick cord which had fixed it to the wooden object (see above). After all this harsh treatment, surely, we cannot expect these bullae to look the same as bullae freshly retrieved from controlled excavations and treated according to today's conservation standards.

Finally, as for any possible remains of patina on the bullae or inside the channel for the string that **may** have survived and which should have developed under "Mediterranean subhumid climatic conditions," Goren and Arie argue that it would have caused the bullae to "crack and crumble" while "an unfired bulla should result *a priori* in its destruction."¹⁰¹ First, this last statement is incorrect. Several unfired and partly unfired bullae not studied by Goren and his team—which were **not** enclosed by a protective jar as the 17 Lachish seal impressions to which they refer—could be listed, *e.g.* the famous *Gedalyahu ašer ʿal habbayit* bulla from Lachish (found on the surface) and the *Milkom ʿur ʿebed Baʿalyišaʿ* jar stopper from Tall al-Umayri (found in the topsoil above the palatial structure of administrative building A).¹⁰² And surely, regardless of the former conservation treatment and harsh handling from

¹⁰⁰ The same conservation treatment was seen by van der Veen when he studied objects (*e.g.* fragments of wooden plates and chairs) from Kathleen Kenyon's excavations at Tell el-Sultan/Jericho at Cambridge University back in 2002 and 2003. Likewise, also a bulla which was once owned by Shlomo Moussaieff (CWSSS 504) and which is currently kept in the collection of the British Museum in London, displayed the same waxy surface when van der Veen studied it during his research on ancient bullae while still working on his Ph.D. thesis for the University of Bristol. For a discussion of CWSSS 504 and a possible identification of the seal's owner, see van der Veen 2003: 250–254.

¹⁰¹ Goren and Arie 2014: 157.

¹⁰² See *e.g.* van der Veen 2014: 74–84; 188–211. Unfortunately the current whereabouts of the unstratified Lachish bulla found by J. L. Starkey in 1935 is presently unknown. For patina on a bullae with a griffin found at Megiddo also studied by Robert Deutsch, see Sass 2000: 408–409.

which both bullae suffered so severely, we have no way of telling where they were found and under what circumstances. Drawing up any more definite scenarios about what **could** or **could not** have happened to them at any given time in history, is therefore irrelevant.

3.3 Leaving One's Own Fingerprints?

Finally, we would like to emphasise that both bullae are covered around the edges by the fingerprints of the person who apparently manufactured and stamped them.¹⁰³ But why would this person have done so? Did he believe he would enhance the authenticity or even the value of these items? This does not appear likely. Quite to the contrary, as a matter of fact, any modern qualified faker would **not** ever leave his fingerprints on his forgeries, as this would make him immediately liable and expose him personally without a doubt during any police investigation.

4. CONCLUSIONS

In closing we can state that Goren and Arie's arguments do not clearly stand up to testing. Close reexamination by the present authors (especially of Bulla 1) has shown that their backs were not impressed on papyrus. Rather the very fact that the Bullae were impressed on wooden objects, and that plausibly they had been used to seal wooden writing boards (the thorough study of which has only become more widely known since 1992) adds considerable weight to these bullae being genuine ancient artefacts. Also, the chemical analysis performed by Goren—suggesting that Moza marl was not used for bulla production in ancient Jerusalem or even in most of Judah—does not support his case. In a follow-up article we hope to present the results of an independent geological examination of the Bullae, even if we doubt that it can prove their authenticity one way or another.

¹⁰³ For the study of fingerprints left on bullae see Moren 2007.

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