STUDIES OF ANCIENT EGYPTIAN FOOTWEAR. TECHNOLOGICAL ASPECTS. PART XI. SEWN-EDGE PLAITED SANDALS

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1. *Introduction*

The category 'sewn-edge plaited sandals' is a large, varied group, which includes several different types based on shape and, to lesser extent, technological features. The large variety makes it difficult *not* to note all kinds of exceptions. These details, however, are especially interesting because they might give insight in who made the sandals and/or where. In other words, possibly these are evidence for different craftsmen or a different tradition (perhaps pinpointing geographical differences) and/or suggests the use of the footwear for a more specific function.

Nevertheless, sewn-edge plaited sandals have one thing in common: the sole consists entirely of plaited fabric or most of the sole layers do. Usually, the plaiting is an 'over one, under one' design but occasionally the design is more complicated (see table 1; *cf.* Veldmeijer, 2008/2009b). The fabric might be folded to create a thicker sole. In types A-D, the sole layers are held together with an edge that consists of cores that sandwich the sole layers and are sewn with small strips of palm leaf, comparable to the edge in sewn sandals (figure 1E; *cf.* Veldmeijer, 2009a; 2009b), to which the back straps are attached. The edge in type E, however, is sewn slightly inwards from the edge proper with a row of closely spaced stitches (figure 1A). In this construction, they differ from 'plain plaited sandals' (Veldmeijer, 2008/2009), because these sandals consist of a folded fabric without a sewn edge. The front strap in sewn-edge plaited sandals is inserted through the entire sole and secured at the ventral surface.

In this part of the Ancient Egyptian Footwear Project (AEFP),[1] the technological aspects of this category are presented with, as usual, other aspects of footwear discussed in passing; ample attention to these subjects (such as iconography and philology) is pending. As always footwear terminology is after Goubitz *et al.* (2001) but with modifications (see Veldmeijer, 2009b). The preliminary classification is based on Montembault (2000) (Category, Type, Variant). As explained elsewhere (Veldmeijer, 2009a; 2009b) Goubitz *et al.* (2001) use recognisability rather than a classification on the basis of technological features or shape only. In the study of ancient Egyptian footwear, a combination of Montembault's and Goubitz *et al*'s systems are used[2] but for the category of sandals in the present study, Goubitz *et al*'s recognisability weighs heavily in the classification.

A total of 101 specimens have been studied, the summary of the most important details of which are shown in table 1.[3] Several incomplete sandals or fragments could not adequately be

[1] For a detailed explanation of the AEFP see Veldmeijer (2009b).

[2] This approach differs fundamentally of Alfano's (1987), who based a typology on depictions of footwear.

[3] The table also includes a list of the used abbreviations to indicate the collection in which the specimens are housed.

classified; no attention is given to these, although they are inserted in the table. The most complete or diagnostic specimens are illustrated; for the images of the remaining sandals, the reader is referred to the forthcoming catalogues and final analysis (Veldmeijer, Forthcoming).

2. *Description*

2.1. *Shape*

2.1.1. Type A

Type A can be divided into three variants. Within these variants, however, are slight noticeable differences. Type A, Variant 1 (figure 2) is a short, wide sandal with a square[4] or rounded[5] heel from which, towards the front, the width increases continuously. It has its largest width approximately at the insertion of the front strap. At the front, the lateral and medial sides run diagonally towards the pointed toe, which is positioned more or less in the centre of the width of the sole. The off centre position of the front strap indicates the orientation. However, the straight condition is not exclusive, as several examples show a tendency of swaying.[6] The child's sandal from Amarna, Petrie UC 769, is clearly swayed and would perhaps fit well in A2, but the overall layout (short, wide sandal) is closer to A1. BM EA 4445 is even distinctly swayed, as the lateral edge curves towards the pronounced big toe from about halfway along the length of the sandal. In contrast, the medial edge is almost straight, but curves slightly towards the toe from about the front quarter of the sandal's length. MFA 03.1721 (figure 16) is already slightly more elongated and the waist shows a slightly constricted condition.[7] Several examples are less stubby, but the heel is still square or slightly rounded. Moreover, the width still increases continuously towards the front, obtaining the largest size at approximately the insertion of the front strap. However, the sandal is more elongated[8] but clearly based on the same principle. Some show a slightly constricted waist and at the front, the medial edge runs diagonally towards the toe whereas the lateral edge gently curves, thus resulting in a slightly swayed sole.[9] MEgT 7701 equals the first series (short, stubby sandal, which continuously increases in width and with a short toe), but the heel is distinctly rounded. Another exception is MEgT 7878, which is a slightly elongated sandal but still relatively short and stubby and does not show an increase in width. The heel is rounded.

Type A, Variant 2 (figure 3) has a square[10] or a rounded heel.[11] Towards the front the width may slightly increase but this seems coincidental.[12] Characteristic of this variant is the fact

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[4] BM EA 36210, MEgT 7700, Petrie UC 769.

[5] ASH 1888.526, BM EA 4445, NMAL AU 9, MEgT 7701, MEgT 7878, MFA 03.1720/1721, MFA 72.4769, NMS 1921.1565a, WML 11899.

[6] ASH 1892.623, ASH 1891.429, BM EA 4445, BM EA 4442, BM EA 4443, MFA 03.1721, MFA 72.4758, Petrie UC 769.

[7] Note the resemblance in shape with sewn sandals.

[8] NMAL AU 9 [note that in this pair, both edges expand and curve towards the toe], EgCa 5230, ASH 1888.526, ASH 1891.299, MEgT 7879 and BM EA 4442 [both only slightly elongated], NMS 1921.1565a.

[9] MFA 72.4769, MFA 72.4771, MFA 72.4772, WML 11899.

[10] BM EA 45185, but the sandal is rather coarsely made, which makes it doubtful whether this was an intended feature.

[11] BM EA 45187, but the sandal is rather coarsely made, which makes it doubtful whether this was an intended feature. MFA 72.4770 differs slightly: it is rather elongated with the lateral edge showing an abrupt turn towards the toe; the insertion of the front strap is further away from the edge and the heel is more rounded.

that the lateral edge, approximately at the level of the insertion of the front strap, makes a distinct angle inwards whereas the medial edge curves only slightly towards the tip of the sandal. This could be interpreted as a less carefully made A1 specimen but the presence of several examples suggests an intended shape, hence the designation as a separate variant.

Variant A3 (figure 4) is clearly based on type A, Variant 1 sandals, hence the classification as another variant despite the different appearance (which might suggest a different type). The heel is square and towards the front the width increases continuously, resulting in the largest width shortly anterior to the insertion of the front strap. Characteristic of this variant is that the toe is extended and curves backwards. It is attached to the junction of the front strap and back strap (see below and figure 19B). Although this variant is well known and often depicted in popular books, the fact that there are only two examples studied suggests they are less common than might be suggested by these publications.

2.1.2. Type B

Type B can be divided in four variants, but the general plan consists of an elongated sandal with a (nearly) square heel. The width towards the front is continuous or shows a slight increase (only in B1) from the waist onwards, resulting in a slightly constricted waist. Moreover, the sandals show a tendency of increasing toe-length or have a toe extending backwards and secured at the junction of the front and back strap. Variant 1 (figure 5) has a rounded heel from which the width towards the front slightly but continuously increases. The lateral edge starts to curve towards the front from approximately halfway along the sandal's length; since the medial edge starts to curve much closer to the toe area and is less distinct, the result in some specimens is a slightly swayed sandal[13] most are distinctly swayed. The toe is clearly elongated relative to A1; admittedly, the distinction between the elongated examples of type A1 and type B1 is sometimes difficult to make, which suggests a close relationship. ÄMPB AM 3323, which is incomplete and therefore tentatively classified to this variant, has an insole.

In Variant 2 (figure 6), the toe is clearly enlarged (much more so than sandals of Variant 1) and curled backwards, but not as far back that it reaches the junction of the front and back strap. One example (BM EA 4450) is incomplete due to which it is not entirely certain if the toe extends halfway towards the back strap or even attaches to it, but the remnant suggests the former; BM EA 4454/4455 (a pair) are largely complete. The heel in this sandal is square, the width is even and only starts to decrease, albeit rather rapidly, shortly posterior to the toe area.

Variants 3 and 4 are clearly based on the foregoing variants, hence their classification and despite the different appearance (which might suggest a different type), as variants of type B. Variant 3 (figure 7) is, in general layout, comparable to B4: nearly square heel, continuously increasing in width towards the front and large, backwards curled toe. However, the curled part of the toe decreases in width continuously from shortly anterior to the insertion of the front strap without terminating in a long and narrow tip. As in B4, the position of the front strap is the best indication of the orientation of the sandal. Note, however, that the difference in width of the toe between B3 and B4 is sometimes very small.[14] Especially the classification of BM EA 4452 and 4453, which resembles each other closely but are not a pair (differ-

[12] BM EA 45187.
[13] ÄMPB AM 620, WML M11898, BM EA 4455.
[14] For example in MEgT 7702a.

ent insole), is problematic as the enlarged toe clearly tapers more rapidly as with Variant 3 sandals, but distinctly less rapidly as in variant 4 sandals.

The toe in B4 (figure 8) is much elongated and curls back to the junction front strap/back-strap. As in the variants of the previous types, the shape is not exactly uniform. Closest to B1 and B2 is EgCa 11 1 + 25 6. The heel is slightly rounded from which the width towards the front remains more or less equal. Anterior to the insertion of the front strap, the width decreases rapidly but continuously and terminates in a narrow, long toe, the point of which is secured to the junction of the front strap and back strap (see below and figure 19B). In the way it decreases in width, it differs from B3. The insertion of the front strap is off centre and therefore a better indication of the orientation than the shape of the sole, even though usually the enlarged toe is also slightly off centre. MEgT 7702b is also a B4 sandal, but the width increases more continuously, especially at the lateral side. This differs in other examples[15] as the width of the elongated toe decrease rather abruptly at the toe, shortly anterior to the attachment of the front strap. The toe in NMAL AU 8, BM EA 4452 and BM EA 4453 is incomplete, but the rapid decrease in width suggests they should be referred to as B4. BM EA 55411 has extremely flexible straps and extended toe; the sole is less clearly shaped than others.

2.1.3. Type C

There are two variants in type C. Variant 1 (figure 9), represented by several examples, has a rounded heel, from which the width increases slightly but continuously towards the front where it forms a square toe. The sole is straight: the position of insertion of the front strap identifies the orientation.

C2, represented by one pair only (BM EA 4437, figure 10), has a square heel from which the width increases slightly, but continuously, terminating in a rounded, symmetrical toe. The sole is straight too.

2.1.4. Type D

Type D is a varied group, divided into four variants. The sole is rounded at the heel and toe, but two variants, D3 and D4, have a pointed toe.

The sandals of D1 (figure 11) are (nearly) symmetrical longitudinally and therefore straight. The heel is rounded, the width (nearly) equal throughout and the front is rounded too (note that in BM EA 36208 the front is slightly pointed but this seems coincidental).

D2 sandals (figure 12) also have a rounded heel. The waist, however, is constricted, from which the width increases symmetrically on both sides and terminates in a rounded front.[16] Only one example[17] shows a slight swaying due to the fact that the lateral side expands slightly more distinct relative to the medial edge and curves more noticeably towards the front. Most of the examples classified to these two variants show a shape similar to sewn sandals type A (*cf.* Veldmeijer 2009a; 2009b).

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[15] BM EA 45184, BM EA 45188, NMAL AU 8, MEgT 5148, WML 11901M.

[16] Straight sole; ASH 197.154, ASH 1971.76, BM EA 68225, Petrie UC 30545, Petrie UC 30546, Petrie UC 30549, Petrie UC 30837, WML 1969.112.40.

[17] ÄMPB AMZ 4312.

Two examples are classified to D3 (figure 13). They show a (nearly) rounded heel from which the width increases slightly but distinctly and terminates into a pointed toe (not visible, however, in ÄMPB AM 26539 as the sandal is incomplete). Because the lateral side is slightly more expanded and curves more gently towards the toe, the soles are swayed.

D4 sandals (figure 14) are highly shaped, showing a rounded heel and distinctly constricted waist, from which the width increase until about the insertion of the front strap. From here, the sides turn rapidly into the pointed toe. In BM EA 4449, the lateral side expands more and runs, after the expansion, diagonally towards the toe, resulting in a swayed sole. NMAL AU 2 is symmetrical longitudinally; only the position of the front strap insertion indicates the orientation (straight sole). In both sandals, the toes are curled, but in BM EA 4449 it is slightly more pronounced.

2.1.5. Type E

The sandals in type E (figure 15) have a square heel with square corners. From here, the width continuously increases but only slightly, after which the sides terminate in a rounded toe. Moreover, the sandals can be distinguished from type A to D by the fact that the plaited fabric is secured with stitches (*cf.* figure 1A) that are situated slightly inwards from the edge, rather than with a sewn edge.

2.2. *Sole construction*[18]

2.2.1. Type A

The sole of this strong type of sandal consists of a plaited 'over one, under one' fabric, which is folded several times (*cf.* Veldmeijer, 2008/2009). The completeness of most studied specimens often prohibits counting of the number of layers, but several examples have as much as three midsoles (thus with the in- and treadsole five layers in total). Moreover, it is not always clear whether the entire sole consists of one *folded* fabric, or whether they were cut apart when the sandal was made into the required shape and size. Another possibility is that the midsoles were individual layers.

Reinforcement of the sole with thick string is unusual in type A sandals but one example (Variant 3, BM EA 4451; figure 4) shows lengthwise rows of running stitches (figure 1C) and another example (Variant 2, BM EA 45185; figure 3) has rows of stitches as shown in figure 1A through several sole layers: they are not visible at the dorsal surface of the sandal, and most likely the insole is excluded (*cf.* figure 14). The stitching in BM EA 45185 is denser and covers the entire surface. In BM EA 4451 (figure 4) two rows are situated close at the edge and the third one runs lengthwise down the centre. The sole in BM EA 45187, which equals BM EA 45185 to great extent, is not reinforced.

The sole layers are secured with a sewn edge, which is the same as in the sewn sandals (see Veldmeijer, 2009a; 2009b): a core sandwiches the sole layers dorsally and ventrally and are sewn subsequently (*cf.* figure 1E; see also figure 8A & 18B). In sewn sandals the outermost

[18] Observations as to the number of sole layers applies to the other types as well and will, therefore, not be given further attention (see table 1).

core is decorative, especially when the edge consists of three rows, rather than functional. In some sandals, not all sole layers are included in the edge: often the midsoles are (distinctly) narrower than the width of the sole proper (figure 12A, where you can see the impression of the narrow midsole[s] in the insole), which results in a distinct bulging sole that might even be higher than the edge itself (see for an example figure 18A). The edge might consist of a single row, two rows or even three.

In type A sandals, stitching of the edge at a right angle is rare and only seen in BM EA 4451. Here, these running stitches are placed diagonally and appear at the ventral surface, immediately inside the innermost row of the sewn edge (arrows in figure 4). The last part of the curled toe, however, lacks this stitching. Note that the entire edge slightly differs from the usual composition. The sole is so thick, that it required three cores placed vertically on top of each other (clearly visible at the heel); the reinforcement stitching is situated between the dorsal second and the lowest, third core. Interestingly, at the medial side, the sandal shows a distinct dent that is caused by the ball of the foot, suggesting that the owner walked heavily on the inside of his/her feet, due to which the uppermost core is pushed against the second one. The heel is dented too. Several specimens show a strip of palm leaf at the dorsal surface between the lateral and medial attachments of the back strap, some (also) show such a strip at the ventral surface (for examples see figure 2). No function can be ascribed to them; most likely they are decorative. Unique in MFA 03.1721 is the decorative finishing touch at the front of the insole (figure 16).

2.2.2. Type B

At least some specimens of variants 3 and 4 of sandal Type B have midsoles constructed from strips of plant fibre rather than a plaited fabric and are therefore much comparable to composite sandals (Veldmeijer, In preparation). However, the in- and treadsoles are made of plaited fabric.

Although, as remarked above, some Variant 1 sandals are in shape much comparable to Variant 1 of Type A, in general the soles are thinner, which seems to be due to the use of thinner strips of palm leaf. Despite the refined appearance, the construction of the sole is comparable. BM EA 4454/4455 (B2, figure 6), however, is an exception and as sturdy as Type A sandals. The edge in BM EA 4440 consists of three elements, which differ from others because they are more or less layered: the outer edge is distinctly lower relative to the others (*cf.* BM EA 4451, an A3 sandal, shown in figure 4). Some sandals consist of as many as four or five midsoles (BM EA 4440 and BM EA 4441 respectively); most, however, have less (for example BM EA 45184, which has only one midsole). The heel in BM EA 4454/4455 (figure 6) is thicker than the rest of the sole, which suggests that this part has an extra layer. If so, this is undoubtedly done as reinforcement as the heel is the part of the sole most prone to wear; surprisingly this is not often seen.[19]

Reinforcement of the sole and edge occurs more often than in Type A sandals, but is not seen in B1 variants. All B2 sandals, but only one B3 sandal have reinforced soles.

[19] Reinforcement of the heel is more frequently seen in much younger (Christian) plaited sandals: here the fabric is folded to varying degrees (*cf.* Veldmeijer, 2008/2009).

There is some variation in the sewn reinforcement of the soles of type B2 sandals. In BM EA 4450 (figure 17) it consists of three rows of running stitches (or the type of stitch that is so often seen and shown in figure 1A: it is not possible to determine because they are worn), the outer two of which follows the edge of the sole but are not the edge-reinforcement stitches seen in BM EA 4451. The third one runs lengthwise down the centre. None of them cover the entire sole, as they start before the elongation of the toe and terminate shortly before the edge of the heel. At the front and back the outer two run inwards and meet the middle one. BM EA 4454/4455 (figure 6) has reinforcement stitches at the edge as described for BM EA 4451 (figure 4). The sandals have triple edges; at least the outer edge consists of two cores placed under each other and sewn to the other two. However, the side of the tip of the sandal, approximately starting at the attachment of the front strap, has also been sewn at right angles to the edge. This construction is also seen at the heel, but not at the middle part.

All Variant 3 sandals have a decorative insole (figure 1D), which are either V-shaped and partly overlap in stair-step fashion or, as in MEgT 7702a, with a single-time-plait in the centre of the sandal's width. In some, such as EgCa 5231 (figure 7), the sole is not reinforced with stitches, but in others, such as MEgT 7702a it is: the entire sole is sewn from the toe to heel, with five rows or stitches (*cf.* figure 1A). At the elongated, narrowing toe they come together (*cf.* figure 17). As in Type A, none of the stitches are visible at the insole. All examples, except MEgT 7702a, have a decorative layer that covers the visible dorsal surface of the large, backwards-curled toe (a beautiful example is shown in figure 7). Although in some, this toe is secured to the back strap (*e.g.* MEgT 7702a, but see below for a more detailed description), others do not show this either because it is not preserved or the toe did not need this because it was considered stiff enough to do without (NMAL AU 1).[20]

Also Variant 4 sandals might have a reinforced sole (one row in NMAL AU 8 and, if we accept BM EA 4452 as a B4 sandal, with three rows), which most likely are the same stitches as shown in figure 1A. The three rows lengthwise down the centre in BM EA 4452 start at about the attachment of the front strap. It is uncertain how far they extend towards the heel, because the heel is incomplete (in MEgT 7702a, a B3 sandal, however, in which the sewing is comparable, it runs until shortly anterior to the heel's edge). BM EA 4453 has reinforcement stitches at the edge as described for BM EA 4451 (A3 sandal, see figure 4). As explained, the curled toe is very narrow from the sole onwards rather than the width decreasing in size continuously as in B3 sandals. Thus, the sewn edges are close together throughout leaving no need for a decorative cover. An insole different from the fabric of the other sole layers is present in most, but it consists of the usual 'over one, under one' plaited fabric, rather than decoratively made insoles as described for Variant 3 sandals. Only NMAL F 1940/12.84 is an exception; here, the strips of the insole are plaited once in the middle of the sandal's width. In WML 11901, the midsoles are made of horizontal and vertical strips: the transverse ones are folded at either side of the middle one that runs lengthwise. Possibly, these layers are made of papyrus. This construction resembles composite fibre sandals. The edge of BM EA 4452 (possibly a Variant 4 sandal) consist of three rows (two cores above each other as described for BM EA 4454/4455, figure 6), but are extremely fine. Here too, the edges are sewn at right angles for the whole length except for the first 3 cm approximately (missing tip).

[20] No remnants of this attachment could be observed.

2.2.3. Type C

The examples of Type C shows that the insole and treadsole, which are loosely plaited 'over one, under one', are independent from the midsole(s). The edge in ÄMPB AM 1397 (figure 9) consists of three cores that are rather coarsely sewn. In BM EA 4437 (figure 10), the edge consists of two, tightly sewn cores.

2.2.4. Type D

The sole consists for the larger part of plaited fabric, which is covered with a decorative insole, but with one exception in Variant 2: ÄMPB AMZ 4312 (figure 12). The overall layout, however, suggests a classification in D2 rather than establishing another variant or type. The resemblance in shape of Variant 1 and 2 has already been explained but note the resemblance of Type D sandals with the category 'composite fibre sandals' (Veldmeijer, In preparation), although the sole in the latter does not consist for the major part of plaited fabric but rather of isolated strips throughout all sole layers. Moreover, the shape of sole usually is distinctly different, although the examples of Variant 4 sandals come very close to several examples of composite fibre sandals. Also, in composite fibre sandals, the edge consists of 'one core' rather than multiple cores as often (but certainly not in all) sewn-edge plaited sandals. Finally, the strap complex in composite fibre sandals is much more decorative and usually consists of narrow strips of palm leaf, often coloured, that are plaited around a core of palm fibre string.

The two examples of Variant 1 (figure 11) are very much alike, even in measurements. However, the difference in plaiting of the treadsole excludes them from being a pair. The multiple sole consists of plaited midsoles; the treadsoles have a narrow braid along the perimeter as well as three braids lengthwise down the centre. The insole consists of transverse strips. The tiny stitching at their edges secure them, but seemingly the prime reason of the stitching was to secure the middle of the three lengthwise-braids. BM EA 36208 has, in the inner corner of the perimeter braid, a loosely z-twisted thread, the function of which is unclear. The edge in both specimens is sewn at a right angle with very fine stitches (figure 11, inset; figure 1B) that possibly emerges at the corner of the edge and the treadsole, being obscured by the perimeter braid. Note, however, that the stitching used in ÄMPB AM 3324 differs from the usual stitching (*cf.* figure 1A).

Variant 2 sandals are comparable in construction, including the braids at the treadsole. However, the plaiting might differ (see table 1). The only exception is ÄMPB AMZ 5312: here, the insole is not made of transverse strips, as in the others, but consists of a tightly and evenly plaited 'over one, under one' fabric, which differs from the rest of the plaited fabric and is clearly made to enhance the aesthetic effect. Sandal ASH 197.154 has a shallow notch at the medial edge that might not be coincidental, but rather a reminder for which foot the sandal is meant. Such a notch is standard in most composite fibre sandals. Differences in the edge construction are seen in the number of cores: in all but ÄMPB AMZ 5312 (who's edge consists of two cores), they consist of one core that sandwich the sole.

The soles of Variant 3 are comparable as well but the insole consists of a fabric that is plaited in the middle rather than of transverse strips. The edge consists of two cores. At least OIM E7992 (figure 13) has reinforcement stitches at right angle to the edge. The treadsole of this sandal is sewn with nine rows of stitches (*cf.* figure 1A); the sole in the other example of this variant is sewn with five rows, which are thus less closely together.

The soles in Variant 4 sandals also consist of the aforementioned layers and are neatly obscured with an insole of transverse strips, which are secured in both examples with tiny stitches at the edges. The treadsole differs from each other. BM EA 4449 (figure 14) shows a row of long but closely spaced running stitches lengthwise down the centre, which secures the strips of the insole. At one side is an additional row of stitches that, at the back half, is sewn in the opposite direction, *i.e.* from insole to treadsole (*cf.* figure 1A). They go through all sole layers, except for the insole. In NMAL AU 2, the lengthwise orientated, central row of stitches (which, as in BM EA 4449, secures the strips at the insole) are flanked with comparable rows of stitches (*cf.* figure 1A). These, however, do not secure the insole strips. In neither of the two do the stitches extend to the tip of the sandal, but terminate somewhere between the insertion of the front strap and the tip proper.

2.2.5. Type E

The sole in the two examples that are classified to this type does not have an edge as described for the previous types. Instead, shortly away from the edge proper (showing the folds of the plaited fabric), the sole layers are secured with stitches (figure 15; *cf.* figure 1A). Both examples are heavily reinforced with rows of closely spaced stitches that are comparable to the stitching at the edge, none of which show at the insole. They cover most of the sole's surface.

2.3. Strap complex

The most common strap complex in sewn-edge plaited sandals[21] (referred to in the table as 'standard') consists of a core that is clad transversely. The back strap, which has a U-shape that runs over the instep, is attached to the sole simply by tying it with the cladding to the edge (figure 18A). One sandal (ASH 1891.429) shows an extra, single stitch at right angle, that further secures it to the sole. In some specimens, the cladding is done in a decorative way at the lower part: in ASH 1888.526, the strips are inserted through the centre of the core, which results in a V-pattern (figure 18B). Such decoration in this type of strap complex, however, is usually absent (but also seen in BM EA 4445). The aforementioned strip at the insole between the attachment of the back strap at the lateral and medial sides, sometimes also seen at the ventral surface of the treadsole (see for an example figure 2, but also visible in figure 18A), might be decorative, its function otherwise being unexplainable.

The front strap is attached with its cladding looped in the middle of the back strap in those of more slender size, but in the bigger ones, the core of the front strap is pulled through the width of the back strap (figure 19A).[22] The construction of the straps in sandals with extended toe is the same although the attachment of the front and backstrap includes the tip of the curled toe as well (*e.g.* BM EA 4451 in figure 4). Although often the attachment is obscured with cladding, examples show that the tip of the toe was secured with a single stitch

[21] No pattern could be seen between the various types and variants: they all seem to have this type of strap complex although differences are observed in measurements.

[22] Note that this construction cannot be entirely ruled out for the more complete specimens, such as EgCa 5230, but clear view is sometimes obscured by the intact cladding.

(figure 19B) to the front strap. The front strap is inserted through all soles, usually off centre as to offer a good fit between the first and second toe, and secured with a knot at the ventral surface of the treadsole. Most common are half knots or overhand knots,[23] rather than a crown sinnet (in contrast to sewn sandals, *cf.* Veldmeijer, 2009a). Since a crown sinnet is used in NMAL AU 9, which has a sewn sandal strap complex, the suggestion that these two (knot and type of strap complex) are linked, seems justified. Usually the strap is inserted between the strips of the soles; in BM EA 4447 and MFA 72.4772, however, the front strap is inserted *through* a strip of palm leaf.

Differences in this layout can be noted: the straps might have a rather wide, rectangular cross-section due to the use of wide strips of fibre for the core (*e.g.* ASH 1891.429) but might be less coarse and of more circular cross-section (*e.g.* ASH 1888.526). A combination (a wide, 'rectangular' back strap with a more rounded front strap) is possible too (*e.g.* EgCa 5230).

Three sandals have a different type of strap complex, which are the same as those described for sewn sandals (see Veldmeijer, 2009a for a detailed description; *cf.* Veldmeijer, 2009b), including the looped pre-strap, where they are standard. However, two (NMAL AU 9 and MFA 03.1721) have the wide back straps characteristic for sewn sandals Type C, whereas the strap complex of one (ÄMPB AM 1397, figure 9) is more comparable to those described for sewn sandals Type A. Note the decorative finishing touch of the lower part of the front strap in this sandal which is similar to the lower part of the back straps in ASH 1888.526 (*cf.* figure 18B).

2.4. *Note on the material*

A multitude of materials seems to have been used, but the main material is palm leaf. Gourlay (1981b: 45-60) mentions palm leaf as prime material for the sandals from Deir el-Medinah too, but no species is mentioned. Papyrus might be present, certainly in those with a sewn sandal strap complex, but conclusions regarding the exact materials (and species) is pending forthcoming research (Cartwright & Veldmeijer).

3. *Wear*

In general one can say that the sandals show a high degree of wear (wear of the heel, broken straps and damaged edges), although there are still several in which wear is (nearly) absent (*e.g.* EgCa 5230). This suggests that these sandals were made for use. This degree of wear contrasts to sewn sandals type C, which, generally speaking, are without extensive wear (Veldmeijer, 2009a). This would fit the picture: sewn sandals type C were status symbols, worn by royals and high officials which have been awarded by the king, and it has been suggested on the basis of a study of two-dimensional representations that they were only worn on special occasions (Veldmeijer, 2009b).

Interestingly, BM EA 4451 shows, at the medial side, a distinct dent caused by the ball of the foot, suggesting the owner walked heavily at the inside of his/her feet, due to which the uppermost core is pushed next to the second one. A comparable sign of use is also seen in BM EA 45185. This contrast to, for example, BM EA 4454/4455, which shows a much more evenly worn treadsole. In some examples (such as ÄMPB AM 26546), dirt still adheres to the treadsole.

[23] Terminology of the knots is after Veldmeijer (2006).

Despite the higher degree of wear, still the sandals are relatively intact. Wear, of course, is due to several circumstances: surface, the way the person walked and his/her physical constitution, intensity of use and the like. But the resilience of the material should not be underestimated. Experiments will be organised in phase III of the AEFP to gain a better insight.

4. *Date and distribution*

The biggest problem with finds from Egypt is the almost complete lack of provenance and date. Out of the 101 sewn-edge plaited sandals studied, only 40 provide us with this information and even with those, there is often uncertainty as to the correctness of the archival records of the collections (see below). Fortunately, several sandals have been excavated from Deir el-Medinah, dating them firmly into the 18th-20th Dynasty (Gourlay, 1981a; 1981b), contradicting the statement by Vogelsang-Eastwood (1994: 141) that sandals of plaited fabrics did not appear before the Third Intermediate Period. It is unclear when this category or the different types evolved first and how long they continued to be in use. In table 1, many specimens show a date, taken from the museum-archive. Without provenance, however, this date should be viewed with caution: possibly, it is based on two-dimensional art, showing large, extended, backwards curving toes from about the 22nd Dynasty onwards. However, one should realise that matching the archaeological record with two- or three-dimensional art is problematic (see for example Veldmeijer, 2009b) and a detailed, systematic study of representations is necessary in order to attempt this.[24] Moreover, that these sandals did not show in two-dimensional art before the 22nd Dynasty does not *per se* mean they did not occur: many archaeologically attested shoes and sandals have not been depicted.[25]

Despite the lack of information on provenance, we can conclude that sewn-edge plaited sandals must have had a wide distribution, considering the fact that they have been found from Saqqara to all the way south to Elephantine[26] and Qasr Ibrim.

5. *Discussion*

Montembault has published several sandals with a sewn edge as type A of the footwear made of vegetable materials (2000: 33-35). However, these would fit much better in the AEFP category composite fibre sandals (Montembault's type D), because the plaited fabric does not make up the major part of the sole: most sole layers consists of lengthwise and transverse, independent strips. Gourlay (1981a: 58-64; 1981b: 45-60) has published several examples from Deir el-Medinah and distinguish eight types, ranging from the AEFP's sewn sandals and sewn-edge plaited sandals to the AEFP's fibre open shoes. Within these types, several variants are distinguished. A detailed discussion of these typologies is beyond the objective of the present paper, but Gourlay's type A, B, C and *poulaine* sandals in particular can be re-classified in the AEFP's category sewn-edge plaited sandals.

The sandals with extended toe, A3 and B4, are comparable but it is clear from the present study that they are based on different sandals: A3 is much coarser and based on the sandals

[24] For this reason, Alfano's (1987) typology is not used by the AEFP. Moreover, Alfano base the classification mainly on the shape of the straps and does not use chronology (see also Schwarz, 2000: 217-218).

[25] Most famously the open shoes from the tomb of Tutankhamun (Veldmeijer, 2009b).

[26] Currently under study by Willeke Wendrich.

classified by the AEFP as type A, whereas the B4 sandals, which are much finer in construction, can be clearly traced back to the type B sandals. This warrants the classification as variants of different types.

The differences between the fibre composite sandals and sewn-edge plaited sandals have already been mentioned. Although the edge in sewn-edge plaited sandals that are used to fasten the sole layers, compares well with those in sewn sandals, in the latter, reinforcement stitches at right angles, as occasionally seen in sewn-edge plaited sandals, are absent. Moreover, the soles are different: plaited (with sometimes an additional decorative insole, and/or braids at the treadsole, and/or reinforcement stitches) versus cores that are sewn with strips of palm leaf. Also, most of the sewn-edge plaited sandals have strap complexes that are not seen in sewn sandals, but there are several exceptions. It is tempting to suggest that these sewn-edge sandals with sewn sandals strap complex originate from higher status contexts, which seems to be supported by the fact that they are very well made with much attention to detail (an example is shown in figure 16), but this conclusion cannot be supported nor rejected as yet.

Strangely enough, plain plaited sandals, which were so common in Christian and even later times in southern settlements such as Qasr Ibrim (Veldmeijer, 2008/2009; Veldmeijer & Endenburg, 2008) do not seem to have been used in Pharaonic times, even though the plaiting technique was known to be well used in footwear, as is shown in the present work.[27] The sewn-edge plaited sandals were clearly 'sandals for use' as suggested by the wear but also by several constructional features: usually the sole is made up of several sole layers; there is reinforcement stitching of the edge and sole; an insole that obscures the (reinforcement) stitching of the sole protecting the stitching from wear (besides the aesthetic effect); and robust strap complex. Despite all reinforcements, the aesthetic effect was important, judging by the presence of a decorative insole to obscure the less pleasing plaited fabric in most of the sandals and the occasional decorative cladding of the straps. Some of the stitches at the sole were used to further secure the strips of the insole (besides the attachment by the edge of the sole proper); usually, these stitches are situated lengthwise down the centre. Other rows of stitching, however, seem to have a double function: reinforcement of the sole as to enhance resistance against wear and further securing the different sole layers.

The study of unprovenanced and undated finds greatly hinders the interpretation of differences in features. Although it is tempting and perhaps even probable that these differences are due to different sandal-makers, or a different tradition (due to, for example, geographical differences or separation in time), such statements have to be regarded as tentative until material has become available from systematic and scientific excavations, and which has been dealt with equally responsibly afterwards. Possibly, the picture can be enlightened when combining the information from the study of the specimens with the study of two- and three-dimensional art, but linking the information from these two disciplines has shown to be (very) problematic (*e.g.* Veldmeijer, 2009b). Moreover, before being able to recognise a type of sandal in two- and three-dimensional art, a thorough knowledge of how footwear looked is indispensible.

[27] And, of course, in basketry (references are abundant, but see for example Gourlay, 1981a; 1981b, and Wendrich, 1999; 2000).

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Table 1. Summary of most important features and measurements of sewn-edge plaited sandals, showing collection and identification (first column), provenance (second column), date (third column) and variant (fourth column). The orientation of the sole, together with the measurements, number of sole layers (and whether the insole is decorative or not and the treadsole has or has not reinforcement) and the construction of the edge (including the presence or absence of reinforcement) is shown in the fifth, shared column. Details of the strap complex and measurements can be found in the sixth, shared column. Additional remarks are inserted in the last column. Measurements marked with # are taken from the photograph. Measurements that are marked with * are average. In pairs, measurements are taken of the best preserved one. All measurements are 'as preserved'.
Institutional abbreviations: ÄMPB = Ägyptisches Museum und Papyrussammlung Berlin; ASH = Ashmolean Museum Oxford; BM = British Museum London; EgCa = Egyptian Museum Cairo; MEgT = Museo Egizio Turin; MFA = Museum of Fine Arts Boston; NMS = National Museums Scotland; NMAL = National Museum of Antiquities Leiden; OIM = Oriental Institute Museum Chicago; Petrie = Petrie Museum of Egyptian Archaeology UCL; WML = World Museum Liverpool
Other abbreviations: Byz. = Byzantine; Dyn = Dynasty; LP = Late Period; NK = New Kingdom; Pre-Ch = Pre-Christian; Pt = Ptolemaic; R = Roman.

Collection/ Identification	Provenance	Date	Variant	Sole				Strap complex		Remarks
			Orientation	Measurements[1]	No. layers (-/√[2])/ '-', 'sewing', en 'braids'.[3]	Edge (-/√[4])		strap complex (standard √/-[5] or sewn) (-/√)[6]	Measurements[7]	
Type A										
ASH 1892.623	?	?	1	right	L: 140. W front: 59. W waist: 55[#]. W heel: 52. T: 13.2. W strips: 10*	multiple -/-	duplo/-	?/√	?	-
ASH 1888.526	?	?	1	pair	L: 315. W front: 111.5. W waist: 95[#]. W heel: 87.5. T: 8.7. W strips: 17*	multiple -/-	triple/-	standard √/√	D front: 10.6. W back: 15	Measurements of left sandal.
ASH 1891.299	?	?	1	right	L: 315. W front: 102.9. W waist: 94[#]. W heel: 86.6. T: 12.5. W strips: 19*	multiple, possibly 1 midsole -/-	triple/-	standard ?/√?	D front: 12.5	-
ASH 1891.429	?	?	1	right	L: 200. W front: 67.1. W waist: 63[#]. W heel: 61.6. T: 10.4. W strips: 11*	multiple -/-	duplo/-	standard √/√	D front: 8.3. W back: 16.5	Straps are relatively wide.

[1] If the sandals do not have a constricted waist the position of the attachment of the back strap is referred to as 'waist'. The measurements include the attachment. If the sandal has an elongated toe, the front width is taken at the level of the insertion of the front strap, which is generally the largest width.
[2] '-' and '√' refers to the absence or presence of a decorative insole.
[3] Absence/presence (and type) of reinforcement of the treadsole.
[4] Absence/presence of reinforcement.
[5] A '√' refers to the attachment of the front strap through a slit in the back strap (*cf.* figure 19A); '-' refers to looping the front to the back strap.
[6] Absence/presence of a strip of fibre between both back strap attachments at the dorsal surface of the insole and/or ventral surface of the treadsole.
[7] The strip at the dorsal surface of the sole, running from one attachment of the back strap to the other, is referred to as 'strip.'

BM EA 4442	?	NK?	1	left	L: 295. W heel: 91.1. W waist: 93#. W front: 112.4. T.: 11.8. W strips insole: 13.5*. W strips treadsole: 14*	multiple -/-	triple/-	?/√	?	Large variation in width strips insole.
BM EA 4443	?	?	1	left	L: appr. 290. W front: 108.1. W back: appr. 89.5. T: appr. 13. W strips insole and treadsole: 20.5*. W strips midsole: 12*	5, 3 midsoles -/-	triple/-	standard ?/√?	W back: 16#	Midsole is a folded fabric and not included in the edge. Might have been a strip between the back straps (discolouration).
BM EA 4445	?	NK?	1	right	L: 325. W front: 123.7. W waist: 105#. W heel: 102. T: 17. W strips insole: 18.5-26. W strips of treadsole: 14.9-24.2	multiple -/-	triple/-	standard ?/√	D front: 13#. W back: 17#. W strip between back straps: 18#	Note the curvature lengthwise.
BM EA 36210	?	?	1	right	L: 275. W: 118.6. W waist: 107#. W heel: 104.6. T: 13.7. W strips insole: 19.5. W strips treadsole: 18.5	multiple -/-	triple/-	standard -?/√	D front: 9.5. W back: 16.5. W strip between back straps: 15#	-
EgCa 5230 (13 1+26 1)	?	?	1	left (pair)	L: 320. W front: 104.6. W waist: 89.4. W heel: 79.5. T: 20.9. W strips dorsal: 15.2-22.1. W strips ventral: 1.1-4.2. W edge: 11	multiple -/-	duplo/-	standard √ (by analogy with the right one)/√	D front: 11.1. D back: 6.4x13.4. W strip: 8	Note the difference in edge, width of the strip between the back straps and shape of the heel's posterior edge.
EgCa 5230 (13 1 + 26 1)	?	?	1	right (pair)	L: 325. W front: 105.8. W waist: 92.1. W heel: 81.7. T: 20. W strips dorsal: 13.8-21.6. W strips ventral: 12.9-22.7. W edge: 12.8	multiple -/-	triple/-	standard √/√	D front: 10.8. D back: 8.4x13.8. W strip: 15.7	Note the difference in edge, width of the strip between the back straps and shape of the heel's posterior edge.
MEgT 7686	Deir el-Medinah	18th-20th Dyn	1	right	L: 340. W front: 112.7. W waist: 93#. W heel: 85.7. T: 12.7. W strips insole: 11.8. W strips treadsole: 11.8	2, possible no midsole -/-	triple/-	standard √/√	D front strap: 10. Back strap: 6.4x12.7	Worn treadsole. Repair with cloth.
MEgT 7700	Deir el-Medinah	18th-20th Dyn	1	left	L: 280. W front: 113.5. W waist: 98#. W heel: 95.1. T: 10.4. W strips sole layers: 13.7-18.1	3, 1 midsole -/-	triple/-	?/√	?	Midsole is folded end of sole's fabric. Treadsole entirely worn. Strip at insole; treadsole unknown.
MEgT 7701	Deir el-Medinah	18th-20th Dyn	1	?	L: 283. W front: 120.5. W waist: 103#. W heel: 90#. T: 10.3. W strips sole layers: 8.3-14	3, 1 midsole -/-	triple/-	?/√	?	The front strap is centred.

MEgT 7878	Deir el-Medinah	18th-20th Dyn	1	left	L: 185. W front: 65.1. W waist: 68#. W heel: 60.7. T: 15. W strips insole: 7.5. W strips treadsole: 14.9	multiple, at least 1 midsole -/-	duplo/-	standard √/-	D back strap: 9.1	Worn treadsole. Heel much thicker: partially folded midsole?
MEgT 7879	Deir el-Medinah	18th-20th Dyn	1	right	L: 190. W front: 69.2. W waist: 60#. W heel: 56.6. T: 10.5. W strips insole: 8.1-9.9. W strips treadsole: 9.8-14.8	multiple, probably 1 midsole √/-	duplo/-	?/√	D front strap: 7.8	-
MFA 03.1720 / 03.1721	Qurna	18th-19th Dyn	1	pair	measurements of left sandal. L: 230. W front: 77.7. W waist: 69.5. W heel: 69.3. T: 12. W strips: 15.9-22.5	multiple √/-	triple/-	sewn sandal/√	D front: 9.4. D pre-strap at attachment with sole: 7.7. W maximal back strap: 21. W strip between back straps: 12#	The insole is not truly decorative itself, but the '√' refers to the decorative front. Dating uncertain, as objects purchased in Luxor.
MFA 72.4758	?	?	1	left	L: 270. W front: 110.5. W waist: 96.5. W heel: 94.5. T: 12. W strips: 12-19	multiple, possibly 1 midsole -/-	triple/-	standard ?/√	D front: 10.8. W strip between back straps: 10#	Note the cross-wise stitching of the edge.
MFA 72.4769	?	?	1	right	L: 315. W front: 112. W waist: 82.5. W heel: 86.5. T: 13. W strips: 12.5-23.5	multiple, at least 3 midsoles -/-	triple/-	standard ?/√	W back: 7.5-20	Note that the lateral side, at the waist, is dented, likely due to the pulling tight of the back strap fastening.
MFA 72.4771	?	?	1	right	L: 280. W front: 105.5. W waist: 79.5. W heel: 74.5. T: app. 6.1. W strips: 13.5-16	5, 3 midsoles -/?	triple/-	?/√?	-	-
MFA 72.4772	?	?	1	left	L: 290. W front: 103.5. W waist: 84.5. W heel: 83.5. T: 7.9. W strips: 11-16.5	5, 3 midsoles -/-	triple/-	?/√	-	-

NMAL AU 9 (E20 E.XI.36)	?	?	1	pair	measurements of left sandal. L: 250. W front: 85.5; W waist: 66.2. W heel: 66.4. T: 10.6. W strips insole: 14-18.7. W strips treadsole: 10.2-15.2. Measurements of right sandal. L: 243. W front: 83.6. W waist: 71. W heel: 71.5. T: 13.3. W strips insole: 13.1-16.2. W strips treadsole: 10.8-15.7	multipe, at least 1 midsole -/-	triple/-	sewn sandal/√	Left sandal: D front strap: 8.9. W back strap: 17. T back strap: appro. 10. W strip between back straps: 8.8. Right sandal: W strip between back straps: 8.3	Midsole not included in the edge? The plaiting of the treadsole seems coarser. Note differences in measurements (reason of including them both). Decorative cladding of the straps.
Petrie UC 769	Amarna	18th Dyn	1	left	L: 175. W front: 80. W heel: 70. W strips: 10-11	muliple? -/-	duplo/-	standard √/-	D front strap: 7. D back strap: 7.5	The edge is very coarsely made. The attachment of the front and back strap has no cladding.
WML 11899	?	NK	1	pair	measurements of right sandal. L: 300. W front: 98.1. W waist: 76.7. W heel: 80.3. W strips: 12.5-22.5. T: 10.4	multiple -/-	triple/-	?/√	W strip between back straps: 15.5*	Strips insole narrower than treadsole.
ÄMPB AM 26535	?	?	2	?	L: 114.3. W: 73.4. W strips: 9#	multiple -/-	single/-	?	?	-
ÄMPB AM 26547	?	?	2	right	L: 190. W front: 104.5. W back: 112.2. T: 12. W strips: 13.5-21.5	multiple -/-	triple/-	?	?	-
BM EA 45185	Asyut	?	2	pair	measurements of left sandal. L: 290. W front: 93.7. W waist: 90.5. W heel: 77#. W strips: 17*. T: 18.9	multiple -/sewing	duplo/-	standard √?/-	D front: 8#. W back: 8.2	-
BM EA 45187	Asyut	?	2	right	L: 270. W front: 94.1. W waist: 87.3. W heel: 76#. W strips insole: 13-20. W strips treadsole: 20-24.5. T: 12	3, 1 midsole of isolated strips lengthwise -/-	single/-	standard -?/-	W back: 5.9	Coarse sandal.

MFA 72.4770	?	?	2	right	L: 350. W front: 91. W waist: 97. W heel: 91. T: 10. W strips: 11-19.5	5?, possibly 3 midsoles -/-	triple/-	standard √/-	D front strap: 9. D back strap: 6-12	-
NMS 1921.1565a	Sedment 275	18th Dyn	2	right	L: 285. W front: 97. W waist: 88#. W heel: 82. T: 12. W strips: 10	multiple, 1 midsole of isolated strips? -/-	duplo/-	standard -?/√	D front strap: 10. D back strap: 8	The sandal but especially the edge is very coarsely made.
BM EA 4451	?	NK	3	right	L total: 455. W front (toe point): 7.7. W waist: 78#. W heel: 72.5[8]. W strips insole: 15*. W strips treadsole: 15.[9] T at front strap: 15. T at heel: 21. W stitches treadsole: 11*. L stitches treadsole: 12*	multiple -/sewing	triple/√	standard √, including tip of toe/√	D straps: 8.8.[10] W cladding: 14.3	Note that the attachment of the medial back strap inserts in the sole, rather than that it is secured to the edge.
ÄMPB	-	-	3	-	-	-	-	-	-	Unfortunately, this specimen could not be studied; the showcase in the Berlin Museum could not be openend.
Type B										
ÄMPB AM 620	?	?	1	left	L: 325. W front: 105.2. W waist: 97#. W heel: 91.2. T: 9.5. W strips: 12.5-18.5	multiple -/-	triple/-	standard ?/√	?	Presence of strip between back strap on the basis of discouloration.
ÄMPB AM 3323	?	?	1?	right	L: 220. W front: 70.5. W waist: 72.2. T: 11.9. W strips insole and treadsole: 15.2-22	multiple -/-	duplo/-	?	?	Heel incomplete.
BM EA 4440	?	?	1	right	L: 330. W front: 107.1. W waist: 95#. W heel: 84.7. W strips: 16. T: 10. W strips midsole: 6.5-23	6, 4 midsoles ?/-	triple/-	standard √/?	D front: 9.3.W back: 10.6; T back: 6.4	Insole is lost. Midsoles folded plaited fabric that is not entirely included in the edge.

[8] Total but the edge protrudes slightly.
[9] But with bigger differences in individual width is with the insole.
[10] back and front are comparable)

BM EA 4441	?	NK?	1	left	L: 330. W front: 80. W waist: 78#. W heel: 72.5. W strips insole: 11.5. W strips midsole: 13. T: 9.5. W strips treadsole: 16	multiple, but probably 7, 5 midsoles -/-	duplo/-	?/√	?	Note the slender shape; note also the peculiar strip from the tip of the sandal towards the insertion of the front strap. The average of the strips of the front part; the strips of the heel are substantially smaller.
BM EA 4446	?	NK?	1	right	L: 340. W front: 107.3. W waist: 97#. W heel: 91.5. T: 10. W strips insole: 17.5. W remnants strips treadsole: 24	multiple -/-	triple/-	?/√	?	The presence of a strip at the front as described for BM EA 4441 suggests a pair; the differences in measurements as well as edge, however, not.
BM EA 4447	?	NK?	1	left	L total: 360. W front: 107.9. W waist: 90#. W heel: 83.5. T: 8.1. W strips insole and treadsole: 17.5	multiple, possibly 1 midsole -/-	triple/-	standard √/√	D front strap: 4#. D back strap: 5#	Note the strip at the front as described for BM EA 4441 and 4446.
BM EA 45188	Asyut	?	1	left	L: appr. 170. W appr.: 105	multiple -?/sewing	duplo/-	standard √/?	D front strap: 8#. D back strap: 9#	Incomplete and damaged.
NMAL AU 7 (E 180)	?	?	1	pair	measurements of left sandal. L: 340. W front: 106.4. W waist: 94#. W heel: 92.8. T: 9.2. W strips insole: 11.5-18.4. W strips treadsole: 12.5-18.2	multiple, at least 1 midsole -/-	triple/-	standard √/√	D front strap: 7.8. W back strap: 12.9. T back straps: 5.6. W strip between back straps: appr. 8#	Midsole not included in the edge.
WML 11898	?	18th Dyn	1	pair	measurements of left sandal. L: 355. W front: 103.6. W waist: 98#. W heel: 94.2. T: 10.7. W strip insole and treadsole: 16	multiple, possibly 1 midsole -/-	triple/-	?/√	?/√	Strip between back straps visible as discolouration at the dorsal surface of the insole. Right sandal at treadsole preserved (knotted).

BM EA 4450	?	?	2	left	L: 250. W front: 78.9. W waist: appr. 80#. W heel: 73.5. T: 13. W strips insole: 18.5*. W strips treadsole: 16	multiple, at least 1 midsole √/sewing	triple/-	?/-	?	Large difference in width of the strips of the insole. The strips of the treadsole narrower.
BM EA 4454/4455	?	NK?	2	pair	measurements of left sandal. L: 430. W front: 118.2. W waist: 107#. W heel: 101.6. T: 22.6. W strips insole: 18.5. W strips midsole: 5.5-11. W strips treadsole: 11.5	multiple, at least 1 midsole; possibly extra midsole only at heel -/sewing	triple/√	?/-	?	Note the wear of the reinforcement sewing of the sole (*cf.* Veldmeijer, 2007/2008a).
EgCa 5231 (13 1 + 26 2)	?	?	3	right	L: 430. W front: 54.2. W waist: 64.8. W heel: 60. T: 10.1. W strips insole: 7.5-15.5. W strips treadsole: 12.2-17.5. W strips dorsal surface toe: 2	multiple √/-	duplo/-	standard √ including tip of toe (by anology with 5232)/-	?	Pair with EgCa 5232. Note the woven decoration at the dorsal surface of the enlarged toe.
EgCa 5232 (13 1 + 26 3)	?	?	3	left	L: 435. W front: 68.8. W waist: 64.9. W heel: 61.4. T: 8.7. W strips insole: 8.2-15.5. W strips treadsole: 9.3-18.7. W strips dorsal surface toe: 2.2	multiple √/-	duplo/-	standard √ including tip of toe/-	D front strap: 4	Pair with EgCa 5231. Note the woven decoration at the dorsal surface of the enlarged toe.
MEgT 7702a	Deir el-Medinah	18th-20th Dyn	3	left	L: 650. W front: 107.7. W waist: 93#. W heel: 86.7. T: 24. W strips insole: 6.6-15.5. W strips treadsole: 11.6-20.9	multiple, at least 1 midsole √/sewing	triple/-	standard √ including tip of toe/-	not measured	7702a & b registered as pair, but they are not originally.
NMAL AU 1 (E21 E.XI.32)	?	?	3	pair	measurement of left sandal. L: 560 (includes entire toe). W front: 89.6. W waist: 77#. W heel: 74.5. T: 7.8. W strips insole: 12.5-24. W strips treadsole: 9.6-12.8	multiple, 1 midsole? √/-	duplo but toe single/-	?/-	D straps: 3.7	Note the cover of the dorsal surface of the extended toe, which pattern is the same as the insole.

BM EA 4452	?	NK?	3/4	right	L: 375. W point toe: 40.4. W front: 100. W waist: 90. T: 20.4. W strips insole: 19.0 (heel); 10 (front). W strips treadsole: 15. L stitching treadsole: 6. W stichting treadsole: 4.5	multiple √/sewing	duplo/√	?/?	?/?	-
BM EA 4453	?	?	3/4	left	L: 400. W front: 92.5. W waist: 83#. W heel: 75.8. T: 7.4. W strips: 15.5*	multiple √/-	duplo/-	?	?	-
BM EA 45184	Asyut	?	4	left	L: 335. W front: 99.7. W waist: 90#. W heel: 84#. T: 8.5. W strips insole and treadsole: 17	3, 1 midsole -/-	single/-	standard √/-?	D back strap: 5.2	-
EgCa 11 1 + 25 6	?	?	4	left	L: 430. W front: 69.8. W waist: 64.6. W heel: 58.5. T: 10. W strips dorsal: 10.9-15.8. W strips ventral: 10.4-19.2. W edge: 4.8	multiple, possibly 1 midsole -/-	duplo/-	?	?	-
MEgT 5148	Valley of the Queens	NK-LP	4	pair	measurements of left sandal. L: 480. W front: 80.4. W waist: 75#. W heel: 68.3. T: 8.3. W strips insole: 14 (heel)-23.2 (halfway length). W strips treadsole: 12.5 (heel)-17.3 (halfway length)	3, 1 midsole √/-	duplo/-	standard √/-	D straps: 5.8	-
NMAL F 1940/12.84	?	?	4	right	L: 375. W front: 87.6. W waist: 78#. W heel: 73.4. T: appr. 5.4. W strips insole: 114-20.2	multipe, at least 2 midsoles √/-	duplo/-	?/?	?	midsoles not included (entirely) in edge
NMAL AU 8 (E19 Mon)	?	?	4	pair	measurement of left sandal. L: 480 (includes toe). W front: 84.2. W waist: 82. W heel: 70.8. T: 8.5. W strips insole: 9.9-21.2. W strips treadsole: 9-15	3, 1 midsole (but see remarks) -/sewing	duplo/-	standard √ including tip of toe/-	D straps: 5.3	Heel insole right sandal folded at heel only(?); heel treadsole folded at heel only too?
WML 11901M	?	NK	4	right	L: 325. W front: 92.7. W waist: appr. 78. W heel: 77.4. W strip	5, 3 midsoles (see remarks)	single/-	standard √ including	D front strap: 5.5. W toe at	Midsoles of isolated strips lengthwise and transverse.

					insole and treadsole: 14.5-19. T: 7	-/-		tip of toe/-	back strap attachment: 4 D back strap: 5.1	Possibly made of papyrus.
MEgT 7702b	Deir el-Medinah	18th-20th Dyn	4	left	L: 580. W front: 110. W waist: 102.7. W heel: 87#. T: ? W strips insole: 14.8-23	multiple, at least 1 midsole -?/√	triple, but also vertical/-	standard √? including tip of toe/-	not measured	7702a & b registered as pair, but they are not originally. Note the knife cuts at the insole.
BM EA 55411	?	R?	4	pair	measurements of right sandal. L: 585. W front: 90.9. W waist: 76#. W heel: 74.7. T: 7.8. L until appr. start toe extension: 335. W strips insole: 20. W strips treadsole: 20	multiple, 1 midsole? √/√	duplo/-	standard - including tip of toe/-	D straps: 5.3. W stitches treadsole: 2.8. L stitches treadsole: 4	Extremely thin and flexible extended toe. Back strap inserted in the sole. Decorative cover of the dorsal surface of the extended toe.
Type C										
ÄMPB AM 1397	Sakkara?	?	1	right	L: 290. W front: 108.2. W waist: 99.7. W heel: 83#. T: 10.2. W strips insole and treadsole: 5-12.2	multiple, possibly 1 midsole -/-	triple/-	sewn sandal/-	D front strap: 7.7-9.3. W pre-strap: 9.7. W at attachment front strap: 25.7	Note decorative cladding of the front strap.
BM cam-0070 (80.2.12/62a & b)	Qasr Ibrim	Pt	1	right?	L: 297. W front: 104. W heel: 89.4. T: 10.3. W strips insole: 20. W strips treadsole: 16.5	multiple, possible 2 midsoles √/sewing	duplo but also vertical/-	?	?	Front part is a; heel part is b. Treadsole largely missing. Remnants of very long running stitches visible at ventral surface lowest midsole. Reinforecment stitches inside edge. Orientation uncertain as one side is incomplete.
BM cam-0072 (80.2.12/6)	Qasr Ibrim	Pt	1?	right	L: 245. W front: 129.6. W heel: 117.7. W strips sole layers: 23.5. T: 14.1	multiple, at least 2 midsoles -/sewing	single/-	?	?	Reinforecment stitches inside edge. At insole's lateral half several short, widely spaced running stitches, that show large at the ventral surface lowest midsole. Treadsole largely worn away.

BM cam-0073 (78.3.26/12)	Qasr Ibrim	R (appr. 25 BC-25 AD)	1?	right	L: 230. W front: 84.8. W heel: 106.1. T: 8.5.W strips insole: appr. 18. W strips tread sole: 14	multiple, possibly 2 midsoles -/sewing	duplo but also vertical/ -	?	?	Reinforcement stitches inside edge. Note several isolated stitches at midsole (not visible at insole), which are visible as large stitches at the ventral surface of the lowest midsole.
WML 11900	?	NK?	1	left	L: 280. W front: 107. W waist: 90#. W heel: 83.4. T: 7.5. W strips treadsole: 8.2-16.9	3, 1 midsole √/-	duplo/-	standard √?/-?	D. front strap: 4. D back strap: 3.5	Midsole of transverse strips.
BM EA 4437	?	NK?	2	pair	measurements of the right sandal. L: 255. W: 85.7. W waist: 74.3. W heel: 63#. T: 4.8. W strips insole and treadsole: 12-20	multiple -/-	duplo/-	standard √/-	W back: 3.6-4.6	Dirt at treadsole.
Type D										
ÄMPB AM 3324	?	?	1	left	L: 295. W front: 93.4. W waist: 87#. W heel: 85.4. T: 6.4. W strips first midsole and treadsole: 17.5 W braid treadsole: 7.6 (W 1 strand: 3.7)	3, 1 midsole and braids √/sewing	single/-	?	?	Midsole plaited 'under 1, over 2, under 1, over 1, under 1, over 1, under 2, over 1'; treadsole plaited 'over 2, under 1'.
BM EA 36208	?	?	1	right	L: 295. W front: 98.2. W waist: 89#. W heel: 87.5. W strips insole: 12-18. W strip treadsole: 39. T: 8. W braids treadsole: 6.2 (W 1 strand: 2#)	3, 1 midsole and braids √/sewing	single/√	?/-?	?	Midsole and treadsole folded(?) plaited fabric 'over one, under one'. Large differences in width strips insole from heel to front. Note the 2 attachment points for the back straps (*cf.* BM EA 4449 and fibre composite sandals).
ÄMPB AMZ 4312	?	?	2	right	L: 280. W front: 106.7. W waist: 96#. W heel: 81.6. T: 10.5. W strips insole: 10-14.5	multiple, possibly 2 midsoles, braids? √/sewing	duplo/-	?	?/-	Note the impression of the small end of the fabric in the insole. Braids(?) at edge only. Back straps inserted in the sole.
ASH 1971.76	Saqqara (Emery), H5-694: 1287	?	2	left	L: 310. W front: 107.4. W waist: 93#. W heel: 89.2. T: 10.5. W strips insole: 15*. W strips treadsole: 20(?)	3, 1 midsole and braids √/-?	single/√	standard -?/-	D front strap: 8.3. D back strap: 5.9	Pair with ASH 1971.154? No stitches at soles observed but most likely lost (holes visible). Note insertion medial back strap in sole rather than to the edge.

ASH 1971.154	Saqqara	?	2	right	L: 290. W front: 101.2. W waist: 91[#]. W heel: 86.6. T: 6.6. W strips insole: 15.0*. W strips treadsole: 22(?). W braids: 12[#] (W 1 strand: 4[#])	3, 1 midsole and braids √/sewing	single/√	standard -?/-	D front strap: 9.4. D back strap: 5.7	Pair with ASH 1971.76? Running stitches at insole short, but at treadsole long. Note insertion medial back strap in sole rather than at edge. Notched medial edge. Midsole and treadsole folded(?) plaited fabric 'over one, under one'.
BM EA 68225	Saqqara	?	2	pair	measurements of left sandal. L: 305. W front: 103. W waist: 84[#]. W heel: 83.1. W strips insole: 20. W strips treadsole: 14-20.5. T: 17.5. W braids: 7.7 (W 1 strand: 3[#])	multiple, possibly 1 midsole, braids √/-	single/√	standard √/-?	D front strap: 6.9.D back strap: 5.7	Note adhering dirt at right sandal; this sandal is much more damaged/worn. Insertion back straps in the sole.
Petrie UC 30545	see remarks	30th Dyn-Pt	2?	right?	L: 270. W front: 109. W heel: 85. W strips sole layers: 18-20	multiple, at least 1 midsole and braids √/-	single/√	standard -?/-?	D back strap: 5.6	Accompanying label reads: Saqqara. H5-592. Dyn. 30-Ptolemaic. This information is not found on the website of the Petrie Museum, however. Insole largely lost.
Petrie UC 30546	?	30th Dyn-Pt	2	right	L: 300. W front: 103. W heel: 83. W strips treadsole: appr. 25	3, 1 midsole and braids √/-	single/√	standard -?/-	D back strap: 5.8	Worn, dirt adhering. Dating as on website; no provenance given.
Petrie UC 30549	see remarks	30th Dyn-Pt	2	?	L: 300. W front: 102. W heel: 85. W strips sole layers: 18-20. W braid: 10	3, 1 midsole and braids √/-	single/√	standard -?/-?	?	Accompanying label reads: Saqqara. Dyn. 30-Ptolemaic. This provenance is not found on the website of the Petrie Museum, however.
Petrie UC 30837	see remarks	LP, see remark	2	?	L: 295. W front: appr. 107. W heel: appr. 107. W strips insole and midsole: appr. 15. W strips treadsole: appr. 20	3, 1 midsole -?/sewing?	single/-	?/?	-	Accompanying label reads: Saqqara. Sector I. Temple debris. Late Period. This information is not found on the website of the Petrie Museum, however.

WML 1969.112.40	Saqqara	LP	2	right	measurements of left sandal. L: 250. W front: 102.9. W waist: 76.5. W back: 88.2. W strip insole: 15. T: 9.1. W braids: 12# (W 1 strand: 4#)	3, 1 midsole and braids √/-	single/-	standard -?/-	D front strap: 7.4. D back strap: 5.4	Note the difference: the right sandal has also running 'sole' stitches along the edge; the left sandal only lengthwise down the centre.
ÄMPB AM 26539	?	?	3	left	L: 235. W front: 81.7 (reconstructed). W waist: 59.2. W heel: 59.4. T: 8. W strips insole: 8.5. W strips treadsole: 10.5-13.5	multiple, possibly 1 midsole -?/sewing	duplo/-	?/-	?	Badly preserved.
OIM E7992	Qarara	Byz	3	right	L: 334. W front: 91.5. W waist: 75#. W heel: 71. T: 10.5. W strips insole: 13. W strips treadsole: 17.5. W stitches treadsole: 4.2	multiple √/sewing	duplo/√	?	D front strap: 8.1. D back strap: 8.7	-
BM EA 4449	?	NK?	4	left	L: 290. W front: 87. W waist: 76.1. W heel: 77.2. W strips insole: 15.5. W strips treadsole: 15.5. T appr.: 5.4	multiple, possibly 1 midsole √/sewing	single/-	?/-	?	Back straps inserted in sole and after pulling it through a second time, slightly before the first insertion, secured with a knot at dorsal surface insole (*cf.* fibre composite sandals). Plaited midsole. Note change in stitches soles: one end sewn from above, other from below.
NMAL AU 2 (E22 Mon. E.Xl. 31. LA119b)	?	?	4	left	L: 260. W front: 80.3. W waist: 66. W heel: 69. W strips insole: 20*. W strips treadsole: 10-12. T: 6.4	multiple, possibly 1 midsole √/sewing	single/-	?/-	D front strap: 4.7	Note slightly curled toe. Mid- and treadsole plaited 'over one, under one'. One row of stitches secures the strips of the insole: small but widely spaced at insole.
Type E										
ÄMPB AM 26545	?	?	1	right	L: 245. W front: 81.4. W waist: 73#. W heel: 70.5. T total: 8. W strips insole: 8.6-14.3	3, 1 midsole √/sewing	none, but single sewing	?	?/-	Insole seems the same fabric as rest of the soles, but still obscures the sewing.

ÄMPB AM 26546	?	?	1	left?	L: 205. W front: 105.8.W waist: 83. W heel: 43.5. W heel reconstructed: appr. 87. T: 9.9. W strips insole: 15. W stitches treadsole: 4	5, 3 midsoles √/√	none, but single sewing	?	?	Insole seems the same fabric as rest of the soles, but still obscures the sewing. Midsoles folded fabric. Remnants of palm fibre repair back straps.
Uncertain										
ÄMPB AM 26534	?	?	?	?	125x75	multiple, possibly 1 midsole -?/-?	duplo/-	?	?	Fragment of front.
ÄMPB AM 26548	?	?	?	?	L: 125. W: 81.8-96.7. T: 7.7	3, 1 midsole √/√	duplo/-	?	?	Mid- and treadsole possible one folded fabric. Insole of horizontal strips.
BM cam-0101 (80.2.27/84c)	Qasr Ibrim	Pt	?	?	L: 126. W: 46.4. T: 8.2	multiple, possibly 1 midsole √/√	duplo/-	?	?	Small fragment. Sewing inside the edge.
BM cam-0103 (80.3.14/43)	Qasr Ibrim	R	?	?	L: 54.9. W: 19	3?	single/-	?	?	Very small fragment.
BM cam-0104 (78.3.21/48)	Qasr Ibrim	Pre-Ch	?	?	not measured	?	?	?	?	Small fragment.
Petrie UC 16557	Sedment136	18th Dyn	?	?	L: 230. W front part: 130.5. W waist: 95.1.W heel: 98.3. T: 10.9. W strips insole: 9.7. W strips treadsole: 10.2-22	multiple, possibly 1 midsole ?/?	triple/-	?/√	?	Only back three quarters of the length preserved.
SCA Magazine Aswan asw-5009 (86.2.13/17)	Qasr Ibrim	post-Meroitic (ca. 400-650 AD)?	?	?	L: 94. W front: 94.6. W heel: 72.6. T: 18.5 (including ede and braid). W strips insole: 3. W strips midsole: 10. W 'treadsole': 17. W sewing strips: 6. W braid: 30	multipe, at least 1 midsole, braids √/?	single/-	?	?	Heel part. Insole finely plaited.
SCA Magazine Aswan asw-5018 (25211/a4)	Qasr Ibrim	?	?	left	W heel: 99.5. W front: 86.6. T: 8.5. W strips insole: 15. W strips treadsole: 15.5. W edge sewing strips: 3.3 (first row); 8 (outer row)	4, 2 midsoles √/-	duplo/-	?	?	Dorsal midsole plaited; ventral midsole lengthwise strips.

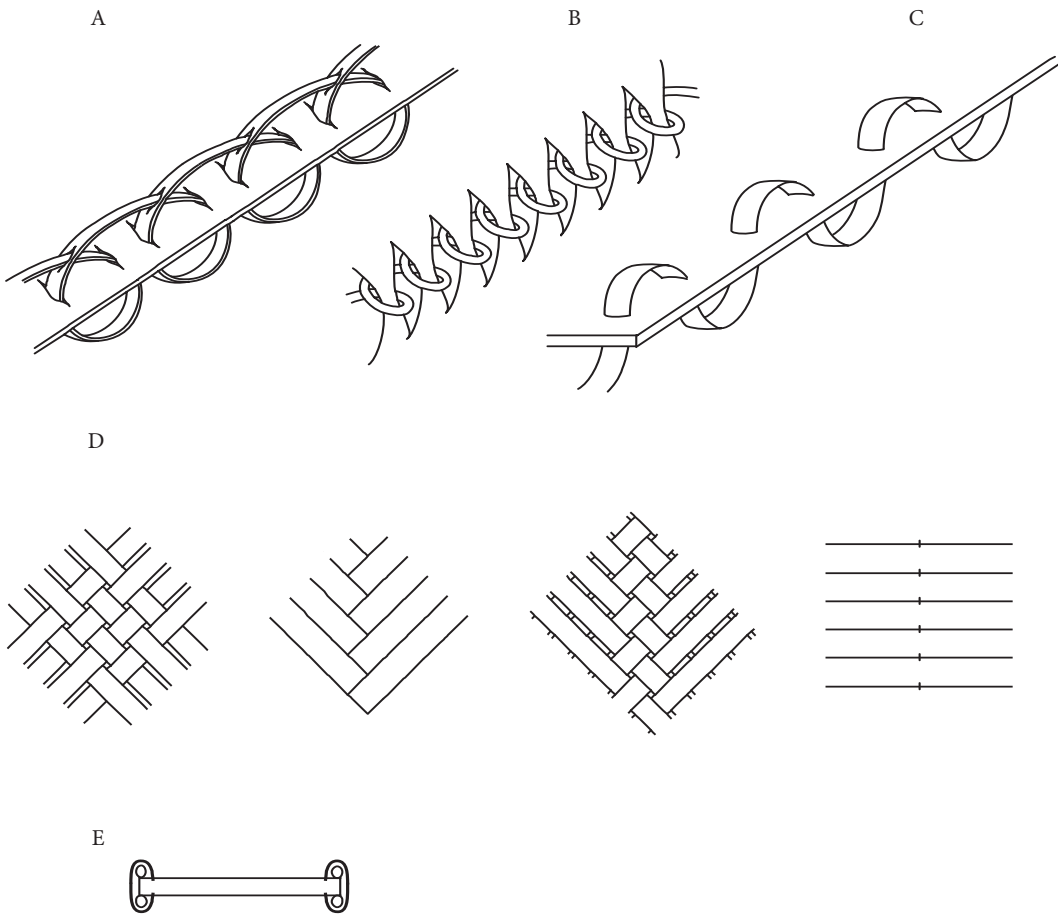


Fig. 1. A) Type of stitch predominantly used in sewn-edge plaited sandals: the stitch is inserted through itself; B) Reinforcement stitch as seen in ÄMPB AM 3324 (see figure 11); C) Running stitches is sometimes used as reinforcement stitch (*e.g.* BM EA 4451); D) Different types of insoles. From left to right: common 'over one, under one' plaited fabric in EgCa 11 1 + 25 6; decorative plaited fabric in NMAL AU 1; decorative plaited fabric in MEgT 7702a; and horizontal strips in NMAL AU 2; E) Construction of the sole's edge. Not to scale. Drawings by E. Endenburg/A.J. Veldmeijer.

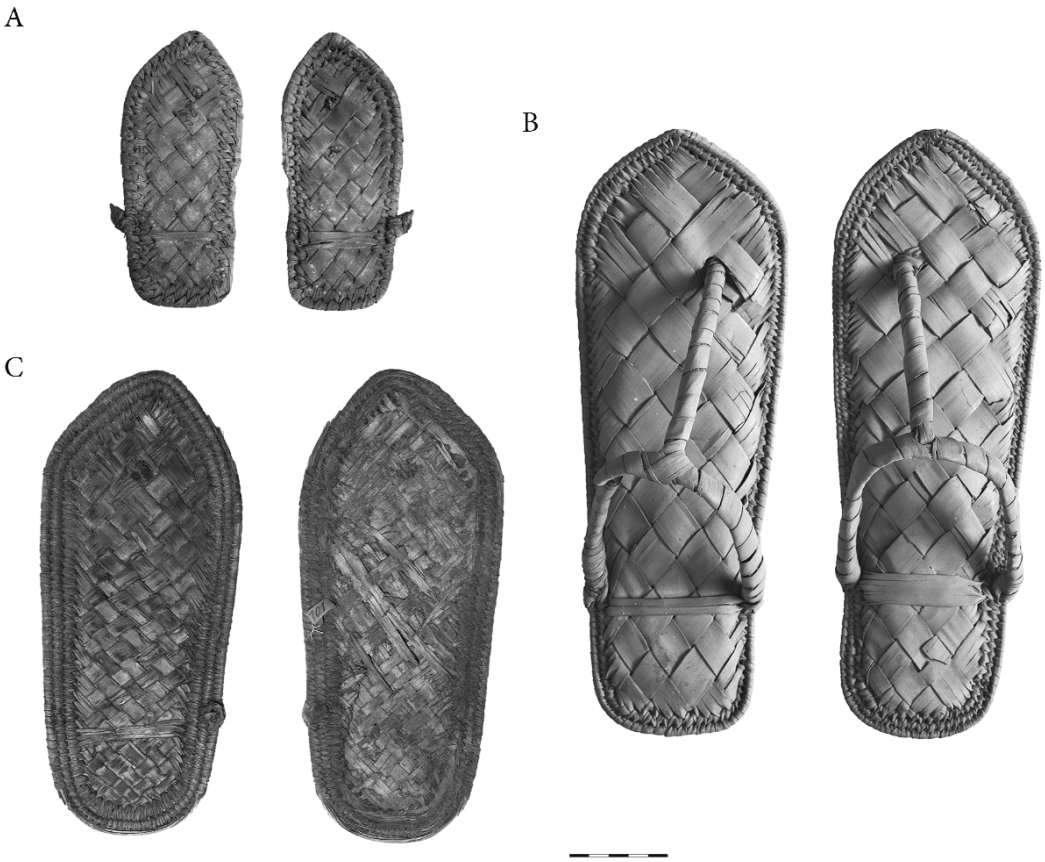


Fig. 2. Type A, variant 1 sandals. A) ASH 1892.623, ventral and dorsal view. Photography by E. Endenburg. Courtesy of the Department of Antiquities, Ashmolean Museum, Oxford; B) EgCa 5230, dorsal view. Photography by A.J. Veldmeijer. Courtesy of the Supreme Council of Antiquities/Authorities Egyptian Museum Cairo; C) MEgT 7701, dorsal and ventral view. Photography by E. Endenburg. Courtesy of the Museo Egizio, Turin. Scale bar in cm.

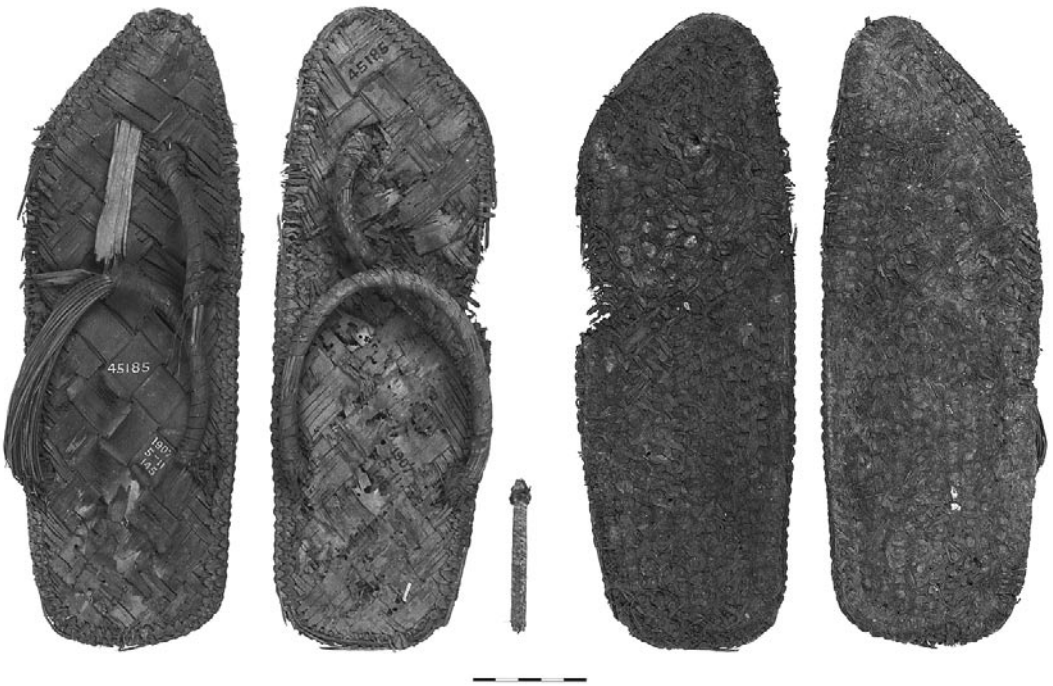


Fig. 3. Type A, variant 2 sandals. The pair BM EA 45185 in dorsal and ventral view. Scale bar in cm. Photography by A. 't Hooft. Courtesy of the British Museum, London.



Fig. 4. Type A, variant 3 sandals. The right sandal BM EA 4451 in ventral, dorsal and, below, oblique anteromedial view. The arrow points to the reinforcement running stitches of the edge (see figure 1A). Scale bar in cm. Photography by A. 't Hooft.
Courtesy of the British Museum, London.



Fig. 5. Type B, variant 1 sandals. The right sandal ÄMPB AM 620. Scale bar in cm.
Photography by E. Endenburg. Courtesy of the Ägyptisches Museum und Papyrussammlung, Berlin.

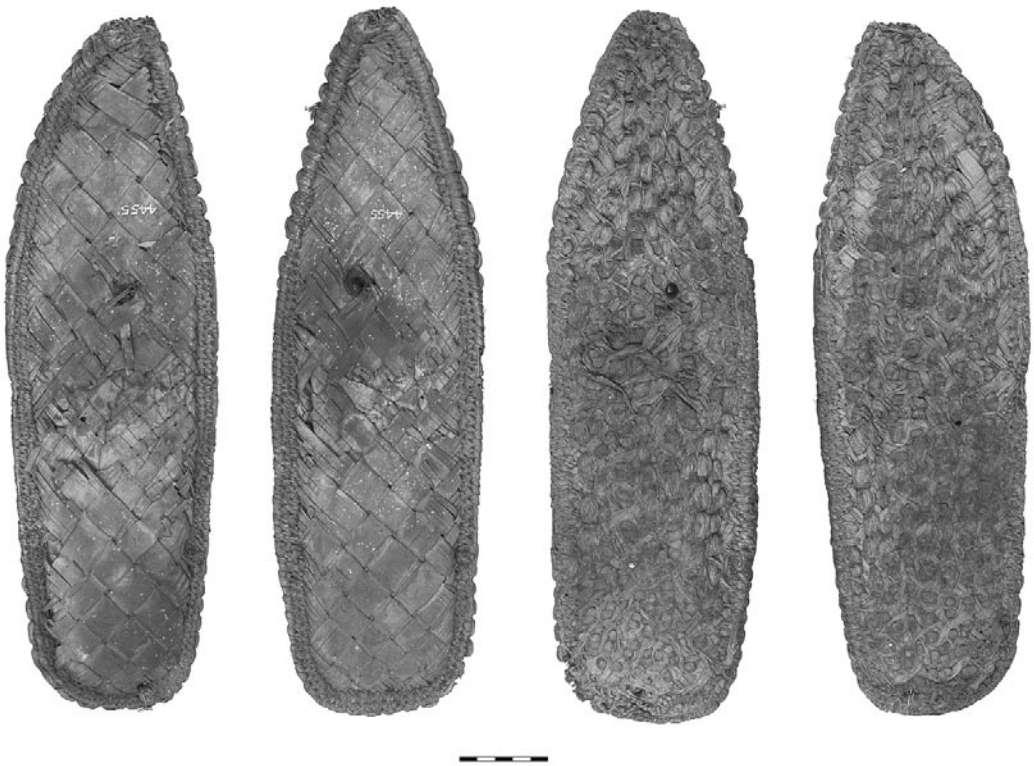


Fig. 6. Type B, variant 2 sandals. Dorsal and ventral view of the pair BM EA 4454/4455. Scale bar in cm. Photography by A. ’t Hooft. Courtesy of the British Museum, London.



Fig. 7. Type B, variant 3 sandals. Top: detail of the decorative cover of the curled toe. Below: dorsal view of the pair EgCa 5232; Scale bar in cm. Photography by A.J. Veldmeijer. Courtesy of the Supreme Council of Antiquities/Authorities Egyptian Museum, Cairo.

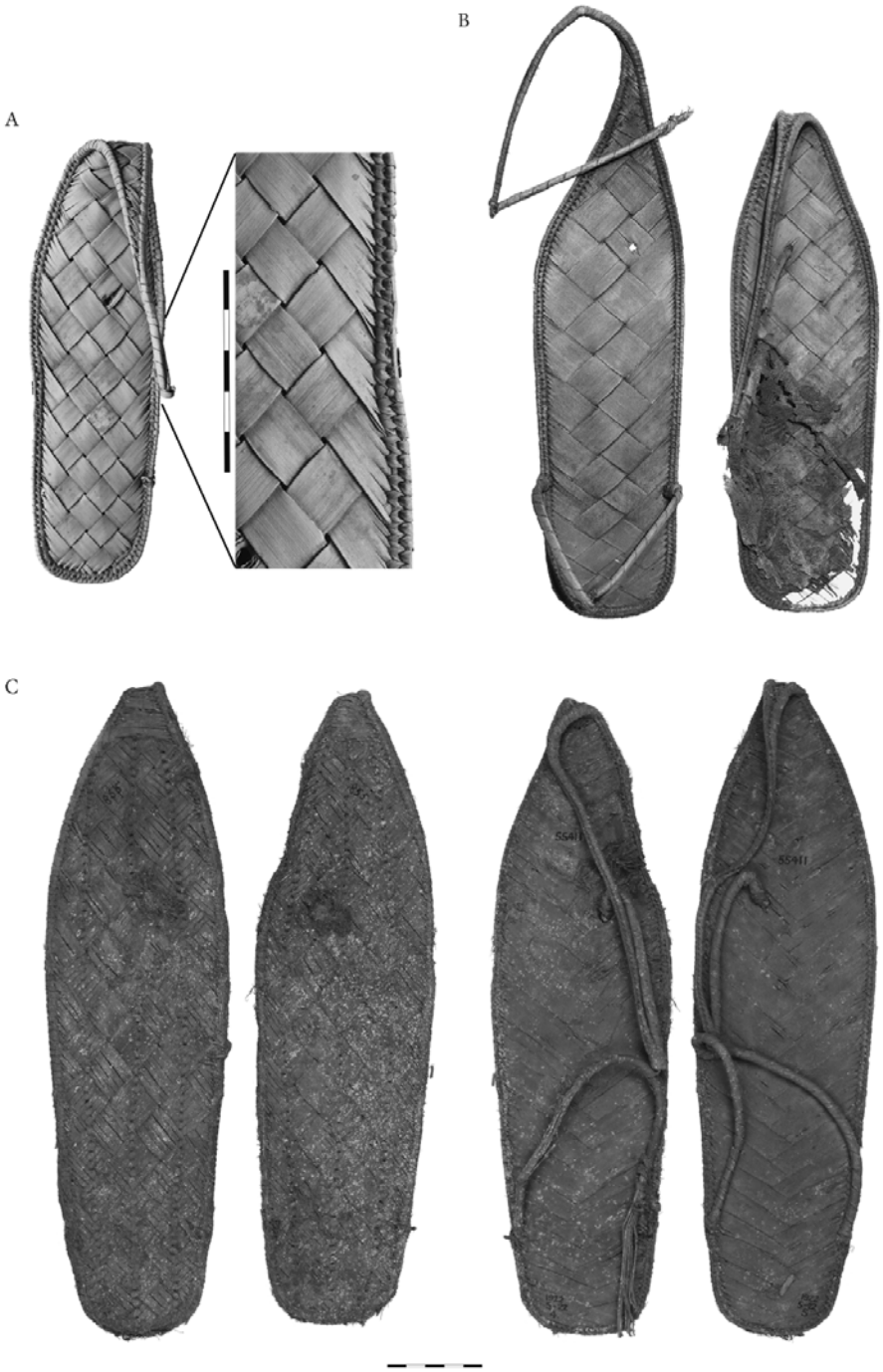


Fig. 8. Type B, variant 4 sandals. A) Dorsal view of left sandal EgCa 11 1 + 25 6. Inset: detail of the sewn edge. Photography by A.J. Veldmeijer. Courtesy of the Supreme Council of Antiquities/Authorities Egyptian Museum, Cairo; B) Dorsal view of the pair MEgT 5148. Photography by E. Endenburg. Courtesy of the Museo Egizio, Turin; C) Ventral and dorsal view of the pair BM EA 55411. Photography by A. 't Hooft. Courtesy of the British Museum, London. Scale bars in cm.



Fig. 9. Type C, variant 1 sandals. Dorsal and ventral view of ÄMPB AM 1397.
Scale bar in cm. Photography by E. Endenburg.
Courtesy of the Ägyptisches Museum und Papyrussammlung, Berlin.

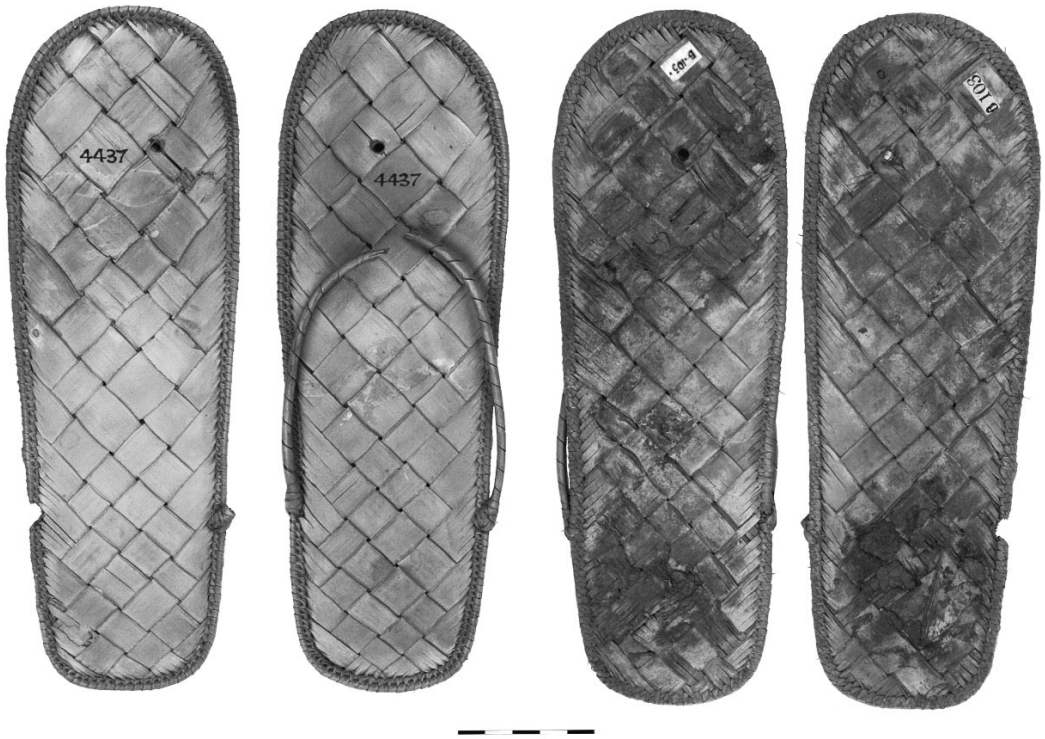


Fig. 10. Type C, variant 2 sandals. Dorsal and ventral view of the pair BM EA 4437. Scale bar in cm. Photography by A. ’t Hooft. Courtesy of the British Museum, London.



Fig. 11. Type D, variant 1 sandals. Dorsal view of ÄMPB AM 3324. Inset: detail of the reinforcement stitching of the edge (see figure 1B). Scale bar in cm. Photography by E. Endenburg. Courtesy of the Ägyptisches Museum und Papyrussammlung, Berlin.

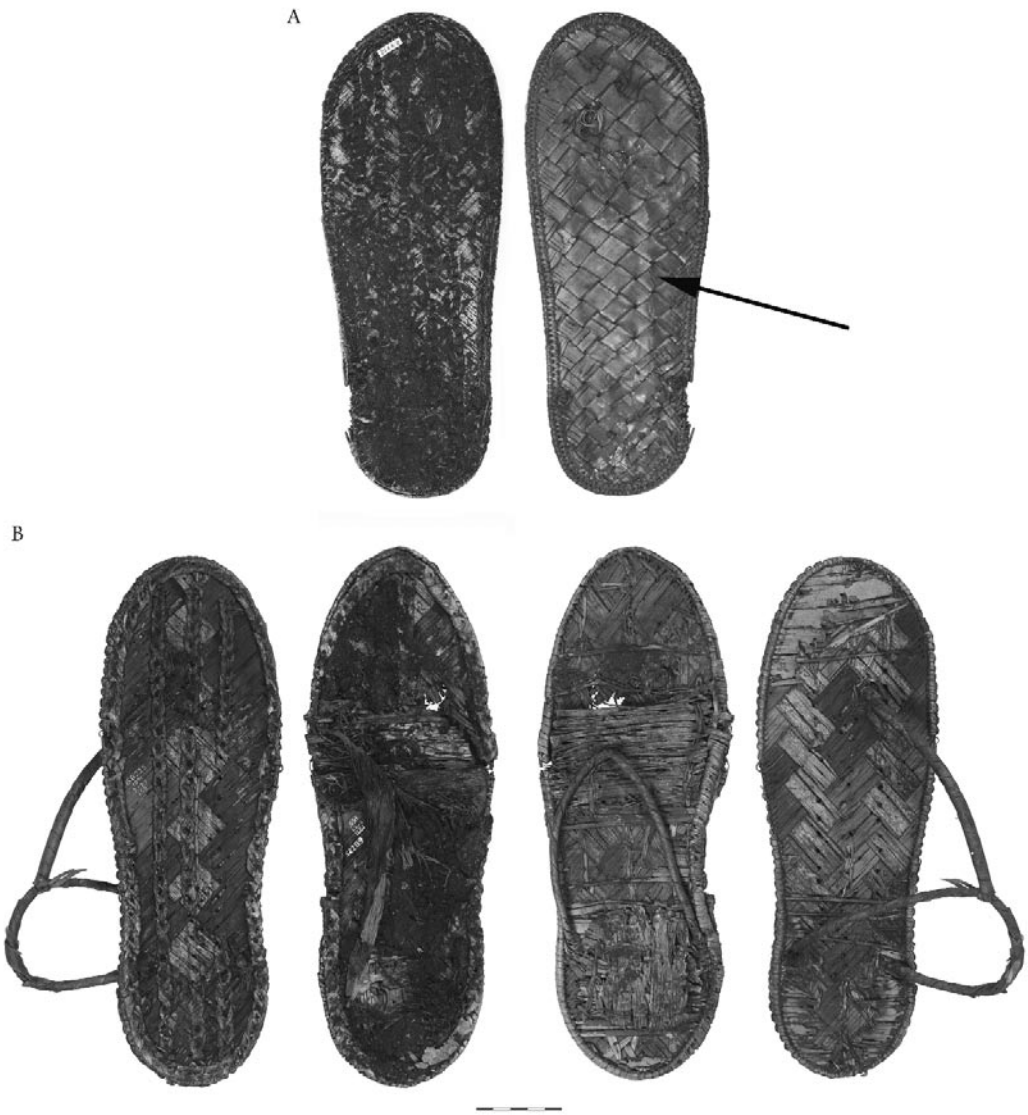


Fig. 12. Type D, variant 2 sandals. A) Ventral and dorsal view of right sandal ÄMPB AMZ 4312. Note the impression of the folded plaited fabric in the insole (arrow). Photography by E. Endenburg. Courtesy of the Ägyptisches Museum und Papyrussammlung, Berlin; B) Ventral and dorsal view of the pair BM EA 68225. Photography by A. 't Hooft. Courtesy of the British Museum, London. Scale bar in cm.

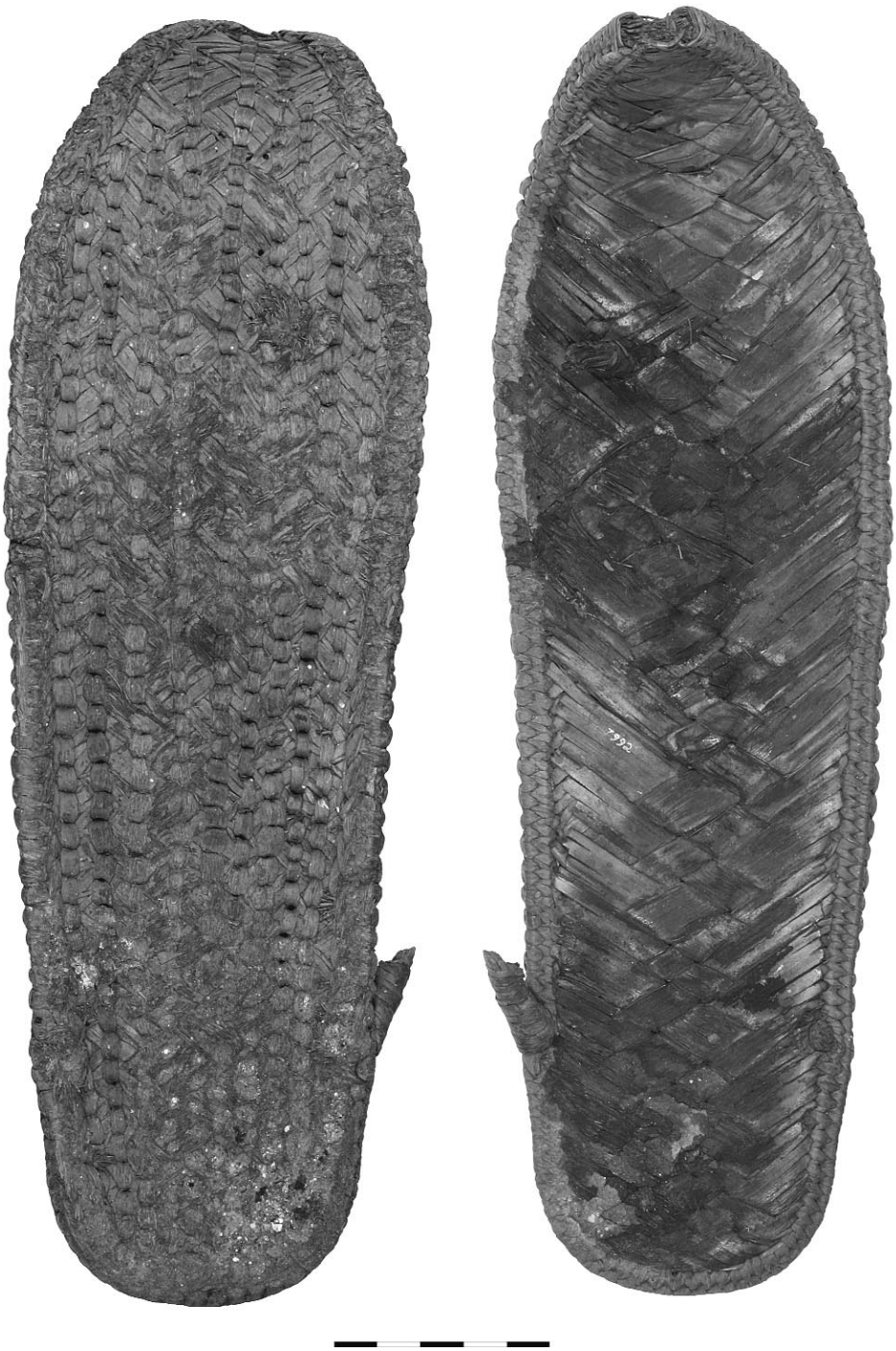


Fig.13. Type D, variant 3 sandals. Ventral and dorsal surface of the right sandal OIM E7992.
Scale bar in cm. Photography by E. Endenburg.
Courtesy of the Oriental Institute Museum, Chicago.



Fig. 14. Type D, variant 4 sandals. Dorsal and ventral surface of the left sandal BM EA 4449. Note the different orientation of the stitches lengthwise down the centre of the sole. Scale bar in cm. Photography by A. ’t Hooft. Courtesy of the British Museum, London.

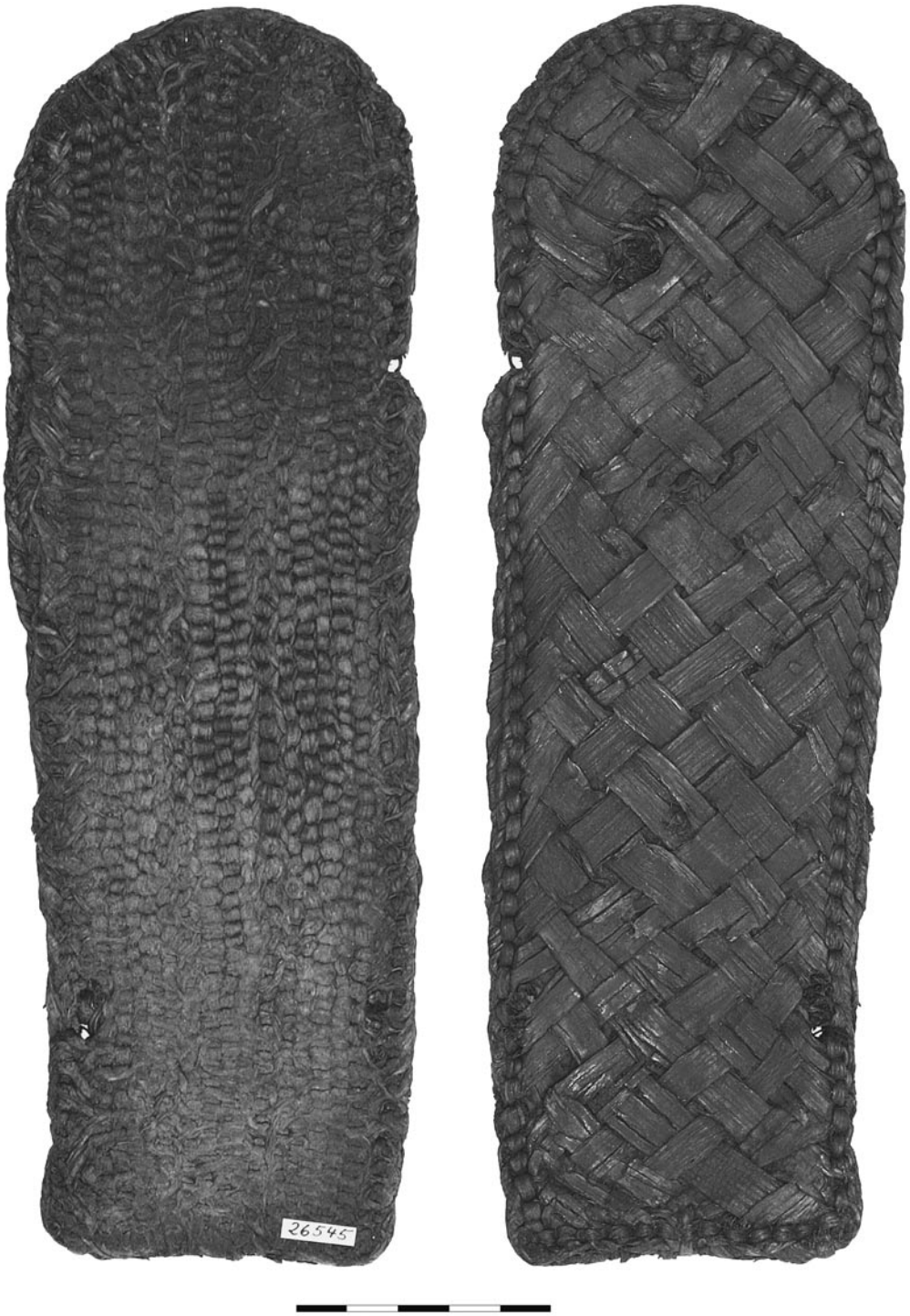


Fig. 15. Type E sandals. Ventral and dorsal view of the right sandal ÄMPB AM 26545.
Scale bar in cm. Photography by E. Endenburg.
Courtesy of the Ägyptisches Museum und Papyrussammlung, Berlin.



Fig. 16. The pair of sandals MFA 03.1721 is well made. They are one of the few examples of sewn-edge plaited sandals with a sewn sandal strap complex. Note the decorative front. Scale bar in cm. Photography by E. Endenburg. Courtesy of the Museum of Fine Arts, Boston.



Fig. 17. Example of a type B sandal with reinforced sole, BM EA 4450.
Scale bar in cm. Photography by A. 't Hooft. Courtesy of the British Museum, London.

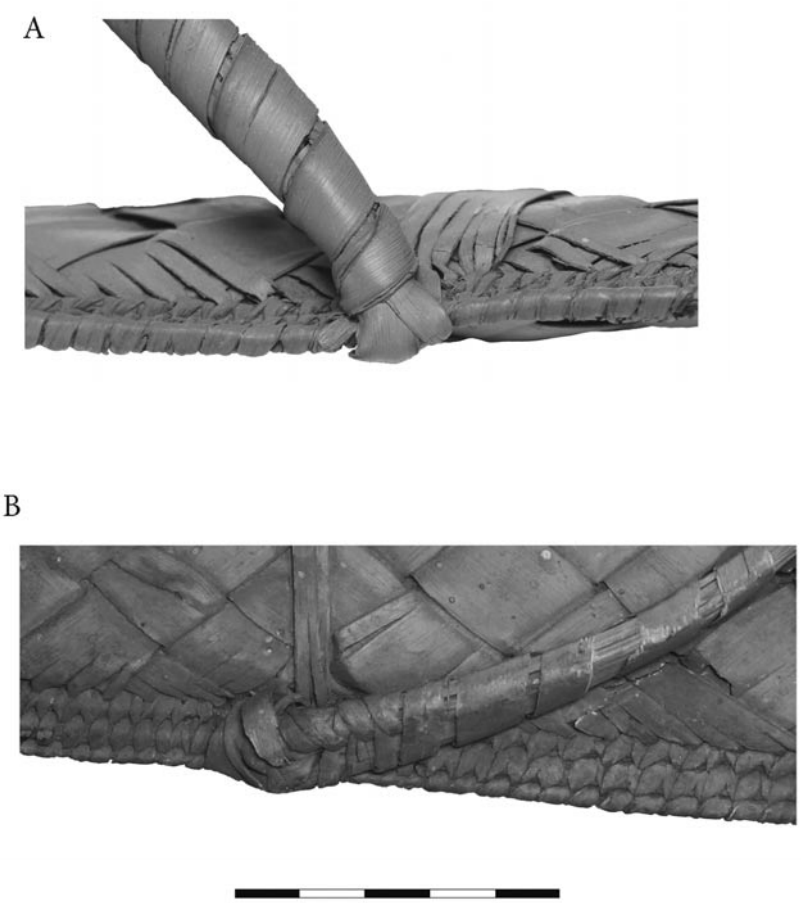


Fig. 18. Detail of the cladding and attachment of the back strap. A) EgCa 5230. Note the transverse strip between the two back strap attachments. Photography by A.J. Veldmeijer. Courtesy of the Supreme Council of Antiquities/Authorities Egyptian Museum, Cairo; B) Decorative cladding in ASH 1888.526. Photography by E. Endenburg. Courtesy of the Department of Antiquities, Ashmolean Museum, Oxford. Scale bar in cm.

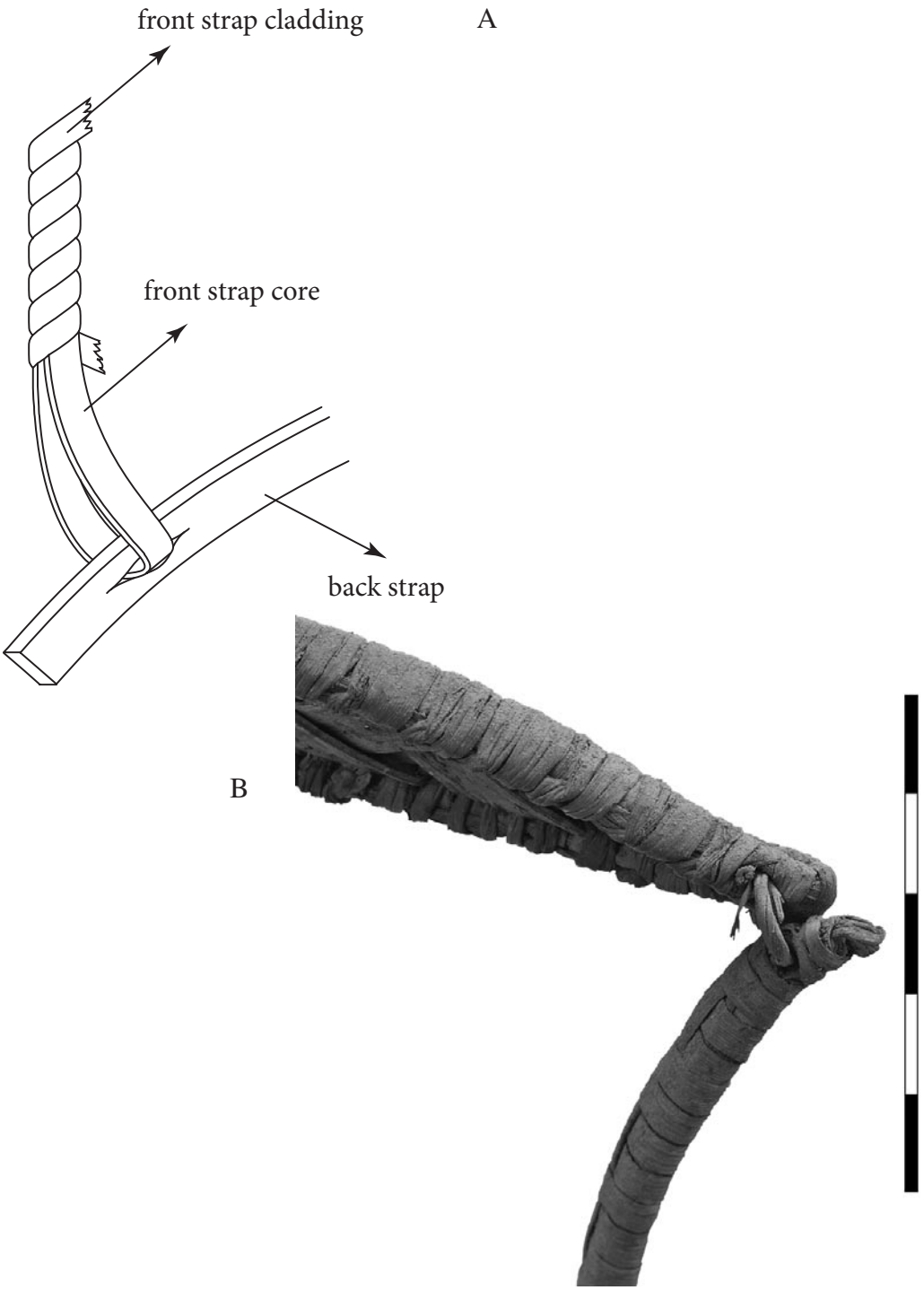


Fig. 19. The front strap in sewn-edge plaited sandals. A) Attachment of the front strap to the back strap (referred to as 'standard'). Not to scale. Drawing by E. Endenburg/A.J. Veldmeijer; B) In EgCa 5232, the tip of the curled toe is secured to the front- and back strap by means of a single stitch. Photography by A.J. Veldmeijer. Courtesy of the Supreme Council of Antiquities/Authorities Egyptian Museum, Cairo. Scale bar in cm.