FOOTWEAR IN ANCIENT EGYPT: THE MEDELHAVSMUSEET COLLECTION

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PART I - DISSERTATION

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Foot-end of mummy cartonnage NME 005, Medelhavsmuseet. Photography by Ove Kaneberg.
INTRODUCTION

STUDYING FOOTWEAR
Although sandals are mentioned in many popular accounts about ancient Egypt this is usually only in passing and not based on studies. Actually, the study of footwear, a term preferred rather than ‘sandal’ as in ancient Egypt there are more types of footwear than only sandals as we will see, only took off several years ago with the Ancient Egyptian Footwear Project (AEFP). This Project has a multidisciplinary and holistic approach, including a large sample from various collections around the world as well as from (recent) excavations. The Project’s focus is on the archaeological specimens, but it also investigates how footwear was depicted on tomb and temple walls. The written record, such as papyri and ostraca, is studied too and, at the end of the project, the information of these three parts is to be combined. Material from all periods are being studied, and although the focus is more or less on Pharaonic material, still, post-Pharaonic material is investigated including Ottoman material from for example Qasr Ibrim. The main goal of the Project is to get a better insight in footwear in all its aspects (among which are manufacturing technology and personal identity). For a more detailed explanation of the Project, see Veldmeijer (2010a) or visit the Project’s webpage at www.leatherandshoes.nl.

THE ARCHAEOLOGICAL RECORD
Egypt is famous for the rich archaeological record, which is very favourable for artefacts made of organic material such as plant fibres and wood. Organic material only preserves for so long in (extremely) arid conditions or waterlogged: in all other circumstances, save rare exceptions, nothing will be left after some years. Thus, in Egypt, organic materials are only preserved in the South and at the desert sites, but not in the wet and salty Delta region. This, of course, results in a bias which is, for knowledge about footwear for the society at large, very disadvantageous as footwear is mainly made of organic materials (vegetable fibres, leather, wood). Thus, we have no finds from the northern regions but this does not mean, therefore, that the people who lived there, did not wear footwear that was made of organic materials.

Another bias occurs due to the fact that older sites might already have disappeared because in more recent times, the area was used differently. Especially in the Delta, agriculture has damaged much of the top levels of sites. Another example is that many Middle Kingdom sites have disappeared under New Kingdom occupation. That early levels are not so well preserved is often also due to the accumulation of (many) generations, often spanning thousands of years. This, however, might also be a reason that the earliest levels are preserved as the layers on top might have protected them – this very much depends on the character of the settlement.

The archaeological record is also biased due to looting, which started already as soon as a tomb was closed in ancient times. Note that looting is still going on and even increases due to the turbulent times in Egypt. Finally, much information was lost due to the way of working of early archaeologists, which
more often than not, was closer to robbing than scientific excavation. In the early days of Egyptology, dealing in antiquities was not forbidden and many collections in the world have a bought collection as their basis. These objects were often obtained by (illegal) excavations and any information on the provenance was usually lost on the way to the collector. This means an incredible loss of information or, as Howard Carter (Carter & Mace, 1923: 125) explains about the feeling that obtained objects are as important as those from proper excavations: “There was never a greater mistake. Field-work is all-important, and it is a sure and certain fact that if every excavation had been properly, systematically, and conscientiously carried out, our knowledge of Egyptian archaeology would be at least 50 per cent. greater than it is.”

A great variety of materials were used in ancient Egypt for footwear: rawhide (unprocessed skin that might only have been cleaned from the hair) and leather (skin which is made durable; usually only tanned skin is referred to as ‘leather’ and not the oil-cured skins that was default in Pharaonic Egypt, but the term will be used here nonetheless), various types of vegetable fibres such as palm leaf and fibre (the leaf sheath of a palm leaf), halfa grasses and reeds. In later times, flax was used for sewing but in earlier times especially, sinew was used and, on a more limited scale, leather thongs. Wood was used, mainly for tomb sandals although in later times, wooden pattens and clog-like pieces are known. Wood, however, has not been used in footwear in a way that was common in Europe in Medieval Times, which can be easily explained by the fact that wood is scarce in Egypt and therefore relatively expensive. Metal was used for tomb sandals too, although more precious metals, such as gold and silver, could also be used in footwear that might have been worn, either passively or actively. The most beautiful examples of such footwear come from the tomb of Tutankhamun (Figure 1) and Yuya and Tjuiu, the great-grandparents of the world’s most famous Pharaoh.

THE FOOTWEAR COLLECTION IN THE MEDELHAVSMUSEET
This work presents the footwear collection that is housed in the Medelhavsmuseet in Stockholm and includes a catalogue. The collection is much varied: the main part of it was collected by Major R.G. Gayer-Anderson and clearly shows his great expertise in collecting; he had an eye for obtaining as much different types of footwear as possible, resulting in a varied collection with several pieces that are not found elsewhere.

FIGURE 1
Artist’s impression of a pair of leather open shoes from the tomb of Tutankhamun. The condition of the leather did not allow for identification of the colour, but most likely this would have been green or red and, most likely, a combination of these two. The outer layer of the upper is cut out.
By Mikko H. Kriek.
FIGURE 2
The symbol of Nine Bows, representing Egypt’s traditional enemies, goes back at least to the Old Kingdom. Here the elaborately decorated pair of marquetry veneer sandals from the tomb of Tutankhamun, showing the same symbolism. Note that here are only eight bows, which is due to a misjudgement by the sandal-maker: there was no space left anymore. Drawing by Erno Endenburg.

FIGURE 3
Entirely closed shoes were for the first time worn in the New Kingdom. These Curled-Toe Ankle Shoes in the Egyptian Museum, Tahrir (Cairo) were always made in bright colours with applied and openwork decoration. Drawing by Erno Endenburg.
FOOTWEAR IN ANCIENT EGYPT: SHORT SURVEY THROUGH TIME

PRE-DYNASTIC AND ARCHAIC PERIOD (5500–2687 BC), OLD KINGDOM (2687–2191 BC) AND FIRST INTERMEDIATE PERIOD (2190–2061 BC)

Finds from the prehistoric period of Egypt, referred to by Egyptologists as the Predynastic Period, suggest that skin was the most important material for the production of footwear. Usually the sandals (shoes were not yet used in this period) consist of one sole layer that was held in place by leather straps that were integrally cut out from the same sheet of leather as the sole. This situation changed slightly during the Old Kingdom and First Intermediate Period, as the society as a whole focussed much more on vegetable fibres. This is also visible in the footwear: the contexts of several Composite Fibre Sandals (MM 19602, Cat. No. 13) are (tentatively) dated to the Old Kingdom. In general, however, the number of sandals that can be dated without any doubt to this period is very low and since representations of footwear in tombs are equally rare, it seems safe to say that only a few people possessed sandals. Wearing sandals seems to have been mainly restricted to the upper class, suggested by the wooden tomb sandals, currently housed in the Imhotep Museum in Saqqara, that are ascribed to royals. The fact that tomb sandals existed does, however, hint to the importance for those that wore them assuming that those having tomb sandals buried with them, possessed sandals in life too. Moreover, one of these sandals is decorated with the Nine Bows, representing the traditional enemies of Egypt and showing the early existence of symbolism of crushing the enemies under the feet (Figure 2). In addition to this, imagery on for example the Narmer pallete, show ‘sandal bearers’: men, standing behind the pharaoh, carrying his sandals.

MIDDLE KINGDOM AND SECOND INTERMEDIATE PERIOD (2061–1564 BC)

The archaeological record covering the Middle Kingdom and Second Intermediate Period is very scanty. This is especially unfortunate because an increase of foreign contacts, especially the Hyksos who concurred and ruled Egypt for a while, seems to be, at least partially, responsible for new types of footwear, which they brought with them together with the chariot and new types of weaponry. One of these might be open shoes, which possibly gave the Egyptians the idea of covering the sides of the foot by adding a strip along the edge of a sandal (MM 10127, Cat. No. 14). Foreign people are depicted in tombs of local rulers (so-called ‘nomarchs’), showing, admittedly difficult to identify, footwear that cannot be matched with examples from Egypt’s archaeological record. Still, at the beginning of the New Kingdom, a larger variety of footwear is seen than before.

NEW KINGDOM AND THIRD INTERMEDIATE PERIOD (1564–656 BC)

By far the largest part of the database of the Footwear Project consists of objects from the New Kingdom. This is partially due to the archaeological record itself as explained above: much more is preserved relative to other periods, the remnants of which have been removed or still buried under the New Kingdom remains and therefore inaccessible. Moreover, traditionally, Egyptologists focus more on researching this era than others. However, this increase is also due to the increased number of people wearing footwear. Possibly, people had even more than one pair: this certainly was the case for royals, judging the more than 80 shoes and sandals that were buried with king Tutankhamun. The variety of sandals increases and entirely closed shoes were seen for the first time in the later New Kingdom (Figure 3).
LATE PERIOD–ROMAN PERIOD (664 BC–AD 395)

The Late Period is represented by only very few examples. Especially leather Pharaonic footwear was highly colourful and were red, green or, more often, a combination of the two (MM 19600, Cat. No. 22; MM 30880, Cat. No. 23; MM 30882, Cat. No. 24). The find of seven shoes in a jar between walls of the temple of Amenhotep II (1424-1398 BC; Figure 4) in Luxor is, despite the New Kingdom date of the temple, dated to the Ptolemaic era. The few examples we have, however, show a basis in footwear from the earlier periods. When the Romans conquered Egypt, they brought their own footwear with them, which, of course, does not mean that it entirely substituted the existing Egyptian footwear but Roman military footwear (Figure 5), as so well known from various European sites, constitutes a big part of the archaeological record and is known from many sites in Egypt. However, much of the introduced technology was not adopted and after the Roman era, typical Roman footwear and technology disappeared altogether.

FIGURE 4
Seven shoes, stored in a Ptolemaic jar in the temple of Amenhotep II in Luxor, five of which were tied together seen here. Photograph by F.M. Giani/CEFB. Reworked by André J. Veldmeijer/Erno Endenburg. Artist’s impression by Mikko H. Kriek.

FIGURE 5
An example of a Roman military shoe, excavated from Qasr Ibrim in south Egypt. Photograph by André J. Veldmeijer. Courtesy of the Egypt Exploration Society. Artist’s impression of a 'European' Roman soldier with comparable footwear by Mikko H. Kriek.
POST-ROMAN PERIOD (AD 395–PRESENT)
The footwear after the Roman Period (grouped under the rather ill-defined term ‘Christian’ or ‘Coptic’ period) again differs from the footwear seen previously. A focus on leather is clearly detectable although footwear made from fibre, such as open shoes from palm leaf, still did occur, and seems to be popular especially in the more remote areas such as the oases, and settlements as Qasr Ibrim (Figure 6). These differ from the much earlier, Pharaonic shoes (MM 10127, Cat. No. 14) in shape, extension of the upper and other details. Shoes show a wide variety of types. Sandals, however, usually are of a more or less comparable construction but many differences in straps and, especially, decoration can be seen: sandals are always decorated with a plethora of techniques, among which are appliqué and open work and stamping/impression (MM 10137, Cat. No. 25; MM 15085, Cat. No. 28). Mules become very popular in this time, resulting in several different types (MM 18232, Cat. No. 26) and another type of footwear seen now as well are boots (Figure 7). Especially popular is decorating shoes and mules with gold foil and embroidery (MM 39886, Cat. No. 27; Figure 8). This contrasts to the Ottoman footwear from Qasr Ibrim (and some finds from other sites), which has no decoration, although some constructional elements might be made in a shape that pleases the eye, such as shaped extensions at the sides of the upper (Figure 9).

**FIGURE 6**
Fibre, Open Shoes (thus covering only the side of the foot) with a flexible, full upper (going around the entire edge of the sole). The oldest examples date to the 3rd c. AD, but they remained in use for many centuries after, such as this example for a small child from Qasr Ibrim. Photograph by André J. Veldmeijer. Courtesy of the Egypt Exploration Society. Artist impression by Mikko H. Kriek.

**FIGURE 7**
Boots like these are popular in Christian times and are known from various sites. Remarkably, many of the boots are for children. Photograph by André J. Veldmeijer/Erno Endenburg. Courtesy of the Ashmolean Museum, Oxford.

**FIGURE 8**
Model of Coptic mules, made by Martin Moser, from Achmim Panopolis, probably 4th or 5th c. AD. Courtesy of Martin Moser.

**FIGURE 9**
An example of an Ottoman shoe from Qasr Ibrim. The footwear is usually undecorated, the only aesthetic effect that pleases the eye are shaped elements at the side and large flaps at the front and back. Photographs by André J. Veldmeijer. Courtesy of the Egypt Exploration Society. Artist’s impression by Erno Endenburg.
FOREIGN FOOTWEAR

Besides foreign influences, as explained above, Egypt's borders included other people as well. For example, the southern parts of modern-day Egypt and the northern parts of the Sudan, is known to scholars as Nubia. Parts of this area are, archaeologically, among the best studied in the world due to the building of the High Dam in Aswan and the subsequent flooding. Before building the dam, large scale salvation operations were organised in order to gather as much information as possible before the water of the future Lake Nasser would destroy it. Hence, we have fairly large numbers of Nubian footwear, especially from sites such as Qasr Ibrim and nearby Gebel Adda. It shows that some Nubian footwear was different from Egyptian, mainly seen in the straps: two front straps rather than one, which would pass between the first/second and the third/fourth toe (Figure 10). Some graves that were excavated in Gebel Adda (dating to the first centuries AD) show sandals that were much more elaborately decorated and contained even shoes (which is, in Nubia in this period, relatively rare) and, although a detailed comparison of all goods from these graves is due, the first survey indicates that, indeed, these belong to richer burials in general. This suggests too that people also wanted to show their different position in life through their footwear. An extraordinary find are several shoes and sandals that are dated to the Persian occupation in Elephantine (Figure 11): since in their home country, the circumstances are unfavourable for the preservation of organic materials, these examples are the only known to date. Especially the shoes differ from the usual indigenous Egyptian shoes in that they are elaborately decorated with appliqué in combination with lace-like elements (which, however, are purely decorational).

FIGURE 10

FIGURE 11
Example of a Persian shoe from Elephantine. Note the elaborate decoration, which is rather different from Pharaonic shoes (compare with figure 1 & 3). Photograph by André J. Veldmeijer. Courtesy of the Deutsches Archäologisches Institut Kairo, Elephantine Mission.
DIFFERENT TOWNS,
DIFFERENT FOOTWEAR

Due to the nature of the research, investigating footwear from all over Egypt and from a large number of collections, it became clear that, to certain extent, different places had their own type of footwear. True, due to the lack of well provenanced finds from Pharaonic Egypt this is less clear, and Amarna, the short-lived city founded by Tutankhamun’s father Akhenaten in Middle Egypt, is the best example. Leather sandals with more than one sole layer that were sewn together but are, for the rest, comparable to leather sandals with different provenance, abound (slightly comparable to MM 18228, Cat. No. 1). A much clearer example is the footwear from Fustat which lies south of modern-day Cairo. Fustat was founded in 641 AD and was the capital of the Muslim province of Egypt until the 13th c. AD. According to the Encyclopaedia Britannica, it grew into a permanent city out of an Arab camp set up for the siege of the Byzantine fortress of Babylon. In 1175 AD it was destroyed out of fear of the Crusaders. By far the majority of shoes that were found there are made from one piece of leather and either sewn together at the front or at the front and back (Figure 12). One example has an outer layer of bright red, green and yellow silk and the edge of the instep has goldfoil on it. Few examples of such shoes, though different in details, are known from other sites, but not in the numbers we have from Fustat. Several sandals from Fustat are unique and not found anywhere else: they differ in shape as well as decoration (Figure 13).

FIGURE 12
Shoe from Fustat that is made from one piece of leather. Shoes like these were default in this rich city. Photographs by André J. Veldmeijer/Erno Endenburg. Courtesy of the Institut français d'archéologie orientale Le Caire, Fustat Mission.

FIGURE 13
The shape of this sandal, with the central protrusion to connect the straps, is unique and has no parallels in earlier or later Egypt. The extremely fine decoration must have been a time-consuming task. Photographs by André J. Veldmeijer/Erno Endenburg. Courtesy of the Institut français d'archéologie orientale Le Caire, Fustat Mission.
FIGURE 14
Sewn Sandals Type A shown here, are made in the same technique as
the status symbol Type C, found in the tomb of Tutankhamun. Note the
difference in size and technique: many children’s Sewn Sandals are housed
in various collections in the world. Photograph by André J. Veldmeijer.
Courtesy of the Medelhavsmuseet Stockholm. Artist’s impression of a Type
C sandal by Mikko H. Kriek.

FIGURE 15
Artist’s impression of one of the elaborately decorated open shoes from the
tomb of Tutankhamun, which is based on the palm leaf and grass Sewn
Sandals. By Mikko H. Kriek.
FOOTWEAR IN SOCIETY: DIVERSITY AND PERSONAL IDENTITY

The term ‘fashion’ should not be seen as today’s, which is for the main part (or perhaps even only) dictated by industrialisation. However, if fashion is seen as a means to convey status and/or to distinguish oneself from another, certainly there was a kind of fashion visible in Pharaonic Egypt. With the rather scanty records of pre-New Kingdom times as explained above, this is not so easy to identify and focus will be, therefore, on the material that is dated to the New Kingdom. The best examples are the so-called Sewn Sandals: rather simple sandals consisting of bundles of grass that are sewn together with strips of palm leaf (MM 10128, Cat. No. 7; MM 18228, Cat. 1; MM 18230, Cat. No. 2; MM 30872, Cat. No. 3; MM 30874, Cat. No. 6; MM 30877, Cat. No. 4; MM 30878, Cat. No. 5; [FIGURE 14]. There are three types, but one type, called ‘Type C’ distinguishes itself by being much more delicate (such as thinner soles, narrower and thus more bundles, more elaborate straps) and very well made. The toe is slightly upturned. It is not clear when this type of sandals was first introduced, the oldest pair we know off to date, excavated in Sidmant el-Gebel, is housed in the Allard Pierson Museum in Amsterdam and dates to the 11th Dynasty, but by the 18th Dynasty they were very common. However, only certain people are seen in the depictions in tombs and temples wearing these C-Type sandals: the royal family and high officials that were rewarded by the king himself. In one scene you can even see the official barefoot before he was rewarded; afterwards he is wearing the sandals. The majority of sandals from the tomb of Tutankhamun were Sewn Sandals or types of footwear based on them, i.e. remade Sewn Sandals in, for example, gold ([FIGURE 15]). The corpus of New Kingdom footwear is much varied, so why these sandals specifically became such a status symbol is not clear (yet).

Men as well as women wore footwear, the only difference being, based on the research of the archaeological material, its size: smaller for women and bigger for men. Kids could have sandals too: children’s footwear can also be recognised on its size (e.g. MM 18228, Cat. No. 1; MM 18230, Cat. No. 2; MM 19600, Cat. No. 22): they were just the smaller versions of the adults’ ones. Special children’s footwear did not exist and is a recent invention (20th century).
ARCHAEOLOGY, TEXTS AND IMAGES: A COMPLETE PICTURE EMERGES?

In Egyptology we are lucky that, besides the archaeological record which is the main focus of the present work, information also comes from texts and depictions in tombs and temples (Figure 16). To start with the latter, interpreting depictions is not as straightforward as might seem. Images are often standardised, prohibiting a 100-percent-certain identification of the type of footwear in most cases, although some types, such as the above-mentioned Sewn Sandals are recognisable. Moreover, a survey of the pictorial evidence produced far less types than evidenced by the archaeological record: for example, although there is a fair number of open and closed shoes from the beginning of the New Kingdom onwards, these are not shown in images (except for one or two). Thus, trying to get an idea of the diversity of footwear in the ancient Egyptian society on the basis of depictions only is flawed. Moreover, it is well known that there was a preference for what to show and the reluctance of showing messy things, such as butchering, further complicating the interpretation of imagery. Furthermore, some parts of processes just cannot be grasped in images: how was an ancient artist to depict the negotiations on buying the material to make sandals for example? Equally unclear in this respect are texts: sandals and ‘enveloping sandals’, which possibly refer to open shoes, are mentioned quite often but not exactly what kind of sandals. In other words, we do not know exactly what they looked like from texts. On the other hand, texts do give us valuable information of various kinds. The soldier who complains about his sandals (note that, although texts are clear that soldiers wore sandals, they are never shown in depictions to do so), the prices of sandals and sandal parts (although the identification of these parts are in some cases still debated; sandals could be a part of the wages of workmen) as well as the distinction between footwear for men and women.

THE WORK OF THE SANDAL MAKER: TECHNOLOGICAL DEVELOPMENT AND CHANGE

Often people say that not much change can be seen over the years in ancient Egypt but detailed studies show that this is not (entirely) true. Changes did occur but not as rapid as nowadays, as they are much related to fashion (see above). The toes, for example, became larger in some types (e.g. MM 30879, Cat. No. 11) and even ended up tied to the straps at the ankle in the late New Kingdom (not represented by the Stockholm collection). Interestingly, such developments are seen in various periods and even globally: think of the shoes in Medieval Europe where the toes were at some point so long that they were, as texts and images suggest, tied to the knee (note that such shoes have not been attested in the archaeological record). Uppers that cover the sides of the foot were added to leather as well as fibre sandals (the above-mentioned open shoes). There seems to have been two developments: the first open shoes still had straps to keep it to the foot, which, through various steps, changed into a system of lace-like closing systems and, ultimately, in true laces. Simultaneously, the upper became bigger and gradually covered more of the foot. However, closed shoes also developed in itself. The attachment of uppers to soles in completely closed shoes was done with adding straps between them, which seems to be a predecessor of the rands seen later (an element in turn-shoes that ensured a much better closure of the seam and made it, although not really necessary in Egypt, better watertight).

How to recognise a workshop where sandals and shoes were made? Did something as a specialised workshop exist or was footwear only one of the products of a workshop? Leatherworkers used several specialised tools, such as halfmoon-knifes to cut the leather sheet, but more clear indication for leatherworking, such as dye and tanning pits, are not identified as tanning was introduced in post-Pharaonic times. Scenes in tombs sometimes show leatherworkers making sandals (Figure 16): they pull the strap through the sole with their teeth, put skin in vases with oil to make the skin durable or men are shown
cleaning the skin. However, in all scenes, the production of the same type of sandal is shown. These are easy recognisable as a sandal, i.e. not a particular type of sandal and that seems to be exactly the reason why the artist has chosen them: he had to convey the message that sandals were made, rather than which sandals.

Since a variety of sandals are shown in representations but not their manufacturing, it seems that representations are standardised. This might also explain the lack of the production of the more specialised pieces of footwear (such as shoes), as they are less well known, and less easily recognisable to the public. On the other hand, we might have expected a scene with an accompanying text, saying that the sandalmaker makes sandals for the Pharaoh, which, after all, was a big honour, but these do not exist either. Scenes of sandalmakers are shown as part of a larger composition: a leather workshop where also other objects were made, such as chariots and weaponry. Although fibre sandals are sometimes shown in the storage facilities seen in these scenes, the production of fibre footwear is never shown, letting some people believe that, therefore, it might have been a household activity. However, this does not explain the presence of the storage in the workshop. Further evidence for workshops are texts that mention workshops in temples where huge numbers of sandals were produced but, as explained, these have not been attested archaeologically. Titles, such as 'Overseer of the Sandal Makers' and 'Overseer of the Sandal Makers of the Amun Temple', however, suggest a day-to-day supervision of the work, but, again, it is not mentioned what type of sandals were made and what they were made for, although it seems probable that they were used as payment. Note that the suggestion that priests wore sandals for purity reasons has not been proven beyond any doubt.

Daily life in Egypt is not well understood for a number of reasons, such as the focus on temples and tombs and the relative lack of well-excavated and published settlements. Much daily-life objects are on display in collections all over the world, but since these often have been obtained long time ago, they more often than not, lack any provenance, greatly hindering analyses. Fortunately, Egyptology more and more focuses on filling in these gaps; the present summary of the work on footwear is an example. The, admittedly, summary character of the present work, does hint to the wide variety of footwear during the long history of Egypt nonetheless, and show that they were used to protect the feet but also as a means of the owner as to express personal identity.

**Figure 16**

Sandals seem to have been made in leather workshop that also produced, amongst others, chariots. This scene is from the tomb of Rekhmira in Luxor (18th Dynasty). From: Davies (1943: pl. LII, LIV).
The majority of the available literature is focussed on technology; two studies deal with the iconography, although the AEF’s second phase, dealing with the depictions in a more exhaustive way, is underway (in collaboration with the American University in Cairo). The short list below features the most important publications which are mostly scientific in nature; the book on Tutankhamun’s footwear, however, is written for scientists and laymen alike. A more exhaustive list of publications, including also other publications than the ones from the AEF, can be found on the website of the AEF: www.leatherandshoes.nl


Schwarz, S. 2000. Ältestes Lederhandwerk. – Frankfurt am Main, Peter Lange.

PART 2 - CATALOGUE

Footwear in Ancient Egypt: the Medelhavsmuseet collection
Världskultur musee rna 2014 - André J. Veldmeijer
The footwear is described by category which is introduced first to give general information. A detailed narrative description of each object follows. However, the descriptions show a different degree of detail: those of well known and published examples are more general, although an overview of the shapes, types and other relevant information is included at the start of the entries. Other specimens include a more detailed description with, where appropriate, descriptions and comparisons with previously unpublished objects from other collections. Work on several types of footwear is in progress, especially footwear dated to the Age of Christianity of which so far little work has been done. Hence, entries show a larger degree of uncertainty, for example as to their more precise typology. In some cases, the AEFP has not established a (full) typology (yet) and reference is thus made to existing typologies.

**CATALOGUE LAYOUT**

The footwear is described by category which is introduced first to give general information. A detailed narrative description of each object follows. However, the descriptions show a different degree of detail: those of well known and published examples are more general, although an overview of the shapes, types and other relevant information is included at the start of the entries. Other specimens include a more detailed description with, where appropriate, descriptions and comparisons with previously unpublished objects from other collections. Work on several types of footwear is in progress, especially footwear dated to the Age of Christianity of which so far little work has been done. Hence, entries show a larger degree of uncertainty, for example as to their more precise typology. In some cases, the AEFP has not established a (full) typology (yet) and reference is thus made to existing typologies.

| Catalogue Number | (Cat. No.) All finds have been given a catalogue entry number by the author. |
| Figures          | The reference to the figure numbers in the catalogue. |
| Inventory Number | The unique number assigned to each object by the Museum, allowing for the tracing of the context of the object. |
| Additional Number| Some objects have an additional number, for example given by Gayer-Anderson before selling it to the Museum. |
| Provenance       | Since most of the collection has been obtained from antiquity dealers, this is unfortunately unknown and thus left out. |
| Date             | The ongoing nature of the AEFP means that still much footwear awaits study, especially the material from the Age of Christianity, which makes a refined dating not possible. This is also true for footwear from other periods, but in some cases a more precise date is possible. |
| Type             | Wherever possible, the type of a piece of footwear is mentioned as used by the AEFP; references to other typologies are made in cases these have not been studied by the Project (yet). |
| Materials        | A general indication is given. Most of the footwear is sampled: the more detailed identification of the material is pending. |
| Measurements     | If two measurements are separated by a hyphen, they indicate the smallest and largest size. Measurements of fragments of which sides cannot be determined and hence no ‘length’ or ‘width’ can be recognised, are noted with ‘x’. Usually, but not exclusively, these are featureless scraps. All measurements are in millimetres, unless stated otherwise. |
| Remarks          | Comments as well as information on conservation is noted here. |
| Bibliography     | Selected, focussed, specialist literature. |
INTRODUCTION

The sole in Sewn Sandals (Figure 14) is made of transverse bundles of vegetable materials (usually halfa grass, Desmostachya bipinnata or Imperata cylindrica, but other grasses were sometimes used too), which are secured with a strip of dom palm leaf (Hyphaene thebaica) that wraps the grass bundle and is secured by sewing (Figure 1). The stitches of the subsequent rows are sewn through the previous row, either through the bundle, or mainly through its winder. The transverse rows are finished with an edge, which is made in the same technique, i.e. a fibre core, which is wrapped and sewn with palm leaf strips. An edge can have two or three rows, but all sandals in the Medelhavsmuseet have a triple edge (Figure 2). There is a considerable variety of the tightness and refinement of the sewing; the expensive C-Type, however, distinguish itself by the default high quality of manufacturing.

The straps consist of various parts, although none of the specimens in the Stockholm Museum has much preserved of them, except for one. At the back, a pre-strap, consisting of a clad, strong loop of palm leaf, is secured to the edge of the sandal by the cladding, which is stitched through the sole. The loop points upward. The pre-strap serves as attachment and reinforcement of the back strap (Figure 3), which is fixed to it with a papyrus strip. Usually, the wrapping extends a few centimetres high and includes the pre- and back strap. Although the pre-strap is made of palm, the back strap is made of various layers of Cyperus papyrus, which results in an aesthetic pleasing effect. The back strap is rather thick and widens dorsally of the foot. The front strap is attached at the centre of the back strap by means of looping. It usually consists of a core that is clad transversely with strips of palm leaf. This cladding tightly secures the looping to the back strap. The lower part of the front strap is inserted in the sole off centre in order to fit better between the first and second toe. At the ventral surface of the sole, in all cases in which it is preserved, the strap is secured with a crown sinnet (Figure 4, cf. Ashley 1993: 480[#2917]).

We make a distinction between three types of Sewn Sandals (Type A–C), but all sandals in the collection are of the so-called A-Type: the soles are symmetrical or near-symmetrical lengthwise, thick and the number of transverse bundles is low (<30). Still, difference between the specimens in the collection can be observed (see text Figure 14).

FIGURE 1
Diagram of the construction of the sole in Sewn Sandals. A bundle of grass is wrapped with a palm leaf strip and sewn through the previous bundle. Drawing by André J. Veldmeijer/Erno Endenburg. Not to scale.

FIGURE 2
Diagram of the construction of the edge in Sewn Sandals, showing a transverse cross section. Drawing by André J. Veldmeijer/Erno Endenburg. Not to scale.

FIGURE 3
Remnant of the attachment of the pre-strap to the sole. Photograph by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 4
Crown-sinnet knot, used to secure the front strap under the sole. Drawing by André J. Veldmeijer/Erno Endenburg. Not to scale.
CATALOGUE NO 1

DESCRIPTION
The left leather sandal, of a well known and described category (Egyptian Eared Sandals), has a clearly pointed front and compares well with other examples of this type, although others have a less clearly pointed front (Veldmeijer & Ikram, 2014). The two sole layers are fairly thick and, as is default in this category, secured with short running stitches with large interstitch spaces that are made of leather thong. Note the reddish colour.

FIGURE 5
Sewn Sandal, MM 18228, dorsal view. The leather sandal MME 1961:77 is attached to the other side (figure 6). Photograph by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 6

<table>
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<tr>
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<tr>
<td>Additional Number</td>
<td>MME 1961:77;</td>
</tr>
<tr>
<td>Date</td>
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</tr>
<tr>
<td>Type</td>
<td>Sewn Sandal Type A / Leather Egyptian Eared Sandal, Swayed Sole Type, Multi Sole Layer Variant;</td>
</tr>
<tr>
<td>Materials</td>
<td>Halfa grass, palm leaf (see introduction)/leather;</td>
</tr>
<tr>
<td>Measurements</td>
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</tr>
<tr>
<td></td>
<td>Sewn Sandal: Length: 174.0; Width heel: 70.0; Width waist: 69.4; Width front: 83.3; Width transverse bundle: 8.8; Width sewing strip: 5.0; Width triple edge: 20.0;</td>
</tr>
<tr>
<td>Remarks</td>
<td>The Sewn Sandal, meant for a child, is a pair with MM 18230 (for description of the Sewn Sandal see that entry [Cat. No. 2]). Sample taken for material identification from the fibre sandal. A request has been submitted to separate the two sandals;</td>
</tr>
</tbody>
</table>
CATALOGUE NO 2

DESCRIPTION
Child’s Sewn Sandal of the A-Type, meant for the left foot. Fourteen transverse bundles (the front and especially the back one have a substantially smaller diameter), which are sewn in a fairly regular way. Triple edge, which are almost equal in diameter. The back strap is incomplete, but enough is preserved in situ to see that it was pulled through the pre-strap. No sign of wear, except, perhaps, the broken back straps and missing front strap.

FIGURE 7

FIGURE 8
Sewn Sandal, MM 18230. Details. A) Detail of the edge and the sewing; B) Detail of the remnants of deteriorated leather and package material. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

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<tr>
<td>Remarks</td>
<td>Pair with sewn sandal MM 18228;</td>
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DESCRIPTION
Pair of large-size sandals. Nothing but the sole is preserved, consisting of 20 (left) and 21 (right) transverse bundles. They have a triple edge, which has a small/width/small diameter (although this is less clear with the right sandal). The dorsal surface of both sandals is distinctly discoloured, which is caused by dirt adhering to it. This has happened before the Egyptian number was attached as underneath it is discoloured too. This suggests that the dirt was collected during the years before they became part of the collection that used the number. It is possible that the blackening happened in ancient times. Especially in the right sandal, fibres are damaged as well as some small pieces of the edge sewing.

FIGURE 9
Pair of Sewn Sandals, MM 30872. Overviews. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 10
Pair of Sewn Sandals, MM 30872. Details. A) slit for the reception of the front strap in the right sandal seen from ventral. Compare the sewing with figure 12 and 14A, which is more tightly sewn; B) Remnant of the attachment of the pre-strap in the right sandal seen from dorsal). Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

CATALOGUE NO 3

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</tr>
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<td>Sewn Sandal Type A;</td>
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<td></td>
<td>Width front: 137.7;</td>
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<tr>
<td></td>
<td>Thickness sole: 7.9;</td>
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<tr>
<td></td>
<td>Diameter transverse bundle: 13.8;</td>
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<tr>
<td></td>
<td>Width triple edge: 24.7;</td>
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<tr>
<td></td>
<td>Width sewing strips: 5.5;</td>
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<tr>
<td>Right:</td>
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</tr>
<tr>
<td></td>
<td>Length: 343.0;</td>
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<tr>
<td></td>
<td>Width heel: 106.5;</td>
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<td></td>
<td>Width front: 135.8;</td>
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<td>Thickness sole: 7.6;</td>
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<td>Diameter transverse bundle: 13.0;</td>
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<td>Width sewing strips: 5.4;</td>
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<tr>
<td>Remarks</td>
<td>Request was submitted to sample the material that caused the discoloration;</td>
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CATALOGUE NO 4

DESCRIPTION
Well preserved sole, meant for the left foot, consisting of 29 transverse bundles. The sole shows some damaged sewing strips, especially in the centre of the dorsal surface and the outer edge of the heel. Triple edge of which the inner and outer rows have a slightly smaller diameter than the middle one. Note the irregularity of the inner row: at the front, slightly more towards the medial side, the row is almost non-existent. Irregularity is also seen with the transverse bundles, especially at the heel (askew). The sole is damaged at the attachment of the pre-straps, suggesting these were detached by force.

FIGURE I

FIGURE 12
Sewn Sandal, MM 30877. Detail of the sewing seen from dorsal. Compare with figure 10A, which is less tightly sewn, and figure 14A in which the sewing is even tighter and more regular. Photograph by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Figures 11-12;
Inventory Number MM 30877;
Additional Number J.6 = Gayer Anderson No.;
Date First Intermediate Period to New Kingdom;
Type Sewn Sandal Type A;
Materials Halfa grass, palm leaf (see introduction);
Measurements Length: 305.0;
Width heel: 92.8;
Width waist: 91.8;
Width front: 123.8;
Thickness sole: 9.3;
Diameter transverse bundle: 8.4;
Width triple edge: 20.5;
Width sewing strips: 4.0;
Bibliography Gourlay (1981a: 62; 1981b: 56);
Veldmeijer (2009a; 2010a).
CATALOGUE NO 5

DESCRIPTION
Incomplete and fragile piece of sole, meant for the right foot, which lack the heel part as well as the straps. Further damage is visible at the lateral edge, lacking part of the sewing strips. The remaining part consists of 25 transverse bundles. The sewing is very fine in terms of regularity as well as the width of the strips of palm leaf that was used. The triple edge consists of a wider bundle as centre and a bundle with smaller diameter at either side. The sole shows a much more distinct shape and can even be referred to as swayed. The notch at the medial edge is due to damage, rather than a designed feature.

FIGURE 13

FIGURE 14

Figures 13-14;
Inventory Number MM 30878;
Additional Number J.7 = Gayer Anderson No.;
Date First Intermediate Period to New Kingdom;
Type Sewn Sandal Type A;
Materials Halfa grass, palm leaf (see introduction);
Measurements Length: 187.0;
Width back: 75.5;
Width front: 96.5;
Thickness sole: 7.5;
Diameter transverse bundle: 6.2;
Width triple edge: 13.6;
Width sewing strips: 1.8;
Remarks Sample taken for material identification;
CATALOGUE NO 6

DESCRIPTION
Well preserved sole, meant for the left foot, consisting of 16, fairly wide transverse bundles, with an additional narrow one at either end. Swayed sole. The sole shows some damage of the sewing strips of the medial front edge. Sewing fairly coarse. The triple edge is wide: the inner but especially the outer row, has a (slightly) smaller diameter than the middle one. Irregularity of sewing is seen with the transverse bundles, especially at the heel (slightly askew). Note that the lateral pre-strap is secured to the middle row; usually, as also seen at the left edge, this is done at the outermost row. Remarkably, there is no slit for the reception of the front strap, suggesting the sandal was never used. However, the broken off pre-strap suggests otherwise.

FIGURE 15

Figures 15;
Inventory Number MM 30874;
Additional Number J.3 = Gayer Anderson No.;
Date First Intermediate Period to New Kingdom;
Type Sewn Sandal Type A;
Materials Halfa grass, palm leaf (see introduction);
Measurements Length: 345.0;
Width heel: 104.4;
Width waist: 103.5;
Width front: 130.3;
Thickness sole: 10.5;
Diameter transverse bundle: 17.0;
Width triple edge: 30.5;
Width sewing strips: 11.2;
Remarks Sample taken for material identification;
Bibliography Gourlay (1981a: 62; 1981b: 56);
Veldmeijer (2009a; 2010a).
CATALOGUE NO 7

DESCRIPTION
Well-made and preserved left sole, consisting of 19 transverse bundles, with, additionally, two narrow ones at either end. The sole is clearly swayed due to the near-absence of curvature of the medial edge and the smoothly convex running lateral edge. The sewing is very regular and does not show any gaps in between them, nor between the transverse bundles (cf. MM 30874, Cat. No. 6). Nothing but the attachment areas remain of the straps.

FIGURE 16

<table>
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<td>Additional Number</td>
<td>E.S. 128l;</td>
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<tr>
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<tr>
<td>Type</td>
<td>Sewn Sandal A Type;</td>
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<tr>
<td>Materials</td>
<td>Halfa grass, palm leaf (see introduction);</td>
</tr>
<tr>
<td>Measurements</td>
<td>Length: 283.0; Width heel: 91.3; Width waist: 89.6; Width front: 118.5; Thickness sole: 7.2; Diameter transverse bundle: 10.0; Width triple edge: 21.2; Width sewing strips: 6.7;</td>
</tr>
<tr>
<td>Remarks</td>
<td>Sample taken for material identification;</td>
</tr>
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</table>
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. Sewn-Edge Plaited Sandals have one thing in common: the sole consists entirely of plaited fabric or most of the sole layers do. The variety of all other features within this category is large. Usually, the plaiting is ‘over one, under one’ but occasionally the design is more complicated (see Veldmeijer, 2010b; cf. Veldmeijer, 2008/2009; figure 17). 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 presented above. The back straps are attached to this edge (figure 18). However, it differs from Plain Plaited Sandals (Veldmeijer, 2008/2009), because these sandals consist of a folded fabric without a sewn edge (figure 19).

The most common strap complex 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 18). The front strap is attached with its cladding looped at 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 a slit in the width of the back strap. The front strap is inserted through all sole layers, 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 rather than a crown sinnet (in contrast to Sewn Sandals, cf. Veldmeijer, 2009a).

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-Medina too, but no species is mentioned. Papyrus might be present, certainly in those with a Sewn Sandal strap complex as well as the braids that are sometimes added to the ventral surface of the treadsole (not represented by the collection). Haddi & Hamdy (2011: 1052) identified the material of a sandal as solely Hyphaene thebaica, dom palm. Conclusions regarding the exact materials (and species) of the Stockholm collection is pending identification of the samples.

FIGURE 17
Detail of the plaited insole and sewn edge in Sewn-Edge Plaited Sandals. Photograph by André J. Veldmeijer/Erno Endenburg. Courtesy of the Museum of Fine Arts, Boston.

FIGURE 18
Detail of the attachment of the back strap to the edge. Photograph by André J. Veldmeijer. Courtesy of the Ashmolean Museum Oxford.

FIGURE 19
Plain Plaited Sandal from Qasr Ibrim. These simple, but very effective sandals have not been used before late Christian Times. Photograph by André J. Veldmeijer. Courtesy of the Egypt Exploration Society.
CATALOGUE NO 8

DESCRIPTION
Well preserved pair of sandals, although some damage occurs. The left one is near-complete and only lack the tip of the curled toe. The right one, however, lack the front strap as well as the tip of the curled toe. There is no damage visible except for some damage at the insert of the front strap through the sole, which might have been caused by wear.

FIGURE 20
Sewn-Edge Plaited Sandal, MM 30873. Overviews. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal; E) Medial view of left sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Figures 20;
Inventory Number MM 30873;
Additional Number J.2 = Gayer Anderson No.;
Date New Kingdom;
Type Sewn-Edge Plaited Sandal, Type B, Variant 1;
Materials Palm leaf (see introduction);
Measurements Left:
Length: 375.0;
Width heel: 96.5;
Width waist (= about halfway length): 103.8;
Width front: 108.5;
Thickness sole: 12.0;
Width strips insole: 9.6-20.3;
Width strips treadsole: 25.2;
Diameter back strap: 7.7 x 8.3;
Diameter front strap: 7.7 x 7.4;
Width triple edge: 10.3;
Right:
Length: 355.0;
Width heel: 95.8;
Width waist (= about halfway length): 106.0;
Width front: 108.5;
Thickness sole: 12.5;
Width strips insole: 11.5-18.3;
Width strips treadsole: 27.7;
Diameter back strap: 8.2 x 7.5;
Width triple edge: 11.0;
Remarks Right: The medial strap attachment is glued. Sample taken for material identification;
Bibliography Gourlay (1981a: 56-61, 63-64; 1981b: 45-59);
Veldmeijer (2010b).
CATALOGUE NO 9

DESCRIPTION
Near-complete left sandal with slightly damaged edge (lateral side at the front). The ventral surface shows fibrous spots, which are signs of wear due to use. At the heel, some dirt still adheres to the ventral surface. The discoloration of the dorsal surface might be due to the foot of the owner.

FIGURE 21

Figures 21;

Inventory Number MM 30876;

Additional Number J.5 = Gayer Anderson No.;

Date New Kingdom;

Type Sewn-Edge Plaited Sandal Type B, Variant 1;

Materials Palm leaf (see introduction);

Measurements Length: 340.0;
Width heel: 87.6;
Width waist (= about halfway length): 100.2;
Width front: 106.8;
Thickness sole: 9.9;
Width strips insole: 13.1-21.7;
Width strips treadsole: 23.4;
Width triple edge: 12.6;

Remarks Sample taken for material identification;

DESCRIPTION
Near-complete left sandal. The tip of the sole lacks as well as the front strap. The back strap is still in situ but incomplete, lacking most of the cladding. The dorsal surface is dirty due to use; the ventral surface still has dirt adhering to it and large parts of the treadsole are worn away. Note the slight deviating shape of the sole at the lateral edge, which reminds one of the Type A, Variant 2 sandal (Veldmeijer, 2010b: 80-81).

FIGURE 22

CATALOGUE NO 10

Figures 22;
Inventory Number MM 30875;
Additional Number J.4 = Gayer Anderson No.;
Date New Kingdom;
Type Sewn-Edge Plaited Sandal Type B, Variant 1;
Materials Palm leaf (see introduction);
Measurements
Length: 307.0;
Width heel: 96.3;
Width waist (= about halfway length): 106.8;
Width front: 115.2;
Thickness sole: 7.8;
Width strips insole: 8.9-17.0;
Width strips treadsole: 26.4;
Width triple edge: 11.8;
Remarks Taken sample for material identification;
Bibliography Gourlay (1981a: 58-61, 63-64; 1981b: 45-59);
Veldmeijer (2010b).
DESCRIPTION

The basis of this much worn left sandal is a Sewn-Edge Plaited Sandal (cf. Veldmeijer, 2010b). However, the insole (there are three sole layers in total) is given extra attention to enhance its aesthetics. The front and back of the insole consists of sewn fabric (see section Sewn Sandals above). The cores are very thin, due to which the sewing strips, not wrapping much material, are split quite far due to the next row of stitching. It does give, however, a different appearance than the standard sewing (cf. with the Sewn Sandals described previously). The centre part, however, is a woven fabric, much comparable to the outer layer of uppers in some fibre Open Shoes (cf. Veldmeijer, 2009b). Nothing is left of the straps except for the crown sinnet at the ventral surface that kept the front strap from slipping through. This knot is made of red leather, suggesting the sandal had leather straps — this would have been extraordinary as only one other fibre sandal with leather straps has been registered thus far (Veldmeijer, 2013b). Note the strip at the edge of the front part.

Although the manufacturing techniques that are used in this sandal are very common in sandals, the combination as seen in MM 30879 for aesthetic reasons is rather unique: only one other example is known. Pair of sandals EA 4456 (figure 25), housed in the British Museum London, has a rounded heel. Towards the front, the width increases but the lateral edge curves more distinctly towards the extended toe. Thus the sole is swayed. An extraordinary feature of this pair is the papyrus straps that are characteristic of Sewn Sandals (Veldmeijer, 2009a: 557-559; 2010a: 44-46); BM 4456 is a rare exception of another sandal with such straps (together with several examples of Sewn-Edge Plaited sandals, see Veldmeijer, 2010b). Note the small palm leaf stick inserted in the knotting of the front strap cladding, possibly done to tighten the wrapping. The treadsole is largely missing but remnants show it is of the usual construction for Sewn-Edge Plaited sandals. Remarkably, beneath this treadsole, sewn fabric adheres at the front and back, which would not have been visible when the sandal was being used. Moreover, since on top of it is a plaited fabric, we can exclude that it is the same layer as the insole: it is a separate inserted piece. Possibly, there is another layer between the plaited midsole and the insole, either a true sole or a filling. Stitches of a soft fibre (most probably flax) $S_2[Z_2]$ are added lengthwise down the centre, securing the midsole sewn fabric. Comparable stitches are also visible at the edge of the sandal.

It is tempting to suggest that the sandals were made by the same sandal maker or workshop, but this cannot be proven for various reasons, among which the lack of any provenance of them. The website of the British Museum suggests a date to the 26th Dynasty. Sewn-Edge Plaited Sandals and Sewn Sandal are firmly dated to the New Kingdom (Veldmeijer, 2009a; 2010a; 2010b); Sewn Sandals, however, did already occur in the 11th Dynasty, as suggested by the pair in the Allard Pierson Museum in Amsterdam. In due course, the length of the tip of sandals (and open shoes) increased leading at some point up to the backstraps. This happened especially with Sewn-Edge Plaited Sandals and the open shoes based on these but not with Sewn Sandals (note that no shoes are registered that are based on Sewn Sandals except for the extraordinary imitation open shoes from the tomb of Tutankhamun (Veldmeijer, 2010a; see text figures 1 & 15), which did not have had such a development. Thus, indeed, a date later in the New Kingdom seems safe to suggest but this could equally be late 19th Dynasty or later.
### FIGURE 23

**Sewn-Edge Plaited Sandal, MM 30879. Overviews.** A) Dorsal view; B) Ventral view. Note the worn surfaces due to use. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

### FIGURE 24

**Sewn-Edge Plaited Sandal, MM 30879. Details.** A) Close-up of the insole, showing the different techniques for aesthetic reasons; B) Detail of the junction between the different parts of the insole; C) Detail of the sewing; D) The red leather crown sinnet, which secured the front strap at the central surface of the treadsole, is the only remnant of the lost front strap. It suggests that, uniquely, the straps were made entirely, or perhaps only the cladding, from leather. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

### FIGURE 25


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<tr>
<td>Diameter back straps</td>
<td>11.7-30.0</td>
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**Remarks** Sample taken for material identification;

**Bibliography** Cf. Gourlay (1981a: 58-64, 63-64; 1981b: 45-59); Veldmeijer (2009a; b; 2010a).
DESCRIPTION

The sandal, meant for the left foot, has a large, backwards curled, extended toe. The visible surface of this toe has added strips, which are secured with back stitching that is made of a narrow strap of leaf. The sole shape is a bit different from the default Variant 4 sandal, as it has a much more pronounced lateral and medial increase of width (the former starting about halfway the length of the sandal, the latter more towards the front). The sole itself consists of three layers: the insole is made of transverse strips; the midsole and treadsole (the latter which is almost lost), are made of plaited fabric. The layers are secured with a sewn edge: lengthwise down the centre, a row of back stitching further secures the layers. The front half has, in addition, a row of running stitching lengthwise down the centre too, but since it is not visible at the dorsal surface of the insole, it is used to secure the mid- and treadsole only.

FIGURE 26

FIGURE 27
Sewn-Edge Plaited Sandal, MM 18231. Details. A) Heel seen from ventral; B) The stitching lengthwise down the centre that secures the sole layers: inset diagram; C) Ventral view of the curled toe part. Note the additional layer included in the sewing. D) The attachment area of the front strap to the back straps; E) The insertion of the back strap through the sole, slightly inwards from the edge proper. Diagram by Andre J. Veldmeijer/Erno Endenburg. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

CATALOGUE NO 12

Inventory Number MM 18231;
Additional Number MME 1961:80;
Date New Kingdom;
Type Sewn-Edge Plaited Sandal, Type B, Variant 4;
Materials Palm leaf; other materials likely (see introduction);
Measurements Length: 345.0 (until start of extension);
Width heel: 72.8;
Width waist: 67.5;
Width front: 83.0–76.0 (lateral increase and medial increase in width respectively);
Thickness sole: 6.8;
Width strips insole: appr. 17.5;
Width strips treadsole: 18.0;
Diameter front strap: 4.6;
Diameter back strap: 3.5;
Remarks Sample taken for material identification;
**FIBRE COMPOSITE SANDALS**

**INTRODUCTION**

Fibre Composite Sandals are relatively simple from a constructional point of view: usually three sole layers (occasionally there are more layers) that are made of strips of vegetable material (palm leaf, papyrus and/or reed; see below), are secured at the edge by sewing with a narrow strip of palm leaf and including cores. This construction is comparable to the construction of the edges described for Sewn Sandals and Sewn-Edge Plaited Sandals discussed previously. However, usually the edge in these categories are made of two or three rows in contrast to the edge in Fibre Composite Sandals, which always consists of one row — the core, however, might consist of several elements, resulting in a thick, strong edge. The strips that make up the insole are orientated transversely, the strips of the midsole lengthwise and the strips of the treadsole again transversely but there are several exceptions to this 'rule' (figure 28). A braid at the ventral surface of the treadsole reinforces the sole (not present in all specimens; MM 19602, Cat. No. 13).

The most frequently registered strap complex (figure 29) can be described as ‘V-shaped’, running from either side of the heel diagonally towards the front, where both are inserted in one hole in the sole. Variants of this construction occur, however. Y-shaped straps are known too but less common and in certain types these are combined with a heel strap. The back straps are secured at the ventral surface of the treadsole by tying the terminal ends into a big, bulky overhand knot. The front strap might be secured in a comparable way or the terminal ends are stitched through the sole several times (see MM 19602, Cat. No. 13).

There are three types of Fibre Composite Sandals on the basis of the shape of the sole: the Wide Type, the Elongated Straight Type (with two variants: Notched and Unnotched) and the Elongated Swayed Type. The reason of classification using the shape of the sole as the main defining trait is because the technological features are comparable in all cases, except for some minor details.

Fibre Composite Sandals are about the most often discussed and published among ancient Egyptian footwear, which is perhaps due to the fact that they are usually interpreted as ‘tomb sandals’, i.e. footwear specifically made for the burial. However, this interpretation seems premature (Veldmeijer, 2013b). Furthermore, the dating of these sandals needs re-evaluation: often Fibre Composite Sandals are dated to Roman Times, but the manufacturing technique is much older, as indicated by finds that are dated to the Old Kingdom (Fiore Marochetti et. al, 2003). However, it cannot be ignored that various types occurred earlier and others later; more provenanced finds are necessary to fine tune dating.

The Fibre Composite Sandals in the Louvre collection (Montembault, 2000: 31, 39-43) are made of date palm leaf (*Phoenix dactylifera*) but it is not clear if all parts are from the date palm. Most likely a variety of materials were in use in each sandal. Identification of examples in the British Museum, London, the Petrie Museum for Egyptian Archaeology, London and the Ägyptisches Museum und Papyrussammlung, Berlin are pending (Cartwright & Veldmeijer).

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*Adapted from Veldmeijer (2013b).*
FIGURE 28
Diagram of the construction of the sole in Fibre Composite Sandals. Drawing by André J. Veldmeijer/Erno Endenburg (adapted from Montembault, 2000: 29). Not to scale.

FIGURE 29
Diagram of the strap types in Fibre Composite Sandals. Most are V-shaped (A) although the Y-shaped construction also occurs regularly (B). The combination of an Y-shaped strap with a heel strap (C) is seen in only one sandal. T-shaped straps have not been registered (D) – these are common in other sandals, such as Sewn Sandals. Drawing by André J. Veldmeijer/Erno Endenburg. Not to scale.
DESCRIPTION

The shape of the sole of this left sandal is comparable to those described elsewhere (Veldmeijer, 2013b) with one exception: the toe is more blunt. Sandals of this type without colourful decoration are registered, although this is far less common than decorated ones. Another interesting detail is the reinforcement stitching (which is decorative as well) inside the edge at the dorsal surface of the sole. Although stitching or applied tiny rods are not uncommon for the same purpose, back stitching is fairly uncommon and has been identified in one other sandal of the Wide Type (Ibidem). Equally uncommon in this type of Fibre Composite Sandal are the type of back and heel strap. The two remnants at either side suggest a construction as seen in a pair of Elongated Straight, Unnotched Sandals in the Metropolitan Museum of Art, New York, Department Ratti (31.8.28a,b; Veldmeijer, 2013b: 95), where the back straps are inserted in the sole and the heel strap, which is an individual element, inserted through the sole next to it. Reinforcement braids at the ventral surface of the treadsole are common in this category of sandals.

FIGURE 30

FIGURE 31
Fibre Composite Sandal, MM 19602. Details. A) The front strap is secured by sewing it through the sole in front of the insertion of the strap proper; B) Remnants of two straps at the back, suggesting the presence (now lost) of a heel strap. Note also the stitching at the edge; see inset figure 30b. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Footnotes:
1 Straps with two insertions at either side of the sole is also seen in Petrie Museum for Egyptian Archaeology UCL UC 28305 and British Museum, London EA 26781.
INTRODUCTION

The category Fibre Open Shoes (figure 33) can be divided in two types (Partial and Full Upper) and four variants (Short Toe and Extended Toe of the Partial Upper Type and the Upright and Flexible Upper of the Full Upper Type). This classification is mainly based on the shape of the upper as well as the presence or absence of an extended toe. Also the shoes from the tomb of Tutankhamun, although highly embellished with semi-precious stones and gold, still are of the (more or less) same shape (compare text figures 1 and 15). The shape of the sole has not been used in classification, because they have, with a few (accidental) exceptions, the same shape. The shoes of the Partial Upper Type has an upper that does not run along the entire edge of the sole, but rather ends at either side of the pointed, upwards curled tip of the toe (figure 34, MM 10127, Cat. No. 14). This type can be further divided in two variants: the short-toed-shoes have a short, slightly upwards curled toe, as the example in the Stockholm collection. The second variant, however, has a large extended toe that curls backwards to the back straps where it is secured together with the front strap, but this variant is not among the material in the Medelhavsmuseet (figure 32). The other type of fibre open shoes has an upper that runs along the entire sandal’s edge but these are also not identified among the collection.

A variety of materials has been identified in various examples of fibre open shoes, such as both date and dom palm leaf and papyrus. As with the other material in the Stockholm collection, samples have been taken to identify the exact materials.
CATALOGUE NO 14

DESCRIPTION
Well preserved right shoe in excellent condition. Slight wear at the ventral surface of the sole.

FIGURE 34
Open Shoe, MM 10127. Overviews. A) Medial view; B) Dorsal view; C) Lateral view; D) Ventral view. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 35
Open Shoe, MM 10127. Details. A) Heel seen from ventral, showing the long stitches (ventral; the stitches at the dorsal side are short) that secures the upper to the sole; B) Attachment of the medial back strap to the sole, going outside of the upper. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Figures 34–35;
Inventory Number MM 10127;
Additional Number E.S.127;
Date New Kingdom;
Type Fibre Open Shoe, Type Partial Upper, Variant Short Toe;
Materials Palm leaf (see introduction);
Measurements
Length: 275.0;
Width heel: 60.1;
Width waist: 65.6;
Width front: 79.1;
Thickness sole: 4.8;
Width strips insole: 13.8;
Width strips treadsole: 15.3;
Height upper (incl. sole): 36.0;
Diameter front strap: 4.5;
Diameter back strap: 4.3;
Remarks Sample taken for material identification;
Bibliography
Veldmeijer (2009b);
Gourlay (1981a: 61-62; 1981b: 55-56);
Hadidi & Hamdy (2011);
INTRODUCTION

Although it is well established that daily footwear was given with the deceased for use in the afterlife, specially made sandals for this purpose did exist too. They differ, however, in the fact that these could not have been used in daily life due to their construction: a wooden sole with pegs inserted in holes which were connected to each other with a strip of vegetable material serving as straps. Due to magic, they could serve as properly functioning footwear as did ordinary sandals in daily life. These sandals were popular in the Old and Middle Kingdom (figure 36); examples from later on are rare. There is, as with daily footwear, quite a variety, especially in shape of the sole, the technology of the straps and the decoration but to date, little work has been done. ³

Montembault (2000) published several examples from the collection of the Louvre and identified three types (with type B sub-divided into variant 1 and 2). A preliminary reference to this typology is made here as the study of various specimens from different collections is currently in progress, which shows that this group of footwear cannot be classified only on the shape of the sole, but should take the straps into consideration too (cf. for example MM 19244 Cat. No. 15 with 18224, Cat. No. 18).

FIGURE 36
Pair of wooden tomb sandals in situ on a coffin. Middle Kingdom. Deir el-Bershah. Courtesy of Dayr al-Barsha Project University of Leuven.

³ Various specimens from different collections, among which is the Egyptian Museum, Cairo, are currently under study by the author.
DESCRIPTION
The left sandal is less well preserved than the right one: it has two holes in the front and is slightly warped. The straps are missing, except for the elements to which the straps would have been attached (see below). The heel is rounded and the waist slightly constricted. The waist is, towards the front, defined by an increase in width, at right angle, which offers room for the strap attachments. Towards the front, the width of the sole continuously increases; the lateral edge slightly more distinct than the medial edge and it also curves slightly more gently towards the big toe area, resulting in a swayed sole. The L-shaped elements (pre-straps) are secured with two wooden pegs through the horizontal part and the sole. The vertical part rises under an angle of about 40 degree. The top has two notches through which the bands would have passed. The wood is coloured white.

FIGURE 37
Pair of Wooden Sandals, MM 19244. Overviews. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal; E) Lateral view of right sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 38
Wooden Sandal, MM 19244. Details. A) Attachment of the pre-strap by means of two little pegs in the right sandal, seen from dorsal; B) As A) but seen from ventral. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

CATALOGUE NO 15

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<tr>
<td>Date</td>
<td>See introduction;</td>
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<tr>
<td>Right: Length: 268.0; Width heel: 67.1; Width waist: 64.8; Width front: 106.2; Thickness sole: 6.9; Length strap attachment: 64.2/64.1; Thickness strap attachment: 14.9/14.5; Height strap attachment (incl. sole): 51.4/48.9;</td>
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**CATALOGUE NO 16**

**DESCRIPTION**
The sandal, meant for the right foot, is fairly well preserved but most of the straps are missing (except a fragment of front strap). The heel is rounded from which the width increases towards the front continuously, ending in a broad, rounded front part. The sandal is painted white with, along the edge, black, painted dots.

**FIGURE 39**

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**Figures** 39;

**Inventory Number** MM 18225;

**Additional Number** MME 1961:74;

**Date** See Introduction;

**Type** Montembault (2000) Type C;

**Materials** Wood;

**Measurements** Length: 242.0;
Width heel: 70.0;
Width front: 92.8;
Thickness sole: 5.9;
Diameter front strap: 6.1x6.2/11.3 x 9.4;
Height front strap: 52.5;

**Remarks** Request for wood identification has been submitted;

**Bibliography** Montembault (2000: 49-54).
DESCRIPTION
The right sandal is better preserved than the left one, which is broken lengthwise through the centre and glued back together. It is also slightly warped in the longitudinal plane. The thin layer of paint is damaged at various places, especially at the crack. The right sandal shows a crack lengthwise down the centre too and at the heel remnants of glue are visible. The heel is rounded with a distinctly constricted waist. From here and towards the front, the width increases, starting with a more or less straight edge. The lateral edge curves towards the big toe area starting about halfway the length of the sandal whereas the medial edge is only slightly convex and curves towards the big toe only, much closer to the front of the sandal. This results in a distinctly swayed sole. Two rectangular holes at either side of the waist indicate the position of the straps (now lost); at the front, an off centre oval hole still contains a fragment of the front strap.

FIGURE 40
Pair of Wooden Sandals, MM 19904 (left) and MM 19905 (right). Overviews. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.
DESCRIPTION
A right sandal in good condition, although at the front the sole is split for a few centimetres. The ventral surface is slightly damaged at the back. Note the cut-like features at this surface and close to the medial edge. The heel is rounded and the waist constricted. Towards the front, the sole expands at right angle to the waist for the placement of the pre-strap: a tapering wooden strut with oval diameter from front to back, which is orientated upwards and backwards. The top has slits for the reception of the band that would have acted as straps, but which is now lost. From this point, the width of the sole increases continuously towards the front almost equally at both sides. The lateral edge, however, increases slightly more and curves towards the big toe area a bit earlier than the medial edge. Thus, the sole is mildly swayed. The front strap consists of a circular wooden strut, expanding in size at all sides towards the top. It points backwards and is slightly bent towards the heel. Here too, the top is incised to accommodate the bands, as seen in the pre-straps. The sandals are painted, but the paint is lost in large areas. No decoration could be observed.

FIGURE 41

CATALOGUE NO 18

| Figures | 41; |
| Inventory Number | MM 18224; |
| Additional Number | MME 1961:73; |
| Date | See Introduction; |
| Type | Not specified; |
| Materials | Wood; |
| Measurements | Length: 236.0; Width heel: 53.4; Width waist: 49.4; Width front: 93.1; Thickness sole: 7.6; Length front strap attachment: 84.2; Diameter front strap attachment: 11.2 x 17.4; Height back strap attachment (incl. sole): 41.6/36.4; Thickness back strap attachment: 9.9/10.0; |
| Remarks | Request for wood identification has been submitted; |
INTRODUCTION

Leather Eared Sandals are, from a technological point of view, simple: the shape of the sole and pre-straps are cut from one sheet of leather. Holes are made in the pre-straps to which simple straps are attached, usually by looping. A hole in the front of the sandal (or two in certain types of Nubian Eared Sandals) accommodates the front strap, which is usually secured with a button at the ventral surface. However, there are some interesting exceptions (see Veldmeijer, 2011a). Egyptian Eared Sandals are usually without any decoration but if decoration is present, it is simple. The sandals are divided into two subcategories (Egyptian Eared Sandals and Nubian Eared Sandals) and various types (see Ibidem: 28).
CATALOGUE NO 19

DESCRIPTION
Fairly well preserved child’s sandal. The straps, however, are less well preserved and suffered from deterioration in several spots. The heel of the rawhide sole is rounded and the waist distinctly constricted. From here, towards the front, the width increases at both sides, although the lateral edge has a more pronounced convex curve towards the big toe area, resulting in a swayed sole. The integrated pre-straps (‘ears’) are fairly long. The back strap, made of much thinner leather, is secured in the usual way: wound around the pre-strap and inserted through the slit in the ear and although lost, without a doubt it turned into a heel strap. The front strap is secured to the back strap by an intricate and decorative weaving of ends. It is made of a folded strip of leather (which is flattened now), the overlap of which seems to have been glued. The strap is secured at the ventral surface of the sole by means of a button: the end of the front strap is coiled. The straps still are faded red in colour, but would have been bright red originally. Note the resemblance in shape with the straps in fibre Sewn Sandals.

FIGURE 42

FIGURE 43
Leather Eared Sandal, MM 18229. Details. A) Clad pre-strap with attachment of the back strap, seen from dorsal; B) As A), but seen from ventral; C) The coiled button to secure the front strap at the ventral surface. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Figures
42-43;

Inventory Number
MM 18229;

Additional Number
MME 1961:78;

Date
New Kingdom;

Type
Egyptian Eared Sandal, Type Swayed Sole, Variant Single Sole Layer;

Materials
Leather, rawhide;

Measurements
Length: 150.0;
Width heel: 39.8;
Width waist: 32.0;
Width front: 57.5;
Thickness sole: 2.0;
Length pre-strap: at least 24.0;
Width (flattened) front strap: 6.9;
Width back strap: at least 15.6;

Remarks
Remnants of package paper at the ventral surface;

Bibliography
Veldmeijer (2011a).
DESCRIPTION

The incomplete left sandal misses various small parts of the medial edge as well as a part of the lateral edge. The remainder is broken in three parts. The edge is curled, suggesting another sole layer or layers. However, since there are no stitch holes visible, the classification in this variant remains uncertain. The pre-strap is cut from the heel part and points sideways and forwards, rather than having been cut from the waist area and pointing backwards. This construction is rare and has been registered with a pair of sandals from Elephantine as well (Veldmeijer, 2011a: 10). The dorsal surface is elaborately decorated with impressed lines: four lines follow the edge. At the front part, the area between these lines, has 10 vertical lines, dividing the area in compartments that are enhanced with diagonal line impressions. At the waist, a set of transverse lines separates the front decoration from a band of diamond pattern, obtained by loosely impressing diagonal lines from left top to right bottom and right top to left bottom. Following onto this are two more sets of transverse lines, alternating with bands of diamonds. As explained by Veldmeijer (2011a: 3) the elaborate decoration, combined with the shape of the sole, clearly indicates a Nubian origin (cf. Williams, 1983). Note the coarse cloth adhering to the ventral surface.

FIGURE 44

FIGURE 45
Leather Eared Sandal, MM 18227. Details. A) Remnant of the front strap in its slit, seen from dorsal; B) Pre-strap with a remnant of the back strap hitched to it; C) Edge and impressed line decoration at the dorsal surface; D) Cloth adhering to the ventral surface (note the remnant of the front strap). Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

CATALOGUE NO 20

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<td>Additional Number</td>
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CATALOGUE NO 21

DESCRIPTION
Badly warped right child’s sandal of white leather. The front strap is integral with the large triangular central element that runs towards the ankle outwards and is tied to the pre-straps. It covers much of the dorsal surface of the foot. Straps like these are not uncommon (British Museum, London EA 26931 is another example) although more often, if straps are more than just strips, these are V-shaped with an (integally cut) front strap (such as Ägyptisches Museum und Papyrussammlung, Berlin AM 20998, 14551 and 10823; British Museum, London EA 36200) but these are the related Leather Composite Sandals rather than eared sandals. Moreover, they are often (elaborately) decorated (see Veldmeijer, 2009c). Triangular straps are mostly registered in small sandals.

FIGURE 46
Pair of Leather Eared Sandals, MM 18233. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Figures 46;
Inventory Number MM 18233;
Additional Number MME 1961:82;
Date New Kingdom;
Type Leather Eared Sandal, Straight Sole Type, Single Sole Layer Variant;
Materials Rawhide;
Measurements
Right:
Length: 132.0;
Width heel: 35.0;
Width waist: 30.6;
Width front: 55.0;
Thickness sole: 2.0;
Length strap: 72.9;
Left:
Length: 120.0;
Width heel: 34.0;
Width waist: 32.6;
Width front: 55.0;
Thickness sole: 1.1;
Length strap: 72.2;
Remarks Possibly, these tiny sandals are dummies, rather than true child’s sandal (see Veldmeijer, In Preparation a);
Bibliography Veldmeijer (2011a).
INTRODUCTION
Leather Composite Sandals are well made sandals, which consists of various sole layers. In most cases the leather is coloured in bright hues (figure 47) and the dorsal surface of the sole is decorated. Usually, the insole is padded in the centre to enhance comfort, but some sandals are without this comfort. Three types are recognised (Veldmeijer, 2009c): Types A-C; only Type B is subdivided into two variants, as explained by Veldmeijer (*Ibidem*: 2): “The sole in Type B, Variant 1 has a rounded heel, constricted waist and a medial edge that runs nearly straight to the pointed toe. As usual, the lateral edge curves gently towards the toe, reaching the largest width at about halfway the total length of the sandal. Thus, a swayed sole is created, the orientation of which is confirmed by the off centre position of the front strap. Only one example of this variant has no padding. The shape of Variant 2 sandals is comparable although the lateral edge is less convex and the medial edge is slightly more curved. This variant, however, differs from Variant 1 in the fact that they have a large, extended, backwards curling toe. The sole is padded in all examples”. The classification “is based on the shape of the sole, because the technological features, though different in detail, are based on the same principle: several layers are stitched together along the perimeter and includes decorative strips at the dorsal surface of the insole” (*Ibidem*: 2).

Only several of the sandals have a possible date and even fewer are also provenanced. The dates clearly points to the later New Kingdom (18th–20th Dynasty). Several fragments were recovered in TT 253, dated to the 18th Dynasty (Tuthmoses IV-Amenhotep III; Strudwick, 1996: 124, 156, 183; see also Schwarz, 2000: Catalogue C, No. 15 [no page numbers]). A more detailed dating of the various types is, as yet, not possible.

LEATHER COMPOSITE SANDALS

FIGURE 47
Artists’ impression of leather composite sandal, based on an example in the Ägyptisches Museum und Papyrussammlung, Berlin. By Mikko H. Kriek.
Incomplete left sandal, lacking the insole almost entirely: remnants, however, are still visible in the edge and the cover of the heel is near-complete. Nothing remains of the straps. The heel is rounded and the waist distinctly constricted. From here, the width increases but mainly at the lateral edge, showing a distinct curvature. More towards the front the width quickly decreases, mainly at the lateral side too, and terminates in a large pointed toe (which would have been curled up- and backwards). The sole consist of a thin insole, two mid-soles and a treadsole. The insole covered padding made of vegetable fibres, remnants of which are still visible. At the edge it is folded over the two mid-soles; the treadsole is attached to it, thus sandwiching the folded part of the insole. The sole layers are secured with interlocking stitching that is done with coarse, fairly thick plied flax thread. Note the remnants of green colour of the insole.

FIGURE 48
Pair of Leather Composite Sandals, MM 19600. Overviews. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 49
Pair of Leather Composite Sandals, MM 19600. Details. A) Detail of the medial edge, showing the torn off pre-straps. Note the interlocking stitching; B) The button that secures the front strap at the ventral surface of the treadsole; C) Diagram of the construction of the various sole layers. Drawing by André J. Veldmeijer/Erno Endenburg. Not to scale. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Inventory Number
MM 19600;

Date
New Kingdom (later 18th-20th Dynasty);

Type
Type B, Variant 1;

Materials
Leather;

Measurements
Left:
Length: 183.0;
Width heel: 40.2;
Width waist: 32.5;
Width front: 51.7;
Thickness sole: 5.5;

Right:
Length: 184.0;
Width heel: 40.8;
Width waist: 37.2;
Width front: 51.1;
Thickness sole: 5.3;
Diameter front strap: 3.0;

Bibliography
Montembault (2000: 106);
CATALOGUE NO 23

DESCRIPTION
Colourful pair of sandals. The heel is rounded and the waist distinctly constricted. From here, the width increases towards the front almost equally until, approximately, the first quarter of the length. Here, the lateral edge continues with a wider curve towards the big toe area; since the medial edge is much straighter and curves at the very tip towards the big toe area, the sole can be seen as swayed. The construction is much comparable to sandals in other collections (Veldmeijer, 2009c: 2-6), except that the treadsole is fairly thin in the Stockholm example. Unfortunately, the red insole is incomplete. A stuffing was present. The two sole layers are secured with a strip of white leather that is folded around the edges and secured with yellowish leather running stitches. These are short, but with large interstitch spaces. It includes a green strip at the dorsal surface of the insole, which is positioned on top of the white edging strip.

FIGURE 50
Pair of Leather Composite Sandals, MM 30880. Overviews. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 51
Pair of Leather Composite Sandals, MM 30880. Details. A) Detail of the enhanced edge, seen from dorsal in the left sandal. Note the fragment of the torn off strap at the right corner; B) Pre-strap, seen from dorsal in the right sandal; C) As B), but seen from central; D) Diagram of the construction of the various sole layers. Drawing by André J. Veldmeijer/Erno Endenburg. Not to scale. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Figures 50-51;
Inventory Number MM 30880;
Additional Number J.13 = Gayer Anderson No.;
Date New Kingdom (later 18th-20th Dynasty);
Type Type A;
Materials Leather;
Measurements Right:
Length: 260.0;
Width heel: 73.8;
Width waist: 56.1;
Thickness sole: 3.8/14.8 (without and with stuffing);
Width green edge strip: 4.9;
Width white edge strip: 8.6;
Width sewing thong: 2.1;
Length pre-strap: 46.1;
Width strap around pre-strap: 2.6;
CATALOGUE NO 24

DESCRIPTION
A right sandal, which is fairly well preserved but showing damage at the medial edge as well as the treadsole. Fragments of the straps are preserved. Clarity about the sole construction is difficult but it probably consists of an insole (green) of which the edges are folded over the edge of one midsole. Ventral to this is attached a white treadsole. The edges of this treadsole have a red strip folded over, but this could be an entire sole layer too. The sole layers are secured with two parallel rows of running stitches following the edge of the sole; the Sz2 stitches are made of sinew(?). The front strap consists of two braids, made of narrow leather thong.

FIGURE 52

FIGURE 53
Leather Composite Sandal, MM 30882. Details. A) The double row of stitches that secures the sole layers, seen from dorsal; B) As A), but seen from ventral; C) View of edge, showing how the layers are composed (compare with E); D) The braided front strap, seen from dorsal; E) Diagram of the construction of the various sole layers. Drawing by André J. Veldmeijer/Erno Endenburg. Not to scale. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

Figures 52-53:
Inventory Number MM 30882;
Additional Number J.15 = Gayer Anderson No.1;
Date New Kingdom (later 18th-20th Dynasty);
Type Type B, Variant 2;
Materials Leather, sinew(?);
Measurements Length: 280.0;
Width heel: 39.7;
Width waist: 38.7;
Width front: 58.5;
Thickness sole: 7.1;
Width front strap total: 7.2;
Diameter pre-strap: 7.6 x 9.0;
Sewing: 4.7-8.1 from edge;
INTRODUCTION
Montembault (2000: 112-113) classifies a pair of toe-shaped sandals to the same Type as sandals such as MM 10137 (Cat. No. 25) because of the diagonal straps. Although beyond the focus of the present work, it should be noted that the toe-shaped sandals are regarded, on the basis of the extraordinary sole shape, as a separate type (see Veldmeijer & Ikram, 2014 for a more exhaustive discussion).

MONTEMBAULT’S (2000) TYPE C, VARIANT 2
DESCRIPTION
Pair of sandals with rounded heel and distinctly constricted waist. From here, the width increases towards the front, after which it decreases again and ends in a centrally positioned point; thus the sole is straight. There are two sole layers, which are secured with running stitches that are made of leather thong. The stitches are small but with large interstitch spaces. The dorsal surface of the insole is enhanced with coarse incised diagonal lines, forming diamonds, within a line that follows the edge of the sole. At the front half, incised lines forming two rectangles divide the decoration over the width of the sandal. In between the attachments of the straps at the back, an incised four-petal flower adorns the sole. The straps consist of two strips of leather that are inserted between the two sole layers at the waist and are secured with the stitching. They run diagonally towards the front and cross each other, above the toes. A circular patch is placed over the section for aesthetic reason; it is attached with a single, leather thong stitch. The ends are cut into a central triangle, flanked by narrow, rectangular extensions. The straps are also enhanced with incised diamonds between lines that run parallel to the edges. The lateral side of the strap in the right sandal is further secured with leather thong.

FIGURE 54
Pair of sandals (Montembault’s, 2000, Type C, Variant 2), MM 10137. Overviews. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 55
Pair of sandals (Montembault’s, 2000, Type C, Variant 2), MM 10137. Details. A) The incised floral motif at the dorsal surface of the left sandal; B) The incised diamond pattern in the left sandal, seen from dorsal; C) The sewing to secure the sole layers in the left sandal, seen from dorsal; D) At one side, the straps in the right sandal are further secured with leather thong stitching (right sandal, seen from ventral). Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

 FIGURES 54-55; MM 10137; E.137; Coptic Period; Leather;

Measurements
Left: Length: 235.0; Width heel: 69.2; Width waist: 50.3; Width front: 77.5; Thickness sole: 4.7; Width strap: 15.5-20.3; Diameter circular patch: 43.1 x 44.4;
Right: Length: 234.0; Width heel: 67.2; Width waist: 51.5; Width front: 78.0; Thickness sole: 4.5;

Bibliography
INTRODUCTION

The AEFP has not classified Coptic footwear yet, due to which Montembault’s (2000) system is used. Mules are soles with uppers that only cover the front part of the foot, which can be in varying degree. In Egypt, this type of footwear develops after the Pharaonic Period (to date, only one pair of mules are known from before, which is based on a Leather Eared Sandal and likely not an original design, Veldmeijer, 2013a). There is a large variety in shape, construction and decoration, varying from examples with an extremely narrow waist to comparable slippers but with large vamp wings. Mules can have a blunt toe, but pointed too. Especially popular is gold foil decoration.

MONTEMBAULT’S (2000) CLASSE III, TYPE A (MULE)
CATALOGUE NO 26

DESCRIPTION
The treadsole consists of relatively thick leather, whereas the insole is made of much thinner, much more flexible leather. Remnants of papyrus suggest a midsole or rather stuffing. The winged upper inserts between the sole layers at the side of the heel, increasing the width of the narrow waist. The red leather of the single piece upper (single layer) is decorated with appliqué leather motifs that are covered in gold foil. One row along the front instep edge consists of a band of pendentive drops. A second row runs, in the centre, against it but its curvature is opposite to the one at the instep edge. These two series are secured with single stitches at the end of the drops. In front of this is a single, large appliqué of gold fold, best described as spades-shaped. Several single stitches attach it to the upper. A separate strip is added to the instep, which is secured with whip stitches. This mule has an exact parallel in the Coptic Museum, Cairo (Veldmeijer & Ikram, 2014), but which is far less complete.

FIGURE 56

FIGURE 57

Figures 56-57;

Inventory Number MM 18232;
Additional Number MME 1961:81;
Date Coptic Period;
Type Mule;
Materials Leather, papyrus(?)
Measurements Length: 235.0;
Width heel: 50.4;
Width waist: 38.2;
Width front: 75.5;
Thickness sole: 5.0 (at heel);
Length vamp: 90.0;
Remarks Written on a carton at the ventral surface of the treadsole, besides the numbers (thus the sole could not be studied): "Köpt i (Boulaq), Gizeh museet, Kairo, Jan 1890, för 10 fr, Romersk sko" (English: "Bought in (Boulaq), the Gizeh Museum, Cairo, January 1890, for 10 francs, Roman shoe"). In addition ‘10’ in pencil;

INTRODUCTION

Leather closed shoes were known in Pharaonic Egypt, but these were not very common, with only a few different types. During and especially after the Roman Period, closed shoes were more common, with ever increasing variety in shapes, techniques and decoration. It became custom to decorate shoes with appliqué (often in combination with gold foil), but also colourful tassels and embroidery can often been seen. The majority of the shoes, however, are still turnshoes: shoes that have been made inside out and, when finished, turned ‘outside’ in. The ongoing nature of the AEFP means that still much footwear awaits study. The Coptic material is particularly challenging as so little work has been done on stratified sites. In this respect, the work of Smalley (2012) is of interest as she tries to refine dating through decoration but her work is preliminary and thus of little use here. Montembault (2000) bases the typology on technological details. Classifying MM 30886 would mean a revision of existing typologies, for which the present work is not the proper place, hence the tentative classification to Montembault’s (2000) until study of more provenanced material is finalised (cf. Veldmeijer, 2013c: 74-144; In Preparation a; Veldmeijer & Ikram, 2014).
Well preserved leather child’s shoe. The sole has a rounded heel, slightly constricted waist from which, towards the front, the width increases, ending in a centrally positioned point at the front. Thus, the sole is straight. At the heel there is a partial midsole as reinforcement. At one side of the front half of the shoe there is also a partial midsole, but it does not seem to run all the way to the other side. However, visibility is obscured at the other side. The upper consists of one piece, which is closed with a back seam, including a passepoil (the extension of the red, lengthwise folded edge binding that runs along the entire instep, secured with whip stitching). At the heel, the height of the upper increases suddenly and distinctly. The top of this heel extension expands sidewardly, whereas in the centre, there is a notch, resulting in a more or less heart-shaped upper part of this heel extension. The instep edge of the front part of the upper, ‘vamp’, has an oval extension pointing into the instep. The ‘vamp’ is decorated with X-shaped stitching transversely and lengthwise down the centre.

**CATALOGUE NO 27**

**DESCRIPTION**

Well preserved leather child’s shoe. The sole has a rounded heel, slightly constricted waist from which, towards the front, the width increases, ending in a centrally positioned point at the front. Thus, the sole is straight. At the heel there is a partial midsole as reinforcement. At one side of the front half of the shoe there is also a partial midsole, but it does not seem to run all the way to the other side. However, visibility is obscured at the other side. The upper consists of one piece, which is closed with a back seam, including a passepoil (the extension of the red, lengthwise folded edge binding that runs along the entire instep, secured with whip stitching). At the heel, the height of the upper increases suddenly and distinctly. The top of this heel extension expands sidewardly, whereas in the centre, there is a notch, resulting in a more or less heart-shaped upper part of this heel extension. The instep edge of the front part of the upper, ‘vamp’, has an oval extension pointing into the instep. The ‘vamp’ is decorated with X-shaped stitching transversely and lengthwise down the centre.

**FIGURE 58**


**FIGURE 59**

Leather Shoe, MM 30886. Details. A, B) Diagram showing the construction of the sole and upper, the edge binding and cutting pattern. Drawings by André J. Veldmeijer/Erno Endenburg. Not to scale; C) The vamp extension with red edge binding; D) The heel, showing the passepoil; E) The decorative stitching at the vamp, dorsal view. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.
LEATHER SANDAL: INDEPENDENT PRE-STRAP, MULTI-LAYER SOLE

INTRODUCTION
Sandals with pre-straps that are separate elements and pulled through slits in the sole are most common in the archaeological record from Post-Pharaonic times onwards and continued to occur until fairly recently; they are also very common, for example, in the Ottoman layers from Qasr Ibrim. Individual straps that insert in slits in the sole is a post-Roman development: Romans were used to let the pre-strap emerge from the sides of the sandal (Veldmeijer, 2011b: 39; figure 60). There is a large variety in shape, layout of especially the front strap, as well as decoration (cf. Veldmeijer, 2013a: 47-64; Veldmeijer & Ikram, 2014). A full typology has not yet been established by the AEFP; only a classification of comparable sandals from Ottoman layers from Qasr Ibrim has been done thus far (Veldmeijer, 2013a) but these exclude elaborately decorated sandals as included in the present work. However, a more exhaustive typology and discussion will be presented elsewhere (Veldmeijer, In Preparation b).

FIGURE 60
Individual straps that insert in slits in the sole is an indigenous development: Romans were used to let the pre-strap emerge from the sides of the sandal. Drawing by André J. Veldmeijer/Erno Endenburg. Not to scale.
CATALOGUE NO 28

DESCRIPTION
A right sandal with a rounded heel and distinctly constricted waist. From here, the width towards the front increases, ending in a tapering, rounded toe. The lateral edge is slightly more bulbous, resulting in a mildly swayed sole. The straps have the usual configuration; the front strap inserts in two transverse slits one behind the other in the insole, but does not go through the treadsole. Thus, it is sandwiched between the two sole layers. The end, sticking out of the frontmost slit, is tied into a Z-overhand knot to prevent it from slipping through. The dorsal surface of the insole is decorated with rows of impressed motifs following the edge of the sole. A row lengthwise down the centre is added as well as one motif flanking the centre line at the front part. Most likely, the motifs are circles but they are unclear due to use of the sandal.

FIGURE 61

FIGURE 61

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<td>Type</td>
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CARTONNAGE TOMB SANDALS

INTRODUCTION
The lack of research of cartonnage tomb sandals prohibits a detailed classification.
**CATALOGUE NO 29**

**DESCRIPTION**
Note bulbs at edge as decoration (edge in gold foil).

**FIGURE 62**

**FIGURE 63**
Cartonnage Tomb Sandal, MM 30881. Details. A) Cut, showing the layers of cloth. Seen from dorsal; B) The gilded edge has circular motifs in high relief. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

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<td>Additional Number</td>
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<td>Post-Pharaonic;</td>
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DESCRIPTION
Certainly a pair (note gold foil zigzag decoration in both).

FIGURE 64
Pair of cartonnage Tomb Sandals, MM 19601 (left) and MM 19601 (right). Overviews. A) Dorsal view of left sandal; B) Ventral view of left sandal; C) Dorsal view of right sandal; D) Ventral view of right sandal. Photographs by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.

FIGURE 65
Detail of MM 19601. The gilded bands lengthwise down the centre have a zigzag motif in high relief. Photograph by André J. Veldmeijer. Courtesy of the Medelhavsmuseet Stockholm.
INTRODUCTION
One of the most interesting pieces of footwear is, unfortunately, an isolated strap for which the only comparison comes from the tomb of Tutankhamun (text figure 15), where it is part of open shoes that are based on Sewn Sandals. Typically, Fibre Sewn Sandal Type C straps have this shape although these are made from papyrus (text figure 14b; cf. figure 25a, b). Sewn Sandals Type C are seen first in the 18th Dynasty.
CATALOGUE NO 31

DESCRIPTION
Isolated back strap of a shape seen, with a few exceptions, only in Sewn Sandals (see above) and imitations of them (sandals and open shoes alike; see Veldmeijer, 2010a: 86-108 and 109-138 respectively). The two enlarged area’s rests on top of the medio- and laterodorsal sides of the foot, thus flanking the attachment to the front strap on the middle. Towards the attachment area, which secures the strap to the sole, the width decreases again and becomes circular in cross-section: it is wrapped with a leather strip. The core is made of wood and clad with two pieces of leather: the one that covers the back is secured at the front by pulling two short, narrow extensions through slits and pulling them through each other (slit-pull technique). The front piece, however, is secured at the back with a leather thong stitch. At the back, remnants of papyrus intermediate layers are still visible. Possibly, glue was used as well. Towards the attachment of the strap with the sole, now lost, the narrow ends are clad in a stair-step way, also reminiscent of the straps of the same form in Sewn Sandals.

FIGURE 66
BIBLIOGRAPHY


Schwarz, S. 2000. Altägyptisches Lederhandwerk. – Frankfurt am Main, Peter Lange.


