

L2/26-060

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Title: Answer to document L2/26-059:

Corruption of the basic sign list of Egyptian hieroglyphs in Unicode 16, revised

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Status: Individual Contribution

Distribution: L2

Reference: L2/25-172 L2/26-059

Abstract:

Despite the somewhat corrosive tone of L2/75-172, revised in L2/26-059, this document attempts to provide answers and considerations to all topics raised by the document in a positive and constructive manner. Many of the concerns are valid and can be addressed to improve the status of the Egyptian Hieroglyphs. Answers are ordered in the same order as they are presented in L2/26-059.

Unicode 5.2 status

The author provided two links:

<https://www.unicode.org/L2/L2006/06354-n3181-egyptian.pdf>
and <https://www.unicode.org/L2/L2005/05313-Gardiner28-57.pdf>

According to the author claim, in the first document: *“This [Unikemet] database rigorously linked all the hieroglyphs either to publications from the Griffith Institute, mainly the grammar by Alan Gardiner, or to the Hieratische Paläographie of Georg Möller.”* Note that the document corresponds to a very early draft of the encoding proposal and was vastly superseded by <https://www.unicode.org/L2/L2007/07097-n3237-egyptian.pdf>. However, it is still a draft of what was ended up in Unicode 5.2 (8 more characters were added). The database included in page 34-50 was incomplete and was never published as a separate and complete document after publication of Unicode 5.2.

Similarly, the second document was also superseded by a much larger document:

<https://www.unicode.org/L2/L2006/06355-n3182-egyptian-sources.pdf> (158 pages instead of 59 pages) which included Möller and James Allen documents. But, for example, the GITB (Citation from the Griffith Institute Topographical Bibliography) information was not present, and is only described by reference in WG2 n3237.

As common in that time of Unicode encoding process (in 2006-2007), the encoding proposal and supported material were not updated to correspond to what eventually ended up in Unicode 5.2. Therefore, while it was possible to reconstruct the original source and attribute of the encoded characters, it was not a simple task and it did require some serious investigative work. And again, a Unikemet database was never formally created.

Unicode 16.0 status

Again, the author provided two links:

<https://www.unicode.org/Public/UCD/latest/ucd/Unikemet.txt> and
<https://www.unicode.org/L2/L2023/23109-n5215-database.pdf>

The first link is problematic as it links to the current version of Unikemet (at the moment of this writing, it is Unicode v17.) and not to Unicode v16.0. The correct link for Unicode 16.0 is: <https://www.unicode.org/Public/16.0.0/ucd/Unikemet.txt>.

The second link correspond to pdf rendering of a large excel spreadsheet which was used during the development of the extension of the Egyptian Hieroglyphs. The document was superseded by a new version accompanying the formal encoding proposal (N5240R2 at <https://www.unicode.org/wg2/docs/n5240R2-hieroglyphs.pdf>) and is here: <https://www.unicode.org/wg2/docs/n5240-hieroglyphs-DB.pdf>. But again, it is a representation of the same spreadsheet and is not the new Unikemet database created for Unicode v16.0.

The actual formal definition for Unikemet was done through a Unicode Standard Annex (UAX #57 Unicode Egyptian Hieroglyph Database (Unikemet) located here for v16.0: <https://www.unicode.org/reports/tr57/tr57-3.html>, the accompanying data for v16.0 is located here: <https://www.unicode.org/Public/16.0.0/ucd/Unikemet.txt>

Contrarily to the assertion of the author of L2/26-059, both UAX#57 and the Unikemet.txt file have a direct reference to the original Unikemet information through the use of the 'kEH_UniK' field value for example:

```
U+13000      kEH_UniK      A001
```

And in UAX#57 the following text was provided: "The kEH_UniK catalog index was originally defined exclusively for the original Unicode Egyptian Hieroglyph block and is part of the formal character name for these code points." Therefore, saying that "Surprisingly however, none of the information from the original UniKemet was included" is factually incorrect.

Having said that, the author of L2/26-059 expressed valid concerns about stability of glyphs as presented in Unicode v5.2 and 'updated' in Unicode v16.0; and the fact that many representative glyphs were modified which could put in question the identity and stability of characters encoded in Unicode v5.2. Glyph stability is not a Unicode requirement. In fact, glyph updates happen all the time, however such an update should not destabilize encoded character identity. Depending on the repertoire, this can sometimes lead to complex considerations which are beyond the scope of this document (like for example for CJK ideographs).

Overall principles of the comment accommodations

Most of the feedback expressed in L2/26-059 concerns issues related to apparent regression from the Egyptian Hieroglyphs content included in Unicode 5.2. They are typically related to divergent analysis on signs where multiple variants exist and to different decisions about which one of those variants should be included in the block as glyphs and related identity defined using database elements. These database elements can be based on the

original database drafted with Unicode V5.2 or the latest one initiated with Unicode 16.0. Besides these variants, they are just mistakes that correspond to errors made when the 16.0 version was created. When the new extended block was added in Unicode 16.0, its sheer size (3995 new characters) necessitated the use of a new font that encompassed the existing block (1072 characters) and the new characters. Because of that, a new font was used, based on Hieroglyphica, which in many cases used different variants. Further analysis was required to determine whether the new font glyph and associated data were a satisfactory representation of the signs defined in Unicode 5.2. This was analyzed by many experts and resulted in the Unicode V16.0 content. As expected with such complex endeavor, there was no unanimity in the result. And multiple corrections were applied to Unicode V17.0. However, multiple feedback have been provided to both the extended block and the original block. Feedback to the extended block are typically a matter of mostly fixing glyphs so that they match the identity defined by the database, mostly in term of their descriptions. Most of these have been provided through feedback addressed to the author of this document and will be incorporated in Unicode V18.0.

Concerning the main block, the main feedback is represented by L2/26-059 which mostly address concern about main block characters (with a few from the extended block but always by association).

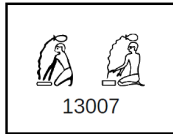
Here is a summary of the principles used in this comment disposition:

- If among variants, only one sign is encoded (typically in the main block), the Gardiner glyph variant should prevail, unless the original V5.2 glyph deviated from the expert understanding of what the Gardiner or the sign meant to represent the glyph of the original identity was supposed to look like.
- When a single variant is encoded, if the original V5.2 glyph is different from the vast majority of other source glyphs for the same sign, it is acceptable to update the glyph.
- If among variants, multiple signs are encoded, the main block variant should be preserved in its identity, including its shape, unless it is thought to be erroneous, or in extreme minority (all other sources pointed to a different glyph).
- While description is an important part of a sign identity it should not prevent association with variants of the sign. This means that some details should be omitted when not present in all signs. This is related to the fact that often elements in complex signs may be simplified and do not include all their details.
- Also important to remember that description is an informative property and can still change.
- In the case of overlay, while it is customary to describe the typical z-ordering of the elements as they are represented in the representative glyph, it is not prescriptive and may vary among sources. Most of these overlaid sequences are 'Legacy' characters (identified by having `KEH_Core` = 'L'). The sequence, when available, is currently described most of the times in order of z-ordering as shown in the current glyphs. In the future, it is expected that the sequence order will use the `KEH_Cat` values. Thus, the glyph shape may not be indicative of the sequence order.

The following sections show analysis concerning 'Apparent Errors' and 'Other noteworthy differences'. All text from L2/26-059 is shown with indentation to separate from the answers (not indented). Sometimes text from the original document has been omitted as not being controversial, nor requiring further answers.


Analysis of 'Apparent Errors'

U+13007

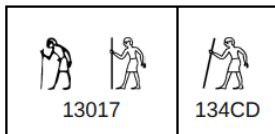


U+13007 KEH_Desc Man, seated, both knees down, with with a vase on its side, with liquid issuing from it (W54), orientated to the front, on his head, with the water ending on a block, both arms forward, extended downwards toward the block.

The "knees down" seems to accurately describe the original form, but not the Unicode 16 form that UniKemet normally describes as "seated on heel". Revert the glyph to the Unicode 5.2 form and make it consistent with the description. In the Database there is "REDRAW (probably on the tips of his toes)", which points in the same direction.

Agreed, glyph changed to: 

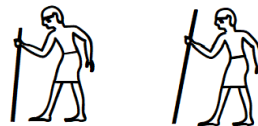
U+13017 U+134CD



U+13017 KEH_Desc Man, standing, with a bend back, right arm forward, holding a staff/stick near the top, left arm hanging beside the body.

U+134CD KEH_Desc Man, standing, with a bend back, right arm forward, holding a staff/stick near the top, with the staff at an backwards angle, left arm hanging beside the body.

The staff in the original shape of U+13017 already had a slight backward angle, unlike the Unicode 16 form, where the staff is perfectly vertical. This has been solved in Unicode 17 by redrawing U+13017 to have the staff at a backward angle, like in the original shape. But note that then U+13017 and U+134CD will differ by no more than the exact degree of the angle, which seems an inappropriately small graphical distinction for the purposes of Unicode.

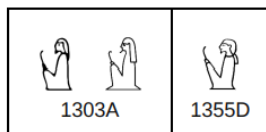


As noted above, this was partially addressed in V17.0 as follows: 13017 and 134CD The body is more slanted forward for U+13017 which is related to old age while U+134CD is related to 'wisdom'. For V18.0, the



body in U+13017 is bent a bit more to create more contrast.

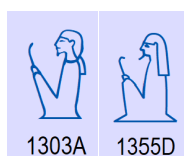
U+1303A U+1355D



U+1303A KEH_Desc Man, seated, both knees up, with covered legs and arms, with a short bushy beard and long wig, holding a stick which angles slightly towards the body.

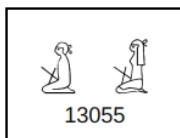
U+1355D KEH_Desc Man, seated, both knees up, with covered legs and arms, with a short bushy beard and short hair/wig, holding a stick which angles slightly towards the body.

Considering the hairstyles, U+1303A was misplaced at U+1355D. This has been solved in Unicode 17 by swapping the shapes and ancillary documentation of U+1303A and U+1355D from Unicode 16.



Addressed in v17.0 as follows: and related data.

U+13055



U+13055 KEH_Desc Woman, seated, both knees down, with long hair and a band of cloth around the head, bound at the back, with two sticks forming a cross-like structure over the legs.

In the original shape, the hair is not long. The Database has "Nederhof example is a different sign though [...]". Different from what? Also, it is not my example, it is *the* example that was *the* justification for introducing this code point in Unicode 5.2 in the first place. The only ground truth in determining what a code point should stand for is the original UniKemet database used to compile the Unicode 5.2 basic list. See p. 34 of: <https://www.unicode.org/L2/L2006/06354-n3181-egyptian.pdf>

It defines B005A as the sign in GITB 804-013-500: <http://www.griffith.ox.ac.uk/gri/8rel100.pdf> In the transcription the hair is definitely not long. Unless one argues that the mentioned tomb relief was misread, and no one has argued that so far, the hair should be short in the code charts. In fact, the Database confirms that the sign in Page-Gasser & Wiese (1997) has "short hair". One could argue that "no female features" might be a reason to adjust the glyph with regard to the original, but since there is no doubt the sign represents a female, no one should care to what extent the "female features" are accentuated in the glyph.

To be clear, I suspect the length of the hair is not part of the character identity, in which case the description could omit mention of the length of the hair and leave it to the font to decide. But if the Database now argues there are two different signs, then the question which of those two signs is the one that is represented by U+13055 is unambiguously answered by the original UniKemet database.

Removed 'with long hair' from description and redrawn:



U+13057



U+13057 KEH_Desc Woman, seated, both knees up, with covered legs and arms, with long hair, wearing a diadem, holding a flower which curves forward, with the flower orientated downwards.


For U+13057, there was a uraeus in the original, now there is not. The Database motivates this by asserting that the uraeus was a mistake because it is not in Gardiner's source (Ann 42, 479), from the tomb of Kheruef. However, the reason why no uraeus is visible in that publication is simply because the font used therein is too coarse to see such details: <https://archive.org/details/ASAE-42-1943/page/n251/mode/2up>.

If we look at the corresponding facsimile in Plate 56 of the following publication we do see the uraeus: <https://isac.uchicago.edu/sites/default/files/uploads/shared/docs/oip102.pdf>. This sign in the cartouche of queen Tiye consistently has the uraeus in that same tomb. See also Plates 9, 10, 24, 26, 42, 49, 51, 57, 66. So the Database is incorrect where it says "Gardiner added an uraeus, the token his sign is based on (which is the one encoded in TSL) does not actually have the uraeus, so the addition is erroneous to begin with". The uraeus wasn't added by Gardiner, it has always been there. As to the TSL: <https://thotsignlist.org/mysign?id=1197>. I find one token for queen Tiye (TSL_3_22183), but it is not the one that Gardiner refers to, and with the blurry photo of this eroded inscription, one can debate whether traces of a uraeus might be visible. It appears to be a case of both confirmation bias and circular reasoning to take a single token for queen Tiye, after overlooking a dozen others, classify and transcribe it in the TSL as not having a uraeus because one cannot make out a uraeus in that single photo, and then to refer to the TSL as evidence that the sign does not have a uraeus.

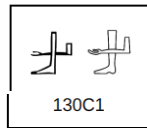
Especially when it comes to glyphs that have already been used for 15 years or more in encodings, fonts, tools, databases, and teaching materials, and where severe disruption is caused by any changes, the bar should be far higher. There should be more thorough analysis, documentation and justification. And above all, there should be more transparency. The default should be to leave things as they are unless there are clearly articulated and convincing reasons to make changes.

The uraeus suggests royalty (personal communication with Peter Dils), and so the change of the glyph affected an important clue to the interpretation of the sign (Gardiner has "Det. of names of queens").

Tough case, because most experts still think that the Gardiner glyph (with uraeus) is a mistake, and is not represented as such in HG, JSesh and more importantly in TSL. Because the sign corresponding to B7 is only encoded once, it is possible to preserve ambiguity for the sign to allow representation with or without uraeus. Added to this with the current function saying 'Classifier female royalty' it leaves a serious hint that this is not just a

woman but rather a queen. Based on this the glyph is changed to , and the description changed from 'Woman' to 'Woman or queen'.

U+130C1

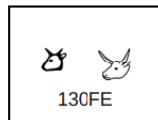


U+130C1 kEH_Desc A forearm, with the palm of the hand facing upwards (D36) written over a human foot and lower leg (D58).

These are arguably only insignificant graphical variants of the same thing, but unless one can argue that one variant is real and the other variant is not real (never occurs), one should revert to the original Unicode 5.2 variant, and change description and image accordingly. Incidentally, both forms exist in GEG, and are in fact found in the same line (top line of p. 458). In 2005-2009, there were discussions about which of the two was the most appropriate form for Unicode, and in consultation with Egyptologists it was decided to opt for the form in Unicode 5.2. Whether or not one agrees now this was the right decision at the time should be irrelevant. Code charts should not be changed without a compelling reason.

In this case most of the glyphs for it have it the other way around (as described above), including the original glyph from Gardiner (D59) which was not represented as such in Unicode 5.2. No change.

U+130FE



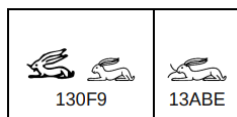
U+130FE kEH_Desc The head of a bovid (ox) with outwards curving horns.

The description suggests outwards curving horns, unlike the Unicode 5.2 and Unicode 16 shapes. Some of the tokens in the TSL have outwards curving horns and some have inwards curving horns:
<https://thotsignlist.org/mysign?id=2871>

Does it make sense to specify the curvature in the description when the curvature is so variable in actual inscriptions? I propose to change the description to just have "with horns"?

While there are variants of the original sign F1, most prefer neutral or outwards curving (as in Unicode 16.0, especially given that there is a variant with inwards curving (like the HG variant) which is not encoded. The current glyph and the description are hinting at a preferred glyph for the sign which is fine.

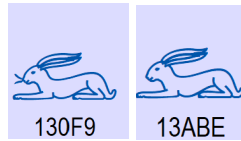
U+130F9 U+13ABE



U+130F9 kEH_Desc A desert hare, lying down.

U+13ABE kEH_Desc A desert hare, lying down, with whiskers.

The original shape of U+130F9 unmistakably had whiskers. This has been solved in Unicode 17 by swapping the shapes and ancillary documentation of U+130F9 and U+13ABE from Unicode 16. (There is no need though to make the length of the whiskers as exaggerated as they are currently in U+13ABE).



Addressed in v17.0 as follows: 130F9 13ABE with descriptions swapped.

U+130FA

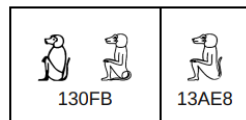


In the original shape, the hare has whiskers. Moreover, the difference between U+130FA and U+130F9 should be in the height, while the width should be roughly the same, i.e. U+130FA is flatter than U+130F9. See Gardiner (1957) for the typographical motivation. Both issues were solved in Unicode 17.



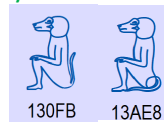
Addressed in v17.0 as follows: 130FA .

U+130FB U+13AE8



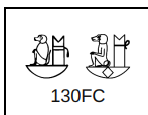
U+130FB KEH_Desc A hamadryas baboon (*Papio hamadryas*), seated, hands on knees, tail folded under the rear. U+13AE8 KEH_Desc A hamadryas baboon (*Papio hamadryas*), seated, hands on knees, tail upwards.

The original shape (tail up) was misplaced at U+13AE8. This has been solved in Unicode 17 by swapping the shapes and ancillary documentation of U+130FB and U+13AE8 from Unicode 16.



Addressed in v17.0 as follows: 130FB 13AE8 with descriptions swapped.

U+130FC



U+130FC KEH_Desc A hamadryas baboon (*Papio hamadryas*), seated, hands on knees, tail folded under the rear (E35), in front of a sheath or receptacle with V shaped indentation at the top, bound at the top with a loop at the backside (V36G); on top of an alabaster basin with a diamond shaped inner marking (W3).

The original shape had the tail up. This has been solved in Unicode 17 by restoring the orientation of the tail. The Database links to p. 53, l. 6 and pl. DCXIX of: <https://www.ifao.egnet.net/uploads/publications/enligne/Temples-Dendara007.pdf>

Note that, first, a sign list is not a token list, and one cannot keep changing the code charts every time a new token is found that has a slightly different graphical feature, and second, it would be very hard to make out the position of the tail in the coarse font of the transcription and in the blurry photo (of the online PDF). I propose removing mention of the tail in the description as overspecific. For many baboon signs in the extended list, the position of the tail is not mentioned either. One trick to be entirely non-committal would be to move the baboon and the "sheath or receptacle" closer together so the tail is hidden altogether.

One remaining issue is that the original shape didn't have the diamond marking. What is the justification for adding the diamond marking? Neither transcription nor photo in the above link show the diamond marking. The Database mentions another token and adds "nor is the diamond shape in the W3 that clear". This suggests to me that there was considerable doubt whether the diamond marking was correct to begin with. It might be safest to revert to the Unicode 5.2 shape entirely and also remove the diamond marking.

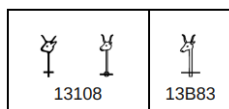


Partially addressed in v17.0 as follows: 130FC . Concerning the diamond, all other sources had it, but at the same time the database mentions that there is no clear evidence of the diamond in the original attestation. Based on that, it is acceptable to remove the diamond from the glyph and adjust the description from 'an alabaster basin with a diamond shaped inner marking (W3)' to 'on top of an alabaster basin or a basket'. Glyph updated to:



. Similar description modified for U+13AF7 which keeps its diamond.

U+13108 U+13B83



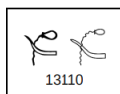
U+13108 KEH_Desc The head and neck of a long-necked horned animal, with a forked end to the neck with a horizontal line over the forked end.

U+13B83 KEH_Desc The head and neck of a long-necked horned animal, with a horizontal line written over the neck, near the bottom.

The original shape was misplaced at U+13B83. The only reasonable solution is to swap shapes and ancillary documentation from Unicode 16. In the Database there is not a shred of an acknowledgement that the shape of U+13108 changed from Unicode 5.2 to Unicode 16, let alone a justification for the change.

Other referenced sources, except Gardiner, use the forked end for F10, but it is ok to swap the glyph and description as requested for Unicode 18.0.

U+13110

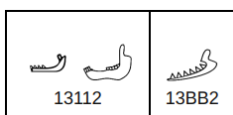


U+13110 KEH_Desc A vase on its side, with liquid issuing from it (W54), written over the horn of a bovid (F16).

Even though these are insignificant graphical variants, code charts should not be changed without a good reason. Unless a compelling case can be made that the horn over the liquid cannot occur in real inscriptions, revert to the Unicode 5.2 form

The Unicode 5.2 glyph for F17 is an anomaly, all sources, including Gardiner, have the liquid written over the horn.

U+13112 U+13BB2



U+13112 KEH_Desc The lower jaw-bone of a bovid (ox).

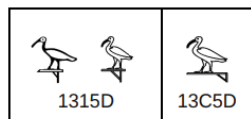
U+13BB2 KEH_Desc A lower jaw-bone of an animal with pointed teeth.

The appearance of U+13112 has changed considerably and one could even argue that U+13BB2 is closer to the original shape than to the new shape; both the original shape and U+13BB2 have a single row of pointed teeth while the new shape of U+13112 has two isolated rows of less pointed teeth. Gardiner (1957) characterizes the sign as "lower jaw-bone of ox", and as far as I know, oxen are not particularly known for having pointed teeth. But does this necessarily mean that the original shape of U+13112 and U+13BB2 differ in what they are meant to represent? Unless there is solid evidence that the original shape of U+13112 was wrong or uncharacteristic, it may be better to revert the shape to something closer to Unicode 5.2. It is then an open question whether the current shape of U+13BB2 deserves its own (core) code point, or whether it is just a duplicate of U+13112.

I don't see the original shape of U+13112 anywhere in the Database, and there doesn't seem to be even a shred of an acknowledgement that the shape changed from Unicode 5.2 to Unicode 16, let alone a justification for the change.

All sources, except Gardiner, use the updated glyph for F19. Other experts wanted to have a separate sign for U+133B2 (source: Dendera X, p. 74,1-2, pl. 65 (col. 62; 64)), also preset in IFAO, HG and JSesh. It does not seem necessary to preserve the original Gardiner glyph as a separate encoded sign.

U+1315D U+13C5D



U+1315D KEH_Desc An African sacred ibis (*Threskiornis aethiopicus*) (G26A), on top of a standard used for carrying religious symbols (R12).

U+13C5D KEH_Desc An African sacred ibis (*Threskiornis aethiopicus*) (G26A), on top of a standard used for the carrying of religious symbols with the vertical stick at the far side (R92A).

The glyphs of U+1315D in Unicode 5.2 and Unicode 16 are virtually the same, and also the glyph at U+13C5D looks very similar. There is only a slight difference in that the vertical beam for U+1315D is almost at the right end and the vertical beam for U+13C5D is perfectly at the right end. The standard with the vertical beam perfectly at the right end is also known as JSesh R92A. Transcription practices don't seem to distinguish between "almost at the right end" and "perfectly at the right end". For example, all of the tokens at: <http://sith.huma-num.fr/karnak/1307> <http://sith.huma-num.fr/karnak/1400> , and <http://sith.huma-num.fr/karnak/1517> have a shape closer to U+13C5D in the photo but a shape closer to U+1315D in the transcription.


After querying whether U+13C5D needs to exist at all next to U+1315D, because they seem to be indistinguishable for all practical purposes, there was the unexpected move to drastically change the glyph of U+1315D by giving it a literal R12 standard as in the description, that is, a standard with the vertical beam roughly in the middle, and objects attached to the left end, and this became the Unicode 17 form. This seems to be a much less common form for ibis-on-standard, even though it is the logo of the Thot Sign List. Most tokens seem to have a plain horizontal beam with attached objects and with the vertical beam perfectly or almost at the right end: <https://thotsignlist.org/mysign?id=3456> .

This change will effectively make encoders use U+13C5D for the common shape that has formerly been at U+1315D from Unicode 5.2 until (and including) Unicode 16. In this case as in other cases, moving or effectively moving glyphs to other code points does nothing but sow chaos and confusion, causing many existing encodings to lose their validity overnight. It would be enough to undermine users' trust in Unicode forever.

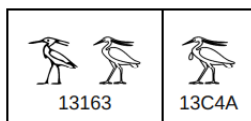
In the case of U+132BC and U+14107 below, the Database seems to hint at a rationale for moving a glyph to a new code point because that glyph might be less frequent than another graphical variant. (I don't follow the reasoning, but let's assume that for now.) Here, it seems to be the exact opposite. The variant with R92A is more frequent by far than the variant with the literal R12, and yet there is supposedly a reason to move it to a new code point? I'm puzzled what one hopes to achieve with this..

Most of the sources have G26 (U+1315D) look like the original Unicode v5.2; some mention the R12 standard even it is simplified (no loop). Also note that the glyph was modified in Unicode V17.0 to show a more detailed

standard:  The best solution is to keep both descriptions as they are but modify the glyph for U+1315D to

look more like the original for the bill, new glyph:  . U+13C5D is unchanged.

U+13163 U+13C4A



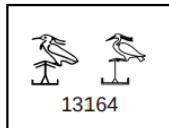
U+13163 KEH_Desc A gray heron (*Ardea cinerea*).

U+13C4A KEH_Desc A gray heron (*Ardea cinerea*) with a lappet.

It is by no more than a few black pixels, but it is unmistakable that the original shape was meant to exhibit a lappet. In other words, the shape of U+13163 was misplaced at U+13C4A. The only reasonable solution is to swap shapes and ancillary documentation from Unicode 16.

The presence of a lappet in the original Gardiner G31 (U+13163) is vestigial at best and is not corroborated by other sources. No change.

U+13164

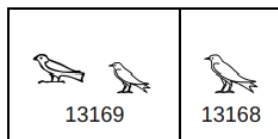


U+13164 KEH_Desc A gray heron (*Ardea cinerea*), legs drawn towards the body, seated on a pole, held upright through ropes (R91).

Again, it is unmistakable that the original shape exhibited a lappet. Ideally, one would revert to Unicode 5.2 and give the shape a lappet. However this case is of lesser importance. The lappet is a low-level palaeographic detail that is of little relevance to Unicode anyway. The description does not need to have "with lappet", and the code point should cover both tokens with lappet and without lappet.

In this case, the Gardiner G32 (U+13164) has clearly a lappet, but no other sources has it, so we'll keep the glyph unchanged.

U+13169 U+13168



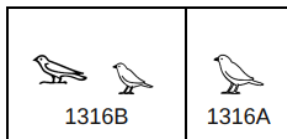
U+13168 KEH_Desc A swallow (*Hirundo rustica savignii*).

The width of U+13169 should be the same as that of U+13168, but the height should be smaller. See Gardiner (1957) for the typographical motivation. This will be corrected in Unicode 17.



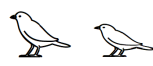
Addressed in v17.0 as follows: 13168 13169 with height and width adjusted.

U+1316A U+1316B



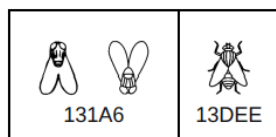
U+1316A KEH_Desc A house sparrow (*Passer domesticus niloticus*).

The width of U+1316B should be the same as that of U+1316A, but the height should be smaller. See Gardiner (1957) for the typographical motivation. This will be corrected in Unicode 17.



Addressed in v17.0 as follows: 1316A 1316B with height and width adjusted.

U+131A6 U+13DEE



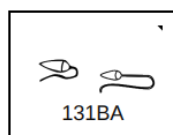
[U+13DEE KEH_Desc A fly.](#)

In 2005-2009, there were protracted discussions about what the most appropriate orientation of U+131A6 was for Unicode, since both orientations occur in GEG (p. 477 versus p. 545), and since the sign was taken from iconography and is not attested in actual running text. In consultation with Egyptologists it was decided to opt for the form in Unicode 5.2, fixed formally by letting UniKemet link the code point to the occurrence on p. 477 as opposed to the occurrence on p. 545. This was motivated by similar signs (like the newly introduced U+13DEE) that have the head up as well. For more information, see pp. 8 and 39 of: <https://www.unicode.org/L2/L2006/06354-n3181-egyptian.pdf>

Whether or not one now agrees this was the right decision at the time, having studied (or not) the arguments laid out by Egyptologists in 2006-2009, all this should be irrelevant. The glyph should not change on a whim relative to what it has been for the past 15 years since Unicode 5.2. If anyone feels the need for the other orientation, a variation selector for rotation can be used. Apropos, the Database has the fly with the head up as well, so it is not even clear to me any of the philologists actually wanted to have this sign rotated relative to the original orientation. In the end, the rotation may be due to clerical error.

That was then in 2009; later in 2023-2024, when the extension was being worked on, the following comment was made concerning that glyph as originally drawn for Unicode 5.2: *Should probably be discarded, as the sign was based on iconography, not actual text, which have [the rotated form]*. The current form is also used by HG and JSesh. No change.

U+131BA




[U+131BA KEH_Desc A lotus bud with a long stalk, folded under itself.](#)

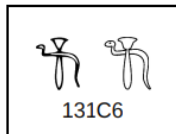
No one should care about the length of the stalk in the glyph. This is a palaeographic detail and insignificant at the level of Unicode. I do object against the Database not even acknowledging that anything was changed, despite the fact that the description above explicitly invalidates the character identity from Unicode 5.2 when the stalk was definitely not long. In particular, there is nothing in the Database that suggests that a short stalk was wrong or atypical and therefore needed to be changed into a long stalk. The original form with the short stalk reappears in a different entry with the comment "Does not seem to be a meaningful variant". Ok, but if the difference between the shapes was not significant, why was there any need for the shape to be changed?

So delete "long" from the description. Ideally one would also make the stalk a little shorter than the Unicode 16 form but it could be a little longer than the Unicode 5.2 form. I'm also reminded that the extended sign list introduced multiple code points U+13C9D and U+13C9F for a falcon on a low cone and a falcon on a high cone. Similarly, separate code points U+13A01 and U+13A02 were introduced for a hand holding a long stick and a hand holding a short stick. Etc. So apparently, it is important how big

something is. But it is apparently not important anymore when it comes to existing code points, and no one thought twice about replacing the short stalk by the long stalk? There seems to be a lack of consistency running through the entire Unicode 16 set.


Considering the folding, it is still a long stalk, and that description is also used by TSL. Given that JSesh and TSL use a shorter version of the 'long' stalk, it is probably ok to make it a bit shorter like . No change in description.

U+131C6

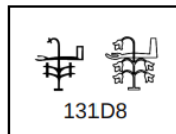


U+131C6 KEH_Desc A cobra in repose (Naja haja, l10), written over a stem of papyrus with a bud (M13).

Revert to the shape from Unicode 5.2. The description in fact already correctly reflects the original shape.


Modified in v18.0 as .

U+131D8

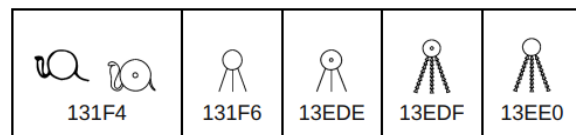


U+131D8 KEH_Desc A forearm, with the palm of the hand facing upwards (D36), written over a desert plant, with four branches, with flowers on every branch, on a horizontal base. (M26).

It is unclear which sign is on top in Unicode 5.2, so fonts have the liberty to interpret this as desired, but at least make sure the shape is consistent with the description, which is currently not the case. The current shape has the plant over the arm, not the arm over the plant. Because the original shape did not fix which sign was on top, I would prefer for the description to leave this underspecified, by using a phrase other than "written over". Perhaps "overlaid with"?

Because TSL already uses that description, just changed the glyph to match description: .

U+131F4 U+131F6 U+13EDE U+13EDF U+13EE0



U+131F4 KEH_Desc The sun within a halo, encircled by a cobra (Naja haja), standing up, with expanded hood (Uraeus).

U+131F6 KEH_Desc The sun, with three beams of sunlight coming from it.

U+13EDE KEH_Desc The sun, within a halo, with three beams of sunlight coming from it.

U+13EDF KEH_Desc The sun, within a halo, with three beams of sunlight coming from it, resembling lines of triangles.

U+13EE0 KEH_Desc The sun, with three beams of sunlight coming from it, resembling lines of triangles.

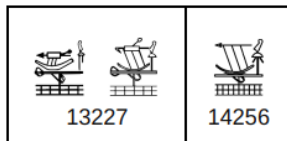
There is no inner circle in the original shape of U+131F4. One may argue this is an insignificant detail. But if one then introduces multiple code points U+131F6 and U+13EDE for the same sign with and without inner circle, and similarly U+13EDF and U+13EE0, then one simultaneously suggests that the inner circle is important and that the inner circle is not important. See also Point 5 of the Encoding Principles, which more often than not are divorced from what was actually done: <https://www.unicode.org/reports/tr57/tr57-4.html#EncodingPrinciples>

In the Database there is not a shred of an acknowledgement that the shape of U+131FA changed from Unicode 5.2 to Unicode 16. The Database does have the shape without inner circle, but in a separate entry, with the comment "Technically the more common form". Then what could possibly be the justification for changing the glyph if the Unicode 16 form is less common than the Unicode 5.2 form?

For U+131F4, after verification, most of the sources use the version with the inner circle (or within a halo). But the mention 'within a halo' should be removed, as there is no demand to separately encode the two versions. This would also be consistent with the other signs including the sun and the cobra where that detail is not called for.

For the sun with beam signs, it is noted that having separate entries is not necessarily consistent with the principles. Note that the descriptions are now using 'inner circle' instead of 'halo' for overall consistency.

U+13227 U+14256




U+13227 KEH_Desc An one-barbed harpoon, with handle, written horizontally (T21), on top of a crescent moon shape, connected by three lines, in front of a feather (H6), angled forwards on top of a standard with a round top, with an short vertical line beside the main pole (R14); on top of a standard used for carrying religious symbols (R12), written on top of a parcel of land with irrigation ditches (N24).

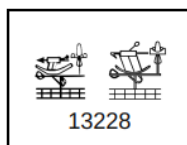
U+14256 KEH_Desc An spear, arrow without fletching or a harpoon without handle, written horizontally, on top of a crescent moon shape, connected by four lines, in front of a feather (H6), angled forwards on top of a standard with a round top, with outwards angled lines coming from the tip of the pole (R14B); on top of a standard used for carrying religious symbols (R12), written on top of a parcel of land with irrigation ditches (N24).

The differences of U+13227 may be insignificant, but it appears to me that most of the description matches the original shape better than the Unicode 16 shape, in particular the orientation of the feather and the "short vertical line". It may be appropriate to revise the glyph, and consult an expert whether the shape is drawn correctly.

It also seems to me that U+14256 is closer to the new shape of U+13227 than the new shape of U+13227 is to the original shape of U+13227. If U+14256 is so fundamentally different that it warranted a new code point, then how can one justify treating the old and new shapes of U+13227 as interchangeable? There seems to be no consistency in any of this.

Redrawn U+13227 to be closer to original  .

U+13228



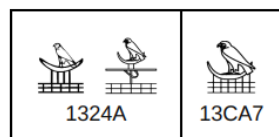
U+13228 KEH_Desc An one-barbed harpoon, with handle, written horizontally (T21), on top of a crescent moon shape, connected by three lines, in front of a spear made into a standard, with a circle on either side of the speartip, with a loop over the standard (Jsesh/Gardiner R15); on top of a standard used for carrying religious symbols (R12), written on top of a parcel of land with irrigation ditches (N24).

I think the description matches the spear better in the original shape than in the Unicode 16 shape. It may be appropriate to revise the glyph, and consult an expert whether the shape is drawn correctly. Ap-ropos, the Database refers to: <http://sith.huma-num.fr/karnak/1585> The spear there is like in the Unicode 5.2 form.




Redrawn U+13228 to be closer to original .

U+1324A U+13CA7

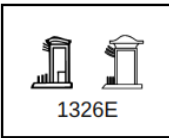


U+13CA7 KEH_Desc A falcon (G5), on top of a moon sickle shaped boat, on top of a sledge that resembles a parcel of land with irrigation ditches (N24).

The original shape of U+1324A was misplaced at U+13CA7. The original and current shapes of U+1324A are not even remotely the same sign. The Database writes "No token of this exact grapheme [the Unicode 16 glyph of U+1324A] could yet be located". This means there was no reason for the sign to even be in Unicode and one should have kept the Unicode 5.2 shape for U+1324A, because that is attested, for example here: <http://sith.huma-num.fr/karnak/1128> (Incidentally, this has a token closer to the original Unicode 5.2 form of U+1324A than to the Unicode 16 form of U+13CA7.) The only reasonable solution is to swap shapes and ancillary documentation from Unicode 16. I would then make U+13CA7 non-core, as it will then get to harbor an unattested shape.

The issue with the current U+1324A was importing NU18A from a font with an incorrect glyph (not HG). This will be fixed with this new glyph  and a new description (U+1324A had none in current database): 'A falcon (G005), on top of a moon sickle shaped boat, on top of a sledge with four vertical lines above a parcel of land with irrigation ditches (N024)'. Function is: 'Logogram (Nemty, 18th nome of Upper Egypt)', Fvalue: nmty. Former glyph for U+1324A is preserved at PUA F1DC4 in the database. Note that U+13CA7 does not have these four vertical lines and is different from NU18A.

U+1326E

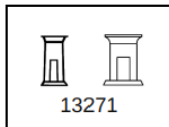


U+1326E KEH_Desc An archaic shrine, seen from the side, with a downwards sloping roof, with upwards curving lines coming from the roof, and short vertical lines in front of the shrine.

The description of the shape of the roof matches the original shape but not the new shape. In the new shape the roof is symmetric, rather than sloping downwards towards the back, as I would understand it.

The 'downwards sloping roof' which could hint at an asymmetrical shape is not present in most source glyphs. Suggest keeping current glyph and removing 'downwards sloping roof' from description.


U+13271



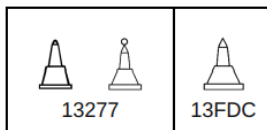
U+13271 KEH_Desc A façade of a shrine with a flat roof, with vertical sides, with a small doorway.

In the original, the sides were more oblique than vertical. In the TSL: <https://thotsignlist.org/my-sign?id=4552> both the normalized glyph and some (but admittedly not all) of the tokens have oblique sides. If the TSL does not provide convincing evidence to motivate changing the sides from oblique to vertical, then I don't think anything else will.

To be clear, we shouldn't even be talking about whether an angle is 90 degrees or 89 degrees. That is not a meaningful distinction for Unicode. The issue is that the UniKemet documentation of the extended list consistently makes a binary distinction whether sides of "building" signs are either vertical or oblique. If anything, the tokens available for U+13271 show that such a binary distinction is an illusion. For any such sign, one will be able to find tokens with slightly different angles, some of which might be almost perfectly 90 degrees, others will be visibly smaller. But by any reasonable measure it is still the same sign.

Addressed by slightly slanting the walls: .

U+13277 U+13FDC



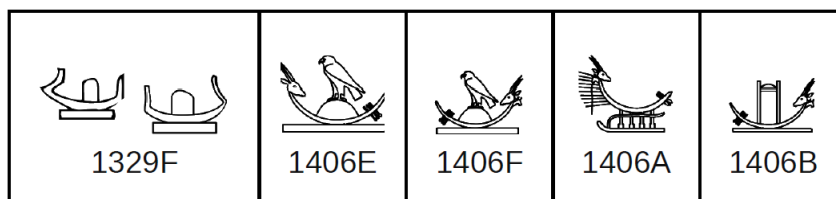
U+13277 KEH_Desc An obelisk of an Old Kingdom sun temple, with an circle (sun disk) on top of the obelisk. U+13FDC KEH_Desc An obelisk of an Old Kingdom sun temple.

The original shape (without circle) was misplaced at U+13FDC. The only reasonable solution is to swap shapes and ancillary documentation from Unicode 16.

The Database has a link to TSL_1_4521_01, where one finds both the shape with circle and the shape without circle. There are two tokens without circle and one token with circle. The only thing this tells us is that the sign occurs both without circle and with circle. It does not in any way tell us that the originally intended shape of U+13277 in Unicode 5.2 should have a circle. The only ground truth in this respect is the original UniKemet, which defines O025A to be the shape that occurs on p. 246 of Gardiner (1931) and on p. 4 of Gardiner (1953) and that very clearly has no circle. Cf. p. 42 of: <https://www.unicode.org/L2/L2006/06354-n3181-egyptian.pdf> and pp. 44 and 49 of: <https://www.unicode.org/L2/L2005/05313-Gardiner28-57.pdf> Gardiner (1931) gives us some indication about the function of the sign: "Det. names of sun-obelisks". But this is consistent with the function "sun temple" listed by the TSL to cover both the circled and the uncircled forms, and so also this offers no justification for changing the shape of U+13277.

Agree to swap both signs and descriptions.

U+1329F U+1406E U1406F 1406A U1406B



U+1406E KEH_Desc A moon-sickle shaped boat with an higher prow than stern, with the head of an antelope (F81) on top of the prow, on top of a rectangle representing water, with a falcon (G5) standing on top of a low cone shape inside the boat/ship, with an oar/rudder at the back.

U+1406F KEH_Desc A moon-sickle shaped boat with an higher stern than prow, with the head of an antelope (F81) on top of the stern, on top of a rectangle representing water, with a falcon (G5) standing on top of a low cone shape inside the boat/ship, with an oar/rudder at the front.

U+1406A KEH_Desc A moon-sickle shaped boat with an higher prow than stern, with a rudder, with the head of an antelope (F81) on top of the prow, facing inwards, with a downwards line with multiple horizontal lines written over it coming from the head, on top of a sledge.

U+1406B KEH_Desc A moon-sickle shaped boat with an higher stern than prow, with the head of an antelope (F81) on top of the stern, on top of a rectangle representing water, with a tall shrine with a round roof, with two vertical lines enclosing the top, on a base, without internal decoration (GID O20D), written inside the boat/ship.

Apparently the position was taken that the original glyph must have been an error because prow and stern are reversed relative to the more common orientation of boats. However, there are several examples of boats in the extended list where the orientation is not as expected either; e.g. U+1406E versus U+1406F and U+1406A versus U+1406B. It seems to happen particularly often in the writing of ḥntj, "sail south", that prow and stern are reversed. It is inconceivable that Gardiner (1928) made a mistake due to being ignorant of the difference between prow and stern, and it is far more likely that he needed this glyph for an inscription where the boat was genuinely oriented as it was in Unicode 5.2.

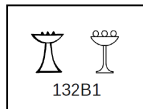
The reversal of boats is also discussed in Section 40 of Fischer's "The Orientation Of Hieroglyphs": <https://archive.org/details/TheOrientationOfHieroglyphs/page/n143/mode/2up>

Now one may take the position that the orientation of boats should be normalized to have the prow always at the left, but then this is inconsistent with what was done elsewhere for the extended list. The

Database has "it probably exists somewhere, but I have no idea where", which rules out that this matter was sufficiently analyzed to justify the disruption that this matter caused..

The mirroring was specifically requested by experts; added a description based on similar signs: 'A boat/ship with a vertical prow and a stern resembling the handle of a sickle (U001), on top of a rectangle resembling water, with an oval with rounded corners in the boat/ship.'

U+132B1



U+132B1 KEH_Desc Three circular items, arranged horizontally, on a one legged table with a bowl-shaped surface.

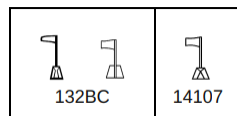
I don't mind the slight change of shape. But the "circular" in the description is overly specific. The Database refers to p. 89, l. 2 of: <https://archive.org/details/MMAF25/page/n69/mode/2up> where admittedly the transcription has round items. But a cursory glance at R2 variants similar to U+132B1 in the TSL:

<https://thotsignlist.org/mysign?id=5320> shows us that the objects are not generally circular. I would even omit the exact number "three", because one will no doubt find tokens with say four items.



For good or bad reasons, the sign also exists with four circular items at U+140D0 140D0 . Most sources show circular objects and it is difficult to be less descriptive. No change.

U+132BC U+14107



U+132BC KEH_Desc A cloth wound on a pole, an emblem of divinity (R8), written over a butchers block, with the pole at the bottom of the block.

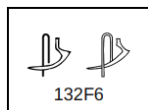
U+14107 KEH_Desc A cloth wound on a pole, an emblem of divinity (R8), written on top of a butchers block (T28).

The original shape of U+132BC was misplaced at U+14107. The only reasonable solution is to swap shapes and ancillary documentation from Unicode 16. There is no justification in the Database for changing the shape of U+132BC other than the comment that Hieroglyphica/JSesh happens to have another shape. There even seems to be a photo in the Database that confirms that the original Unicode 5.2 shape is attested.

...(more justification)


Agree to swap.

U+132F6

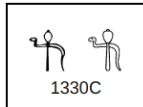


U+132F6 KEH_Desc A sickle (U1), written over a folded piece of cloth (S29).

The description matches the original shape but not the new shape. In the new shape the piece of cloth is over the sickle.


Agreed to change the glyph to: .

U+1330C

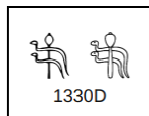


U+1330C KEH_Desc A cobra in repose (Naja haja) (I10), written over a mace with a pear-shaped head, written vertically (T3).

The original shape underspecified which of the signs was on top, and it may be safest to leave this underspecified in the description. In any case, the glyph should be consistent with the description. In the new shape, the cobra is *under* the mace.


Agreed to change the glyph to: , description also present in TSL, although glyphs in TSL and JSesh are drawn the other way around.

U+1330D

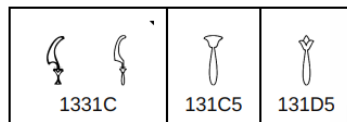


U+1330D KEH_Desc Two cobras in repose (Naja haja) (I10), arranged vertically, written over a mace with a pear-shaped head, written vertically (T3).

The description matches the original shape but not the new shape. In the new shape the mace is over the cobras.

Agreed to change the glyph to: , description also present in TSL, although glyphs in TSL and JSesh are drawn the other way around.

U+1331C U+131C5 U+131D5



U+1331C KEH_Desc A scimitar (khopesh), written vertically, blade curving forwards, with a handle resembling a stem of papyrus with a bud (M13).

U+131C5 KEH_Desc A stem of papyrus with a bud.

U+131D5 KEH_Desc A stem of papyrus with a flowering bud.

In the original code charts, the handle most certainly does not resemble M13 (U+131C5), If anything, it looks closer to U+131D5. I do not mind much if the glyph in the code charts currently has that shape, as the shape of the handle seems a minor detail. But by putting "with a handle resembling ..." in the description, one is suggesting that M13 is an essential part of the character

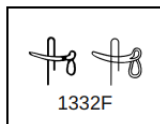
identity of U+1331C, whereas (as far as I know) scimitars do not generally have a handle resembling M13. The Database does not motivate departing from the original shape. The TSL has one single token of T016A (without citation!), which is rather blurry and does not seem to suggest M13 at all: <https://thotsignlist.org/mysign?id=5850>

Various examples taken from iconography are here:


https://www.reddit.com/r/Cowofgold_Essays/comments/zcfv4z/the_khopesh_of_ancient_egypt/
I don't see the shape of M13 in any of them. I would simply omit "with a handle resembling a stem of papyrus with a bud (M13)" as overspecific.

Clearly, a majority of the sources for that sign have decided to use a M13-like shape for the handle, but not all of them. IFAO has 3 glyphs (420,9 420,10 and 420,11) all with variations on the shape handle. I would agree that the description should not be prescriptive in describing the handle shape unless we eventually get to encode another variant. I would also be in favor of removing 'with a handle resembling a stem of papyrus with a bud (M13)'. Glyph unchanged.

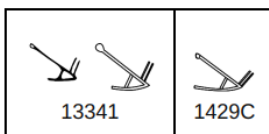
U+1332F



By plausible deniability one could argue the new shape underspecifies which sign is on top. But in Unicode 16, the shapes of overlays generally commit to one or the other. It would be better therefore to revert to the Unicode 5.2 shape.

Agreed to change the glyph to: ; description added: 'A knife sharpener, with a thin, curved body, and a loop at the end (T033), written over a piece of cloth (S029)'.

U+13341 U+1429C



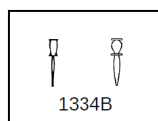
U+13341 KEH_Desc A plough, with a cross-bar and two vertical lines on the end of the long beam.

U+1429C KEH_Desc A plough, with a cross-bar and two vertical lines on the long beam, without a circle at the front of the long beam.

It is unclear to me whether the original shape of U+13341 is closer to its new shape, or whether it rather corresponds to U+1429C. The original shape had a pronounced circle, like U+1429C, while the new shape has more of a bulb. Does it even make sense to have two code points here?

Most of the sources (including Gardiner U13) seem to have a bulb, not a circle. Therefore, it makes more sense to change 'circle' by 'bulb' in the description of U+1429C.


U+1334B



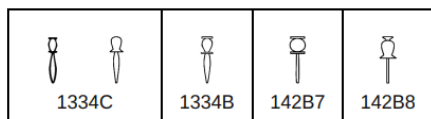
U+1334B KEH_Desc A hair-pin or burin, with a horizontal line above and below the oval of the pin.

In isolation, I would have thought little of this slight change of shape, but see the below. It looks like the shape that should have been at U+1334C has been misplaced at U+1334B. The Database has "Redraw based on Gardiner". Great, but which sign from Gardiner? The original glyph is not at all like the new glyph, and the old glyph reasonably accurately mimics the printed GEG. By the way, I would not characterize the original shape as in the above description: what is between the two lines does not form a clean oval.



Glyph changed to  to look closer to the original (narrower pin), still noting that many sources have wider pins.

U+1334C U+1334B U+142B7 U+142B8



U+1334C KEH_Desc A hair-pin or burin, without the horizontal line on the top.

U+1334B KEH_Desc A hair-pin or burin, with a horizontal line above and below the oval of the pin.

U+142B7 KEH_Desc A hair-pin or burin, with a horizontal line above and below the circle of the pin.

U+142B8 KEH_Desc A hair-pin or burin, with a horizontal line under the oval of the pin, and a triangular shape on top of the oval.

The original shape of U+1334C has a horizontal line on the top, so the new shape is wrong. By the original UniKemet from 2006, U+1334C stands for "a later form of U23" (Gardiner 1931) as found on the 26th Dyn. sarcophagus of Ankhnesneferibra (BM EA32). See p. 45 of:

<https://www.unicode.org/L2/L2005/05313-Gardiner28-57.pdf>



See the bottom-left corner of the image in the link below, where it reads at the end of the column

"nmr=s n [...]". https://www.britishmuseum.org/collection/object/Y_EA32?selectedImageId=1495613001

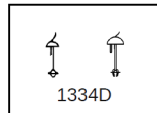
There is most definitely a line on the top.

The Database provides no evidence of having even consulted the original UniKemet. Instead, the Database refers to the Pyramid of Unas, which is off by 2 millennia so this is unlikely to be relevant to U+1334C. It is unclear to me how other newly introduced code points for hair-pins are supposed to relate to the original shape of U+1334C, or even how to characterize the difference between U+1334C and usual hairpin U+1334B. It becomes an exercise in futility if new code points are introduced for barely distinguishable shapes, as if those are meaningful for Unicode, while exact specifications of existing code points are ignored to reuse these code points for totally different things. One either takes the character identities of code points seriously, or one does not, in which case why do we even bother with Unicode?

This is a tough one. Gardiner U23* (U023A) has no other reference than the one mentioned above and is extremely close in shape to U23 itself with just a wider pin. Other sources have used U23A for what is apparently

another sign. I would agree that it would be better to change the glyph and description of U+1334C to better reflect to what was in Unicode 5.2 and was intended to represent U23*. This means that the current glyph for U+1334C and related sources will become un-encoded. (Not related to encoding, the PUA entry in the database for the updated U023A will be moved from F3DE7 to F3E03 as the corresponding IFAO value is closer to that shape). Given its close relationship, U023A (U+1334C) will become non-core (variant of U+1334B) and its description will be: 'A wide hairpin or burin, with a horizontal line above and below the oval of the pin.'. The updated glyph for U+1334C is:  compared to the updated U+1334B: .

U+1334D



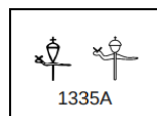
U+1334D kEH_Desc A drill, with a half-circle handle, with a backwards tick on top of the handle, with a forked drill-bit with a horizontal line on top of the forked drill-bit, with a short vertical stroke next to the drill, connected to the handle.

The original shape had a round drill-bit. The Database does not acknowledge that the shape of the drill-bit has changed, let alone offer a justification for the change other than that JSesh happens to use a different form. Given the many instances of round drill-bits among several newly introduced glyphs in the extended list, it is uncontroversial that round drill-bits are very frequent in this and similar signs, and so there is no rational basis for changing the Unicode form as it has existed since Unicode 5.2.

The phrase "a horizontal line on top of" is used elsewhere in UniKemet to mean something different from what is in the glyph. What is in the glyph would elsewhere in UniKemet be phrased as "a horizontal line over"; cf. the descriptions of U+142C7 and U+142CB.


All other sources use a fork, not a round drill-bit, difference is minor. Description change is accepted.

U+1335A



U+1335A kEH_Desc A horned desert viper (Cerastes cerastes) (I9), written over a spindle (U34).

The description matches the original shape but not the new shape. In the new shape the spindle is over the viper.

Agreed to change the glyph to: , description also present in TSL, although glyphs in TSL and JSesh are drawn the other way around.

U+1335D

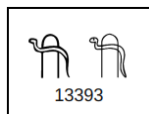


U+1335D kEH_Desc A balance, with a plummet resembling a heart (F34).

The original did not depict the plummet as a heart. I have no objection to the glyph being represented with greater clarity, but is it part of the character identity that the plummet resembles a heart? The Database has "only one token comes close, and it still lacks the heart", so I assume the answer is no. It seems therefore better to leave out details that may well be hallucinated or uncharacteristic for the sign. I propose simplifying both glyph and description.



Most sources have a heart. No change.

U+13393

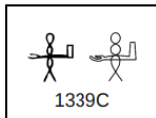


U+13393 kEH_Desc A cobra in repose (Naja haja) (I10), written over a hobble for cattle without a cross-bar (V20).

Apart from plausible deniability (see above), the description matches the original shape but not the new shape. It would be better to revert to the Unicode 5.2 shape.

Agreed to change the glyph to:  , also updated U+1432F  . The latter apparently used when the sign needs to fit in same space as snake but without the cross-bar extra area.

U+1339C

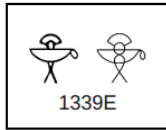


U+1339C kEH_Desc A forearm, with the palm of the hand facing upwards (D36), written over a wick of twisted flax, consisting of three loops (V28).

Apart from plausible deniability (see above), the new shape, unlike the description, suggests the wick is over the arm. Make the new shape consistent with the description. I would prefer for the description to leave underspecified which sign is on top, as it is not clear from the original shape either.

Agreed to change the glyph to:  , description also present in TSL.

U+1339E

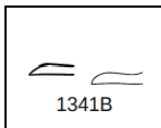


U+1339E KEH_Desc A swab made from a hank of fibre with two loops (V29), written over a wickerwork basket with a handle, orientated with the handle to the back (V31).

Even though these are insignificant graphical variants, code charts should not be changed without a good reason. Unless a compelling case can be made that the basket over the hank of fibre cannot occur in real inscriptions, revert to the Unicode 5.2 form and change the description accordingly.


In this case, the latest glyph is more common among sources, however its shape is ambiguous and just shows an overlay without a clear z-order. In this case the description should change from 'written over' to 'overlaid with'.

U+1341B

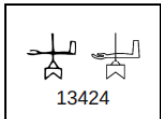


U+1341B KEH_Desc A representation of two ribs, top line curving downwards.

The description matches the original shape but not the new shape. Correct the new shape to have the top line curve downwards.


Agreed to change the glyph to: .

U+13424

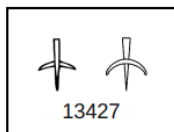


U+13424 KEH_Desc A forearm, with the palm of the hand facing upwards (D36), written over an object consisting of a horizontal rectangle with a triangular indentation at the bottom, with a vertical line on top of it, connected through a triangle (Aa21).

Apart from plausible deniability (see above), the new shape, unlike the description, suggests the object is over the arm. Make the new shape consistent with the description. I would prefer for the description to leave underspecified which sign is on top, as it is not clear from the original shape either.


Agreed to change the glyph to: .

U+13427



U+13427 KEH_Desc A crescent moon shape written over a thin triangle, point downwards.

The original glyph had triangle-over-moon while the new form has moon-over-triangle. This may have been motivated by a single token in the TSL that has moon-over-triangle.
(more justification...)

Agreed to change the glyph to: , description changed to: 'A thin triangle, point downwards, written over a crescent moon shape'.

Other noteworthy differences

U+13403



U+13403 KEH_Desc Man, standing, back bend forward, both arms toward the front, holding a hoe with a rope connecting the two pieces (U6), with the forward piece at the level of the feet.

...


Remarks noted, no change to current.

U+13008

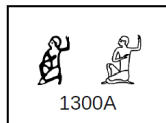


The Database has "I am rather doubtful if this grapheme actually exists" but fails to address the link in the original UniKemet from 2006 to GITB 804-005-650 where the exact Unicode 5.2 glyph is found, with feet that are vertical rather than horizontal: <http://www.griffith.ox.ac.uk/gri/8rel100.pdf>

Either way, no justification was offered for the change of the position of the feet; see also above for U+13007. One would have to have very good arguments not to revert to the Unicode 5.2 form.

Glyph changed to: . Description added: 'Man, seated, both knees down, with a vase on its side, with liquid issuing from it (W054), orientated to the front, on his head, both arms forward, extended downwards.'

U+1300A



U+1300A KEH_Desc Man, seated, right knee raised, right arm angled in front of the body, left arm raised, hand held vertically, handpalm inwards (hnw gesture).

There are two differences, the orientation of the hands, and the orientation of the left foot. As for the hands, the Database has a comment "IT IS A FISTED HAND, not a handpalm oriented inwardly", which already contradicts the description. In the TSL: <https://thotsignlist.org/mysign?id=895> there are at least two occurrences where the hand palm (not a fist) to me appears to be very clearly oriented outwards: namely TSL_3_22086 and TSL_3_17746. Some other tokens are not clear enough to be sure.

As for the left foot, the Database does not even mention that there was a change relative to Unicode 5.2. Again, many examples in the TSL seem to suggest the left foot is vertical rather than horizontal, including at least TSL_3_14385, TSL_3_17746, TSL_3_23102, TSL_3_25540. In other words, the Unicode 5.2 form appears to be reasonably representative, and one would need very good arguments not to revert to the Unicode 5.2 form.

One could perhaps omit specification of the orientation of the hand in the description, and one may avoid clearly depicting the orientation of the hand in the glyph, thereby not committing to one view or another.

This needs further study. The orientation of the left leg for U+1300A should probably be changed. There are many variations among A8 among sources and we have 3 variants encoded (U+1300A, U+1347E, and U+1347F) with variations in leg position and hands.

U+13023



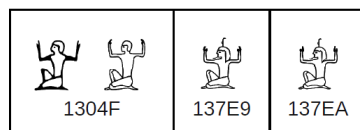
U+13023 kEH_Desc Man, standing, head facing forwards, arms raised behind him, hand palms outwards.

The orientation of the hands differs. The Database does not address, let alone justify, the change. The tokens in the TSL are not clear enough to tell: <https://thotsignlist.org/mysign?id=492>

This said, if I look at the print in GEG using a magnifying glass, I would be more inclined to see the orientation as in Unicode 16. Everything else being equal, the usual reading as classifier "turning away" also seems to favour the orientation of the hands as in Unicode 16. Therefore, no further action is required.

Remarks noted, no change to current.

U+1304F U+137E9 U+137EA



U+1304F kEH_Desc Man, seated, right knee raised, raised arms at either side of the body, hands held vertically, with the handpalms inwards.

U+137E9 kEH_Desc God, seated, right knee raised, with long curved beard and long wig, with a palm branch, stripped of leaves and notched on his head (M4), notch forward, raised arms at either side of the body, hands held vertically, with the handpalms inwards.

U+137EA kEH_Desc God, seated, right knee raised, with long curved beard and coif, with a palm branch, stripped of leaves and notched on his head (M4), notch forward, raised arms at either side of the body, hands held vertically, with the handpalms outwards.

The hands of U+1304F were oriented outwards, now inwards. The supposed source is GITB 801-626-810, but this does not have the sign: <http://www.griffith.ox.ac.uk/gri/s14.pdf>.

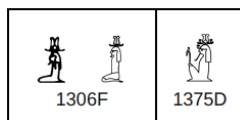
This makes it hard to confirm the orientation of the hands. A similar sign is: <https://thotsignlist.org/my-sign?id=883> but there the hands are oriented inwards, provided the blurry photos are interpreted correctly.

Another occurrence is on p. 134, l. 14 and pl. DCCCLXXXIV of: <https://www.ifao.egnet.net/uploads/publications/enligne/Temples-Dendara009.pdf>. The transcription has the hands inward, but the photo is again too blurry to be sure about the orientation of the hands.

Now, one could argue that the orientation of the hands is not important, and so we can simply replace the old glyph by the new glyph. However, the orientation of the hands was apparently important enough to distinguish U+137E9 and U+137EA and give them separate code points. (All these signs seem to be functionally indistinguishable: ḥḥ, "million".) So what is it? Is the orientation of the hands important, or is it not important? There seems to be a lack of consistency running through the entire Unicode 16 set.

While the source for V5.2 (A73) is ambiguous for the hand positions, all other sources for A73 consistently use the hand inwards. For U+137E9 and U+137EA, the two glyphs were requested explicitly by experts. No change to current.

U+1306F U+1375D



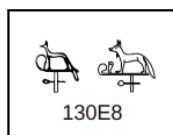
U+1306F KEH_Desc God, seated, both knees down, with a long curved beard and long hair/wig, wearing a headdress consisting of two feathers on rams horns (S77).

U+1375D KEH_Desc God, seated, both knees up, with covered legs and arms, with a long curved beard and long hair/wig, with an uraeus on the forehead, wearing a headdress consisting of two feathers and a sun-disk on rams horns, with an uraeus at either side of the feathers; holding a sceptre with a straight shaft, topped with the head of the Seth animal vertically.

For U+1306F, the sun-disk was removed. This is fine if the sun-disk in the original shape seems to have been due to a misinterpretation of known tokens. But note that there are headdresses in similar signs like U+1375D with sun-disk. In the Database I find "redraw of C18G without sun" but without justification.

There was in fact a long justification in the line below attached to the original U+1306F glyph in the database PUA entry F0BB1 (*Redrawn into F0BC1. (sign should be redrawn to the HG form instead (the S64 crown is incorrect for this sign, see the others of this group, who all have the other type of crown). Additionally, no solar disk should be added either, and the short hair should be replaced by a longer wig (as in the Jsesh form). Note that the Jsesh form uses S77 as well, so should not be under here.*). No change.

U+130E8



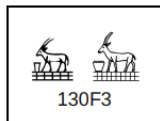
U+130E8 KEH_Desc A jackal, standing, tail down (E17), on top of a standard used for the carrying of religious symbols, with an uraeus and SdSd-pretubercle at the front of the standard, with a mace (T3) written horizontally over the vertical pole of the standard.

The Unicode 5.2 form did not have the uraeus. The Database justifies adding the uraeus by the observation that many occurrences have a uraeus, calling this "correcting" of the glyph. I don't think the word "correcting" is appropriate if occurrences without uraeus exist, and then the glyph without uraeus would not be incorrect per se. Nonetheless this change to the glyph may cause relatively little disruption, provided no one will now consider introducing a new code point for the original form without uraeus.

This identifies a major shortcoming of the kEH_Desc descriptions: a description describes a single 'representative' token that the philologists happened to find, down to minute detail. The new UniKemet also typically lists only the one function of that one token. But this fails to capture the type. For example, if in the future the intention is that U+130E8 can be used for the sign with uraeus and the sign without uraeus, then currently no documentation exists that expresses this intention. In this sense, this is a step back from the documentation in GEG, which, by being less overspecific about appearance of signs, made it clear to encoders that signs could be used for a range of graphical variants.

This is based on the reluctance of disunifying this sign between one version with uraeus and one without. Because the version with uraeus is deemed more appropriate it seems better to represent the more logical version, not really a 'correction' per se. Clearly the description field could be improved either by omitting details when they should drive the request for an undesired disunification. At the same time, the description is an important factor in determining identity, so maybe accepting alternative details in saying 'with or without' could be helpful. No change so far.

U+130F3

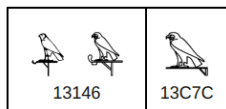


U+130F3 kEH_Desc A basket with four pieces of grain or fruit (M39) in front of an oryx, standing (E28), on top of a parcel of land with irrigation ditches (N24).

Unicode 5.2 form did not have the four pieces of grain or fruit. This seems an insignificant detail and I have no objection to the embellishment of the glyph with the four pieces of grain or fruit. I think though that one should simplify the description to just mention that there is a basket, without (over)specifying what is in it.

Related to above, this shows the limitation of the current buildup of the description field which formally uses full description of its inner components (here M39, E28, and N24) even when some of details are not present. Maybe the solution is to loosen the association by instead saying 'A basket (related to M39)' and omitting describing 'the four pieces of grain'.

U13146 U+13C7C



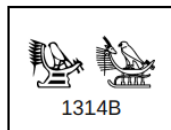
U+13146 kEH_Desc A falcon (G5), on top of a standard used for carrying religious symbols (R12).

U+13C7C kEH_Desc A falcon (G5), on top of a standard used for the carrying of religious symbols with the vertical stick at the far side (R92A).

It is unclear to me what kind of standard was intended with the original shape of U+13146, and it seems an insignificant detail. But if one starts introducing multiple code points depending on the choice of standard (cf. U+13C7C), then it is not clear to me that the change of shape of U+13146 is within the normal bounds of allowable graphical variation for a given code point, and perhaps a fresh code point would have been warranted. The Database does not contain a shred of reflection on the fact that the shape of U+13146 has changed.

Most sources associated with U+13146 (G7) describe it as using internally the R12 standard. It is not totally clear from the original sign in Gardiner which other standard should be used to describe the original Gardiner glyph if R12 was not adequate. No change.

U+1314B




U+1314B KEH_Desc A falcon (G5), on top of a moon-sickle shaped boat with an higher prow than stern, with a rudder, with the head of an antelope (F81) on top of the prow, facing inwards, with a downwards line with multiple horizontal lines written over it coming from the head, on top of a sledge (P60B).

The head of antelope was not previously discernible. If I correctly interpret the very fuzzy images in the TSL: <https://thotsignlist.org/mysign?id=3196> then the sign may occur with and without head of antelope. Nonetheless, it would have been nice to see some acknowledgement in the Database that the glyph has changed. Again, there is the problem that the description specifies the token, not the type. Are *two* rudders visible, in both glyphs? In that case the description and the glyph are inconsistent.

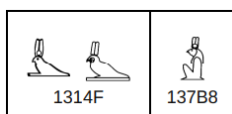
Most sources for G10 (U+1314B) have an antelope head, and the original drawing in Gardiner 1928 has a more pronounced bulge where the head should be than Unicode v5.2 shows. And most related signs have the same



design: U+1406A () U+1406F () U+14075 (). All of them have another detail, not part of their descriptions which is another animal head on the opposite side of the antelope head, detail of U+1406F

shown here:  , some with some sort of line (blood?) coming out of the head. If you go to paleographic evidences, some show another antelope head, or a Sethian head, or even a bovid head, one example at <http://alienexplorations.blogspot.com/1979/01/other-depictions-of-sokar-funery-bark.html> . It shows the limitation of the current description scheme where it could have been argued that what is depicted here is simply a Henu-Sokar bark. (Noting that bark is an unusual term in English for a boat or vessel). Ok to change description to 'two rudders'. No glyph change.

U+1314F



U+1314F KEH_Desc An archaic image of a falcon/cult image of a falcon, wearing a headdress consisting of two plumes (S9).

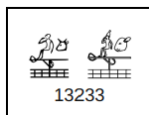
U+137B8 kEH_Desc God, seated, knees up, with covered legs and arms, with the head of a falcon, wearing a headdress consisting of two plumes with a sun disk (S63A/S70).

For U+1314F, the sun-disk was removed. This is fine if the sun-disk in the original shape seems to have been due to a misinterpretation of known tokens. But note that there are headdresses in similar signs like U+137B8 that do have a sun-disk. The Database does not contain a shred of reflection on the fact that the shape of U+1314F has changed. It does comment that "Jsesh glyph has a circle in crown". What evidence justified departing from both the original Unicode 5.2 shape and the Jsesh shape? If no such evidence exists, then one should have kept the original shape, rather than sacrifice the stability of Unicode on a whim for no apparent reason.

Agreed to add back the sun-disk (was in Jsesh and TSL), done for both U+1314F and U+13CC9



U+13233



Child was given white crown. Bovid lost its horns. The Database says no token could be found. The default action should then be to keep the shape as it is, rather than change the glyph randomly, and sacrifice the stability of Unicode on a whim for no apparent reason.

In this case, the original evidence mentioned for U+13233 (NL018) was Gardiner 1953 NnL18 which shows the child with white crown and bovid without corn as in the new glyph. Note that there is a variant encoded at



U+13F13 of the same NL18 but with a loaf of bread below the bovid head: 13F13 . U+13233 had no function and description; by analogy to U+13F13 the following data is added to U+13233:

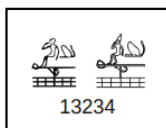
U+13233 kEH_Desc Child, wearing the white crown (S001), seated on nothing, forelegs spread, right arm raised in front with hand to mouth, left arm hanging beside the body (A274); in front of the head of a bovid (cow), without horns, with an ear (F063); on top of a standard used for carrying religious symbols (R012), written on top of a parcel of land with irrigation ditches (N024).

U+13233 kEH_Func Logogram (18th nome of Lower Egypt)

U+13233 kEH_FVal ꜥm.ty-ḥnt.y


No glyph change.

U+13234



Child was given white crown. The Database says no token could be found. The default action should then be to keep the shape as it is, rather than change the glyph randomly, and sacrifice the stability of Unicode on a whim for no apparent reason.

In this case, the original evidence mentioned for U+13234 (NL019) was Gardiner 1953 NnL19 which shows the

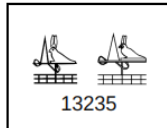
child with **red** crown (not white). Glyph changed to  . It also had no function nor description, following data added:

U+13234 kEH_Desc Child, wearing the red crown (S003), seated on nothing, forelegs spread, right arm raised in front with hand to mouth, left arm hanging beside the body (A274); in front of hindquarters of a seated lion or leopard (F022); on top of a standard used for carrying religious symbols (R012), written on top of a parcel of land with irrigation ditches (N024).

U+13234 kEH_Func Logogram (19th nome of Lower Egypt)


U+13234 kEH_FVal 𐍎ty-phw

U+13235



Headdress lost the sun-disk. The Database says "Could not yet locate an example." There cannot therefore have been a justification for changing the shape.

It is virtually impossible to see the sun-disk in the original source (Gardiner NL20), but because other sources

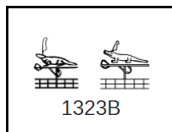
have it, glyph changed to: . It also had no function and no description, following data added:

U+13235 kEH_Desc A triangle, in front of a falcon (G005), with a headdress consisting of two plumes (S009), on top of a standard used for carrying religious symbols (R012), on top of a parcel of land with irrigation ditches (N024).

U+13234 kEH_Func Logogram (Sopdu, 20th nome of Lower Egypt)

U+13234 kEH_FVal spdw

U+1323B

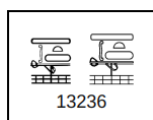


U+1323B kEH_Desc A Nile crocodile (*Crocodylus niloticus*), with a feather (H6), angled backwards, on its head; on top of a standard used for carrying religious symbols (R12), on top of a parcel of land with irrigation ditches (N24).

In the original, the feather was not angled backwards. I'm not concerned about the glyph, but the description seems overspecific, unless you can make a case that the angle of the feather is an integral element of the character identity that Gardiner overlooked.

Agreed, removed 'angled Backwards' from description.

U+13236




U+13236 kEH_Desc A strip of land (N17), above a cluster of signs consisting of a bow, of an archaic type (Aa23), in front of a half round loaf of bread (X1), over a strip of land (N17); on top of a standard used for carrying religious symbols (R12), written on top of a parcel of land with irrigation ditches (N24).

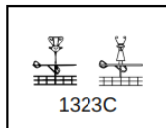
The bow was mirrored. The Database aims to motivate the change on the basis of available tokens, but I'm far from convinced. It says "I wonder if the bow is ever facing outwards". Roughly the same group

above the standard (but without standard) is at the extreme right in the photo of: <http://sith.humanum.fr/karnak/1128>

Here the bow is outward, seemingly contradicting the above. Just because one could not find an attestation of the exact Unicode 5.2 glyph within the available time, that doesn't mean the glyph was wrong and that there was a compelling reason to change it.

Glyph changed accordingly to: .

U+1323C

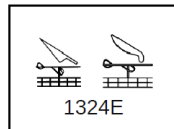


U+1323C kEH_Desc An emblem with a human face with cow ears, with two upwards line which curl inwards (R129), on top of a standard used for carrying religious symbols (R12), written on top of a parcel of land with irrigation ditches (N24).

...

Remarks noted, no change to current.

U+1324E

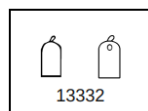


A knife with a rounded blade and rounded handle (T30), on top of a standard used for the carrying of religious symbols (R012) on top of a parcel of land with irrigation ditches (N024).

I would not be concerned about the slight change to the glyph, if it were not for UniKemet descriptions elsewhere that explicitly specify whether a knife has a triangular or a rounded blade. If it is felt to be important whether a knife has a triangular or a rounded blade, then I would not expect for the shape of a blade in the code charts to arbitrarily change, especially if the Database says "Could not yet locate a token".

It has mostly to do with the fact that the rounded knife is a more common variant. I would tend to agree that the knife descriptions are probably too specific, but this would impact many other descriptions. No change for now.

U+13332



U+13332 kEH_Desc A shield with a rounded top, with a loop on top, with a boss in the center of the shield.

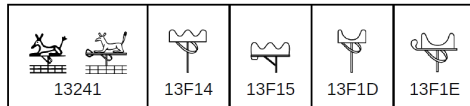
The original shape did not have a boss. Here it seems acceptable, though far from necessary, to refine the appearance, since Gardiner refers to an occurrence at Medinet Habu where the sign appears to have a boss; see Plate 45, column 37 of:

<https://isac.uchicago.edu/sites/default/files/uploads/shared/docs/oip8.pdf> But "in the center" in the description is not accurate. I would write "near the top of the shield".

Another thought is that if presence or absence of the loop on top is important enough to distinguish U+13332 and U+14201, then how can presence or absence of the boss in U+13332 be so unimportant that both forms can be represented by the same code point? Once one goes down the path of making hard-core palaeographic distinctions, there is no stopping the unbridled proliferation of code points.

Agreed on the description change..

U+13241



U+13241 KEH_Desc The animal of Seth, lying down, tail up (E21), on top of a standard used for the carrying of religious symbols (R12) on top of a parcel of land with irrigation ditches (N24).

U+13F14 KEH_Desc The hill country over the edge of the cultivated areas (N25), on top of a standard used for carrying religious symbols, with a loop under the horizontal beam, running over the vertical pole (R12A).


U+13F15 KEH_Desc The hill country over the edge of the cultivated areas (N25), on top of a standard used for carrying religious symbols (R12).

U+13F1D KEH_Desc A sand covered mountain over the edge of the cultivated areas (N26), on top of a standard used for carrying religious symbols, with a loop under the horizontal beam, running over the vertical pole (R12A).

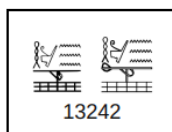
U+13F1E KEH_Desc A sand covered mountain over the edge of the cultivated areas (N26), on top of a standard used for carrying religious symbols (R12).

In the original, the standard was simplified. In the Database, I see no reflection on this. The Database has a reference to: <http://sith.huma-num.fr/karnak/1202> which has yet another form of the standard, with diagonal bar rather than "a loop under the horizontal beam, running over the vertical pole". It would be fine to normalize glyphs when it comes to the type of standard, and to use a default form of R12 for any signs with a standard that is similar to R12. But this is not what was done elsewhere, especially for the extended list (cf. U+13F14 versus U+13F15, U+13F1D versus U+13F1E).. There appears to have been no consistent strategy for the treatment of standards.

Simplification of elements in compound document is a recurrent issue because the smaller size always creates some level of simplification in details. Being fully consistent is hard. In this case, because other sources have the

same simplification, glyph changed to: .

U+13242



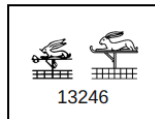
U+13242 KEH_Desc A wick of twisted flax, consisting of 3 loops (V28), in front of the red crown (S3), in front of three ripples of water, vertically aligned above one another (N35A); on top of a standard used for carrying religious symbols (R12), written on top of a parcel of land with irrigation ditches (N24).

In the original, the standard was simplified. The Database has "Transcription only. Inclusion in core based on principle, not verification with image". How then can a change to the glyph be justified?



Same as above, because other sources do same, glyph changed to: .

U+13246



U+13246 kEH_Desc A desert hare, lying down (E34), on top of a standard used for the carrying of religious symbols (R12), on top of a parcel of land with irrigation ditches (N24).

The standards are different, although both standards are often referred to as instances of R12. Also, in the original, the hare had whiskers. The Database lists both the original shape and the new shape, in different entries, without acknowledging that the standard in U+13246 changed between Unicode 5.2 and Unicode 16. According to the Database the two forms are "practically identical". I don't necessarily disagree with this, but if the two forms are practically identical, then why was a change needed in the first place? Because an attestation could be found for one form and not for the other? Will the shape of U+13246 change back once the original form is attested?

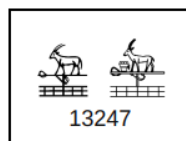
I detect an eagerness to change glyphs in the code charts for the sake of making changes, not because there is any compelling need. To destroy and remake in one's image is not in the interests of the user community. By the way, there is a token where the standard is somewhere in between the standards above. See 9th column from the left in the photo of: <http://sith.huma-num.fr/karnak/1128>

There is here a significant misunderstanding of how the extended block was created and its repercussion on the original main block. Because almost 4000 characters added to the existing 1000+ signs, there was a requirement to have a 'harmonized' set, and because of that, a new stock font was used to create the 5000+ signs, some regressions were introduced; no eagerness whatsoever here to change glyphs, just a consequence of using a different font. That new font had different designs for many glyphs in the existing block. In the past few years since Unicode 16.0 was issued, efforts have been made to reduce the level of perceived regressions, and this document is part of the effort to do that. There are two forms of the sign in the database, mostly differentiated be-



cause JSesh had two glyphs corresponding to NU15 and E34B. Glyph change to: .

U+13247



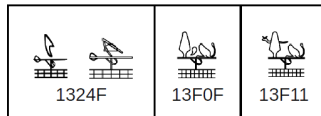
U+13247 kEH_Desc A basket with four pieces of grain or fruit (M39) in front of an oryx, standing (E28), on top of a standard used for the carrying of religious symbols (R12) on top of a parcel of land with irrigation ditches (N24).

There was no basket in the original shape. As the Database points out, the Unicode 5.2 form differs from what, according to the original UniKemet, should have been the source, namely Gardiner (1953). See p. 52 of: <https://www.unicode.org/L2/L2005/05313-Gardiner28-57.pdf>

It is hard to escape the conclusion that the shape was incorrectly copied from Gardiner (1953) to the Unicode 5.2 code charts at the time. The Unicode 16 shape therefore seems to be an improvement. However, the "four pieces of grain or fruit" seem overly specific and can certainly not be discerned in Gardiner (1953). I would omit this phrase from the description.

Remarks noted, in description the count number 'four' is removed from 'four pieces' to be less specific.

U+1324F



In U+1324F, the object on the standard changed to a kind of overlay. The Database notes that a supposed token of this sign has been identified that has "X1 behind what looks like a U8". This could be in the second column in the photo of: <http://sith.huma-num.fr/karnak/1128> where X1 is to the left of what looks like U8, so "behind" in terms of reading order. (See also the first column, where there is the same combination of X1 and what looks like U8, but without standard.) I suspect the new glyph for Unicode 16 was created with the misunderstanding that "behind" meant "overlay".

Assuming that the above text correctly identifies the sign that Gardiner had in mind (which is not at all clear to me), then a redrawing of the glyph may be in order. In any case, it should not be an overlay.

Another concern is that for similar cases elsewhere, multiple code points were introduced, such as for U+13F0F and U+13F11, which are alternative writings of the 14th nome of UE. What then justifies confusing two alternative writings of the 22nd nome of UE, with and without X1? There is no consistency to be found.

Given that the 22th Nome of upper Egypt is typically associated with 'Knife' the attestation and shape could be a bit problematic. However, based on the evidence provided above, the glyph would be better redrawn as:



, with new description (avoiding 'behind' which can be ambiguous as it may be used either in z-order or x-order):

A hoe without a rope connecting the two pieces (U008) in front of a half round loaf of bread (X001); on top of a standard used for the carrying of religious symbols (R012) on top of a parcel of land with irrigation ditches (N024).

U+1327F

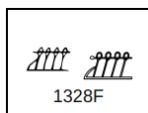


[U+1327F KEH_Desc A tenoned door, written horizontally.](#)

The original shape was asymmetric, while the new shape is perfectly symmetric. Can that be correct? I imagine a tenoned door not to be symmetric.

All other sources for O31 (many) are symmetric, glyph unchanged.

U+1328F

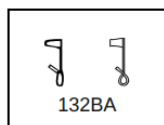


U+1328F KEH_Desc A fence, consisting of a horizontal base with four lines with bulbs at the end, angled backwards, with a curved line connecting the front of the base and the first line with a bulb, with a horizontal line with a loop at the front through the bulbs.

There was no loop at the front in the original. I don't think anyone cares that the glyph is refined. The only suggestion I have is to omit the loop from the description as overly precise.

Agreed, removing 'with a loop at the front' from description.

U+132BA

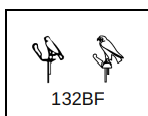


U+132BA KEH_Desc A cloth wound on a pole, an emblem of divinity (R8), on top of a bag or a sack of linen, with a tie towards the front, and a (small) loop at the back (V33).

The two shapes are similar. But I cannot relate the description to the shapes. I don't think the tie towards the front should be drawn as one with the outline of the bag. What is the "loop at the back"? May the description be overly precise?

The description element 'a bag or a sack of linen, with a tie towards the front, and a (small) loop at the back' corresponds to the description of V33 when described as its own sign. As found, in this case, there is no loop in the back. I think that just saying 'on top of a bag or a sack of linen' (like TSL does) should be sufficient, also removing the link to V33. Glyph unchanged (unclear whether or not the front ties are related).

U+132BF



U+132BF KEH_Desc A falcon (G5) on a standard with a rounded top, with a feather (H6), angled forwards, attached to the standard in front of the falcon.

The standard has a different shape. Before it had a horizontal beam, now it has a rounded top. The Database does not contain a shred of reflection on the fact that the shape has changed. No doubt the Unicode 16 form exists, but so does the Unicode 5.2 form, for example here: <https://www.met-museum.org/art/collection/search/546944>
<https://blogs.bl.uk/a/6a00d8341c464853ef02e860ece6b0200b-pi>

One would have to have very good arguments not to revert to the Unicode 5.2 form. That one happened to stumble upon a token of the Unicode 16 form first is not a good enough argument. In any case "with a rounded top" is not part of the character identity of this code point as introduced in Unicode 5.2 and

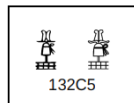
should not be in the description. If the variant with rounded top is considered to be fundamentally distinct, then it should be this variant that appears under a new code point..

This is a case where about half the sources show a rounded top, while others do not. Furthermore, the descrip-

tion does not call for a falcon on top of rounded top (itself encoded at U+13C97). Glyph changed to:



U+132C5



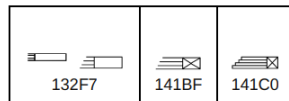
U+132C5 KEH_Desc A wig, with a fillet, with a headdress consisting of two feathers on top of the horns of a ram (S77), on top of a vertical pole, on top of a parcel of land with irrigation ditches (N24).

The headdress lost the sun disk. The Database motivates this by "more often without disk". I don't think anyone cares about the change to the glyph. But by the same token, I don't think there was ever a compelling need for any change.



Most sources show the sun disk. Glyph changed to:

U+132F7 U+141BF U+141C0




U+132F7 KEH_Desc A rectangular piece of cloth, with sloping fringes on its front short side, without internal decoration.

U+141BF KEH_Desc A rectangular piece of cloth, with sloping fringes on its front short side, with a cross shape as internal decoration.

U+141C0 KEH_Desc A square piece of cloth, with long sloping fringes on its front short side, with a cross shape as internal decoration.

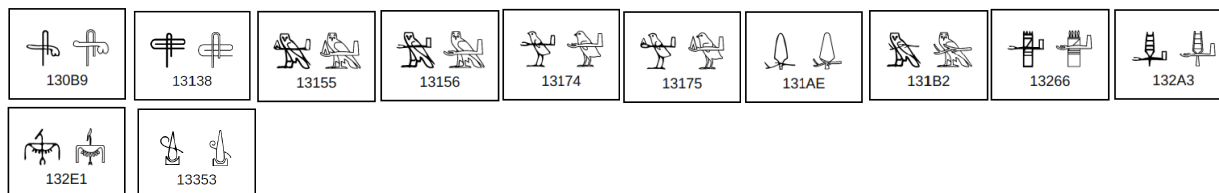
In the original shape of U+132F7, the fringes were not sloping. Erman and Grapow already listed and contrasted both the non-sloping and the sloping forms (the latter with cross). The vast majority of dictionaries and grammars use the non-sloping form of S32. One would have to have very good arguments to unceremoniously purge the traditionally used non-sloping form by replacing it with the sloping form.

There are many interpretations of S32, the V16.0 version is derived from HG, TSL/JSesh use , among the sources used in the database, Kurtz and Leitz are like HG, Bonnamy is like original. Overall, the current glyph for S32 is quite common, at least as much as the 'original'. This could be revisited, but no change for now.

I also don't see how one can argue that U+141BF and U+141C0 deserve two independent (core) code points, even though they are basically the same shape apart from aspect ratio of the crossed rectangle, while at the same time treating the non-sloping and sloping forms of S32 as the same shape to justify arbitrarily replacing one by the other in the code charts. The Database does not contain a shred of reflection on the fact that the shape has changed.

These two shapes correspond to IFAO 381,14 and 382,4.

U+130B9 U+13155 U+13156 U+13174 U+13175 U131AE U+131B2 U+13266 U+132A3 U+132E1 U+13353



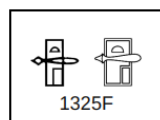
U+130B9 KEH_Desc A phallus with a scrotum (D52), written over a folded piece of cloth (S29).

It is debatable whether the original shape has the folded piece of cloth on top, or whether the intention was to underspecify which of the two signs is on top. In the latter case, it may be adequate to describe this simply as an overlay of the two signs without specifying which of the two is on top, and leave it to the font designer how to draw this. By the same reasoning, the current glyph in Unicode 16 can also remain as it is, as one allowable graphical realization of the underlying sign. There are several more such cases below.

(glyphs for those shown above here)



All these cases correspond to ‘Legacy’ signs which are all compound signs which can also be represented using a sequence of element signs separated by the overlay operator. Because there is no definitive knowledge on which sign should come first, several schemes have been suggested to determine which element comes first in the ‘equivalent’ sequence. One suggestion was the code point value which is less than optimal because the signs are encoded in two different blocks that both cover the whole spectrum of signs. At the present, the current thinking is to use the order in which they appear on the Catalog number (KEH_Cat) which encompass the two encoded block and would still be valid with a future extension, if any. This means that the z-order shown in the code charts is not prescriptive or could eventually be changed to show the sequence order in a predictable fashion.

U+1325F

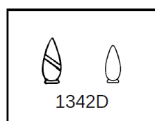


U+1325F KEH_Desc A wooden column, written horizontally (O29), written over a half round loaf of bread (X1), written inside a plan of a rectangular enclosure, with an internal rectangle in the lower corner away from the reading direction (O6).

The original shape underspecified which of the signs is on top. The new shape specifies that it is the column that is on top. I have no objection to the new shape, but I would prefer for the description to leave underspecified which sign is on top, as it is not clear from the original shape either.

This is again a ‘Legacy’ sign which is as such also described as a sequence of code point: 13257 1343A 133CF 13436 1327B in Unikemet, or  (defined as a container O006 with insertion at the top of the overlaid sequence of X001 and O029) although there is an update coming that would now use 13257 13439 1327B 13436 133CF, or  (change of the insertion operator from top to middle and the sequence of overlaid signs to the opposite: O029 preceding X001). There is also an argument in this case that O029 is an overlay to the rest, not just to X001. This is just to indicate that the visual appearance and its description have little to do with how the compound sign is constructed. No change to current description, but sequence changed as mentioned above.

U+1342D



U+1342D KEH_Desc An ornamental chevaux de frise on top of walls, with a flat base.

The internal detail in the form of diagonal lines was removed. The only justification I can piece together is that no diagonal lines happened to be discernible in any of the mere 6 (!) tokens in the TSL, which may have been from after the Old Kingdom. The Database has "Agreed, TSL without strokes only [...] OK form vs. later form". There is no doubt though that the sign occurs in the Old Kingdom with diagonal strokes. (Gardiner explicitly intended the sign to represent the "O.K. form", so I don't see why considerations about later forms are even relevant.) E.g. there are two occurrences of Aa31 with diagonal strokes on p. 129 of: https://gizamedia.rc.fas.harvard.edu/images/MFAimages/Giza/GizaImage/full/library/has-san_giza_6_3.pdf

In general, with how much detail a sign is represented is unimportant, as long as the sign is recognized. But, first, the extended list often introduced multiple code points for signs with and without internal details. So apparently, in those cases internal details were important enough to warrant multiple code points. But internal details were apparently so unimportant that it was fine to unceremoniously purge them from U+1342D, a well-known sign that appears with these internal details in almost every printed and digital sign list. At the very least, this lacks consistency.

Second, if perhaps no tokens of Aa31 with discernible diagonal strokes were present in the TSL at the time, then that does not mean that no such tokens exist. Moreover, a sign list is not a list of tokens, it is a list of types. A type (sign) is an abstraction of potentially many tokens, rather than a facsimile of one particular token, and could have more or fewer graphical features than any particular known token.

Third, it is underappreciated that the main purpose of a glyph in a normalized font is to communicate the identity of a sign to the reader. Everyone would immediately recognize the form with the internal details as Aa31, as it appears like that in almost every printed and digital sign list. Even the normalized font of the TSL displays Aa31 with internal details. Leaving out the internal details from Aa31 in Unicode fonts will cause unnecessary confusion to users. I'm also reminded of Point 5 of the Encoding Principles: <https://www.unicode.org/reports/tr57/tr57-4.html#EncodingPrinciples> which has "inner detailing [...] helps in avoiding confusion". This is one of the Encoding Principles that makes sense.

I don't see any downsides to keeping the internal details either. The devil's advocate would say that a student would be misled into thinking that any token of Aa31 in a real inscription from any period must have all the internal details that the normalized glyph has. But even a beginning student would know that this is not how the writing system works.

Palaeographic special interests should not override any and all considerations about the continuity of Unicode or what would be best for typical users.

The removal of these details was a specific request of the Egyptian philologists. This could be revisited though.