Hieroglf: The Poor Man's Hieroglyphic Font*

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Abstract

The hieroglf bundle provides a Postscript Type1 rendition of some of the ancient Egyptian's hieroglyphs. Hieroglyphic writing was used between about 3000 BC and 400 AD.

It is based on Serge Rosmorduc's hieroglyph package but only provides one tenth of his 650 odd hieroglyphs. Sufficient glyphs are provided for writing a few names, like Cleopatra or Ptolemy, but the package is not for serious Egyptologists.

The package also requires the use of the oands package.

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1 Introduction

The font presented here is a rendition of a very small fraction of the hieroglyphs used by the ancient Egyptians between about 3000 BC and 400 AD. It is one of

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a series of fonts that was initially intended to show how the Latin alphabet has evolved from its original Phoenician form to its present day appearance.

This manual is typeset according to the conventions of the LaTeX DOCSTRIP utility which enables the automatic extraction of the LaTeX macro source files [GMS94].

Section 2 describes the usage of the package. Commented code for a Metafont version of the fonts and the package code may be in later sections.

In 2015 David Carlisle provided a correction to the code for when a T1 font was used.

1.1 An alphabetic tree

Scholars are reasonably agreed that all the world's alphabets are descended from a Semitic alphabet invented about 1600 BC in the Middle East [Dru95]. The word 'Semitic' refers to the family of languages used in the geographical area from Sinai in the south, up the Mediterranean coast to Asia Minor in the north and west to the valley of the Euphrates.

The Phoenician alphabet was stable by about 1100 BC and the script was written right to left. In earlier times the writing direction was variable, and so were the shapes and orientation of the characters. The alphabet consisted of 22 letters and they were named after things. For example, their first two letters were called *aleph* (ox), and *beth* (house). The Phoenician script had only one case — unlike our modern fonts which have both upper- and lower-cases. In modern day terms the Phoenician abecedary was:
A B G D E Y Z H Θ I K L M N X O P ts Q R S T
where the 'Y' (*vau*) character was sometimes written as 'F' and 'ts' stands for the *tsade* character.

The Greek alphabet is one of the descendants of the Phoenician alphabet; another was Aramaic which is the ancestor of the Arabic, Persian and Indian scripts. Initially Greek was written right to left but around the 6th C BC became *boustrophedron*, meaning that the lines alternated in direction. At about 500 BC the writing direction stabilised as left to right. The Greeks modified the Phoenician alphabet to match the vocalisation of their language. They kept the Phoenician names of the letters, suitably 'greekified', so *aleph* became the familar *alpha* and *beth* became *beta*. At this point the names of the letters had no meaning. There were several variants of the Greek character glyphs until they were finally fixed in Athens in 403 BC. The Greeks did not develop a lower-case script until about 600–700 AD.

The Etruscans based their alphabet on the Greek one, and again modified it. However, the Etruscans wrote right to left, so their borrowed characters are mirror images of the original Greek ones. Like the Phoenicians, the Etruscan script consisted of only one case; they died out before ever needing a lower-case script. The Etruscan script was used up until the first century AD, even though the Etruscans themselves had dissappeared by that time.

In turn, the Romans based their alphabet on the Etruscan one, but as they wrote left to right, the characters were again mirrored (although the early Roman

inscriptions are boustrophedron).

As the English alphabet is descended from the Roman alphabet it has a pedigree of some three and a half thousand years.

2 The hieroglf package

Hieroglyphs were first used by the Egyptians around about 3000 BC, and the last datable hieroglyphic inscription was created in 394 AD. The period of use was more than three millenia. There is some evidence to suggest that at least some of the signs in what might be a proto-Semitic alphabet were developed from the hieroglyphs.

Hieroglyphs are a complete writing system and much is known about the hieroglyphic signs, the Egyptian language and grammar. As one might expect for a script that spans thousands of years, it changed during its lifetime. To date some 6000 different glyphs have been recorded, although at any given time fewer than 1000 were in use, and only a small proportion of this number occured frequently.

Apart from the specialised literature, the story of the hieroglyphs can be found in Collier & Manley [CM98], Davies [Dav87] and Gordon [Gor87], among others. For the Egyptian numbering system [Dav87] provides a start while for detailed information Ifrah's magnificent work should be consulted [Ifr00].

Serge Rosmorduc has created a font set for some 650 hieroglyphs as well as a comprehensive package and programs for typesetting Egyptian [Ros95]. The fonts in the hieroglyf package are a small subset, about one tenth, of Rosmorduc's fonts (which are in the public domain). They should be sufficient to typeset some Egyptian words and names, more as a curiousity than for any kind of scholarly work.

Use of the hieroglf package requires that the oands package is also available.

`\pmhgfamily` This command selects the hieroglyphic font family. The family name is `pmhg`.

`\textpmhg` The command `\textpmhg{`⟨*text*⟩`}` typesets ⟨*text*⟩ in the hieroglyphic font.

I have maintained Rosmorduc's glyph codes, which he based on a work that I have not yet been able to get[1]. Essentially the glyphs come as several series of signs, where a series is denoted by a letter. An individual sign within a series is denoted by a number. For example, the glyphs in the G series are all pictures related to birds; the G39 glyph looks, at least to me, like a duck standing on the ground and G40 looks like a flying duck.

There are three ways of accessing the glyphs: ASCII characters, a command based on Rosmorduc's coding, and a command based on the name of the ASCII character.

The commands (and their ASCII equivalents) for the glyphs are given in Tables 1 and 2. The comment column in the Tables first attempts to describe the appearance of the glyph, then in parenthesis, if I know it, the meaning and/or the sound that the glyph represents.

[1] The reference given is: Jan Buurman, Nicolas Grimal, Michael Hainsworth, Jochen Hallof and Dirk Van Der Plas, *Inventaire des signes hieroglyphique en vue de leur saisie informatique.*

Table 1: Commands and encoding for the signs A—N

Glyph	ASCII	Command	Command	Comment
A1		\HAi	\Hman	kneeling man pointing (man)
A2	I	\HAii	\HI	man pointing at mouth (eat, drink, speak)
A28	Y	\HAxxviii	\HY	man with upraised arms (joy)
C11	7	\HCxxi	\Hmillion	kneeling man with upraised arms (hh, numeral 1,000,000)
D1	Q	\HDi	\HQ	profile of head (tp)
D2	q	\HDii	\Hq	full face (hr)
D4	e	\HDiv	\He	an eye (ir)
D21	r	\HDxxi	\Hr	pointy ellipse (mouth, r)
D36	A	\HDxxxvi	\HA	elbow, forearm and hand (the semitic gutteral ayin)
D46	d	\HDxlvi	\Hd	hand in a mitt (d)
D47	P	\HDxlvii	\HP	curved hand in mitt (palm of hand)
D50	5	\HDl	\HXthousand	ship's ventilator (db, numeral 10,000)
D54	L	\HDliv	\HL	legs walking left (walk, run, come, ir)
D58	b	\HDlviii	\Hb	lower leg and foot (b)
E23	l	\HExxiii	\Hl	lion lying down (l)
F1	X	\HFi	\HX	ox head
F20		\HFxx	\Htongue	tongue (ns)
F31		\HFxxxi	\Hms	three brambles hanging down (ms)
F34	G	\HFxxxiv	\HG	vase with stopper (heart, ib)
F40	Z	\HFxl	\HZ	like a zylophone (Aw)
G1	a	\HGi	\Ha	Egyptian vulture (glottal stop)
G17	m	\HGxvii	\Hm	owl (m)
G26		\HGxxvi	\Hibp	sacred ibis on a post (dhwty)
G26*		\HGxxvis	\Hibw	ibis (jabiru?) walking (b)
G27		\HGxxvii	\Hibs	short-necked ibis pecking
G28		\HGxxviii	\Hibl	long-necked black ibis pecking (gm)
G36	R	\HGxxxvi	\HR	a swallow (wr)
G43	w	\HGxliii	\Hw	a quail chick (w)
H8	O	\HHviii	\HO	egg
I8	6	\HIviii	\HCthousand	mongoose? (hfnw, numeral 100,000)
I9	f	\HIix	\Hf	horned viper (f)
I10	D	\HIx	\HD	cobra with dropped tail (a dj sound)
K1	F	\HKi	\HF	fish with large dorsal fin (in)
M3	N	\HMiii	\HN	tree branch (wood, tree, Ht)
M8	E	\HMviii	\HE	lotus pool (SA)
M12	4	\HMxii	\Hthousand	lotus (h3, numeral 1,000)
M17	i	\HMxvii	\Hi	a machette (i)
N29	K	\HNxxix	\HK	triangle with wavy hypotenuse (q)
N35	n	\HNxxxv	\Hn	zigzag line (n)

Table 2: Commands and encoding for the signs O—PW

Glyph	ASCII	Command	Command	Comment
O1	j	\HOi	\Hj	single doored house floorplan (house, pr)
O4	h	\HOiv	\Hh	square spiral (h)
O34	S	\HOxliv	\HS	horizontal line with 2 blobs (z or s)
Q3	p	\HQiii	\Hp	a square (p)
R7	B	\HRvii	\HB	pestle and mortar (b)
S12	v	\HSxii	\Hv	a gold collar (nbw)
S29	s	\HSxxix	\Hs	long umbrella handle (s)
S39	?	\HSxxxix	\Hquery	shepherd's crook (awt)
S41	c	\HSxli	\Hc	hanging twisted string (dm)
T3	u	\HTiii	\Hu	upright with a knob at top (HD)
T14	/	\HTxiv	\Hslash	throw stick, boomerang (qma)
U36	J	\HUxxxvi	\HJ	upright cudgel (Hm)
V1	3	\HVi	\Hhundred	coil of rope (st, numeral 100)
V4	o	\HViv	\Ho	lassoo (wA)
V13	T	\HVxiii	\HT	pair of sugar tongs (tj, T)
V20	2	\HVxx	\Hten	cattle hobble (mdw, numeral 10)
V24	U	\HVxxiv	\HU	vertical line with centre oval (wD)
V28	H	\HVxxviii	\HH	twisted flax (an emphatic h)
V31	k	\HVxxxi	\Hk	bowl with handle (k)
W11	g	\HWxi	\Hg	chockstone of a stone arch with triangular crest (g)
X1	t	\HXi	\Ht	upper semicircle (t)
Y1v	V	\HYiV	\HV	rectangle with W (book, writing, abstract)
Y4		\HYiv	\Hscribe	scribe (sh)
Z1	|	\HZi	\Hvbar, \Hone	short vertical line (numeral 1)
Z2		\HZii	\Hplural	3 short vertical lines (plural)
Z4		\HZiv	\Hdual	2 short sloping lines (dual, pair)
Z6		\HZvi	\Hsv	stick with a V at righthand end
Z7	W	\HZvii	\HW	curved spiral (W)
Z11	+	\HZxi	\Hplus	crossed planks (imi, wnm)
Aa1	C	\HAai	\HC	shaded circle (ch as in loch, x)
Aa12	M	\HAaxii	\HM	parallel lines joined at left (M)
PW1	x	\HPWi	\Hx	notched rectangle (door)
PW2	y	\HPWii	\Hy	a pair of machettes (y)

The glyphs denoted as PWn are my additions to Rosmorduc's glyphs and coding scheme.

More graphically, table 3 shows the 'numeric' coded commands and the corresponding glyphs.

Table 4 shows the alphabetic coding (in both single character and command form) and the corresponding glyphs together with their transliterations. Note that not every glyph has a transliteration.

`\pmglyph` The command `\pmglyph{`⟨*codes*⟩`}` will typeset its argument as hieroglyphs. The ⟨*codes*⟩ argument can contain character commands and the two special characters `-` and `:`. The special `-` character causes the following glyph to be typeset to the right of the previous glyph, and adds a little (breakable) space between the two glyphs. The special `:` character causes the following glyph to be typeset below the previous glyph. The characters `{` and `}` can be used for grouping. For example `\pmglyph{K:l-i-o-p-a-d:r-a}` (which means Cleopatra) typesets the *l* glyph under the *K* glyph, then there are the *i*, *o*, *p*, and *a* glyphs in a line, followed by the *d* glyph stacked above the *r* glyph, and ending with the final *a* glyph.

As another example `\pmglyph{A-i-{p-x}:a-H}` results in the *a* glyph being typeset below both the *p* and *x* glyphs (alternatively, the *p* and *x* glyphs are both typeset above the *a* glyph).

This last example could just as well have been written as:
`\pmglyph{\HA-\Hi-{\Hp-\Hx}:\Ha-\HH}` or
`\pmglyph{\HDxxxvi-\HMxvii-{\HQiii-\HPWi}:\HGi-\HVxxviii}`, or any combination of these. Note, however, that `\pmglyph{{Ai{px}:aH}` will produce a very different typeset result (it typesets the *A*, *i*, *p* and *x* glyphs all in a row above the *a* and *H* glyphs which are also in a row).

`\cartouche` `\Cartouche` The command `\cartouche{`⟨*text*⟩`}` draws a cartouche around ⟨*text*⟩. A cartouche is an oval box with a vertical line at the right hand end. It is used for enclosing royal names. The only difference between the `\cartouche` and `\Cartouche` is that a `\cartouche` is drawn with `\thinlines` while `\Cartouche` is drawn with `\thicklines`. The seperation between the cartouche box and the enclosed text is given by the normal LaTeX `\fboxsep` command. A cartouche command should not be used as part of the argument to `\pmglyph`; instead use `\pmglyph` as the argument to the cartouche commands. That is:
`\pmglyph{...\cartouche{...}...}`
will produce unexpected results; instead use
`\pmglyph{...} \cartouche{\pmglyph{...}} \pmglyph{...}`
The `\cartouche` command can take any text, for example:
`\cartouche{Some text}` will draw a cartouche around the two words *Some text*; or add interest to an otherwise dry maths paper by cartouching some equations — `\cartouche{$sin^{2} x + cos^{2} x = 1$}`

As an example the cartouche, and transliteration, of Cleopatra shown below is produced by the following code:

```
\cartouche{\pmglyph{K:l-i-o-p-a-d:r-a}} \translitpmhg{\HK\Hl\Hi\Ho\Hp\Ha\Hd\Hr\Ha}
```

Table 3: Coded coding

\HAii (A2)		\HNxxix (N31)		\HAai (Aa1)	
\HAxxviii (A28)		\HNxxxv (N35)		\HAaxii (Aa12)	
\HDi (D1)		\HNxxxvii (N37)		\HPWi (PW1)	
\HDii (D2)		\HOi (O1)		\HPWii (PW2)	
\HDiv (D4)		\HOiv (O4)		\HFxxxi (F31)	
\HDxxi (D21)		\HOxxxiv (O34)		\HGxxvi (G26)	
\HDxxxvi (D36)		\HQiii (Q3)		\HGxxvis (G26*)	
\HDxlvi (D46)		\HRvii (R7)		\HGxxvii (G27)	
\HDxlvii (D47)		\HSxii (S12)		\HGxxviii (G28)	
\HDliv (D54)		\HSxxix (S29)		\HZvi (Z6)	
\HDlviii (D58)		\HSxxxix (S39)		\HAi (A1)	
\HExxiii (E23)		\HSxli (S41)		\HFxx (F20)	
\HFi (F1)		\HTiii (T3)		\HYiv (Y4)	
\HFxxxiv (F34)		\HTxiv (T14)		\HZii (Z2)	
\HFxl (F40)		\HUxxxvi (U36)		\HZiv (Z4)	
\HGi (G1)		\HViv (V4)		\HCxi (C11)	
\HGxvii (G17)		\HVxiii (V13)		\HDl (D50)	
\HGxxxvi (G36)		\HVxxiv (V24)		\HIviii (I8)	
\HGxliii (G43)		\HVxxviii (V28)		\HMxii (M12)	
\HHviii (H8)		\HVxxxi (V31)		\HVi (V1)	
\HIix (I9)		\HWxi (W11)		\HVxx (V20)	
\HIx (I10)		\HXi (X1)			
\HKi (K1)		\HYiV (Y1v)			
\HMiii (M3)		\HZi (Z1)			
\HMviii (M8)		\HZvii (Z7)			
\HMxvii (M17)		\HZxi (Z11)			

Table 4: Alphabetic coding

A	\HA		ꜥ	a	\Ha		ȝ	+	\Hplus		i̯my
B	\HB		b	b	\Hb		b	?	\Hquery		awt
C	\HC		ḫ	c	\Hc		ḏꜥm	/	\Hslash		ḳmȝ
D	\HD		ḏ	d	\Hd		d	|	\Hvbar		wꜥ
E	\HE		šȝ	e	\He		i̯r		\Hms		ms
F	\HF			f	\Hf		f		\Hibp		ḏḥwty
G	\HG		i̯b	g	\Hg		g		\Hibw		bȝ
H	\HH		ḥ	h	\Hh		h		\Hibs		
I	\HI			i	\Hi		i̯		\Hibl		gm
J	\HJ		ḥm	j	\Hj		pr		\Hsv		
K	\HK		ḳ	k	\Hk		k		\Hman		
L	\HL		i̯w	l	\Hl		l		\Htongue		ns
M	\HM		m	m	\Hm		m		\Hscribe		sḫ
N	\HN		ḫt	n	\Hn		n		\Hplural		
O	\HO		ȝst	o	\Ho		wȝ		\Hdual		
P	\HP			p	\Hp		p	|	\Hone		wꜥ
Q	\HQ		tp	q	\Hq		ḥr	2	\Hten		mḏw
R	\HR		wr	r	\Hr		r	3	\Hhundred		št
S	\HS		s	s	\Hs		s	4	\Hthousand		ḫȝ
T	\HT		ṯ	t	\Ht		t	5	\HXthousand		ḏbȝ
U	\HU		wḏ	u	\Hu		ḥḏ	6	\HCthousand		ḥfnw
V	\HV			v	\Hv		nbw	7	\Hmillion		ḥḥ
W	\HW		w	w	\Hw		w				
X	\HX		ḫ	x	\Hx						
Y	\HY			y	\Hy		y				
Z	\HZ		ȝw	z	\Hz		š				


ḳlỉw3p3dr3

`\pmvglyph` `\vertouche` `\Vertouche`

The commands `\pmglyph`, `\cartouche` and `\Cartouche` are for use when the glyphs are principally in a horizontal sequence. The total height of the glyphs as printed are, as far as possible, limited to the height of a single line of text.

In cases where the glyphs are principally in a vertical sequence, use the corresponding vertical versions of the commands, namely `\pmvglyph`, `\vertouche` and `\Vertouche`. With these commands, the total height of the glyphs is unlimited (except by the physical size of the page).

`\cartouchecorner` `\cartouchecorner*`

When LaTeX normally draws an oval box it tries to make the left and right hand ends as close to a semicircle as it can, given the limited number of circular arcs it has got to choose from. The command `\cartouchecorner{`⟨*fraction*⟩`}` instructs LaTeX to do its best to make the diameter of the corner circles equal to ⟨*fraction*⟩ of the height of the cartouche. For example `\cartouchecorner{0.5}` asks for the corner diameter to be half the height of the cartouche, while `\cartouchecorner{1}` asks for the ends to be semicircles. The `\cartouchecorner*{`⟨*length*⟩`}` command is similar except that LaTeX will try and use corners of diameter ⟨*length*⟩.

`\translitpmhg` `\translitpmhgfont`

`\translitpmhg{`⟨*char-commands*⟩`}` will typeset a transliterated version of ⟨*char-commands*⟩, where the commands are taken from the fourth column of Tables 1 and/or 2. That is, commands like `\HK` must be used rather than either `K` or `\HNxxix`. The transliteration is typeset using the `\translitpmhgfont`, which is initialised to `\itshape`. The font can be changed by renewing the `\trnslitpmhgfont` command.

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Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.