

ON THE DECIPHERMENT OF AFFIX T102 (T103) AND THE  
COMPOUNDS T501:102 AND T630.181 OF THE MAYA  
HIEROGLYPHIC INSCRIPTIONS<sup>1</sup>

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In a recent paper Fought (1965) tries to read the so called "bundle" affixes T102 and T103<sup>2</sup> as *-al*, while rejecting Barthel's earlier decipherment (1952) of affix T23 as *-al*. Since the interpretation of T23 as *-al* is supported by many more examples than the few Barthel presents in his early paper (cf. Thompson 1962:43, 67 and Barthel's more recent papers) we have been thinking about an alternative reading of affixes T102, 103. The conclusion is that the plural suffixes *-ob*, *-ab*, *-ib* and/or the plural particle *-tak* fit the occurrences of T102, 103 in the hieroglyphs listed in Table 1 very well.<sup>3</sup> The examples have been taken largely from Thompson's catalog (1962) and are transcribed in his numbering system.

The use of the plural suffixes *-ob*, *-ab*, *-ib* in the Maya languages is well known. To give a few examples: *ahauob* (Yucatec), *ahauab* (Quiché) = rulers, lords (glyphic expression: 533.102 or 533.103); *tunob* (Yucatec) = precious stones (glyphic form: 580:102); *Chacob* (Yucatec) = Chac's, rain gods (glyphic equivalents: 668:103 and 1030:102); *kinob* (Yucatec) = days (glyphic forms: 534:103 and 544:103). Numbers too may carry a plural postfix: *ox* and *oxib* (Quiché) = three; *beleh* and *beleheb* (Quiché) = nine.<sup>4</sup>

<sup>1</sup> Abbreviations are the same as used by Thompson (1962).

<sup>2</sup> The "bundle" affix T102, 103 occurs already in the preclassic hieroglyphic inscriptions of Monte Albán I (St. 12 and 15; Caso 1947, figs. 10, 14, 21).

<sup>3</sup> Recently Barthel (1966a) discusses the plural suffixes *-ab*, *-ob*, *-ib* and *-tak* in addition to *-aan* as possible reading of affix T130. We prefer the interpretation *-aan* for T130 and like to reserve the plural suffixes for T102 and T103.

<sup>4</sup> In their *Achi Grammatical Sketch* M. Shaw and H. Neuenswander (in M. K. Mayers 1966:29) write: "This (pluralizing) suffix (*-ab'/-ib'*) was probably historically present on numbers (which may function as nouns as well as adjectives).

Like T102, 103 in the hieroglyphs the plural particle *tak* \*tyaq, "sufijo plural", Kaufman 1964:123) can be used both as prefix and postfix. For instance, *tak che* (Quiché) = the (many) trees; *cab-tak* (Quiché) = branches (Friedrich 1955:331); *chauac tac* (Yucatec) = cosas largas (Motul 138; *chauac* = cosa larga). Edmonson (1965: 118) gives *tak* (Quiché) = crowd, mass, bunch, branch. The hieroglyph 102:756.528 (Copan Temple 11, step 3) for instance may be read as *tak zutz'* (Quiché) = the (many) clouds. In addition this hieroglyph carries a prefix T59 (*ti*). In Quiché *tih* means among others "big, much, greatly" (Edmonson 1965:121), therefore suggesting *tih tak zutz'* = "many big clouds" as reading of the complete glyph T59.102:756.528 (for the interpretation of 756.528 as *zutz'*, "cloud", see Barthel 1966b:111).

There are several hieroglyphs of known meaning which already contain the concept of plurality and are found sometimes with, sometimes without the plural postfixes T102 or T103. These are glyphs expressing numbers in relation to time distances (days, 20 [days] = *kal*, 400 [days] = *baq*, 360 days = Tun), glyphs used in offerings (e.g. 506.103 = food; 738:102 = fishes) and name glyphs of gods (e.g. the Chacs of the 4 world directions are sometimes treated as one, sometimes as 4 gods).

#### I. Glyphs expressing time distance numbers:

- A. With the *day as unit*: Number: 534:103 and the variant 59 number: 534:113, both glyphs are used in short distance numbers for days (Thompson 1962:149).
- B. With 20 days (*kal*) as unit (T683 = *kal* or *q'al* = 20): 683a:102:IX or X (*glyph A of the lunar count* = 29 or 30 days); I.683a:102/1.528.528 (these glyphs which signify "20 Bak-tuns or 20 cycles" appear before the name glyphs of the triad gods T1011, T1030 g and 74.184.239:594 on the middle panel

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tives), but vowel assimilation and consequent change have obscured the suffix somewhat: *queb'* two, *oxib'* three, *cajib'* four, *jo'ob'* five, etc." In Achi *-ab'/-ib'* "occur further with nouns which represent persons: *achi* man, *achiab'* men; *mam* old man, *mamib'* elders; *aj xojol* dancer, *aj xojolab'* dancers." In Kekchi "suffix *-eb'* indicates general pluralization: *xtz'i'eb'* their dogs ... Suffix *-tk* indicates the aspect of grouping: *laje.b'* ten, *lajetk* group of ten, *lajetkeb'* many groups of ten" (F. Eachus and R. Carlson in M. K. Mayers 1966:115).

In Chorti "suffix *-op* is a plural indicator for third person or objects: *otot* house, *ototop* houses, *uyototop* their house. Suffix *-tac* is a pluralizer used only with women, girls and children. It may or may not be followed by *-op*: *ixic* woman, *ixictac/ixictacop* women" (H. Oakley in M. K. Mayers 1966:245).



of the Temple of the Inscriptions, Palenque [Berlin 1963:96]); 12.I:683a:102/?a28:548 ("end of 20... Katuns", Yaxchilan St. 11). Equivalent to T683:102 in denoting a period of 20 days is T521:103 (T521 = uinal). The plurality, in our opinion expressed by T102 or T103, is in both glyphs an attribut of the *number 20*, not of the *period uinal*, in the same way as in Quiché and other Maya languages for instance the number 9 carries a plural suffix. This means that the occurrence of T521:103 as period glyph with the number 1 is not an argument against the reading of T102 as plural particle.

In Quiché two expressions exist for 20: *q'al* (corresponding to T683 and *hu vinaq* ("one man", corresponding to T521), 40 is *ka vinaq* ("two men"). Therefore the original meaning of T521 may be "*man*" (Yucatec *uinic*, Chorti *winic*, Chol *uinal*), with the additional meaning "20" derived from the 20 fingers and toes of a man (cf. Cordan 1964:47). Plural forms are in Quiché: *taq vinaq* "the men" (Friedrich 1955:331), *hu taq vinaq* "each month, each person" (Edmonson 1965:44); in Chorti: *winicop* "person" (Mayers 1966:277). It may well be that several occurrences of T521:103, especially in the Codices, have the meaning, "men, people, person".

- C. With 360 days (*Tun*) as unit: 548:103 (*Tun* used as anniversary). In normal Tun glyphs no suffix or T23 or T142 are present as suffixes (Thompson 1962:161, 163).
- D. With 400 days (*baq*) as unit: 12.II:570(109):102 ("end of  $2 \times 40 = 800$ " [days], Aguateca St. 1); 12.III:570(109):102 ("end of  $3 \times 400 = 1200$ " [days], Aguateca St. 7). T570 has been deciphered as *baq*, "bone" (Barthel 1966a). T570(109) seems to indicate *baq*, "400". The glyph 12.I:683a:102 (Yaxchilan St. 11) is a direct analogue to the Aguateca glyphs. Thompson 1962:197) lists several other glyphs 12.number:570(109), in which the T102 suffix is missing.
- E. Other examples for the association of T102 or T103 with numbers: III.573:103 ("3 changes", C. Madrid 65b), III.668:103 ("3 Chacs", C. Madrid 68b) and III.558:103 (C. Madrid 104b).

## II. Glyphs used in offerings:

- A. 506.103, 506.506:103, and 506:506.506:103 = "food" (*kan*). All examples are from the C. Madrid. That here a mass (plurality) is meant, is expressed not only by the suffix T103, but also by the duplication and triplication of the main sign. 506.501:103

= "abundance of food"; here the plurality is introduced by T501 (*imix*) and T103.

- B. 652:103, 652.652:103, and 652:506.506:103, some form of an offering (Thompson 1962:256).
- C. 738:103 = "fishes". They are offered to the yellow Chacs (281.1037 / 668.103) in C. Dresden 31b. Other offerings of special food are (C. Madrid): 795:103 ("deer haunches") and 799:506:103 ("iguanas").

### III. Name glyphs of gods:

- A. 668.103 = *Chacob* (Chacs, rain gods), mentioned frequently in the Codices. In the Monjas inscription (Chich'en Itza) both terms 668:23 (*Chacal*) and 668:102 (*Chacob*) occur (Beyer 1937: 82). The counterpart of 668:102 (or 668:103) in the classic inscriptions is 1030:102, which appears for instance on Yaxchilan Lintels 24 and 25. On Lintel 2 of Tikal Temple 4 1030:102 occurs in the passage (A13-B14): 95.1030:23 (*k'ek Chacal*) / 204.35:1016:24/16.74:61-1030:102 (*yax...Chacob*)/58.1030:23 (*zak Chacal*). Whereas the black and the white rain god are treated as a single deity, the green rain god is mentioned as a plurality of gods.
- B. 145:103:613, name glyph of the old moon goddess of weaving (Thompson 1962:236). Here T103 seems to belong to T145 ("hank of cloth") as shown by glyph 58.145:103 (C. Madrid). 145:103 may denote "*threads*".  
Another form of the old goddess' glyph is 103.69:613, which contains 103.69, "*puffs of down*", instead of 145:103. On the panel of the Temple of the Cross, Palenque (B17), the glyph of the earth goddess, 69:1000, also contains T69 (down).
- C. 1026.103, 58.1026.103, and 171.1026.103 = name glyphs of the young moon goddess *Ixchel*. 1026.103 may have been used also as the title "ladies". The counterpart in the classic inscriptions is 1000:102.

A glyph found frequently in the inscriptions is 533:102, *ahauob* (rulers, lords) using the suggested decipherment for T102. To give an example: On the bone MT-41 from the tomb of Tikal Temple 1 533:102 (glyph 11) is followed by three animal heads which certainly are name glyphs. Table 1 lists a series of animal glyphs with T102 or T103 as suffix denoting plurality.

Besides the glyphs discussed in the foregoing there are several special glyphs deserving attention. Most interesting is the glyph



1.501:102 which appears in the Yaxchilan inscriptions after the names of captives as noted by Proskouriakoff (1963:152); e.g. on Yaxchilan Lintel 8:87.515.181:25 ("capture")<sup>5</sup>/1.582 (1040) ("name of captive")/1.501:102/126.236:751 ("the capturer, a Yaxchilan ruler")/38.168:562 (emblem glyph of Yaxchilan). In the accompanying picture the Yaxchilan ruler is shown grasping the left arm of his captive who can be identified by the name glyph 1.582(1040) engraved on his right leg. The solution to the meaning of 1.501:102 is found in the captive scene of Bonampak room 2. Here several captives are painted with blood dropping from their hands.

Immediately above the erected right hand of one of the captives the glyphs 112?.582:130?/501.103 appear. Now, *naab* (the linguistic counterpart of T501) means in Yucatec in addition to "lake, water, abundance" also "palm of the hand" (Thompson 1950:73). The Motul Dictionary (138) gives *naab*: palmo o medida de palmo.\*

A reading of 1.501:102 as "his palms" refers directly to the grasping of the captives hands by the capturer on the Yaxchilan Lintels and to the blood dropping rite performed with the hands of the captives in the judgment scene of Bonampak room 2. Here another captive from whose fingers blood drops, is accompanied by the glyphs 281:23 (*kanal*)/44.580 ("brilliant precious stone", synonym for "blood")/?/501.44:761? Perhaps T501 in this inscription denotes "palm of the hand". The lady or goddess depicted on Yaxchilan Lintels 24 and 25 is accompanied by a possible name glyph 1000:666(501):142, in which a hand with infixed imix sign may express the idea *naab* = "palm of the hand".<sup>6</sup> On the bones MT-55:A/B from the tomb of

<sup>5</sup> T515.181 = *chuk-ic*, "to take prisoner, to bind" (Barthel 1966c:129).

\* Note also the phonetic similarity *kab* (hand) — *nab*.

<sup>6</sup> The proposed reading of T501 makes sense also in the glyph 13.60:501 which appears on Kuna Lintel 1 after a bat glyph: 13.60:501/1.126:712:81? (C6, D6), on Copan Altar U after the glyphs of a goddess (?): 13.60:501/1.712 (T3, U). In both cases the second glyph contains as main element T712 = "descend" (Yucatec, Motul 164r: *emel* descender; Quiché, Edmonson 1965/105: *qah*, *qahih* descend, fall, sink). This decipherment has been proposed first by Zimmermann (1956:16) for the paläographic form of the glyph (T667).

The knot affix, T60, has been read as *kax* (Yucatec, Motul 241: *kax*, atar o liar, "binding", especially used in connection with sacrifice (Dütting 1965: 70). "Cantares" 1 and 13 of *El Libro de los Cantares de Dzitbalché* (Barrera Vásquez 1965) for instance describe the victim as "bound" (*kaxan*) for sacrifice, e.g.: un-ppe1-xiib-kaxan-tu-chum-ocom-tuniich, "un hombre atado al fuste de la columna pétrea" (Cantar 1). In Quiché *q'ax* means "pain, evil, love, hurt, trouble" (Edmonson 1965:98) whereas for "knot, tie, seize" expressions with *xim* or *yut'* exist. Thus, the Quiché term *q'ax* underlines the connection of T60

Tikal Temple I (Trik 1963) six glyphs, "ideogram for paddling" / 1030/11.501:102/181.630P:130/561:23-1030/38.168:569, comment on the beautiful scene, in which a rain god standing in the water grasps and offers fishes (possibly symbols for unborn human beings; Barthel 1965a:162) to another rain god paddling a canoe. In this inscription the combination 11.501:102/181.630P:130 seems important, since on bones MT-43 and MT-44 the first 3 glyphs, 11.501:102/181.630P:130/174:503.116:130, form a unit, which is followed after an interval by 38.168:569/671:544.116 ("west")/1030.

T630 (Thompson's "double comb" glyph) we understand as *kam*. In Yucatec, Mam, Quiché and other Maya languages *kam* means "receive". Motul 236r: *kam* recibir. Edmonson (1965:106): *qam* take, receive, collect, furthermore *qamik* (or *k'amik*) take, receive, accept. Kaufman (1964:109): \**k'am* tomar, llevar (familia entera). Since the lunar postfix T181 has been interpreted convincingly as *-ik* by Barthel (1964:237) (note that in Quiché "moon" is *ik'*), we assign the meaning *kamik*<sup>7</sup> to the compound 630.181. In the Codices T630.181

(*kax* in Yucatec) with sacrifice, death and underworld, which has been treated elsewhere (Dütting 1965). It should be mentioned that the knot as symbol for sacrifice appears already in the iconography of Monte Albán I. Danzante 42 for instance (Caso 1947, fig. 28) in lying position is shown with a knotted band tied around his neck.

The glyph 13.60:501 may be understood as "end of the binding of the hands (palms)." This makes sense, since in the following main sign T712 the act of spending, donating, descending is implied. The inscription on Copan Altar U continues (T4 — U5) with 1000(528):102?/?.:503/738:102/126:756. Possibly T712 refers to the coming down of "fishes" (738:102).

Affixes T12 and T13 are read convincingly as *dzoc* (Motul 131 r: *zoc*, el fin, cabo, o paradero) or *hidz* (Motul 185: *hi*), el fin) by Thompson (1950:189) and Barthel (1966b).

<sup>7</sup> In *El Libro de los Cantares de Dzitbalché* (Barrera Vásquez 1965; Cantar 12) we find *yum-caan-kamiic-u-buuo-kak* "el Señor del Cielo recibirá el humo del fuego", a sentence which may have its glyphic equivalent in 93.672:74?/630-181:178/126.561?:670 ... on Kuna Lintel 1 (J1 — L1). Compare also with 93.672:74?/1.630-181/60:751 (Kuna Lintel 1, C3 — C4). Here the *kax balam* (T60:751) receives (630-181) the "smoke of the fire" (93.672; cf. Thompson 1962:276).

More evidence for the correctness of our reading T630 = *kam* is provided by Yaxchilan Stelae 4 and 7. Both stelae depict a woman kneeling before a standing man, the upper part of whom is destroyed. Between them we note a kind of altar. *The hands of the lady are raised and opened towards the man as to receive something of him.* The glyphs D7 — C9 in the accompanying text on Yaxchilan St. 7,

1000.109:1040.173/1000.630-181:130?/1.92:757?/1.712:81?/126.236.751,  
can be translated as: "She (the lady T1000) receives (630-181) his preciousness



seems to occur in the forms 25.181<sup>8</sup> (e.g. C. Dresden 36a, 44b, 45b: 190.25.181) and 682:25 (e.g. C. Madrid 97b, 98b: 190:682:25, C. Dresden 24a, 25b, 48f, 49e and 58:1.682:25). The "double comb" is present in the form 25:25 (e.g. C. Dresden 10b: 1.25:25:130).

Landa assigns the phonetic value *ca* to T25 (Zimmermann 1956: 14), which apart from T630 (*kam*) is an important element in the glyphs T669a (*kab*; Barthel 1964:224) and T28:548 (*katun*). The phonetic equivalence of all 3 glyphs start with *ka-* and are thus supported by Landa's assignment of *ka* to T25.<sup>9</sup>

Keeping the reading T630 = *kam* in mind the combination 11.501:102/181.630P:130 above the rain god scene on bones MT-55: A/B may be interpreted as "his hands (palms) receive" (fishes). On bones MT-43/44, where the receiving of fishes by the rain gods in

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(T757) or gift T92, its descending (1:712:81) Ah Ch'ich' Balam (ruler of Yaxchilan; reading of his name glyph according to Barthel)."

The inscription on Yaxchilan St. 4 begins with 1000.683a:102/738c:102, "her (T1000 = u) 20 (683a:102) fishes (738:102)", the fishes probably symbolizing unborn human beings (Barthel 1965a). After three intervening glyphs the text continues with 1000.7/758.173/1000.1004a/23.168:756. T1004a certainly is the head variant of 630-181, T23 (al) means "child" (Motul 34 r: *al*, hijo o hija de la mujer; Edmonson 1965, 7: *al*, woman's child); this interpretation of T23 was first proposed by Barthel (1966a). Thus, the last two glyphs get the meaning: "she (the lady T1000) receives (1004a) the child (T23) of T168: 756."

A woman and a man are also depicted on Yaxchilan Lintel 14, where the glyphs 1001/1000.109:1040/1000.630-181/126.168:756 may denote: "she (the lady T1000) receives (for marriage ?) Ah ... Zotz'." In this connection it is of interest that *kam nicté* in addition to "recibimiento de la flor" (Barrera Vásquez 1965, Cantar 4) means "casarse, y el matrimonio" (Motul 237 r).

<sup>8</sup> Very similar glyphs, 671:25.181 and 202:630:671, occur C. Dresden 33c and Copan HS, Gxihi, respectively. The passages, in which these glyphs occur, can be transcribed as follows.

C. Dresden 33c: 1.667:19 (u-em-koch)/668.103.679 (god B-ch'en/59. 671:25.181/168:613.612af (another name glyph of the goddess).

Copan HS: 202:630:671/115?:671/544:116.764?/16.744a (name glyph)/?.168: 756(528).177 (emblem glyph of Copan).

<sup>9</sup> We do not share Thompson's opinion (1950:146): "The comb element, to which Landa assigns the sound *ca*, presumably because that is the first syllable of *cai*, "fish", cannot stand for *ka*." There is good evidence that a connection between T25 and the fish (as rebus for "count") exists, but it is open to question, if Landa really distinguished between the similar sounds *ca* and *ka*. It seems to us that the comb elements in the T28-superfix of the Katun glyph may express the first syllable of *Katun* or *Kal-tun* (if the former is a contraction of the latter) rather than denote the idea "count".

the canoe is not illustrating the glyphic text, the glyph 174:503.116:130 (note T503 = *ik*, life) may be a substitute for the fishes.

Another glyphic compound which deserves attention is 552:102. Thompson (1950:108) pointed out that the linguistic equivalent to T552 must be *kat*. For instance the inscription in the center of the sculptured step of Copan Temple 11 continues after the date (9.16.12.5.17) 6 Caban 10 Mol with 684a/168:518c:130/16.222:561f (a name glyph) /115.552:102/XVI.573.25/93.972:74/38.756(528):130 (city emblem of Copan). On both sides this inscription is flanked by 10 lords sitting on hieroglyphs. *Kat* (T552) has several meanings in Quiché (Edmonson 1965:50): *k'at* = 1. net, 2. burn up, *q'at* = 1. say the right word, 2. party, rank, flock, group. The last meaning is particular interesting with respect to glyph 115.552:102. The prefix T115 has been read by Barthel (1965b:151) as *noh* (Yucatec) = great (Quiché: *nim*). Together one gets 115.552:102 = "great parties (meetings)". The T25-postfix of the following glyph XVI.573.25 may be a substitute for the fish (kar, cay) with the meaning "count" (Thompson 1950:162), the complete glyph thus expressing something like "count of 16 changes". Our interpretation 552:102 = "parties" in this particular case is supported by the pictured assembly of lords.

The last glyph which I should like to discuss appears frequently in the Codex Dresden with different prefixes: 765:103. For example:

Codex Dresden 65a: 1.714/1020 (god K)

501:140.765b:103/668.103 (god B)

162:506.501/84:544.611 (god E)

Here the action of god K is given by T714, the "hand grasping a fish", a glyph which is illustrated by the carving on bones MT-55 of the Tikal Temple 1 tomb. The action of god B (the rain gods) is given by T501 (here possibly *imix* = abundance) combined with 765b:103. The main sign T765 depicts the dog with the linguistic equivalent *oc* in Yucatec, *tz'i* in Quiché. According to Edmonson (1965:130) *tz'i* in Quiché has also the meaning "grasping, miserly". The Motul Dictionary assigns a similar additional meaning to *oc* (Motul 343: *ocol cha*, coger o tomar a hurtadilla; Motul 342r: *ocol hurto*; *ocolom*, tah. t: tomar muchas puñadas o almuerzas, como de sal, maíz, frijoles, etc.).

An interpretation T765:103 = "grasping" is supported by C. Dresden 44a where the rain god sits on glyph 238.501 and holds a fish in his hands. The last three glyphs of the otherwise destroyed inscription above him read 738 (fish)/166.765b:103/1.1038b. We assume that the grasping of the fish shown in the picture underneath, which is symbolized in glyph T714, is expressed here by glyphs



738/166.765b:103. T501:140.765b:130 (C. Dresden 65a) then may be read as "abundance he (god B) is grasping". The T103 suffix (*tak?*) of T765 may denote an intensification or acceleration of the action described by T765, according to Motul 397r: *tac*, *partícula que denota aceleración y presteza* (e.g. *xen tac*, *vete presto*; *alcab nen tac*, *corre presto*).

*In conclusion* we feel that the Maya highland languages are at least as important as Yucatec for attempts in decipherment and that each reading should be checked in several Maya languages as well as by the glyphic contexts, in which the particular sign occurs. We have tried this with T630. An interpretation "receive" fits well into the glyphic contexts. "Receive" is *kam* in all Maya languages, which we have been able to check. Finally a reading *kam* is supported by Landa's assignment of *ca* (in our opinion equivalent to *ka*) to T25. T630-181 (*kamik*) is just the same as the T25.181 of the Codices.

We have not been able to find the same amount of evidence for our interpretation of T501:102. We do not know if *nab*, the possible linguistic counterpart of T501, has the second meaning "palm of the hand", apart from Yucatec also in other Maya languages. Therefore, the interpretation is mainly supported by the glyphic contexts, in which a reading "lake, water, abundance" makes no sense as in the Yaxchilan "capture" scenes. In the picture on bones MT-55:A/B (Tikal Temple 1, tomb) the important event is the capturing of fishes by the rain god in the water and the receiving (collecting) of the fishes by the Chac's in the canoe, not the paddling of the rain god on his lakes. This means that an alternative interpretation of the first three glyphs like "the Chac is paddling on his lakes (11.501:102)" is not convincing.

One of the most important points against a reading of T102 and T103 as *-al* is the occurrence of these affixes in glyphs, which have been identified as *numbers*, e.g. glyph A of the lunar count. To our knowledge the only suffixes, which may be attached to numbers in several (especially highland) Maya languages are *plural particles* (cf. note 4), apart from the late (?) invention of numerical classifier's like *-ppel* or *-tul* in Yucatec. It may well be that in the time of the classic inscriptions plural particles have been used with numbers more frequently than in the recent Maya languages.

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TABLE 1

## HIEROGLYPHS CONTAINING AFFIXES T102 OR T103

Group	Hieroglyph	Notes on decipherment	Occurrence
1	16:58:102		Copan St. A, A 12
2	281:23:103		Beyer 484
3	501:103	"palms"	Bonampak, room 2, captive
	1:501:102	"his palms"	Yaxchilan L. 8, E 1; L. 41, D 3; St. 18, A 9
	11:501:102	" (?)	Tikal T. 1, tomb, bones (MT 55:A/B and others)
	204:501:102	"	Yaxchilan L. 46, F" 5; also L. 10, D 2
4	504:122:103	"flames" (122:103)	Xcalumkin, N. build., Serp. Gl. 17
5	506:103	"food", "corn" (plural)	C. Madrid 77 b
	506:506:103		C. Madrid 105 b; C. Dresden 40 c
	506:506:506:103		C. Madrid 78 b, d
	506:501:103		C. Madrid 94 d
6	? :520:103		Naranjo St. 6, A 5
7	521:103	Uinal, see text	many examples
	12:521:103	dzoc uinal, "end of the uinal"	C. Dresden 61; 69
8	IX:283:526:103	cabob (526:103), "bees"	C. Madrid 105 b
9	528:103	ha-ab, "year" (water — plural!)	C. Madrid 81 b
	229:528v:103:?	dzoc haab, "end of the year"	Chama vase (Seler GA III:641)
10	533:102	ahaub (Maya), ahaub (Quiché), "lords, rulers"	many examples
	533:103		
11	Number:534:103	used in short distance numbers	
	59: Number:534:113	for days	
12	? :544:103	kinob, "days"	C. Madrid 8 c, 96 a

Group	Hieroglyph	Notes on decipherment	Occurrence
13	548:103	Tun (=360 days), used as anniversary (see text)	Copan T. 11, step Gl. 13
14	115.552:103	month Uo	
	95.552:103	month Zip	
	109.552:103		
	102.552		Beyer 599
15	283.558:103		C. Dresden 30 b
16	367.561:102	canob, "snakes" ? or caanob, "skies" ?	Palenque T. Cross, D 15; T. Sun, D 9
17	565a.181:102		Palenque T. Inscr. M. G 6
	229.102:565:178		Beyer 595
18	568:102	"sacrifices"	Beyer 446
19	12.II.570(109):102	"end of 2 x 400" }	Aguateca St. 1, A 10, A 14, D 5
	12.III.570(109):102	"end of 3 x 400" }	Aguateca St. 7, C 1
20	III.573:103	"three changes"	C. Madrid 65 b
21	1:580:102	u tunob, "his precious stones"	Yaxchilan St. 11, H 3
	580.113:40		Yaxchilan St. 4
22	586:103	muq-ob ?, "graves" ?	Bonampak, room 1, Lint. B 3
	1.586:102 or 103		Caracol St. 17, B 2
23	? :590:103	"jawbones"	Beyer 106
24	109.610:102:59	T610 = T283 = flesh or paper (Barthel 1963:165)	Palenque T. Inscr. M, N 6
25	145:103:613	"old goddess of weaving"	
	58.145:103	"white threads" ?	C. Madrid 100 d
	103.69:613	103.69 = "puffs of down"	C. Madrid 11 c
26	1026.103		C. Madrid 52 c
	58.1026.103	zac Ixchel (young moon goddess), (plural form) (see text)	C. Dresden 18 b, 20 a
	171.1026.103		



27	1000:102	same as 1026.103	Copan Alt. U, T 4 (?)
28	1.625:103	("turtle shells")	C. Dresden 2 d
29	652:103	some form of offering (plural form)	C. Madrid 108 a
	652.652:103		C. Dresden 40 c
	652.506.506:103		C. Madrid 68 a, 103 b
30	668:103	Chacab, "rain gods" (see text)	Codices, many examples
	668:102		Beyer 249
31	1030:102		e.g. Yaxchilan L. 24; L. 25
	108.1030:23		Palenque T. Inscr. E, K 4
	16:74-61-1030:102	"green... rain gods" (see text)	Tikal T. 4, L. 2, A 14
32	60.16:671:103	671:103, "deers" (?)	Beyer 465
	112.671.103:276		C. Madrid 38 a
	679.671:102		Palenque, T. Inscr. W, D 2
33	679:103	"wells" (?) (Barthel 1964:233)	C. Madrid 95 c
	74.679:103		C. Paris 5 c
	23.679af:102		Palenque T. Inscr. W, B 10
34	682:103	Kal (or qal) = 20	C. Dresden 31a, 73a
	682.103:23		C. Dresden 61a
	683a:102	hun kal baktun	Beyer 150:152; Copan T. 22, step 12, A 1
	I.683a:102/1.528.528	dzoc hun kal...katun, "end of	Palenque T. Inscr. M
	12.I.683a:102/? .28:	20 ... Katuns"	Yaxchilan St. 11, R 2 — Q 3
	548	"29 or 30 days", glyph A of lunar series	
	683a:102:IX or X		Copan HS, G XII 1
	580:102:683b		Yaxchilan St. 4, G 1
	1000.683a:102		Beyer 159, 160
	1051a.683:102		Copan Alt. Z, C 2
35	1:174:709.102		

Group	Hieroglyph	Notes on decipherment	Occurrence
36	? 717:102		Xcalumkin S. build., W jamb, A 4
37	168?:733:102 or 103		Caracol Alt. 12
38	24.736:103		C. Madrid 28d
39	738:102	"fishes"	Copan St. 8, D. 5; Copan Alt. U, T 5
	738a:103	" (among the 4 offering)	C. Dresden 31b
40	743:102	"turtles"	Yaxchilan L. 1, C 1
41	103.744b:280	"macaws" ?	Poptun sculpt. frag. 2
42	747:103	"vultures"	Xcalumkin, I. S. build., L. lint., F
43	751:103	"jaguars"	Caribe St. 1, B 3
44	IV?:756:102	"4 bats"	Copan St. B, back
	59.102:756.528	"many (big) clouds" (see text)	Copan T. 11, step 3
45	757:103	preciousness (plural form)	C. Dresden 57b
46	13.758:103		C. Dresden 3a
	11.758:103		Quirigua Alt. P, T 1
	283.758.103		C. Dresden 29b
47	16.759:103		Quirigua St. J, D 8; Copan St. A, E 9
48	501:544.760:102		Piedras Negras, Throne 1, Z 3
49	765:103	(see text)	C. Dresden, many examples with different prefixes
50	795:103	"deer haunches", (among offerings)	C. Madrid 105b
51	799:506:103	"iguanas"	C. Madrid 77
52	125:103:125	ah tak'ah (Quiché), "lord of the valley (or coast)" (Edmonson 1965:117)	Papa, Alta Verapaz, Vase