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Source: *Studien zur Altägyptischen Kultur*, Bd. 33 (2005), pp. 147-157

Published by: Helmut Buske Verlag GmbH

Stable URL: <https://www.jstor.org/stable/25152939>

Accessed: 02-08-2019 20:51 UTC

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# Accountancy at Deir el-Medîna: How accurate are the administrative ostraca?

Jac. J. Janssen

## *Abstract*

The administrative ostraca from Deir el-Medîna bristle with errors of various types: simple misspellings, omissions of words, mistakes in the dates, in the addition of the products, and so on. The article mentions several examples, raising the question as to what then was the use of such records. The reason for this in our eyes astounding lack of accuracy may be that the society of those days was still predominantly based on oral practice.

The ostraca of Deir el-Medîna testify to the extensive administration of the supply of the workmen as well as of their work in the tombs. The major type of documents are:

1) Those recording the number of lamps, i.e. torches, distributed for lighting the work, divided between those for the morning and those for the afternoon shifts.<sup>1</sup>

2) Those recording the names of the workmen who were absent from the workshop on particular days, in some instances with the reason for their absence.<sup>2</sup>

3) Those recording, day-by-day, the delivery of various products to the community, as well as important events in the necropolis.

4) Those recording the supply of the community with fuel (wood, dung, faggots) and fish.<sup>3</sup>

All these, and some other types of record, conjure up a picture of the state administration as of our days. Concerning them two questions can be raised:

a) For what purpose were these documents composed?

b) In how far are the contents reliable?

To a modern reader the first question seems superfluous. Of course, a government wants to know all that goes on within its territory. It seems obvious, for instance, that the management of the royal necropolis wanted to know the consumption (*h3w*) of wicks, and of grease supplied to them, or how many days in a specific month a workman did not turn up for his work in the royal tomb. We would suppose that absence could lead to a reduction of the monthly wages. However, there exists no clear evidence that this was ever the case. And






<sup>1</sup> See for the subject: J. Černý, *The Valley of the Kings*, 1973, chapter V: The Lighting of the Work, 43–54.

<sup>2</sup> Cf. my „Absence from Work by the Necropolis Workmen of Thebes“, in: SAK 8, 1980, 127–152.

<sup>3</sup> The supply with fuel and fish is noted, apart from special ostraca, in the day-by-day records (category 3). These texts I have called „Journal of the Necropolis“ ostraca; see R.J. Demarée/A. Egberts (eds.), *Village Voices*, 1992, 91–94. However, as Donker van Heel remarks (in: K. Donker van Heel/B. Haring, *Writing in a Workmen's Village*, 2003, 68), this term could as well be applied to category 2. That is certainly correct; a modern term seldom fully coincides with the Egyptian reality. It was only to facilitate referencing that I introduced the term, and I prefer to stick to it.

why the authorities would want to know the exact number of cakes or units of dates<sup>4</sup> that were delivered to the workmen in a specific month is far from clear. Yet, such details are regularly recorded in the „journal of the necropolis“ ostraca.<sup>5</sup> The fundamental question concerning the reason for such a minute administration has as yet seldom been raised in Egyptology.<sup>6</sup>

The matter of the reliability of the accounts has, so far as I know, never been systematically studied. That is the subject of the present article. One point should be made clear from the outset: if the contents of the administrative ostraca would appear not to be fully trustworthy, their value for the Egyptian authorities will have been minimal, informative as they may be to us.

That the scribes of Deir el-Medīna made mistakes is not surprising; everyone does that. It is the number of slips that is remarkable. A quite common error is: to begin a text with *hrw n pn* instead of *hrw pn*, „this day“,<sup>7</sup> a confusion of *hrw pn* with *hrw n* + verb.<sup>8</sup> An odd but rare slip is the writing of *ʿ3 n sš* instead of *sš* only in O. Nash 5 (= Hier. Ostr. 53/2), vs. 3. Other misreadings are, e.g. *tttt* (  ) for *tttt* (O. DeM 36, 1), or  for *d3mw* (O. DeM 40, 12), or  for *b3ry* (O. Petrie 3 = Hier. Ostr. 35/1, II, 10; in II, 3 correct!), while  for  (O. DeM 39, 15) is only the use of the wrong sign.

Fairly common are instances of metathesis: *kšrt* for *kršt*, „kyllestis bread“ (O. Or. Inst. Chicago 17005, 13; unpubl.) or *khrt* for *krht*, a fruit-basket (O. DeM 569, 5).<sup>9</sup> Several misspellings occur in O. Cairo 25677: *hd* for *hdm* (rt. 24), *hbw* for *hbny* (rt. 27), *nḳ* for *nḳr* (vs. 7). Evidently, the famous scribe Kēnhikhopshef, who was the author of this text, did not like to spend time on writing all the signs of these words.


<sup>4</sup> The „journal“ texts mention regularly the receipt of 1 or 2 „dates“, throughout without an indication of the quantity – as wood is always recorded by a figure, without a measure.



<sup>5</sup> Sixty-six of these texts are known from a period stretching from year 24 of Ramesses III until year 2 of Ramesses IV. Some are mere fragments, and several still remain unpublished. They all belong to the administration of the Right Side of the crew (see M. Gutgesell, *Die Datierung der Ostraka und Papyri aus Deir el-Medineh und ihre ökonomische Interpretation I*, 1983, 67ff.). Very probably there once existed a similar series for the Left Side, but of these only one has been preserved for these years, namely O. Gardiner 127 (unpubl.). Two other such Gardiner ostraca, the nrs. 145 and 160, also belong to the Left Side, but they date from the reign of Ramesses VI. Both are as yet also unpublished.



<sup>6</sup> Whether the ostraca are mere „brouillons“, that is, drafts the contents of which were intended for composing records on papyrus for the central administration, as has been suggested, or whether they were genuine documents for the local administration, as seems more likely (cf. S. Allam, in: *JEA* 54, 1968, 121–128), is of no importance to the present study. In both cases it is not clear why such a detailed recording was thought necessary.



<sup>7</sup> Already noted by J. Černý, in: *ArOr* 3, 1931, 296, note a. A few more examples are: O. Gardiner 121 (= Hier. Ostr. 59/2), 1; O. Gardiner 128 (= Hier. Ostr. 57/5), 1; O. DeM 204; O. DeM 244.

<sup>8</sup> E.g. *hrw n dlt*: O. Petrie 9 (= Hier. Ostr. 42/3), 1; O. Gardiner 126 (= Hier. Ostr. 54/1), 1; O. Ashmolean Museum 1933.810 (= Hier. Ostr. 71/1), 1. Other examples are: *hrw n spr* (O. Nash 5 = Hier. Ostr. 53/2, 1) or *hrw n mwt* (O. Gardiner 61 = Hier. Ostr. 60/2, 1).

<sup>9</sup> Once written  : O. Petrie 19 (= Hier. Ostr. 19/3), 5.

Some words occur in a large variety of spellings, e.g. *īrks* / *īrgs*, a basket, which is also written *īks* (O. BM. 29555, 9 = Demarée, Ramesside Ostraca, pl. 83), or *īrs* (O. Cairo 25678, 2); *dnrg* (*dlg*; cf. ⲉⲗⲟⲟⲩ), „gourd“, written *drg* (with  alone instead of ; O. Berlin 12653, 3 and 14; unpubl.) or *dng* (O. Cairo 25678, vs. 5).<sup>10</sup> An extreme example of the numerous ways in which a word was written is *ḏndr*, „branch“ or „faggot“; cf. J. Hoch, *Semitic Words in Egyptian Texts*, 1994, 389–390, who lists about 20 variants. But this is a loanword.<sup>11</sup>

Spelling mistakes occur also in names. Some examples are: *P3-wdh* for *P3-whd* (O. DeM 69, 2 and O. DeM 133, vs. 2), or even *P3-h3hd* (O. DeM 619, 2–3); Amemonē with  („stone“) instead of  („Valley“) in O. Cairo 25273, 2 and O. IFAO 420, 4 (unpubl.); *Hwt-šfyt* instead of *Hr-šfyt* (O. IFAO 1071, 8; unpubl.); *P3-ḥ3-n-īnt* for *P3-ḥ3-n-t3-īnt* (O. Gardiner 203, 4; unpubl. In the next line correct!). The name of the workman *ʿIy-r-nīwt.f* (e.g. O. DeM 47, 17; O. Gardiner 54 = Hier. Ostr. 49/3, 5) is elsewhere regularly written without the *r*. With the name of the fisherman Penpakhenty the scribes had constantly problems. Twice we find *P3-pn-hnty* (O. DeM 394, 3; O. IFAO 1276, 7; unpubl.); once *pn* was written over *p3* (O. Brussels E 3211, 4 = KRI VII, 315), while in O. Strasbourg 124, 2 only *P3-hnty* and in O. DeM 80, 3 only *Pn-hnty* occurs.<sup>12</sup>

Whether one should call the writing  for *ʿImn-nḥtw* (O. Or. Inst. Chicago 12073 = Hier. Ostr. 77, 11 and O. IFAO 155, 7; unpubl.)<sup>13</sup> an error or an abbreviation is a matter of taste. The spelling  for *Ḳenḥikhopshef* (O. DeM 698, 7) is probably a real abbreviation, although not very common.<sup>14</sup>



Most of the cases here mentioned are certainly mistakes. In how far the pronunciation of the words and names is responsible for the unusual spellings is unknown. The instances of dropping the final letters of a word in O. Cairo 25677, mentioned above, may be interpreted as such. Particularly in the second half of the Twentieth Dynasty there are many cases which suggest that prepositions were dropped in speech, which explains, for instance, the writing *ʿIy-nīwt.f* without *r*.


Quite a different type of slip in the texts is: forgetting to note the name of the watchman (*wrš*) at the beginning of an entry after the date in the „journal of the necropolis“ ostraca,

<sup>10</sup> Cf. also the writing of the initial signs as  in O. Gardiner 224, 2 (unpubl.)

<sup>11</sup> For an indication of twice writing a word, see O. DeM 429, 4–5: at the end of line 4 and at the beginning of line 5 both *nt*. Moreover, this word is here superfluous; cf. J. Borghouts, in: SAK 8, 1980, 75, n. 47.

<sup>12</sup> For the various spellings of Tjaroy (Dḥutimose), see Černý, *Workmen*, 365–366.

<sup>13</sup> In O. Gardiner 54 (= Hier. Ostr. 49/3), 11, Černý/Gardiner transcribed , although the facsimile gives only . This is indeed the abbreviated writing of *ʿImn*; see in: JEA 86, 2000, 53.

<sup>14</sup> The spelling  for *nḥ(t)* occurs frequently; cf., e.g., O. DeM 155, 5 (Nekhemmut) or O. DeM 148, 9 (Nakhtmin).


and adding it afterwards at the end of the line (e.g. Kha'emnun in O. DeM. 155, vs. 6),<sup>15</sup> or even in the middle of it (Nakhtmin in O. DeM 148, 9).

All these mistakes, insofar as they are indeed mistakes, have no impact on our understanding of the texts; they merely show that the administrators were inaccurate. Worse, however, are mistakes in the dates. Not so much when they occur in a continuous series of dated entries, as in the „journal of the necropolis“ ostraca, for there it is obvious what it should be. For instance, in O. DeM 37, 6, „day 5“ instead of „day 6“, or in O. DeM 45, vs. 3 „day 15“ instead of „day 25“. In O. DeM 44 verso the scribe appears to have lost his way; „day 8“ in line 4 is wrong, what follows in that line (*ds* 2, etc.) belongs still to day 7. The name Re'mery in line 5 proves that this is actually the entry of day 8, but the scribe automatically wrote „day 9“ after the erroneous „day 8“ in line 4. In line 6 he, correctly, noted again „day 9“. In vs. 16 we find another error: „day 23“ should be „day 25“.<sup>16</sup>

While such slips may be irritating, more awkward are mis-datings when they occur outside a series. A famous example would be, if correct, the date of Pap. Harris I, 1, 1; III *šmw* 6, which Černý suggested<sup>17</sup> to be a mistake for day 16, the first day of the reign of Ramesses IV. This would indeed be a suitable date for the text; however, not everyone accepts that this is an error.<sup>18</sup>

Equally debatable is Černý's suggestion<sup>19</sup> to „correct“ the date of O. Michaelides 1 (H. Goedicke/E. Wente, *Ostraka Michaelides*, 1962, pl. LI) from „year 10“ into „year 16“. Gutgesell<sup>20</sup> and Davies<sup>21</sup> have rejected the idea, although „year 10“ would mean that there has been a chief workman Khonsu already in that year who seems nowhere to be recorded. That Amennakhte appears in line 6 of this ostrakon as *sš-ka* is no problem, for the day II *šmw* 20 of year 16 fell before III *ḥt* of that year when Amennakhte was promoted to *sš n p3 hr*.<sup>22</sup>

Quite a mystery is the date „year 27, I *šmw* 13“ in O. IFAO 1254, 4.<sup>23</sup> It follows IV *prt* 28 at the beginning of the line, while after it, but still in line 4, we read: „day 15“. Since the preceding entries are dated to year 26, it looks as if a new regnal year began between IV *prt* 28 and I *šmw* 13. Yet, the accession day of Ramesses III, whose reign it will be,<sup>24</sup> was I *šmw* 26, that is, 13 days later. „Year 27“ should have been written in the last part of line 5, not in line 4.

<sup>15</sup> The name is written with the determinative , which is usual in the 20<sup>th</sup> Dynasty, although not in the 19<sup>th</sup>.

<sup>16</sup> More examples of errors of this type are noted by J. Černý, in: ZÄS 72, 1936, 114, n. 1.

<sup>17</sup> Op. cit., 114. This was accepted by H. Schaedel, *Die Listen des grossen Papyrus Harris*, 1936, 9, n. 1.

<sup>18</sup> E.g. P. Grandet, in his commentary to the text: *Le papyrus Harris I*, 1994, vol. 1, 119–122.

<sup>19</sup> Černý, *Workmen*, 212 and 306, n. 7.

<sup>20</sup> *Die Datierung*, Teil I (see n. 5), 93, n. 2 („Man muss hier nicht emendieren“).

<sup>21</sup> B. Davies, *Who's Who at Deir el-Medina*, 1999, 48.

<sup>22</sup> See Graff. 1143. The regnal year of Ramesses III began on I *šmw* 26.

<sup>23</sup> See my article „A Curious Error“, in: BIFAO 84, 1984, 303–306.

<sup>24</sup> For Ramesses II, the only other ruler of this time whose regnal years were 27 and more, the date is equally wrong; he ascended the throne on III *šmw* 27 (see in: SAK 17, 1990, 205).

A date which could have caused problems is that in O. Berlin 12641 + 12628, 1 (unpubl.). It appears to be „year 2, II *pṛt*“, but should be, as Černý noted in his transcription (Notebook 32, 64) „year 1, III *pṛt*“. Similarly, in O. DeM 156, 1, we should read „year 28, III *šmw* 1“ instead of IV *šmw* 1.

These mistakes are slips that were easily recognizable by the ancient user of the record, as they are by us today. Errors in additions of various goods, however, seem fatal for the reliability of an administration. In the records about the rations / wages distributed among the workmen several of them can be found. An – incomplete – list of them is:

- 1. O. DeM 181, 2: „61 men, each  $1\frac{1}{4}$  khar, makes  $75\frac{2}{4}$  khar“, instead of  $76\frac{1}{4}$ .
- 2. O. DeM 182, 5: „16 men, each 3 khar, makes 51 khar“, instead of 48.<sup>25</sup>
- 3. O. DeM 345, 3: „39 men, each  $\frac{1}{4}$  khar, makes 9 khar“, instead of  $9\frac{3}{4}$ .
- 4. O. DeM 376, 14: „17 men, each  $3\frac{3}{4}$  khar, makes  $69\frac{3}{4}$  khar“,<sup>26</sup> instead of  $63\frac{3}{4}$ .
- 5. O. Gardiner 184, 4 (unpubl.): „17 men, each  $4\frac{2}{4}$  khar, makes 68 khar“, instead of  $76\frac{2}{4}$ .

These five are all of one single type. The next group is of a different nature.

- 6. O. DeM 381, 9: „Total 92 khar, deficit 1 khar“. The total of the preceding lines is  $98\frac{3}{4}$ .<sup>27</sup>
- 7. O. DeM 383, 7: „Total of all<sup>28</sup> expenses: 55 khar“. From the preceding lines it appears that it should be  $54\frac{2}{4}$  khar.<sup>29</sup>
- 8. O. Cairo 25517γ, 23: „Total 15 khar“. The sum of  $\frac{3}{4}$  khar for each of 21 men is  $15\frac{3}{4}$ .<sup>30</sup>
- 9. O. Cairo 25608, 11: „Total  $32\frac{2}{4}$  khar“.
- 10. O. Cairo 25608, 12: „ $84\frac{3}{4}$ “. These figures should be 34 and  $88\frac{3}{4}$ , that is  $1\frac{2}{4}$  and 4 more, which is the quantity one workman received (cf. line 5). Were there then 18 instead of 17 men?
- 11. O. DeM 34 + O. Heidelberg 567, 11: „Emmer,  $32\frac{2}{4}$  khar for (*hr*) Right; each  $1\frac{2}{4}$ “. This would mean  $21\frac{2}{3}$  men (!). Actually, the chief workman and the scribe may have received more than  $1\frac{2}{4}$  khar, but that is not noted.
- 12. O. DeM 34 + O. Heidelberg 567, vs. 4: „Emmer, 35 khar“. Under the line is written: „Each  $\frac{3}{4}$  khar“. That would mean  $46\frac{2}{3}$  men(!).

Evidently, the additions are full of errors. Perhaps some of them are due to incomplete information, as in nr. 10 above, but that too makes them almost useless for administrative purposes.

<sup>25</sup> Perhaps it should be 17 men.

<sup>26</sup> The underlining (= red in the original) indicates that emmer was meant. That  $3\frac{3}{4}$  was written in black ink is another slip.

<sup>27</sup> The 2 of 92 is not clear (Černý noted „sic!“), but there is no room for the required  $7\frac{3}{4}$ . It may be that, for whatever reason, the  $7\frac{3}{4}$  sacks of line 8 is not included in the total; then that should be  $91\frac{2}{4}$ , which could have been written.

<sup>28</sup> Černý seems to have been uncertain about *nb*, but it fits the context.

<sup>29</sup> The amount for the chief workman is lost, but that is always double that of the scribe (who received the other half of the ration with the other Side of the crew).

<sup>30</sup> At the bottom of the column, far below a blank space, a total is noted of  $15\frac{3}{4} 1/8 1/16$  khar. While  $15\frac{3}{4}$  would be correct, the reason for  $1/8 1/16$  is a mystery.

Similar erroneous figures occur in records of other materials and goods. In O. Petrie 5 (= Hier. Ostr. 35/3) the distribution of yarn for wicks is noted.<sup>31</sup> The three captains of the crew received each 24 deben, which is stated to be together 81, instead of 72. Forty men got each 9½ deben, correctly added up to 380, while a certain Khonsu received 26 deben. There follows a total of 74, whatever that might mean. If Khonsu is the chief workman of that name, and it means that he got 26 instead of 24 deben, the total, first given as 81, would indeed have been 74, but this would have been extremely complicated and obscure. As they stand, the figures make no sense.

Another lamp account is the unpublished O. Cairo J 72458. There is recorded (line 4) for Right: 582 wicks, for Left (line 5) 364, which is said to be an excess for Right of 222. Actually,  $582 - 364 = 218$ . In O. Cairo J 72454 + O. Cairo 25545, 2–3,<sup>32</sup> we read that 95 greased wicks were brought from the storeroom, 32 for day 27 of III *ḥt* and 32 for day 28, which leaves a remainder of 35 (should be 31). In line 5 we even read:  $16 + 16 = 22$ !

Such errors also occur with the units of wood delivered by the woodcutters. In O. DeM 36, 10, for instance Bakenkhonsu is said to have brought on II *pṛt* 16, 500 units, in line 11, for day 17, 750 units; in lines 12 and 13, for day 18, 730. This is stated in line 13 to be a total of 29[80],<sup>33</sup> instead of 1980 units. In O. Prague H 14, 2 (KRI VII, 302–3) the same Bakenkhonsu is recorded as having delivered 160 units of wood, and the next day (line 3) 180 more, which is stated to be together 240 instead of 340.

Another woodcutter, Ptahmose, delivered, according to O. DeM 47, vs. 9, 300 units on II *pṛt* 29, plus 160 for day 20. He had already brought on the 21<sup>st</sup> (vs. 2–3) 590 units, which with the 160 makes 750 units, his quota per decade. On the 30<sup>th</sup> he produced (vs. 10) 292 units, stated to bring his total up to 432, his deficit being 318. That would again mean a full quota of 750. But how could 300 on the 19<sup>th</sup> plus 292 on the 30<sup>th</sup> together be 432? It is actually 592, 160 more, but the 160 of the 29<sup>th</sup> were explicitly for the preceding decade.

Let us look at one more case. In O. DeM 46, 5, Pades is recorded as delivering 166 units<sup>34</sup> for II *ḥt* 30, to complete his quota except for a deficit of 4. Since his quota was 500, he had earlier delivered  $500 - (166 + 4) = 330$  units. However, in O. DeM 45, vs. 12, we read that on II *ḥt* 30 itself Pades had brought 314 units, not 330. Moreover, a deficit of 4 units is seldom recorded; such small amounts are mostly ignored. That his quota was indeed 500 appears evident from O. DeM 45, 2.

That was also the quantity Bakenkhons had to deliver, as is clear from O. DeM 35, 8. On the 28<sup>th</sup> of II *pṛt* of year 28, according to that line 8, he brought 140 units, while on the 19<sup>th</sup> (line 7) he had already delivered 368, together 508 units. Here the 8 are neglected. That happened again, this time for Ptahmose, in lines 12 and 13. He first brought 328 units, a day

<sup>31</sup> See my article „The Year of the Strikes“, in: BSEG 16, 1992, 43.

<sup>32</sup> Translated by A. McDowell, *Village Life in Ancient Egypt*, 1999, 209 (Nr. 157B).

<sup>33</sup> Černý wrote the 80 between brackets, obviously because it was badly or not legible.

<sup>34</sup> These units are also noted in O. DeM 45, vs. 17. That 166 units are also recorded for Bakenkhonsu in O. DeM 46, 4, one line higher, is somewhat suspicious.

later 180, which are added up to 500.<sup>35</sup> Finally, in O. Michaelides 21 (Goedicke/Wente, op.cit., pl. 76), 4–6, we read that, on III *pṛt* 25, Left received 1225 units of firewood (*ḥt šm*) plus 5 beams (*sʿy*), which counted for 250 units of wood; together 1275. That should be 1475.

Apart from wood, intended for the fires as fuel, the woodcutters also delivered dung. This is seldom recorded in the „journal of the necropolis“ ostraca, O. DeM 42 and 46 being almost the only ones. One therefore wonders whether in other texts the „value“ of dung, expressed in units of wood, was sometimes included in the quantities of wood which are recorded.

Several texts show that 1 khar of dung equalled 40 units of wood. In O. DeM 42, vs. 12, Ptahmose is stated to have delivered 5 khar of dung, which is said in a note above the line to „make 240 (units of) wood“. Actually, that should be the equal of 6 khar. In the next line, Ptahmose is recorded as bringing 3 2/4 khar of dung, bringing the total up to 18 2/4 (sic!), which equals 740 (units of) wood.<sup>36</sup> Yet, 5 + 3 2/4 is 8 2/4, not 18 2/4, while 740 units would indeed be the equivalent of 18 2/4 khar.

Quantities of water brought to the community are seldom recorded, but in a few instances the deficit was noted. One example is O. DeM 391. Four people, the first one the scribe Amennakhte (the son of Ipu?),<sup>37</sup> then an Amenemope, an Usihē, and a Khonsu (the chief workman?) are each noted for 9 khar. The total is said to be 37 khar, instead of 36. Another water account may be O. IFAO 1027 (unpubl.), although the word „water“ is nowhere mentioned. Five men are listed, each for 1 1/4 (khar), which together is said (line 7) to be 5, instead of 6 1/4 (khar).

Let us return to the subject of wood, but this time to the distribution of it among the workmen. In O. Gardiner 145 verso (unpubl.) we are told (lines 3–7) that 29 men received each 160 units per month, stated to be in total 5260 units. Actually it would be 4640, 620 less. It is, according to the text, in two months 10560 – 2 x 5260 would actually be 10520 – and in four months 21120 – which is indeed 2 x 10560. In the last line there is noted: excess (*ḥʿw*) of the two months: 2040“. I see no way to make sense of these figures.

A last instance may be O. IFAO 1206, recently published by Wimmer.<sup>38</sup> In rt. 2 we find a measure in cubits: 18 x 5 x 8 = 180 cubit cubits (*dnī*), instead of 720. In rt. 10 an addition is presented (*ir.n dnī* 4204) of the preceding lines, which is also wrong.<sup>39</sup> It is difficult to explain these errors; that they appear in such a technical calculation is simply astonishing.

<sup>35</sup> In O. DeM 46, 8 we read that Bakenkhonsu delivered on III 3 *ḥt* 9: 760 units. This is immediately followed by the words: „Wood, 765, for III *ḥt* 9“; hence 5 more.

<sup>36</sup> There follows: „Deficit, wood, 10“, since the quota of Ptahmose was 750.

<sup>37</sup> Only for him it is said that the deficit was „with“ (*m-dī*; perhaps in the sense of „due to“?) Eferikh, probably the water-carrier of that name. It is not clear whether this man was also responsible for the water of the others.

<sup>38</sup> Deir el-Medina in the Third Millennium AD, Demarée/Egberts (eds.), op.cit., 351–358, with pls. 46–51. Wimmer deals here mainly with the writing and the date of the text, not with its contents, although he indicates the errors.

<sup>39</sup> Loc. cit., 354, note hh.



Could it be that the mathematical skills were based on „oral“ arithmetic, and created a problem for the scribes when applied in writing? This aspect requires much further study.

The reliability of the administrative ostraca can also be studied from a different perspective, namely whether they completely record what they purport to contain. For instance: the „journal of the necropolis“ ostraca register day-by-day the deliveries to the workman's community, but are indeed all the products that entered recorded? Of course we seldom possess evidence from which we can deduce what really happened. Moreover, many ostraca are damaged or only partly legible, so that we have not sufficient material to assess their value. Yet, there are some ways to evaluate the indications and to determine what in all probability was the reality.

Firstly, we will consider the evidence for the deliveries of the potter.<sup>40</sup> Every decade he was supposed to bring his quota, the composition of which is unknown; it is simply called his *b3kw*. Like other members of the *smdt* he will not have been expected to deliver his products exactly on the first day of the decade, although, in contrast to the evidence for the woodcutters, there is no proof that he delivered it over additional days. The ostraca merely register his delivery or non-delivery (*wḏ3* or *ḏ3t*), in some instances that he brought more than one quota, which means that he made up for his arrears.

There has survived a series of „journal“ ostraca covering almost completely eight months of year 1 of Ramesses IV, that is, 24 decades, from IV *šmw* 1 till III *prt* 30.<sup>41</sup> Over these decades the evidence for the potter is lost, due to damage of the ostrakon, in three texts. In eleven others he is stated to have delivered his full quota indicated by the word *mḥ*, while three times he was in arrears (*ḏ3*), one of which he probably made up for at a later date.<sup>42</sup> In seven instances at the first day of a decade no mention at all is made of the potter. Nevertheless, there cannot be any doubt that he either had delivered on these days, or at least was supposed to deliver, which should have been noted. That is, in more than a quarter of the decades the scribe failed to record the arrival or non-arrival of new vessels. So much for the completeness of these texts.<sup>43</sup>

<sup>40</sup> „The“ potter (*p3 kd*) is what is written throughout in these ostraca, without a name. Since those „journal“ ostraca that have been published belong to the administration of the Right Side, this implies that there was only one potter connected with this Side. Whether there was another serving the Left Side is unknown.

<sup>41</sup> They are, in chronological order: O. Berlin 12631 (unpubl.); O. DeM 40 + O. Strasbourg H42; O. DeM 41; O. DeM 42; O. DeM 43; O. DeM 47; O. Berlin 12641 + 12628 (unpubl.). Missing are the periods IV *šmw* 18–24 (see O. Berlin 12631), III *ḥt* 22–30 (see O. DeM 42), and IV *ḥt* 15 – I *prt* 4 (see O. DeM 43); together about one month.

<sup>42</sup> He did not deliver on IV *šmw* 30 (O. Berlin 12631, vs. 9), but on I *ḥt* 24 (O. DeM 40, 15) he brought no less than 3 quotas. One was intended for that decade, another for I *ḥt* 10, and the third probably for IV *šmw* 30. However, it may also have been for the epagomenal days. Whether the potter had to deliver for those days (½ quota?) is not fully clear. On the first epagomenal days of year 2 of Ramesses IV (O. DeM 44, vs. 20) he brought 2 quotas, but they could have been meant for the second and third decade of IV *šmw*. In that month there is no mention whatsoever of the potter. The last instance where he occurs is III *šmw* 9 (O. DeM 44, 20). Then he brought 1½ quotas (!).

<sup>43</sup> See for this aspect of the potter's delivery already my *Commodity Prices, 1975, 485ff.*

For other products it is less easy to prove that the records are unreliable; a more intricate analysis is necessary. The wood-account of Bakenkhonsu in O. DeM 151<sup>44</sup> covers a period from IV *ḥt* 10<sup>45</sup> until II *šmw* 20 of years 27–28,<sup>46</sup> that is, 20 decades, almost seven months. Without exception every decade is recorded. O. DeM 150 deals with a period from the epagomenal days of year 26 until I *pṛt* 20, that is, almost five months. It is not absolutely certain that the text contains the account of Bakenkhonsu alone, for his name appears only in line 11. Yet, in comparing it with O. DeM 151, that appears likely. Again, all decades without exception are mentioned. Such texts suggest that in the „journal“ ostraca the woodcutters should have been recorded every decade; mostly more than once, since they seldom handed over their quota at one time.

Turning now to the „journal of the necropolis“ ostraca in which Bakenkhonsu occurs regularly from year 30 of Ramesses III to year 2 of Ramesses IV, it is conspicuous that the only ones in which he is not mentioned are: O. DeM 37 (III *pṛt* 1–19), O. DeM 153 (I *šmw* 4–30), and O. DeM. 38 (II *šmw*, 1–30), all three from year 31–32.<sup>47</sup> That is, during four months, from III *pṛt* until III *šmw*, he never turns up. That could of course mean that he was ill, or absent for another reason. However, it seems more likely that it was due to the scribe of the „journal“.

There are more instances in which the name of a woodcutter disappears from these texts for some time. Ptahmose, who is mentioned in almost every one from year 30 until year 2 of Ramesses IV, is earlier only intermittently recorded. He appears for the first time in O. DeM 653 (rt. 3 and vs. 6), a rather fragmentary text from year 27 of Ramesses III. On the other hand, in year 28 his name occurs four times in O. DeM 35. One could conclude that, in year 26 and year 27, Ptahmose served for one month only, but that seems once more unlikely. Although our documentation is far from complete,<sup>48</sup> it is extensive enough to deduce from the absences of some woodcutters that the ostraca do not present the full reality. Not only is what they note full of errors, but they also omit facts that should be recorded according to their system.

There is one more way to test the reliability of the „journal“ ostraca. Some of them exhibit an overlap of a few days. The reason is that the scribe chose by preference a sherd large enough to note the entries of a whole month, but sometimes he overestimated the need and was left with a blank space at the bottom of the verso. This he used to already enter notes for the first days of the next month. Later on he recorded the same data on the ostrakon for the next month, but not exactly the same. Some examples are:

<sup>44</sup> Of the name only the *k* of *Bḥk* is left (line 2), but see Černý's note a to the publication.

<sup>45</sup> On the 10<sup>th</sup> Bakenkhonsu delivered 500 units, which is stated to be 200 short of his quota. However, according to O. DeM 33, 7, he brought on that day 400 units. Is that another error of the scribe, or is the reconstructed date of 151 (year 27) a mistake of Černý?

<sup>46</sup> Between line 19 (I *šmw* 20) and line 20 (I *šmw* 30) year 28 of Ramesses III began.

<sup>47</sup> In O. DeM 153, vs. 8 begins year 32.

<sup>48</sup> The last lines of O. DeM 155, vs. α (III *ḥt* [1] of year 31) are repeated in O. Prague H 14, 1 (KRI VII, 302). In both it is stated that Ptahmose delivered 300 units of wood. However, the rest of O. DeM 155 is lost, so that we cannot discover to what extent both texts record the same facts. See further below.

- I. O. DeM 45, vs. 13–19 (A) and O. DeM 46, rt. 1–7 (B)
- II. O. DeM 47, vs. 11–15 (C) and O. Berlin 12641 + 12628, 1–4 (unpubl.) (D)

In A we read that, on III *ḥt* 1, Ptahmose delivered 155 units of wood, intended for II *ḥt* 30. In B Ptahmose is not mentioned, only a delivery by Pades of 150 units, which according to A are again 155. This quantity by Pades is in both ostraca said to be for the preceding day, but that addition we find also in the next lines of B, not in A. Moreover, B records every time a deficit, A not. Then, the quantity brought by Bakenkhonsu in A (vs. 16) is stated to be 160 units, in B it is 166 units.<sup>49</sup> In A (vs. 18) 1250 deben of fish are said to be the delivery of Khonsumose, whose name is immediately followed by that of Amenkha‘u, so that one could surmise that the latter was the father, *s’ n* being omitted. However, B (rt. 6) clearly states that the fish came from Khonsumose and „from (*m-dī*) Amenkha‘u“.

In C (vs. 11) we read that Ptahmose delivered 312 units of wood, a note which is absent from D. On the other hand, C omits that Kha‘emnun was the *wšw* of that day.<sup>50</sup> Since part of D is broken off at the left hand side we cannot know whether the text here was the same as in C. The amount of fish delivered by Amenkha‘u was according to C (vs. 11) 140 deben, although Černý was not quite certain of the figure 40. In D we find indeed a figure 40, preceded by a sign which could be 900, not transcribed by Černý,

Comparison between two texts requires close reading, and we need to be careful with our conclusions.<sup>51</sup> Pap. Turin 1949 + 1946, vs. col. I,<sup>52</sup> covers the same days as O. DeM 39, 10–16. Indeed, some deliveries are noted in both texts: 2 *ds*-jars and 1 (measure of) dates on the 14<sup>th</sup> of III *šmw*, and 8 *bīt*- plus 8 *psn*-loaves on the 15<sup>th</sup>.<sup>53</sup> But the two texts are of a different nature. Not only is one a papyrus and the other a potsherd, but the papyrus records whether the crew was at work on these days or not, whereas the ostrakon notes for each day the name of the watchman (for Right). The latter text mentions also more deliveries, e.g. fish and wood. On the other hand, the announcement of the death of Ramesses III is far more extensive in the papyrus. Such differences are clearly not to be ascribed to the carelessness of a scribe; the texts belong to different categories. The papyrus was perhaps based on notes by the senior scribe, made in the Valley of the Queens where the crew was at work in the year 32, while the ostrakon will have been composed by a scribe of the *smdt* in the Enclosure of the Tomb.

<sup>49</sup> See above, p. 152

<sup>50</sup> For the error in the date of D (year 2, II *pṛt* instead of year 1, III *pṛt*) see above, p. 150.

<sup>51</sup> According to O. DeM 154, 6–7, Bakenkhonsu delivered, on II *šmw* 20 of year 31, 148 units of wood, and the next day 146. The same days are recorded in O. Cairo 25635, an account of this woodcutter. Here for day 20 (line 8) are noted 146 units and for the next day no less than 308. The difference with the figures of O. DeM 154, 7 seems too large for a mistake, but how to explain it escapes me.

<sup>52</sup> From line 5 onward published by Černý, in: ZĀS 72, 1936, 110–111; also KRI V, 557–558.

<sup>53</sup> In O. DeM 39, 16, the order is: 8 *psn* plus 8 *bīt*. In the Turin papyrus, vs. 1, 9, there is written: 8 *bīt* plus *psn* ....., the number being lost.

Not all comparison leads to the discovery of differences. The first three lines of O. Brussels 3214 (= KRI VII, 316)<sup>54</sup> are an exact duplicate of O. Berlin 10634 (unpubl.). However, the Brussels ostrakon has 13 lines, all dealing with fish deliveries in I, II, and III *ḥt*, whereas the Berlin text has only 5 lines, lines 4–5 being a „memorandum of (*shʾ n*)<sup>55</sup> the papyrus roll (*ʿrt n ḏm*) and the ink (*pʾ ry*)“.

This rather intricate and – I readily admit – fairly dull study is an attempt to answer the question posed in the beginning: to what extent are the administrative ostraca from Deir el-Medīna reliable? The conclusion seems clear: the texts contain numerous errors both in the spelling and in the additions, and certainly did not always fully record the deliveries to the workmen. However, so far as we are able to see, there is no reason to doubt that those deliveries which are registered for a particular day had indeed been received.

This leads to the next question: what is the value of such an inaccurate administration? If ever the central authorities, for instance the vizier and his bureau, wanted to control the accounts of the community, what could they do with this evidence? Such a control so far as we know never took place. Even for an inside check on what happened earlier, by the scribes of the community themselves, the ostraca are too incomplete and unreliable. Why then take the trouble to note all these minute details?

There is, however, a more fundamental problem: why are there so many mistakes of all kinds in these texts? Sheer incompetence seems hardly to be a satisfactory answer. I am rather inclined to suggest: while the community of Deir el-Medīna as a whole may have had a higher level of literacy than others, it was not yet far removed from the oral tradition of recording. The format of the various types of ostraca may have been somewhat systemized, but the whole administration rested still on a predominantly oral practice.<sup>56</sup> The scribes, therefore, did not worry about the details of what they wrote. To brand them as careless and slovenly means to apply to them the criteria of a modern society, which would be ahistorical, hence unjust.

<sup>54</sup> Although Kitchen states that his text is after „Černý, Courtesy Griffith Institute“, that is evidently not the case. It is a copy of L. Speleers, *Recueil des inscriptions égyptiennes*, 1923, 59. Černý's transcription (Notebook 34, 7) differs widely from that of Speleers.

<sup>55</sup> For the distinction between *shʾ r* and *shʾ n*, cf. McDowell, *Jurisdiction in the Workmen's Community of Deir el-Medīna*, 1990, 16–18.

<sup>56</sup> Cf. the article by B. Haring, *From Oral Practice to Written Record in Ramesside Deir el-Medina*, in: *JESHO* 46, 2003, 249–272.