

A. *Np(1) 271 [+J Xd 9124*



B. *Xe 544 [+J Od(1) 5511*



A. Lc(2) 512 [+J] Lc(2) 7438.r, l. s., v.



A. *Lc(1) 547 [+]* *Lc(1) 1580*

B. *Np(2) 860 + 9343, r., v., and l. s.*



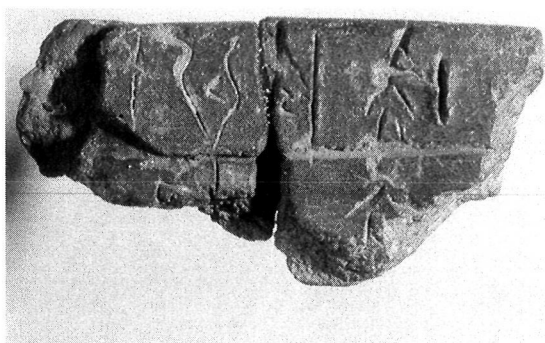
A. X 1539 [+J] U 1813



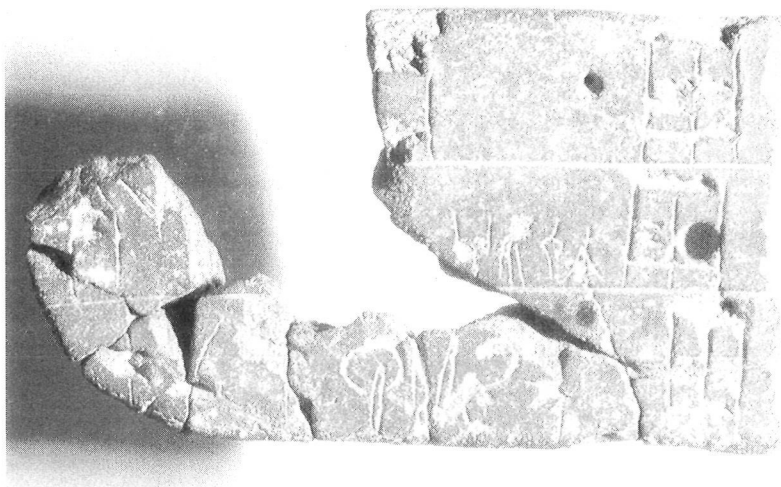
B. Np 2138 [+J] C 7060 [+J] 8791 + fr.



A. *Np(1) 5013 [+]* *Np(1) 7923*



B. *Ap 5547 + 8807 + frr.*



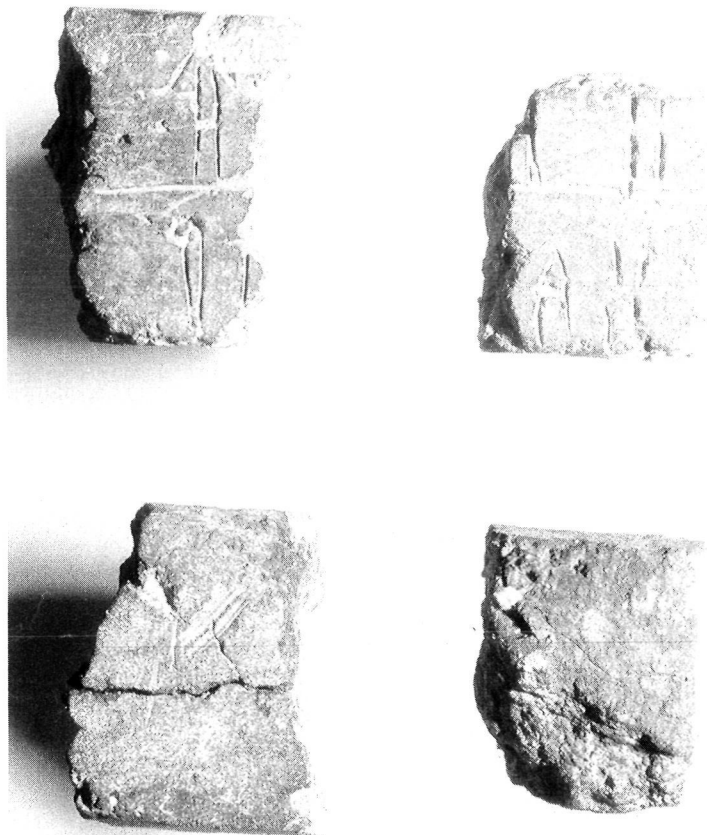
C. *Le 5629 + 8512*



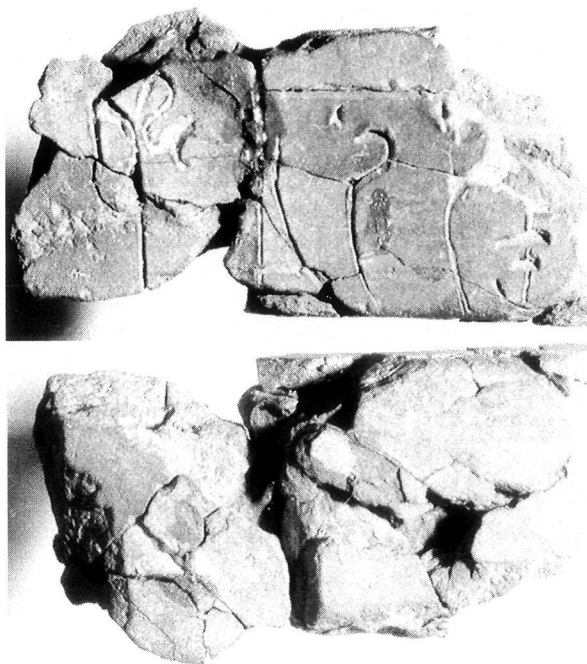
A. L 5745 + 5917, r. and v.



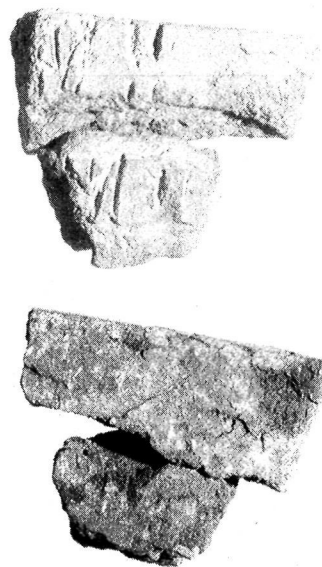
B. As(1) 5932 [+] As(1) 8342, r., l. i., and v.



A. Ak(2) 7012 [+] Ak(2) 7021, r. and v.



B. E 7979 + 10015 + FRR(3) II-0, r. and v.



A. *Od 9675 [+] Od 9889, r. and v.*

22 JOINS AND QUASI-JOINS OF FRAGMENTS OF LINEAR B TABLETS FROM KNOSSOS*

These joins and quasi-joins were made during our stay at Iraklio from 25th to 30th November 2002, five days implying about 25 working hours in the Scientific Reserve of the Museum.¹ Most of the work done by JLM was devoted to a comparison of the fourth volume of *CoMIK* against the tablets themselves,² and to go through the files containing Xanthoudides' letters,³ while RJF first familiarised himself with the epigraphical material and considered proposals for scribal hands in the Od-series suggested by M.-L. B. Nosch as part of her research on the textile tablets. RJF then went on to check some proposals for joins and quasi-joins from his own studies. It is convenient to append a number of his considerations on quasi-joins to the present paper which are written from the perspective of a new observer.

For the presentation of the results, cf. *Floreat Studia Mycenaea*, p. 369, but only the leading numbers of the tablets are now given. Photographs are given in order to keep *CoMIK* up-dated.

Np(1) 271 [+] Xd 9124

(**Np[1]**; «124»e)

]rē[]vest.[]CROC RO 1 QI 1

]i[not impossible. One sign in the lacuna?

Upright on the right edge.

[RJF] PLATE XIX.A

Size and profile suggest the quasi-join. Also blackened as usual in tablets in hand «124»e. The word could be a place-name after the usual formula, but which one? *re* is likelier than *i*; there are traces for a second sign before a third one; upright in the break (*wa*, *nu*, *ra*, etc.)

* Work by JLM was done in the frame of DGES Research Program PB-94/0464 of the Ministry of Education and Culture of Spain.

¹ Our thanks are due to the Director of the Museum of Iraklio, Dr Alexandra Karetsou and her collaborators and guards of the Scientific Reserve, for their unfailing support during this visit as they have always given during the past years of research on the Knossos tablets.

² See the joint review J. L. Melena and Thomas G. Palaima, «100 Years of Linear B from Knossos», *AJA* 105, 2001, pp. 316-320.

³ Thanks to the kind support of Eleni Banou, who also deserves our deepest gratitude. The aim of the search was to locate the list of the Linear B tablets from Knossos presented to Sir A. J. Evans.

Lc(2) 512 [+] Lc(2) 7438 (Lc[2]; 113)

.A]TELA^x 5[]vac.[
 .B si-ra-ri-ja[LANA]32 M 1 N[

↓ (115)

v. to-u-ka[LANA]2 M 1 [

.A For the isolated 5 at the end of the line, cf. Lc 483, Lc 7377, Lc 7433.
 5[]: 6 theoretically possible but highly unlikely.

.B 1 N over []].

[RJF] PLATE XX.A

This is most probably quasi-join. The original tablet was broken first into pieces along the right line of *-ja*, and the central piece was baked with a higher amount of oxygen than the left end (darker). When the spot was excavated, a pick struck the middle piece disintegrating the left part of it (of which one bit was recovered from drawer IV by J. L. Melena («175 raccords... », *Minos* 27-28, 1992-1993, p. 55), whereas two more, from the far right, were deposited in the Miscellaneous drawer I/1, joined by J.-P. Olivier («436 raccords... », *Minos* 24, 1989, p. 228). This story gives further support to the probability of the join, which could be confirmed in the near future by searching for the remaining fragments produced by the pick strike.

Xe 544 [+] Od(1) 5511 (Od[1]; 103)

.a pe-re-ko[]
 .b da-*22-ti-ja / a-ze-ti-ri[-ja] LANA 1

[RJF] PLATE XIX.B

Clay texture, profiles and some waving in the clay surface suggest that both pieces belonged to the same record. There is at least 3 cm. gap between pieces. It could be entered as a possible quasi-join: 'Possibly same tablet as ...' in the apparatus for both pieces, still kept separated.

Lc(1) 547 [+] Lc(1) 1580 (Lc[1]; 103)

.A TELA+TE 8]LANA 56
 .B tu-ni-ja[/ tu-na-no TELA¹ 1] LANA 3 [

[RJF] PLATE XXI.A

Gap about 2 cm. Quasi-join not excluded, it is supported by the trajectory of the straw, and clay colour and grain.

Np(2) 860 + X 9343 (Np[2]; 134)

] CROC P 4 o P 8
 Cut at right.

[RJF] PLATE XXI.B

Although a bit of clay is still missing from the back between both pieces, the clay texture and profile are identical in both fragments, which are now held together with adhesive gum. The break followed the trace of the upper and lower initial units of the numeral 8 and remains of them are clearly perceptible on the surface of the two pieces.

The join supports the hypothesis that due contributions of saffron on Np(2) tablets in Hand 134 amounted to N 1 (as in Np 856, 861, 1000, 5002, 5721, 5725, 5982, 7418, 7439, 8003 and 8249) and deficits were recorded for the people who did not achieve the required amount.

Ga(5) 1535 [+] X 5774 (Ga[5]; 221)
]-wo [] AROM 12
 Cut at right.

[RJF, JLM]

This quasi-join is not excluded. It is proposed on the basis of the cross-sectional profile of the pieces and on the clay type.

X 1539 [+] U 1813 (U; —)
 pa-i-to[]*184 2 []
 No sign lost in the gap.

[RJF] PLATE XXII.A

1539 bis (= 1813) has already been joined by ELB to a fragment at right («Junctions of fragments of Minoan Inscriptions in Iraklion Museum», *Minos* 3.2, 1955, p. 123). In his *Handlist*, Evans considered both pieces, found in the Queen's Megaron, as parts of the same document and he is surely right. Clay texture, grain and colour, and the very tracing of the stylus support the quasi-join. A gap of ~15 mm. still separates them, but it seems that fragments made from the same clay are not extant in the Museum drawers. No text seems to have been written between the toponym and the unique, obscure logogram.

Np 2138 [+] C 7060 [+] 8791 + fr. (C; —)
 .1] CROC N[]^f[]3 WE 1
 .2]vac.[]vac.

→

v. ri []

Cut at bottom.

r.1 Strange trace at left. Upright before]3 could be the base of OVIS, OVIS^m, CAP or CAP^m.

v. Perhaps [ri] and further traces of [] to right of it.

[JLM] PLATE XXII.B

All the pieces come from the same tablet although it is not possible to determine the magnitude of the gaps between the fragments, which remain unglued.

An old *agrafon*, which was quasi-joined to 8791 by J.-P. Olivier, («98 raccords...», *Minos* 13:2, 1972, p. 125), is now joined (another *agrafon* was once joined by myself, «19 raccords....», *Minos* 31-32, 1996-1997, p. 420).

The original document may record miscellaneous entries of agricultural products and livestock.

Np(1) 5013 [+] Np(1) 7923 (Np[1]; «124»e)

qa-sa-ro-we []CROC P 1[

Possibly remains of the left petal outline of CROC on 7923.

[RJF] PLATE XXIII.A

Jan M. Driessen⁴ suggested this quasi-join, which we judge to be probable. There is a gap of 2-3 mm. between the fragments. The width of the tablet was squeezed at left by pressure from fingers the tablet maker held the wet tablet.

Ap 5547 + X 8807 + frr. (Ap; 103?)

.1]ja-mi-nu MUL 1 [

.2] di-[] MUL 10[

.1 Possible trace at right.

.2 Possible traces at left on both fragments.]-*di-ni-ja* not impossible.

[JLM] PLATE XXIII.B

Ap 5547 was joined to 8162 by John T. Killen («123 raccords», *Minos* 10, 1970, p. 162), which went at right. Both X 8807 and an old *agrafon* went on 5547 at the bottom giving remains of signs before MUL on line 2. Another bit went on *verso* of the same piece.

The reading of the anthroponym for the woman on line 2, which is traced back to *CoMIK*, is extremely difficult and is probably wrong.

Le 5629 + 8512 (Le; 103)

.1]ja TELA¹+TE [

.2 e-ki-[si-]ja / a-pu-do-si TELA¹+TE [

.3 pa-i-to / ko-ma-we-to TELA¹+TE [

.1 Small cavity (width *ca* 1,5 mm, min. depth 6 mm) 5 mm to the left of the ideogram, probably made with the sharp end of the stylus.

.2 Trace after *e-ki-*[compatible with *si*. The three horizontal strokes at the right of *TE* were replaced by a cylindrical cavity (width 4 mm, depth 3,5 mm) possibly made with the round end of the stylus.

[JLM] PLATE XXIII.C

Jean-Pierre Olivier⁵ had suggested that 8512 is part of Le 5629. However, he placed it as the upper left corner and the first entry was therefore assigned to *e-ko-so*. On closer examination, 8512 is naturally suited to join to the piece which includes the remains of sign forming the beginning of line 2 and the *apudosis* concerned is then ascribed to *e-ko-so*.

L 5745 + L 5917 (L[1]; 103)

.a [] a-pu-do-si[

.b]wa-ja , / ki-to , TUN+KI [

.a Traces at left, perhaps followed by a divider.

.b Possibly]-*wa-ja*. Probable trace at right (![?).

[RJF] PLATE XXIV.A

⁴ *The Scribes of the Room of the Chariot Tablets at Knossos*, Supl. *Minos* no. 15, p. 77.

⁵ «Quasi-raccords de fragments dans les tablettes de Cnossos», *KKh* 9, 1969, p. 252.

Emmett L. Bennett, jr. seems to suggest the quasi-join in his notes in the 5000- file, checked by JLM, and this was therefore noted down in *KTTColor*. It was checked by RJF, and JLM confirmed that there is physical contact between both fragments: colour and texture of the clay support the suggestion that they belonged to the same tablet; profile and *verso* also support the join. Nevertheless, the greater argument is the divider after *ki-to*, remains of which do appear on the fragments. The tracing of *wa*, *ja*, *ki*, and *to* is clearly compatible with hand 103.

As(1) 5932 [+] As(1) 8342 (As[1]; 103)

- .1 *sup. mut.*
- .2]VIR 1 a-[•]-we X[]VIR 3 a-[
- .3] X VIR 5 a-[]wε-ro VIR 1 X[

lat. inf.]su-*56-ta X VIR 1 [• -]*56-ti VIR 1 X

- .2 Perhaps *a-ro-we*.
- .3 Sign at left, possibly]*pa*. a-[]*wε-ro*: at least two signs before *wε-ro*; initial X probably over [] ; X's written when clay was 'dry'.

l. i. X written when clay was 'dry'.

[RJF] PLATE XXIV.B

This quasi-join is almost certain, although some clay (ca. 4 mm. at bottom, but insignificant at the level of the rule) is missing between both fragments. Most of the *verso* is absent in 5932, but a bit extant fits well with the width and curvature of 8342.

Ak(2) 7012 [+] Ak(2) 7021 (Ak[2]; 108?)

- .1] MUL [] 4[
- .2] ko-wø[]jo-e 4 [
- Sup. mut.* in 7021.
- .1 Possibly]*wø* at left.

[RJF] PLATE XXV.A

Possible quasi-join is suggested by the quality of the clay (with inclusion of small pebbles), and top and bottom profiles. Medial rule fits well on both pieces. A gap of 2 cm. is supposed with [*me-u-*] lost.

E 7979 + 10015 + FR II-0 + FR II-0 + FR II-0 (E; —)

e-]me-si-jo-jo , / pa-na[-so () GRA 100 [??)

l. i.] *vest.* [(Traces at left of GRA.)

[JLM] PLATE XXV.B

After heavy reconstruction («501 raccords...», *Minos* 25-26, 1990-1991, p. 381; «71 raccords...», *Florent Studia Mycenaea* 1999, p. 371), the position of fragment 10015 on the *verso* of E 7979 is now ensured by inner traces of a straw. This gives the beginning of the upper profile and the probable height of the tablet. Three more II-0 fragments were also glued on the *verso*. For the difficulty of a quasi-join with E 7338, see «71 raccords...», p. 371.

Od 9675 [+] Od 9889

(Od; —)

.1]LANA 4 [

.2]LANA 2[

inf. mut.

[RJF, JLM] PLATE XXVI.A

Although there is probably physical contact between these pieces (which are undoubtedly parts from the same tablet), they remain unglued.

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APPENDIX

by RJF

The aim of this APPENDIX is twofold. Firstly, it will set down the criteria for quasi-joins and whether quasi-joins are certain, probable, possible or 'not excluded'. Secondly, it will give a few examples of quasi-joins which conform to these criteria.

Given the large volume of Linear B material, there have been relatively few quasi-joins identified. For example, *KTTCOLOR* currently lists only 15 probable quasi-joins and 9 possible quasi-joins. Furthermore, 9 of these date back to the work of Olivier⁶ who made the first concerted effort to set down quasi-joins. He wrote:

«Que cette certitude vienne de la présence de lignes guidant l'écriture qui se répondent parfaitement d'un fragment à l'autre, de l'existence d'un trou (laissé par la combustion d'une paille ayant servi à armer la tablette) orienté de la même façon dans les deux pièces, de la courbure de la tablette ou d'autres indices se rapportant à l'aspect de cette dernière.»

During the joint work in the Iraklio Museum, particular efforts were made to look for new quasi-joins and, in doing this, a set of standards were developed to define the quality of a quasi-join. In general, quasi-joins are less certain than joins simply because the pieces do not make direct contact. Nevertheless, the standards required for acceptance of a quasi-join should be rigorous.

For a certain quasi-join, for which there is no reasonable doubt about its correctness, then we should expect that the pieces of the tablet should,

1. be made from the same type of clay
2. be from the same find-place
3. be written by the same hand

⁶ «Quasi-raccords de fragments dans les tablettes de Cnossos», *KKh* 9, 1969, pp. 249-253.

4. have associated text
5. have continuity of the straw-lines (for the cases where straws were used to strengthen the tablet)
6. have dimensions and profiles which are fully consistent with them being from the same tablet
7. have continuity of lines ruled by the scribe
8. have continuity of non-textual features (such as absence/presence of palm-prints on the *verso* or continuity of marks accidentally scored onto the surface).

If a quasi-join meets all of these criteria, then we can have 100% confidence that the pieces are from the same tablet. Clearly, there will be cases where some of the criteria do not apply, because, for example, find-places are not known, or the scribe has not ruled lines and so on. In these cases there must be a judgement whether sufficient criteria have been met.

A quasi-join is described as ‘probable’ (given as 90% confidence), if it meets criteria 1 to 5 (where applicable) but with a little relaxation on criteria 6-8. This is often the case, for example, for the leaf-shaped tablets, where there is some separation between the two pieces, so that it is possible to accept slight differences in the cross-sectional profiles of two pieces.

A quasi-join is described as ‘possible’ (given as 75% confidence) if it meets criteria 1-5 (where applicable), but with more relaxation on criteria 6-8. Typically this occurs, for leaf-shaped tablets, where there is greater separation, so that there are some plausible differences in cross-sectional profiles (or the level of preservation of at least one of the fragments is not sufficient to present a full cross-sectional profile).

A quasi-join is described as ‘not excluded’ (given as 50% confidence) if it meets criteria 1-4 (where applicable) but with more relaxation on criteria 5-8. This would apply where the pieces from the original tablet would have been quite widely separated and so, although it is reasonable to assume that they could be from the same tablet, the changes in profiles are necessarily too large to permit a greater level of confidence.

The following are included as examples.

The probable quasi-join, 910 [+] 7056, and the possible quasi-join, 909 [+] 8347, were first noted in *KT4*. These conform to the above definitions of ‘probable’ and ‘possible’.

The quasi-join, 7338 [+] 7979 was proposed in «436 raccords...», *Minos* 24 1989, p. 225 by Killen and Olivier in 1989. However, this was questioned by J.L. Melena in «71 raccords...», *Floreat Studia Mycenaea* 1999, p. 371: «Le difference entre les endroits de trouvaille (IV et VI) rend plus compliqué [+] 7979». In other words, the 1984 fragment that is joined to 7338 is from Box VI, implying that it is probably from the NEP, whereas the fragments joining onto 7979 are from boxes II and IV, implying that it is probably from the Western Magazines. Furthermore, even the photograph and drawing in *CoMIK* III do not appear to support a quasi-join. It is suggested that it is not a certain quasi-join

and, if it is to be retained as a quasi-join at all, it should be reduced in status to 'not excluded', although it might be preferable to exclude it altogether.

The quasi-joins proposed by Giovanna Bandini⁷ were based on the *CoMIK* drawings and, when these were tested, they were found not to be valid on the basis of the above criteria. It is worth sounding a warning that, although it would appear to be straightforward to use the drawings in *CoMIK* as a basis for searching for quasi-joins, in practice, this approach has been found to give a low rate of success. This is simply because the two dimensional photographs and drawings in *CoMIK* give a very limited representation of the three-dimensional tablets.

⁷ «Proposta di raccordi tra tavolette della serie Ra di Cnosso», *SMEA* 39/2, 1997, pp. 267-279.