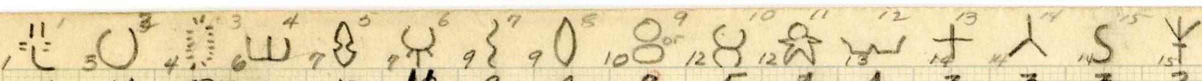
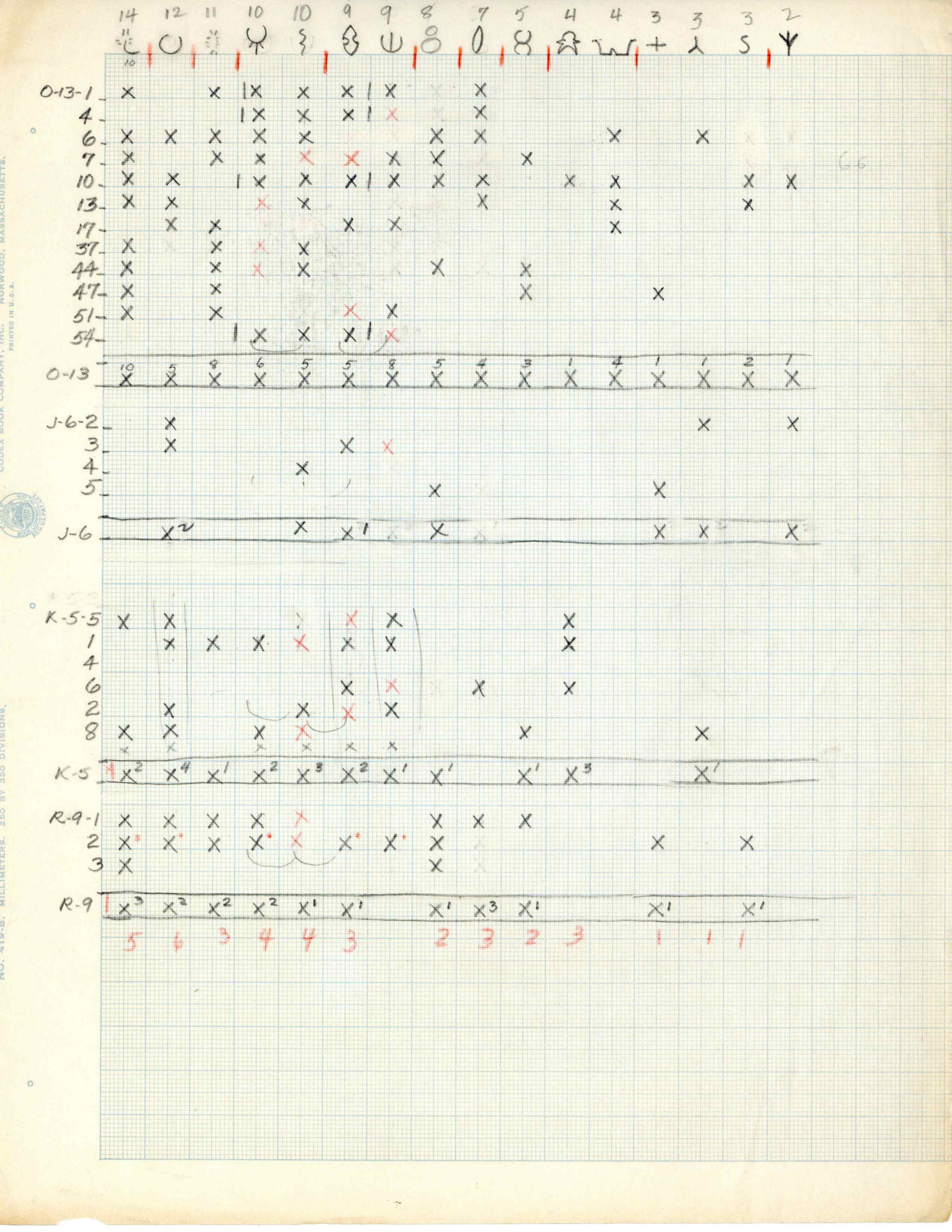
O F flint  — 16

		16	14	13	11	10	11	9	8	8	5	4	4	3	3	3	2	Rel (actually represented # of occ.)	%
a	0-13-1	X		X	X	X	X	X	X									7(8)	11
b	0-13-4					X	X	X	X									4(4)	5
c	0-13-6	X	X	X			X	X	X	X			X		X			9(12)	14
d	0-13-7	X		(X)	X		X (added)			X	X							6(8)	15
e	0-13-10	X	X		X	X	(X) added	X	X	X		X	X			X	X	11(14)	51
f	0-13-13	X³	X					X²	X				X			X		6(9)	9
g	0-13-17		X¹	X	X	X							X					5(6)	6
h	0-13-37	X²		X¹				X										3(4)	16
i	0-13-44	X¹		X¹				X		X¹	X¹	X						5(5)	10
j	0-13-47	X¹		X¹							X¹			X¹				4(4)	10
k	0-13-51	X³		X	X													3(5)	8
l	0-13-54					X²	X	X¹										3(4)	8
m	9.12.15 J-1-2		X³		X²	X²									X		X²	3 7 ~~4~~	21
n	J-6-2		X²												X¹		X²	3 5	13
o	J-6-3		X			X												2	4
p q	J-29-1	(X)	X	X	X													4	
r	K-5-1		X	X	X	(X)	(X)	—				X						6	
s	K-5-2		X		(X)			X										3	
t	K-5-5	X	X		X							X						4	
u	K-5-6					X			X			X						3	
v	K-5-8	X	X				X				X				X			5	
w	R-9-1	X	X	X			X		X	X	X							7	
x	R-9-2	X	X	X	X	X	X			X	X			X	X	X		9	
y	R-9-3	X								X								2	
z	R-16-1	X		X			X		(X)									4	
(p)	J-6-5									X				X				2	

(26)

	16	14	13	11	10	11	9	8	8	5	4	4	3	3	3	2
0-13 caches	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J-6 caches		X			X	(X)—J-6-4			X				X			
By no later than 9.10	X	X	X	X	X	X		X	X	X			X		X	
By 9.12.15.0.0 {		X		X	X											
By 9.12.5.0.0 {	X	X	X	X	X	X	X	X		X	X			X		
K-5-1		X	X	X	(X)	(X)					X					
K-5-4, -6					X			X			X					
K-5-2, -8	X	X		(X)		X	X			X				X		

16	e 1+16	en 2+16	— 3+16	e 4+6	e 5+16	— 6+16	e 7+16	e 8+16	e 9+16	— 10+16	e 11+16	— 12+16	— 13+16	n 14+16	— 15+16	en
15	efx 1+15	efx 2+15	x	ex	ex	x	ef	ef	ex	—	e 11+15	ef 12+15	x		efx	e
14	cv 1+14	cnv 2+14	c 3+14	—	—	v	c	c	c	v 10+14	—	c		cnv	—	
13	jx 1+13	px 2+13	jpx 3+13	x	x	x	—	—	px 9+13	—	—		jpx	—		
12	cef 1+12	cefg 2+12	cg 3+12	eg 4+12	e	c	cef	ef 8+12		—		cefg	—	—		
11	eij vw 1+11	ert 2+11	ir 3+11	ert 4+11	eru	r	e 7+11	eu	ei		ei rtu	e	-	-		
10	dij vw 1+10	vw 2+10	dijw 3+10	di 4+10	—	dvw 6+10	—	w		dij vw	i	-	-	-		
9	cew xy 1+9	cewx 2+9	cpx 3+9	ex 4+9	ex 5+9	cwx 6+9	ce		cei pw xy	(iw)	i	-	-			
8	ace fwz 1+8	cef w 2+8	acz w 3+8	ae 4+8	abe u 5+8	abc wz		abc ef uw z	cew	w	—	-	-			
7	acef h 1+7	cef 2+7	ach 3+7	ae 4+7	abe l		abce fhl s	abc ef	(ce)	-	-	-	-			
6	acd wyx z 1+6	crv wx 2+6	acdw 3+6	adx r		abcd lrv wxz	abc l	abc	c	-	-	-	-			
5	ae x 1+5	egm rx 2+5	adg kqr x		abeg lmo rux	abl rx	(abl)	(ab)	—	-	-	-	-			
4	ade kqx 1+4	egmq rstx	→	ade gkm qrs tx	aeg mrx	arx	a	a	-	-	-	-	-			
3	acd hijk qxzw 1+3	→	acd ahijk pqr wxz	adg kqr x	ag rx	arx	a	a	-	-	-	-	-	jrx		
2	1+2	cefg mnqr st vpo wx	cgq rxw	gq rx	(grx)	(rx)	-	-	-	-	-	-				
1	acdef hijk qtvw xyz	e cfqt vwx	(cq xw)	(qx)	x	x	-	-	-	-	-	-				


14 12 11 10 10 9 9 8 7 5 4 4 3 3 3 2
0-13-1
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J-6-2
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5
J-6
K-5-5
1
4
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2
8
K-5
R-9-1
2
3
R-9
5 6 3 4 4 3 2 3 2 3 1 1 1

Copy for Mr. Coe

Guess-dates

Dates and Guess-dates for Architectural Sequences at Piedras Negras.

Table 1 deals with datable monument material where it can be used to date masonry constructions which define "phases" in stratigraphical sequences. I think the dates themselves may be accepted as firm, even when supplied with single question-marks, some of which have been added by Proskouriakoff to Morley readings without them. Where there are two question-marks, of course there is more doubt, but if wrong, there is sound evidence that they are not very wrong. In an instance or two a current tun hotun-end is given instead of the only date, or the latest date actually recorded, this being a non-tun ending.

The table equates horizontally a monument or group of monuments being "assigned" to a particular masonry construction prepresented by its label. At a given mound ordinal numbers and final letters in these labels carry one down or into the mound, hence backward in time, "-1st" or "-1st-A" being the latest phase.

At the Acropolis Str. J-6-1st (or at least it's Room 1) was apparently built to receive Throne 1, which thus seems to date the building securely at 9.17.15.0.0. Six sequent periods, each presumably involving many buildings, have been distinguished at the Acroplis, and have been number I-VI in chronological order. Str. J-6-1st, because of the lateness of its date, doubtless belongs in Period VI, but this could not be proved stratigraphically. It proves late palace-building activity in the West Group. It would be falacious to infer that Period VI did not begin some considerable time before Str. J-6-1st and 9.17.15.0.0. It may or may be the latest palace building of the period.

The other sequences are in single mounds. Str. R-3-1st consists of a non-vaulted temple building which utilized Lintel 11, and a final increment to its pyramid which was probably necessary for the support of Stela 29. The two monuments

are all glyphic, and apparently agreed in being in "early style". Conceiably the building might be later than the stela, but it seems safe to see a strict chronological equation between the construction and the stela.

Such an equation is certain for "Series 2"- D and Stela 25, and for the G phase and Stela 26. The structural units involved were specially designed to support stelae. The same is true for K-5-1st-B and Stelae 39 and 38. There are two "stela platforms", both of which can be assigned stratigraphically to a single phase. See Satterthwaite 1939 and 1940 for drawings of the K-5 sequences; 1944 for drawings of the R-9 structures.

When we come to Str. O-13 we deal with more monuments and a more complicated stratigraphical picture which has not been worked out in all possible detail. We exlude for the moment fragments of three monuments which were broken up and reused, saying only that they were reused during the phases indicated. By vertical stratification this was during the final major "1st" phase. By horizontal position M.S.S. 16 must have come from the final "sub-phase" while one of two halves of "Lintel" 12 was observed in position in an O-13-1st-A wall. Plaster on M.S.S. 16 (which also appeared on "Lintel" 2 indicates that it also was used as a wall-stone. Thus it satisfactorily - if not absolutely certainly - dates a major re-building of the O-13-1st temple labeled as after its dedicatory date. The re-use of M.S.S. 1 could have been in any of the three phases of the "-1st" period, so it merely assures us that the earliest of these, O-13-1st-C, was no earlier than its dedicatory dated, rather surely fixed at 9.10.10.0.0.

From the re-used fragments alone we may safely infer no more, except that the other five monuments listed, which appear to have been functioning at the end, presumably had fallen from their original locations. Their dates are all after 9.10.10.0.0, ~~and so are the dates of the three phases of 0-13-1st.~~ The early limit for architecture with which they were used.

The earliest of these phases consisted of a final raising of the pyramid-top of the 0-13 ~~2nd/ phases~~ and the erection of a high building platform and presumably temple building, the platform stairway being set behind a stage at the top of the main stairway.* ~~formed by the pyramid top~~. In the next (*B) ~~phase~~ the platform was greatly changed at sides and back and perhaps elsewhere, and a new temple building (the original building seems to have been completely removed) consructed; in the final phase there was extensive remodeling of the building, almost surely involving a new vaulted roof, and certainly a widening of ~~xxxxx~~ ~~frontxxxxxx~~ at the front of both the building and platform, and of its stairway. Each of these phases was, individually, a considerable undertaking.

By positions found it is clear that Stelae 15 and 12 stood on the stage. The only reasonable reconstruction must place the three panels called "lintels" on masonry blocks on the platform stairway, with "Lintel" 2 on the axis, the others on either side. So far as the available record goes, these five monuments could all have been placed during the earliest phase, and have remained exposed and functioning during the two later ones. Or they could all have been placed in Phase *B or -A, or distributed among the three phases.

However, these monuments fall into two groups with a 6-katun interval between "Lintel" 2 and the earliest of the others, "Lintel 3 and Stela 15. ~~We may add Stela 14, at the base of the same pyramid to the late and Three of the West Group,~~ group, and have The date of the latter two, 9.18.5.0.0 falls in the katun of the latest dated monument at the site, whether or not one accepts Morley's reading of 9.19.0.0.0 for Altar 3 - but rejecting his reading for Altar 1, as Thompson has shown one must do. One cannot resist the conclusion that such late monuments belong with the latest of the three phases, and that

* To the sides of the stairway the front of the pyramid-top was somewhat lower. However, the whole area between the platforms will be referred to as "the stage", though, atypically, it was a 2-level one.

the "lintel" which was carved as much as 6 katuns before any of them belongs with one of the earlier phases, as shown in the table.

We cannot be so sure as at the other mounds that the construction of the phase of "Lintel" 2 did not precede its placement by a significant amount of time, nor that 0-13-1st-A was not built somewhat before placement of monuments on and before it at 9.17.15.0.0. ~~All of the six monuments could have been placed ~~on or before~~ at any time~~. Lacking real evidence on this, there is none to the contrary. Placement of "Lintel" 2 on the axis may well have been in the original plan of one of the early phases; and symmetrical placement of the other two "lintels" on either side of it may well have been part of the re-building plan in the final phase. It is simplest to assume this and the error, if any, will probably be scarcely ~~xxxx~~ non-significant.

Making this assumption, if "Lintel" 2 dates the 0-131-1st-B phase, the phase ~~it~~ functioned for 6 katuns, ~~whilezthezearlierzO-13-1st-Cxphasexfunctionedzfor lessxthanz2zkatunsyzavenxifzwexplacexitzatx9x10x0x0x0xthexearlyxlimitxfor~~ We have no definite check, but on general principles this seems excessive, I am inclined to suppose, without prove, that "Lintel" 2 dates the earliest pphase 0-13-1st-C, and that the 6-katun gap in carved dates ~~bridgex~~ covers ~~twoxperiodx~~ the durations of two phases rather than of one. However, Table 1 shows uncertainty in this respect.

With Table 2 we become highly speculative and reach guess-dates for all phases in the mound sequences preceding those reliably dated in Table 1. The dates are given two questions marks to emphasize that they are mere guesses, though they are reached on the basis of identical assumptions. These are:

First The dated time-span for the monument-building complex is taken as 9.5.0.0.0 (Stela 30) to 9.19.0.0.0 (Altar 3). A katun is added at the end, and 5 katuns are added at the beginning to obtain the whole of Baktun 9 as the theoretically assumed complete local Classic period. This allows for two or three later monuments whose dates may have been lost; and for three building phases at Str. R-3 before 9.6.0.0.0 ?? for the latest; and for a period of some length when stelae may have been small and plain. This early extension of the dated period is perhaps excessive rather than otherwise; if we shortened it the guess-dates would come out a bit later, but not very much.

Second More re-surfacings of structures are disregarded; phases formally recognized in the labeling system are all assumed to have been of equal duration unless there is clear evidence to the contrary. This is, of course, a highly arbitrary assumption which, one hopes, results in guess-dates sometime wrong in one direction, sometimes in the other. One guesses that a plus-or-minus allowance of 2 katuns ought to cover these errors, but there is no real check. Perhaps it should be more.

Third It is assumed not only that the occupation began at 9.0.0.0.0, but that it spread over the whole ceremonial area at once (though not necessarilly with ceremonial architecture at all spots at this time). This gives us a theoretically assumed date for the earliest phaze at any spot, provided it is on bedrock. (In the special case of Str. O-13, where the earliest known phase is the top of a high pyramid, Str. O-13-4th, it is assumed that excavation would

would show an earlier O-13-5th, analagous to the situations at R-3 and K-5. Failure to allow for unprovable lags in building at specific spots would also tend to make the guess-dates a bit too early, rather than too late.

As to the utility of the results, they are worse than nothing if taken litterally. Possibly they may be useful in forming or checking hypotheses involving the site as a whole, or concerning temporal associations of architecture with caches, pottery, monuments, and other classes of objects.

Only for the O-13-1st sequence can it be said that there is some basis for considering the result a reasonable one. It is, of course, mere coincidence that our guess-date system places O-13-1st-C at precisely the date of M.S.S. 1, a portable altar which may have first got to this location because it was made for use in the temple of that phase. The coincidence might still be a real one, in which case "Lintel" 2 was added a generation latter as a secondary feature on the stairway. Not also that our arbitrary system, working back approximately to 9.0.0.0.0 by equal stages, does not require a 6-katun life for Str. O-13-1st-B. At the four mounds it gives us theoretically intervals which vary from 2 katuns to nearly four katuns. For the South Group only the larger of the two intervals is only 2 and 1/4th katuns, and these sequences end earlier than the others. Whether there is any meaning in this I will not attempt to say.

ceased.

Table 1

Dated Monuments Stratigraohically Related
to Architectural Sequences

		Dedicatory Dates Per Inscriptions	References	Proskouriakoff Style-dates
Acropolis				
Str. J-6-1st				
Str. R-3				
R-3-1st	"Lintel" 11	(illegible)		(all-glyphic)
"	Stela 29	9. 6. 0.0.0??	M	(all-glyphic)
Str. R-9 Basal Platform ("Series 2")				
Series 2, -D	Stela 25	9. 8.15.0.0?0	M,P	9. 8.10 ± 2
Series 2 - B	Stela 26	9. 9.15.0.0?		9.10. 0 ± 2
Acropolis				
Str. J-6-1st		9.17.15.0.0	M,P	9.16. 0 ± 2
Str. O-13				
O-13-1st (-C, or -B or -A)	"Lintel" 2	9.11.15.0.0?	M,P	9.13.10 ± 2
O-13-1st-A	"Lintel" 3	9.17.15.0.0?	T, Note 1	9.17. 0 ± 2
"	Stela 15	9.17.15.0.0?	M,P	9.16.0 ± 2
"	Stela 12	9.18.5.0.0 ?	M,P	9.17. 0 ± 2
"	"Lintel" 1	(inscription missing)		late Classic, Dynamic Phase?
Fragments re-used at Str. O-13				
In O-13-1st (-C, -B or -A)	M.S.S. 1	9.10.10.0.0?	T, Note 2	(all-glyphic)
In O-13-1st-A	"Lintel" 12	9. 5. 0.0.0??	M,P,Note 3	Early Classic or Formative
"	M.S.S.16	9.15. 0.0.0?	T, Note 4	9.17.10 -- 2

M, P and T refer respectively to Morley 1938, Thompson 1944 and Proskouriakoff 1950

Note 1: T. changes reading from 9.16.0.0.0 of M and P.
Note 2: Current hotun of T's or M's differing reconstructions of the IS.
Note 3: M gives 9.4.0.0.0?? as an alternative approximation; inscription incomplete.
Note 4: Current hotun of three LC positions allowed for by T; chosen to allow time for use and destruction with the style-dated "spread".

Str. K-5				
K-5-1st-B	Stela 39	9.12. 9.0.0	M	(design eroded)
"	Stela 38	9.12.10.0.0	M,A	" "
	"lintel" 7	9.12.10.0.0??	M,B	Late Classic, Formative Phase. 1950

(A, B, M, P, T refer respectively to Andrews, 1942; Berlin, 1952, Morley, 1938, Proskouriakoff Thompson, 1944.

Table 2

Guess-dates for Phases of Four architectural Sequences

(Forward to Phase Controlled by Dated Monument)

Str. R-3

R-3-4th	9. 0. 0.0.0 ??	
R-3-3d	9. 2. 0.0.0 ??	
R-3-2nd	9. 4. 0.0.0 ??	
R-3-1st	9. 6. 0.0.0 ??	(Stela 29)

Str. R-9 Basal Platform

Series 2	-H	9. 0. 0.0.0 ??	
"	-G	9. 2. 5.0.0 ??	
"	-F	9. 4.10.0.0 ??	
"	-E	9. 6.15.0.0 ??	
"	-D	9. 8.15.0.0 ??	(Stela 25)
"	-C	9. 9. 5.0.0 ??	
"	-B	9.9.15. 0.0	(Stela 26)

Str. K-5

Str. K-5

K-5-4th	9. 0. 0.0.0 ??	
K-5-3d	9. 3. 0.0.0 ??	
K-5-2nd	9. 6. 0.0.0 ??	
K-5-1st-C	9. 9. 0.0.0 ??	
K-5-1st-B	9.12. 5.0.0	(Stela 39)
	9.12.10.0.0	(Stela 38)
K-5-1st-A	9.12.10.0.0 ??	("Lintel" 11) 7
	~~9.12.10.0.0~~	~~(Stela 38~~
	~~9.12.10.0.0 ??~~	~~("Lintel" 11~~

Current Holmul Border

Str. O-13

9.0.0.0.0	(O-13-5th ?)	~~9. 0. 0.0.0~~ ??	
9.3.0.0.0	O-13-4th	9. ~~3.10.0.0~~ 2.10.0.0 ??	
9.6.0.0.0	O-13-3d	~~9. 7. 0.0.0~~ 5.0.0.0 ??	
9.9.0.0.0	O-13-2nd	~~9.7 10.0.0~~	
9.12.0.0.0	O-13-1st-C	~~9.10.10.0.0~~ ?? ~~9 10.0.0.0~~	("Lintel" 2 centered on Platform stairway at 9.11.15.0.0? M.S.S. 1, a portable altar, in use here? at 9.10.10.0.0?
9.15.0.0.0	~~O-13-1st~~ O-13-1st-B	9.~~14. 0.0.0~~ 12.10.0 ??	(M.S.S. 16, a probable small stela, erected here at 9.15.0.0.0 ?) M.S.S. 1 broken and used in fill here ? Or later?
9.17.15.0.0	O-13-1st-A	9.~~18~~.15.0.0 9 17 15 0 0	("Lintel" 3 added to platform stairway at 9.17.15.0.0 Stela 15 erected on pyramid stage at 9.17.15.0.0 "Lintel" 1 probably added during this phase. Stela 12 added at 9.18.5.0.0 "Lintel"12 and M.S.S. 16 broken and used in masonry of this phase (Dedicatory dates 9.~~6~~5.0.0.0 ?? and 9.15.0.0.0 ?)

Note: see text for arbitrary assumptions.

(up to 9.18.10 certainly - last date - and construction ceased too - reasonable to suppose that 10.0? and .... also stopped.

JESJ San Jose p. 191-2 ÷

note hook shaped & wedge shaped pieces of shell & stone found in M.C. & S.J. in caches dated contemp with Holmul V

Really must study the P.N. caches and their dating in terms of comparative material - eg shell & jade figurine stingrays ecc. flints & obsids engraved jadeites.

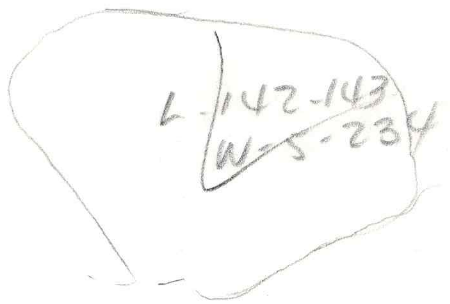
Jade in the mouth

S.J. Cache D1 - pair hook shaped pieces of shell fig 29, c, 2-5 } Probably SJ III
" " " " polished dark stone

 -

H.C. volume cache 1 pl. XXXI, 2,5 Holmul V
2 hook, shell

worked shell



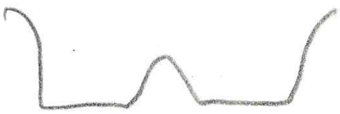
PN — Wax.

1. frequency
2. Paucity of outside beyonds and what there are are aberrent ~~as to~~ unrelated to those oriented to architecture

3 Meaning of Early Late Classic at PN?

ecc inventiveness greatest in Late - 013 (10)

Certain caches without ecc obsrds J-1-1
" " flints J-6-2



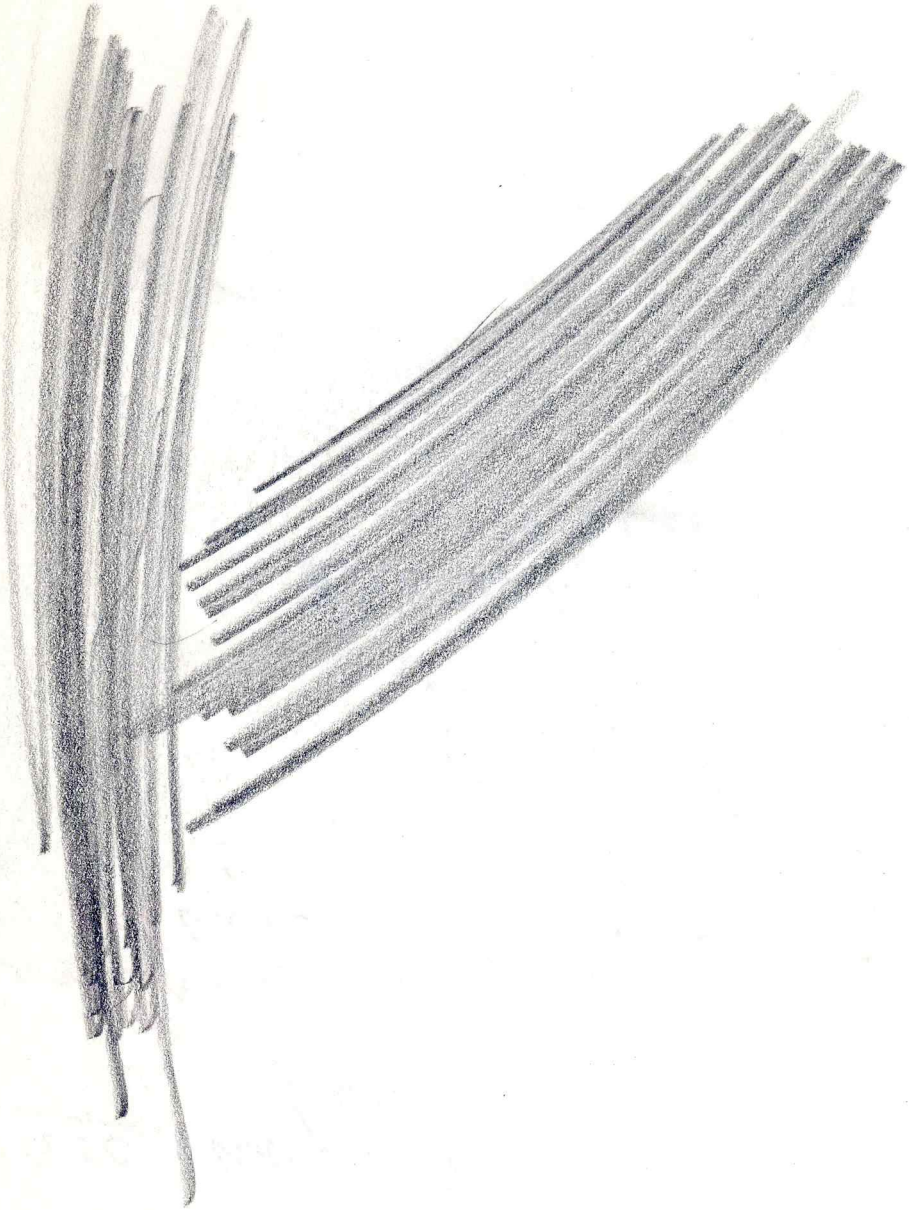
- Venus symbol?

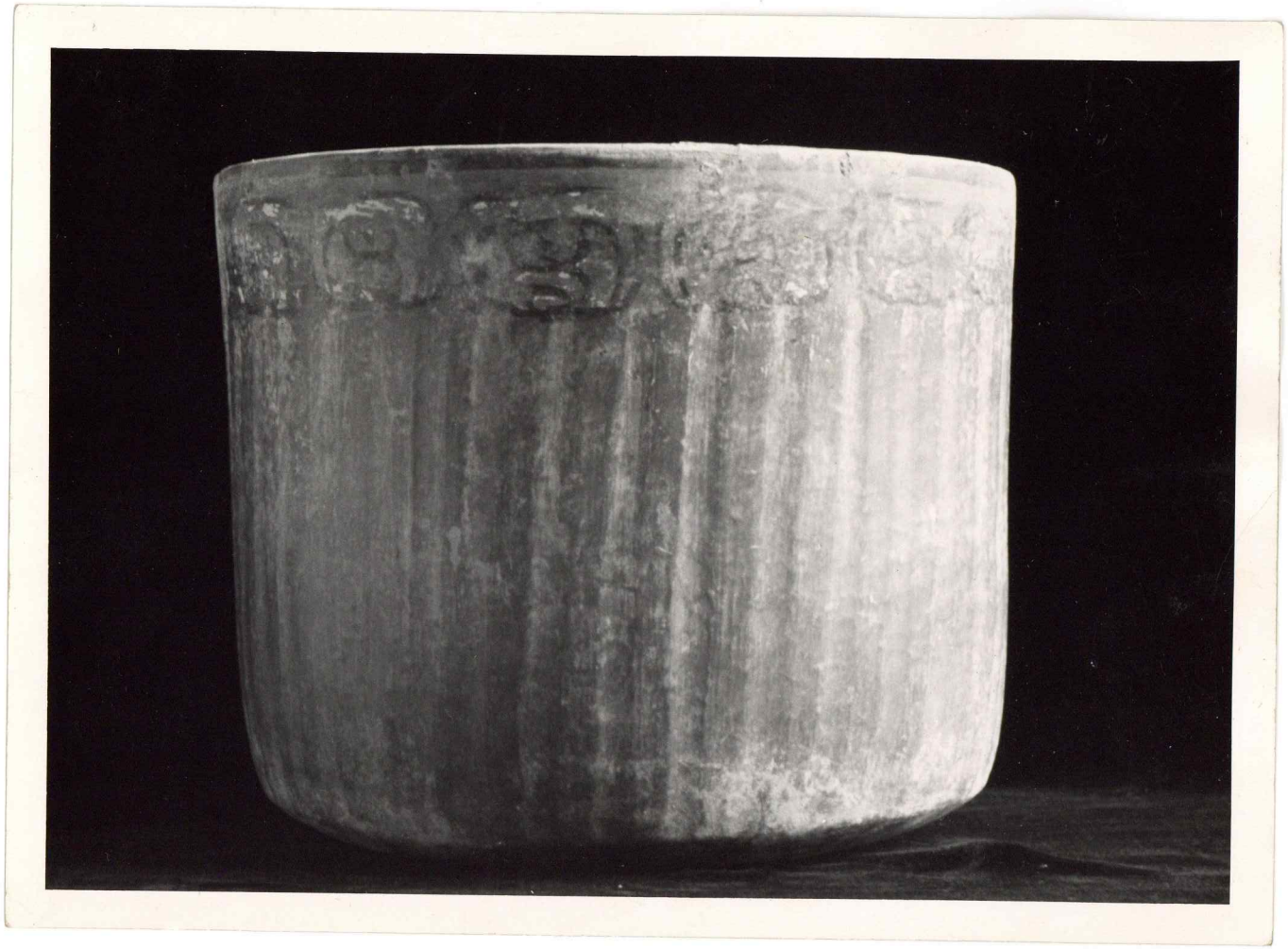
Should you illustrate the aecrop fig + K-5-3 fig?

ST.39 9.12.5 K55
ST.6 9.12.15 J-1-2
QQ.1 9.13. J-1-1

9.13 shell string

9.12.5 shell

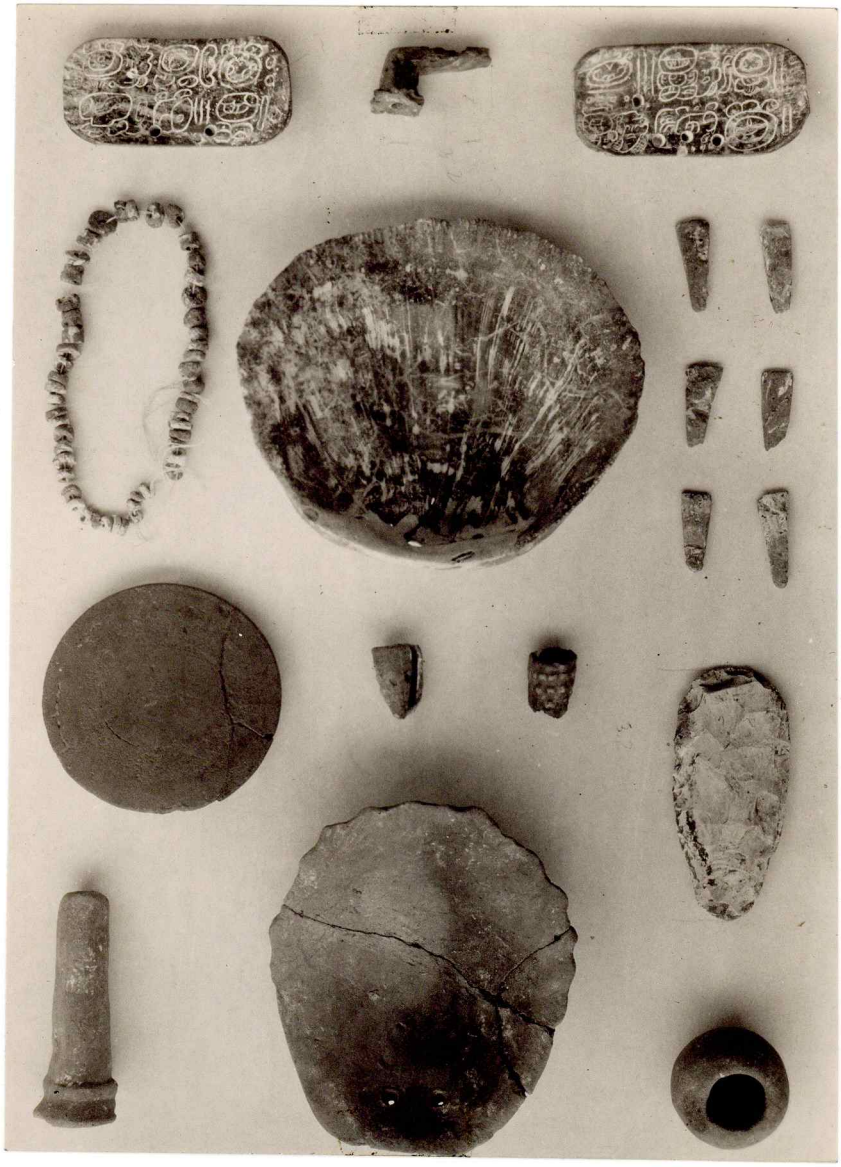




X14(29)
NO #
J-29.
1936.
~~3~~ 36-219,220
dale's with
J-29-1st.

X14(2;2)

W-8-83 / W-8-70



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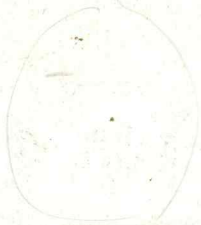
W-17-35

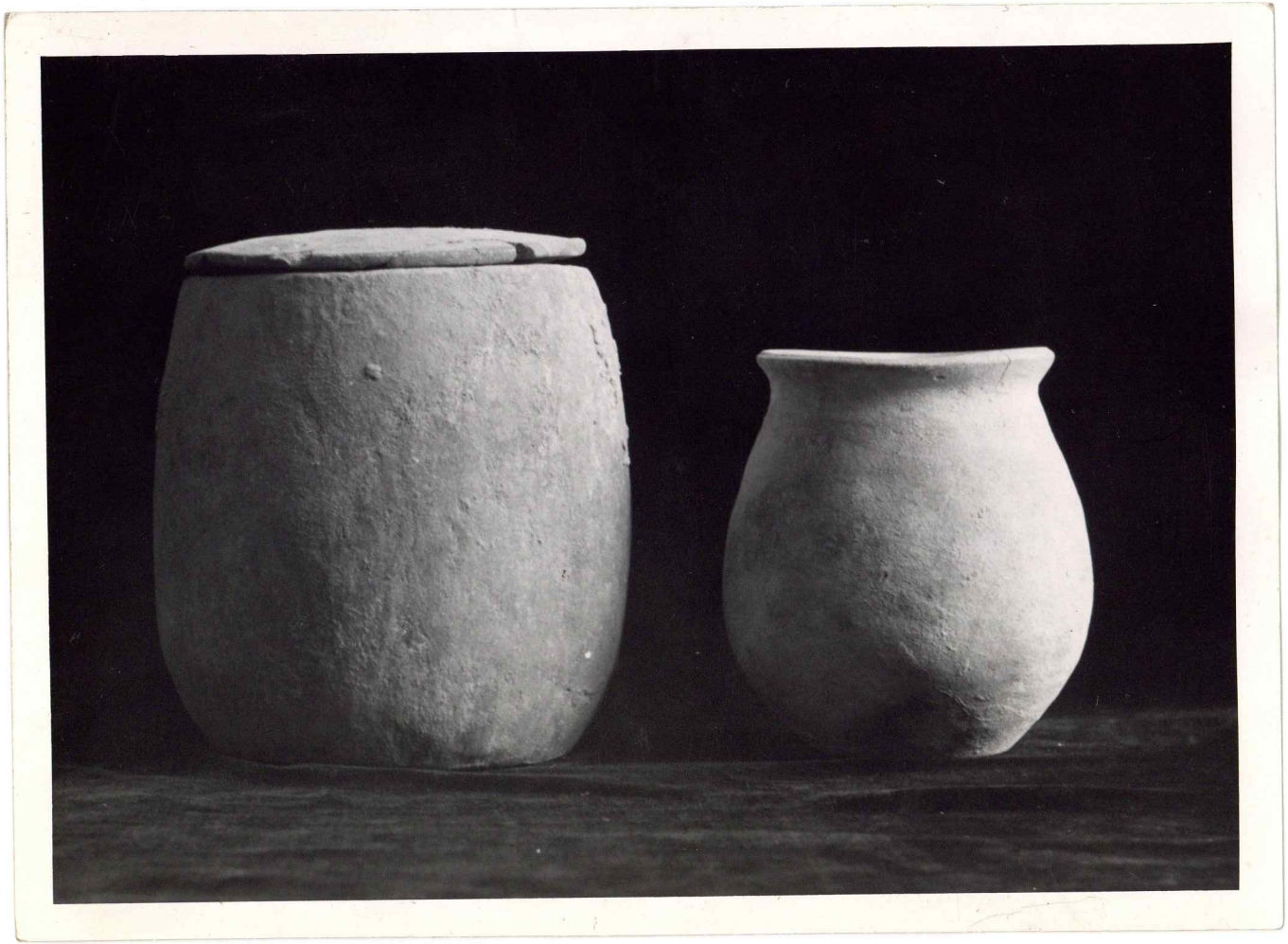
W-17-40c 7.82

W-17-20

W-17-60

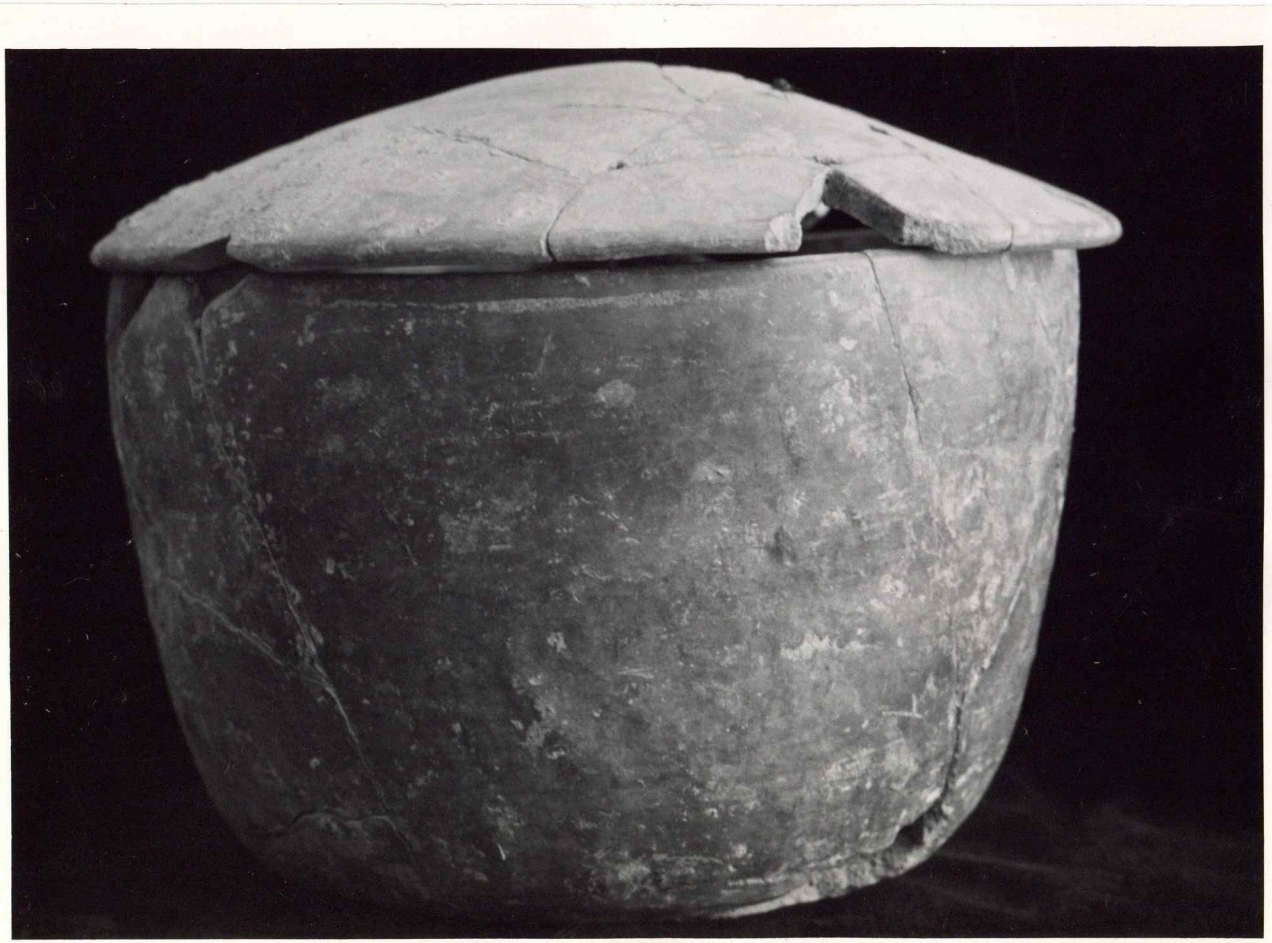


W-17-61



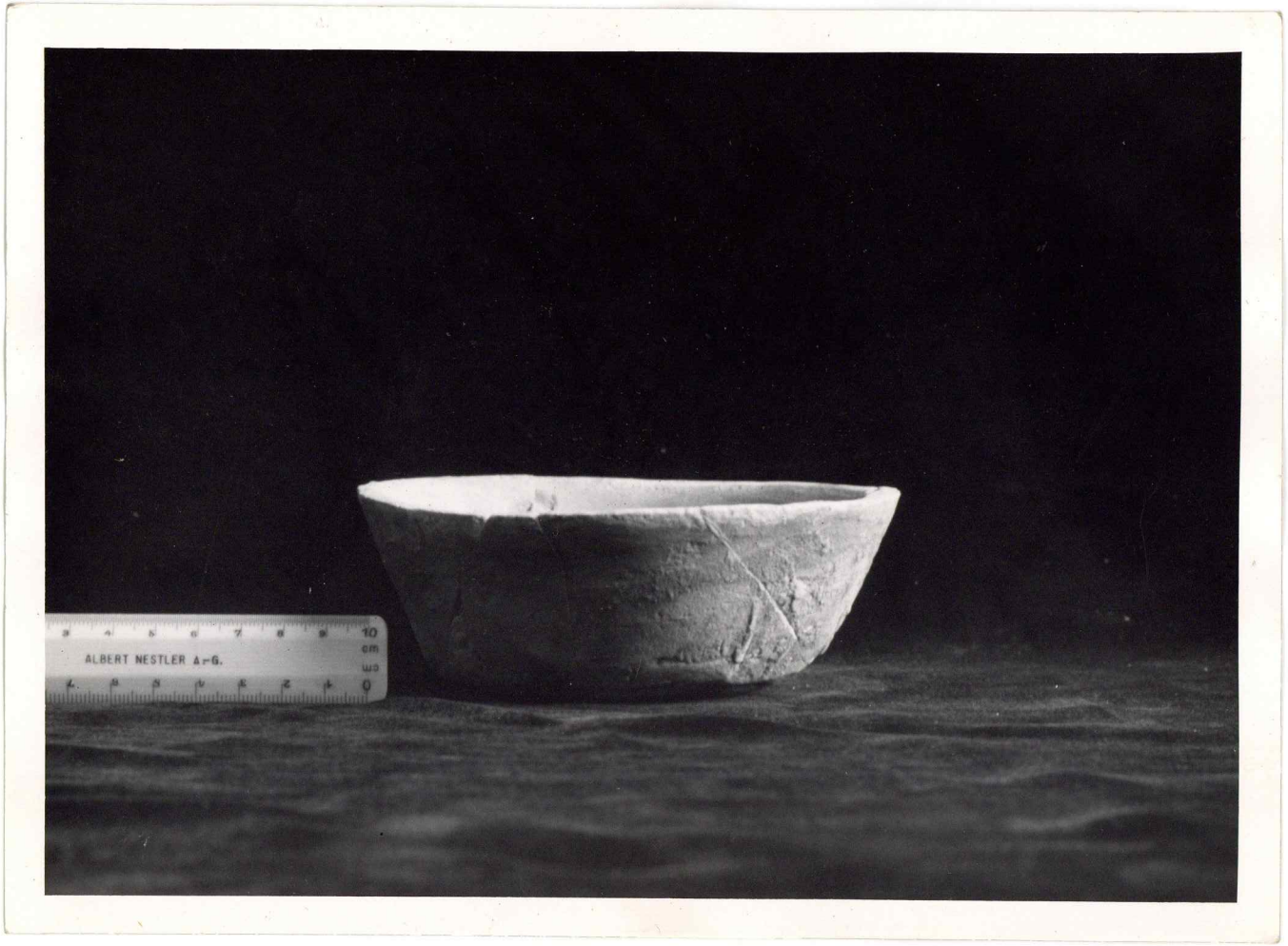
X 14(28)

E-1-48 W-12-6
0-13-41 J-6-1

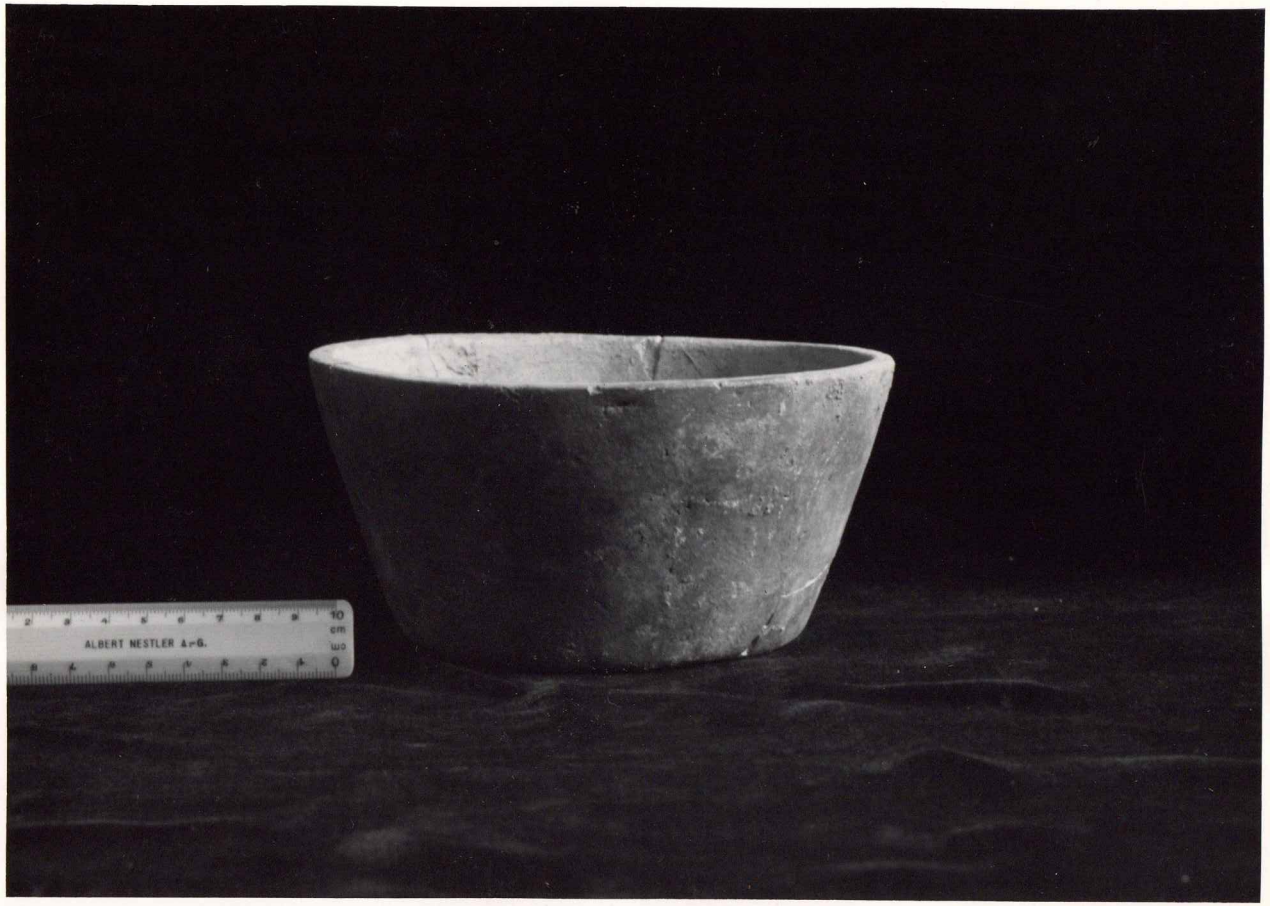


X14(21)

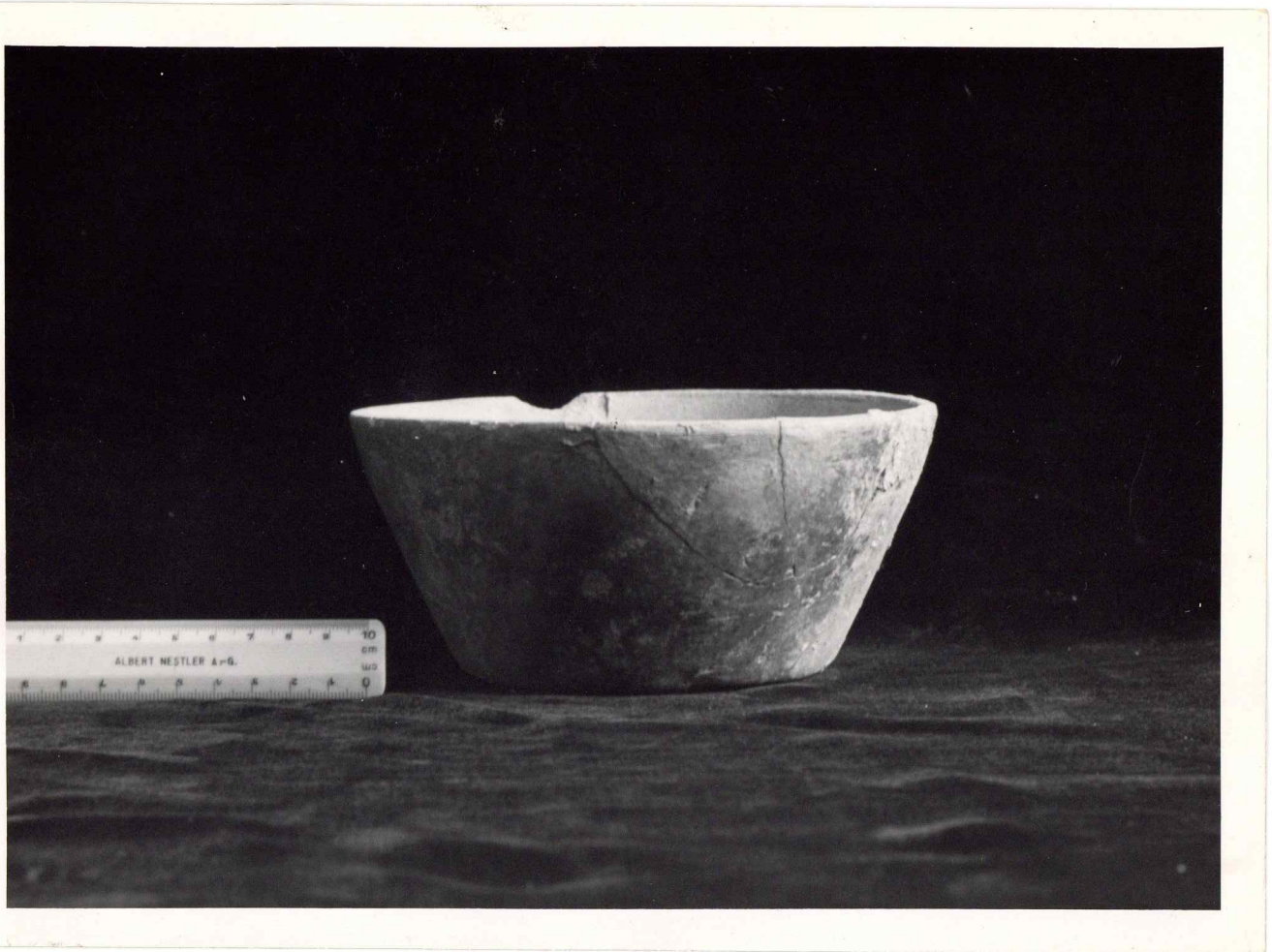
W-5-183
orange
K-5-6


ALBERT NESTLER A-G.
cm

X14(26)
E-1-155
0-13-18

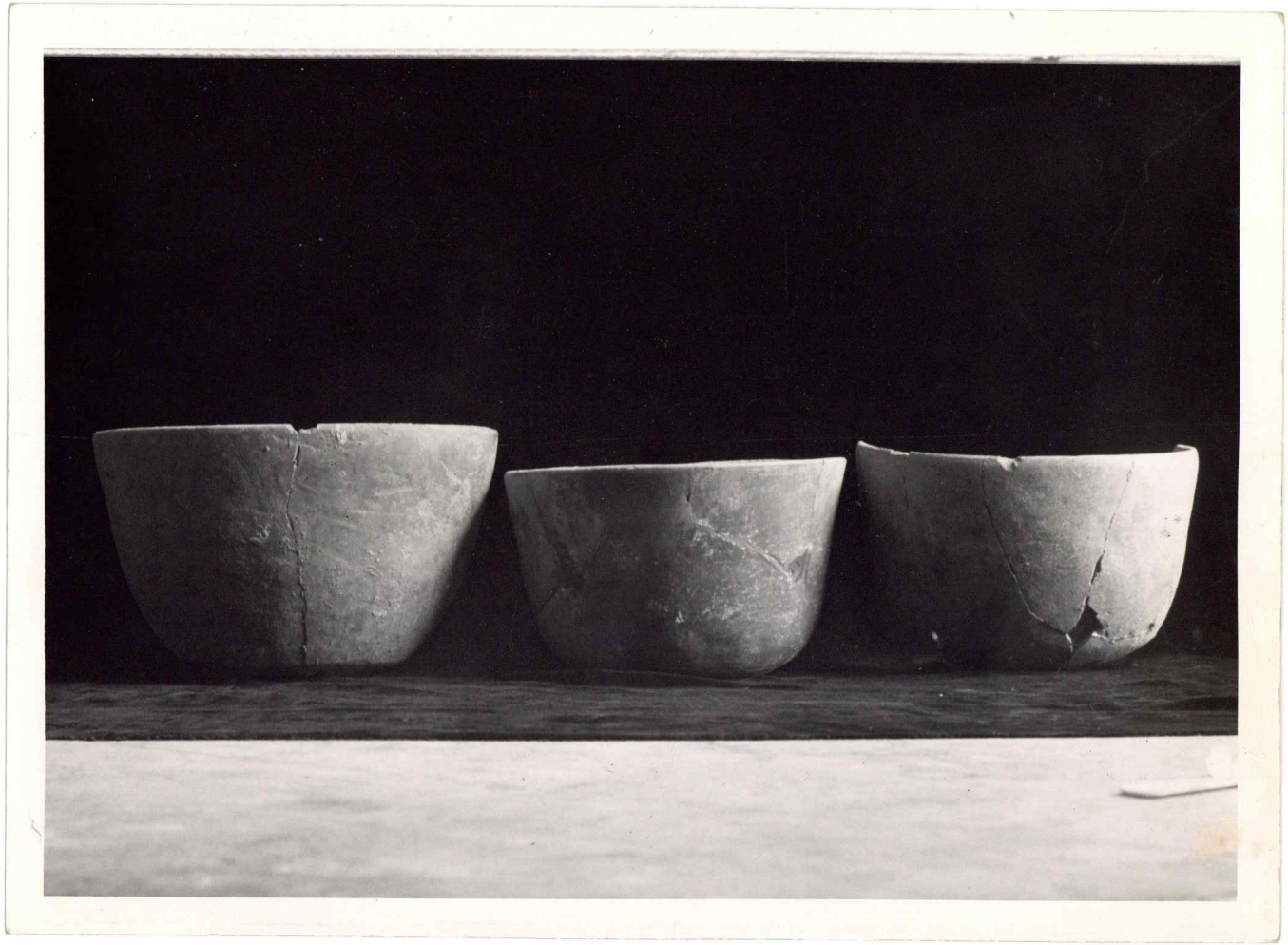

ALBERT NESTLER A-G.
10
cm

X14(23)
E-1-147


ALBERT NESTLER A-G.
10
cm

X14(25)
24

E-1-145



X14(27)

639, NE-4-18, 647

J-29-1

Nov. 1956

J-29 = J-29-A

(1)

Vaulted buildings at Piedras Negras have been characterized by "wall-span indexes". The index is the propotion of outer wall thickness to the width of the room behind it; when piers are present (as is almost universal) the measurements are taken through a pier, where the safety margin of resistance to vault thrust (as well as vertical load) must be least.

It is assumed that, other things being equal, a decreasing index means technological progress, hence chronoloigcal sequence. As a first step in obtaining series of comparable indexes, they have been broken down into groups: 1-room temples, double-range freestanding palaces, one-range "built-on" palaces, free-standing one-range unclassified buildings (F3 and F4), and a three-room pyramid temple (O-13-1st-A).

Within these groups one should consider differences which might affect the index; thus, wider doorways or narrower piers in a later building would tend to prevent or minimize a drop in the index, by increasing the load per pier; so would higher walls and piers which, for a given thickness, weakens their ability to resist vault-thrust. So also would "notching" of piers (Str. J11). Roof-combs would also tend to require a larger index, provided it was so placed as to add to the load on the outer half-vault.

To get a rough fix on the magnitudes involved, and the general picture of vaulting here, the most satifactory series is that for six double-range palaces, which run from 69% (J-9) down to 28% (J-11). These are on opposite sides of the same court, and both are replacemts of earlier buildings on the same platforms. If disturbing factors noted above have had any effect, this has been to keep the J-11 figure of 28 per cent from dropping still lower (The lowest known, 24, is for the unclassified Str. F-4). Stratigraphically, the J-11 vaulted building belongs in the latest Acropolis Period VI; The "heavier" J-9 may also, but could go back to Period V.

Since the general plans of these two vaulted palaces are almost identical with each other and with those of two non-vaulted places on the same Acropolis (J-11 on the same court and J-20 higher up) technological advance from non-vaulting to progressive vaulting, and then reduction of wall-span proportions among ~~xxxxxx~~ palaces seems indicated. Granted this, the full double-range series shows that this may have been step by step, as one would expect:

	Span	Wall	Index
Str. J-9 69			
J-2 59			
J-13 54	Str. J9 1.67	1.20	69
	Str. J-2 1.72	.92	59
	Str. J-13 1.62	.87	54
	Str. J-21 2.43	.80	33
	Str. J-18 2.55	.75	29
	Str. J-11 2.70	.75*	28

*pier weakendd by "notbhing; highest walls in the series.

Unfortunately we have a Long-count tie-in with palace construction only for Room 1 of Str. J-6, a "built-on" single-range structure (Throne 1, 9.17.15.0.0). There is no particular reason to doubt that its index, 39, is not comparable with those above; if we add it in, we eliminate the rather large drop of 21% between the double-ranged J-13 and J-21. This tends to raise a presumption that re-building of palaces on the acropolis, with vaulted instead of non-vaulted roofs, was in progress at a late period beginnibg before 9.17.15.0.0, and extending to the ending of building activity.

Turning to 1-room temples, the series of indexes requires re-checking, but the general pattern of the following is surely correct:

J-29-A	74
O-12	64
K-5list- B	63
J-4	53
R-5	50

This series starts a bit "heavier", but none of the disturbing factors seem available to account for this. A roof-comb is probable, but a thick rear mass was provided for its support. On all the others, combs may have been present and may have loaded the front half of the vault somewhat. This might acc unt for the fact that the lightest 1-room tmple is only down to 50 per cent. The indexes for O-12 and K-5-1st-B, are

substantially identical; and the evidence of stucco fragments is rather convincing for a comb on K-5-1st-B, which was probabky built at 9.12.5.0.0 (Stela 39). Without the comb it might have had a lower index - showing more of a drop from the J-29-A index than is the actual case. Thus we are led to postulate that J-29-A was built before 9.12.5.0.0. Since the tenchical problem of supporting its outer half-vault seems to have been the same as with the palaces is seems comparable with our series for them; if we add it in we have a series of one temple (J-29), six double-range palaces and one single-range six doubtle-range palaces, and a dated 1-room temple and a dated single-range palace, beginning some time before 9.12.5.0.0, and extending to and beyond 9.17.15.0.0. Since the enhanced series includes the heaviest index of the site it is a solution to including the newly vaulted building erected (Str. J-29).

Just as adopting 9.0.0.0.0 as a guess-date for first settlement at the site in we choose to be too early rather than too late, the middle of the baktun seems a proper preliminary guess-date for tye beginning of vaulting here, with the "heaviest" index in any series, i.e. with Str. J-29. Just in in the case of the "heaviest" palace, Str. J-9, it is known that this was a replacement on the same platform. Taking 9.10.0.0.0 as the guess-date for introcition of vaulting may be a bit too early, but hardly too late. Granted this lateness of vaulted temples and palaces one may account for substantially identical ones without the vault by assigning them to the pre-vault period.

Supposing (as may or may not be the case) that K-5-1st-B had a comb and O-12 did not. In spite of the near-identical indexes, the latter might be tenchnoligcally (hence chronologically) intermediate between K-5-1st-B and J-29-A. I arrive at 9.10.0.0.0 as a guess-date for Str. 29 and the heaviest (presumably earliest) vault with an aribtray yardstick of approximately 1 katun because it is at the mid-baktun point, and yet allows possibly some time to elapse between the 1st, 2nd and 3d vaulted temple constructions as suggested by the indexes, with 9.12.5.0.0 for the possibly 3d one.

J--A and thus obviously a guess; f

(1)

Wherever a vaulted temple or palace appears at Piedras Negras, it is the latest building at its locus and also the earliest either it is known not to be the latest building at its locus, or more digging might show this to be the case. Adding to this the fact that the full roster of vaulted temples and palaces fails to account for many others ~~only accounts for about half the totals~~ it seems reasonable to infer that the non-vaulted ones, of substantially similar plans, ~~are survivals from a pre-vault period~~ it seems reasonable to infer that the later survive from a pre-vault period - i.e. in terms of guess-dating, they are no later than 9.10.0.0.0. "Geographical" distribution tends to confirm this inference. We have both vaulted and non-vaulted palaces on the Acropolis, but no vaulted ones elsewhere, as if modernization of this type of building began there and never went further. In the pyramid temple category we have only one vaulted one in the South group, along with numerous non-vaulted ones; elsewhere we have only vaulted ones, as if in this functional category also modernization began outside the early South Group and had just begun to be applied there at the time of abandonment. The low index of this temple (in the temple series) agrees with this notion.