

QUIPU AS21

Museum identification: No. SA4040 (University Museum, University of Pennsylvania)

Main cord: color AB:W joined by knot at 17.0 cm to color W

- \$ 2.0 cm: group of 9 pendant cords (1-9), then space of 1.5 cm
- 5.5 cm: group of 9 pendant cords (10-18), then space of 5.0 cm
- 12.5 cm: group of 8 pendant cords (19-26), then space of 2.0 cm
- 17.0 cm: knotted junction, then space of 3.0 cm
- 20.0 cm: group of 9 pendant cords (27-35), then space of 2.0 cm
- 24.0 cm: group of 9 pendant cords (36-44), then space of 2.0 cm
- 28.0 cm: group of 9 pendant cords (45-53), then space of 2.5 cm
- 32.5 cm: group of 6 top cords (T1-T6), then space of 13.0 cm
- 47.0 cm: end †

Cord	Knots (no.,type,position)	Length	Color	Value	Subsidiaries (no.,position)
1	2s(8.0);2L(16.0)	35.0¢	W	22	2:1.0
1s1	5L(14.0)	27.0¢	W	5	
1s2	--	0.5b	BB	?	
2	8L(15.0)	24.0¢	YB	8	2:0.5
2s1	2L(12.5)	38.5¢	W	2	
2s2	--	0.5b	BB	?	
3	8L(9.5)	15.5¢	AB:BB	8	1:0.5
3s1	2L(9.0)	25.0	YB	2	
4	3L(16.5)	33.5¢	BB:W	3	1:0.5

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
4s1	3L(13.0)	25.0¢	BB	3	
5	4L(15.5)	28.5¢	AB:W	4	1:0.5
5s1	2L(13.0)	35.0¢	AB:BB	2	
6	9L(9.5)	15.5¢	W	9	2:0.5
6s1	2L(13.0)	27.0¢	W	2	
6s2	--	0.5b	BB	?	
7	1s(6.0)	45.0¢	W	10	
8	8L(14.0)	21.0¢	W	8	
9	7L(13.5)	37.5¢	AB:BB	7	
10	3s(5.0);2L(12.0)	20.0¢	W	32	
11	1s(6.0);1E(13.0)	42.0¢	W	11	
12	1s(7.0);3L(14.0)	41.0¢	W	13	
13	4L(13.0)	41.0¢	AB:BB	4	
14	8L(13.0)	45.0¢	W	8	
15	1s(6.0);1E(12.5)	39.5¢	W	11	
16	1s(6.0);5L(12.0)	39.0¢	W	15	
17	1s(6.5);1E(12.5)	39.5¢	AB:W	11	
18	1s(6.5);1E(13.0)	27.0¢	AB:W	11	
19	1s(7.0);2L(15.0)	36.0¢	W	12	
20	1s(7.0)3L(14.0)	39.0¢	AB:W	13	
21	6L(14.0)	29.0¢	YB	6	
22	8L(14.0)	26.0¢	AB:W	8	
23	1s(7.0);1E(13.5)	35.5¢	W	11	
24	1s(7.0);6L(13.0)	31.0¢	BB:W	16	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
25	1s(7.0);1E(13.5)	35.5¢	W	11	
26	1s(7.0);1E(12.0)	34.0¢	W	11	
27	2s(8.5);2L(14.5)	32.5¢	W	22	1:1.0
27s1	5L(12.0)	24.0¢	YB	5	
28	8L(13.5)	28.5¢	W	8	1:0.5
28s1	--	0.5b	?	?	
29	8L(12.5)	26.5¢	W	8	1:0.5
29s1	--	0.5b	?	?	
30	3L(12.5)	35.5¢	BB:W	3	1:0.5
30s1	--	28.0¢	YB	0	
31	3L(10.5)	16.5	YB	4	1:0.5
31s1	2L(10.0)	27.0¢	YB	2	
32	8L(11.5)	29.5¢	W	8	1:1.0
32s1	2L(11.0)	25.0¢	YB	2	
33	1s(7.0)	37.0¢	AB:W	10	
34	8L(12.0)	22.0¢	W	8	
35	7L(11.0)	33.0¢	GØ	7	
36	3s(5.5);1s(11.5)	26.0¢	W	31	
37	1s(6.5);1s(13.0)	33.0¢	W	11	
38	--	0.5b	YB	?	
39	4L(12.5)	25.5¢	YB:GY	4	
40	8L(12.0)	21.0¢	W	8	
41	1s(8.0);1s(15.0)	29.0¢	W	11	
42	1s(8.5);5L(14.0)	30.0¢	W	15	
43	1s(7.0);1s(14.5)	39.5¢	AB:W	11	

Cord	Knots (no.,type,position)	Length	Color	Value	Subsidiaries (no.,position)
44	1s(6.5);1s(14.5)	29.5¢	GY	11	
45	3s(8.0)	13.5b	W	3?	
46	1s(7.5);1s(14.0)	37.0¢	AB:W	11	
47	1s(9.5);3L(15.0)	32.0¢	W	13	
48	6L(15.0)	28.0¢	BB:W	6	
49	8L(14.0)	22.0¢	W	8	
50	--	1.0b	YB	?	
51	1s(9.5)	13.5b	YB	1?	
52	1s(9.5);1s(16.5)	35.5¢	W	11	
53	1s(9.0);1s(16.5)	30.0¢	YB	11	
T1	--	37.0¢	W	0	
T2	--	37.0¢	W	0	
T3	--	27.0¢	YB	0	
T4	--	28.0¢	AB:W	0	
T5	--	26.0¢	YB	0	
T6	--	28.0¢	GØ	0	

Observations

1. This quipu consists of 2 main cords tied together. The main cord on each part is a different color. Part I, by spacing, contains 3 groups of 9, 9, 8 pendants and Part II, by spacing, contains 4 groups of 9, 9, 9, 6 pendants, respectively.
 2. For comparison of Part I and Part II, the quipu is represented in Table 1.
- Note that a) When the numbers in Part I are compared with the numbers in Part II,

of 36 possible matches, 5 are unknown due to breakage, 4 have no comparable cords, and 23 are the same. In the 4 cases where differences are present, the value in Part I is larger than the value in Part II. (In 3 of the 4 cases, the values differ by 1 on 1 pendant in each of the 3 groups. The fourth case is a difference of 3 on a subsidiary.)

- b) When the colors in Part I are compared with the colors in Part II, of 36 possible matches, 4 have no comparable cords and 11 are the same. (The 11 similarities do not occur on subsidiaries and include only colors W, BB:W, AB:W.)
- c) Subsidiaries occur in the same positions in Part I and Part II.
- d) Although some colors appear on both Part I and Part II, BB and AB:BB appear only on Part I, while GØ, GY, and YB:GY appear only on Part II.
- d) In Part I, the digit 1 in the units position is represented by a figure eight knot. In Part II, single knots are used instead.

3. For comparison of the second and third groups within each Part, see Table 2.

Note that a) In Part I, of 9 possible number matches, 1 has no comparable cord and 5 are the same. In the 3 cases where differences are present, the value in group 3 is larger than the value in group 2.

- b) In Part II, of 9 possible number matches, 4 are unknown due to breakage, and 4 are the same. In the 1 case of difference, the value in group 3 is larger than the value in group 2.
- c) In Part I, of 9 possible color matches, 1 has no comparable cord and 2 are the same.
- d) In Part II, of 9 possible color matches, 2 are the same.

4. Comparing the first 6 groups to each other the values have the following consistencies in rank order:

a) For all 6 groups with and without subsidiaries:

$$\text{Pos } 4 \leq \text{Pos } 5 < \text{Pos } 9 \leq \text{Pos } 8 \leq \text{Pos } 2 < \text{Pos } 7 < \text{Pos } 1$$

(breakage is ignored)

b) For groups 2, 3, 4 without subsidiaries, 5, 6:

$$\text{Pos } 4 \leq \text{Pos } 5 < \text{Pos } 9 \leq \text{Pos } 8 \leq \text{Pos } 6 \leq \text{Pos } 2 \leq \text{Pos } 3 < \text{Pos } 7 < \text{Pos } 1$$

(breakage is ignored)

5. The last group has all 6 pendants blank and turned upward. These might refer to the previous 6 groups (3 in Part I, 3 in Part II).

TABLE 1

Group 1

	W	YB	AB:BB	BB:W	AB:W	W	W	W	AB:BB
Part I	sWsBB	sWsBB	sYB	sBB:W	sAB:BB	sWsBB			
	22	8	8	3	4	9	10	8	7
	s5s?	s2s?	s2	s3	s2	s2s?			
	22	8	8	3	4	8	10	8	7
Part II	s5	s?	s?	s0	s2	s2			
	W	W	W	BB:W	YB	W	AB:W	W	GØ
	sYB	s?	s?	sYB	sYB	sYB			

Group 4

Group 2

Part I	W	W	W	AB:BB	W	W	W	AB:W	AB:W
	32	11	13	4	8	11	15	11	11
Part II	31	11	?	4	8	11	15	11	11
	W	W	YB	YB:GY	W	W	W	AB:W	GY

Group 5

Group 3

Part I		W	AB:W	YB	AB:W	W	BB:W	W	W
		12	13	6	8	11	16	11	11
Part II	3?	11	13	6	8	?	1?	11	11
	W	AB:W	W	BB:W	W	YB	YB	W	YB

Group 6

TABLE 2

P A R T I	W 32	W 11	W 13	AB:BB 4	W 8	W 11	W 15	AB:W 11	AB:W 11	Group 2
		12 W	13 AB:W	6 YB	8 AB:W	11 W	16 BB:W	11 W	11 W	Group 3
P A R T II	W 31	W 11	YB ?	YB:GY 4	W 8	W 11	W 15	AB:W 11	GY 11	Group 5
	3? W	11 AB:W	13 W	6 BB:W	8 W	? YB	1? YB	11 W	11 YB	Group 6