QUIPU AS211

Museum identification: 45.698 (Náprstkovo Muzeum, Prague)

Main Cord: color B:W

$ 11.0 cm: group of 18 pendant cords (1-18), then space of 0.5 cm.

[1]15.5 cm: group of 17 pendant cords (19-35)[2], then space of 10.0 cm.

29.5 cm: group of 15 pendant cords (36-50), then space of 26.0 cm.

58.5 cm: end ¢

Cord	Knots (no.,type,position)	Length	Color	Value	Subsidiaries (no.,position)
1	2s(10.0);2L(20.0);1E(20.5)	32.5¢	W	22&1	1:4.0
1s1	7L(18.0)	31.0¢	W	7	
2	—	46.0¢	W	0	1:4.0
2s1	—	20.0¢	W	0	
3	4L(21.0)	38.0¢	W	4	1:3.0
3s1	1E(17.0)	37.0¢	W	1	
4	1E(21.0)	43.0¢	W	1	1:3.0
4s1	1E(17.0)	33.0¢	W	1	
5	—	43.0¢	W	0	1:3.0
5s1	—	23.0¢	W	0	
6	1E(22.0)	55.0¢	W	1	1:4.0
6s1	—	30.0	W	0	
7	2L(20.0)	51.0¢	W	2	1:5.0
7s1	—	27.0¢	W	0	

Cord	Knots (no.,type,position)	Length	Color	Value	Subsidiaries (no.,position)
8	6L(20.0);1E(20.5)	42.5¢	W	1&1	1:7.0
8s1	2L(13.0)	22.0¢	W	2	
9	4L(19.0)	52.0¢	W	4	1:5.0
9s1	–	24.0¢	W	0	
10	2s(10.5);2L(19.5);1E(20.0)	46.5¢	B	22&1	1:7.0
10s1	–	12.0b	B	?(<10)	
11	–	45.5¢	B	0	1:5.5
11s1	–	24.0¢	B	0	
12	2L(19.5)	54.5¢	B	2	1:6.5
12s1	1E(13.0)	22.0¢	B	1	
13	1E(19.0)	48.0¢	B	1	1:6.0
13s1	–	37.0¢	B	0	
14	–	49.0¢	B	0	1:6.5
14s1	–	22.0¢	B	0	
15	5L(19.5)	45.5¢	B	5	1:7.0
15s1	1E(11.5)	35.5¢	B	1	
16	2L(18.0)	48.0¢	B	2	1:7.0
16s1	–	24.5¢	B	0	
17	1E(18.5)	48.0¢	B	1	1:8.0
17s1	–	26.0¢	B	0	
18	1E(19.0);1E(20.5)	42.5¢	B	1&1	1:7.5
18s1	–	19.0b	B	0	
19	3s(10.0);4L(21.0)	27.5¢	W	34	
20	4L(22.5)	39.0¢	W	4	

Cord	Knots (no.,type,position)	Length	Color	Value	Subsidiaries (no.,position)
21	4L(22.0)	25.0¢	W	4	
22	3L(21.0)	40.0¢	W	3	
23	6L(22.0)	38.5¢	W	6	
24	7L(22.0)	33.5¢	W	7	
25	8L(21.0)	33.0¢	W	8	
26	9L(19.0)	22.0¢	W	9	
27	7L(19.0)	35.5¢	W	7	
28	3s(10.5);7L(22.0)	27.0¢	B	37	
29	2L(21.0)	34.0¢	B	2	
30	2L(21.0)	37.0¢	B	2	
31	3L(21.5)	42.5¢	B	3	
32	5L(22.5)	34.5¢	B	5	
33	2L(21.0)	35.0¢	B	2	
34	5L(21.0)	38.0¢	B	5	
35	2L(20.0)	36.5¢	B	2	
36	1s(10.0);4L(20.5);2L(21.5)	36.5¢	W	14&2	
37	3L(21.0)	42.0¢	W	3	
38	–	50.0¢	W	0	
39	5L(22.5)	44.0¢	W	5	
40	6L(21.0)	43.0¢	W	6	
41	5L(22.0)	40.5¢	W	5	
42	5L(23.0)	34.0¢	W	5	
43	–	50.0¢	W	0	
44	1s(10.0);3L(20.0)	36.0¢	B	13	

Cord	Knots (no.,type,position)	Length	Color	Value	Subsidiaries (no.,position)
45	6L(20.0)	37.5¢	B	6	
46	-	47.0¢	B	0	
47	4L(20.0)	41.0¢	B	4	
48	-	2.5b	B	?	
49	-	53.0¢	B	0	
50	-	7.5b	B	?	

Observations

1. A cord fragment was tied to the main cord just before P19. The cord color is B and it is broken at both ends. Beginning at the broken end nearest the single knots there is a space of 4.5, 3s, space of 8.5, 3L, space of 13.5, broken end. It is unlikely that the fragment is part of broken P50, P10s1, or P18s1 because the knots would not be aligned with the others in the group. The fragment's value (33) would make it unlikely to be part of broken P48 or the pendant that may be missing just after P35[2]. These would be expected to have values less than 10.[6] When the fragment was tied to the main cord is unknown but it does not appear to have been done recently.

2. A discoloration on the main cord suggests that another pendant was once attached just after P35. We assume this in the observations that follow.

3. By spacing the quipu is separated into three groups of pendants. By color the groups are each divided into two subgroups. The first two groups have 9 pendants per subgroup and the third group has subgroups of 8 and 7 pendants. Therefore the quipu can be described as

P_{ijk} where $i=1,2,3$ (group by space); $j=1,2$ (subgroup by color); $k=1,\ldots,9$ for $i=1,2$ $k=1,\ldots,8$ for $i=3, j=1$ (position in $k=1,\ldots,7$ for $i=3, j=2$ subgroup).

4. Each pendant in group 1 has a subsidiary. Each subsidiary is the color of its host pendant. All subsidiary values are less than 10. No subsidiaries appear in groups 2 and 3.

5. Each group consists of a subgroup of W cords followed by a subgroup of B cords. That is,

P_{i1k} is W P_{i2k} is B for all i,k.

6. The first pendant in each subgroup contains the maximum value in the subgroup. Depending on the group, the values are in the teens, twenties, or thirties. All other pendant values are less than 10. Specifically,

$P_{1j1} = 22\&1$ $34 \leq P_{2j1} \leq 37$ for $j=1,2$ $13 \leq P_{3j1} \leq 14\&2$ $9 \geq P_{ijk} \geq 0$ for $i=1,2,3$; $j=1,2$; $k \neq 1$.

7. With the exception of the first position (and the unknown value due to breakage) the values in the first subgroup of group 2, position by position, are greater than or equal to those in the second subgroup. Also, position by position,

they are greater than or equal to those in each subgroup in group 1. That is,

$$P_{21j} \geq P_{22j} \qquad \text{for } j=2,\ldots,8$$

$$\left. \begin{array}{l} P_{21j} \geq P_{11j} \\ P_{21j} \geq P_{12j} \end{array} \right\} \qquad \text{for } j=1,\ldots,9.$$

8. Several values are repeated in the corresponding positions of the subgroups of group 1. They are

$$\left. \begin{array}{l} P_{1j1} = 22\&1 \\[1ex] P_{1j2} = 0 \text{ with subsidiary value } 0 \\[1ex] P_{1j4} = 1 \\[1ex] P_{1j5} = 0 \text{ with subsidiary value } 0 \\[1ex] P_{1j7} = 2 \text{ with subsidiary value } 0 \end{array} \right\} \qquad \text{for } j=1,2.$$