

QUIPU AS210

Museum identification: No. 111407 (Field Museum of Natural History, Chicago)

Main Cord: color B

\$ 1.0 cm: group of 4 pendant cords (1-4), then space of 2.5 cm
 4.5 cm: group of 6 pendant cords (5-10), then space of 2.0 cm
 8.0 cm: group of 8 pendant cords (11-18), then space of 2.5 cm
 12.5 cm: group of 6 pendant cords (19-24), then space of 1.0 cm
 15.0 cm: group of 6 pendant cords (25-30), then space of 64.0 cm
 81.0 cm: end ϕ

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
1	4L(13.0)	36.0 ϕ	W	4	
2	4L(12.0)	35.0 ϕ	KB	4	
3	2L(13.0)	28.0 ϕ	B	2	
4	1E(13.0)	39.0 ϕ	B	1	
5	2s(4.5); 4L(12.5)	25.5 ϕ	W	24	1:0.5
5s1	1s(4.0)	32.0 ϕ	KB	10	
6	1s(5.5); 1E(13.5)	29.5 ϕ	B	11	1:0.5
6s1	4L(14.0)	35.0 ϕ	B:RG	4	
7	5L(13.0)	33.0 ϕ	B	5	
8	5s(5.0)	36.0 ϕ	B	50	

Cord	Knots (no., type, position)	Length	Color Value	Subsidiaries (no., position)
9	2s(5.0);2L(9.0)	54.0¢	KB:W	22
10	4s(5.0)	35.0¢	KG	40
11	2s(5.0);6L(11.0)	50.0¢	W	26 1:0.5
11s1	4L(9.0)	28.0¢	KB	4
12	8L(12.0)	32.0¢	B:RG	8 1:0.5
12s1	4L(12.0)	29.0¢	RG	4
13	2L(12.5);2L(19.5)	49.5¢	KB:W	2&2 1:0.5
13s1	2L(11.0)	24.0¢	B	2
14	4L(12.0);1E(14.0)	46.0¢	KB	4&1
15	1s(4.0)	51.0¢	KB-W	10
16	8L(12.0)	44.0¢	KB:W	8
17	-	37.0¢	KG	0
18	-	11.5b ¹	KB:W/ B:W/KB:W (6.0/9.5/ 11.5)	?
19	4L(14.0);4L(14.5)	29.5¢	RG	4&4 1:0.5
19s1	3L(12.0)	26.0¢	B	3
20	2s(4.5);2L(15.0);2L(16.0)	33.0¢	W	22&2 1:0.5
20s1	-	44.0¢	KB	0
21	1E(12.0)	44.0¢	B	1
22	4s(5.0)	37.0¢	B:W	40
23	9L(20.0)	43.0¢	KB:W	9
24	-	46.0¢	KG	0
25	6L(20.0)	51.0¢	B	6 1:0.5
25s1	8L(13.5)	27.5¢	B	8

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
26	2s(4.5);4L(15.0)	35.0¢	W	24	1:0.5
26s1	-	41.0¢	KB	0	
27	1E(15.0)	44.0¢	B	1	
28	2s(5.0);3L(13.5)	38.5¢	B:W	23	
29	3s(8.0);5L(18.5)	34.5b	B:W/ KB:W/ B:W/ KB:W/B:W (6.0/9.0/ 16.0/18.5/ 34.5)	35	
30	-	47.0¢	KG	0	

Observations

1. Pendant 18 is broken at 2.0 cm. We are assuming that a 9.5 cm fragment stored with the quipu, broken at both ends, is its continuation.
2. The quipu, received by the museum in 1925, was part of the collection of Charles F. Gunther. Its provenance was stated as Peru. The quipu was received by the museum in a basket made of woven reeds (13.0 cm x 6.0 cm x 34.0 cm). The basket also contained 41 spindles, 55 sticks and needles, 4 whorls, 1 bundle of sticks, 2 skeins of yarn, 7 miscellaneous samples of rope, reed, and textiles, and 1 bag of unspun cotton fiber. The color of the cotton fiber was similar to the browns of the quipu cords. There is no statement as to whether or not the quipu was found in the basket and none of

the yarn or fiber colors are sufficiently distinctive to associate them with the quipu.

3. By spacing the quipu is separated into 5 groups. By color and values the groups form 3 parts: Part I is a group of 4 pendants; Part II is two groups of 6 and 8 pendants respectively; and Part III is two groups of 6 pendants each.

4. Part II

Because of color and subsidiary placement, we align the 6 pendants in the first group with the 8 in the second group as follows:

1	2	3	4	5	6		
1	2	3	4	5	6	7	8

That is, Part II consists of P_{21k} $k=1, \dots, 6$
and P_{22k} $k=1, 2, 3, 3', 3, \dots, 7$.

Then the color and subsidiary consistencies are:

- | | | |
|---|---|--------------|
| i) P_{2j1} is W with an MB subsidiary | } | for $j=1, 2$ |
| ii) P_{2j2} and its subsidiary are B, RG, or B:RG | | |
| iii) P_{2j5} is KB:W | | |
| iv) P_{2j6} is KG | | |
| v) Subsidiaries are present for $k=1, 2$
and not for $k=3, \dots, 6$. | | |

5. Part III

- i) For both groups the color pattern is B or RG with a B subsidiary, W with a KB subsidiary, B, KB:W or K:W alternating with B:W, KG.
- ii) For both groups subsidiaries are present in positions 1 and 2 but not in the other positions.

iii) Some values appear in the same positions in both groups: the third position in each has value 1; the sixth position has value 0; and the subsidiary of the second position has value 0.

6. Parts II and III

i) By color and value the first pendant position in each group of Part II is related to the second position in each group of Part III and vice versa. That is, for $j=1,2$

P_{2j1} and P_{3j2} are W with a KB subsidiary

P_{2j2} and P_{3j1} and their subsidiaries are B or RG
or B:RG

$22 \leq P_{2j1}, P_{3j2} \leq 26$

$6 \leq P_{2j2}, P_{3j1} \leq 11$

ii) The fifth and sixth positions in both groups in both parts are related by color. Namely,

P_{ij5} is KB:W or KB:W interspersed with B:W
 P_{ij6} is KG

} for $i=2,3;$
 $j=1,2.$

iii) The subsidiary placement is consistent for both groups of both parts. There are subsidiaries for P_{ijk} for $k=1,2$ and not $k=3, \dots, 6$ for $i=1,2; j=1,2.$

7. Parts I, II and III

i) The 38 values on the quipus are in three ranges: 0 to 11; 22 to 26; and 35 to 50. Those in the highest range are all multiples of 5.

ii) Eleven is a pendant value, sum of consecutive pendant values, sum of a group of pendant values, sum of a pendant

and its subsidiary, and sum of similarly placed subsidiaries.

The summands can be related as follows:

$\underbrace{2&2}, 4&1, 2$

$P_{223}, P_{223}', \text{ sub of } P_{223}'$

$4, 4, \underbrace{2,1}$

$P_{111}, P_{112}, P_{113}, P_{114}$

$\underbrace{4&4}, 3$

$P_{311}, \text{ sub of } P_{311}$

$\underbrace{8, 3}$

$\text{sub of } P_{321}, \text{ sub of } P_{311}$

11

P_{212}