

QUIPU AS26A

Museum identification: No. SA4030 (University Museum, University of Pennsylvania)

Main cord: color FB:B

*\$ 0.5 cm: group of 2 pendant cords (1-2), then space of 0.5 cm.

1.5 cm: group of 12 pendant cords (3-14), then space of 1.0 cm.

5.0 cm: group of 13 pendant cords (15-27), then space of 1.0 cm.

8.5 cm: group of 12 pendant cords (28-39), then space of 1.5 cm.

12.0 cm: group of 10 pendant cords (40-49), then space of 1.5 cm.

15.5 cm: group of 5 pendant cords (50-54)

17.0 cm: end b

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
1	4s(9.0); 2L(19.0)	37.5¢	W	42	
2	2s(9.0); 9L(18.5)	30.0¢	W	29	
3	8L(13.5)	27.5	W	8	1:2.5
3s1	5L(9.0)	17.5¢	DB	5	
4	3L(13.0)	29.0¢	W	3	1:2.0
4s1	--	1.0b	FB	?	
5	1E(14.5)	34.0¢	FB:W	1	1:3.5
5s1	--	1.0b	FB	?	
6	3L(12.0)	26.0¢	FB:W	3	
7	2L(13.5)	31.5	W	2	1:3.5
7s1	--	20.0	FB	0	
8	6L(12.0)	29.5¢	W	6	1:4.0

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
8s1	--	0.5b	FB	?	
9	--	34.5¢	W	0	1:3.5
9s1	--	22.0	FB	0	
10	5L(10.0)	24.0¢	W	5	1:3.0
10s1	--	3.0b	B	?	
11	--	40.0¢	W	0	
12	--	40.0¢	W	0	
13	--	39.0¢	W	0	
14	2L(14.0)	40.0¢	W	2	
15	1s(5.0)	27.0¢	W	10	1:3.0
15s1	--	24.0¢	B	0	
16	3L(15.0)	24.0	FB:B	3	1:5.0
16s1	--	10.0b	FB	?	
17	3L(14.0)	28.0¢	FB:B	3	1:3.0
17s1	--	3.0b	FB	?	
18	2L(15.5)	31.5¢	W	2	
19	2L(15.0)	32.0¢	W	2	
20	--	33.0¢	W	0	
21	--	39.0¢	W	0	
22	--	34.0¢	W	0	
23	1E(16.0)	28.0	W	1	1:5.0
23s1	--	13.0	B	0	
24	1E(15.0)	33.0¢	W	1	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
25	4L(15.5)	25.5	W	4	
26	--	35.0¢	W	0	
27	4L(14.0)	30.5¢	W	4	
28	1s(7,0); 3L(18.5)	27.5	B:W	13	2:6.0-6.5
28s1	2L(11.0)	14.5¢	W	2	
28s2	4L(12.0)	16.5	B	4	
29	--	44.0¢	B	0	
30	5L(16.5)	27.5¢	G:W	5	
31	4L(16.5)	29.5	G:W	4	
32	--	8.0b	FB:B	?	1:7.0
32s1	--	1.0b	FB	?	
33	4L(19.0)	42.0¢	B:W	4	1:8.0
33s1	--	17.0	W	0	
34	--	35.0¢	FB:B	0	1:8.0
34s1	--	7.0	B	0	
35	1E(11.0)	28.0	W	1	1:7.0
35s1	1E(4.0)	12.0¢	FB:B	1	
36	--	38.0¢	B	0	
37	--	30.0	W	0	
38	--	30.0	B	0	
39	--	28.0	W	0	
40	--	5.0b	B	?	1:4.0
40s1	1E(8.0)	19.0¢	W	1	
41	4L(12.0)	29.0¢	G:W	4	1:8.0

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
41s1	--	15.0¢	B:G	0	
42	3L(10.0)	30.0¢	B:G	3	
43	2L(9.5)	28.5	B	2	
44	2L(10.5)	31.5¢	B	2	
45	--	26.0¢	B	0	
46	--	40.0¢	W	0	
47	--	46.0	B	0	2:8.0-8.5
47s1	1E(8.0)	34.0	B:W	1	
47s2	1E(8.0)	30.0¢	G:W	1	
48	--	3.0b	B:G	?	
49	--	37.0¢	W	0	1:1.0
49s1	5L(9.0)	32.0¢	B:W	5	
50	1s(6.0); 2L(14.0)	34.0¢	W	12	1:3.0
50s1	3L(12.0); 3L(14.5)	22.5¢	W	3+3	
51	2L(16.0)	41.0¢	FB:W	2	
52	2L(13.0)	28.0¢	G	2	
53	4L(16.0)	36.0	W	4	
54	--	38.0¢	W	0	

Observations

- *1. Quipus AS26A and AS26B are joined. Their main cords are knotted together at 1.0 cm. from the twisted end of AS26A (between pendant cords 2 and 3), and at 15.0 cm. from the twisted end of AS26B (just before its first pendant cord).

2. By spacing, AS26A has 6 groups of 2, 12, 13, 12, 10, 5 pendants respectively. The order of magnitude of the values in the first group (29-49) is greater than the values in the other groups (0-13). Within the other groups, values in position 1 are 8-13 while values in all the other positions are restricted to 0-6.
3. Both AS26A and AS26B contain the colors W, B, FB and their combinations FB:W and B:W. There are colors that occur in AS26A and not in AS26B, as follows: DB, G, and the combinations G:W, B:G, and FB:B. Similarly, there are colors that occur in AS26B and not in AS26A. They are: KB, GG, GG:W, B:GG, and KB:B. These differences may be due to differential changes from the same original colors.

QUIPU AS26B

Museum identification: No. SA4030 (University Museum, University of Pennsylvania)

Main cord: color FB:GG:W

- *\$15.5 cm: group of 10 pendant cords (1-10), then space of 0.5 cm.
- 19.5 cm: pendant cord (11), then space of 0.5 cm.
- 20.0 cm: group of 10 pendant cords (12-21), then space of 0.5 cm.
- 24.0 cm: group of 8 pendant cords (22-29), then space of 1.5 cm.
- 29.5 cm: group of 10 pendant cords (30-39), then space of 0.5 cm.
- 33.0 cm: group of 7 pendant cords (40-46), then space of 0.5 cm.
- 37.0 cm: pendant cord (47), then space of 0.5 cm.
- 37.5 cm: group of 9 pendant cords (48-56), then space of 0.5 cm.
- 41.5 cm: group of 9 pendant cords (57-65), then space of 0.5 cm.
- 45.0 cm: group of 10 pendant cords (66-75), then space of 0.5 cm.
- 48.5 cm: group of 10 pendant cords (76-85), then space of 0.5 cm.
- 52.5 cm: group of 10 pendant cords (86-95), then space of 1.0 cm.
- 57.0 cm: group of 10 pendant cords (96-105), then space of 28.0 cm.
- 87.5 cm: end ç

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
1	2s(5.0); 4L(17.0)	32.0ç	W	24	2:0.0-0.5
1s1	2L(11.5)	20.0ç	GG:W	2	
1s2	2L(10.0)	23.5ç	B	2	
2	2s(6.5); 4L(18.5)	30.5ç	W	24	2:0.0-0.5
2s1	2L(11.5)	22.0ç	GG:W	2	
2s2	2L(11.0)	21.0	B	2	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
3	1s(6.0); 2L(18.0)	34.0¢	W	12	1:0.5
3s1	1E(11.0)	21.5¢	GG:W	1	
4	2s(6.0); 4L(16.0)	28.0¢	W	24	2:0.0-0.5
4s1	2L(11.5)	19.5¢	GG:W	2	
4s2	2L(11.0)	19.5¢	B	2	
5	2s(7.0); 4L(17.5)	30.0¢	W	24	2:0.0-0.5
5s1	2L(11.5)	19.0¢	GG:W	2	
5s2	2L(11.5)	22.5¢	B	2	
6	2s(7.0); 4L(16.5)	30.5¢	W	24	2:0.0-0.5
6s1	2L(10.5)	18.5¢	GG:W	2	
6s2	2L(11.5)	21.5¢	B	2	
7	2s(7.5); 4L(16.5)	30.5¢	W	24	2:0.0-0.5
7s1	2L(11.5)	20.5¢	GG:W	2	
7s2	--	10.0b	B	?	
8	2s(7.0); 4L(16.5)	27.5¢	W	24	2:0.0-0.5
8s1	2L(10.0)	19.5¢	GG:W	2	
8s2	2L(11.5)	26.5¢	B	2	
9	1s(6.5); 2L(18.5)	36.5¢	W	12	2:0.0-0.5
9s1	1s(11.5)	20.5¢	GG:W	1**	
9s2	1s(12.0)	26.0¢	B	1	
10	1s(6.0); 2L(18.5)	34.5¢	W	12	2:0.0-0.5
10s1	1s(11.5)	21.5¢	GG:W	1	
10s2	1s(11.5)	27.5¢	B	1	
11	3s(14.0); 1E(25.5)	35.0¢	W	31	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
12	9L(13.0)	21.5¢	W	9	1:0.5
12s1	1E(14.5)	27.5¢	B	1	1:6.0
12s1s1	1s(8.5)	17.0¢	FB:W	1	
13	9L(14.0)	23.0¢	W	9	1:0.5
13s1	1E(13.5)	27.5¢	B	1	1:7.0
13s1s1	1s(5.5)	11.0¢	B:W	1	
14	4L(13.5)	22.0¢	W	4	1:0.5
14s1	1s(13.5)	28.0¢	B	10	
15	9L(15.5)	26.5¢	W	9	1:0.5
15s1	1E(13.0)	30.5¢	B	1	1:6.0
15s1s1	1E(6.5)	11.5	FB:W	1	
16	9L(15.0)	30.0¢	W	9	2:0.0-0.5
16s1	1E(14.5)	29.0¢	B	1	
16s2	1E(12.5)	25.5¢	B:W	1	
17	9L(15.5)	26.5¢	W	9	1:0.5
17s1	1E(13.0)	25.0¢	B	1	1:0.5
17s1s1	1s(12.5)	19.5¢	B:W	1	
18	9L(15.0)	28.0¢	W	9	1:0.5
18s1	1s(11.5)	24.5¢	B:GG	1	1:0.5
18s2	1E(10.5)	19.0¢	B:W	1	
19	9L(14.0)	25.0¢	W	9	1:0.5
19s1	1s(12.0)	22.0¢	B:GG	1	1:0.5
19s2	1E(11.5)	20.0¢	B:W	1	
20	4L(13.0)	31.0¢	W	4	1:0.5

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
20s1	1E(12.0)	24.5¢	B:GG	1	
21	4L(13.5)	27.0¢	W	4	1:0.5
21s1	1E(13.0)	27.0¢	B:W	1	
22	1s(6.5); 1s(9.0); 2L(13.0)	27.5¢	B	112	2:0.0-0.5
22s1	1E(12.0)	30.0¢	GG:W	1	
22s2	1s(12.0)	27.0¢	KB:B	1	
23	1s(6.0); 1s(8.0)	30.0¢	B	110	2:0.0-0.5
23s1	--	19.5¢	GG:W	0	
23s2	2L(12.0)	24.0	KB:B	2	
24	1s(9.0); 2L(13.0)	18.0	B	12	1:0.5
24s1	1s(13.5)	30.5¢	B:W	1	1:9.5
24s1s1	1s(4.5)	15.5¢	GG	1	
25	--	4.0b	B	?	2:0.0-0.5
25s1	1s(12.0)	27.0¢	GG:W	1	
25s2	1s(13.0)	22.5¢	B:W	1	
26	1s(6.0); 4L(12.0)	23.0¢	B	104	2:0.0-0.5
26s1	1s(12.5)	30.5¢	GG:W	1	
26s2	1s(12.5)	27.5¢	KB:B	1	
27	--	5.5b	B	?	2:0.0-0.5
27s1	1s(13.0)	28.5¢	GG:W	1	
27s2	--	12.0b	KB:B	?	
28	--	1.0b	B	?	2:0.0-0.5
28s1	1s(13.5)	29.5¢	GG:W	1	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
28s2	1s(14.5)	25.5¢	B:W	1	
29	--	4.5b	B	?	2:0.0-0.5
29s1	1s(15.0)	29.0¢	GG:W	1	
29s2	--	5.0b	B:W	?	
30	4L(10.5); 4L(12.5)	15.5b	B	4+4	1:0.5
30s1	1s(10.0)	18.0¢	B:W	1	
31	4L(10.5); 4L(13.0)	28.0	B	4+4	1:0.5
31s1	1s(10.5)	18.5¢	B:W	1	
32	4L(12.0)	32.0¢	B	4	1:0.5
32s1	1s(9.5)	17.5¢	B:W	1	
33	4L(9.0); 4L(12.0)	27.0¢	B	4+4	1:0.5
33s1	--	7.5b	B:W	?	
34	--	7.5b	B	?	1:0.5
34s1	1s(9.0)	19.0¢	B:W	1	
35	--	7.5b	B	?	1:0.5
35s1	1s(10.0)	19.5¢	B:W	1	
36	--	7.0b	B	?	1:0.5
36s1	--	6.0b	KB:B	?	
37	--	6.5b	B	?	1:0.5
37s1	--	6.0b	B:W	?	
38	4L(11.5)	29.5¢	B	4	1:0.5
38s1	1E(10.5)	15.0	B:W	1	
39	4L(11.5)	30.5¢	B	4	1:0.5
39s1	1s(10.0)	21.5¢	KB:B	1	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
40	4L(12.0); 1s(13.0)	24.0¢	B	4+1	2:0.0-0.5
40s1	1s(11.0)	23.5¢	KB:B	10	1:4.0
40s1s1	1s(7.0)	11.0	B:W	10	
40s2	3L(11.5)	24.5¢	W	3	
41	2L(10.5)	25.5¢	B	2	1:0.5
41s1	2L(10.5)	24.5¢	W	2	
42	4L(11.0); 2L(12.0)	21.0	B	4+2	2:0.0-0.5
42s1	1s(11.0)	23.5¢	KB:B	1	1:0.5
42s1s1	1s(11.0)	20.5¢	B:W	1	
42s2	2L(12.0)	26.0¢	W	2	
43	--	4.0b	B	?	2:0.0-0.5
43s1	1s(12.0)	22.0¢	FB:W	1	1:2.0
43s1s1	--	4.0b	KB:B	?	
43s2	4L(11.5)	22.0¢	W	4	
44	4L(13.0)	25.0¢	B	4	2:0.0-0.5
44s1	1s(13.0)	23.0¢	FB:W	1	
44s2	4L(12.5)	24.5¢	W	4	
45	--	2.0b	B	?	2:0.0-0.5
45s1	1E(11.0)	24.0¢	B:W	1	
45s2	2L(11.0)	16.0¢	W	2	
46	--	8.0b	B	?	2:0.0-0.5
46s1	1s(11.0)	25.0¢	FB:W	1	
46s2	2L(12.0)	21.0¢	W	2	
47	4s(5.0); 6L(13.0)	27.0¢	W	406	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
48	4L(10.5); 4L(12.0)	23.0¢	B	4+4	2:0.0-0.5
48s1	1E(10.0)	20.0¢	B:GG	1	1:0.5
48s1s1	1E(10.0)	15.0¢	B:W	1	
48s2	4L(12.0)	25.0¢	W	4	
49	4L(11.5); 4L(13.0)	24.0¢	B	4+4	2:0.0-0.5
49s1	1E(10.0)	22.0¢	B:GG	1	1:0.5
49s1s1	1E(10.0)	16.0¢	B:W	1	
49s2	4L(11.5)	27.0¢	W	4	
50	2L(12.0); 2L(13.0)	30.0¢	B	2+2	1:0.5
50s1	1E(11.0)	20.0¢	B:GG	1	
51	5L(11.5); 4L(13.0)	24.0¢	B	4+4	2:0.0-0.5
51s1	1E(9.0)	16.0¢	B:W	1	1:0.5
51s1s1	1E(9.5)	19.0¢	GG:W	1	
51s2	4L(11.0)	25.0¢	W	4	
52	4L(11.5); 4L(13.0)	26.0¢	B	4+4	2:0.0-0.5
52s1	1E(10.0)	19.0¢	GG:W	1	1:0.5
52s1s1	1E(8.0)	14.0¢	B:W	1	
52s2	4L(11.0)	26.0¢	W	4	
53	4L(11.5); 4L(13.0)	26.0¢	B	4+4	2:0.0-0.5
53s1	1E(10.0)	21.0¢	B:GG	1	1:0.5
53s1s1	1E(9.0)	12.0¢	B:W	1	
53s2	4L(10.5)	31.5¢	W	4	
54	4L(9.5); 4L(10.0)	23.5¢	B	4+4	2:0.0-0.5
54s1	1E(10.0)	23.0¢	B:GG	1	1:0.5

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
54s1s1	1E(9.0)	15.0	KB:B	1	
54s2	4L(9.5)	29.5¢	W	4	
55	2L(10.0)	34.0¢	B	2	2:0.0-0.5
55s1	2L(8.0)	28.0¢	W	2	
55s2	1E(8.0)	11.0¢	B:W	1	
56	2L(12.0)	32.0¢	B	2	2:0.0-0.5
56s1	2L(10.5)	28.0¢	W	2	
56s2	1E(8.5)	12.5¢	B:W	1	
57	4L(12.0)	28.0¢	W	4	1:0.5
57s1	1E(12.5)	29.5¢	KB	1	
58	4L(12.0)	27.0¢	W	4	1:0.5
58s1	1E(12.5)	20.5¢	KB	1	
59	2L(11.5)	23.0¢	W	2	1:0.5
59s1	--	22.0	W	0	
60	4L(12.5)	26.0¢	W	4	1:0.5
60s1	1E(10.0)	19.0¢	B:W	1	
61	4L(12.0)	25.0¢	W	4	1:0.5
61s1	1E(11.5)	19.5¢	B:W	1	
62	4L(11.5)	25.5¢	W	4	1:0.5
62s1	1E(11.0)	19.0¢	KB:B	1	
63	4L(11.5)	12.5b	W	4	1:0.5
63s1	1E(10.5)	13.5b	KB:B	1	
64	2L(11.0)	26.0¢	W	2	1:0.5
64s1	--	2.5b	B	?	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
65	2L(11.0)	25.0¢	W	2	1:0.5
65s1	--	0.5b	B	?	
66	4L(9.0); 4L(10.0)	19.0¢	B	4+4	1:0.5
66s1	1E(8.5)	17.5¢	KB:B	1	
67	4L(8.0); 4L(9.0)	16.0	B	4+4	1:0.5
67s1	1E(8.0)	14.0¢	FB:W	1	
68	4L(9.5)	23.5¢	B	4	
69	4L(8.5); 4L(9.5)	18.5¢	B	4+4	1:0.5
69s1	1E(8.0)	17.0¢	B:W	1	
70	4L(8.5); 4L(9.5)	21.5¢	B	4+4	1:0.5
70s1	1E(8.0)	20.0¢	B:W	1	
71	4L(9.0); 4L(10.0)	19.0¢	B	4+4	1:0.5
71s1	1E(8.0)	20.0¢	B:W	1	
72	4L(9.5); 4L(10.5)	19.5¢	B	4+4	1:0.5
72s1	1E(8.0)	9.0	KB:B	1	
73	4L(9.0); 4L(10.0)	17.5¢	B	4+4	1:0.5
73s1	--	5.0	KB:B	?	
74	4L(10.0)	25.0¢	B	4	1:0.5
74s1	1E(10.0)	19.0¢	KB:B	1	
75	4L(10.0)	24.0¢	B	4	1:0.5
75s1	1E(9.0)	17.0¢	B:W	1	
76	4L(10.0)	21.0¢	W	4	1:0.5
76s1	1E(8.5)	24.5¢	B:GG	1	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
77	4L(10.0)	20.0¢	W	4	1:0.5
77s1	1E(8.5)	21.5¢	B:GG	1	
78	2L(10.0)	22.0¢	W	2	
79	4L(10.0)	22.0¢	W	4	1:0.5
79s1	1E(10.0)	22.0¢	B:GG	1	
80	4L(11.0)	23.0¢	W	4	1:0.5
80s1	1E(9.0)	21.0¢	B:GG	1	
81	4L(10.0)	22.0¢	W	4	1:0.5
81s1	1E(9.5)	21.0¢	B:W	1	
82	4L(10.5)	22.0¢	W	4	1:0.5
82s1	1E(9.0)	24.0¢	B:GG	1	
83	4L(10.0)	23.0¢	W	4	1:0.5
83s1	1E(7.5)	22.0¢	B:W	1	
84	2L(10.0)	23.0¢	W	2	1:0.5
84s1	--	19.0¢	B:W	0	
85	2L(11.5)	22.5¢	W	2	1:0.5
85s1	1E(10.0)	20.0¢	B:GG	1	
86	2L(9.0)	28.0¢	B	2	2:0.0-0.5
86s1	1E(8.0)	21.0¢	B:W	1	
86s2	2L(8.0)	16.0¢	W	2	
87	2L(8.5)	26.5¢	B	2	2:0.5, 3.5
87s1	2L(9.0); 1E(11.5)	15.5¢	W	2+1	
87s2	1s(5.0)	8.0¢	KB:B	1	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
88	1E(8.0)	28.0¢	B	1	2:0.0-0.5
88s1	1E(8.0)	18.0¢	B:W	1	
88s2	1E(7.5)	16.0¢	W	1	
89	2L(9.0)	25.0¢	B	2	2:0.0-0.5
89s1	1E(8.0)	20.0¢	B:W	1	
89s2	2L(8.5)	17.5¢	W	2	
90	2L(10.0)	27.0¢	B	2	3:0.0-5.0
90s1	1E(8.0)	20.0¢	B:W	1	
90s2	1E(9.0)	18.0¢	W	1	
90s3	2L(4.0)	10.0	B	2	
91	2L(9.5)	27.5¢	B	2	2:0.0-0.5
91s1	1E(8.0)	22.0¢	B:W	1	
91s2	2L(9.5)	25.0¢	W	2	
92	2L(9.0)	28.5¢	B	2	2:0.0-0.5
92s1	1E(8.0)	20.5¢	B:W	1	
92s2	2L(9.0)	26.5¢	W	2	
93	2L(9.0)	28.0¢	B	2	3:0.0-0.5
93s1	1E(7.5)	19.5¢	B:W	1	
93s2	1E(8.0)	26.0¢	W	1	
93s3	2L(9.0)	18.0¢	B	2	
94	1s(9.0)	25.0¢	B	1	1:0.5
94s1	1E(9.5)	24.0¢	W	1	
95	1E(9.5)	29.5¢	B	1	1:0.5

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
95s1	--	22.0¢	W	0	
96	4L(11.0); 1E(12.0)	20.0¢	W	4+1	
97	4L(11.0); 1E(12.5)	22.5¢	W	4+1	
98	--	31.0¢	W	0	
99	3L(11.0)	27.0¢	W	3	1:0.5
99s1	--	2.5b	B	?	
100	3L(11.5)	28.5¢	W	3	1:0.5
100s1	--	3.5b	B	?	
101	4L(12.0)	26.0¢	W	4	1:0.5
101s1	1E(11.0)	24.0¢	B	1	
102	3L(12.0)	23.0¢	W	3	2:0.0-6.0
102s1	1E(11.0)	15.0	B	1	
102s2	1E(5.5)	14.0¢	W	1	
103	3L(12.5)	26.5¢	W	3	2:0.0-6.5
103s1	--	1.0b	B	?	
103s2	--	0.5b	W	?	
104	--	29.0¢	W	0	
105	1E(12.5)	29.5¢	W	1	

Observations

- *1. Quipus AS26A and AS26B were joined. Their linkage and a comparison of their colors are detailed with AS26A.
- **2. Most of the subsidiaries (103 of 150) have one knot. While some are single knots and some are figure eight knots, their positions on the cords are the same. Both types have been interpreted as value 1.
3. By spacing, there are 11 groups and 2 single pendants. The color of the pendants in the first 2 groups is W; in the next 3 groups all are MB; and for groups 6-11, the colors alternate. Group 6 is MB, group 7 is W, group 8 is MB, etc. Both single pendants are W.
4. The groups that have 9 or 10 pendants (with the exception of group 11) have values that are similarly internally related. The relationship is of particular interest because it involves halving. These groups, discussed below in greater detail, are groups 1, 2, 4, 6, 7, 8, 9, 10.

(i) Each group can be described in terms of one value. Calling this value N, basically the pendants in the group contain:

$$N, N, \frac{N}{2}, N, N, N, N, N, \frac{N}{2}, \frac{N}{2}.$$

Where there are 9 rather than 10 pendant positions, one of the 5 consecutive positions with value N is non-existent. The values involved are: N=24 (N/2=12); N=9 (N/2=4); N=8 (N/2=4); N=8 (N/2=4); N=4 (N/2=2); N=8 (N/2=4); N=4 (N/2=2); and N=2 (N/2=1).

(a) Where N=8 (in groups 4, 6, 8), the value 8 is represented by a long knot of 4 immediately followed by a long knot of 4, rather than by a long knot of 8. Half of it is one long knot of 4 (in groups 4 and 8). By contrast, there is a double long knot of 2 in group 6. It is the distributive

axiom, of course, that justifies the use of these 2 procedures to arrive at equivalent results. Namely, $A = \frac{(A+A)}{2} = \left(\frac{A}{2}\right) + \left(\frac{A}{2}\right)$.

(b) Since halving when only integers are used causes problems for odd values, it is important to note that $\frac{9}{2} = 4$.

(ii) Including subsidiary values, the values of the positions change but the basic internal pattern remains the same. Since there are 0-3 subsidiaries per pendant position, there are more inconsistencies. The values and their representations are detailed:

Group 1 $N=28=24+2+2$; $N/2=14=12+1+1$ (with 1 inconsistency)

Group 2 $N=11=9+1+1$; $N/2=5=4+1$

Group 4 $N=9=4+4+1$; $N/2=5=4+1$

Group 8 $N=9=4+4+1$; $N/2=4$ in one position, $\frac{N}{2}=4+1$ in 2 positions

Group 7 $N=5=4+1$; $N/2=2$ in one position, $\frac{N}{2}=2+?$ in 2 positions

Group 9 $N=5=4+1$; $N/2=2$ in 2 positions, $\frac{N}{2}=2+1$ in one position

Group 10 The values of N vary (4 are $N=5=2+2+1$ and 3 are $N=6=2+2+1+1$).

Also the $\frac{N}{2}$ position values vary (one is 1, another is 1+1, and one is 1+1+1).

Group 6 $N=14=4+4+4+1+1$; $N/2=5=2+2+1$

(Note: In each of the 3 representations of $\frac{N}{2}$, one of the 4's in N has been ignored. This might be viewed as $N=10$; $\frac{N}{2}=5$.)

(a) Comparison of the arithmetic in groups 1 and 2 again shows the two different orders of computation: $28/2=14$ uses $\frac{A+B+B}{2} = \frac{A}{2} + \frac{B}{2} + \frac{B}{2}$, while $11/2=5$ uses $\frac{A+B+B}{2} = \frac{A}{2} + \frac{2B}{2} = \frac{A}{2} + B$.

(b) The odd numbers present are 11, 9, 5. Note that $\frac{11}{2} = 5$ in all positions and $5/2=2$ in 3 of 6 positions. However, $5/2=3$ in one position and is unclear (2+?) in 2 positions. Also, $\frac{9}{2}$ now equals 5 in 5 of 6 positions. It might be that the representation of 9 by 4+4+1 is leading to this alternate result. Overall, in halving 18 odd numbers, 10 of them are rounded down, 6 are rounded up, and 2 involve broken cords.

(iii) The focus on halving is also seen by comparing the basic values of consecutive groups. The values of N (without subsidiaries) for groups 6-10 are 8, 4, 8, 4, 2. Within each group, the number of consecutive pendants with repeated values also shows a halving pattern: two have value N followed by 1 of value $\frac{N}{2}$; then 4 or 5 have value N followed by 2 of value $\frac{N}{2}$.