

## QUIPU AS29

Museum identification: No. 40145 (Museum Voor Land-en Volkenkunde, Rotterdam,  
Holland)

Main cord: color YB

- § 5.0 cm: group of 10 pendant cords (1-10), then space of 1.0 cm.  
 8.0 cm: group of 16 pendant cords (11-26), then sapce of 0.5 cm.  
 10.5 cm: group of 10 pendant cords (27-36), then space of 1.0 cm.  
 13.5 cm: group of 6 pendant cords (37-42), then space of 1.0 cm.  
 15.5 cm: group of 6 pendant cords (43-48), then space of 1.0 cm.  
 17.5 cm: group of 4 pendant cords (49-52), then space of 2.0 cm.  
 20.5 cm: group of 4 pendant cords (53-56), then space of 1.5 cm.  
 23.0 cm: group of 4 pendant cords (57-60), then space of 0.5 cm.  
 24.5 cm: group of 3 pendant cords (61-63), then space of 0.5 cm.  
 25.5 cm: group of 8 pendant cords (64-71), then space of 1.0 cm.  
 28.5 cm: group of 2 pendant cords (72-73), then space of 0.5 cm.  
 29.5 cm: group of 6 pendant cords (74-79), then space of 0.5 cm.  
 31.5 cm: group of 7 pendant cords (80-86), then space of 2.5 cm.  
 36.0 cm: pendant cord (87), then space of 30.0 cm.  
 66.0 cm: end ç

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
1	1s(8.5)	42.5ç	W	100	1:4.5
1s1	1s(3.5); 2s(8.5)	39.5ç	W	120	
2	--	40.0ç	W	0	1:4.0
2s1	3L(17.0)	40.0ç	W	3	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
3	1s(8.0)	63.0¢	W	100	1:4.0
3s1	3s(4.0); 9s(10.0); 7L(16.0)	22.0¢	LB	397	
4	1s(13.5); 5L(20.5)	31.5¢	DB-W	15	1:3.5
4s1	2s(10.0)	41.0¢	LB-W	20	
5	1s(14.0); 9L(21.0)	58.0¢	BL	19	1:4.0
5s1	4L(17.0)	44.0¢	DB-BL	4	
6	2s(9.0); 2L(21.0)	60.0¢	LB:W	202	2:4.5-5.0
6s1	1s(4.0)	44.0¢	LB-W	100	
6s2	1s(2.0); 8L(15.0)	27.0¢	W	108	
7	4L(19.0)	46.0¢	BL/DB (9.0/46.0)	4	1:4.0
7s1	1E(17.0)	39.0¢	LB-W	1	
8	3L(21.0)	43.0¢	LB-W	3	1:4.0
8s1	8L(17.0)	47.0¢	W	8	
9	5s(14.5); 1E(21.0)	46.0¢	W/DB/W (6.0/14.5/ 46.0)	51	1:4.0
9s1	2s(9.5); 3L(16.5)	28.0¢	W	23	
10	2s(13.5); 8L(20.0)	27.0¢	BB:W	28	1:4.0
10s1	1s(12.0); 3L(21.0)	33.0¢	DB-W	13	
11	1s(2.0); 7s(8.0); 7s(14.0); 5L(21.0)	40.0¢	W	1775	4:4.0-5.0
11s1	7s(11.5); 6L(17.0)	26.0¢	DB-BL	76	
11s2	4L(18.0)	37.0¢	YB:BL	4	
11s3	2L(17.0)	57.0¢	YB:BL	2	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
11s4	5s(9.5); 9L(16.0)	28.0¢	YB	59	
12	1s(2.5); 1s(7.5); 8s(14.0); 1E(21.0)	58.0¢	YB:BL	1181	4:4.0-5.0
12s1	2s(4.0); 4s(10.5); 3L(16.5)	35.5	DB-BL	243	
12s2	3L(16.0)	38.0¢	YB-BL	3	
12s3	1E(15.5)	39.5¢	BL/LB (9.5/39.5)	1	
12s4	3s(10.0); 1E(16.0)	37.0¢	YB:BL	31	
13	4s(2.5)	29.5¢	YB	4000	4:3.5-4.5
13s1	5s(11.5); 5L(16.5); 7L(17.0)	44.5¢	LB:W	55&7	1:1.5
13s1s1	1E(13.0)	19.0¢	W	1	
13s2	1E(15.0)	33.0¢	W/LB (10.0/33.0)	1	
13s3	1E(15.0)	28.0¢	LB	1	
13s4	1s(9.0); 7L(15.0)	36.0¢	YB	17	
14	3s(2.0); 3s(7.5); 1s(12.5); 4L(19.0)	51.0¢	BL	3314	1:3.0
14s1	4L(16.0)	28.0¢	YB	4	1:1.0
14s1s1	2L(12.0)	19.0¢	YB	2	
15	--	2.0	DB	?	
16	1s(2.0); 4s(7.5); 5s(12.5); 5L(19.0)	44.0¢	W	1455	2:3.0-3.5
16s1	2L(16.0)	61.0¢	YB:BL	2	
16s2	7s(9.5); 6L(16.5)	26.5¢	DB-BL	76	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
17	1s(2.0); 3s(13.5); 2L(21.0)	58.0¢	YB:BL	1032	3:4.0-5.0
17s1	3L(16.0)	38.0¢	YB:BL	3	
17s2	--	11.0b	LB	0	
17s3	2s(3.5); 4s(9.5); 3L(16.5)	24.5	DB/DB-BL (3.0/24.5)	243	
18	3s(2.5); 8s(8.0)	52.0¢	YB	3800	1:3.5
18s1	2s(8.5)	26.5¢	LB:W	20	
19	3s(2.0); 1s(6.0); 1s(11.0); 4L(18.0)	52.0¢	BL	3114	1:3.0
19s1	2L(15.0)	28.0¢	W	2	
20	--	66.0¢	LB	0	
21	3s(8.0); 1s(13.5)	39.5¢	W	310	2:4.5-5.0
21s1	5s(9.0); 9L(15.5)	45.5¢	W	59	
21s2	4L(15.0)	42.0¢	YB:BL	4	
22	1s(8.0); 4s(14.0); 9L(22.0)	52.0¢	YB:BL	149	1:4.0
22s1	3s(9.5); 1E(16.5)	50.5¢	YB:BL	31	
23	2s(8.0)	37.0¢	LB	200	3:4.0-5.0 1:6.0
23s1	1E(13.5)	27.5¢	LB/W (10.0/27.5)	1	1:0.5
23s1s1	4s(8.0); 2L(14.0)	30.0¢	W	42	1:0.5
23s1s1s1	1E(14.0)	30.0¢	W	1	
23s2	2s(4.0); 6s(10.5)	40.5¢	W	260	
23s3	3s(9.5); 5L(16.0)	32.0¢	W	35	1:1.0

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
23s3s1	1E(12.0)	26.0¢	W	1	
23s4	1s(7.0); 7L(13.5)	27.5¢	LB	17	
24	2s(7.5)	57.5	BL	200	
25	5s(13.0)	45.0¢	LB-BL	50	1:3.0
25s1	4L(17.0)	32.0¢	W	4	
26	--	6.0b	LB	?	
27	--	1.0b	LB	?	
28	--	5.0b	YB:BL	?	
29	7s(8.0); 4s(14.0); 5L(20.0)	24.0¢	LB	745	
30	--	51.0¢	DB-W	0	
31	--	1.0b	DB	?	
32	--	33.0¢	W	0	
33	--	50.0¢	DB	0	
34	2s(14.0)	44.0¢	YB:BL	20	
35	--	54.0¢	LB:W	0	
36	3s(13.5)	42.5	LB:W	30	
37	--	7.5b	YB	?	
38	--	42.0¢	LB:W	0	
39	2L(19.0)	33.0¢	LB:W	2	
40	4s(8.0); 3s(13.0); 4L(20.0)	36.0¢	W	434	
41	6s(8.0)	11.0b	DB:W	6??	
42	--	39.0¢	YB:BL	0	
43	1s(6.5)	33.5¢	W	100	1:0.5

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
43s1	3s(11.0)	34.0*	DB-W	30	1:13.0
43s1s1	3L(6.0)	13.0¢	W	3	
44	4L(18.5)	32.5	YB	4	1:0.5
44s1	--	47.0¢	YB	0	
45	2L(20.0)	41.0¢	W	2	
46	1E(18.0)	25.0¢	DB-W	1	
47	1s(13.0); 7L(21.0)	36.0¢	LB-BL	17	
48	1s(13.5)	40.5¢	LB	10	1:1.0
48s1	--	11.0¢	LB	0	
49	2s(7.0); 4L(20.0)	40.0¢	LB:W	204	1:1.5
49s1	2s(9.0); 2L(16.0)	31.0¢	YB:BL	22	1:0.5
49s1s1	3s(8.5); 8L(15.0)	25.0¢	YB:BL	38	
50	1s(12.0); 9L(19.5)	36.5¢	DB/DB:W (4.0/36.5)	19	1:2.0
50s1	2s(5.5); 9s(11.5); 6L(16.0)	19.0¢	DB-(DB-W)	296	
51	4s(18.0); 1E(27.0)	49.0¢	DB-W	41	
52	4L(20.0)	40.0¢	DB-W	4	
53	3s(1.5); 7s(12.0); 6L(19.0)	44.0¢	W	3076	
54	1s(6.5); 5s(11.5); 8L(17.5)	25.5	YB	158	1:1.0
54s1	1s(1.0)	18.0¢	DB	1000	
55	2s(11.0); 5L(19.0)	54.0¢	LB-W	25	
56	1s(11.0); 2L(18.0)	34.5¢	W	12	
57	4L(19.5)	39.5¢	W	4	1:1.0

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
57s1	2s(11.0)	40.0¢	DB:W	20	
58	1s(12.0); 6L(19.5)	33.5¢	YB	16	1:1.0
58s1	2s(11.0)	32.0¢	YB	20	
59	1s(12.0); 1E(18.0)	34.0¢	YB	11	
60	--	40.5¢	LB:W	0	1:1.5
60s1	4L(17.5)	30.0¢	LB:W	4	
61	7s(7.0); 4s(12.0); 5L(19.0)	34.0¢	YB	745	
62	1s(12.0); 2L(18.5)	42.5¢	YB	12	
63	6s(6.5)	31.5¢	DB/W (4.0/31.5)	600	
64	2s(7.5); 8s(15.0)	37.0¢	W	280	
65	1s(2.0); 7s(12.5); 3L(19.5)	38.5¢	LB:W	1073	
66	2s(2.0); 5s(7.5); 6s(14.5); 5L(22.0)	45.0¢	LB:W	2565	1:4.0
66s1	--	0.5b	LB:W	?	
67	1s(2.0); 7s(8.0); 3s(13.5); 9L(21.0)	41.0¢	YB	1739	
68	1s(7.5); 7s(14.0)	37.0¢	YB	170	
69	1s(2.0); 7s(8.5); 3s(14.5); 9L(23.0)	39.0¢	YB	1739	
70**	1s(2.0); 1s(5.5); 5L(12.0); 6s(18.0)	18.5b	DB:W		
71	1s(7.0); 1s(12.5)	59.5¢	W	110	
72***	8s(8.0); 5L(20.5)	34.5¢	LB:W	805	
73	--	1.5b	LB:W	?	

Cord	Knots (no., type, position)	Length	Color	Value	Subsidiaries (no., position)
74	2s(12.0)	42.0¢	DB-W	20	
75	1s(8.0)	41.0¢	LB-W	100	
76	2s(7.5); 1s(13.0)	34.0¢	W	210	
77	1s(7.0); 2s(13.0)	40.0¢	LB	120	
78	5s(13.0)	43.0¢	YB	50	
79	2s(12.0)	37.0¢	YB	20	
80	2L(20.0)	49.0¢	DB:W	2	
81	4s(13.5); 2L(21.0)	53.0¢	W	42	
82	5s(13.0); 2L(19.5)	32.5¢	W/LB-BL (4.5/32.5)	52	
83	1s(7.5)	27.5b	W/LB-BL (3.0/27.5)	100	
84	1s(8.5)	47.5¢	LB-BL	100	
85	1s(7.5)	45.5¢	W	100	
86	2s(13.0)	34.0¢	DB-W	20	
87	--	30.0¢	DB/W/DB (7.5/12.5/ 30.0)	0	

#### Observations

- \*1. The end of the pendant cord is formed into a loop 1.0 cm. long.
- \*\*2. The pendant cord is mended at 5.5 cm. It appears to have been replaced upside down so the knot order is reversed and was 6s, 5L, end knot rather than 1s, 5L, 6s. The value would then be 1?65.
- \*\*\*3. The main cord is mended between pendants 71 and 72. Hence, some of the main cord and pendant cords might be missing.



4. The Museum records the acquisition as Aankoop, July 1956.
5. Using 6 basic colors, 18 additional cord colors were created. DB appears alone, is twisted with W, is mottled with W, is joined with W in three different orders (DB/W, W/DB/W, DB/W/DB), is twisted with BL, and is joined with BL. The DB-BL twist is joined with W and is joined with DB, while the DB-W twist is twisted again with DB, and the mottled DB:W is joined with DB. LB appears alone, is twisted with W, is joined with W in two different orders (LB/W, W/LB), is twisted with BL and is joined with BL. YB appears alone, is mottled with W, and is mottled with BL. BL and W each appear alone as well as in the combinations described above. BB only appears alone.
6. By spacing, there are 14 groups varying from 1 pendant to 16 pendants per group.
7. Groups 1, 2, 5, 6, 8, and 10 have subsidiaries and the other 8 groups do not.
- a) In groups 1 and 6, the subsidiaries always differ in color from the pendants to which they are attached.
- b) In group 1, wherever the pendant value is larger than its subsidiary's value, the difference is the value of another pendant in the group. That is,
- $$P_i - P_{i,s1} = P_j \quad \text{for } (i,j) = (5,4), (7,8), (9,10), (10,4).$$
- By contrast, in group 8, whenever the pendant value is smaller than its subsidiary's value, the difference is the value of another pendant in the group. Namely,
- $$P_{i,s1} - P_i = P_j \quad \text{for } (i,j) = (1,2), (2,1), (4,1)$$
8. a) Five of the 6 pendants in group 5 can be related by summing:  $P_5 = P_2 + P_3 + P_4 + P_6$ .
- b) In group 8, 5 of the 8 pendants can be related. The sum of pendants 2 and 3 (which are the same color as each other but different in color from the rest of the group) equals the sum of pendants 4, 5, and 6 (which are the same color as each other but different from the rest of the group).

9. Group 2 contains 16 pendants with pendants 1-4, 6-9, and 11-14 forming related subgroups within it..
- a) With the exception of P13 which is LB rather than YB, the 3 subgroups repeat the same color pattern (W, YB:BL, YB, BL).
- b) With the exception of a 1 in 1 digit, the first subgroup sums the other two so that  $P_i = P_{i+5} + P_{i+10}$  for  $i=1,2,3,4$ .
- c) In keeping with its being their sum,  $P_i$  has subsidiaries of the same colors and values as  $P_{i+5}$  and  $P_{i+10}$  combined. Only one position shows a summation instead: a value of 55+7 appears while the subsidiaries it is adding are 20 and 42. (Of the 32 subsidiaries on the 12 pendants, 3 are not accounted for by this addition.)