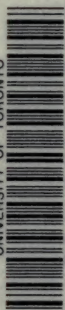


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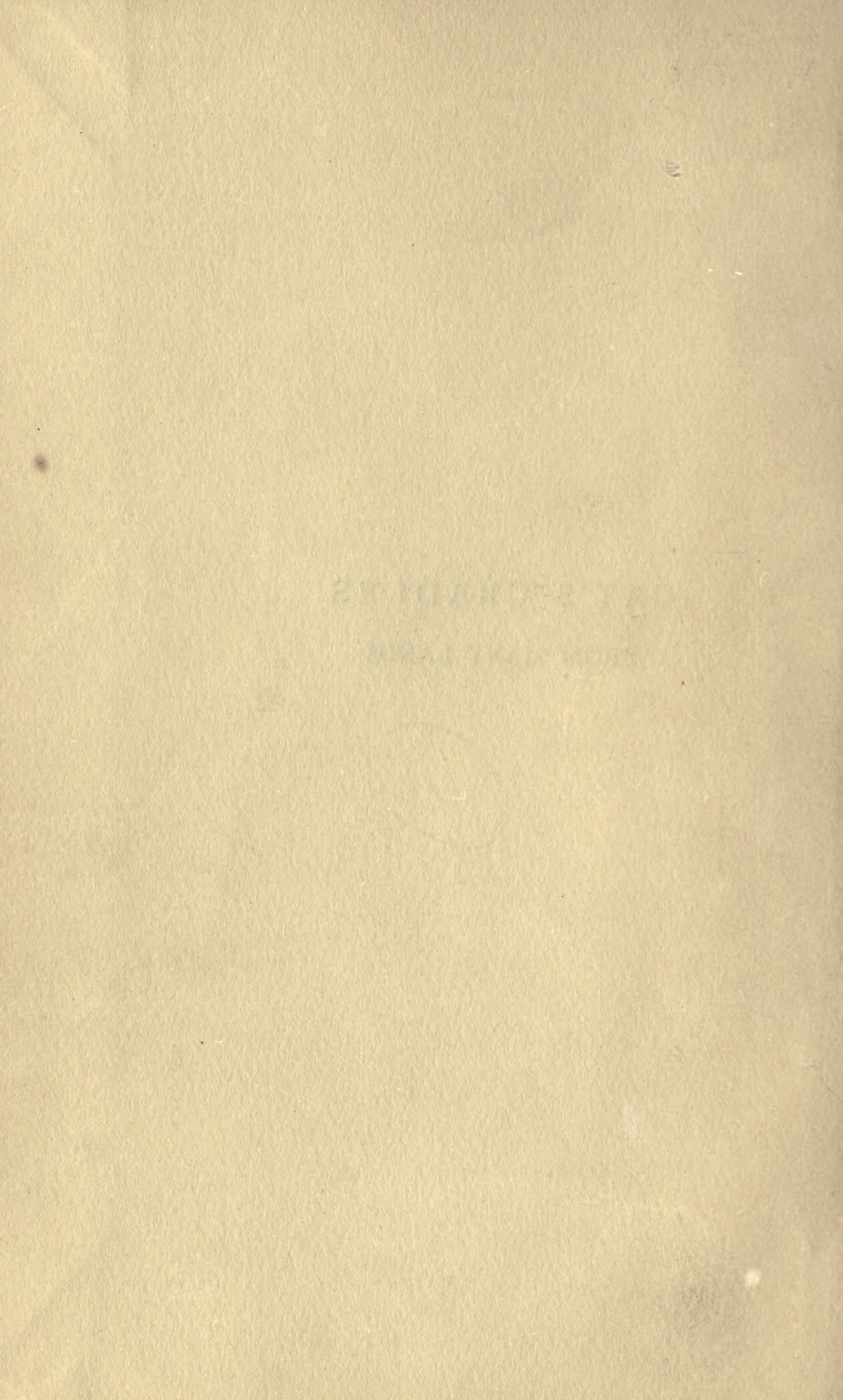
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CAT'S CRADLES

FROM MANY LANDS



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CAT'S CRADLES

FROM MANY LANDS

BY

KATHLEEN HADDON

WITH FIFTY-NINE ILLUSTRATIONS

SECOND IMPRESSION

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PREFACE

My idea in writing this book was to gather into a small volume representative cat's-cradles from all over the world. In the case of each country I have given the easiest examples first, so as to accustom my readers by degrees to the more difficult movements. The figures are not really difficult to remember, but at first fairly constant practice is required to fix them in the memory.

I wish to take this opportunity of expressing my most grateful thanks to my father, Dr. A. C. Haddon, for assisting me in collecting and putting together the material, and also for keeping my interest in the subject alive ever since he returned from Torres Straits in 1899.

My thanks are also due to Dr. G. B. Gordon, of the Philadelphia Free Museum of Science and Art, for the Eskimo figures; to Dr. W. A. Cunningham for the East African figures; to Mr. John Parkinson for those from the West Coast, and to Mr. A. R. Brown of Trinity College, Cambridge, for figures from the Andaman Islands.

CONTENTS

	PAGE
CAT'S CRADLES	1
TORRES STRAITS	7
I. The Fish-spear	7
II. Throwing the Fish-spear	8
III. The Coco-nut Palm Tree	9
IV. The Tern	10
V. The Bed	11
VI. Little Fishes	12
VII. The King Fish	13
VIII. The Canoe with Two Masts	15
IX. The Sea-snake	16
X. The Well	17
XI. The Fence Round the Well	19
XII. The Trigger-fish	20
XIII. The Flying Fox	22
XIV. The Fighting Men	22
XV. The Setting Sun	24
XVI. The Crab	26
AFRICA	28
XVII. A Locust	28
XVIII. A Temporary Grass Hut	29
XIX. A Fish-trap	30
XX. The Moon	31
The Moon gone Dark	32
XXI. A Parrot Cage	33
XXII. A Bed	34
XXIII. A Calabash Net	36
XXIV. The Face Mark of the Town of Owu	37
XXV. A Pit	38
XXVI. The Batoka Gorge of the Zambezi River	40
XXVII. Fighting Lions	41
XXVIII. Ambra	43

	PAGE
AMERICAN INDIAN	45
XXIX. Dressing a Skin	45
XXX. Carrying Wood	46
XXXI. A Hogan	47
XXXII. Two Hogans	48
XXXIII. Many Stars	50
XXXIV. The Owl	51
XXXV. Lightning	51
ESKIMO	53
XXXVI. The Siberian House	53
XXXVII. The Wolverine	54
XXXVIII. A Dog on a Leash	55
XXXIX. The Sea-gull	57
XL. The Arms	58
XLI. The Legs	59
XLII. The Kayak	60
XLIII. Two Ptarmigan	62
XLIV. The Fox and the Whale	64
XLV. A Man Climbing a Tree	69
XLVI. An Imperial Pigeon	70
XLVII. A Parrot	72
XLVIII. The Leashing of Lochiel's Dogs	73
XLIX. The Tallow Dips	74
L. Sawing Wood	78
TRICKS	80
1. The Lizard	80
2. The Mouse	80
3. Will You Have a Yam?	82
4. A Fly on the Nose	83
5. A Dravidian Trick	83
6. A German Trick	84
7. An English "Hanging" Trick	85
8. An African "Hanging" Trick	86
9. An Egyptian Trick	86
10. A Navaho Indian Trick	87
11. A Pawnee Trick	88
12. Threading a Closed Loop	89
BIBLIOGRAPHY	90
INDEX	93

LIST OF ILLUSTRATIONS

		PAGE
Fig. 1.	Cat's Cradle (Position I.)	3
2.	Cat's Cradle (Opening A)	5
No. 1.	The Fish-spear	7
2.	Throwing the Fish-spear	8
3.	The Coco-nut Palm Tree	9
4.	The Tern	10
5.	The Bed	11
6.	Little Fishes	13
7.	The King Fish	14
8.	The Canoe with Two Masts	15
9.	The Sea-snake	17
10.	The Well	18
11.	The Fence Round the Well	19
12.	The Trigger Fish	21
13.	The Flying Fox	22
14.	The Fighting Men	23
14A.	The Fighting Men	24
15.	The Setting Sun	25
16.	The Crab	27
17.	A Locust	28
18.	A Temporary Grass Hut	29
19.	A Fish-trap	30
20.	The Moon	31
20A.	The Moon gone Dark	32
21.	A Parrot Cage	34
22.	The Bed	35
23.	The Calabash Net	37
24.	The Face Mark	38
25.	A Pit	39
26.	The Batoka Gorge	41

	PAGE
27. Fighting Lions	42
28. Ambra	44
29. Dressing a Skin	45
30. Carrying Wood	46
31. A Hogan	48
32. Two Hogans	49
33. Many Stars	50
34. The Owl	51
35. Lightning	52
36. The Siberian House	53
37. The Wolverine	55
38. A Dog on a Leash	56
39. The Sea-gull	57
40. The Arms	59
41. The Legs	60
42. The Kayak	61
43. Two Ptarmigan	63
44A. The Fox and the Whale (Unfinished Figure)	67
44. The Fox and the Whale	68
45. A Man Climbing a Tree	70
46. An Imperial Pigeon	71
47. A Parrot	73
48. The Leashing of Lochiel's Dogs	74
49. The Candles	75
49A. The Chair	76
49B. The Scissors	77
49C. The Tipstaff	77
49D. The Handcuffs	77
50. Sawing Wood	78

INTRODUCTION

NEARLY everyone is familiar with a game called "Cat's-cradle," in which a simple closed loop of string is used, and two players in turn construct a series of figures ; but the greater number of people are unaware of the extraordinarily elaborate results which may be obtained by a single player. These interesting games are played by natives almost all over the world, and it is with these hitherto unregarded forms, rather than with the better-known variety, that I wish to deal in this little book.

Till comparatively recent years little or nothing has been known about cat's-cradles, and there is still plenty to be learnt on the subject. Occasional imperfect lists of the figures made by a particular people have been published, with here and there an illustration of the finished figure, but the first to describe the method of production was Dr. Franz Boas (I),¹ who published a

¹ The figures in heavy type refer to the Bibliography at the end of the book.

description of two out of the five Eskimo figures he illustrates. Mr. Harlan I. Smith (2) also published sketches illustrating stages in the making of two string figures of the Salish Indians of Thompson River, British Columbia. In order to study these cat's-cradles comparatively, it was necessary to devise a nomenclature by which they might be described, and this was done by Dr. W. H. R. Rivers and Dr. A. C. Haddon (3) in 1898, during the Cambridge Anthropological Expedition to Torres Straits. Ten years previously Dr. Haddon had visited these parts and had seen some figures and brought home some finished patterns; this time, however, he was enabled to write down some thirty examples, some of which I give in this book.

In a trip to Chicago in 1901, Dr. Haddon learnt half-a-dozen figures from two old Navaho Indian men (4); and in 1904 he succeeded in infecting Mrs. Jayne of Philadelphia with his enthusiasm on the subject, with the result that she immediately visited the St. Louis Exposition in order to collect cat's-cradles, and in 1906 published a large and interesting volume (5), sumptuously illustrated, containing the descriptions of about one hundred figures. Her brother, Dr. W. H. Furness, shortly before had visited the Caroline Islands and collected fifteen new figures, which Mrs. Jayne records in this book. I should like

to take this opportunity of paying a tribute to the memory of this charming and highly gifted woman, whose untimely death has saddened a wide circle of friends.

In 1905 Dr. G. B. Gordon, in an expedition to Alaska, collected nearly twenty figures (6), the illustrations of which are given in Mrs. Jayne's book. Amongst these Eskimo figures are some of the prettiest as well as the most complicated examples yet described, chief of which there stands out the "Fox and Whale". Added to the great length of this cat's-cradle is the difficulty in manipulation, and anyone successfully completing the figure from a description may be regarded as an adept in this new pastime.

For a long time no cat's-cradles were known from Africa except the "Pigmy Diamonds," collected by Mrs. Jayne at St. Louis. The first to record them was Dr. W. A. Cunningham (7), who in 1904 collected some fifteen figures in Central Africa, chiefly in the neighbourhood of Lake Tanganyika. In 1906 Dr. Haddon (8) took advantage of the visit to South Africa of the British Association for the Advancement of Science to collect some cat's-cradles from that part. About the same time Mr. John Parkinson (9) published an account of sixteen figures from the West Coast; and this represents the sum of our present knowledge of cat's-cradles from that continent.

An interesting field of research was opened to Mr. A. R. Brown when in 1907 he visited the primitive inhabitants of the Andaman Islands. The Andamanese are well acquainted with cat's-cradles, and perform several peculiar and unique movements, but on the whole, in spite of the complicated manipulation, the finished figures are unsatisfactory and crude. Dr. W. E. Roth has figured intricate figures from North Queensland (II) and British Guiana,¹ but, as he does not describe the manipulation, they are of little value.

So far I have said nothing of British cat's-cradles ; apart from the one requiring two players. There is a curious one illustrating the fate of a man who stole a pound of candles. Strangely enough there has been found in Scotland a figure which has a world-wide distribution, occurring besides in North Queensland, East Africa, North America, and Alaska, and having a different mode of formation in nearly every place. The Scotch version of this figure is called "The Leashing of Lochiel's Dogs," while in North America it is known as "Crow's Feet".

It is not surprising that some of the simpler forms, such as the "Fish-spear" and "Shooting the Fish-spear," should have a very wide distribution, as, given a simple loop of string, they would

¹ "Cratch Cradle in British Guiana," *Revue des études ethnographiques et sociologiques*, Avril-Mai, 1908, p. 1.

probably soon present themselves to the mind of the ingenious savage. More difficult it is to account for the occurrence of a comparatively complicated figure, such as the "Moon" in the Andaman Islands, North Queensland, Torres Straits, and in Central Africa, and of the "Calabash Net" in Central and West Africa and in North America.

The real cat's-cradle occurs in China, Japan, Korea, Borneo, the Philippines, and Europe, into which last it was probably introduced with the tea trade. A modification of this, called "Sawing Wood," occurs in Scotland, and the same figure is produced by a slightly different method in India and North America. This figure and two small tricks are all that have yet been collected from India, although one would imagine that great country to be fruitful in this respect.

The ethnological value of these figures has not yet been worked out. Indeed, it is difficult to do so at present owing to insufficient data. Two interesting facts connected with them are the occurrence of an accompaniment of chants or words in Torres Straits, and their frequent representation of persons or objects connected with religion or mythology in Oceania. Moreover, according to Captain G. Comer (10) in Iglulik: "While the sun is going south in the fall the game of cat's-cradle is played, to catch the sun in the

meshes of the string, and to prevent his disappearance". Also, on the west coast of Hudson Bay : " Boys must not play cat's-cradles, because in later life their fingers might become entangled in the harpoon-line. They are allowed to play this game when they become adults. Two cases were told of hunters who lost their fingers in which the cause was believed to be their having played cat's-cradle when young. Such youths are thought to be particularly liable to lose their fingers in hunting ground seal." This Eskimo evidence suggests a magical influence.

Apart from the ethnological interest in collecting cat's-cradles, they form a most delightful pastime. At first sight they may not appear to be particularly alluring, but in practice I have found very few people able to withstand their charm. Old and young alike succumb to the fascination of this simple game, which affords an excellent means of whiling away the long hours spent on a tedious railway journey or on a convalescent bed. It is, moreover, an excellent method of becoming friendly with natives, for who could suspect of guile a man who sits among the children playing with a piece of string ?

KATHLEEN HADDON.

INISFAIL, CAMBRIDGE.

CAT'S CRADLES FROM MANY LANDS.

[The nomenclature I have adopted is the one invented by Drs. Rivers and Haddon (3).]

A string passed over a digit is termed a loop. A loop consists of two strings. Anatomically, anything on the thumb side of the hand is called "radial," and anything on the little finger side is called "ulnar," each loop, therefore, is composed of a radial and ulnar string. By employing the terms thumb, index, middle finger, ring finger, little finger, and right and left, it is possible to designate any one of the twenty strings that may extend between the two hands.

A string lying across the front of the hand is a palmar string, and one lying across the back of the hand is a dorsal string.

Sometimes there are two loops on a digit, one of which is nearer the finger-tip than the other. Anatomically, that which is nearer to the point of attachment is "proximal," that which is nearer the free end is "distal". Thus, of two loops on a digit, the one which is nearer the hand is the proximal loop, that which is nearer the tip of the digit is the distal loop; similarly, we can speak of a proximal string and a distal string.

In all cases various parts of the string figures are transferred from one digit or set of digits to another or others. This is done by inserting a digit (or digits)

2 CAT'S CRADLES FROM MANY LANDS

into certain loops of the figure and then restoring the digit (or digits) back to the original position, so as to bring with it (or them) one string or both strings of the loop. In rare cases a string is taken up between thumb and index. A digit may be inserted into a loop from the proximal or distal side, and in passing to a given loop the digit may pass to the distal or proximal side of other loops. These expressions are used as a general rule instead of "over and under," "above and below," because the applicability of the latter terms depends on the way in which the figures are held. If the figures are held horizontally, "over and above" will correspond as a general rule to the distal side, while "under and below" will correspond to the proximal side. In some cases when there is no possibility of confusion, the simpler terminology is used.

A given string may be taken up by a digit so that it lies on the front or palmar aspect of the finger, or so that it lies on the back or dorsal aspect. In nearly all cases it will be found that when a string is taken up by inserting the digit into the distal side of a loop, the string will have been taken up by the palmar aspect of the digit, and that the insertion into the proximal side of the loop involves taking up the string by the dorsal aspect of the digit.

Other operations involved are those of transferring strings from one digit to another and dropping the string from a given digit or digits.

The manipulation consists of a series of movements, after each of which the figure should be extended by drawing the hands apart and separating the digits. In

some cases in which this would interfere with the formation of the figure, a special instruction will be given that the figure is not to be extended. Usually it is advisable to retain the loops as near the tips of the digits as possible, and to keep the strings as loose as you can until the completion of the figure.

There are certain opening positions and movements which are common to many figures. To save trouble these may receive conventional names; the use of these will soon be apparent.

Position I.—This name may be applied to the position in which the string is placed on the hands when beginning the great majority of the figures.

Place the string over the thumbs and little fingers of both hands so that on each hand the string passes round the back of the little finger, then between the little and ring fingers and across the palm; then between the index and thumb and round the back of the thumb to the radial side of the hand. When the hands are drawn apart the result is a single radial thumb string and a single ulnar little finger string on each hand, with a string lying across the palm.

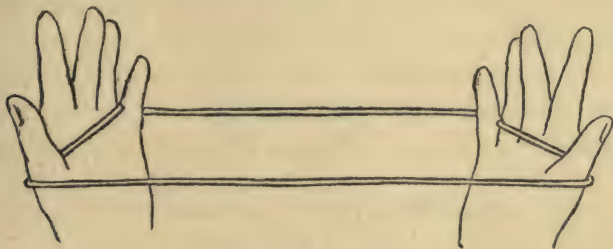


FIG. 1.—Position 1.

4 CAT'S CRADLES FROM MANY LANDS

This position differs from the opening position of the English cat's-cradle in which the string is wound round the hand so that one string lies across the palm and two across the back of the hand, with a single radial index string and a single ulnar little finger string.

Opening A.—This name may be applied to the manipulation which forms the most frequent starting-point of the various figures. Place string on hands in *Position I*. With the back of the index of the right hand take up from the proximal side (or from below) the left palmar string and return. There will now be a loop on the right index, formed by strings passing from the radial side of the little finger and the ulnar side of thumb of the left hand, i.e. the radial little finger strings and the ulnar thumb strings respectively.

With the back of the index of left hand take up from the proximal side (or from below) the right palmar string and return, keeping the index with the right index loop all the time so that the strings now joining the loop on the left index lie within the right index loop.

The figure now consists of six loops, on the thumb, index, and little finger of each hand. The radial little finger string of each hand crosses in the centre of the figure to form the ulnar index string of the other hand, and similarly the ulnar thumb string of one hand crosses and becomes the radial index string of the other hand.

The places where the strings cross in the centre of the figure may be termed the crosses of *Opening A*.

There is another term that I wish to introduce in

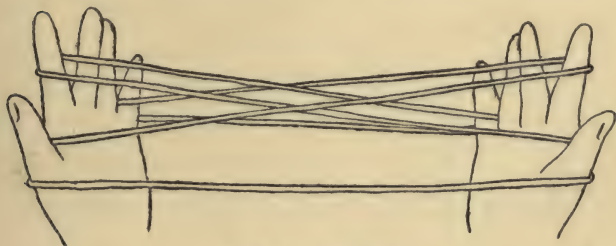


FIG. 2.—Opening A.

this book. When there are two loops on a digit, a distal one and a proximal one, you are often required to lift the proximal loop over the distal one, and over the tip of the digit on to its palmar aspect. This movement I refer to as "*Navahoing*" on account of its frequent occurrence among the string figures of the Navaho Indians of New Mexico, U.S.A.

You are sometimes required to twist a loop; this may be done "clockwise," that is, in the direction in which the hands of a clock travel, or in the opposite way which is termed "counter-clockwise".

In some finished figures if the strings are pulled apart carelessly a hopeless tangle is the result. To avoid this take the top and bottom straight strings of the figure and pull them apart, and the string will usually resolve itself into a simple loop.

The string selected should be smooth and pliable, and one which is not liable to kink. Macrami thread or a fine woven cord, like blind cord, will be found to be very suitable. A length of about 6 ft. 6 in. (2 metres) is usually the most convenient. The ends should be tied in a reef knot or sewn together with cotton, or, best of all, spliced.

6 CAT'S CRADLES FROM MANY LANDS

All the illustrations are original, with the exception of the Eskimo figures (Nos. 36-43), which are reproduced by the courtesy of Dr. G. B. Gordon of Philadelphia from his paper on the Western Eskimo. The numbers which are given on some of the drawings refer to the corresponding digits which occupy that position.

TORRES STRAITS.¹

I. THE FISH-SPEAR = *Baur*² (3) (Murray Island).

This figure is identical with "Pitching a Tent," collected from the Salish Indians of British Columbia by Mr. Harlan I. Smith (2); with the "Sea-egg (*Echinus*)³ Spear" from the Clayoquaht Indians of Vancouver Island, collected by Dr. Haddon; and there is in the Philadelphia Museum a specimen of this figure attached to cardboard, which was made by a Zuñi Indian from New Mexico.

Position I.

Take up with the right index the transverse string on the left palm from its proximal side, give it one twist and return. Pass the left index through the right index loop from the distal side, and take up the transverse string of the right hand from the proximal side and return through the loop.

Drop the thumb and little finger loops of the right hand and draw the hands apart.



No 1.—The Fish-spear.

¹ All the Torres Straits figures were collected by Dr. Haddon, and will be found in Vol. IV of the Reports of the Expedition. (3) refers to the Bibliography at the end.

² In all native words the vowels have the continental value.

³ All names in italics, within brackets, refer to the scientific name of the genus.

8 CAT'S CRADLES FROM MANY LANDS

II. THROWING THE FISH-SPEAR.

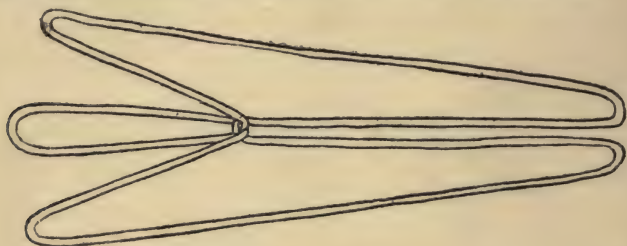
This is precisely the same figure as one from South Africa known as *Makora* "Canoe," collected by Dr. Haddon, only it has not the last stage by which the figure is made to move. A similar figure is illustrated by Dr. W. E. Roth from North Queensland. (II.)

Opening A. (Left palmar string must be taken up first.)

Transfer right index loop to left index, and the original left index loop to the right index, passing it over the one just transferred.

Release right index finger and the spear flies to the left; by bringing the right thumb and little finger close together the handle of the spear appears.

Pick up on right index the string just dropped, and release left index; the spear then flies to the right.



No. 2.—Throwing the Fish-spear.

III. THE COCO-NUT PALM TREE = *U* (Murray Island).

Opening A.

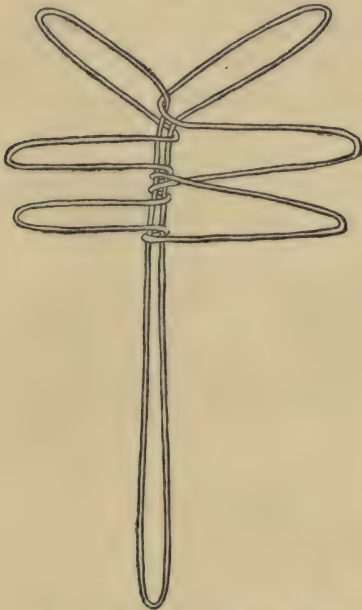
Pass fingers from the distal side into thumb loops and close hands.

Put toe¹ from the distal side into thumb loops, drawing radial thumb string over all other strings, and holding it down.

Exchange loops on little fingers, the right passing over the left.

Repeat with index fingers.

Draw tight and work the strings up to form the crown at the head of the tree.



No. 3.—The Coco-nut Palm Tree.

¹The native method of manipulation is given in each case, but although a foot may frequently be used, it is often more satisfactory to get the help of another person, or hook the string on some object.

10 CAT'S CRADLES FROM MANY LANDS

IV. THE TERN = *Sirar* (*Sterna*) (Murray Island).

Opening A.

Hold ulnar side of little finger loop with toe.

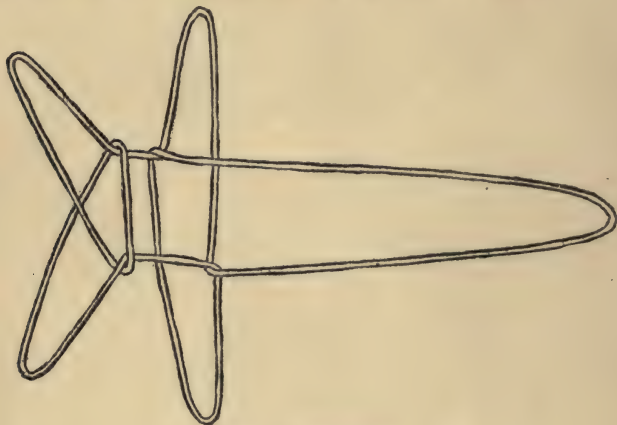
With little fingers take up ulnar strings of index loops from the proximal side, returning proximal to the ulnar strings of the little finger loop.

Hold radial thumb string with the mouth.

With thumbs take up from the proximal side the radial strings of the index loops and return proximal to the radial strings of the thumb loop.

Release indices and mouth.

Move the hands inward and outward, and the strings will imitate the movements of the tern's wings.



No. 4.—The Tern.

V. THE BED = *Le Sik* (Murray Island).

Opening A.

Put thumbs proximal to index loops and into little finger loops from the proximal side; take up on the backs of thumbs the radial strings and return under index loops.

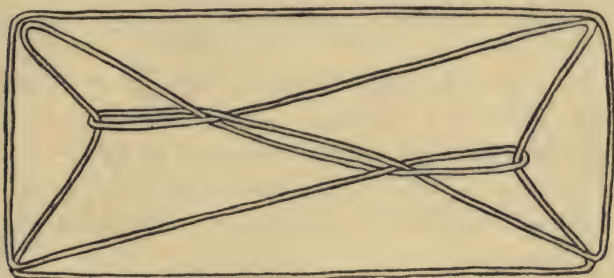
Pass little fingers through the index loops from the distal side and into the thumb loops from the proximal side; with backs of little fingers pick up ulnar thumb string and return through index loops.

Release indices.

Sing:—

<i>Le sik,</i>	<i>Le sik,</i>	<i>sik erapei,</i>	<i>le sikge,</i>
Man bed,	Man bed,	bed breaks,	man on a bed,
<i>le sikge,</i>	<i>uteidi,</i>	<i>uteidi,</i>	<i>sik erapei.</i>
man on a bed,	asleep lies,	lies asleep,	bed breaks.

At the word "*erapei*" release little fingers and the figure disappears.



No. 5.—The Bed.

12 CAT'S CRADLES FROM MANY LANDS

VI. LITTLE FISHES = *Tup* (3) (Murray Island).

Hold part of the string between the thumbs and indices, the hands being about six inches apart; make a small loop by bringing the right hand towards you and to the left. Hold the loop between the thumbs and indices so that both the loops hang down, and pass both indices towards you through both loops. Draw the hands apart and turn indices up.

There should now be two loops on each index, with the two radial strings running straight across, while the two ulnar strings cross.

Pass thumbs into the proximal index loop from the distal side, and with backs of thumbs pick up the proximal ulnar index strings.

Pass thumbs into the distal index loop from the distal side, and with backs of thumbs pick up the distal ulnar index string.

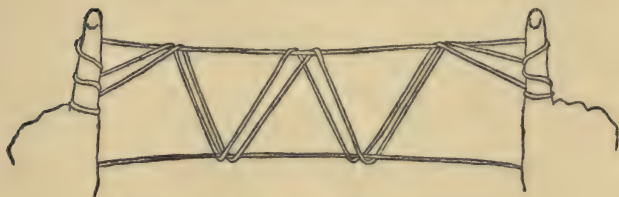
Pass little fingers distal to the distal radial index string and proximal to the proximal radial index string; with backs of little fingers take up this string and return.

Each little finger is now in a triangle. Pass the index fingers from the distal side into this triangle, and by turning them up towards you, pick up on their tips the slanting string, i.e. the distal radial index string.

Release thumbs and extend, by turning the palms away from you.

Sing:—

Tup igoli umi Waierge, Waier kesge.
 Tup swim round to Waier Waier in the channel.
Waierge Waier kesge.
 to Waier Waier in the channel.



No. 6.—Little Fishes.

VII. THE KING FISH = *Geigi* (3) (*Cybium commersoni*)
 (Murray Island); [DUGONG = *Dangal* (Mabuiag)].

Opening A.

Release right index and draw out; bend left index into its own loop, thus holding down to palm the string running from left thumb to little finger.

Release left thumb and little finger and draw tight.

Put string over left hand as in Position I.

Pass left index over the transverse string of the right hand, and return, twisting the index towards you and up.

Pass right index into right thumb loop from the distal side, and turning the finger up away from you, pick up the ulnar thumb string.

14 CAT'S CRADLES FROM MANY LANDS

Pass right index into right little finger loop from above, and by bending it towards you and up, pick up the radial little finger string, allowing the string just picked up from the thumb to slip off.

Pass right little finger towards you into the triangle just formed, and hook down against the palm the ulnar thumb string, allowing the original little finger loop to slip off.

Similarly, with the left little finger hook down the left ulnar index string. Release thumbs and extend.

Another person puts a hand into the central diamond. If the manipulator leaves go with the left hand and pulls with the right, the fish will be caught; but if he leaves go with the right hand and pulls with the left, the fish will escape.



No. 7.—The King Fish.

VIII. THE CANOE WITH TWO MASTS = *Nar* (Murray Island).

Opening A.

Another person must pass his hand distal to the ulnar string, and proximal to the ulnar pair of crossed strings, and take up from above the radial pair of crossed strings at their point of junction, and draw them well out. (The natives perform this action with their right big toe; the loop is therefore called the "toe loop".)

Bend down the right middle finger through the loop on the right index, and take up the ulnar thumb string on its dorsal surface and return.

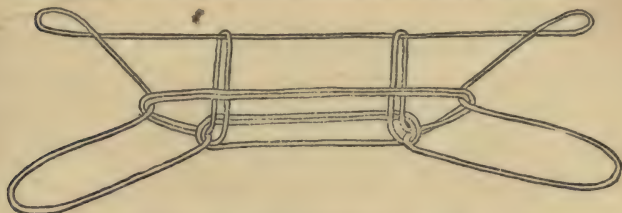
Repeat with left middle finger.

Release thumb, index, and little finger of each hand.

Draw out large the loop remaining on the middle fingers and with this go through Opening A.

Pass middle fingers distal to the little finger loops and into the toe loops from the proximal side. Then pass them distal to all the transverse strings except the radial thumb string; take up this string on their dorsal aspect, releasing thumbs, and return through toe loops.

Release toe loops and indices and draw tight.



No. 8.—The Canoe with Two Masts.

16 CAT'S CRADLES FROM MANY LANDS

IX. THE SEA-SNAKE = *Pagi* (3) (Murray Island).

Opening A.

Pass the right hand round the left hand so that all the strings cross the back of the left hand from the ulnar to the radial side.

Pass the left hand and its strings from the distal side into the right index loop and bring it out proximal to the ulnar index string. Release right index.

Unwind the left hand, bringing the right hand back to its usual position. Release left index.

There is now a single transverse string on the right palm, and a single transverse string on the back of the left hand.

With left index take up from the proximal side the transverse string on the right palm.

Transfer the string from the back of the left hand to its palm and draw tight.

Release left thumb, transfer the left index loop to the left thumb.

Put each index into its little finger loop from the distal side and take up the ulnar string with the back of the index.

Hold the hands pointing away from the body with the index fingers uppermost. Withdraw left thumb, and with it gently press down the radial little finger string until the "snake" appears. Gently draw out the right hand and the snake will swim.

It is interesting to note that instead of the pointed tail characteristic of land-snakes, *Pagi* has the broad flat tail peculiar to sea-snakes.



No. 9.—The Sea-snake.

X. THE WELL = *Tim* (3) (Lifu, Loyalty Islands).

This figure is the same as one from Murray Island, called the "Nest of the *Ti* Bird" = *Ti meta* and one from Mabuiag known as the "Canoe" = *Gul*, except that in neither of these is the final movement representing the dry well, shown.

Opening A.

Insert each index into the little finger loop from the distal side; bend it towards you and pass it to the proximal side of the radial little finger string, and bring it back to its original position by passing it between the ulnar thumb string and the radial index string. Release little fingers.

There are now two loops on each index and a large loop passing round both thumbs. Insert the little fingers from the distal side into the index loops and pull down the two ulnar index strings.

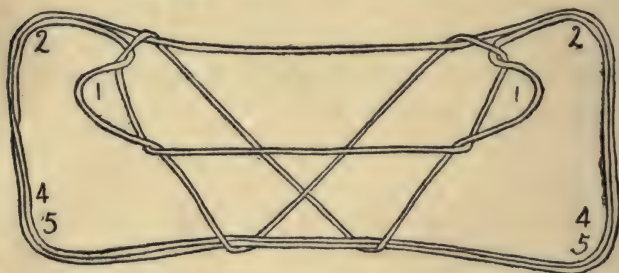
[End of *Ti meta* opening.]

18 CAT'S CRADLES FROM MANY LANDS

Let go both thumbs gently and insert them into the same loop in the opposite direction to which they had been previously (i.e. change the direction of the thumbs in their loops).

With the dorsal aspect of the thumbs take up from the palmar side the strings passing obliquely from the radial side of the index fingers to the ulnar little finger strings, and extend. The inverted pyramid in the centre represents the well.

By slacking the little finger strings and pulling tight the thumb and index strings the apex of the pyramid is brought to a level with its base. The original condition is spoken of as the well being full of water, in the latter the well is said to be dry.



No. 10.—The Well.

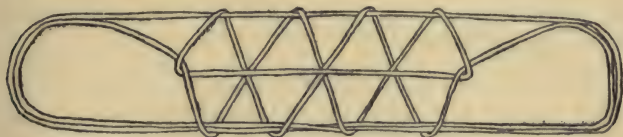
XI. THE FENCE ROUND THE WELL = *Sihnag* (3)
(Lifu, Loyalty Islands).

Make the "Well".

With the dorsal aspect of the thumbs take up the two radial index strings and bring them through the thumb loops.

Release little fingers and draw tight.

Release the index fingers gently, insert the little fingers into the thumb loops and extend.



No. 11.—The Fence Round the Well.

20 CAT'S CRADLES FROM MANY LANDS

XII. THE TRIGGER-FISH = *Nageg* (Murray Island).

(*Ti meta* opening).

Drop right thumb loop without pulling tight, and pass right thumb into the upper central triangle, and press the two strings of the loop just dropped by the thumb towards the right.

Take up with the thumb, from the proximal side, the oblique radial index string and return, letting the two original loops slide off the thumb.

Take right thumb out of its loop and insert again in the opposite direction.

With dorsal aspect of thumb take up the two ulnar index strings and bring them through the thumb loop.

Take out the right little finger from its loop and place it in the right thumb loop from the proximal side, withdrawing thumb.

Take up with the right thumb from below, and close to the index, the radial index string that passes across to the radial side of the left index. Withdraw index from both loops. (End of *Nageg* opening.)

The loop released by the index will form part of the head of *Nageg*, and the short loop above it is the dorsal spine.

Drop left thumb string without drawing tight.

A big loop is now left which will form the tail of *Nageg*.

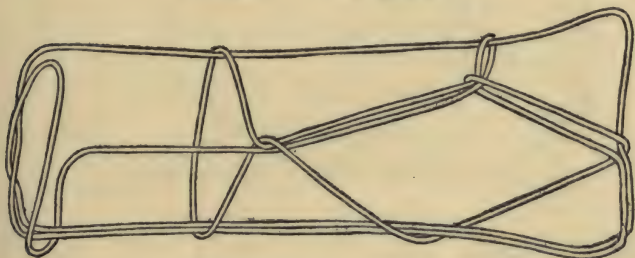
Press down with the left thumb, from above, the oblique string from the radial side of the left index till it is below the two straight strings connecting the figure.

Release thumb, and pass it above the straight strings and take up from the far side of the two strings, and from below, the string just pressed down, and extend, keeping the left thumb string in the middle line of the figure.

This string represents the row of spines on *Nageg's* tail.

Sing:—

<i>Nageg</i>	<i>upi</i>	<i>seker</i>	<i>dike,</i>	<i>abele</i>	<i>lar</i>	<i>upige</i>
<i>Nageg</i>	tail	comb ¹	it is here	that	fish	on the tail
		<i>seker</i>	<i>dike</i>			
		comb	it is there			



No. 12.—The Trigger Fish.

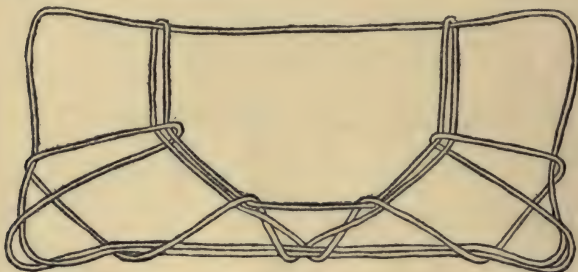
¹ This has reference to the series of small spines at the base of the tail of the *Nageg* fish, i.e. "Trigger-fish" or "Leather Jacket" (*Monacanthus*); in the folk-tale *Nageg* is the mother of *Geigi*.

22 CAT'S CRADLES FROM MANY LANDS

XIII. THE FLYING FOX = *Saper (Pteropus)* (Murray Island).

Repeat the previous figure "*Nageg*," to the end of the "*Nageg* opening," only using both hands all through; the figure is then symmetrical.

Extend by passing each index into its thumb loop from the distal side, and picking up on its tip the radial string. Release thumbs.



No. 13.—The Flying Fox.

XIV. THE FIGHTING MEN = *Ares* (3) (Murray Island).

Opening A.

Pass little fingers distal to index loop and insert them into the thumb loops from the distal side. With backs of little fingers take up the radial thumb string and return. Release thumbs.

Pass thumbs proximal to the index loops and into the little finger loops from the proximal side. With backs

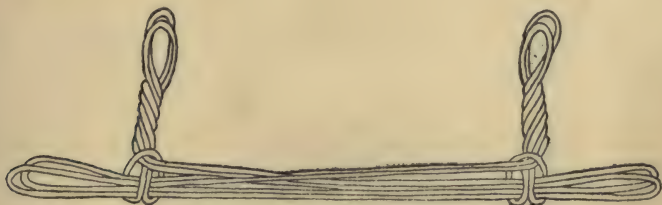
of thumbs take up the two radial little finger strings and return proximal to index loop. Release little fingers. By this movement the little finger loops have been transferred to the thumbs.

Pass little fingers distal to the index loops and into the thumb loops from the proximal side. With backs of little fingers take up the two ulnar thumb strings and return. (End of "*Lem* opening".)

There is now a triangle in the centre of the figure ; into this insert the indices from the proximal side, and with the back of each index take up its respective side (the radial thumb strings).

Navaho the proximal index string.

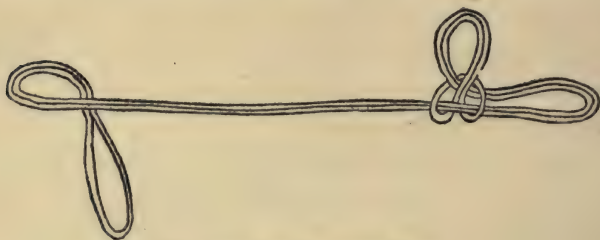
Release thumbs, twist the index loops three times and release indices.



No. 14.—The Fighting Men.

Insert the four fingers into the little finger loops and draw slowly apart. After the two "men" meet in the centre only the left string should be pulled, until this becomes free ; the remaining man may then be pulled to the right.

24 CAT'S CRADLES FROM MANY LANDS



No. 14A.—The Fighting Men.

This figure represents a Murray Island man and a Dauar man who meet and begin to fight, and they "fight, fight, fight" until the Murray Island man kills the Dauar man (when the left loop falls), and being a head hunter, he cuts off his enemy's head and runs home with it (the hindermost loop representing the head).

XV. THE SETTING SUN = *Lem baraigida* (3) (Murray Island).

In Mabuiag this figure is called *Dògai*, "a Star".

"*Lem* opening."

Transfer loop of left index to right index and loop of right index to left index, passing it over the loop just transferred.

Pass middle fingers from the distal side through the index loop and take up from the proximal side the two ulnar thumb strings and return through index loops

Release thumbs and indices,

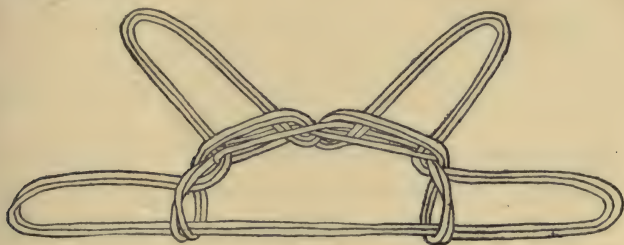
Pass the thumbs from the proximal side into the middle finger loops and withdraw middle fingers, thus transferring the middle finger loops to the thumbs.

Extend the figure with the thumbs towards you; there will then be a St. Andrew's cross in the centre of the figure. Insert the index fingers from the distal side into the lateral spaces of the cross, and into the inverted triangle (the one farthest from you) from the proximal side. With backs of indices take up the respective arms of the cross and return.

Pass middle fingers through the index loops from the distal side and take up from the proximal side the two ulnar thumb strings and return through the index loops.

Release thumbs and indices, and with the thumbs manipulate the figure so as to make an approximate semicircle with four diverging loops ("rays").

Drop middle fingers and draw out gently and the sun will set.



No. 15.—The Setting Sun.

26 CAT'S CRADLES FROM MANY LANDS

XVI. THE CRAB = *Kokowa* (3) (Saguane, Kiwai Island).

This figure was collected by Mr. S. H. Ray.

Make the "Well" (p. 17).

Put the little fingers from the proximal side into the thumb loops. Release thumbs.

Pass thumbs away from you through little finger loops and to the palmar side of the double strings, running from index to little finger. With backs of thumbs take up these strings, returning through little finger loops. Release little fingers.

Pass little fingers from the proximal side into the thumb loops, and release thumbs.

A straight string passes from index to index. Take up this string from the proximal side, close to the index, with the thumbs. Release indices.

Put indices into thumb loops towards you and withdraw thumbs.

A loop passes from the centre of each palmar string to the outer angle of the centre lozenges; take up with the thumbs from the proximal side the string of this loop that lies nearest to you.

Bring thumbs together, tip to tip, and exchange the loops, the left passing under the right.

Pass the middle fingers distal to the index loops and take up the ulnar thumb string from the proximal side.

Release thumbs and pass them into the middle finger loop from the distal side and take up the ulnar middle finger string from the proximal side. Release middle fingers.

By these two movements the thumb loops are taken off the thumbs, twisted once, and replaced.

With the thumbs take up from the proximal side the radial index strings, and return through the thumb loops, allowing original thumb loops to slip off. Release indices.

Pass indices from the proximal side into the thumb loops and withdraw thumbs.

One of the two radial little finger strings of each hand goes across the figure and crosses the corresponding string from the other little finger in the middle within a central triangle. (If not apparent this triangle will become so by a slight manipulation.)

Take up these strings from the proximal side at the point at which they cross the triangle with both thumbs, so that there is a double string running from thumb to thumb.

With the thumbs, from the proximal side, take up the radial index strings and return through the thumb loops, allowing original thumb loops to slip off.

Release indices and extend.

This figure represents a Land Crab with its nippers held up.



No. 16.—The Crab,

AFRICA.

This first figure, and all the others from Central Africa, were collected by Dr. W. A. Cunningham (7), and the Yöruba figures by Mr. John Parkinson (9).

XVII. A LOCUST = *Nzige* (Uganda).

Place the string on the thumb of the left hand and the index finger of the right. By partially rotating the left hand counter-clockwise and passing the left index under the two strings and up again, take up the two strings on its dorsal aspect and return.

Pass the right thumb under the two strings and bring it up again so that the strings rest on its dorsal surface.

Bring the hands together, palms downward, and pass the right thumb away from you into the space between the left thumb and index, and hook down the strings crossing the space.

In a similar manner pass the left index away from you into the space between the right thumb and index, and hook down the strings crossing the space.

With the fingers pointing downwards separate the hands and extend, pulling tight. Wriggle the hands, if necessary, until the knot is in the centre.



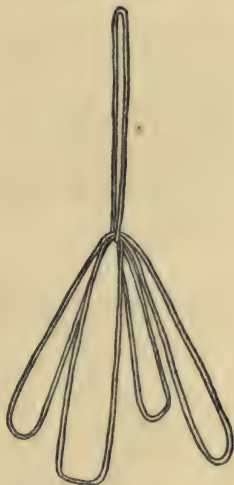
No. 17.—A Locust.

XVIII. A TEMPORARY GRASS HUT = *Nsakwe*
(Central Africa).

Place string on left hand as in *Position I*, and draw out the dorsal thumb string into a short loop, hanging over the back of the hand and coming some inches below it. With the right hand, bring the short loop through the long one and place it over the left index finger, drawing tight.

A string runs across the palm from the radial side of the little finger to the radial side of the index finger. Take this as close as possible to the little finger and loop it over the thumb.

Bring the string on the back of the hand, which runs across the knuckles, over on to the palmar aspect, and draw up and away from the left hand with the right. (If the figure does not extend easily it may be made to do so by "sawing" the left hand.)



No. 18.—A Temporary Grass Hut.

30 CAT'S CRADLES FROM MANY LANDS

XIX. A FISH-TRAP = *Kanyandi* (South Africa).

Dr. Haddon learned this figure from a Mu-Toka boy. It represents a kind of open screen made of reeds fastened by bark lashing; this is placed across the mouth of streams and the people frighten the fish into these traps, the fish being entangled by their gills.

Opening A with middle fingers.

Release little fingers.

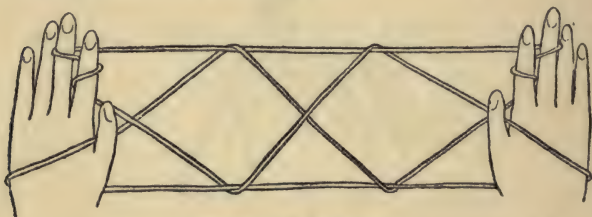
Pass little fingers distal to middle finger loops and take up the ulnar thumb strings.

Take off the right middle finger loop and pass it right round and beneath the palmar string within its own loop, and keep hold of this loop and of the centre of the palmar string.

Release thumb and little finger. Still holding the two loops place the outer one (the original middle finger loop) over the index and remaining fingers of the right hand, and the inner one (the original palmar string) over the right index.

Do the same with the left hand.

Extend the figure by passing the middle fingers distal to the ulnar index string and taking up the radial index string with the backs of the middle fingers, and turn the palms away from you.



No. 19.—A Fish-trap.

XX. THE MOON = *Mwezi* (Central Africa).

Dr. Haddon transferred to a card a completed figure, called *Gud*, "Mouth," identical with this, which he obtained in Torres Straits in 1888; it is now in the British Museum, and is figured in J. Edge Partington and C. Heape's *Album*, I, 1890, Pl. 341, No. 1. A similar figure is given by Roth (II) from North Queensland, where it is called the "Sun Clouded Over".

Mr. A. R. Brown found that the Andaman Islanders make the same final pattern, but arrive at it by different movements. It also forms a stage in the "Stone Money," collected by Dr. W. H. Furness in the Caroline Islands (5, p. 161).

The continuation which forms "The Moon Gone Dark" does not seem to occur elsewhere.

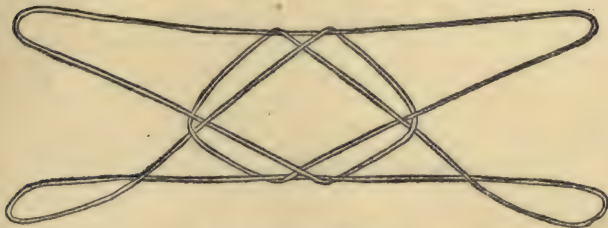
Opening A.

Take the ulnar little finger string in the mouth, and bring it over the other loops, at the same time releasing little fingers but not pulling tight.

Transfer the thumb loops to the little fingers, and insert the indices into the mouth loop from the proximal side.

Extend, at the same time letting go with the mouth.

Navaho indices and draw out gently.



No. 20.—The Moon.

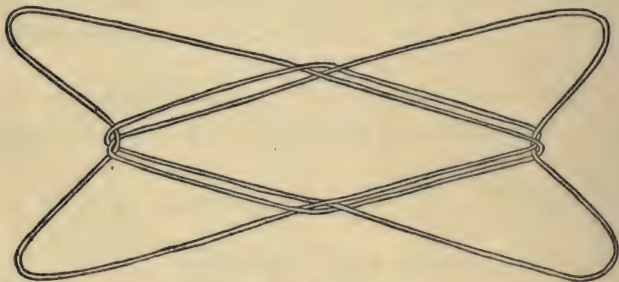
THE MOON GONE DARK = *Mwakatanga*.

Make the "Moon" and lay it down before you.

Place from above the left thumb and index in the original index finger loops, outside, but close to the spot where they are crossed by the diagonal strings.

Proceed similarly with the thumb and index of left ~~right~~ hand, inserting them into the former little finger loops.

Passing thumbs and indices downwards bring them up again through the space in the centre of the figure and extend. Now pass thumbs and indices downwards once more through the centre of the figure, and extend.



No. 20A.—The Moon gone Dark.

XXI. A PARROT CAGE = *Ile unde* (Yöruba, West Africa).

Opening A.

On both hands transfer little finger loops to ring fingers.

On both hands transfer index finger loops to middle fingers.

On both hands transfer thumb loops to index fingers.

Turning the left hand back upwards, pull the dorsal string of the ring finger loop, twisting it wristwards, over the dorsal string of the middle finger loop, and pull the latter through the ring finger loop (dorsal loop) so formed.

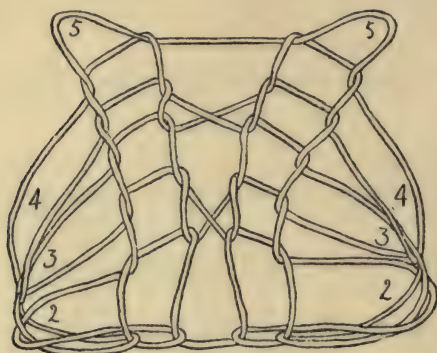
Repeat with index finger; pull dorsal string of the index finger through and loop it over the thumb. Repeat with ^{right} left hand.

With palms facing each other, take each finger string in succession, beginning from the radial side, passing it over to the back of the thumb, and Navahoing. (In both hands, in the case of the middle and ring fingers, take the ulnar proximal index string first, not the string that runs straight across.) Do this with both hands.

Transfer thumb loops to little fingers and extend.

The two pairs of string in the centre should cross, the two outside ones lie parallel.

To unravel this figure, release little fingers and draw tight.



No. 21.—A Parrot Cage.

This figure has also been described by Dr. H. Kraus from German East Africa (13, No. 8).

XXII. A BED = *Kitala* (Central Africa).

If made very broad, this figure may also be known as *Sumbo*, "A Fishing-net". It is identical with one described by Mr. Parkinson from Yöruba, where it is called "The White Man's Camp Bed" = *ebusoñ*, and is said to be a recent invention, being first made when the road to Ayo was opened up.

Make a double ring of the string and put it round the neck, holding it stretched by means of the left thumb, on which the two strings are to be separated, one being more distal than the other by about an inch. The thumb should point upwards.

Rotate the left hand clockwise through 180° so that the thumb points downwards.

Pass the right hand over and to the left of the proximal loop, and with the fingers pointing downwards take the distal loop off the thumb.

Rotate both hands back to their original position, and place the loop held in the right hand on to the left little finger.

Pass the finger and thumb of right hand through the little finger loop from the distal side, and take hold of the ulnar thumb string, at the same time releasing little finger, and draw it out.



No. 22.—The Bed.

XXIII. A CALABASH NET = *Añwoñ* (Yöruba, West Africa).

This figure has a very wide distribution. It is described by Dr. Cunningham from Central Africa as *Sumbo*, "A Fishing-net," in which the same result is reached in a different way, and he also found it in the Shiré Highlands. Mrs. Jayne was taught it by an Osage Indian from Oklahoma, and there are two finished patterns in the Philadelphia Museum, collected from the Hawaiian Islands.

Opening A.

Release thumbs. Pass thumbs proximal to index and little finger loops, and with backs of thumbs take up ulnar little finger strings and return. Release little fingers.

Insert thumbs from the distal side into the index loops and take up ulnar index strings with their backs.

Pass little fingers distal to the radial index string and proximal to the ulnar thumb string; with backs of little fingers take up this string and return. Release thumbs.

(There should now be one index and one little finger loop on either hand, the strings crossing and twisting together in the middle.)

Pass thumbs distal to index loops and take up the radial little finger strings from the proximal side.

Take the radial index string and place it over the thumb; do this with both hands.

Navaho thumbs.

Pass each index from the distal side into the triangles on the palmar surface of its thumb. Release little fingers, and extend by straightening the index fingers away from you.



Nc. 23.—The Calabash Net.

XXIV. THE FACE MARK OF THE TOWN OF OWU = *Ke ke o'lowu* (Yöruba, West Africa).

In this the finished figure is almost exactly the same as one called "Ten Men" from the Caroline Islands, described by Mrs. Jayne (5, p. 150), and also resembles one figured by Roth from Australia, called a "Turtle" (11, Pl. VI, 7), and one collected by Mr. A. R. Brown from the Andaman Islands.

Opening A.

Remove index finger loops and pass them over the backs of their respective hands forming dorsal wrist strings.

Take left radial little finger and ulnar thumb strings between right thumb and index, and withdraw left thumb and index. Twist left hand once away from you and replace loops, but on middle and index fingers.

38 CAT'S CRADLES FROM MANY LANDS

Repeat with right hand, which must also be twisted away from you.

Take the dorsal wrist string, pull it over the hand and hang it over the index and middle fingers of the same hand.

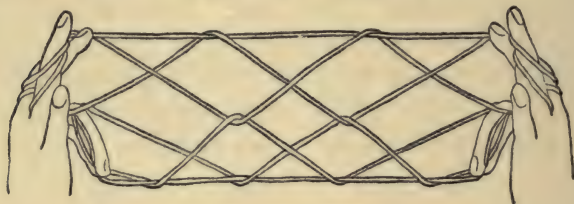
Pass thumbs proximal to index loops, and into middle finger loops from proximal side and with their backs take up the ulnar index and radial middle finger strings.

Hook the little fingers round the ulnar middle finger strings and with backs of middle fingers take up the two radial index strings.

Release thumbs and extend the figure, the index and middle fingers pointing away from you.

This figure represents a complicated face scarification.

All Yörubas have these, such marks being distinctive of the town and of the quarter of the town.



No. 24.—The Face Mark.

XXV. A PIT = *Shimo* (Central Africa).

Place the string as a simple loop round both wrists.

Insert thumbs into this loop from the proximal side, taking up on their palmar aspect the radial string.

The strings now passing across the palmar surface of the thumbs are to be taken together and held on the toes, or by another person. Allow the original loops to slip over the hands.

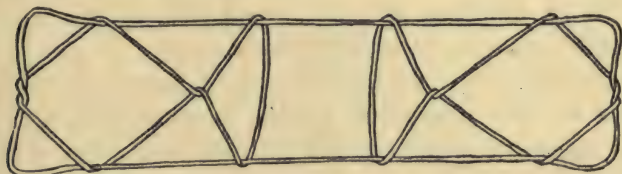
Insert the little fingers from the proximal side into the thumb loops and with their backs take up from the distal side the strings that enclose these loops distally, and extend.

Place the thumb loops on the middle fingers, pass thumbs distal to the middle fingers, and with backs of thumbs take up the radial little finger strings from the proximal side.

Remove the loops from the middle fingers and place them over all the five digits, keeping them near the tips of the digits.

Pass the proximal radial thumb strings over the thumbs on to the palmar aspect and place as loops on middle fingers (so that the radial thumb string becomes the ulnar middle finger string). Bring the strings across the backs of the hands over on to the palms.

Release little fingers and extend, at the same time releasing the far strings which have been held during all these later movements.



No. 25.—A Pit.

XXVI. THE BATOKA GORGE OF THE ZAMBEZI RIVER
= *Ma-rose*.

This figure, which is one of the few geographical ones known, represents the zigzag gorge of the Zambezi River below the Victoria Falls. It was learnt by Dr. Haddon on the spot.

Suspend the string on the right wrist so that two equal loops depend from its radial and ulnar sides.

Pass the left hand through both loops and bring the hands into their usual position.

Pick up on the radial side of little fingers the two strings which cross each other in the centre of the figure.

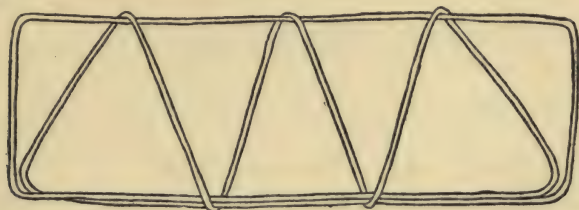
Draw the hands apart with palms uppermost, then half-turn the hands so that the thumbs are uppermost.

With a swinging movement throw the radial wrist string away from you over both hands, and draw the hands apart.

With the back of each thumb pick up the corresponding oblique radial little finger string.

Pass the ulnar wrist string to the radial side of wrists. This is accomplished by closing together the thumb and fingers of each hand and by passing the tips of the digits distal to the two ulnar little finger strings, and, then by bringing them towards you distal to the ulnar, wrist string; allow that string to slip over the hands.

Extend the figure by separating the thumbs and little fingers.



No. 26.—The Batoka Gorge.

XXVII. FIGHTING LIONS (Portuguese East Africa)

This and the following figure were obtained by Prof. W. M. Davis, of Harvard, from a boy at Bulawayo, who learned them from his mother at Beira.

Take a small portion of the string between the thumb and index of each hand, and bring the left hand counter-clockwise so as to form a loop, in which insert the left index, away from you, in such a way that the two strings lie on it an inch apart.

Put the right index into these loops in the same direction and draw the hands apart, the fingers pointing away from the body. There is now a double loop of parallel strings on the radial side of each index and crossed strings on their ulnar side, the proximal ulnar string of the right hand crossing over radial to the proximal ulnar string of the left hand.

Catch the middle of all the strings under the chin and bring the hands together. (If any difficulty is experienced in retaining the strings under the chin, they may be held in the mouth.)

42 CAT'S CRADLES FROM MANY LANDS

Transfer the left distal index loop to the right index, and the right distal index loop to the left index, passing it over the loop just transferred.

Pass thumbs over proximal radial index string and under proximal ulnar string, and over distal radial index string and under distal ulnar string, thus picking up the proximal ulnar and distal ulnar index strings.

Raise the proximal radial index string of each hand from the palm over (i.e. radial to) the distal radial index string, and lay it over the little finger.

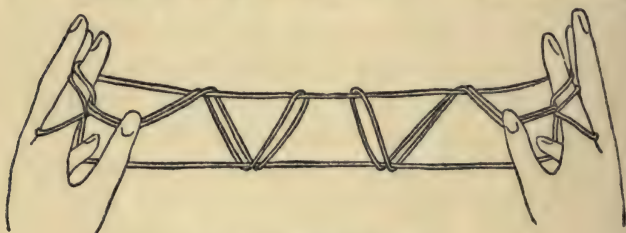
Raise the distal radial index string of each hand from the middle of the palm and lay it round the index from the radial to back and to ulnar side.

Release chin.

Stretch the distal ulnar index string and ulnar little finger string until they are parallel between the hands, and release thumbs.

With the thumbs raise the double loops that were on the thumbs and so pull the zigzag loops (lions) on the parallel cross strings to bring the parallel strings closer together. Then stretch the cross strings parallel again.

While doing this say "Oo-ah" (= the lions roaring).



No. 27.—Fighting Lions.

XXVIII. *Ambra* (Portuguese East Africa).

Place the loop over the three middle fingers of each hand.

Release the loops from the backs of the hands, letting them fall over the whole hand on the palmar side.

Place the entire right hand upwards through the left palmar string and vice versa.

Draw tight.

With the left thumb and index hold the two middle right hand strings firmly and somewhat apart, and take the right hand finger loops entirely off the right hand. Give the right hand one twist away from you and replace the finger loops in their former positions.

Repeat with the left hand strings.

Take the radial thumb string of each hand and lay it, away from you, over the back of the hand.

Take the ulnar little finger string of each hand, and lay it, towards you, over the back of the hand.

Take this string, now become the radial thumb string, and twist it once round the thumb in each hand.

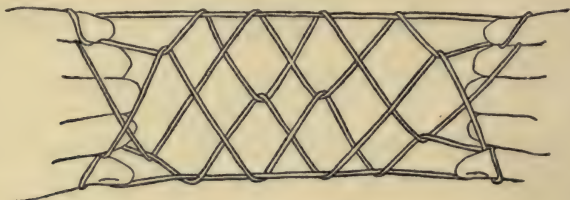
Take the former thumb string, now become the ulnar little finger string, and twist it once round the little finger in each hand.

Remove each wrist string to the palmar side of the hand, placing it in *Position I*.

Close together the thumb and fingers of each hand, and plunge the whole hand, from above, through the

44 CAT'S CRADLES FROM MANY LANDS

triple triangular space nearest to it, and extend, saying at the same time "Ambra!"



No. 28.—Ambra.

AMERICAN INDIAN.

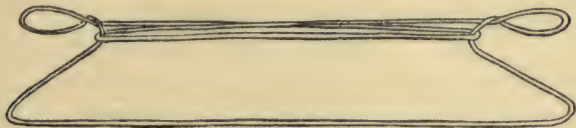
XXIX. DRESSING A SKIN.¹ (Thompson Indians, British Columbia).

This figure, and one similar to the Torres Straits "Fish-spear," but called "Pitching a Tent," were learned by Mr. Harlan I. Smith, of the American Museum of Natural History, New York, when on the Jesup North Pacific Expedition, and illustrated by him in the Memoirs of the American Museum of Natural History (2).

Opening A.

Release little fingers and allow the loop thus released to hang down. With a swinging motion throw this loop over the remaining strings so that it falls over their radial side.

Pass each thumb into its own loop distal to the corresponding string of the former little finger loop, and, catching this string in the hooks of the thumbs, extend.



No. 29.—Dressing a Skin.

¹Dr. Kraus (13, No. 1) describes a similar figure from German East Africa. When the figure is made a second person puts his arm through the central space, the thumbs are released and the arm is caught.

XXX. CARRYING WOOD = *Chiz-jö-yět-lǎ* (Navaho Indian).

This and the following Navaho figures were obtained from two old Navaho men by Dr. A. C. Haddon in 1901 (4).

Opening A.

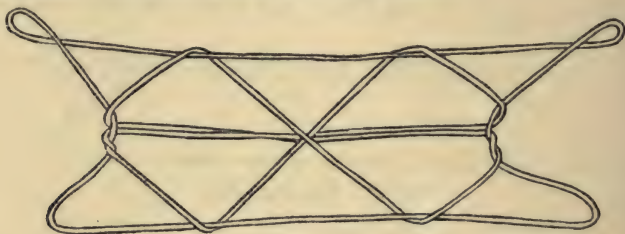
Pass the thumb and index of each hand distal to the index loop and insert into little finger loop from the proximal side.

Release little fingers.

Navaho thumbs and indices and gently extend the figure.

Insert each thumb from the distal side into the radial of the two loops between the thumb and index, and extend with the thumbs pointing away from you.

The two central strings that lie side by side represent the carrying band of the Navaho, the other strings represent the wood that is being carried.



No. 30.—Carrying Wood.

XXXI. A HOGAN (OR HUT) = *Hogan* (Navaho Indian).

Hold the left hand with the fingers pointing upward. Pass the string over the index and middle fingers of the left hand, allowing a long loop to hang down from its palmar aspect.

Place the right hand within the long loop from below ; pass the index finger of the right hand between the index and middle fingers of the left hand, and take up from above the dorsal string and pull it out between the fingers as far as it will go towards the right, letting the long loop slip over the back of the right hand. Draw tight.

Place the right hand within the long loop from below ; pass the right thumb and index distal to the short transverse string ; take up the two strings immediately between the index and middle fingers of the left hand and draw toward the right, so that the loop on the back of the right hand slips over the hand and over the two central strings. Draw tight.

There are now a knot and four strings lying along the palm of the left hand, two central strings which pass between the index and middle fingers, and two lateral strings. Pass the long ulnar lateral string over the little finger, and the corresponding radial lateral string over the thumb.

With the thumb and index of right hand pick up

48 CAT'S CRADLES FROM MANY LANDS

the transverse string of the knot on the palm of the left hand, and draw it gently to the right.



No. 31.—A Hogan.

XXXII. Two HOGANS = *Naki-hogan* or *Atl-sa-hogan*
(Navaho Indian).

Opening A.

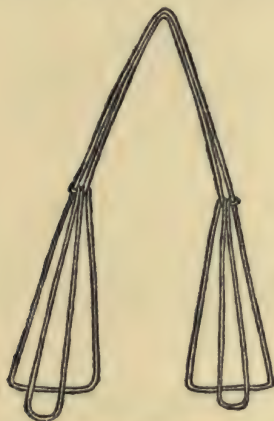
With the mouth take hold of the two crosses of the figure. Drop off the hands all the strings except the little finger (or ulnar) string.

Pass both hands from below through the triangle thus formed and take up with the thumbs and indices the loop that has been dropped from the thumbs, bringing it over the transverse string and toward the face so as to form an oblong.

Insert the little fingers into the oblong from the distal side, but to the outside of the two strings which form a triangle whose apex is in the mouth, take up on the backs of the little fingers the sides of this triangle, and release string held between thumb and index. Draw the little fingers apart as far as they will go, releasing the mouth strings at the same time.

Hold the middle point of the two central strings with the mouth, and place the hands side by side, thumbs outermost.

To convert this figure into a single hogan, release the mouth and the little finger of one hand and draw tight.



No. 82.—Two Hogans.

XXXIII. MANY STARS = *Son-tlani* (Navaho Indian).

Opening A.

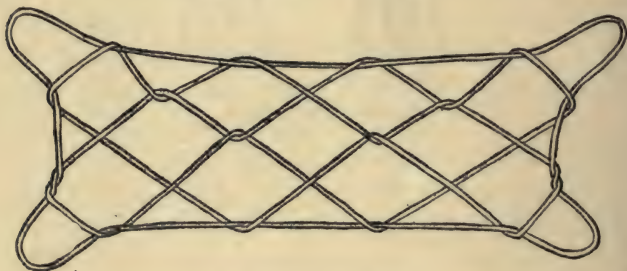
Pass each thumb distal to the index loop and take up the radial little finger string from below and return.

Pass each middle finger distal to the index loop and take up the ulnar thumb string from the proximal side and return. Release thumbs.

Pass each thumb distal to the radial index string and proximal to all the other strings; with backs of thumbs take up the ulnar little finger string and return through the index loop. Release little fingers.

Transfer the middle finger loop of each hand to the thumb and index by passing the digits to the proximal side of the middle finger loop, and then round the ulnar middle finger string to insert them from the distal side into the middle finger loop. Release middle fingers.

Navaho thumbs and indices and gently extend the figure. Insert each thumb from the distal side into the radial of the two loops between the thumb and index, and extend, turning the palms away from you.



No. 33.—Many Stars.

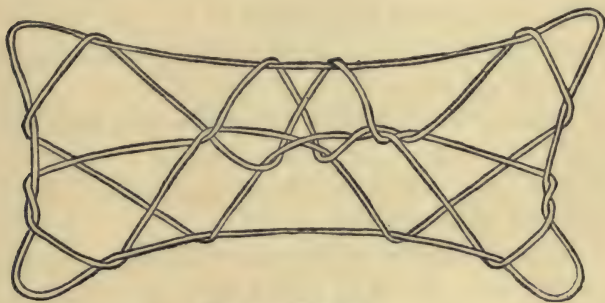
XXXIV. THE OWL = *Nas-ja* (Navaho Indian).

Position I.

With left index take up the palmar string of the right hand from the distal side, and return, giving it a twist. With right index take up from the distal side the palmar string of the left hand, by the side of, and not through, the left index loop, and return, giving it a twist.

Pass each thumb distal to the index loop and take up the radial little finger string from the proximal side and return.

Continue as in "Many Stars" (see previous figure).



No. 34.—The Owl.

XXXV. LIGHTNING = *Atsinil-klish* (Navaho Indian).

Hold part of the string with the thumbs and index fingers, the hands being about 6 inches apart; make a small ring by passing the right hand away from the body and toward the left side, and hold it by the thumb and index of the right hand in such manner that the small ring is away from the body.

52 CAT'S CRADLES FROM MANY LANDS

Insert the index fingers, pointing downwards, into the small ring, and the thumbs, also pointing downwards into the large loop. Draw tight.

With a turn of the wrists make the thumbs point upward. Insert each thumb into its index loop distally, and take up the ulnar index string from the proximal side.

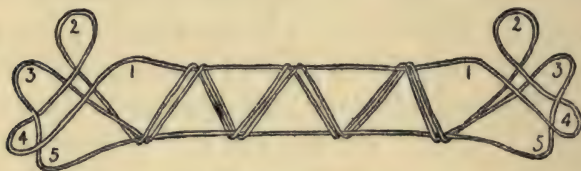
Pass each middle finger distal to the radial index string and take up the ulnar thumb string from the proximal side.

Pass each ring finger distal to the ulnar middle finger string and take up the radial index string from the proximal side.

Pass each little finger distal to the ulnar ring finger string and take up the ulnar middle finger string from the proximal side.

Extend the thumbs as far as possible ; then release them gently, and throw the released loops over the other strings. The double elements of these loops should be close together.

Without drawing tight, pass thumbs from the proximal side into the little finger loops, and keeping the four fingers of each hand firmly pressed together, raise up with the thumbs the radial little finger string.



No. 35.—Lightning.

ESKIMO.

These figures were all obtained from the Western Eskimo of Alaska in 1905 by Dr. G. B. Gordon of the Philadelphia Free Museum of Science and Art (6)

XXXVI. THE SIBERIAN HOUSE = "*Kochlinee*" (Diomed Island Eskimo).

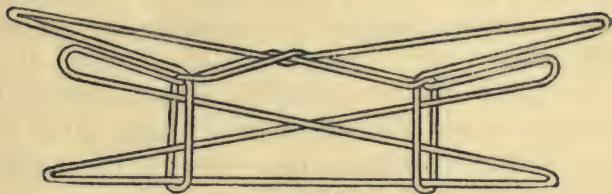
Opening A.

Turn palms towards you; close the four fingers of each hand over all the strings except the radial thumb string; throw this string over the backs of the hands and return.

Pass thumbs distal to the radial dorsal string and proximal to all the other strings; with backs of thumbs take up ulnar dorsal string and return.

Slip the loops on the backs of the hands over the tips of the fingers on to the palms and extend.

A second development of this figure, "Two Eskimo Running Away" = *mugalonik enuk okparuktuk*, is made by releasing the index fingers and drawing the hands apart.



No. 36.—The Siberian House.

XXXVII. THE WOLVERINE = *Koftsik* (*Gulo*) (Nunivak Island Eskimo).

This figure is identical with that obtained from a Klamath Indian, by whom, however, it was called the "Porcupine" (5, p. 137).

Opening A (left palmar string must be taken up first).

Transfer right index loop to left index, and left index loop to right index, passing it over the loop just transferred.

Transfer left index loop to left thumb by putting the thumb into the index loop from the proximal side and withdrawing index.

Transfer left little finger loop to left thumb in the same way.

Pass left little finger into left thumb loops from the proximal side, and with tip of little finger hook down the distal ulnar thumb string and hold against the palm.

Pass left index into left thumb loops from the distal side, passing ulnar to the two distal radial strings, and radial to the proximal radial string, bend index finger down and then up away from you, thus picking up the proximal radial thumb string on its tip. Release left thumb.

Pass left thumb into right little finger loop from the proximal side, and with side of thumb take up the two strings forming the right lower side of the lozenge formed in the centre of the figure.

Pass left thumb into left index loop from the proximal side, and take up the radial index string.

Navaho the two proximal thumb loops. Release left index finger, and right thumb and little finger and extend.

The large loop running upwards to the right represents the creature's large bushy tail.



No. 37.—The Wolverine.

XXXVIII. A DOG ON A LEASH = *Kaymuchta* (Nunivak Island Eskimo).

String over thumbs.

Pass little fingers proximal to the loop and take up both strings on their backs.

With right index pick up left palmar strings, and with left index pick up right palmar strings as in *Opening A*.

Transfer right index loops to left index, and left index loops to right index, passing them over the loops just transferred.

Transfer left index loops to left thumb by putting the thumb from the proximal side into index loops, and withdrawing index.

Transfer left little finger loops to left ^{thumb} index in the same way.

Pass left little finger into left thumb loops from the proximal side, and with tip of little finger hook down the two distal ulnar thumb strings and hold them against the palm.

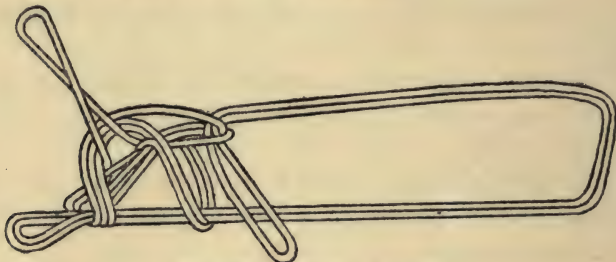
Pass left index into left thumb loops from the distal side, passing ~~them~~ ulnar to the two distal and two middle strings, and radial to the proximal radial string; bend index down and then up away from you, thus picking up on its tip the proximal radial thumb string. Release left thumb.

Pass left thumb into right little finger loop from the proximal side, and with back of thumb take up the three strings forming the right lower side of the lozenge in the centre of the figure.

Pass left thumb into left index loops from the proximal side and take up the radial index string.

Navaho the three proximal thumb loops, and release left index. Release right thumb and little finger.

By passing the right hand through the loop on the right index and drawing out, the leash is made taut. By drawing tighter the dog is released.



No. 38.—A Dog on a Leash,

XXXIX. THE SEA-GULL = *T'keyack* (Nunivak Island Eskimo).

Opening A.

Pass index fingers away from you distal to the little finger loops, then bend them down and towards you and pass them proximal to little finger and index loops and into thumb loops from the proximal side; with backs of index fingers take up the radial thumb string, release thumbs, and return.

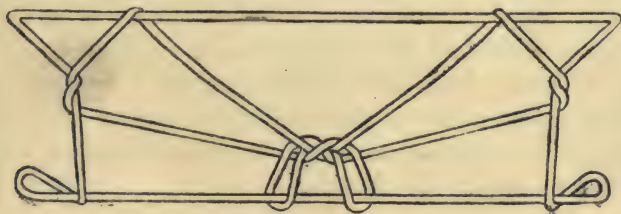
Pass thumbs distal to the proximal radial index strings and proximal to all the other strings; with backs of thumbs pick up the ulnar little finger string and return.

With tips of thumbs hook down the distal radial index strings, allowing the original thumb loops to slip off; keeping the thumbs pointing away from you, pass them proximal to the index loops, and to the ulnar little finger string, but distal to the radial little finger string, and with backs of thumbs take up this string, allowing original thumb loops to slip off.

The thumbs should still be pointing away from you and resting each in a triangle; by turning them upwards take up on their backs the string running straight across.

Release indices and extend.

This figure represents a sea-gull flying with its legs hanging down.



No. 39.—The Sea-gull,

XL. THE ARMS = *Moguk* (Nunivak Island Eskimo).

Opening A.

Pass thumbs distal to index loops and into little finger loops from the proximal side ; with backs of thumbs take up the radial little finger strings and return.

Pass middle fingers distal to index loops and into thumb loops from the proximal side ; with backs of middle fingers take up the ulnar thumb strings and return. Release thumbs.

Transfer index and middle finger loops to thumbs, keeping the latter distal.

Pass indices into little finger loops from the distal side, and with backs of indices pick up the ulnar little finger string and return. Release little fingers.

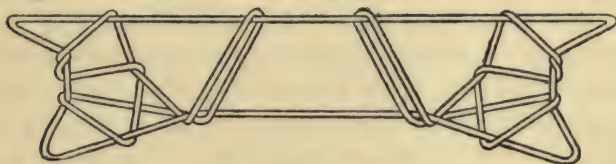
Pass little fingers through thumb loops from the proximal side and into index loops from the proximal side ; with tips of little fingers hook down radial index string and hold against the palms.

Pass middle fingers through the index loops from the proximal side and into thumb loops from distal side, then bring them out towards you between the distal and proximal radial thumb strings.

Apply indices to middle fingers, thus holding the distal radial thumb string between them ; bend these fingers down and then up away from you, thus picking up the string held between them on the tips of the indices, through the original index loops which have now slipped off the indices, at the same time allowing this string to slip off the thumbs.

Pass right thumb into left thumb loop from the proximal side and pick up the radial string; withdraw left thumb from its loop, and pass it from the proximal side into the right thumb loops, picking up the two radial thumb strings. By this movement both thumb loops are placed on both thumbs. Pass thumbs into index loops from the proximal side; with backs of thumbs draw out the radial index string. Navaho two proximal thumb loops. Release indices.

Pass indices into thumb loops from the distal side, and with the backs of indices pick up radial thumb strings. Release thumbs and extend.



No. 40.—The Arms.

XLI. THE LEGS = *Eruk* (Nunivak Island Eskimo).

Make the Arms.

There is now a circle round each little finger loop. To make the "Legs," pass each thumb into its little finger loop from the distal side (i.e. the side nearer to you), and with backs of thumbs take up the string forming the side of the circle nearest to you.

Pass thumbs into index loops from the proximal side, and with backs of thumbs draw out the radial index strings.

60 CAT'S CRADLES FROM MANY LANDS

Navaho thumbs and release indices.

Transfer thumb loops to indices and extend.



No. 41.—The Legs.

XLII. THE KAYAK (King Island Eskimo).

Opening A.

Pass thumbs proximal to index loops, and with backs of thumbs take up ulnar index strings and return. Release indices. Pass thumbs into little finger loops from proximal side, and transfer the little finger loops to thumbs, withdrawing little fingers. There are now three loops on each thumb, the fingers being free; care must be taken to keep these loops in their right order, i.e. the original thumb loop most proximal, and the original little finger loop most distal.

Pass little fingers into thumb loops from the proximal side, and with tips of little fingers hook down the distal ulnar string (the one running from thumb to thumb) and hold it down against the palms.

Pass indices into the thumb loops from the distal side, passing them ulnar to the two distal radial strings, and radial to the proximal radial string; bend the index fingers down and then up away from you, thus taking up on their tips the string running from thumb to thumb. Release thumbs.

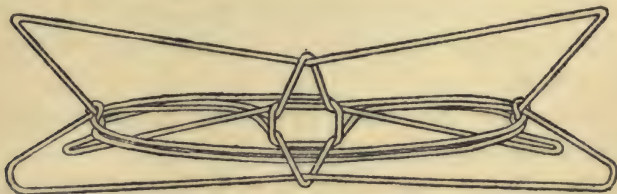
Pass thumbs into little finger loops from the proximal side, and transfer these loops to thumbs by withdrawing little fingers. With tips of little fingers hook down the two strings that cross the thumb loop of its respective hand.

Pass right thumb into left thumb loop from the proximal side; withdraw left thumb and pass it into the two right thumb loops from the proximal side, and take up the two radial strings.

Pass thumbs into index loops from the proximal side. Take up with the backs of the thumbs the radial index strings and return through the thumb loops, letting the two original thumb loops slide off. Release indices.

Lay the figure on the table with the thumb loops towards you. Take up original thumb loops on hooks of little fingers. With thumbs take up from the distal side the distal of the two strings farthest away from you (running straight across the figure); and with indices take up from the proximal side the remaining string. Extend.

This figure represents the skin canoe or kayak which is used by the Eskimo, with the hole in the middle in which the man sits.



No. 42.—The Kayak.

XLIII. Two PTARMIGAN = *Mugalonik okhozgiuk*
(*Lagopus*) (Cape Prince of Wales Eskimo).

Position I, left hand.

Take pendant ulnar string between thumb and index of right hand; bring it towards you and round between middle and ring fingers of left hand to back of ring and little fingers; repeat, but this time after the string has passed between middle and ring fingers, bring it forward between ring and little fingers.

Apply ring and little fingers close together, and lift the two loops off the ring finger to the ulnar side of little finger, but retain the little finger strings between the two fingers. Do not pull tight.

Take ulnar string of pendant loop near to the bottom and hang it over left thumb proximal to the original thumb loop. The two strings on the radial side of the thumb now form a simple loop.

Take the original thumb loop, which is now distal, off thumb, and bring it between the ring and little finger of the left hand from its palmar aspect, then bring it round the ulnar side of the little finger to the palm.

Repeat the first movement, wrapping the string twice round the ring finger and removing the ring finger loops.

There are now four loops on the little finger. Navaho the two proximal ones.

Take the pendant radial thumb string, remove the loop from the thumb and twist it once clockwise round

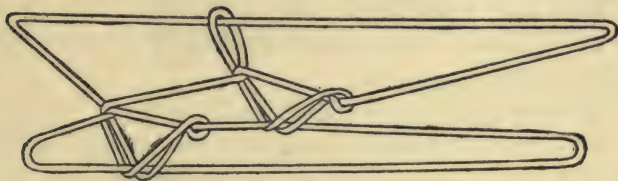
the thumb, keeping hold of the string (now become the ulnar thumb string). Place it over the little finger as in *Position I*, but keeping it distal.

Navaho the two proximal little finger strings.

There is now one loop on the thumb and one on the little finger. Place the right thumb into the depending portion of the thumb loop, keeping the radial string radial; and place the right little finger into the depending portion of the little finger loop, keeping the ulnar string ulnar, and the right hand pointing in the same direction as the left.

The finished figure shows the hen bird close to the left hand, while the cock, with his long tail, is in the centre.

It is advisable in the last movement to have the two depending loops as nearly the same length as possible, otherwise the birds get pulled out of shape. The length of the loops depends on what portion of the pendant loop is hung over the left thumb in the third movement; it works best when taken near to the bottom of the loop, but slightly to the ulnar side.



No. 43.—Two Ptarmigan.

64 CAT'S CRADLES FROM MANY LANDS

XLIV. THE FOX = *Tezeuk*, AND THE WHALE = *Achvuk* (King Island Eskimo).

(Especial care must be taken in this figure to keep the strings slack.)

String over thumbs and indices.

Pass little fingers proximal to the ulnar and radial strings, and with backs of little fingers take up the radial string and return proximal to ulnar string. Bend the little fingers forward and hook down against the palms the ulnar index string, allowing the other loop to slip off.

Bring hands together, palms downward, and pass the right thumb away from you under the string, passing from left thumb to index, lifting this string off the left thumb; repeat with left thumb and draw out.

Keeping the left thumb pointing away from you, pass it to the palmar side of the left radial little finger string, and bending it outwards take this string up on its back, returning through the thumb loop. Release left little finger.

Pass left little finger into left thumb loop from the proximal side; withdraw thumb and hook this string down against the palm.

Release right index finger and draw out.

There should now be a diamond-shaped figure near the left hand (the shape may become more evident if in the right hand the radial thumb string is stretched up, and the radial little finger string pressed down).

Pass left thumb away from you into the right thumb loop, close to the diamond, and with tip of thumb hook

towards you the right upper side of the diamond (the radial little finger string of the right hand).

Pass left thumb away from you to the palmar side of the radial little finger string of left hand, and bending it outwards take this string up on its back, and return through the thumb loop, allowing original thumb loops to slip off. Release left little finger.

Pass left little finger into left thumb loop from the proximal side; withdraw thumb, and hook this string down against the palm.

There is now an irregular figure near the left hand; pass the left thumb away from you into its centre, and with back of thumb take up the two right upper strings (one of which is the right ulnar thumb string).

Pass left thumb into left index loop from the proximal side. Navaho the two proximal thumb loops and release left index.

Pass the left index finger into the left thumb loop from the distal side; take up the radial string and release left thumb.

There is now a straight string running from index of left to thumb of right hand; near the left index it is caught down by a single loop, and farther to the right by a double string.

Pass the right index towards you between these two loops and proximal to the straight string; draw this string out to the right on the hook of the right index, at the same time releasing right thumb.

Release left little finger and place all the left fingers into the index loop, in the same direction as the index, thus extending it. Draw the figure out gently and the

66 CAT'S CRADLES FROM MANY LANDS

"fox" will run from left to right. Draw out until the "fox" is close to the right hand.

There is now a loop on the index and little finger of the right hand, and one loop on the left hand.

Bring hands together, palms facing, and bringing the left loop behind the loops on the right hand hang it on the hook of the right middle finger, keeping the long straight string of the right index as the radial middle finger string. The hand should be held palm downwards, so that the loops hang freely.

All strings are now on the right hand; there is a loop running from index to middle finger and one from little finger to middle finger. Pass left thumb away from you through the depending portion of the former, keeping the radial string of the right index as radial on left thumb.

Pass the left little finger towards you into the depending portion of the remaining loop, thus catching the string in the hook of the little finger, and holding it against the palm. The ulnar right little finger string must be the ulnar string on the left little finger.

Pass left index into left thumb loop from below and withdraw thumb.

Bring right middle finger out towards you, proximal and to the palmar side of the index loop. Bring hands together, palms facing, and insert the left index, on the palmar aspect of the right middle finger, into its loop, from the distal side. Catch this string in the hook of the left index and draw the hands apart, releasing middle finger.

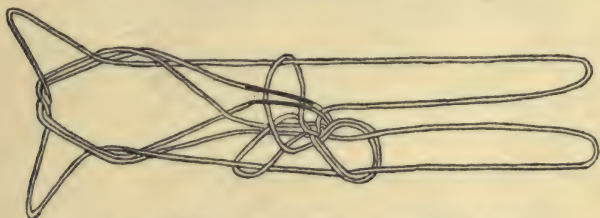
Pass left index into left little finger loop from the proximal side and withdraw little finger.

There are now three loops on the left index which must be kept in their right order, the finger pointing towards you.

Pass the left thumb into the left index loops from the distal side, passing ulnar to the two distal strings and radial to the proximal string; by a half turn towards you take up the proximal radial string (which runs straight across to the right hand) on the tip of the thumb.

Pass the left little finger into the left index loops from the proximal side, passing radial to the two proximal strings and ulnar to the distal ulnar string; by a half turn up take up the distal ulnar string (which runs straight across to the right hand) on the tip of the little finger, and return, releasing left index.

Lay the figure down with the little finger strings towards you. Across the "fox" there run two strings, one of which goes to the left away from you across the former radial thumb string, and the other runs towards you across the former left ulnar little finger strings (see fig. where the strings are blacked in).



No. 44A.—The Fox and the Whale (unfinished figure).

Take hold of the latter, lift it up, and draw towards you underneath it the first-mentioned string.

68 CAT'S CRADLES FROM MANY LANDS

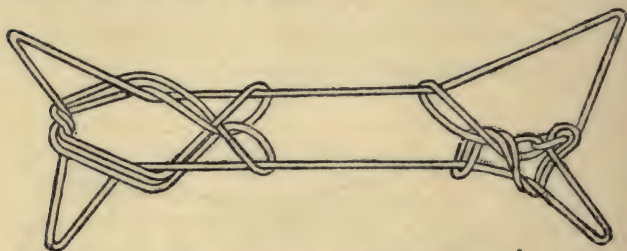
Through this string, which is now nearer to you, thread the original right little finger loop from below upwards, and return it to its original position.

Through the other string in the same way thread the original right index loop and return.

Now place the index fingers downwards into the top loops (the original left thumb and right index loops) and the thumbs downwards into the nearer loop (the original little finger loops), thus picking up the figure and extending it, keeping the fingers pointing away.

The "fox" is at first entangled in the "whale," but by gently drawing the hands apart, and opening and shutting the thumb and index of the right hand, he will become disengaged and run away.

The figure represents the whale's carcass stranded on the beach, and the fox eating it, but on being discovered the fox runs away.



No. 44.—The Fox and the Whale.

XLV. A MAN CLIMBING A TREE (North Queensland).

This figure was illustrated by Roth (II, Pl. III, 5), but no description of its mode of formation was published. The following mode of procedure has been worked out by Mr. W. Innes Pocock from the finished figure:—

Opening A.

Pass little fingers distal to index loops and into thumb loops from the distal side; with backs of little fingers take up radial thumb strings and return.

Navaho little fingers.

Bend the index fingers down into their own loops, thus holding against the palms the strings crossing them. The loops just released from the little fingers must be kept to the ulnar side of the indices.

With the foot hold down the ulnar little finger string.

Release all the finger strings, except the ones held against the palms by the indices.

Draw these strings upwards and the man will climb up the tree. The diamond-shaped upper portion represents the body of the man, the lower triangular part the legs, which are wound round the trunk. It will be noticed that the tree tapers towards the top and the man becomes smaller as he goes farther away,

70 CAT'S CRADLES FROM MANY LANDS

according to the laws of perspective, and ultimately disappears.



No. 45.—A Man Climbing a Tree.

XLVI. AN IMPERIAL PIGEON = *Mirid* (*Carpophaga*), (Andaman Islands).

This and the following were collected by Mr. A. R. Brown, of Trinity College, Cambridge.

Position I.

Remove the thumb loops to the index fingers.

Pass thumbs proximal to the index finger string; take up from the proximal side the palmar strings and draw them out.

With the mouth take up from the distal side the ulnar little finger string; twist it into a loop, insert thumbs, and release mouth.

Navaho thumbs.

Transfer the remaining thumb loops to index fingers.

Pass thumbs proximal to the index loops, and with backs of thumbs take up the proximal ulnar index strings close to the indices, returning proximal to the radial strings.

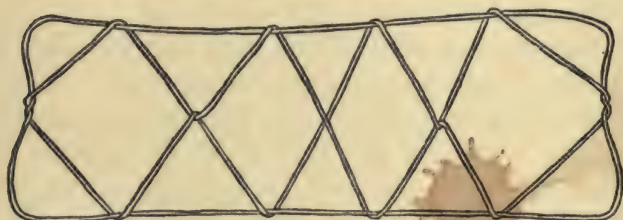
Pass the thumbs from the proximal side into the distal index finger loops and draw out the radial strings.

Pass the middle fingers distal to the ulnar index strings, and take up the proximal radial index finger string, close to the indices.

Navaho thumbs.

Remove all strings from the index fingers.

Release little fingers and extend.



No. 46.—An Imperial Pigeon.

XLVII. A PARROT = *Chorolo* (Andaman Islands).

Opening A.

Release thumbs.

Pass the left thumb proximal to the left index loops, and with back of thumb take up the ulnar index string, returning proximal to the radial string.

Take up with the mouth from the distal side the ulnar little finger string, and twist it into a loop clockwise (i.e. the left-hand string passing over the right); into this loop insert the thumbs and release the string from the mouth.

Navaho left thumb.

Transfer the left thumb loop to left index.

Pass left thumb proximal to the index finger strings, and take up the proximal ulnar index string with the back of the thumb, returning proximal to the radial strings.

Insert the left thumb from the proximal side into the distal index finger loop and draw out the radial string.

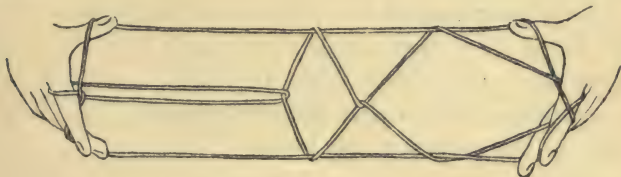
Navaho left thumb.

Pass the left middle finger distal to the ulnar index string and take up the radial index string.

With the right middle finger take up the same string (i.e. the left index proximal radial string) near the middle of the figure, beyond (i.e. to the left of) the point where it passes proximal to the right ulnar thumb string.

Release the little fingers and extend.

To be true to life the parrot (*Palaeornis magnirostris*) should have a long tail, a small body, and a large head.



No. 47.—A Parrot.

XLVIII. THE LEASHING OF LOCHIEL'S DOGS (Scotland).

This figure appears to be known throughout the British Isles, and is described by the Rev. John Gray (12) from the Islands of Eriskay, Outer Hebrides. Dr. W. H. Furness found it among the Kabyles of Algeria, introduced from France under the name of "Cock's Feet" (5, p. 116). Dr. Haddon learnt it from a Pulman car conductor of European, Negro, and Cherokee Indian extraction, as "Crow's Feet" (4, p. 217). It is known to the Ulungu of Africa as *Umuzwa*, "Wooden Spoon" (7, p. 125), and is described by Dr. Kraus (13, No. 5) from German East Africa. Roth gives a similar pattern from North Queensland, and Dr. G. B. Gordon found it among the Eskimo.

Opening A.

Close the fingers of each hand over all the strings except the radial thumb string; throw this string over the backs of the hands and extend.

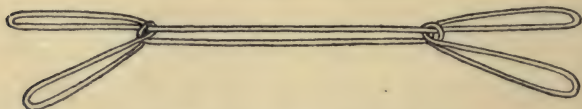
74 CAT'S CRADLES FROM MANY LANDS

Transfer index loops to thumbs.

Take the dorsal string off each hand and hang it over the middle finger of the same hand.

Pass little fingers into the middle finger loops from the distal side, then bend them back into their own loops from the distal side, and with backs of little fingers take up the radial little finger strings and return through the middle finger loops.

Navaho little fingers, release thumbs, and extend.



No. 48.—The Leashing of Lochiel's Dogs.

XLIX. THE TALLOW DIPS.

This figure is well known in Great Britain, and the Rev. John Gray (12) has published a description of it as played by the children of the Cowgate, in Edinburgh.

Hold left hand palm upwards ; lay the string over the four fingers so that there is a straight string across the palm and a long loop hanging down.

Take the dorsal loop in the right hand and bring it forward over the tips of the left fingers, so that the radial string passes between the index and middle fingers, and the ulnar string between the ring and little fingers. Draw tight, and let the loop hang from the palm.

Take hold of the palmar string with the right hand, and between the two strings of the loop, and lift it over

the tips of the left middle and ring fingers on to their dorsal aspect. Draw tight.

Put right index from the distal side into the index finger loop and draw out the palmar (radial) string a little way; then put the right index into the little finger loop from the distal side and draw out the palmar (ulnar) string; draw these two strings out to their full extent and release right index.

Grasp the pendant loops with the right hand, and draw them over the tips of the left fingers to the back of the hand, passing

the left index radial to its radial string,
the left middle finger radial to its radial string,
the left ring finger ulnar to its ulnar string,
the left little finger ulnar to its ulnar string.

There are now two strings between middle and ring fingers and one on each side of them.

Taking hold of the ends of the pendant loops, thread them from the distal side through the dorsal loop of the middle and ring fingers. Draw tight.

Taking hold of the dorsal string of the middle and ring fingers, draw it gently over the tips of the two fingers, and holding the left hand with the fingers pointing up, continue to draw out the string gently to the right, as far as possible.



No. 49.—The Candles.

76 CAT'S CRADLES FROM MANY LANDS

The story¹ runs that, "Once upon a time a man stole a pound of tallow dips," this figure representing the old-fashioned dips fastened together by the wicks.



No. 49A.—The Chair.

"When he got home he hung them on a peg,"—hang the pendant loop on the left thumb, keeping it untwisted.

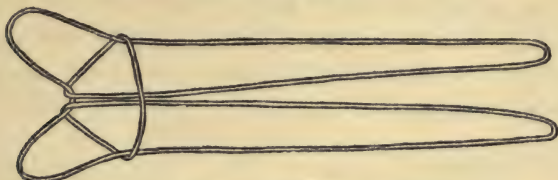
"Being tired he sat down in a chair and went to sleep,"—pass the right index from the proximal side under the dorsal string of the left middle finger, and the right middle finger in the same way under the dorsal string of the left ring finger; lift these two strings over the tips of the fingers and, turning the left hand, palm upwards, draw these strings out to their full extent vertically above the left hand.

This figure represents an old-fashioned, high-backed chair. The thumb loop forms the seat, and from this running down to the palm are the four legs, represented by the index and little finger strings. To see this clearly, the thumb loop should be kept on the tip of the thumb.

"When he awoke it was getting dark, so he took a pair of scissors with which to cut off a candle,"—release

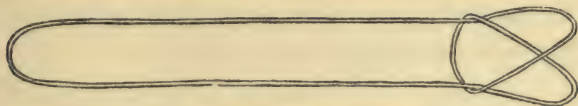
¹ Collected by Miss M. A. Hingston (14).

left thumb and bring hands back to their usual position. Open and shut index and middle fingers of right hand to imitate the movement of the scissors.



No. 49b.—The Scissors.

“ Just then a constable came along with his tipstaff,” —release left little finger and draw tight; the crown at the top of the tipstaff appears close to the right hand.



No. 49c.—The Tipstaff.

“ Clapped a pair of handcuffs on the man and took him off to prison,” —put the whole of the right hand into the right index loop, releasing right middle finger, and draw out.



No. 49d.—The Handcuffs.

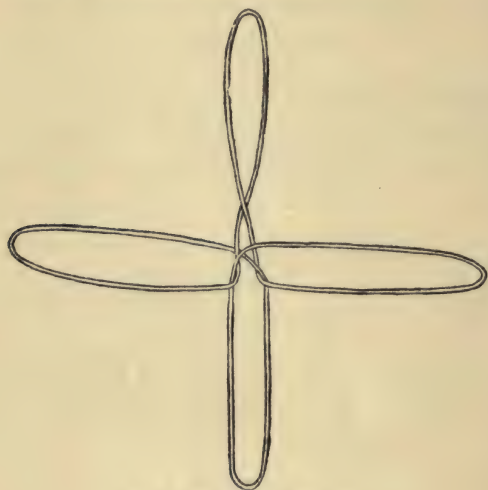
“ And afterwards he was hanged,” —pull the radial string and the noose will run up to the right hand.

L. SAWING WOOD.

This figure was taught to Dr. Haddon by Zia Uddin Ahmad of Trinity College, Cambridge, who said that it was known in Delhi and Lucknow under the name of *Qainchi*, "Scissors".

Opening A.

The other player passing his left hand under all the strings pulls the straight little finger string towards the original player, and with his right hand, under the remaining strings, pulls the straight thumb string towards himself; the first player releases all but the index loops, and by the two players alternately drawing their hands apart sawing movements can be made.



No. 50.—Sawing Wood.

This figure is also made in China by the following method (5, Introd. p. xiii.) : In the ordinary Cat's Cradle make the " Manger " or " Inverted Cradle " ; the other person then picks up one of the straight strings in the middle, passes it under the other, and holding the latter in the middle, draws these two strings as far apart as possible ; the first player then releases all the strings except those on the little fingers, and the two players make sawing movements with the strings.

I believe this figure also occurs in England, and it has been recorded from the North-west of America.

TRICKS.

1. THE LIZARD = *Monan* (Murray Island).

This trick was learnt by Dr. Haddon in Torres Straits (3, p. 152); in Mabuiag it is known as *Maita*, "Intestines of a Turtle". Dr. Furness was shown it by a Uap boy in the Caroline Islands (5, p. 337).

Hold the string in the left hand so that the loop hangs down from it.

Pass the right hand through the loop away from you, then turn the fingers downwards and pass them round the right string towards you; pass the hand between the hanging strings and your body, and bring it forward to the left of the left string; turn the fingers up and bring it back towards you between the two strings.

Pull the hands apart and the right hand is released.

2. THE MOUSE = *Kebi mokeis* (Murray Island).

This is probably the most widely distributed string trick. Dr. Haddon learnt it in Torres Straits, and also describes it as an Omaha Indian trick (4, p. 218). Mrs. Jayne saw it done by African Batua Pygmies, the Philippine Negritos, and Linao Moros, and by American Indians of the Chippewa, Osage, Navaho, and Apache tribes (5, p. 360). Mr. Parkinson describes it from West Africa (9, p. 141), and it has been reported from the Alaskan Eskimo and from Japan.

Hold the left hand with the thumb uppermost and the fingers directed to the front. Put the whole left hand through the string letting the loop fall down its dorsal and palmar aspects from the radial side of the thumb. There will then be a pendant palmar and dorsal string on the left hand.

Pass index of right hand beneath the palmar string and between the thumb and index of the left hand, then hook it over the dorsal pendant string, bringing it out between the thumb and index of the left hand. Give the loop thus made a twist clockwise and place it over the left index. Pull tight the pendant strings.

Again pass right index beneath the pendant palmar string and between the index and middle fingers; hook it over the dorsal string as before; bring this string out, twist the loop clockwise and put it over the middle finger. Pull tight.

Repeat so as to make similar loops over the ring and little fingers. Pull all the strings tight.

Remove the loop from the left thumb and put it between left thumb and index.

This loop represents the ear of the mouse appearing through a crack. With the right hand pull the palmar string and make a squeaking noise as the "mouse" disappears.

Among the Yöruba the trick is identical but the explanation is very different:—

"Certain thieves have crept into a yam plantation. Knowing the owner to be a very wideawake individual, they arrange to tie up their yams in bundles as they

82 CAT'S CRADLES FROM MANY LANDS

are dug up. The strings wound round the four left fingers represent these bundles.

"Remove the thumb loop, and the owner has appeared.

"Pull the palmar string, and you will see the speed and readiness with which the thieves and the yams disappear" (o, p. 141).

3. WILL YOU HAVE A YAM? (Torres Straits).

Dr. Haddon collected this trick. In Mabuiag it is called *Ai*, "Food," in Murray Island *Lewer*, "Food".

Position I.

Pass index fingers over the little finger strings and take them up from below. Return, bringing the part raised in an oblique line across fingers.

With thumbs take up this oblique string from below and return below thumb string.

Pass little fingers over the ulnar index string, and take up from below with the backs of the little fingers the radial string of the oblong.

With thumbs take up from below the remaining string of the oblong (now become the radial string) and return.

Release index loop of left hand, letting it lie loosely on the palm.

Offer it to another person; when he says, "Have you any food for me?" pull the strings and the yam disappears, and say at the same time, "I haven't any".

Repeat with right hand.

4. A FLY ON THE NOSE (Torres Straits).

Dr. Haddon collected this trick. Its native name is *Buli*; a similar one is described by Dr. Kraus from German East Africa (13, No. 7).

Hold the string between the index and thumb of either hand about 6 inches apart. Make a small circle by bringing the right hand towards you and to the left, and place the string it has been holding between the left index and thumb to the near side of the string already held.

Put this double string between the teeth with the small loop hanging down and hold the long loop straight out with the left hand.

Put the right index from below into the long loop, then bending it towards you, hook it over the small ring, the tip pointing downwards.

Turn the finger up towards you and to the right until it points upwards, then bring it between the two strings of the long loop from below and put the tip on your nose.

Release the strings held in the mouth, at the same time pulling the long loop and protruding the tongue. The string should come off the right index.

5. A DRAVIDIAN TRICK.

This trick was shown to Dr. Haddon by Dr. S. Levinstein, who learnt it in Leipzig from a travelling troupe of Dravidians.

84 CAT'S CRADLES FROM MANY LANDS

It is interesting as being one of the very few string tricks from India.

Place the string over the left index and middle finger so that the loop hangs down over the palm.

Put the right index from below into the loop and pass it between the index and middle fingers; hook it over the dorsal string and draw this out between the two fingers, as far as possible to the right.

Pass the left thumb over the radial string of the loop and under the ulnar string, and bring its tip against the tip of the left index.

Remove the middle finger loop. Without separating the thumb and index, take the dorsal string off the left index and the string will pull free.

6. A GERMAN TRICK.

This trick was collected by my sister, Mrs. A. E. Hodder, several years ago in Berlin, and she also found it in Scotland. One very similar was taught to me a few years since, in Cambridge.

Holding the left hand palm upwards, hang the string over the four fingers so that there is a palmar string and a long loop hanging down.

Take the pendant loop with the right hand and bring it forward over the tips of the left fingers, so that the radial string passes between the index and middle fingers, and the ulnar string between the ring and little fingers.

Bring these strings between the thumb and index to the radial side of the thumb, keeping the radial string

uppermost and the strings untwisted ; bring them across the palm and loop the proximal thumb string over the little finger.

Twist the loop still held in the right hand through 180° clockwise, and place it over the left index, letting the long loop hang down behind.

Take the two loops off the thumb and draw them out as far as possible to the right, then pass them back between the left middle and ring fingers and let them hang down behind.

With the right hand pull the straight palmar string and the left hand will be freed.

7. AN ENGLISH "HANGING" TRICK.

This trick is very common in England, and is often done through a buttonhole instead of round the neck.

Place the middle of the loop over the back of your neck so that two loops hang down, one on each side.

Into the loop on your left pass your left little finger from below, and into the loop on your right pass your right thumb, also from below.

With right little finger pick up from below the left ulnar string, and pass the left thumb above the little finger loop and into the thumb loop from below ; pick up the ulnar string and return.

Draw the hands as far apart as possible, close up to the throat, and release both little fingers (or both thumbs) quickly ; draw the hands apart and the string will come off your neck.

8. AN AFRICAN "HANGING" TRICK.

This trick was obtained by Dr. W. A. Cunnington from Central Africa (7, p. 124).

Place the string round the neck (as a necklace) and allow it to hang free in front of the body. With the right hand grasp the left hand string, bring it under the neck and round it behind to the left side again.

Take the right and left strings of the hanging loop in the right and left hands respectively, near the lower end of the loop, and make there a small closed loop by passing the right hand to the left with a circular motion counter-clockwise (i.e. away from you), until the left string is grasped. Increase the size of this loop by sliding the hands until it is large enough, and pass it over the head, retaining hold of the single string which is in front. Pull this string, and the whole will come free from the neck.

This may be done equally well by reversing right and left all through.

9. AN EGYPTIAN TRICK.

This is one of the three tricks collected in Egypt by Dr. W. A. Cunnington in 1907.¹ These are the only string tricks known from Egypt.

Seated on the ground, extend the string by placing it round the neck and over a foot.

¹ "Man," Vol. VIII, No. 10, October, 1908, p. 149,

Cross the index fingers of each hand, the backs of the hands being uppermost and the right index over the left. With the crossed index fingers now approach the left hand string from the left, and taking the left hand string on the radial (or equally well the palmar) side of the left index, pass the hands with the string below the right hand string and up again on the right of it.

Take the original right hand string with the right index, and crooking the indices round their respective strings, pull the hands a few inches apart.

By moving the left hand with its string clockwise through 180° , pass the head into the left hand loop from the distal side, at the same time releasing the left hand.

On releasing the right hand the string will pull free from the neck.

10. A NAVAHO INDIAN TRICK.

This trick was taught to me in Chicago in 1906 by Mr. Fay Cooper Cole. It was learnt from the Navaho Indians of New Mexico.

Place the loop over another person's finger, and hold the strings in your left hand keeping them untwisted.

Pass the right middle finger from above to the left of the strings, and with the tip of the middle finger draw the left string to the right distal to the right string.

Pass the right index from above, between the two strings beyond the cross.

Twist the hand counter-clockwise and rest the tip of your middle finger on the other person's finger.

Release index and the string will pull free.

11. A PAWNEE TRICK.

I learnt this trick from a Pawnee Indian at Pawnee, Oklahoma State.

Place the loop over another person's finger ; wrap the right string once round, clockwise, and hold the end of the strings in the right hand, keeping them untwisted.

Lay the left index across the strings about one-third of the length of the string away from you.

Bring the right hand upwards and forwards and lay the loop across the straight strings so that a loop hangs down on either side of them.

Pass the right hand proximal to the strings, and pass the middle finger between the parallel strings and above the transverse string, the ring finger over the loop to the right, and the index over the loop to the left of the parallel strings.

Draw the right hand towards you, at the same time passing the left hand towards the other person. Place the tip of your left index on his finger and transfer the distal loop to his finger ; then turn the remaining loop through 130° upwards, to the right, and place it on too.

Keeping your finger on his, release all except the right middle finger, pull tight, and the strings will come off.

12. THREADING A CLOSED LOOP (Omaha, Pawnee, Kwakiutl).

This trick is described from these tribes by Dr. Haddon (4, p. 218), and is also known to the Japanese, the Caroline Islanders (5, p. 354), and to Europeans.

Take a piece of string about 18 inches long, and beginning a few inches from one end, twist the middle portion of the string three or four times round the left thumb in the direction of the body. Then make a loop which projects outwards between the thumb and index finger of the left hand, and hold it between those digits.

Drop this end of the string and take up the other, about half an inch from its extremity, with the thumb and index of the right hand.

Make movements as if threading the loop with this point of string. Suddenly slip the string round the point of the left thumb and it will appear as if the loop had been threaded by the string held in the right hand.

According to Dr. Boas there are two shamanistic societies among the Kwakiutl. This trick is used to identify the members of one of these societies when they hold their secret meetings in the forest. The members of the other society are recognized by another trick; they employ a little stick to the middle of which a string is fastened. The toggle is put in the mouth, and when the mouth is opened the stick appears to perforate the tongue. This is probably accomplished by means of a second piece of wood secreted in the mouth,

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¹ These and other Torres Straits string figures will be found in the *Reports of the Cambridge Anthropological Expedition to Torres Straits*, Vol. IV.

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INDEX.

- AFRICA**, 8, 28-44, 73, 80, 83, 86.
 — Central, 28, 29, 31, 34, 38, 86.
 — German East, 34, 73, 83.
 — Portuguese East, 41, 43.
 — South, 8, 30.
 — West, 33, 36, 37, 80.
 African Batua pygmies, 80.
 Alaska, 53.
 Alaskan Eskimo, 80.
 Algeria, 73.
 Ambra, 43.
 America, North-West, 79.
 American Indian, 5, 7, 36, 45-52,
 73, 80, 87, 88, 89.
 Andaman Islanders, 31.
 Andaman Islands, 37, 70, 72.
 Apache Indian, 80.
 Arms, the, 58.
 Australia, 37, 69.

BATOKA gorge, the, 40.
 Bed, a (Africa), 34.
 Bed, the (Torres Straits), 11.
 Beira, 41.
 Berlin, 84.
 Boas, Dr. F., 89, 90 (1), 91 (10).
 Britain, Great, 74.
 British Columbia, 7, 45.
 British Isles, 73.
 Brown, Mr. A. R., 31, 37, 70.
 Bulawayo, 41.

CALABASH net, a, 36.
 Cambridge, 84.
 Camp bed, the white man's, 34.
 Canoe, 8, 17.
 Canoe with two masts, the, 15.
 Cape Prince of Wales Eskimo, 62.
 Caroline Islands, 31, 37, 80, 89.

 Carrying wood, 46.
 Chair, the, 76.
 Cherokee Indian, 73.
 China, 79.
 Chippewa Indian, 80.
 Clayoquaht Indian, 7.
 Cock's feet, 73.
 Coco-nut palm tree, the, 9.
 Cole, Mr. Fay Cooper, 87.
 Crab, the, 26.
 Crow's feet, 73.
 Cunningham, Dr. W. A., 28, 36, 86,
 90, (7).

DAVIS, Prof. W. M., 41.
 Delhi, 78.
 Diomedes Island Eskimo, 53.
 Distal, defined, 1.
 Dog on a leash, a, 55.
 Dorsal, defined, 1.
 Dravidian trick, a, 83.
 Dressing a skin, 45.
 Dugong, 13.

EDINBURGH, 74.
 Egypt, 86.
 Egyptian trick, an, 86.
 England, 79.
 Eskimo, 53-63, 73, 80.
 — Alaskan, 80.
 — Western, 53.
 Europeans, 89.

 Face mark of the town of Owu, 37.
 Fence round the well, the, 19.
 Fighting lions, 41.
 Fighting men, the, 22.
 Fishing net, a, 34, 36.
 Fish-spear, the, 7, 45.

- Fish-spear, throwing the, 8.
 Fish-trap, a, 30.
 Flying fox, the, 22.
 Fly on the nose, a, 83.
 Food, 82.
 Fox and the whale, the, 64.
 France, 73.
 Furness, Dr. W. H., 31, 73, 80.

 GERMAN trick, a, 84.
 Gordon, Dr. G. B., 6, 53, 73, 90 (6).
 Grass hut, a temporary, 29.
 Gray, Rev. John, 73, 74, 91 (12).

 HADDON, Dr. A. C., 90 (4) and (8)
 et passim.
 Haddon and Rivers' nomenclature,
 1, 90 (3).
 Handcuffs, the, 77.
 Hanging tricks, 85, 86.
 Hawaiian Islands, 36.
 Heape, C., and J. Edge Partington, 31.
 Hebrides, Outer, 73.
 Hingston, Miss M. A., 76, 91 (14).
 Hodder, Mrs. A. E., 84.
 Hogan, a, 47.
 Hogans, two, 48.
 House, the Siberian, 53.

 IMPERIAL pigeon, an, 70.
 India, 79, 84.
 Indian, American, 5, 7, 36, 45-52,
 73, 80, 87, 88, 89.
 Inverted cradle, the, 79.

 JAPAN, 80.
 Japanese, 89.
 Jayne, Mrs., 36, 37, 80, 90 (5).
 Jesup North Pacific Expedition, 45.

 KAYAK, the, 60.
 King fish, the, 13.
 King Island Eskimo, 60, 64.
 Kiwai Island, 26.
 Klamath Indian, 54.
 Kraus, Dr. H., 34, 73, 83, 91 (13).
 Kwakiutl, 89.

 LEGS, the, 59.
 Leipzig, 83.

 Lem opening, 23, 24.
 Levinstein, Dr. S., 83.
 Lightning, 51.
 Linao Moras, 80.
 Lions, fighting, 41.
 Little fishes, 12.
 Lizard, the, 80.
 Lochiel's dogs, the leashing of,
 73.
 Locust, a, 28.
 Loyalty Islands, 17, 19.
 Lucknow, 78.

 MABUIAG, 13, 17, 24, 80.
 Man climbing a tree, a, 69.
 Manger, the, 79.
 Many stars, 50.
 Men, the fighting, 22.
 Moon, the, 31, 32.
 Moon gone dark, 31, 32.
 Mouse, the, 80.
 Mouth, 31.
 Murray Island, 7-24, 80, 82.

 NAGEG, 20, 21.
 Nageg, opening, 20, 22.
 Navaho Indian, 5, 46-51, 80, 87.
 Navahoing, described, 5.
 Nest of the *Ti* bird, 17.
 New Mexico, 7.
 Nunivak Island Eskimo, 54-59.

 OKLAHOMA, 36, 88.
 Omaha Indian, 80, 89.
 Opening A, described, 4.
 Osage Indian, 36, 80.
 Owl, the, 51.

 PALMAR, defined, 1.
 Parkinson, Mr. John, 28, 34, 80,
 90 (9).
 Parrot, a, 72.
 Parrot cage, a, 33.
 Partington, J. Edge, and C. Heape,
 31.
 Pawnee Indian, 88, 89.
 Philippine Negritos, 80.
 Pigeon, an imperial, 70.
 Pit, a, 38.
 Pitching a tent, 7, 45.

Pocock, Mr. W. Innes, 69.
 Porcupine, 54.
Position I., described, 3.
 Proximal, defined, 1.
 Pygmies, African Batua, 80.

QUEENSLAND, North, 8, 31, 69, 73.

RADIAL, defined, 1.
 Ray, Mr. S. H., figure collected by,
 26.
 Rivers and Haddon nomenclature,
 1, 90 (3).
 Roth, Dr. W. E., 8, 31, 37, 69, 73,
 91 (11).

SALISH Indian, 7.
 Sawing wood, 78.
 Scissors, the, 77, 78.
 Scotland, 73, 84.
 Sea-egg spear, 7.
 Sea-gull, the, 57.
 Sea-snake, the, 16.
 Shiré Highlands, 36.
 Siberian house, the, 53.
 Smith, Mr. Harlan I., 7, 45, 90 (2).
 Star, a, 24.
 Stone money, 31.
 Sun clouded over, 31.
 Sun, the setting, 24.

TALLOW dips, the, 74.
 Ten men, 37.
 Tent, pitching a, 7, 45.

Tern, the, 10.
 Threading a closed loop, 89.
 Thompson Indians, 45.
Ti meta opening, 17, 20.
 Tipstaff, the, 77.
 Tricks, 80-89.
 Trigger-fish, the, 20.
 Torres Straits, 7-27, 31, 45, 80, 82,
 83.
 Turtle, a, 37, 80.
 Two Eskimos running away, 53.
 Two ptarmigan, 62.
 UAF, 80.
 Uganda, 28.
 Ulnar, defined, 1.
 Ulungu, 73.

VANCOUVER Island, 7.
 Victoria Falls, 40.

WELL, the, 17, 19, 26.
 Well, the fence round the, 19.
 Whale, the fox and the, 64.
 Wolverine, the, 54.
 Wooden spoon, 73.

YAM, will you have a ? 82.
 Yöruba, 28, 33, 34, 36, 37, 81.

ZAMBEZI River, 40.
 Zia Uddin Ahmad, 78.
 Zuñi Indian, 7.

61

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