Celtic Art
The Methods of Construction

George Bain

CONSTABLE LONDON

Celtic Art is the only indigenous British art form of world significance and this book is a graphically eloquent plea for the establishment of this great national art to its rightful place in schools and colleges where the history of ornament is being taught.

Until recently, the classical orientated art world has regarded the abstract, ikonographic and symbolic style of the Celtic artist as something of an enigma, a mysterious archaic survival largely ignored in histories of art. The modern trends away from realism and the interest of the younger generation in psychedelic and art nouveau styles provides favourable ground for the Celtic art revival which the widespread interest in this new edition seems to indicate is possible.

When this book first appeared it was hailed as a "veritable grammar of ornament." It is certainly an indispensable reference book and practical textbook for the art student and craftsman seeking simple constructional methods for laying out complex ornamental schemes.

The entire chronology of symbols is embraced from spirals through chevrons, step patterns and keys to knotwork interlacings which are unique to this particular Celtic School. There are also sections dealing with zoomorphics, plant and human forms, authentic Celtic lettering, initials and terminals and examples of applications in knitwear, carpets, ceramics and other areas in which the author pioneered in his day.

This book deals with the Pictish School of artist-craftsman who cut pagan symbols like the Burghead Bull and in the early Christian era designed such superb examples of monumental sculpture as the Aberlemno Cross and the counterparts in the Books of Kells and Lindisfarne, the amazing jewellery con ceptions of the Tara and Hunterston Brooches, the Ardagh Chalice and other masterpieces.

Knotwork Interlacings, owing much of their perfection and beauty to the use of mathematical formulae, are unique to Pictish Art and are found nowhere else than the areas occupied by the Picts. The outstanding achievement of their art was the subtle manner in which they combined artistic, geometric and mathematical methods, (often in the manuscript art, to standards of minuteness and intricacy beyond the skills of moderns) with magic, imagination and logic, the function being both to teach and adorn.

Although incidental to the main educational purpose of this book, there is also an implicit challenge to the art historian and archaeologist. The author frankly admits that the evidence such researches into the art have revealed of a hitherto unsuspected culture of much sophistication in pre-Roman Britain, pose as many questions as are answered.

Who were the Picts? Whence the Asiatic origins of Celtic Art? How does a La Tène cloisonné enamel effect glow on Lindisfarne vellum a thousand years later? Why can a 20,000 B.C. key pattern survive the drift of migrating tribes through the millenia of archaic craft traditions to appear in the Book of Kells and a Maya temple?

The instinct to ornament is one of the most basic human impulses that seems to have atavistic roots in the primeval creative and imaginative characteristics that separate man from beast.

George Bain clearly demonstrated in his classrooms, to judge from pupil's work here illustrated, that through practice and application in his methods of constructing decoration, anyone with the initial interest can release this innate instinct to beautify and mark out the impress of their individuality that has been a quality in man since the neolithic times of the cave artist and still finds expression through the subconcious outlines of the phone-pad doodler.

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Celtic Knotwork
Iain Bain

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The general principles for designing Celtic Knotwork. (Pictish Schoc

Freehand knotwork bands may be done if two lines only are crossed at one point and if each o the enclosed shapes is large enough to allow for the desired width of the band to be drawn

Stage 1 | Stage 2. | Stage 3 | Stage 4 | Stages 1 and 2 | Stages 3 and 4 | Stages 1 and 2 | Stage 3.

The band may be a narrow one ——— or a broad one ——— or it may be doubled —

This may be the method of the Pictist artist. | Arch one space above and below | Break and rejoin in various ways. | Form band | Remove centre line | Interlace, over a under, alternate

The stages of various treatments are shown below. Narrow. broad and doubled interlacing band

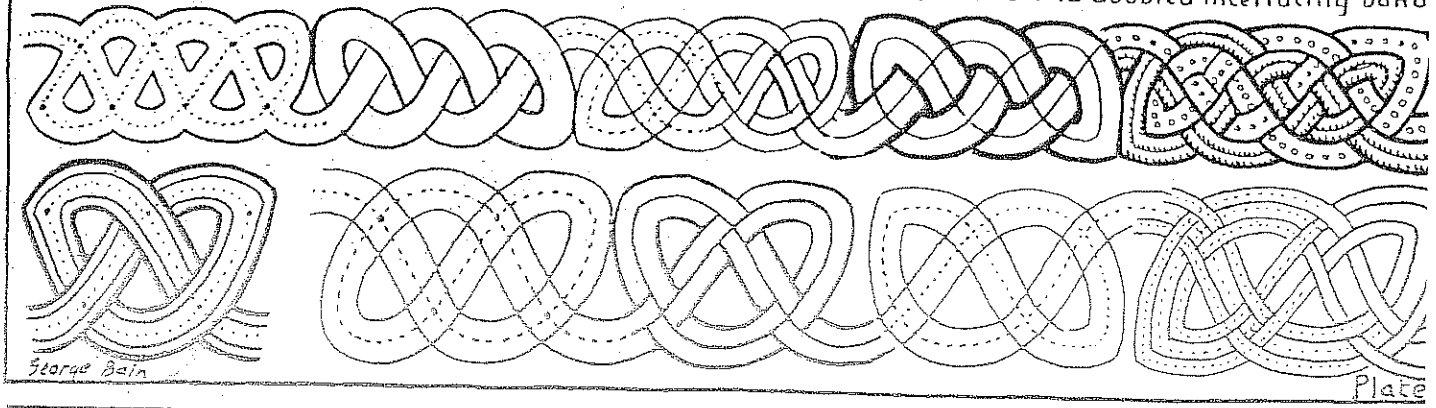

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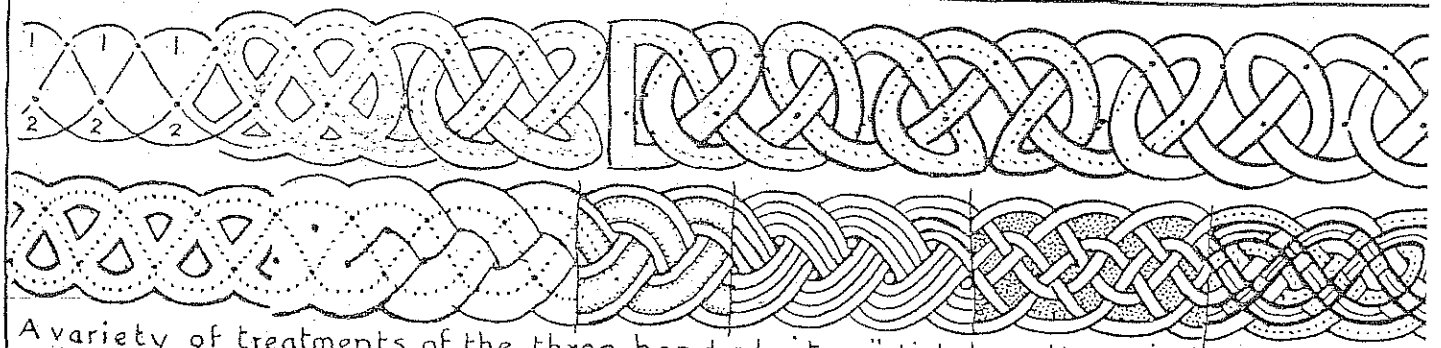
Plate

The general principles of the methods of construction for Celtic Knotwork



A variety of treatments of the three band plait or "dirk handle twist".

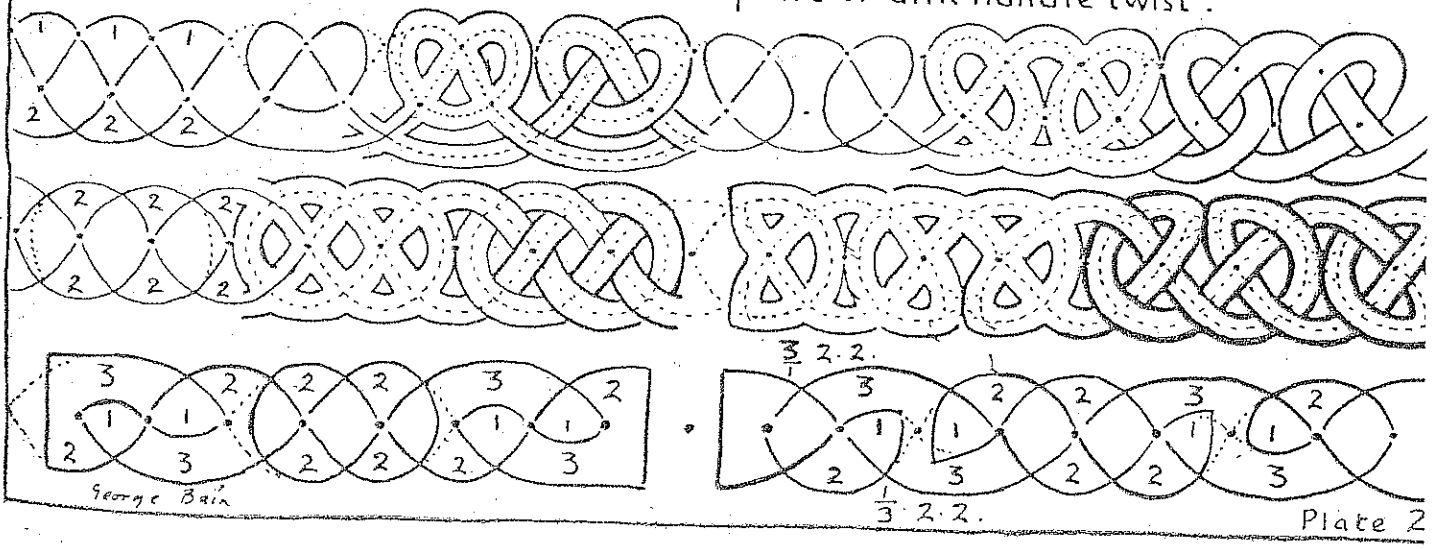


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Plate 2

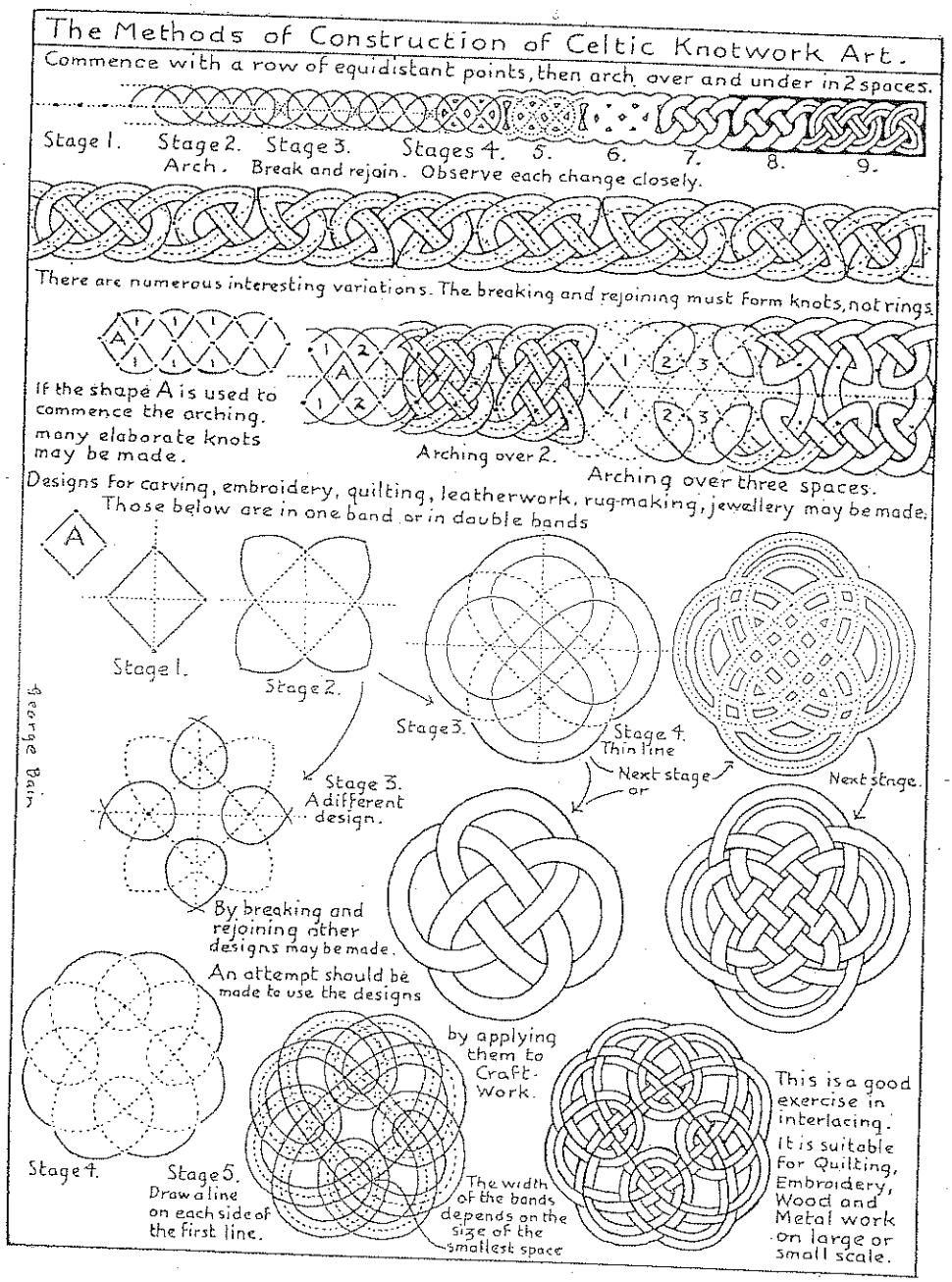
The Methods of Construction of Celtic Knotwork Art.
Commence with a row of equidistant points, then arch over and under in 2 spaces.
Stage 1. Arch.
Stage 2. Break and rejoin.
Stage 3. Observe each change closely.
Stages 4. 5. 6. 7. 8. 9.
There are numerous interesting variations. The breaking and rejoining must form knots, not rings.
If the shape A is used to commence the arching, many elaborate knots may be made.
Arching over 2.
Arching over three spaces.
Designs for carving, embroidery, quilting, leatherwork, rug-making, jewellery may be made.
Those below are in one band or in double bands
A
Stage 1.
Stage 2.
Stage 3.
Stage 4. Thin line
Next stage or
Next stage.
Stage 3. A different design.
By breaking and rejoining other designs may be made.
An attempt should be made to use the designs by applying them to Craft-Work.
This is a good exercise in interlacing. It is suitable for Quilting, Embroidery, Wood and Metal work on large or small scale.
Stage 4.
Stage 5. Draw a line on each side of the first line.
The width of the bands depends on the size of the smallest space
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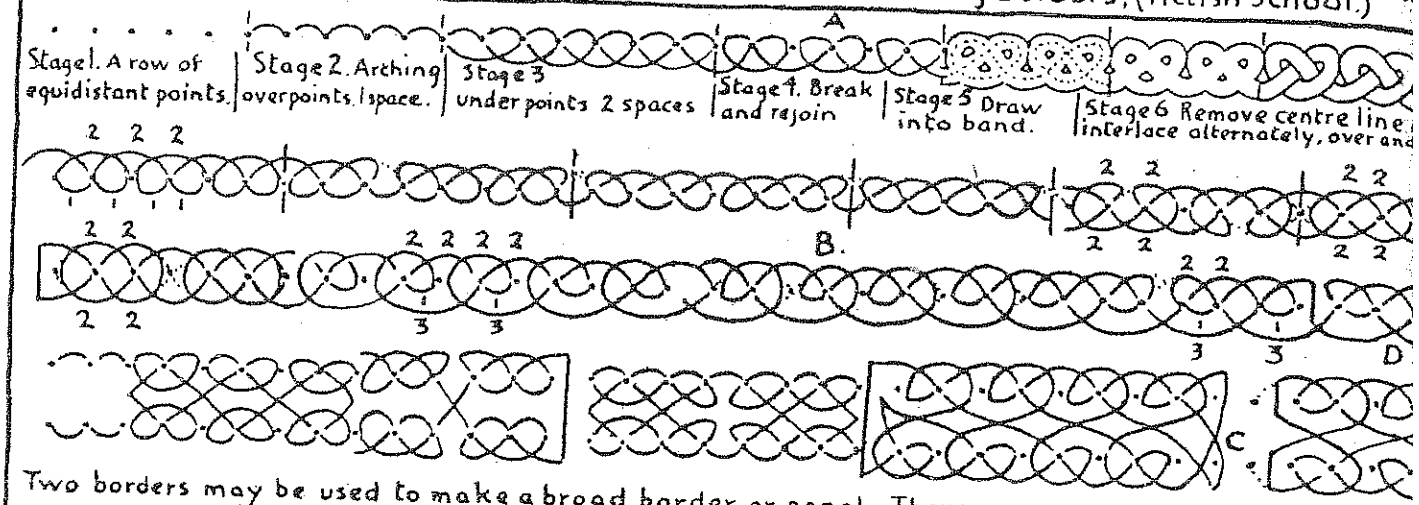
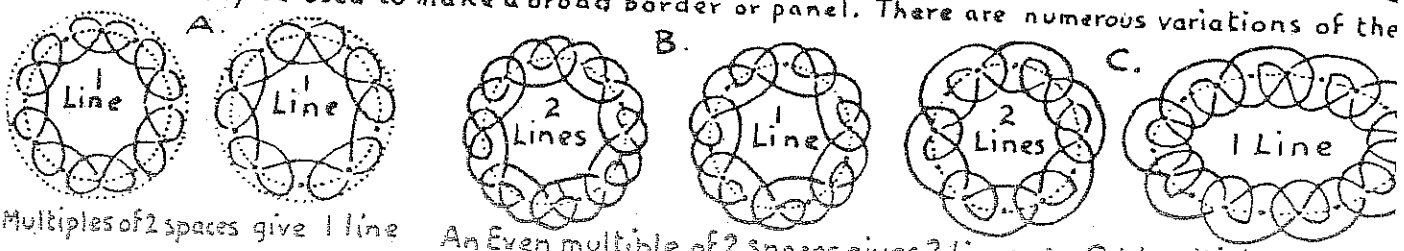
Plate B

The methods of construction for simple Celtic Interlacing Borders, (Pictish School.)



Two borders may be used to make a broad border or panel. There are numerous variations of the

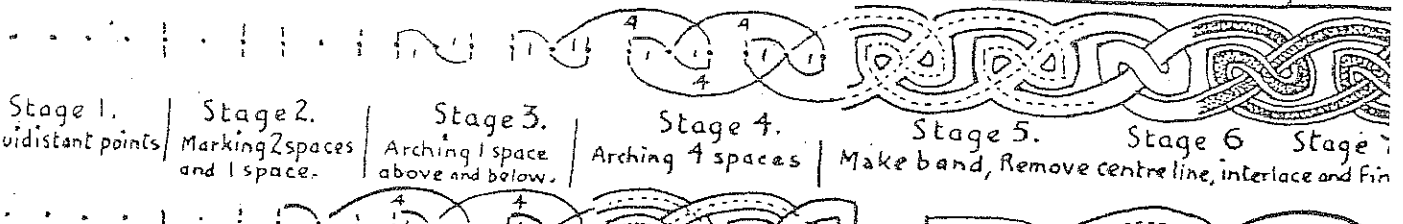


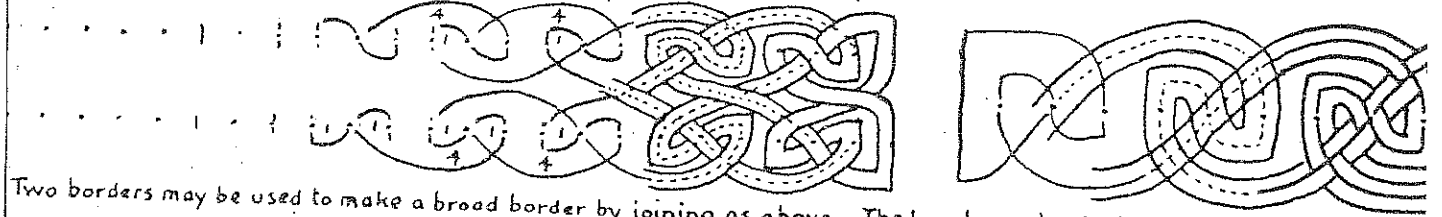
Multiples of 2 spaces give 1 line. An Even multiple of 2 spaces gives 2 lines, An Odd multiple gives 1 li

Plate

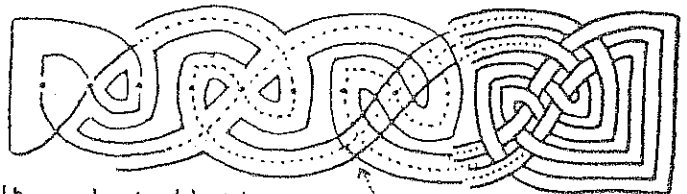
The general principles for designing Celtic knotwork borders, (Pictish School.)

George B

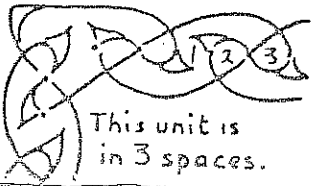


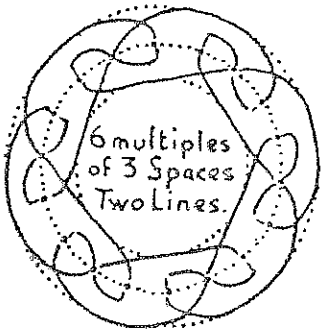


Two borders may be used to make a broad border by joining as above. The band may be doubled and interlaced as abo



It may be doubled by crossing lines and making each line into a band and interlacing them.





An even multiple of 3 spaces will make 2 lines.
An odd multiple of 3 spaces will make 1 line

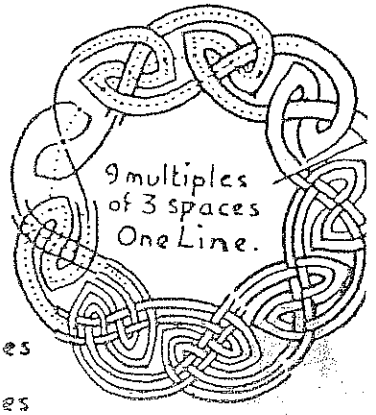
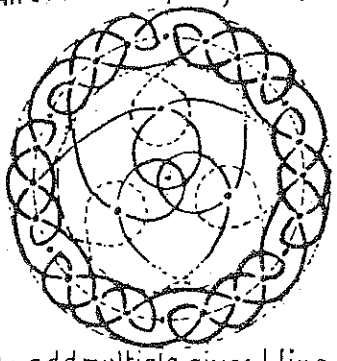


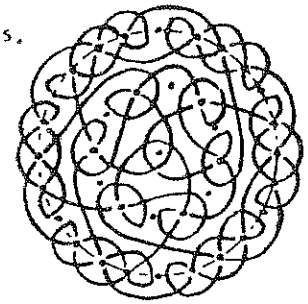
Plate 4.

The methods of construction and of application to craftwork for simple Celtic Interlacings

Stage 1. Stage 2. Stage 3. Stage 4. A variation by different breaking and joi

This unit is in 4 spaces.
An even multiple gives 2 lines.



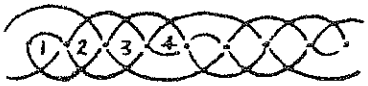


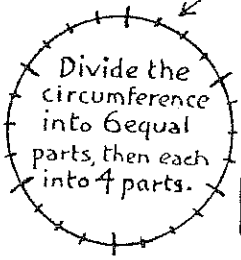
An odd multiple gives 1 line

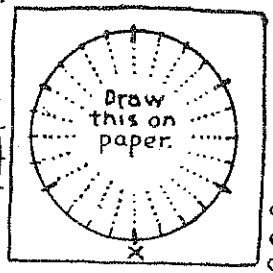
Circles may be filled by breaking the lines of the border and rejoining to interlacings drawn in the centre.

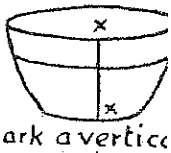
Below, The method of applying a border design to a cylindrical object.

1st The number of Spaces required for the unit is arranged in the desired multiple.

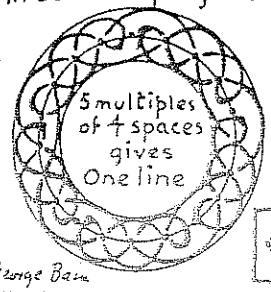




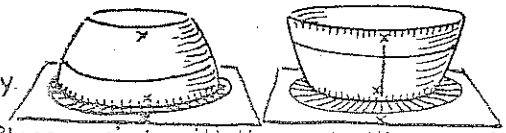




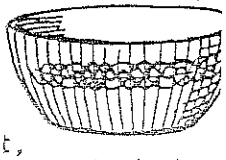
Mark a vertic line on the bo and one point circumference circle on the pa



Designs of this nature are very suitable for metal-work, jewellery, embroidery, quilting, rug-making, carving, pottery, etc.,



Place on circle with the marked line X to fit,



The same order will give $\frac{3}{1}\cdot 2\cdot 2$ a variety $2\cdot 2\cdot\frac{1}{3}$ of designs.

mark off the spaces to the bow
Draw line or lines around be
in desired position.

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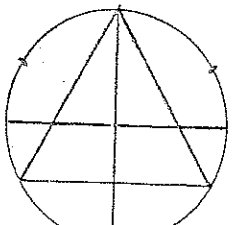
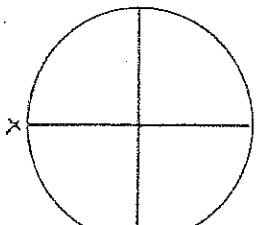
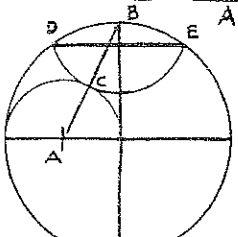
Plate

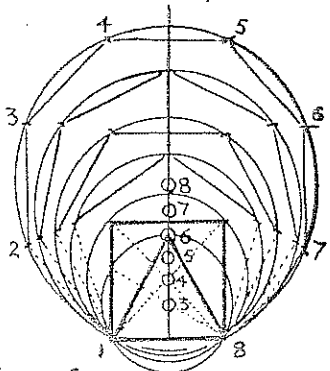
The methods of construction of Celtic border designs and of their application to circles.



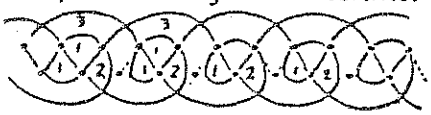


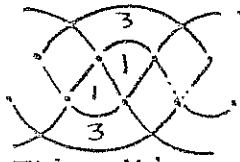


The division of the circumference of a circle into 2. 3. 4. 6 or 8 equal parts, requires little explanation



To divide into 5 equal parts.
First divide into 4 equal parts,
With centre A describe semi-circle.
Draw line A to B. With radius B.C.
find points D. E = $\frac{1}{5}$ of Circumference.



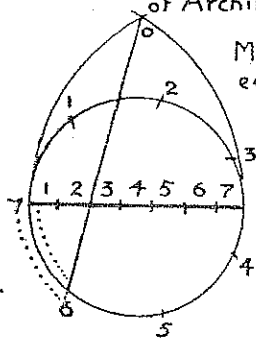


The order is $\frac{3}{1}$ on chevron. $\frac{1}{3}$

This unit is in multiples of 2.

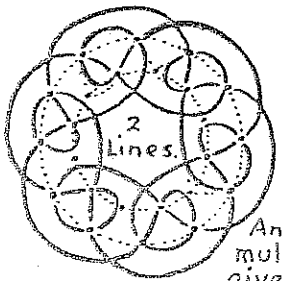
Absolute accuracy of division of a circle is not necessary, but in many cases, such as the pentagonal division of the underpart of the bas of the "Ardagh Chalice", accuracy is observed

The method below may have been in use before the tir of Archimedes. It is very nearly accura

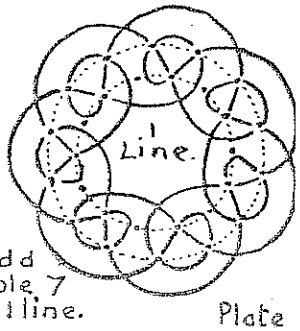


Mark the required number of equal parts on the diameter.
Find point O and draw a straight line through poin 2. (always) on the diamet The intersection with the circle gives the size that divide the circumference in the required number of pa

Circles or figures based on circles may be drawn by the above method. The side of the square is also the side of the eq. triangle. A circle is described through corners of each and a line equally dividing both is extended at right angles to the common base. The space between centres 3 and 4 is repeated above to the number required.



An even multiple 6 gives 2 lines



An odd multiple 7 gives 1 line.

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Plate

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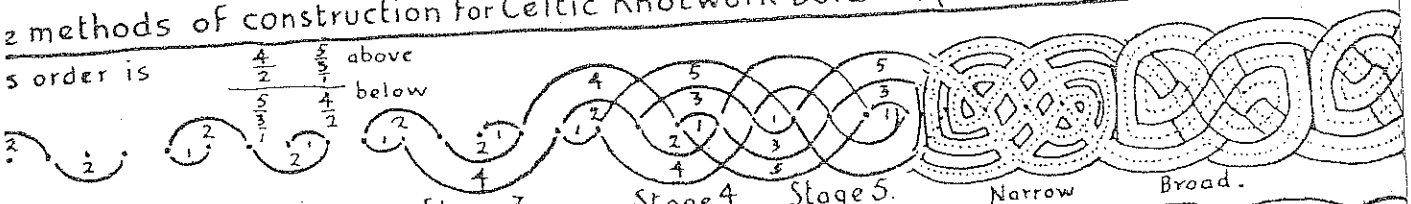
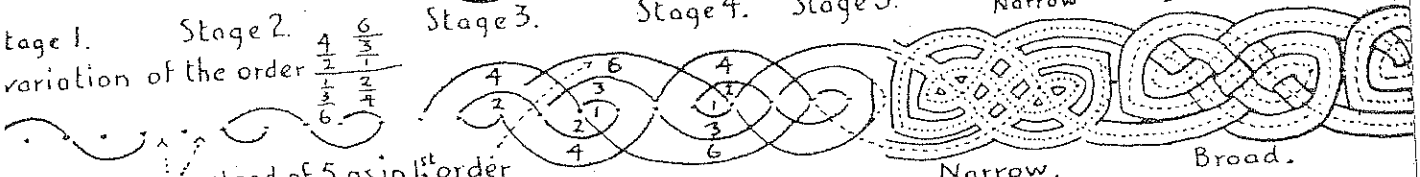
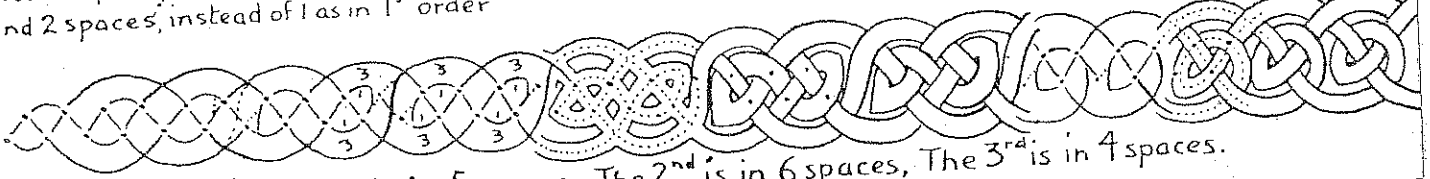
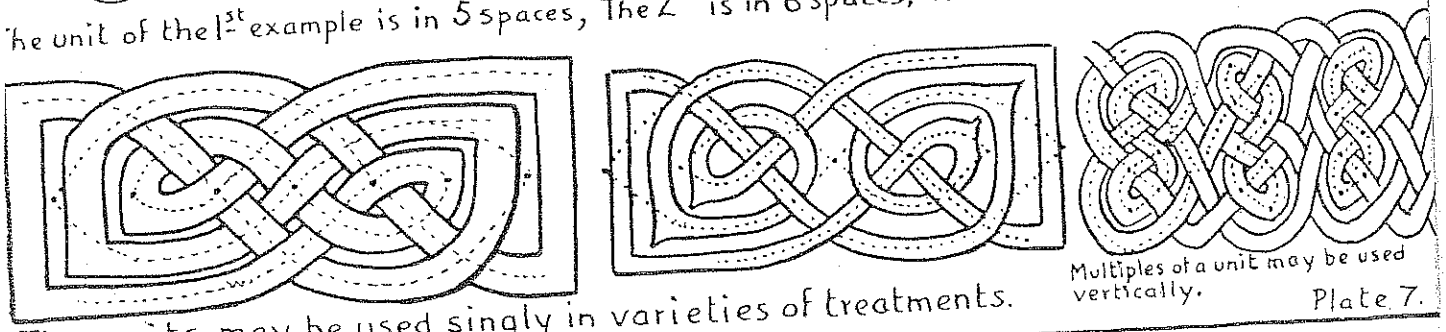
2 methods of construction for Celtic Knotwork Borders. (Pictish School.)







The unit of the 1st example is in 5 spaces, The 2nd is in 6 spaces, The 3rd is in 4 spaces.



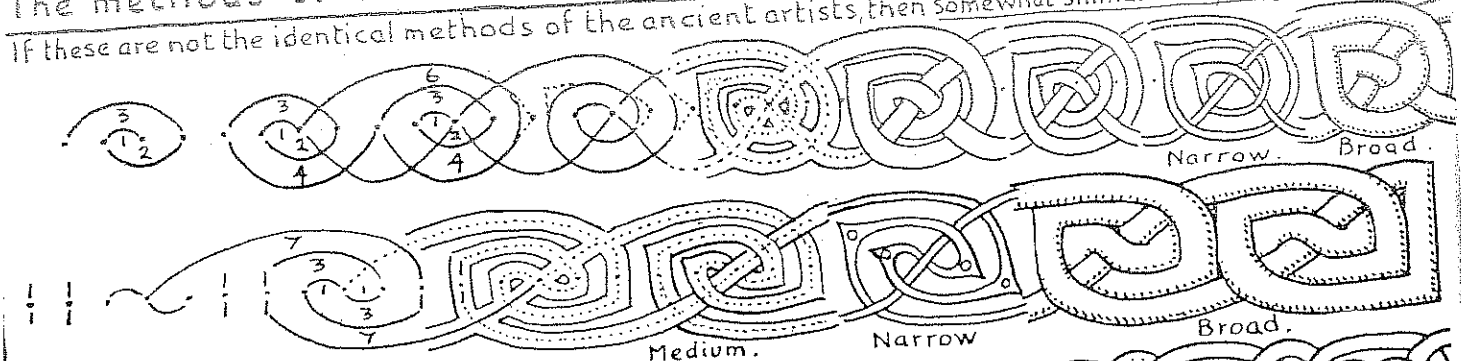
The units may be used singly in varieties of treatments.

Multiples of a unit may be used vertically.

Plate 7.

The methods of construction of Celtic Interlacing Borders. (Pictish School.)

If these are not the identical methods of the ancient artists, then somewhat similar though easier ones were used



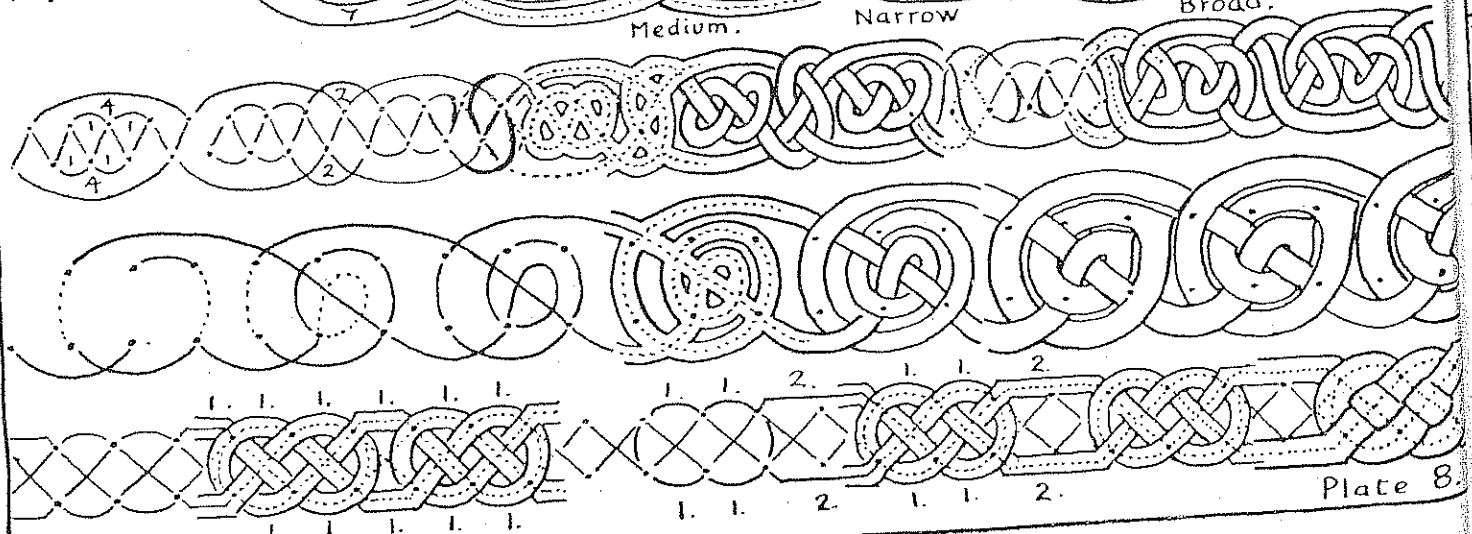


Plate 8.

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e Methods of Construction for Celtic Interlacing Borders, (Pictish School.)

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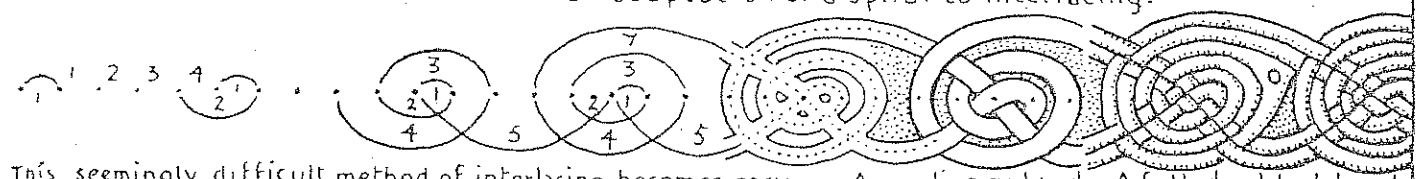
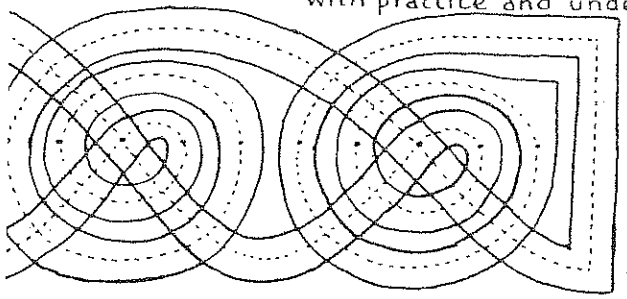
is a variation of No. 1 Plate 8. It is an adaptation of a spiral to interlacing.

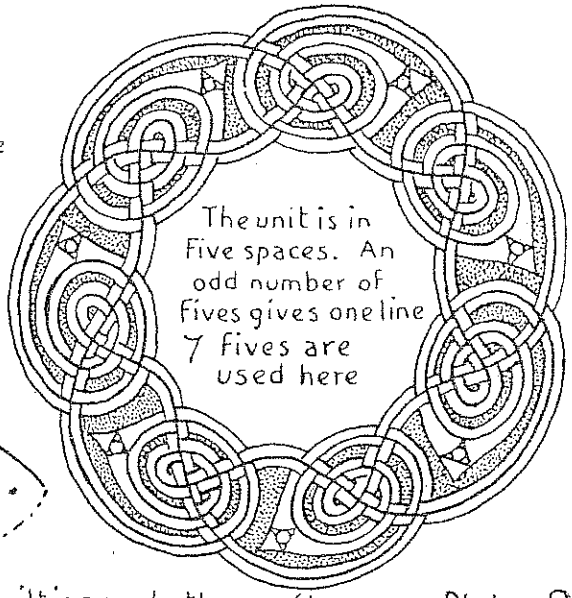


This seemingly difficult method of interlacing becomes easy with practice and understanding.

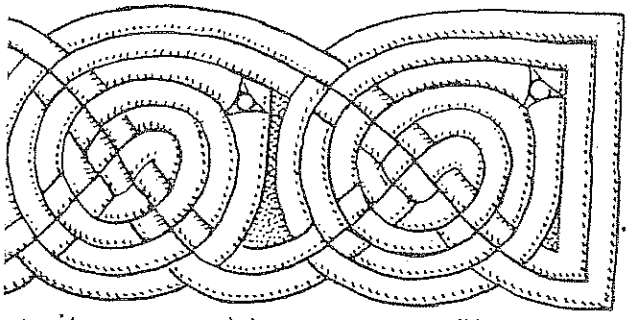
An ordinary band. A full doubled band



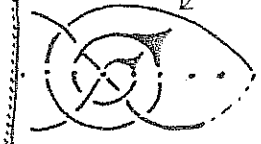
Equidistant from and on each side of the first line draw a line. This will make two bands. Interlace at all crossings.



The unit is in Five spaces. An odd number of Fives gives one line. 7 Fives are used here



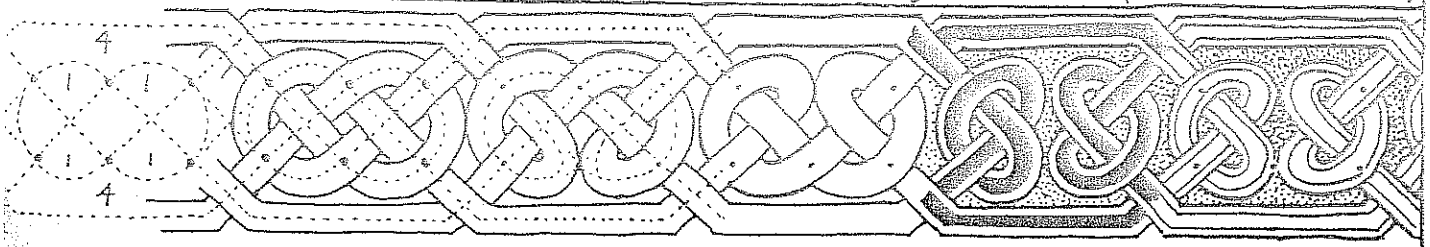
It may be drawn as a spiral and incised in a thin line as shown here.

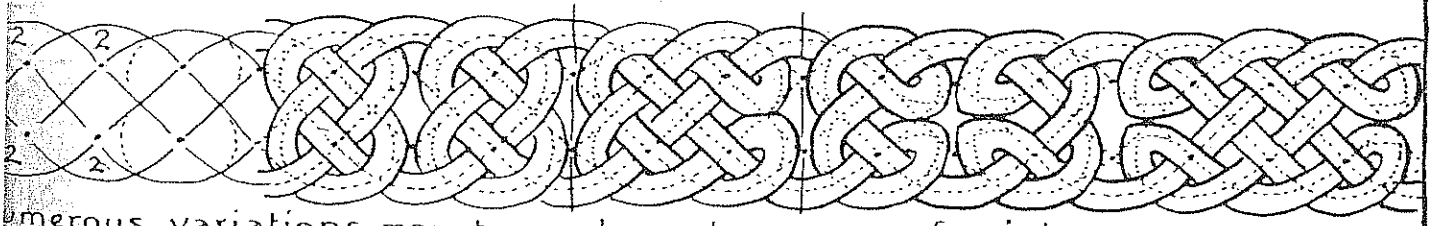


> Units are used to show suitability to carving, jewellery, quilting and other crafts.

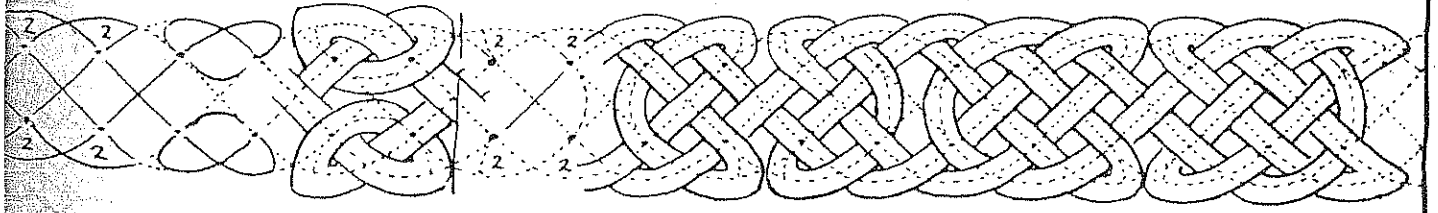
Plate 9.

e methods of construction for Celtic Interlacing Borders, (Pictish School.)





merous variations may be made on two rows of points



ge Bain

Plate 10.

The methods of Construction for Celtic Borders, (Pictish School.)

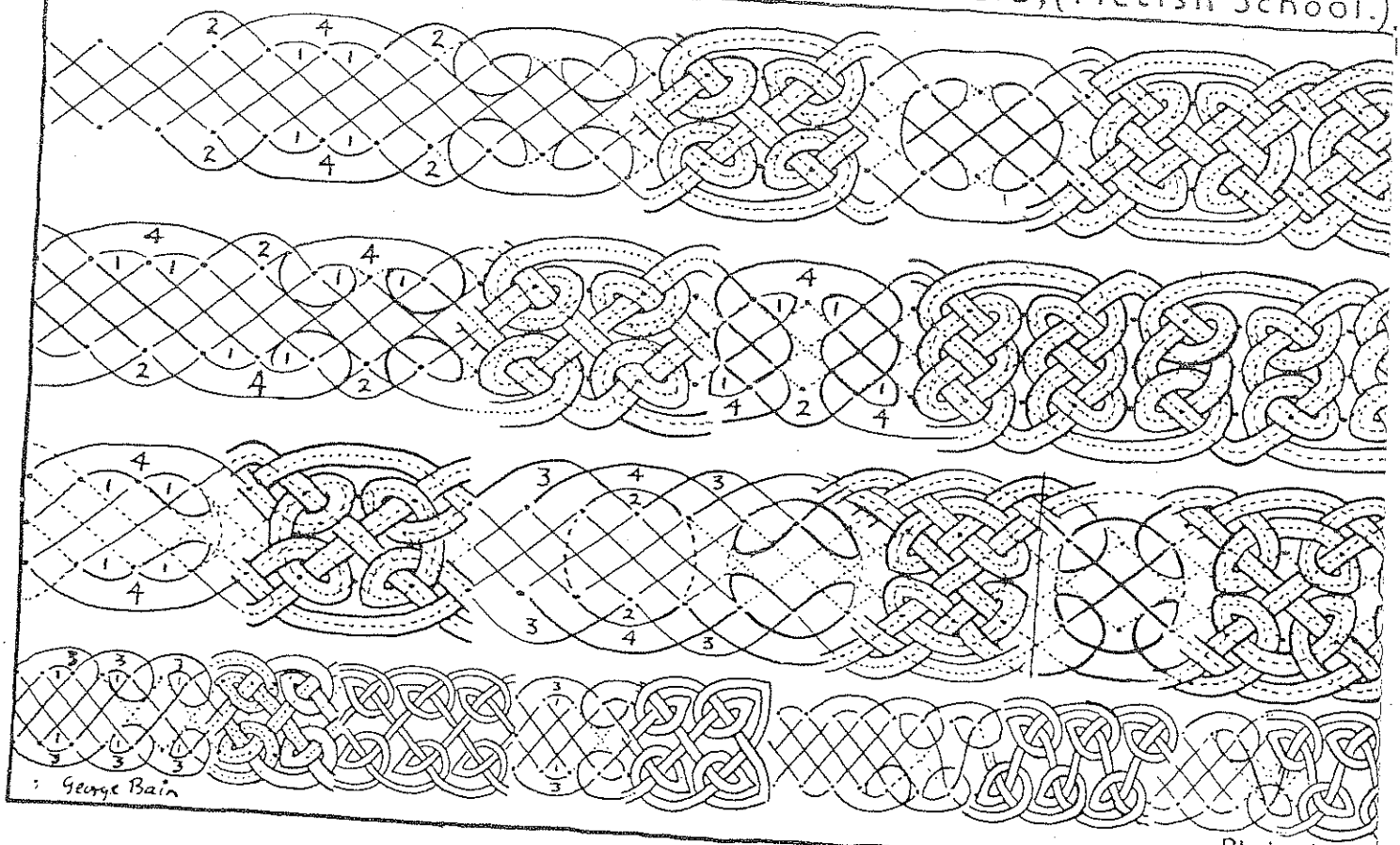
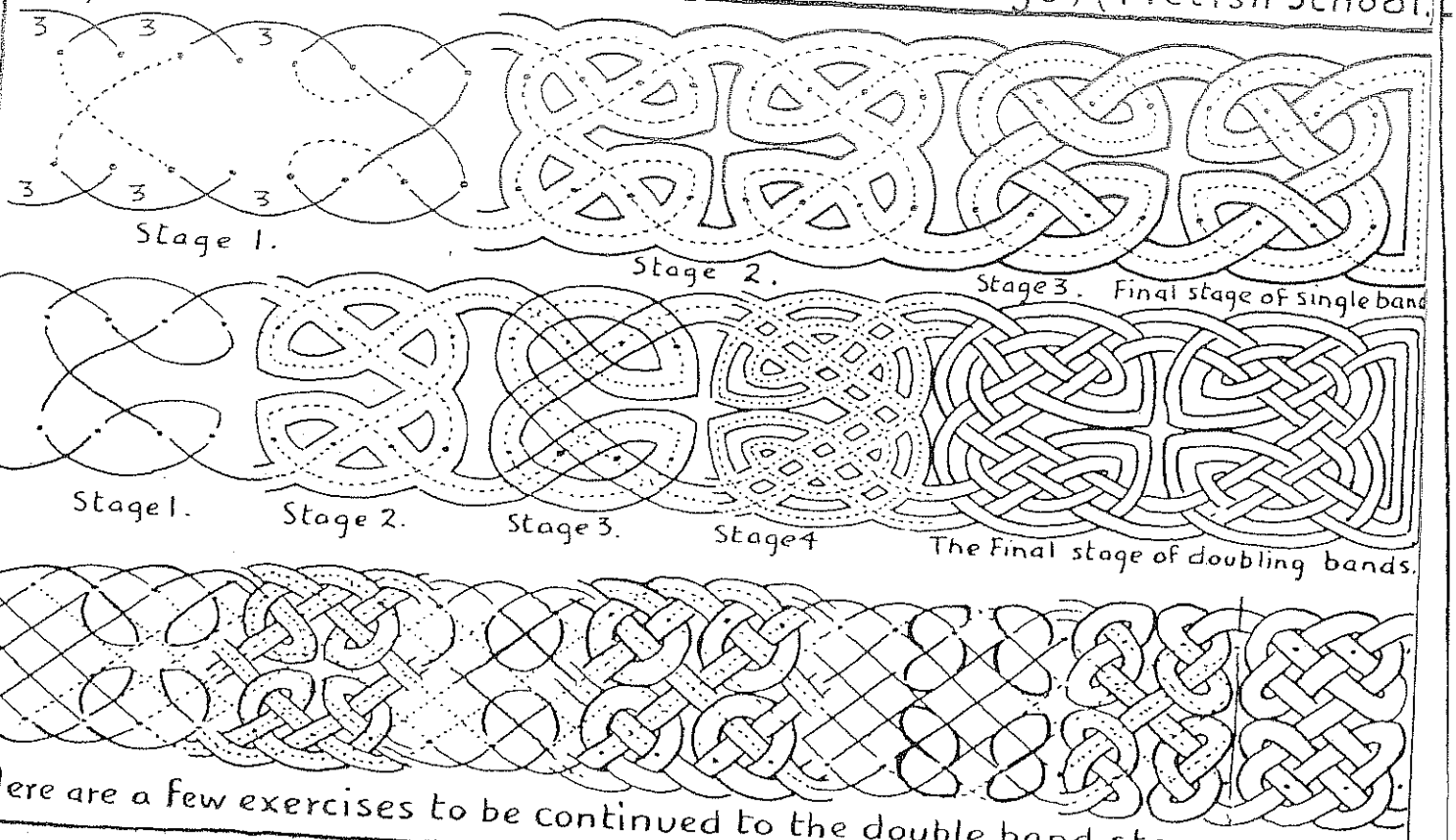


Plate 11.

The Method for doubling Celtic Interlacings, (Pictish School.)

George Bain



Here are a few exercises to be continued to the double band stage. Plate 12.

e methods of mitring Celtic Knotwork Borders, (Pictish School.)

tring may be done by a reversed action turnover at 45° or any angle. Adjustments will be required.

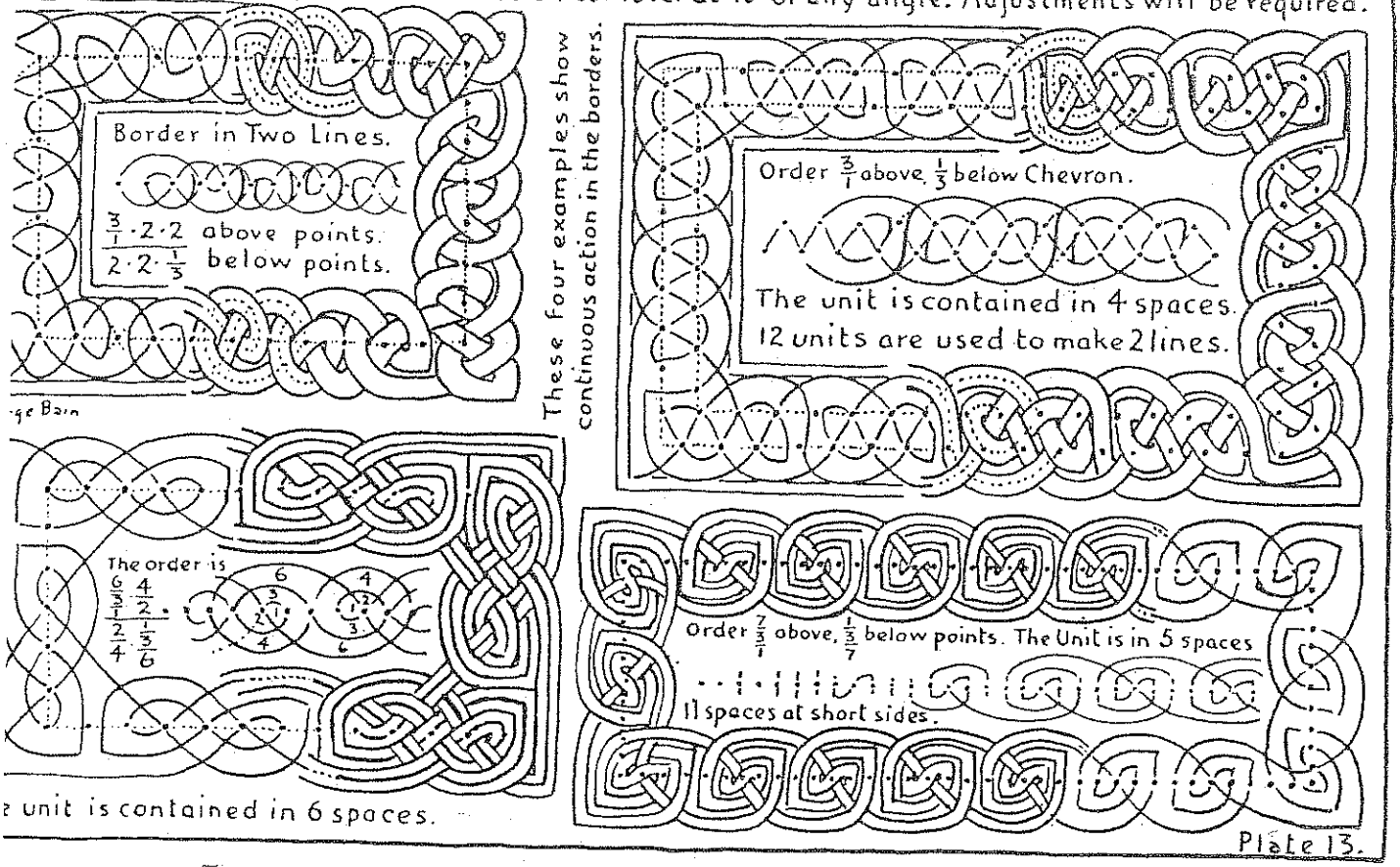


Plate 13.

e methods of mitring Celtic Knotwork Borders. (Pictish School.)

George Bain.

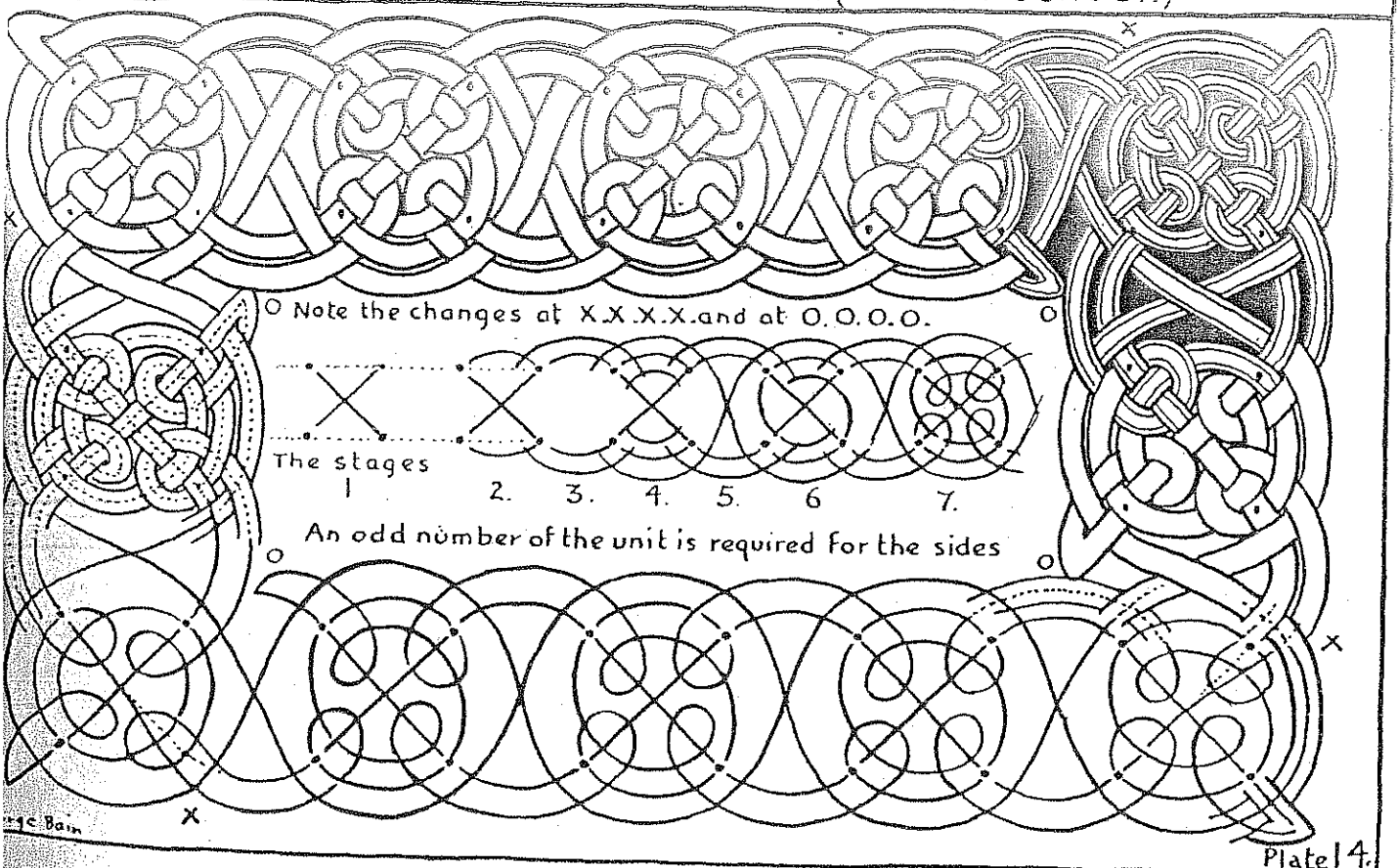


Plate 14.

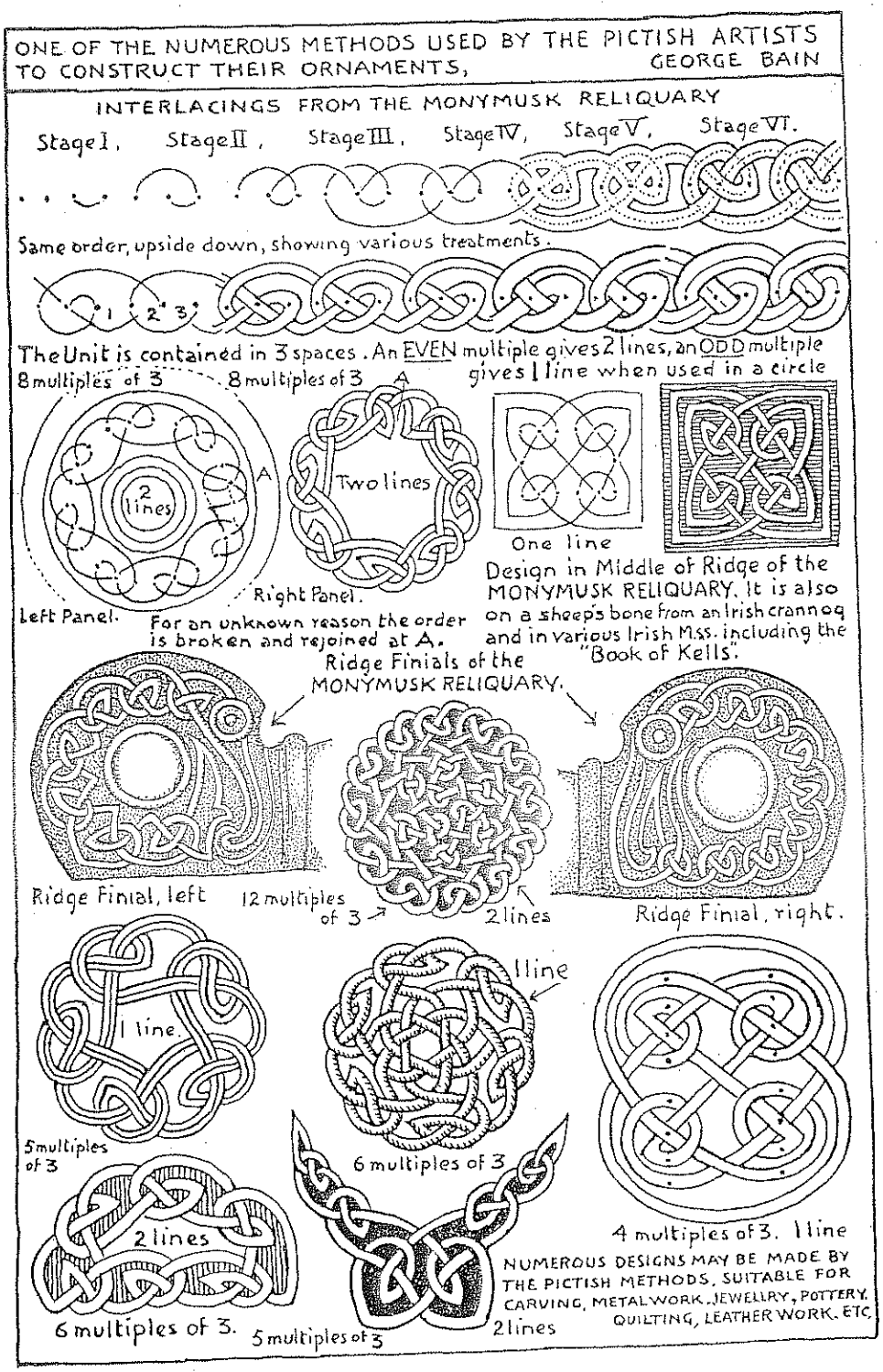

ONE OF THE NUMEROUS METHODS USED BY THE PICTISH ARTISTS TO CONSTRUCT THEIR ORNAMENTS,
GEORGE BAIN
INTERLACINGS FROM THE MONYMUSK RELIQUARY
Stage I, Stage II, Stage III, Stage IV, Stage V, Stage VI.
Same order, upside down, showing various treatments.
1 2 3
The Unit is contained in 3 spaces. An EVEN multiple gives 2 lines, an ODD multiple gives 1 line when used in a circle
8 multiples of 3
8 multiples of 3
A
2 lines
A
Two lines
One line
Left Panel.
Right Panel.
For an unknown reason the order is broken and rejoined at A.
Design in Middle of Ridge of the MONYMUSK RELIQUARY. It is also on a sheep's bone from an Irish crannog and in various Irish MSS. including the "Book of Kells".
Ridge Finials of the MONYMUSK RELIQUARY.
Ridge Finial, left
12 multiples of 3
2 lines
Ridge Finial, right.
1 line.
5 multiples of 3
1 line
6 multiples of 3
4 multiples of 3. 1 line
2 lines
6 multiples of 3.
5 multiples of 3
2 lines
NUMEROUS DESIGNS MAY BE MADE BY THE PICTISH METHODS, SUITABLE FOR CARVING, METAL WORK, JEWELLRY, POTTERY, QUILTING, LEATHER WORK, ETC.

Plate C

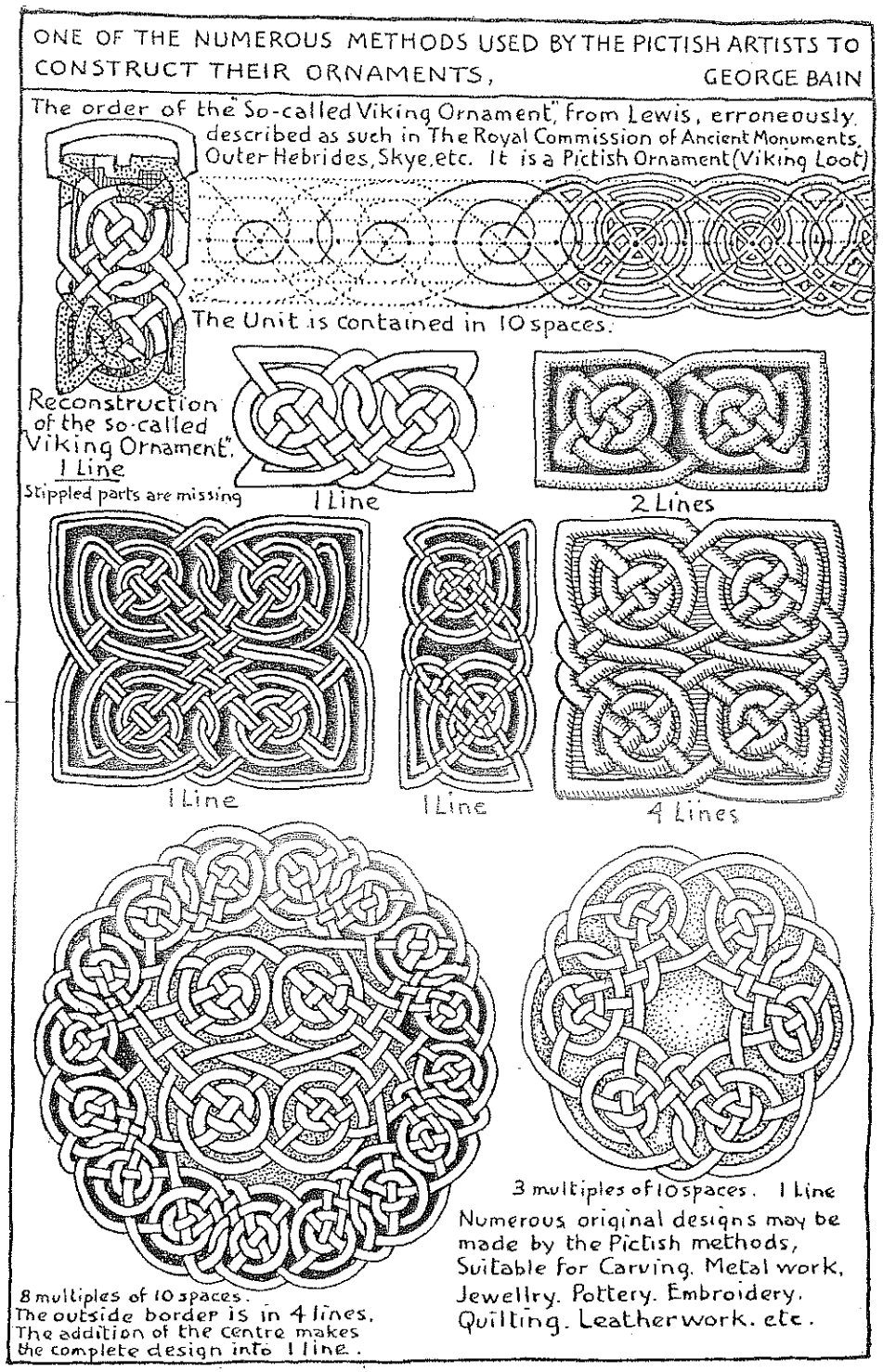

ONE OF THE NUMEROUS METHODS USED BY THE PICTISH ARTISTS TO CONSTRUCT THEIR ORNAMENTS,
GEORGE BAIN
The order of the "So-called Viking Ornament" from Lewis, erroneously described as such in The Royal Commission of Ancient Monuments, Outer Hebrides, Skye, etc. It is a Pictish Ornament (Viking Loot)
The Unit is contained in 10 spaces.
Reconstruction of the so-called "Viking Ornament".
1 Line
Stippled parts are missing
1 Line
2 Lines
1 Line
1 Line
4 Lines
8 multiples of 10 spaces.
The outside border is in 4 lines.
The addition of the centre makes the complete design into 1 line.
3 multiples of 10 spaces. 1 Line
Numerous original designs may be made by the Pictish methods, Suitable for Carving. Metal work, Jewellry. Pottery. Embroidery. Quilting. Leatherwork. etc.

Plate D

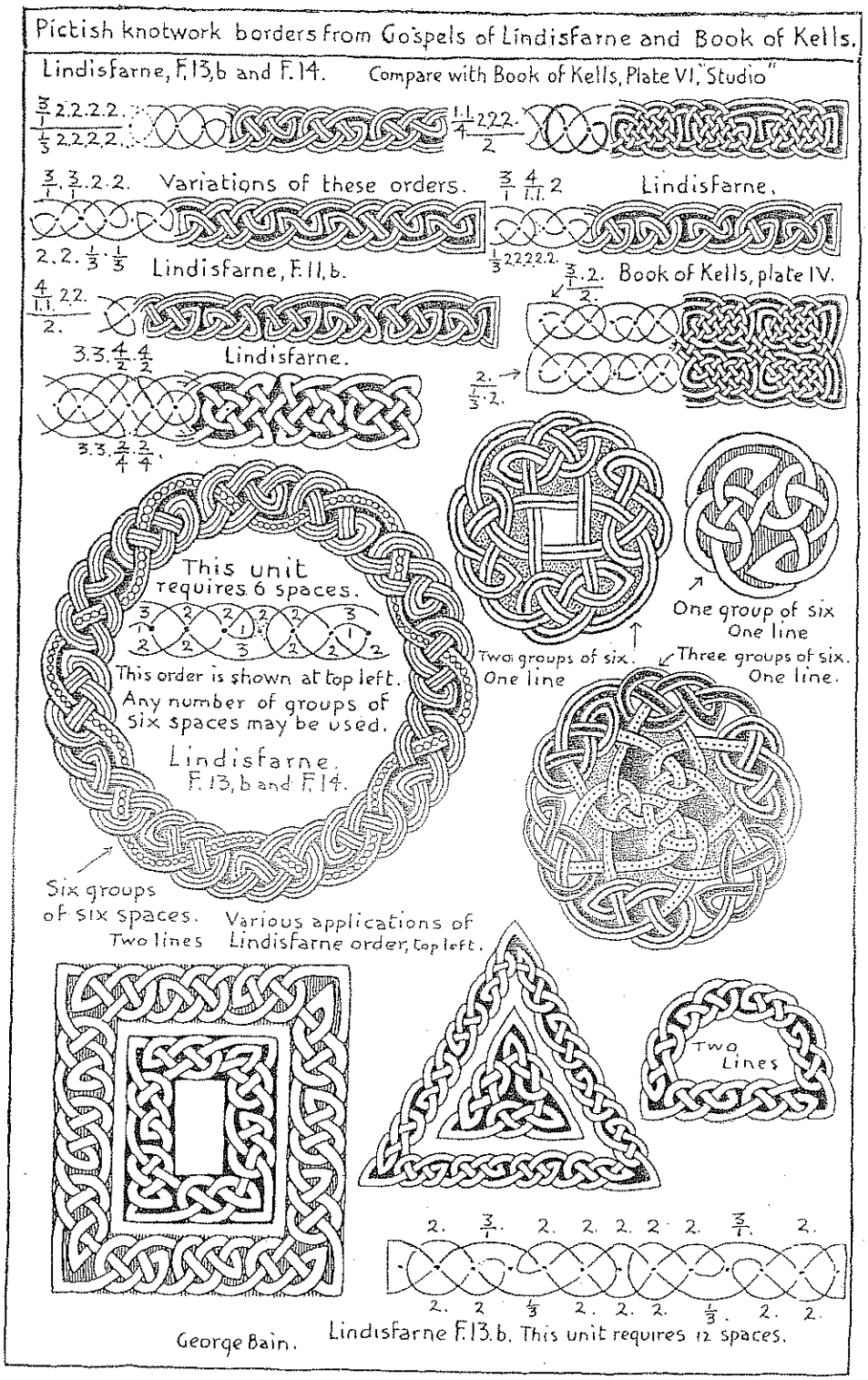

Pictish knotwork borders from Gospels of Lindisfarne and Book of Kells.
Lindisfarne, F.13,b and F.14. Compare with Book of Kells, Plate VI, "Studio"
Variations of these orders.
Lindisfarne.
Lindisfarne, F.11,b.
Book of Kells, plate IV.
Lindisfarne.
This unit requires 6 spaces.
This order is shown at top left.
Any number of groups of six spaces may be used.
Lindisfarne. F.13,b and F.14.
Six groups of six spaces. Two lines
Two groups of six. One line
One group of six One line
Three groups of six. One line.
Various applications of Lindisfarne order, top left.
Two Lines
George Bain.
Lindisfarne F.13.b. This unit requires 12 spaces.

Plate E

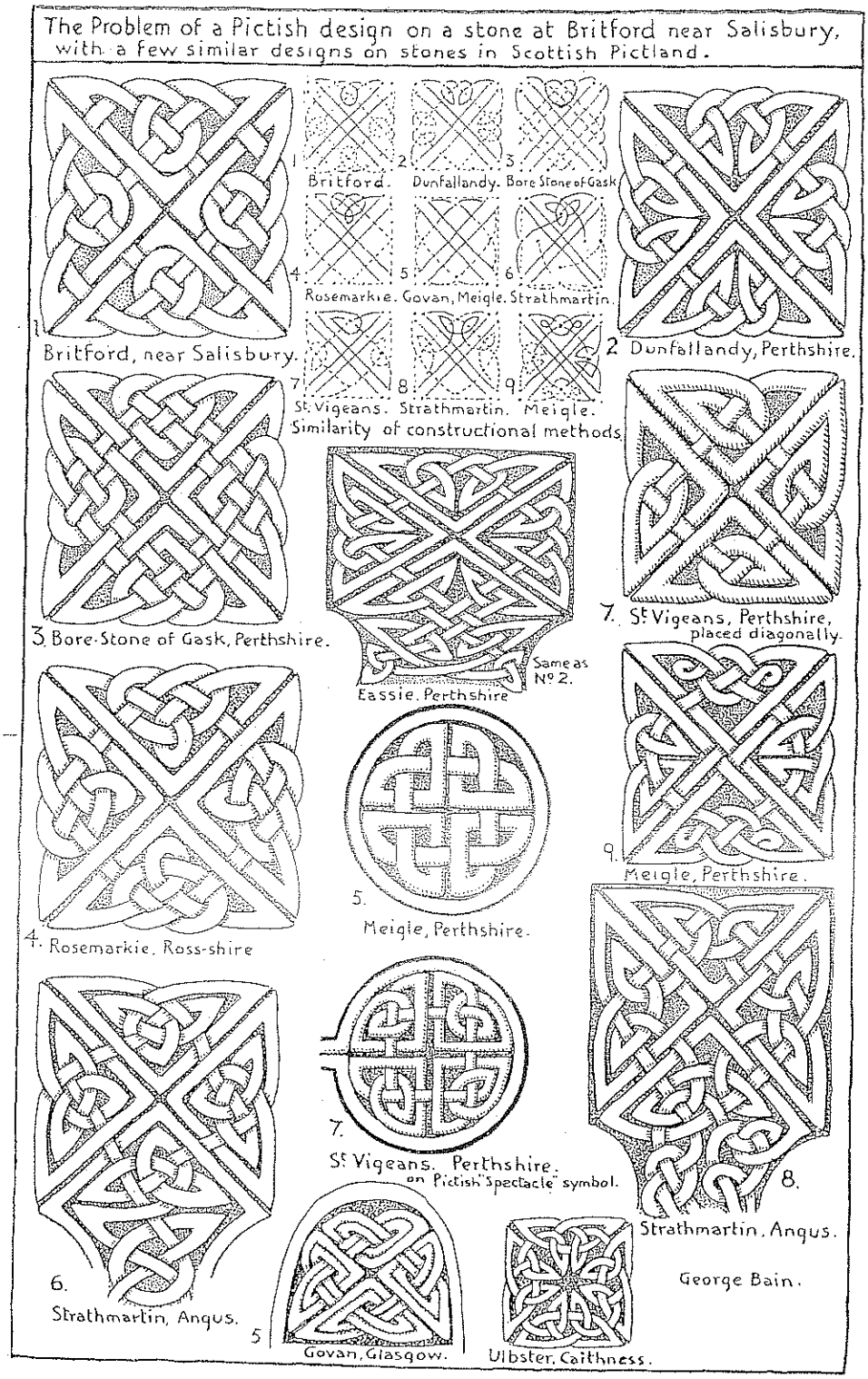

The Problem of a Pictish design on a stone at Britford near Salisbury, with a few similar designs on stones in Scottish Pictland.
1
2
3
Britford.
Dunfallandy.
Bore Stone of Gask
4
5
6
Rosemarkie.
Govan, Meigle.
Strathmartin.
7
8
9
St Vigeans.
Strathmartin.
Meigle.
Similarity of constructional methods
1 Britford, near Salisbury.
2 Dunfallandy, Perthshire.
3 Bore-Stone of Gask, Perthshire.
Same as No 2.
Eassie, Perthshire
7. St Vigeans, Perthshire, placed diagonally.
9. Meigle, Perthshire.
4. Rosemarkie, Ross-shire
5. Meigle, Perthshire.
7. St Vigeans, Perthshire, on Pictish "Spectacle" symbol.
8. Strathmartin, Angus.
6. Strathmartin, Angus.
5 Govan, Glasgow.
Ulbster, Caithness.
George Bain.

Plate F

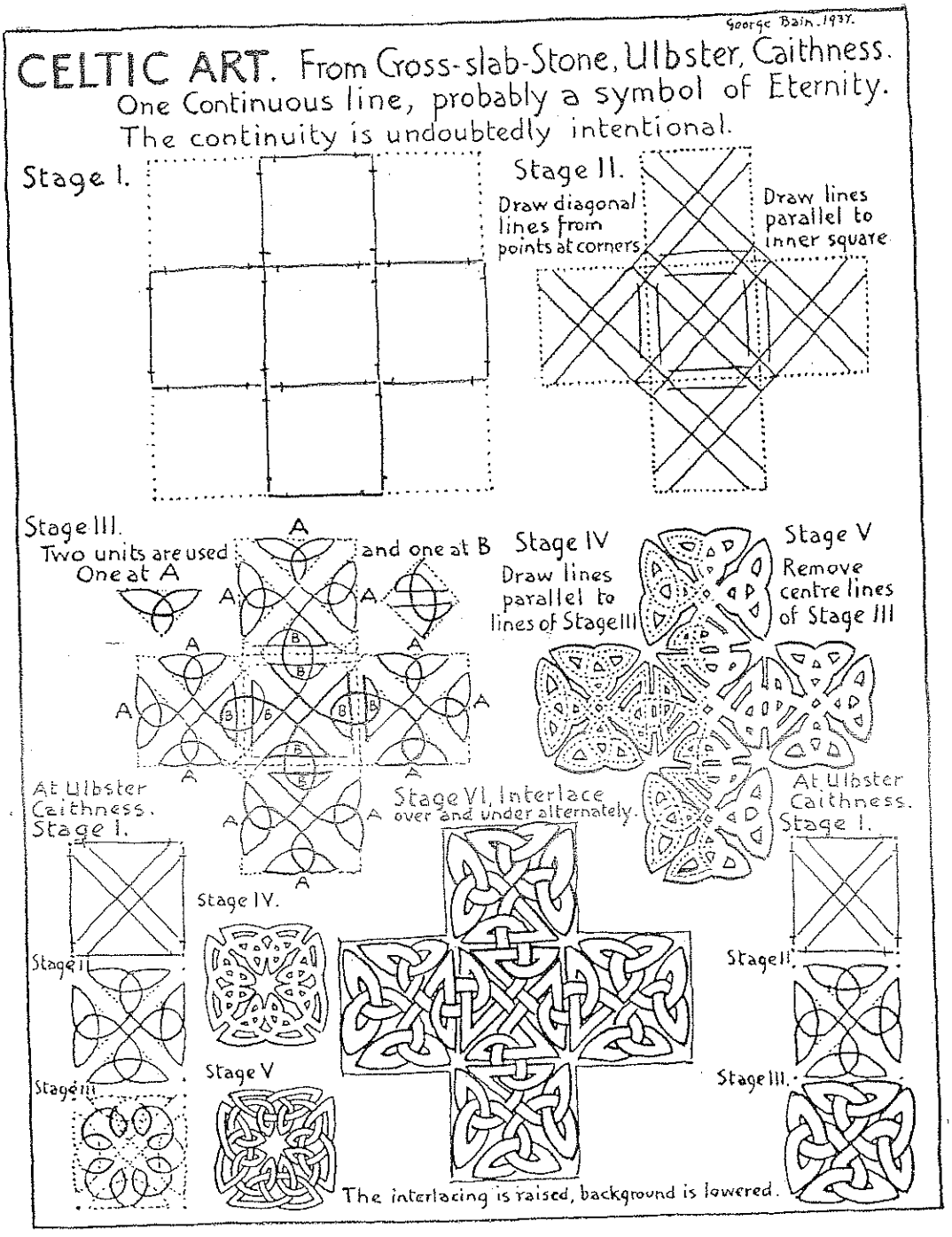

George Bain. 1937.
CELTIC ART. From Cross-slab-Stone, Ulbster, Caithness.
One Continuous line, probably a symbol of Eternity.
The continuity is undoubtedly intentional.
Stage I.
Stage II.
Draw diagonal lines from points at corners
Draw lines parallel to inner square
Stage III.
Two units are used
One at A
and one at B
Stage IV
Draw lines parallel to lines of Stage III
Stage V
Remove centre lines of Stage III
At Ulbster Caithness. Stage I.
Stage VI, Interlace over and under alternately.
At Ulbster Caithness. Stage I.
Stage II.
Stage III.
Stage IV.
Stage V
The interlacing is raised, background is lowered.

Plate G

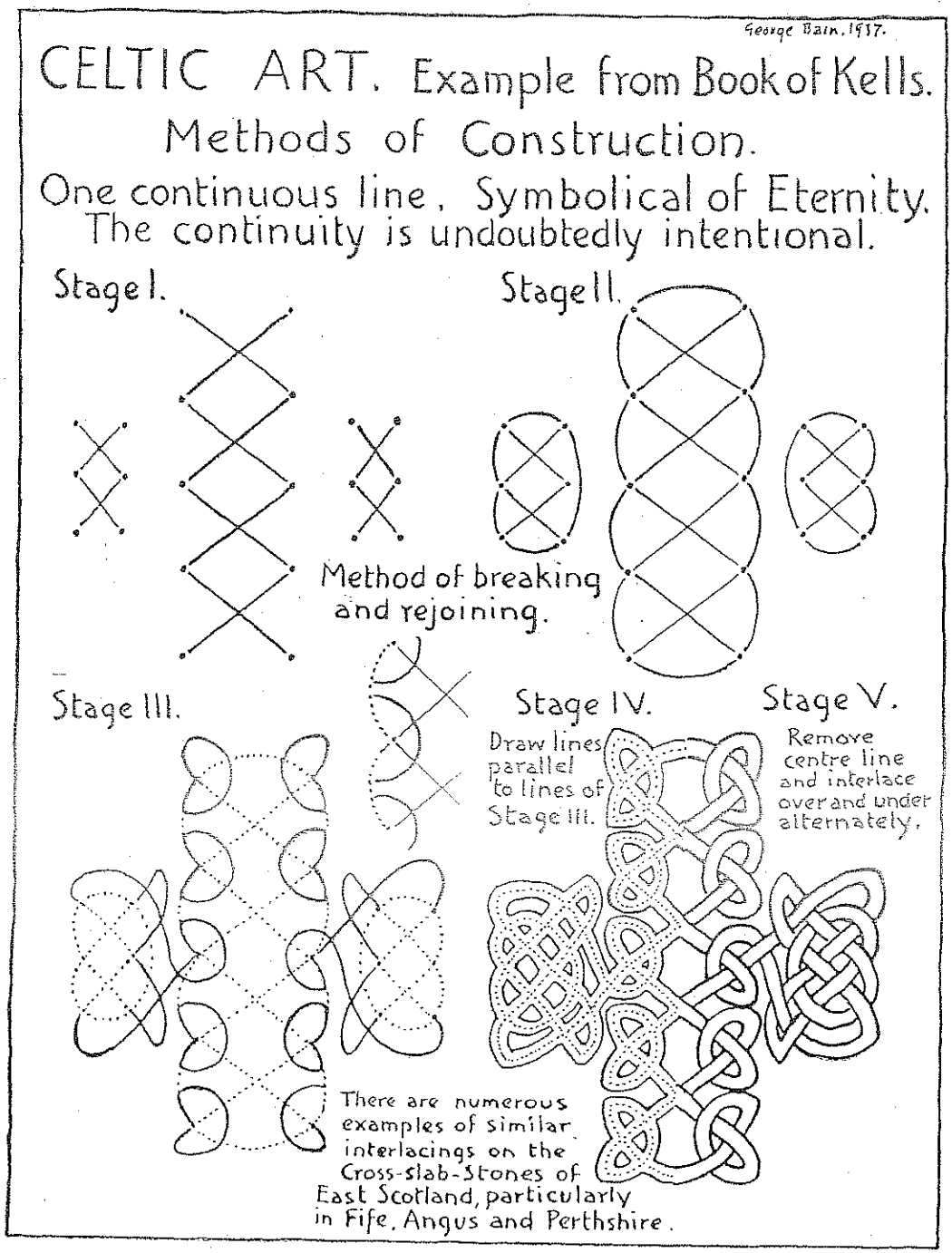

George Bain. 1937.
CELTIC ART. Example from Book of Kells.
Methods of Construction.
One continuous line. Symbolical of Eternity.
The continuity is undoubtedly intentional.
Stage I.
Stage II.
Method of breaking and rejoining.
Stage III.
Stage IV.
Draw lines parallel to lines of Stage III.
Stage V.
Remove centre line and interlace over and under alternately.
There are numerous examples of similar interlacings on the Cross-slab-Stones of East Scotland, particularly in Fife, Angus and Perthshire.

Plate H

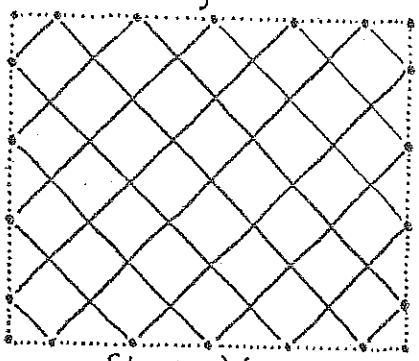
Methods of Construction for Simple Celtic Knotwork Panels, (Pictish School.)

Pictish Panels, the proportion of the lay-out is not rectangular, it is lozenge ◇ or ◇ 1 by $\frac{4}{3}$.

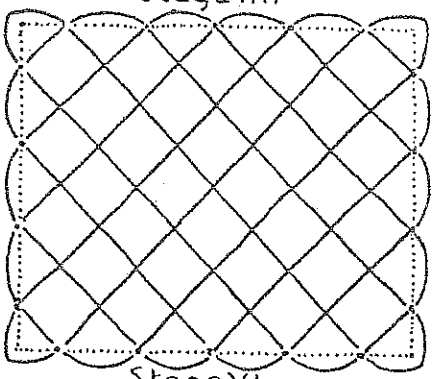
Stage I.

Numbers with no common factor produce an endless line when used with half-sizes at the four corners. Example, Top and bottom, 4 and 2 halves. Sides, 3 and 2 halves.
Eoghan Carmichael, son of Dr. A. Carmichael, first discovered that the Pictish artists used this method to produce a continuous line.
J. Romilly Allen first discovered that knotwork was based on Plaiting. It took him 20 years research to do this.

Stage II.

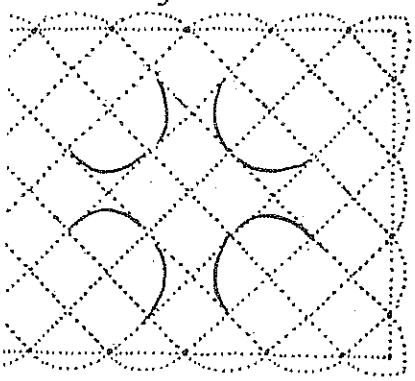


Stage III.

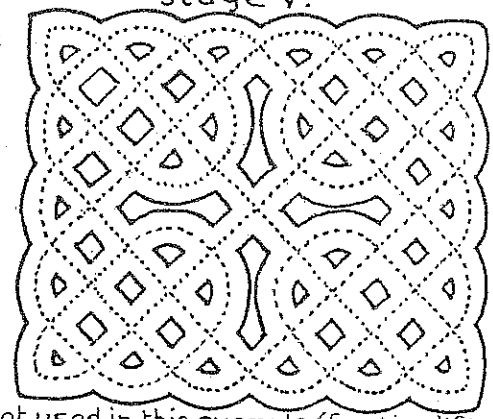


George Bain.

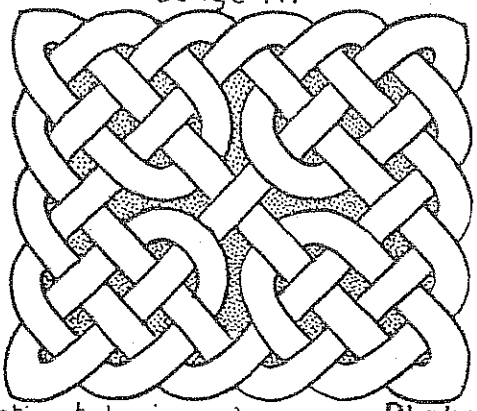
Stage IV.



Stage V.



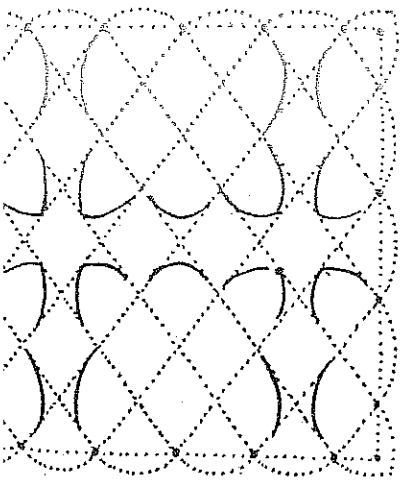
Stage VI.

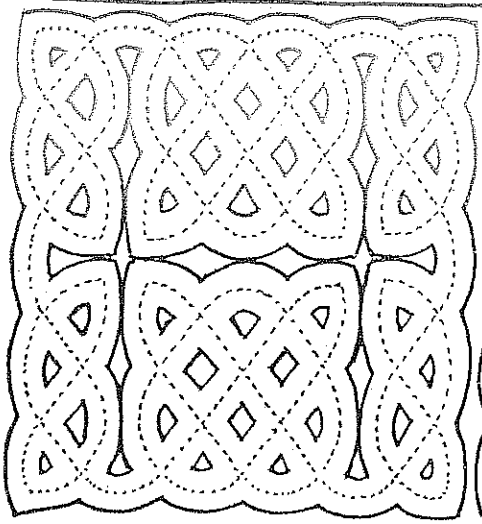


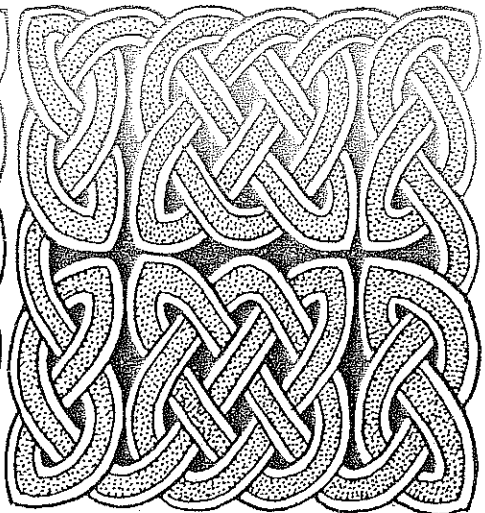
Pictish Proportions 1. by $\frac{3}{4}$ are not used in this example (for simplification to beginners).

Plate 1.

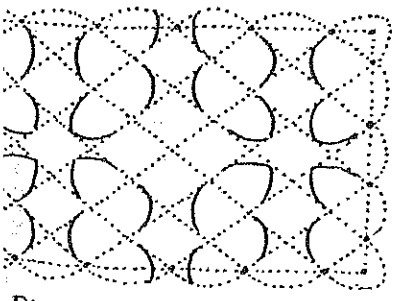
Methods of Construction for Simple Celtic Knotwork Panels (Pictish School).

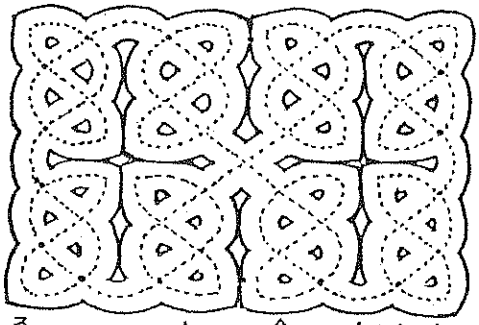


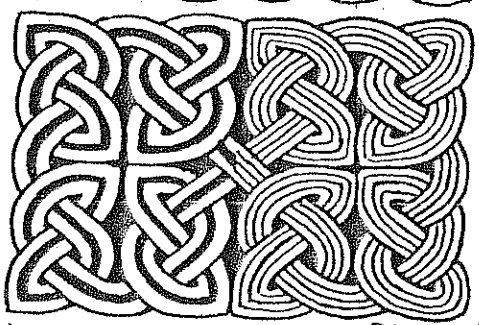




George Bain







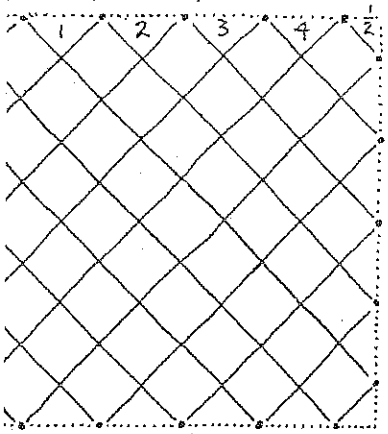
Pictish Proportions 1. by $\frac{3}{4}$ are used, as ◇ and ◇ in these examples

Plate 2.

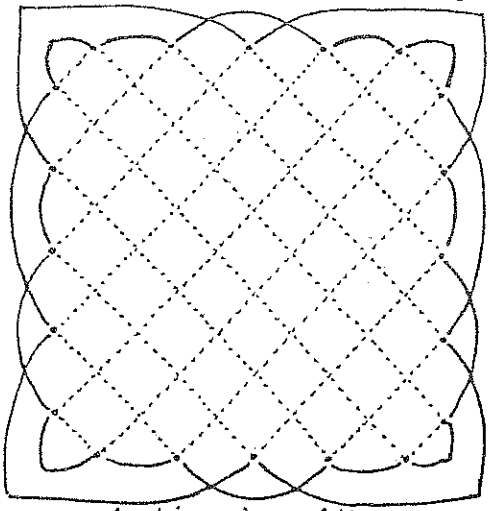
example of an exception to the methods of Plates 1 and 2, Celtic Interlacing Panels.

m the Book of Kells, Studio Publication, Plate IX. The actual size of the side of the square is $\frac{3}{8}$ of inch

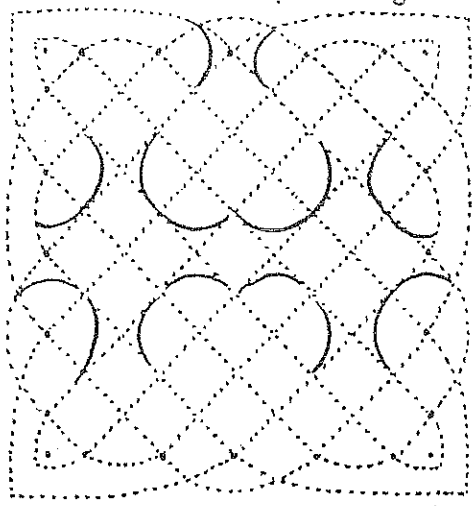
ge 1. 4 spaces $\frac{1}{2}$ spaces at corners.



This gives 5 lines.

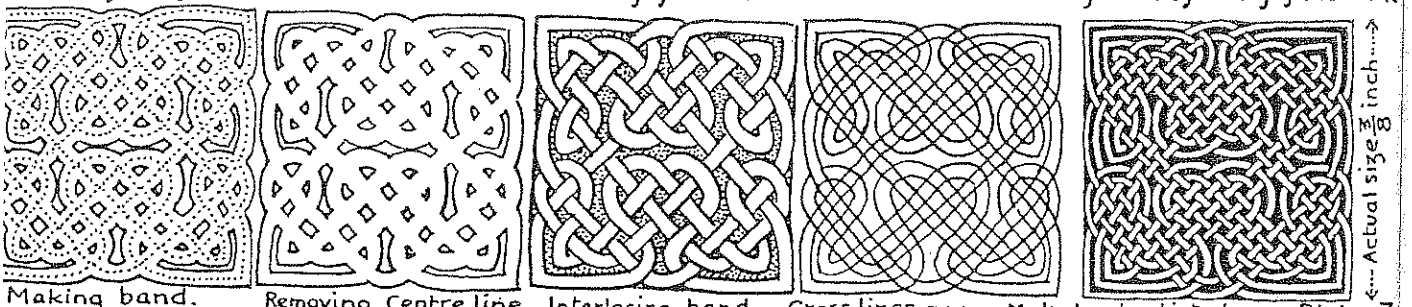


Arching gives 4 lines



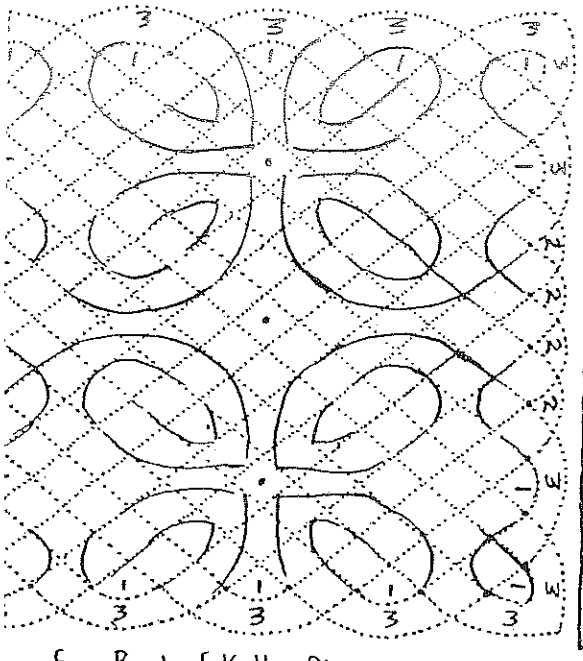
The breaking and re joining gives 1 line

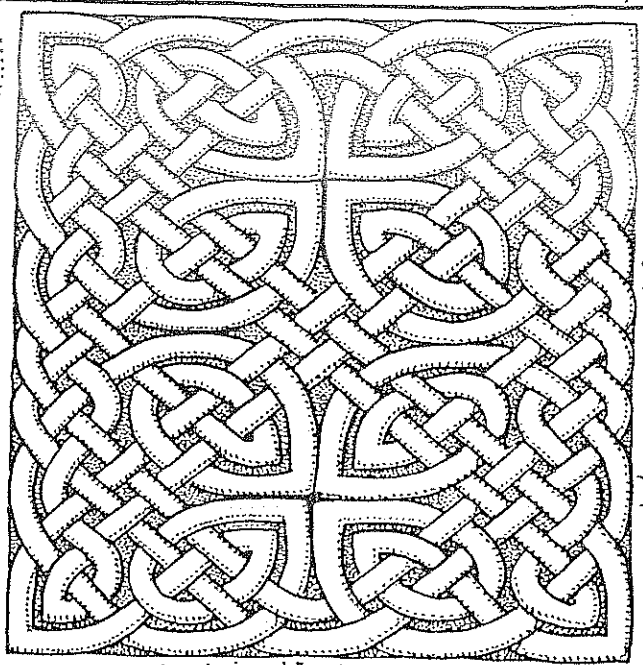
remaining stages are shown below.



Making band. Removing Centre line Interlacing band. Cross lines again, Make band and interlace. Plate 3.

example of "continuity" from the St. Madoes Stone, Perthshire, in Pictish proportions.

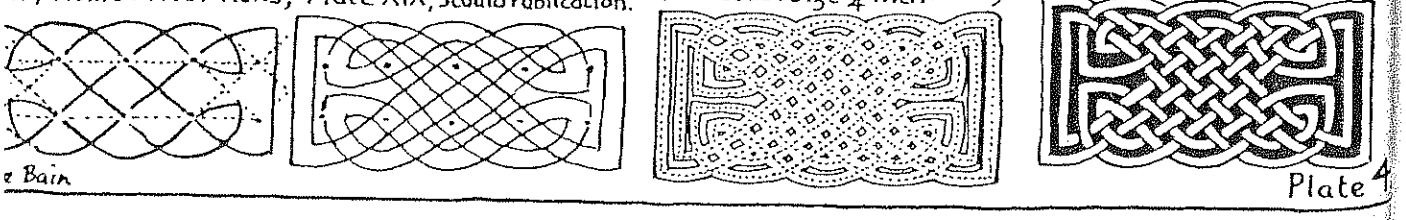




The student will be able to do the stages (shown in Plate 3) in this design and will appreciate the great skill, taste and inventiveness of the Pictish artist who successfully completed the problem of making the line a continuous one.

The spaces are
Top and bottom
$\frac{1}{2} \cdot 7 \cdot \frac{1}{2}$.
Sides $\frac{1}{2} \cdot 9 \cdot \frac{1}{2}$

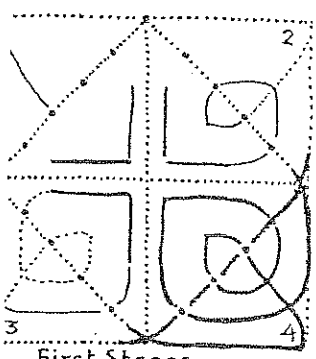
w, From Book of Kells, Plate XIX, Studio Publication.



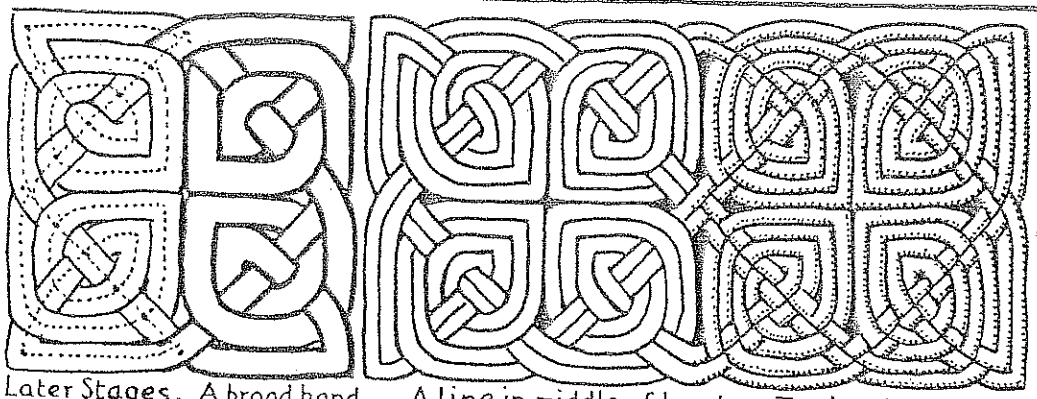
e Bain

Plate 4

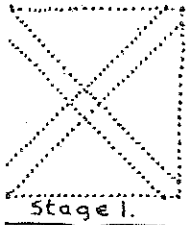
ew of the numerous Methods used by Pictish Artists for Simple Knotwork Panels.

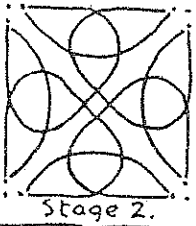


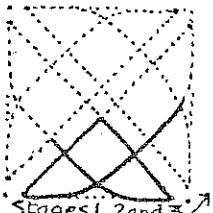
First Stages.

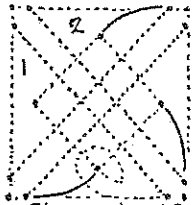

Later Stages. A broad band, A line in middle of band, Two bands.

George Bain

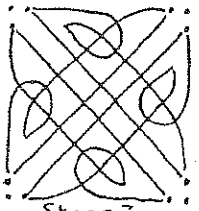

Stage 1.

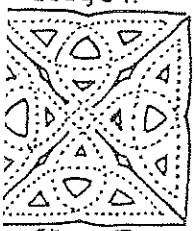

Stage 2.


Stages 1. 2 and 3.



Stages 1 and 2.


Stage 3.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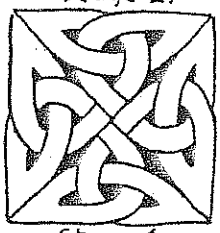
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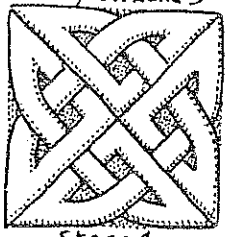
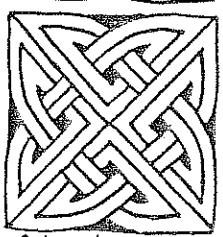

Stage 4.


A treatment.

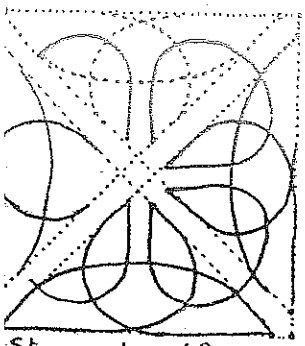
Stages 4 and 5.

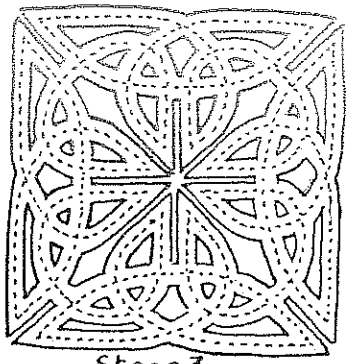
Multiples of these may be used to make large rectangular panels. The example on the top right shows how to join them together.

Plate 5.

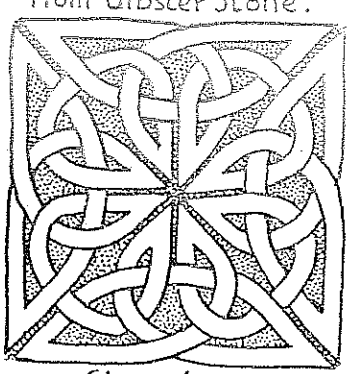
xample From "Ulbster Stone, Caithness, and one from "Strathmartin Stone", Angus.

n the "Ulbster Stone".

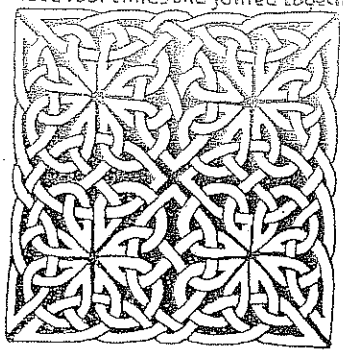

Stages 1 and 2.

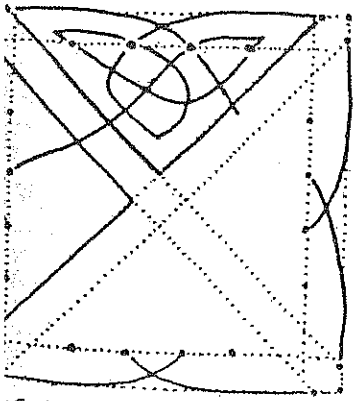

Stage 3.

From Ulbster Stone".

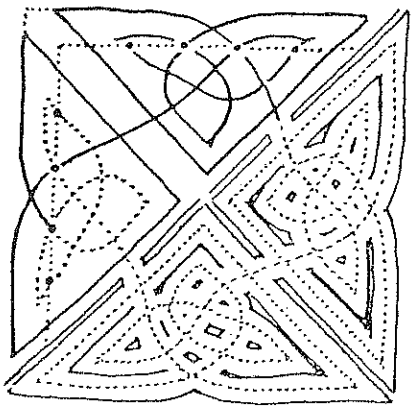

Stage 4.

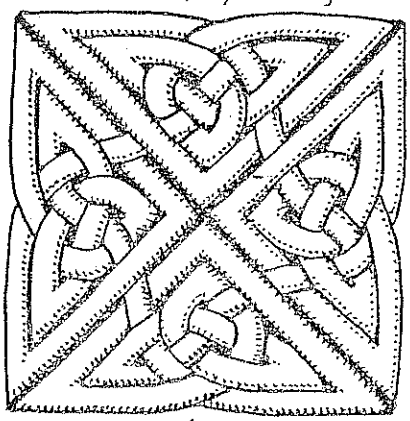
This is the Ulbster Stone design used four times and joined together


This is in 2 lines, try to change to 1 line.


Stages 1 and 2.

From the Strathmartin stone.


Stages 2 and 3.


Stage 4.

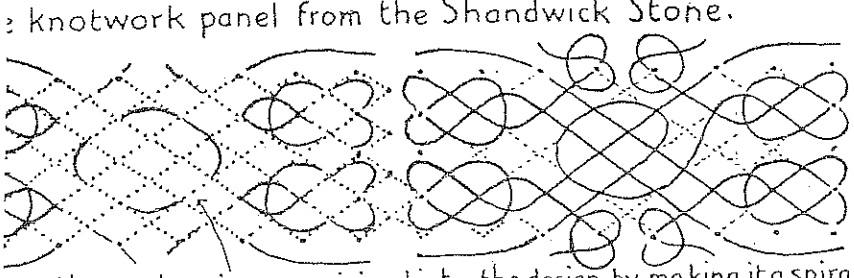
George Bain

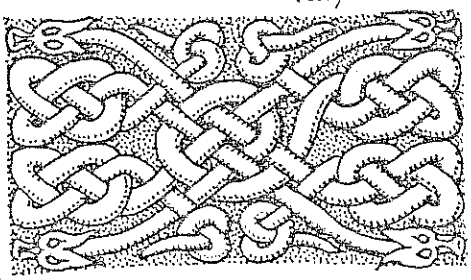
Plate 6.

ethods of Construction for Celtic Knotwork Panels of the Pictish School.

e knotwork panel from the "Shandwick Stone".

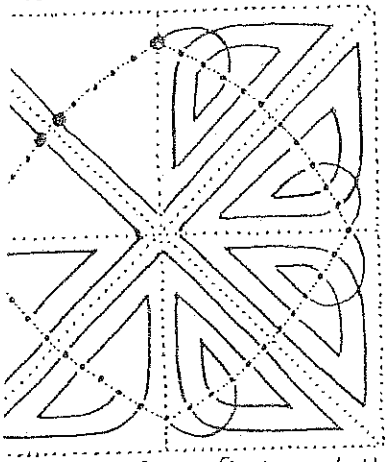
George Bain.

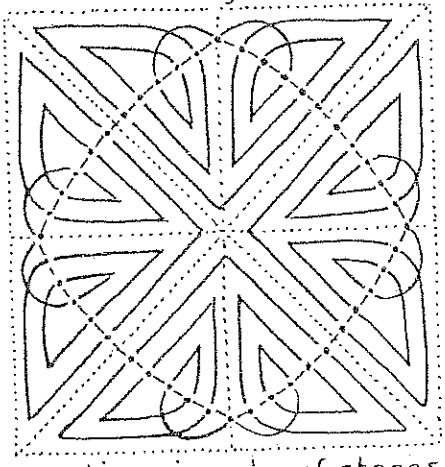


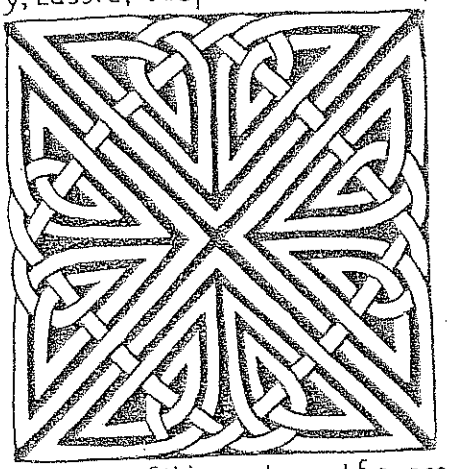


ow the centre ring was joined into the design by making it a spiral.

curved line into 11 spaces. Lindisfarne, St. Vigeans, Dunfallandy, Eassie, Gospels of Mc. Durnan, etc







ne curved lines, first mark the
e points, then the smaller ones.

Continue in order of stages
as shown in previous plates.

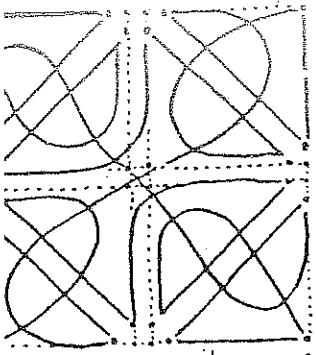
Multiples of this may be used for a panel

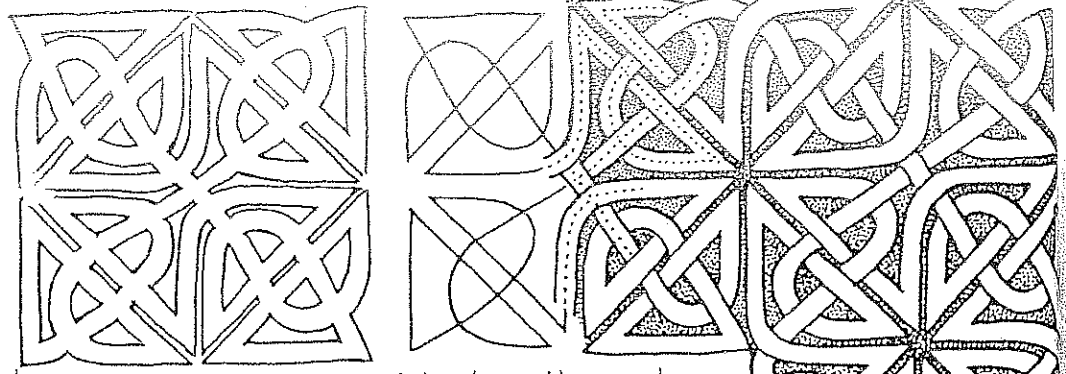
Plate 7.

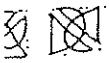
Methods of Construction for Celtic Knotwork Panels of the Pictish School

Book of Lindisfarne and Ulbster Stone, Caithness.

George Bain

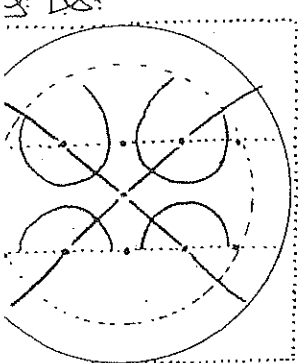


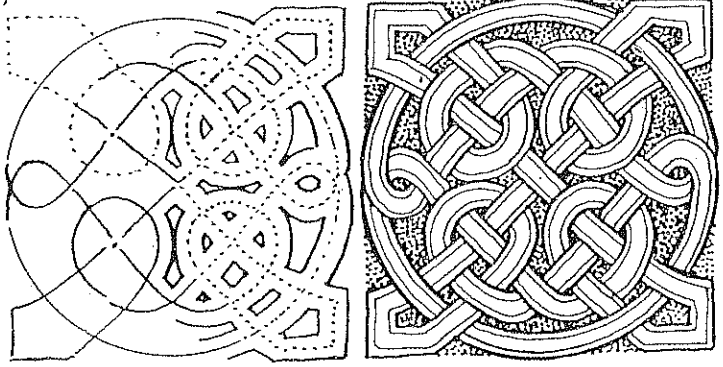


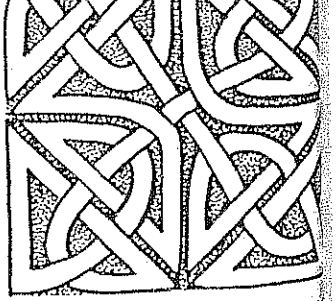


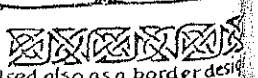
Two units are used
in the above design

Multiples of them may be joined together as shown.









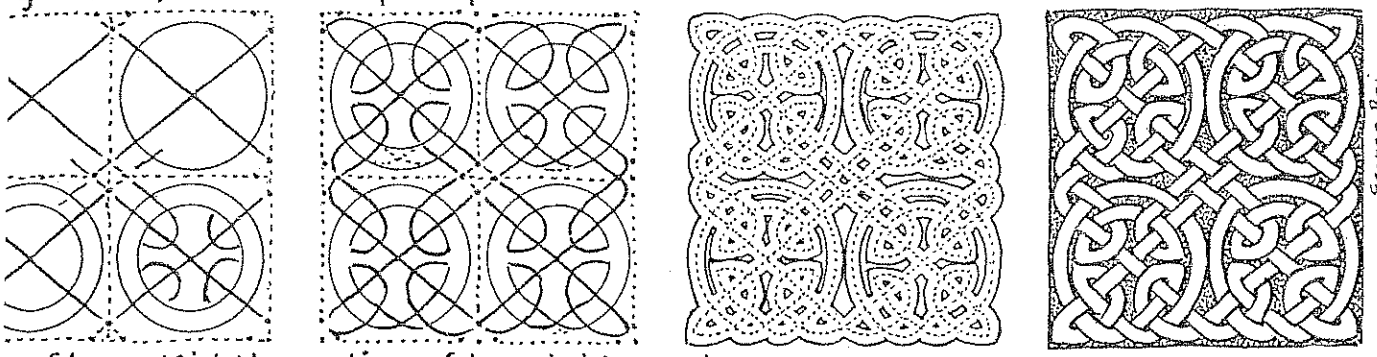
Used also as a border design

is unit is used on the
ieburn", Sutherland, and the "Glammis", Angus, stones. Multiples may be joined.

Plate 8.

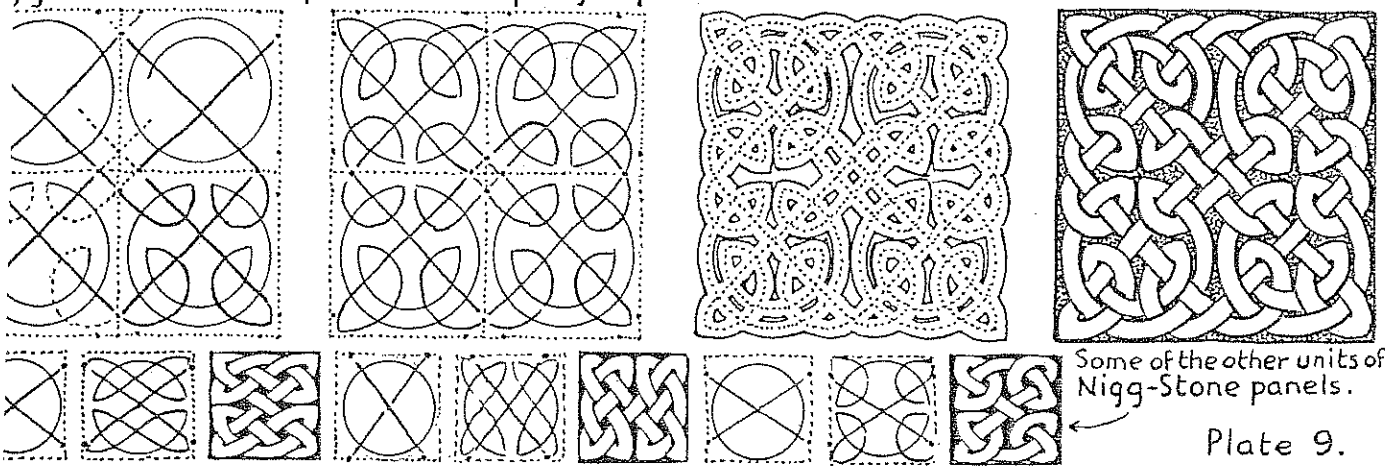
Methods of Construction of Pictish Knotwork Panels, Nigg Stone, Ross-shire

g Stone, Portion of top left panel.



George Bain

jg Stone, Middle portion of top right panel.

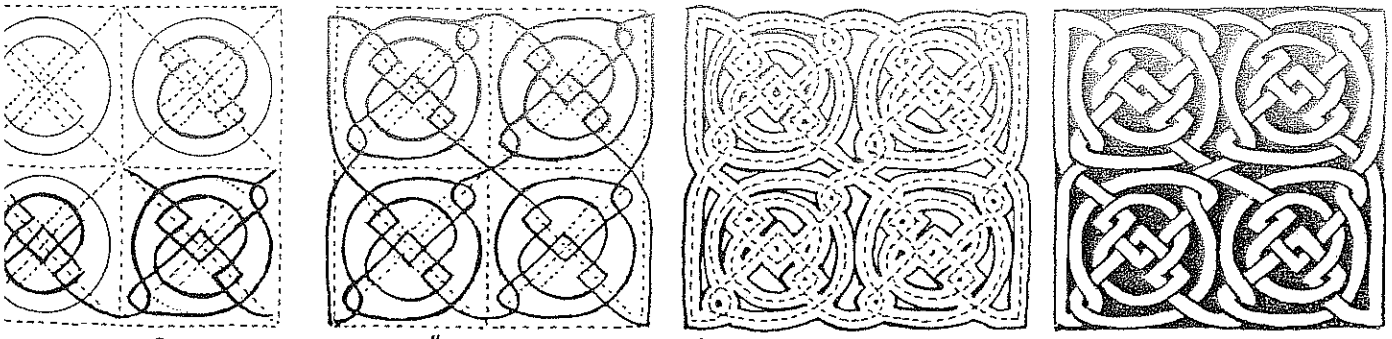


Some of the other units of Nigg-Stone panels.

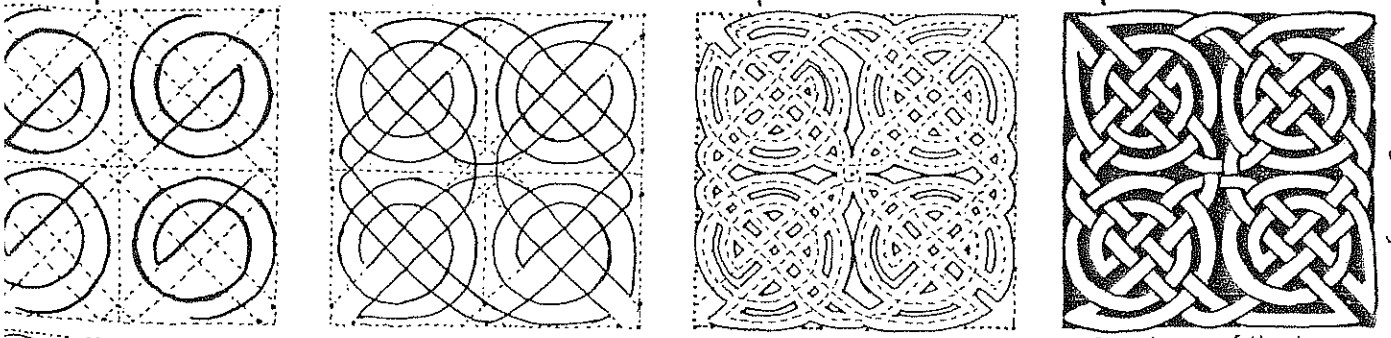
Plate 9.

e Methods of Construction of the Irish-Pictish School of Celtic Knotwork.

example from a border in the "Book of Durrow". The unit is used to fill a panel in one line.



example from a border in the "Book of Durrow." A portion is used to fill a panel in one line.



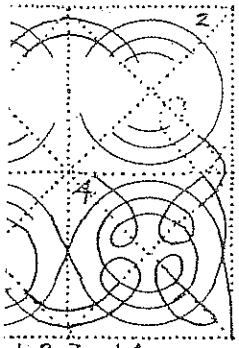
George Bain

The stages of the two units as borders are shown on left bottom.

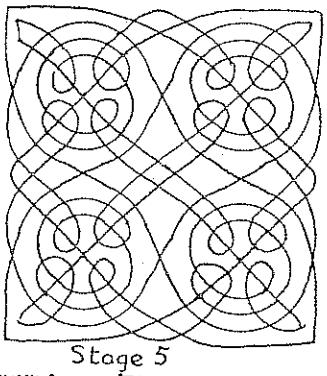
Plate 10.

thods of Knotwork Construction of the Irish-Pictish School of Celtic Art.

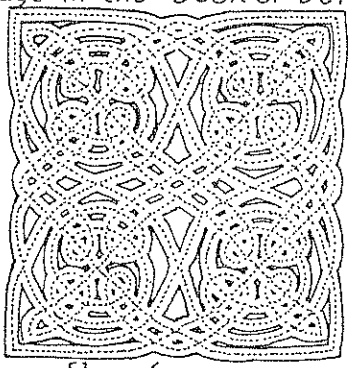
el is made from the unit of a border of a page in the "Book of Durrow". It is in one line.



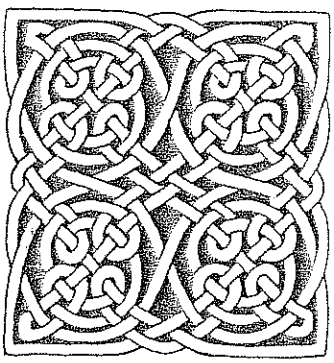
1, 2, 3 and 4.

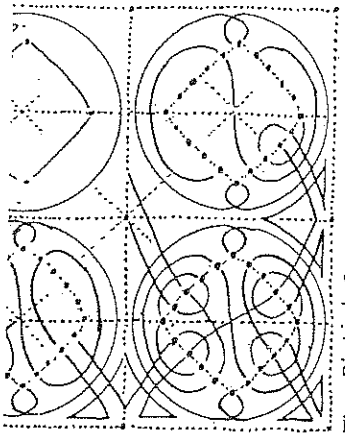


Stage 5

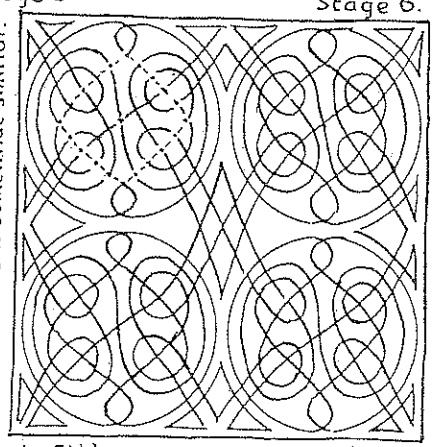


Stage 6.

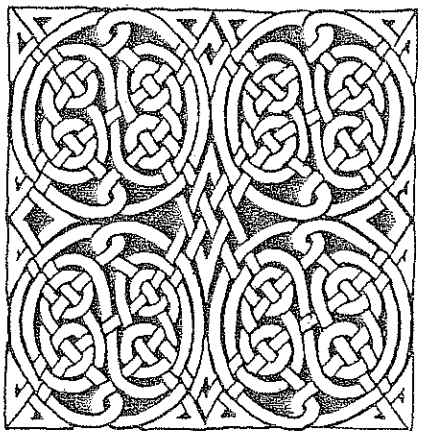




The Pictish Stone at Collieburn, Sutherlandshire is somewhat similar.



The next stage of the method of construction is as above →

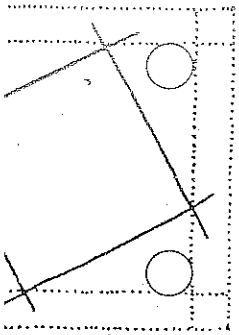


George Bain

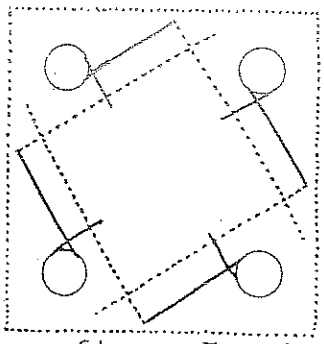
s a portion of a panel which fills a page of the "Book of Durrow". Plate 11.

Methods of Knotwork Construction of the Irish-Pictish School of Celtic Art

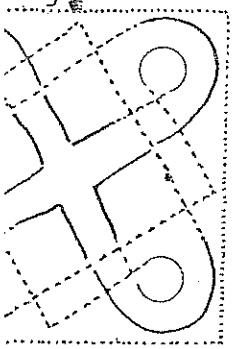
From the "Book of Durrow. It is a good example of an intentional continuous line.



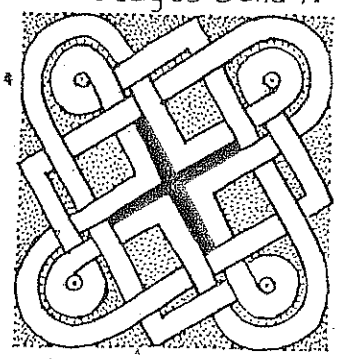
tages 1 and 2.



Stages 3 and 4.

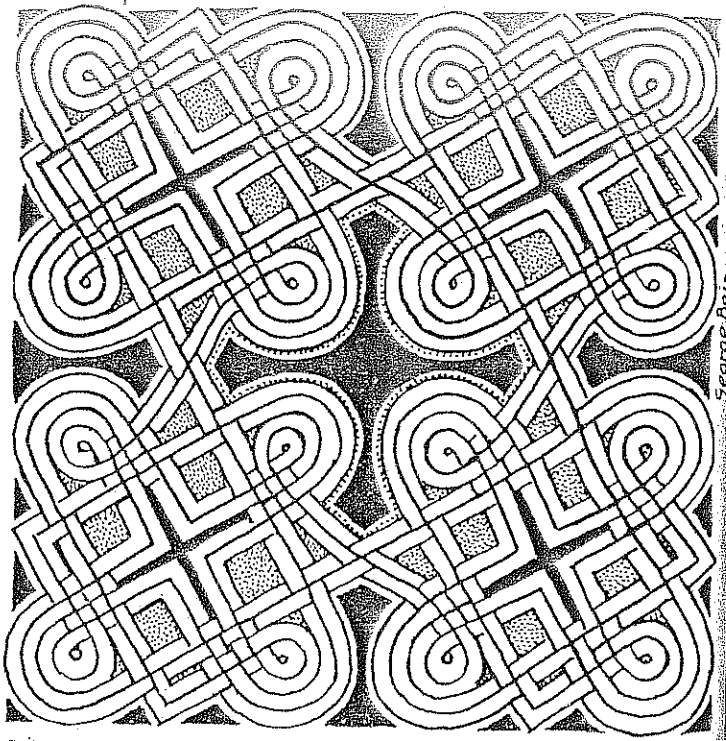


es 5 to 8



Stages 9 and 10

its may be joined as shown here

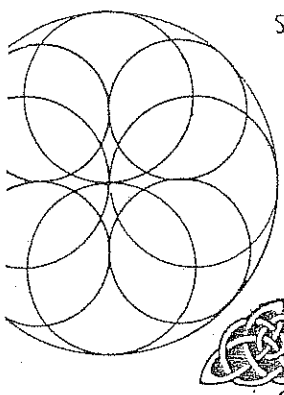


George Bain

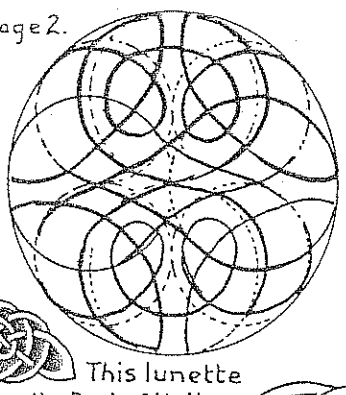
The Irish-Pictish Designer seems to have used this design to embellish the Cross Symbol.

Plate 12.

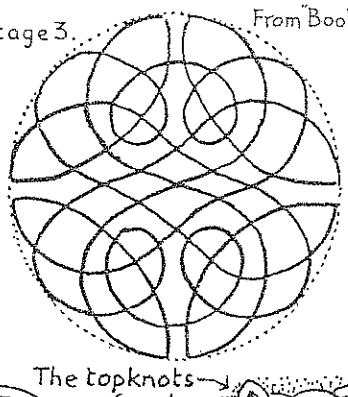
Methods of Construction for Knotwork in Circular Panels, Pictish Art.



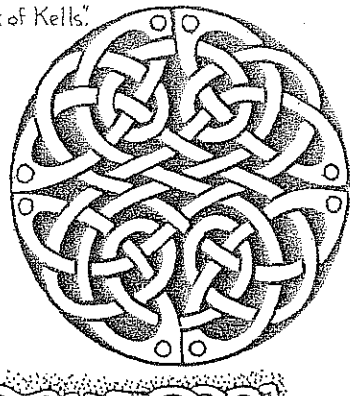
Stage 2.



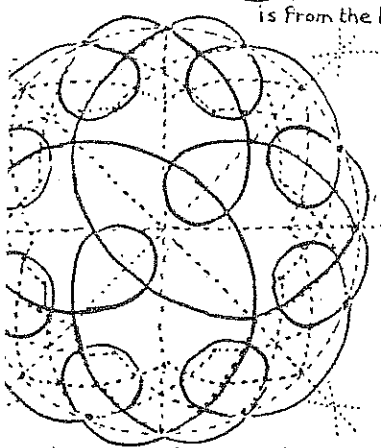
Stage 3.

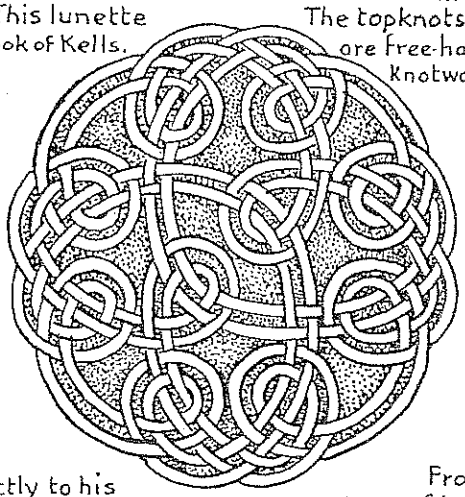


From "Book of Kells".

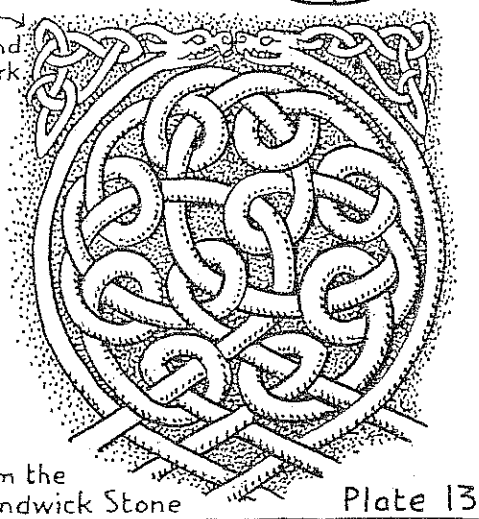


This lunette is from the Book of Kells.





The topknots → are free-hand knotwork.



George Bain

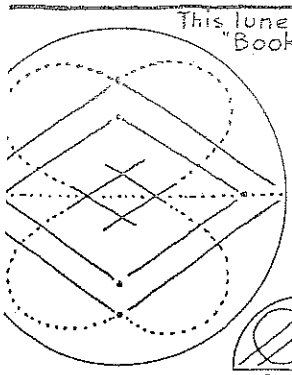
ctish Artist did not adhere strictly to his
al lay-out. He altered it to suit his idea as it developed

From the Shandwick Stone

Plate 13.

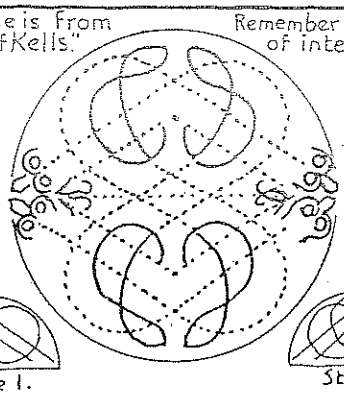
Methods of Construction for Knotwork in Circular Panels, Pictish Art.

This lunette is from "Book of Kells."



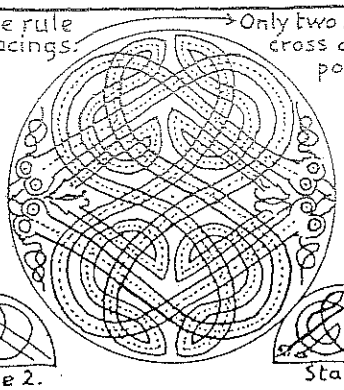
Stage 1.

Remember the rule of interlacings.



Stage 2.

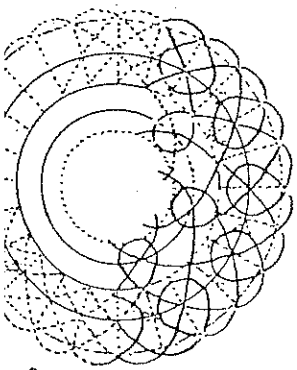
→ Only two lines may cross at one point



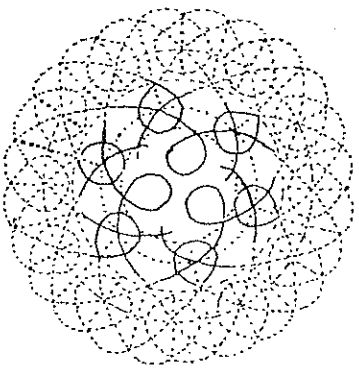
Stage 3.

avoid confusion due to intricacy, each stage should be completed before the next is commenced.

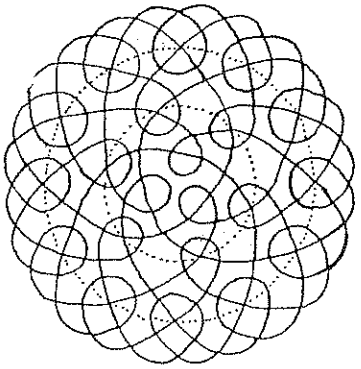
George Bain



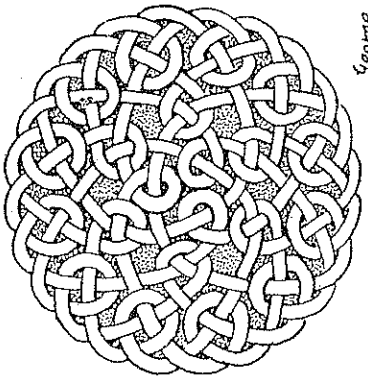
Stages 1, 2 and 3.



Stage 4.



Stage 5.



This design is from the Hilton of Cadbol Stone Ross-shire.

Plate 14.

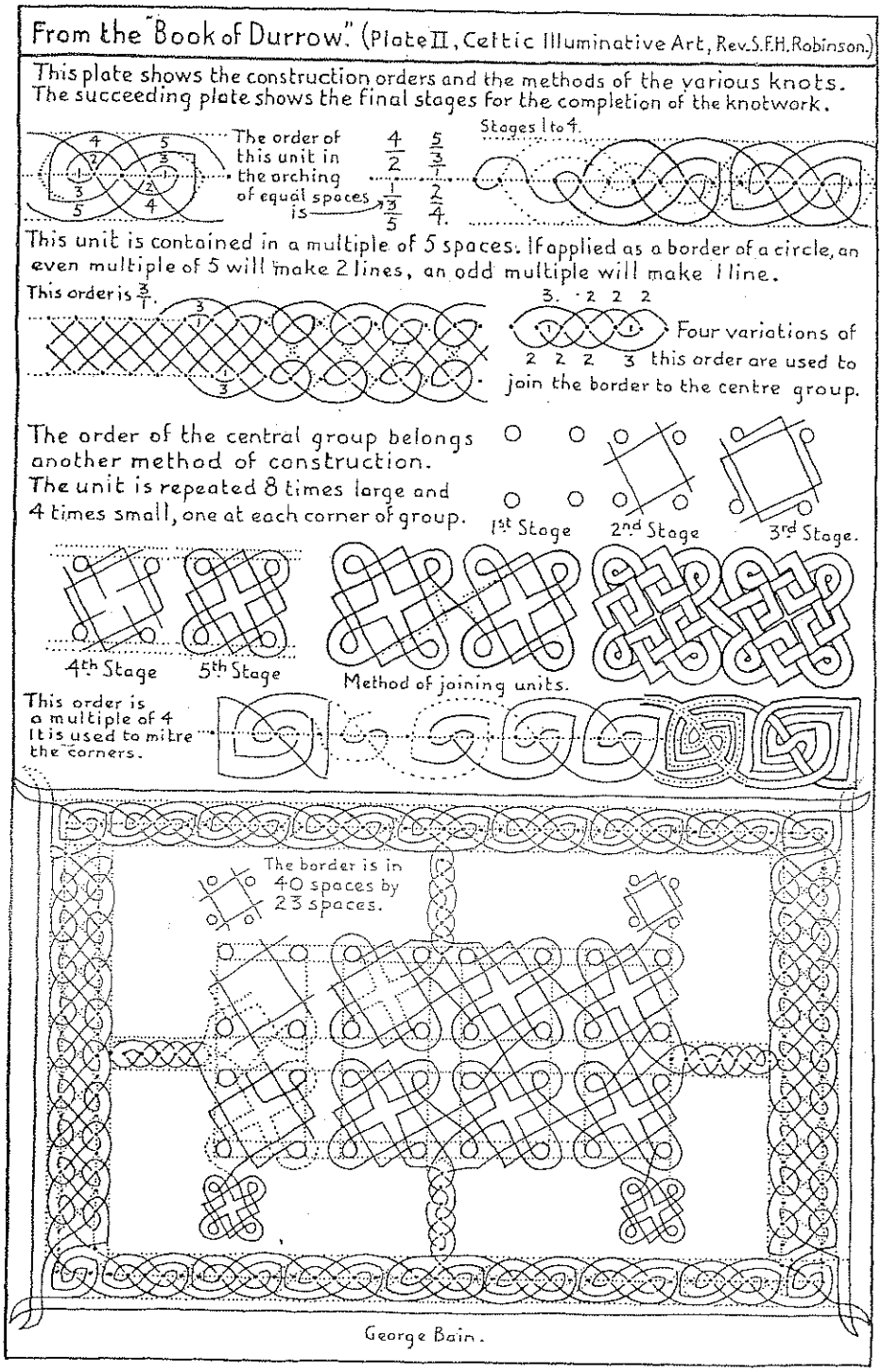

From the "Book of Durrow." (Plate II, Celtic Illuminative Art, Rev. S.F.H. Robinson.)
This plate shows the construction orders and the methods of the various knots.
The succeeding plate shows the final stages for the completion of the knotwork.
The order of this unit in the orching of equal spaces is
Stages 1 to 4.
This unit is contained in a multiple of 5 spaces. If applied as a border of a circle, an even multiple of 5 will make 2 lines, an odd multiple will make 1 line.
This order is
Four variations of this order are used to join the border to the centre group.
The order of the central group belongs another method of construction.
The unit is repeated 8 times large and 4 times small, one at each corner of group.
1st Stage
2nd Stage
3rd Stage.
4th Stage
5th Stage
Method of joining units.
This order is a multiple of 4 It is used to mitre the corners.
The border is in 40 spaces by 23 spaces.
George Bain.

Plate I

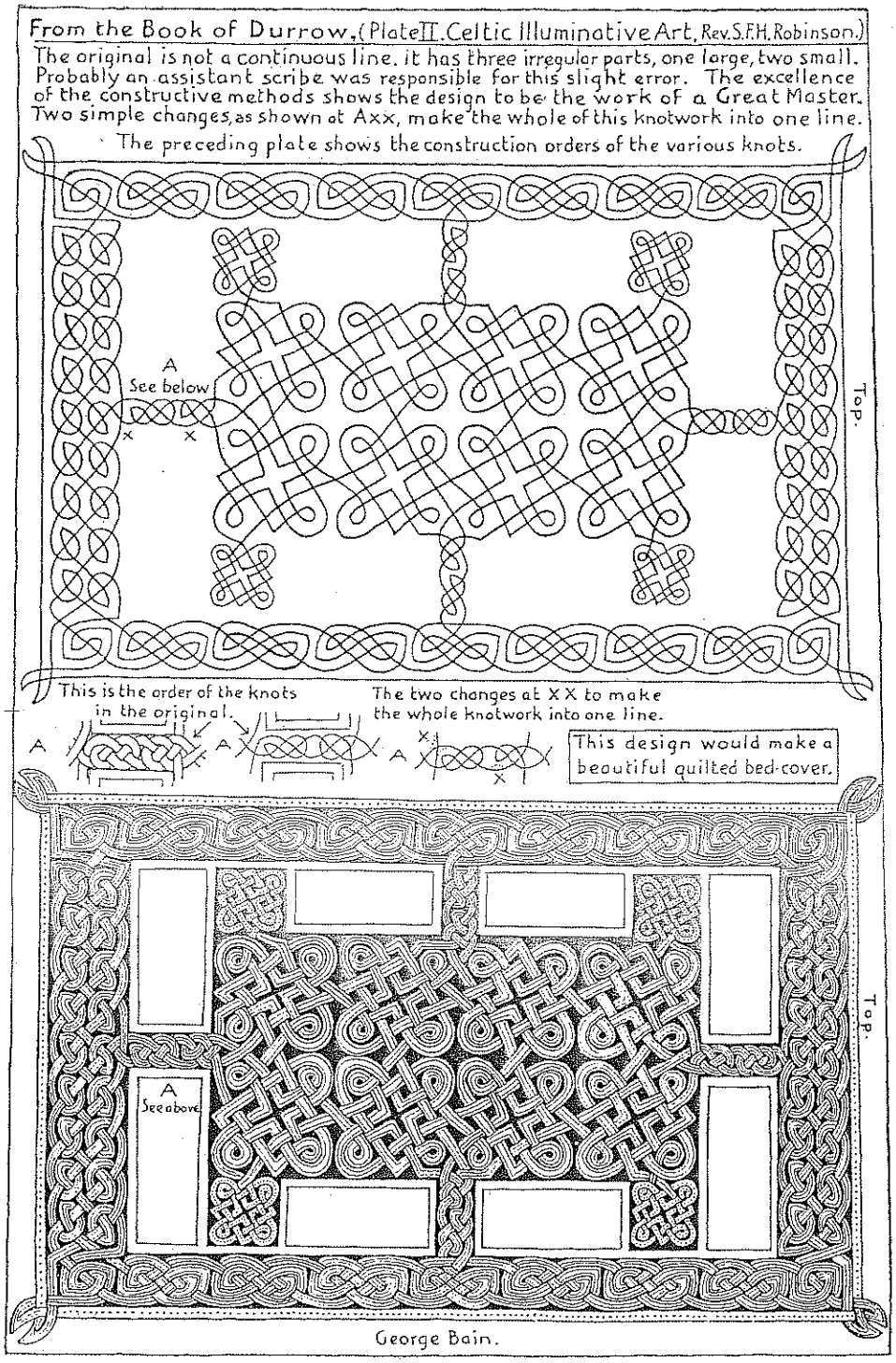

From the Book of Durrow, (Plate II. Celtic Illuminative Art. Rev. S.F.H. Robinson.)
The original is not a continuous line. it has three irregular parts, one large, two small. Probably an assistant scribe was responsible for this slight error. The excellence of the constructive methods shows the design to be the work of a Great Master. Two simple changes, as shown at Axx, make the whole of this knotwork into one line.
The preceding plate shows the construction orders of the various knots.
A
See below
X
X
Top.
This is the order of the knots in the original.
A
A
The two changes at XX to make the whole knotwork into one line.
X
A
X
This design would make a beautiful quilted bed-cover.
A
See above
Top.
George Bain.

Plate J

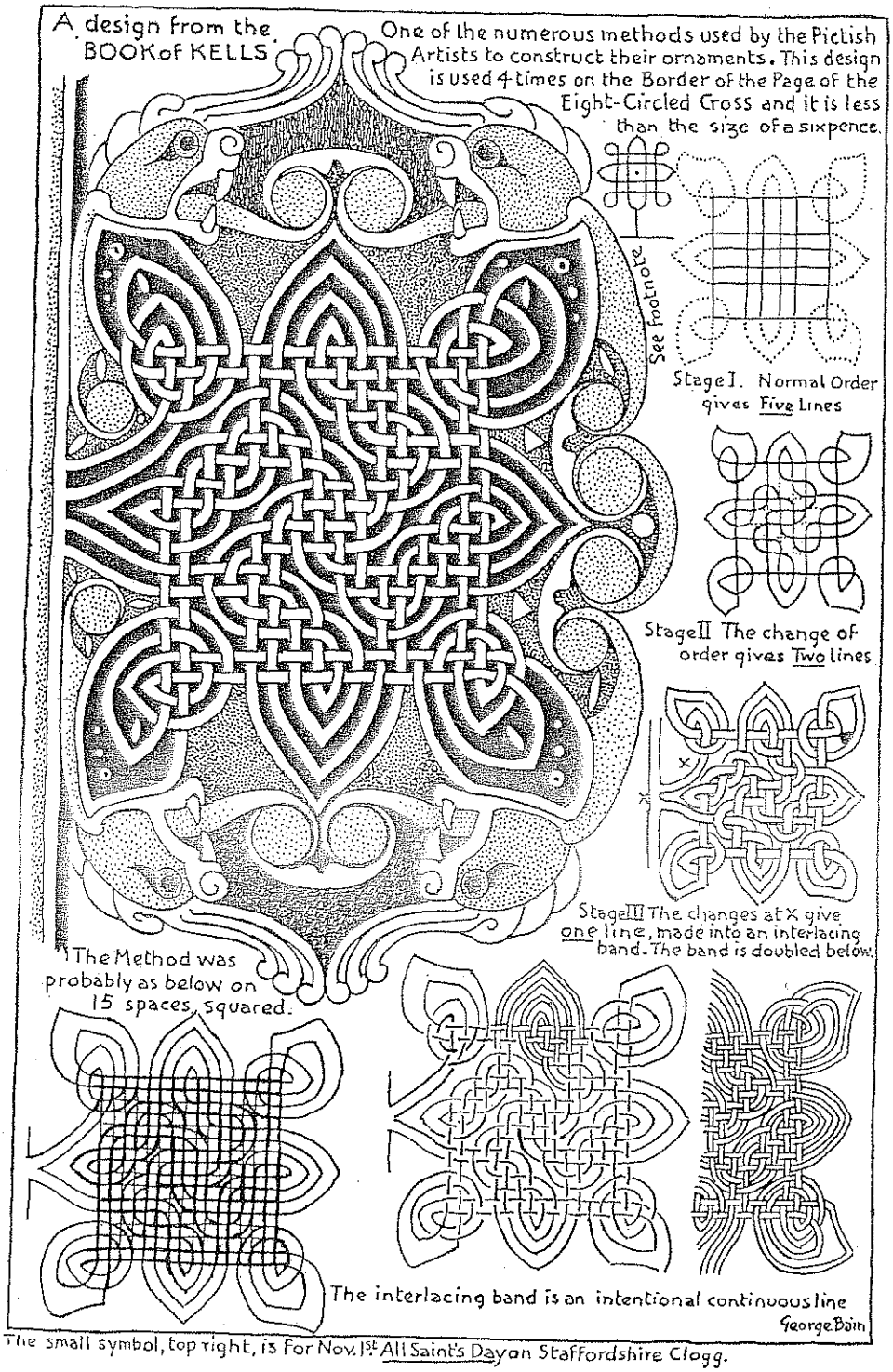

A design from the BOOK of KELLS.
One of the numerous methods used by the Pictish Artists to construct their ornaments. This design is used 4 times on the Border of the Page of the Eight-Circled Cross and it is less than the size of a sixpence.
See footnote
Stage I. Normal Order gives Five Lines
Stage II The change of order gives Two lines
Stage III The changes at X give one line, made into an interlacing band. The band is doubled below.
The Method was probably as below on 15 spaces squared.
The interlacing band is an intentional continuous line
George Bain
The small symbol, top right, is for Nov. 1st All Saint's Day on Staffordshire Clogg.

Plate K

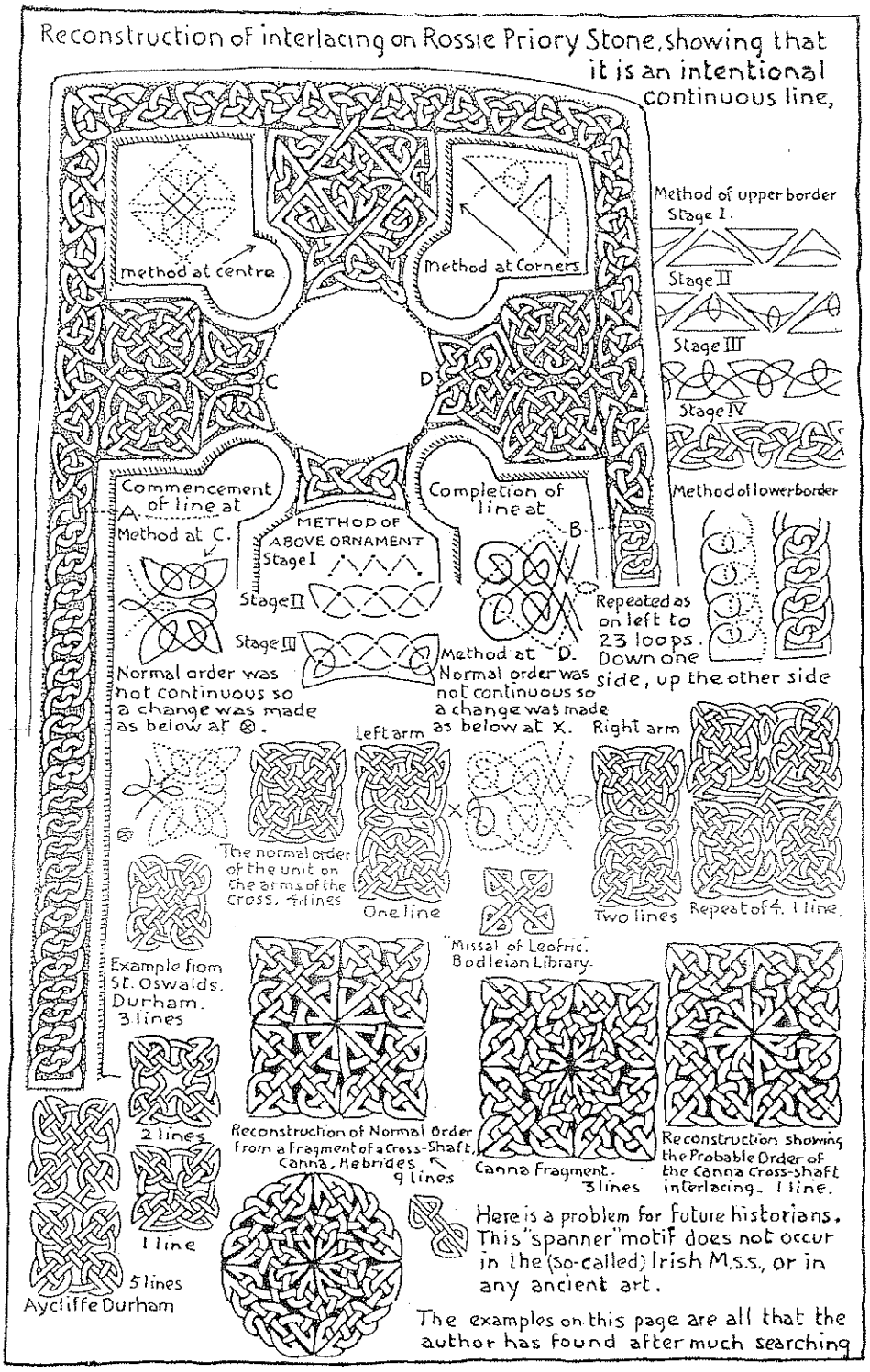
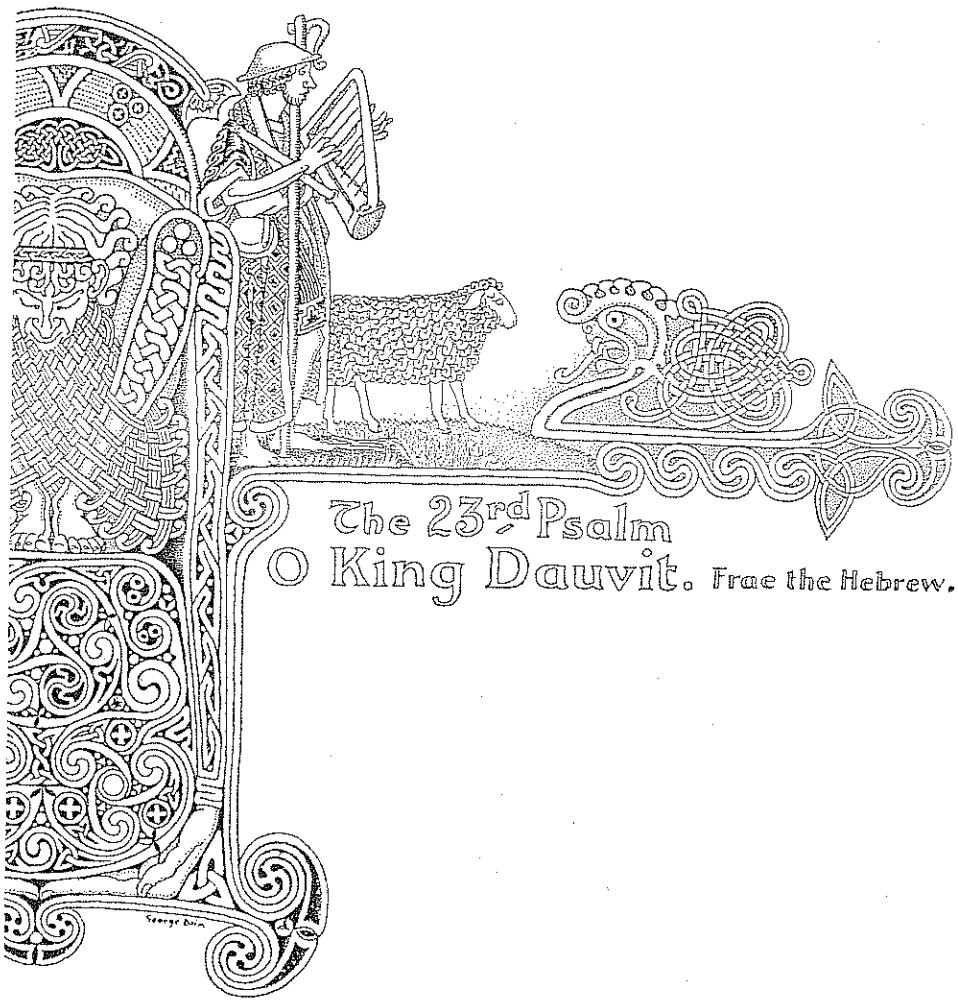

Reconstruction of interlacing on Rossie Priory Stone, showing that it is an intentional continuous line,
method at centre
Method at Corners
Method of upper border
Stage I.
Stage II
Stage III
Stage IV
Method of lower border
C
D
Commencement of line at A.
Method at C.
METHOD OF ABOVE ORNAMENT
Stage I
Stage II
Stage III
Completion of line at B
Method at D.
Repeated as on left to 23 loops. Down one side, up the other side
Normal order was not continuous so a change was made as below at ⊗.
Normal order was not continuous so a change was made as below at X.
Left arm
Right arm
The normal order of the unit on the arms of the cross. 4 lines
One line
Two lines
Repeat of 4. 1 line.
Example from St. Oswalds. Durham. 3 lines
"Missal of Leofric" Bodleian Library.
2 lines
1 line
5 lines
Aycliffe Durham
Reconstruction of Normal Order from a Fragment of a Cross-Shaft, Canna, Hebrides
9 lines
Canna Fragment. 3 lines
Reconstruction showing the Probable Order of the Canna Cross-shaft interlacing. 1 line.
Here is a problem for future historians. This "spanner" motif does not occur in the (so-called) Irish M.s.s., or in any ancient art.
The examples on this page are all that the author has found after much searching

Plate L



The 23rd Psalm
O King Dauvit. Frae the Hebrew.

Spirals

THE Spiral as a symbol and as an ornament had a beginning at the dawn of man's intellect. It was the development of the inherited impulse that made man construct the first circular hut. With very few exceptions (if any) the constructions by insects, birds and animals are made by circular motions. The circle may be considered as man's first step in art. As a recapitulative impulse it is every child's beginning in drawing, and it is as much used by the educated doodler as it is by the uneducated female for pipe-clay decoration on the doorstep. The spiral is an application of its constructional methods that rapidly became magical. It could be performed to the right or to the left, sunwise or anti-sunwise.

The beauty of nature's spirals was probably observed by man's earliest ancestors, for the shell was also the container of his staple food.

From the terminating point to the opening in the shell to the food, the movement of the spiral is to the right or sunwise and the motion of extracting the food is to the left or anti-sunwise.

Most of nature's spirals are to the right with a notable exception in pairs of horns, which are symmetrical. The Scottish Highlander's sword-dance, being a war dance, is anti-sunwise, but finishes sunwise symbolical of victory.

An assessment of the dating of the commencement of the use of spirals as an ornamental and magical art may be conjectured from the fact, already stated, that highly developed key patterns, engraved on mammoth ivory were found in the Ukraine and in Yugo-Slavia, and are dated from 25,000 B.C. to 15,000 B.C. Key patterns are really spirals in straight lines, and man had to travel long in time before he "invented" the square. Although one-coil spirals are to be found in the arts of most peoples of Europe, Asia, Africa, Polynesia and the Americas, with the Greek Ionic as the acme, yet the finest developments of spiral ornament were made by the Celtic race, who at an early period found the methods of making two, three, four or more coils. There is a continuity of the evolution of the spiral three-dimensional art in Scotland, England, Wales and Ireland from pre-prehistoric times, commencing with two incised points continued as two incised coils that have between them a raised spiral line that revolves back upon itself. This double spiral is also found in the metal bronze-age work of the peoples of the Baltic countries. The Mycenaean artist-craftsman used the spiral motive in a manner that suggests one of the courses of the migration of Celtic peoples to Britain and Ireland. The Egyptians used spirals as all-over motifs from 3000 B.C. to 1500 B.C.

It was in Britain and Ireland, however, that spirals found full artistic growth, first, in the enamelled bronze ornaments for the horse, the chariot and man, then, in the age of the ornamented stone monuments and the late Pagan and early Christian Jewellers' Art.

The noble spirals of Aberlemno, Shandwick, Tarbet, Hilton of Cadboll, Nigg, the Tara brooch, and the Ardagh chalice led the way to the great art of the scribes, who produced the supreme masterpieces of the world's decoration of books, profusely embellished with spiral art.

The few survivors of a great artistic period, the books of Durrow, Kells, Lindisfarne, and St. Chad will shed a light for future generations upon the greatness of the art and the other cultures of the Pict and the Briton.

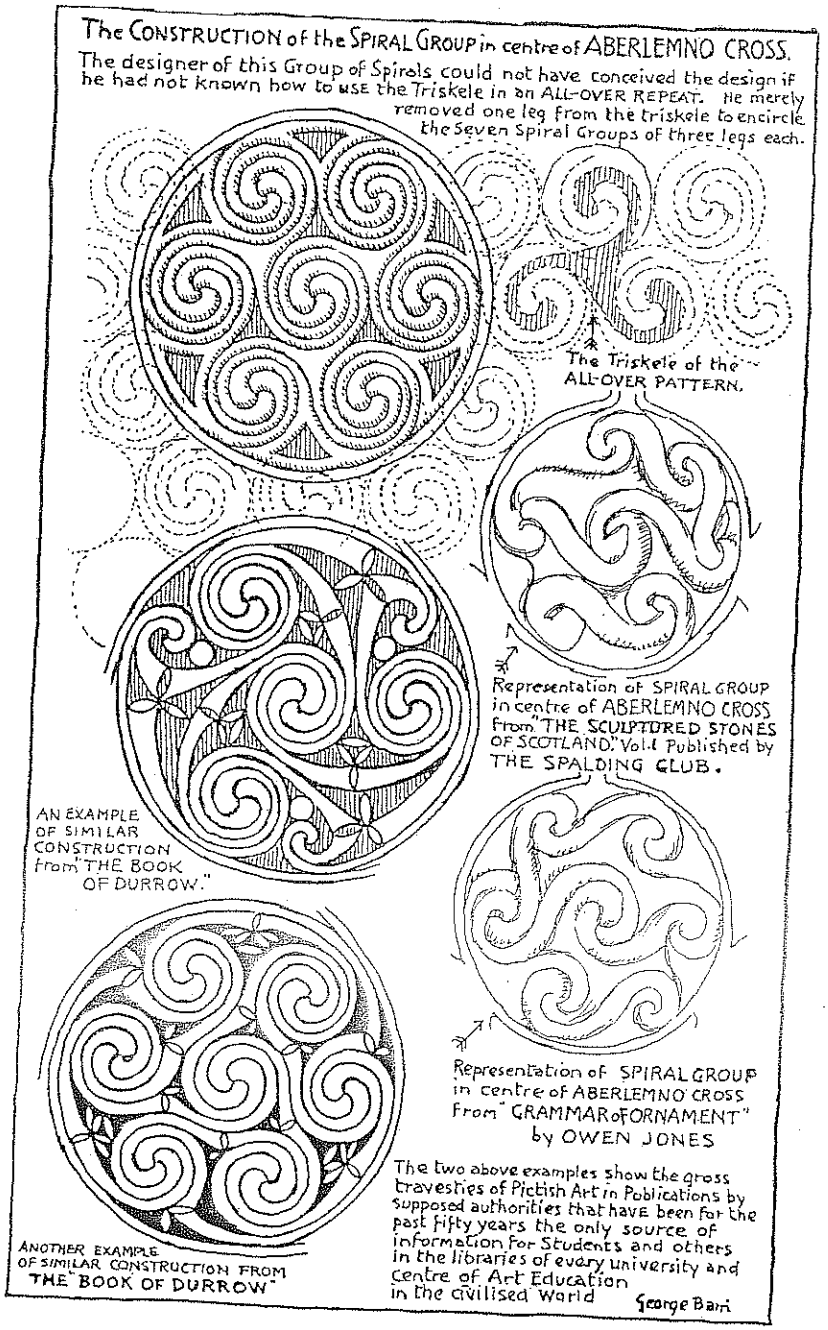
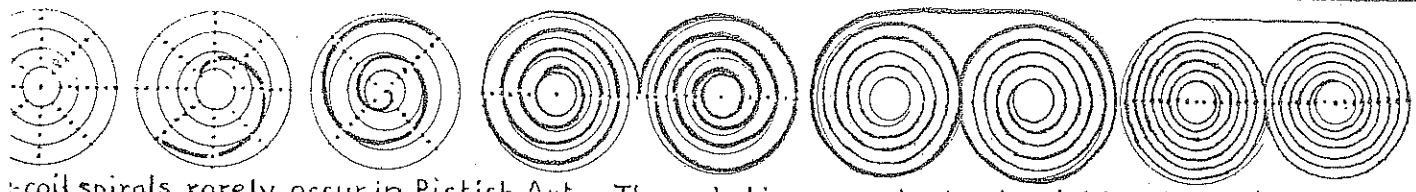


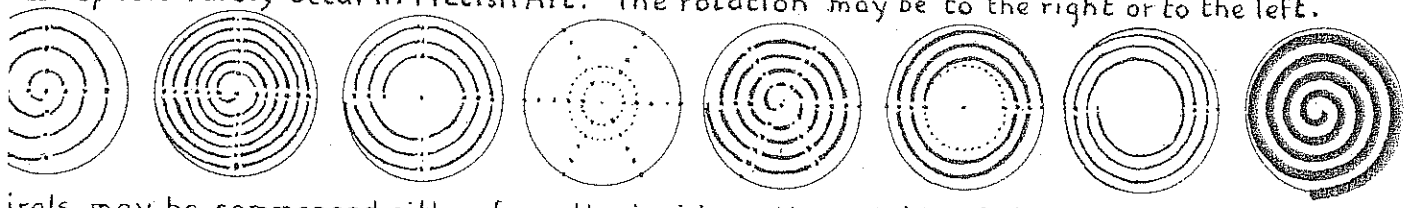
Plate M

Plate by courtesy of the Gaelic Society of Inverness

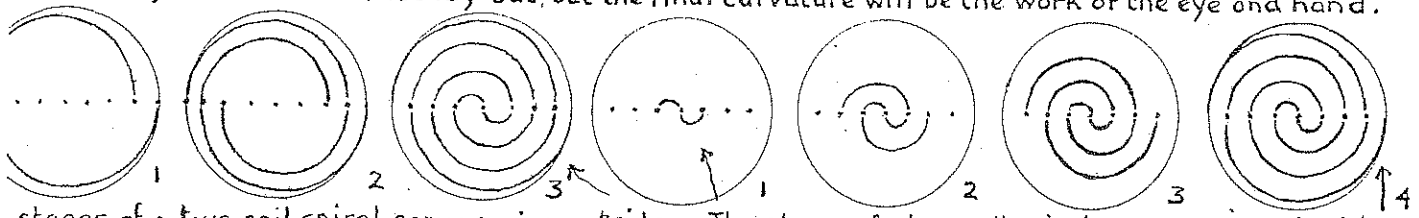
ne Methods for the Construction of Spirals of the Pictish School of Celtic Art.



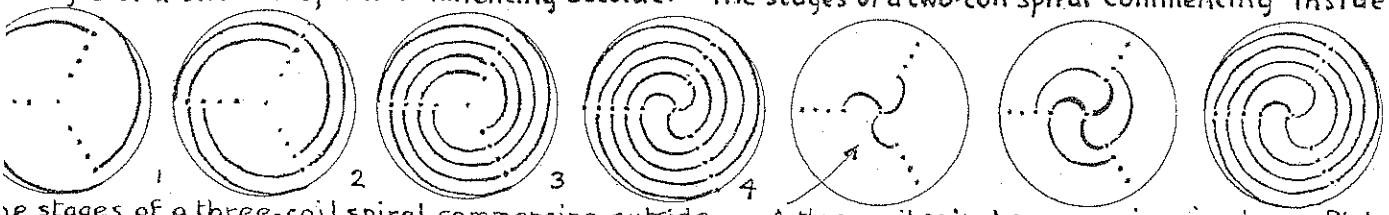
-coil spirals rarely occur in Pictish Art. The rotation may be to the right or to the left.



irals may be commenced either from the inside or the outside of the rotation.
ruments may be used for the first lay-out, but the final curvature will be the work of the eye and hand.



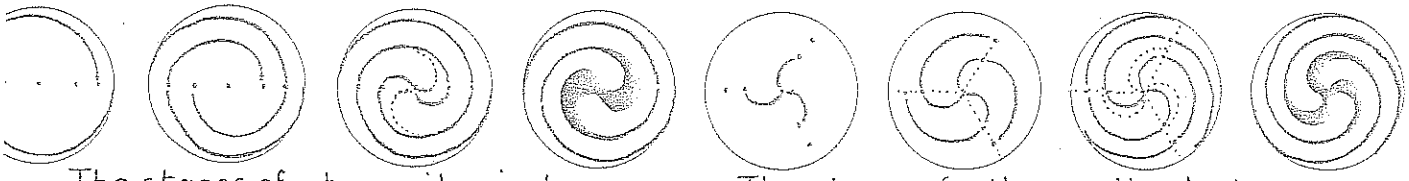
stages of a two-coil spiral commencing outside. The stages of a two-coil spiral commencing inside



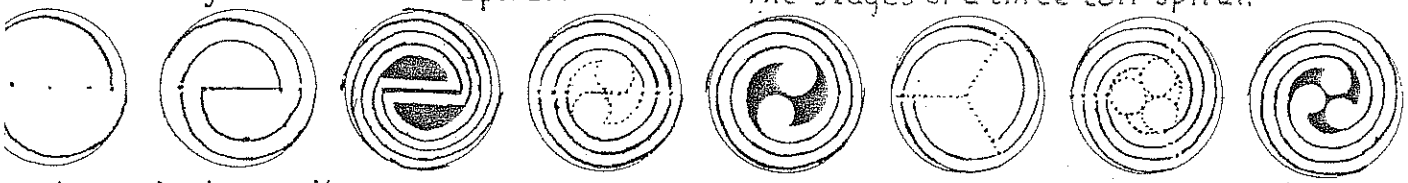
George Barn

ie stages of a three-coil spiral commencing outside. A three-coil spiral commencing inside. Plate 1

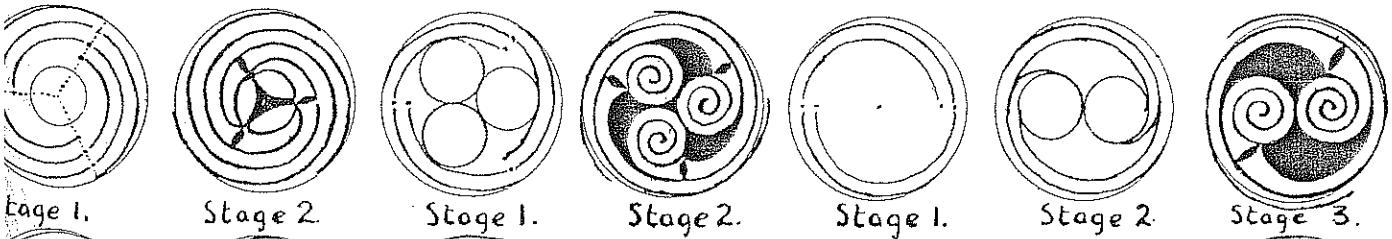
Methods of Construction of a Few Centres of Spirals of the Pictish School of Celtic Art.

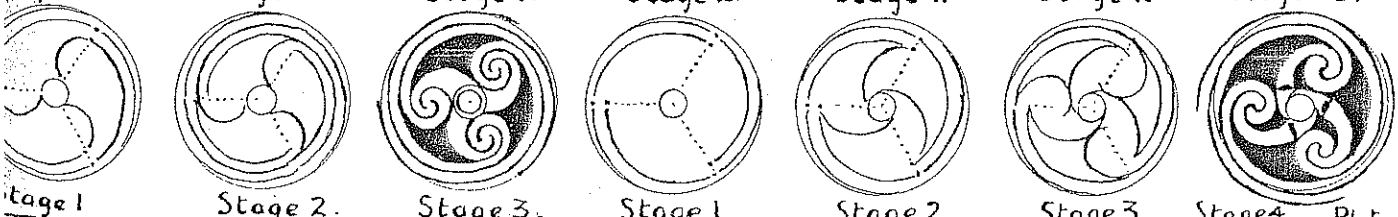


The stages of a two-coil spiral. The stages of a three-coil spiral.



ne stages of a two-coil spiral A two-coil spiral. The stages of a three-coil spiral.

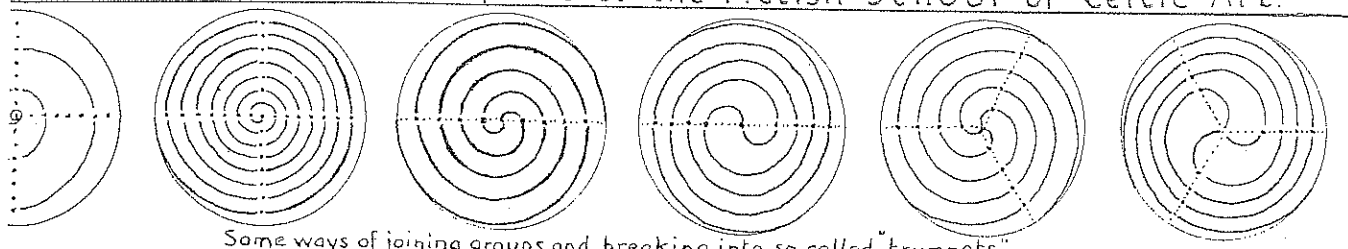




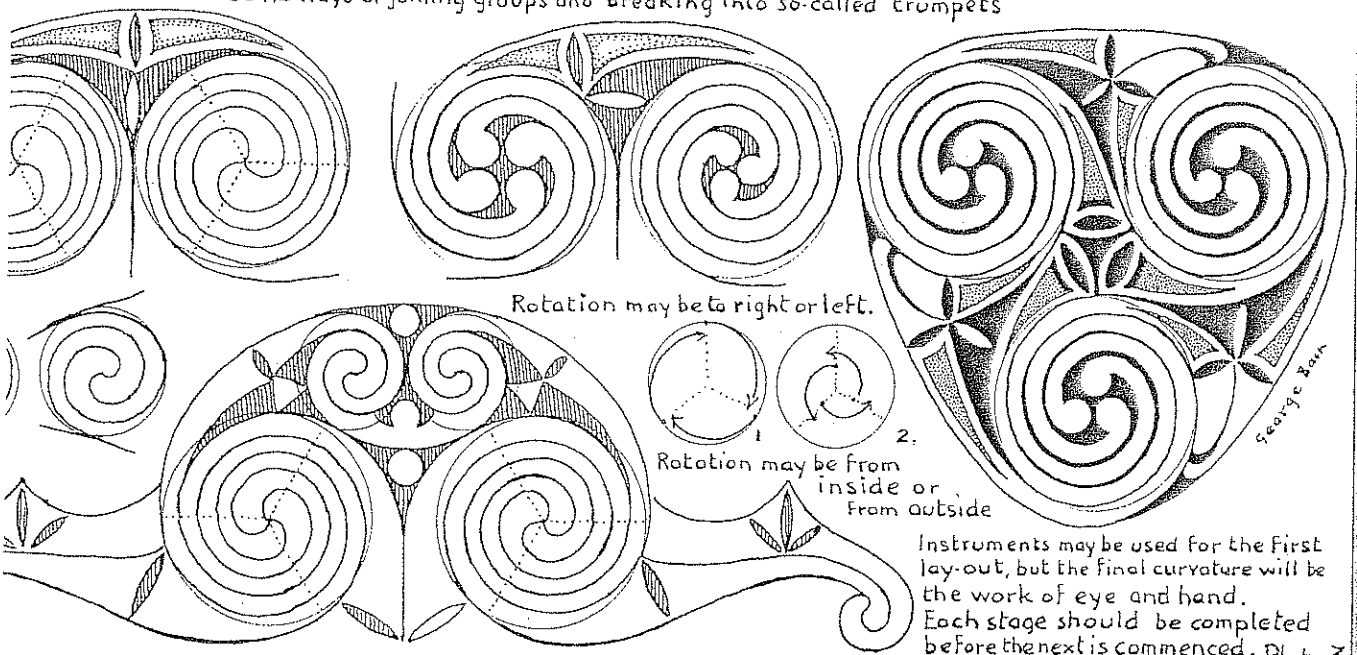
George Barn

Plate 2

ethods of Construction for Spirals of the Pictish School of Celtic Art.

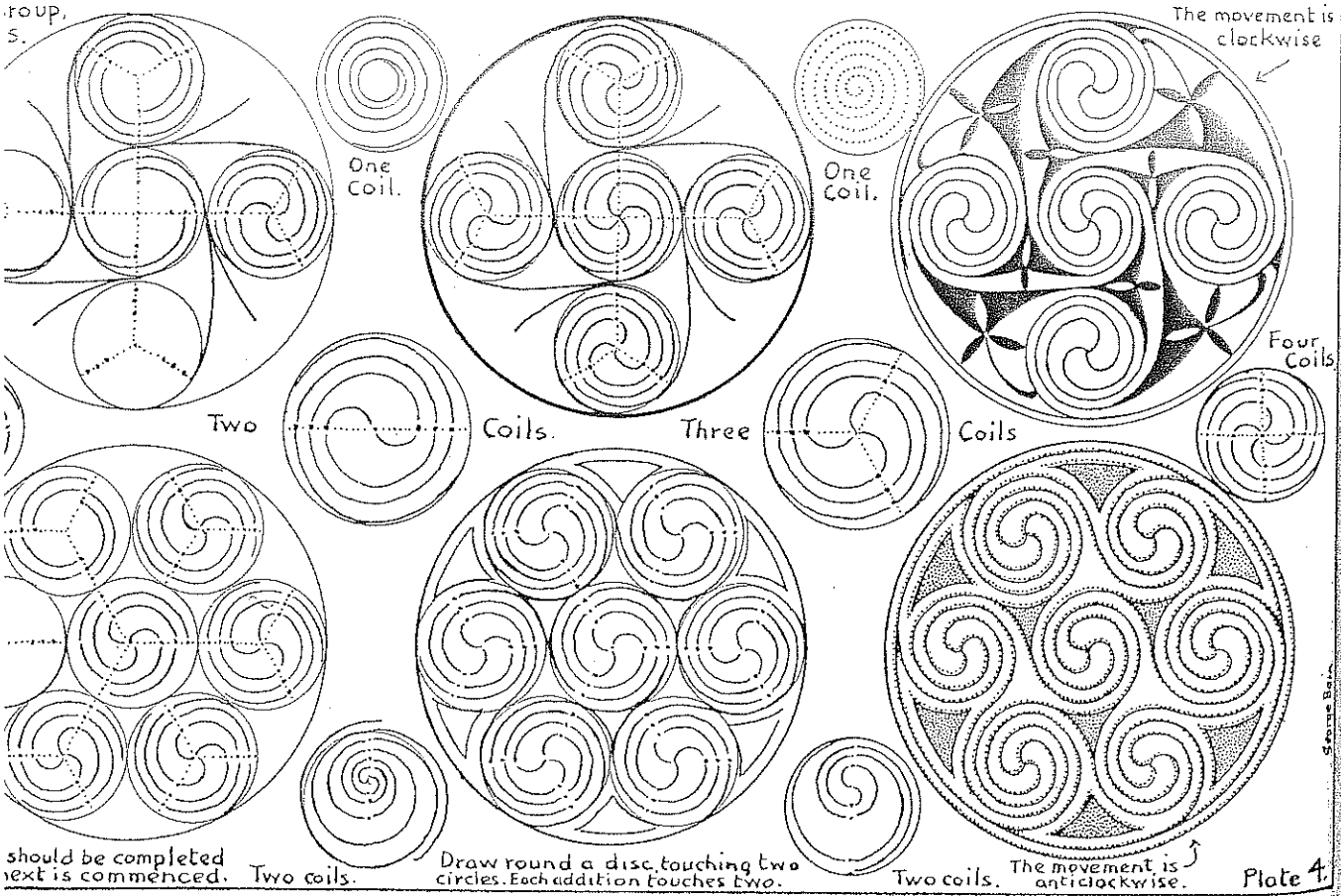


Some ways of joining groups and breaking into so-called "trumpets"



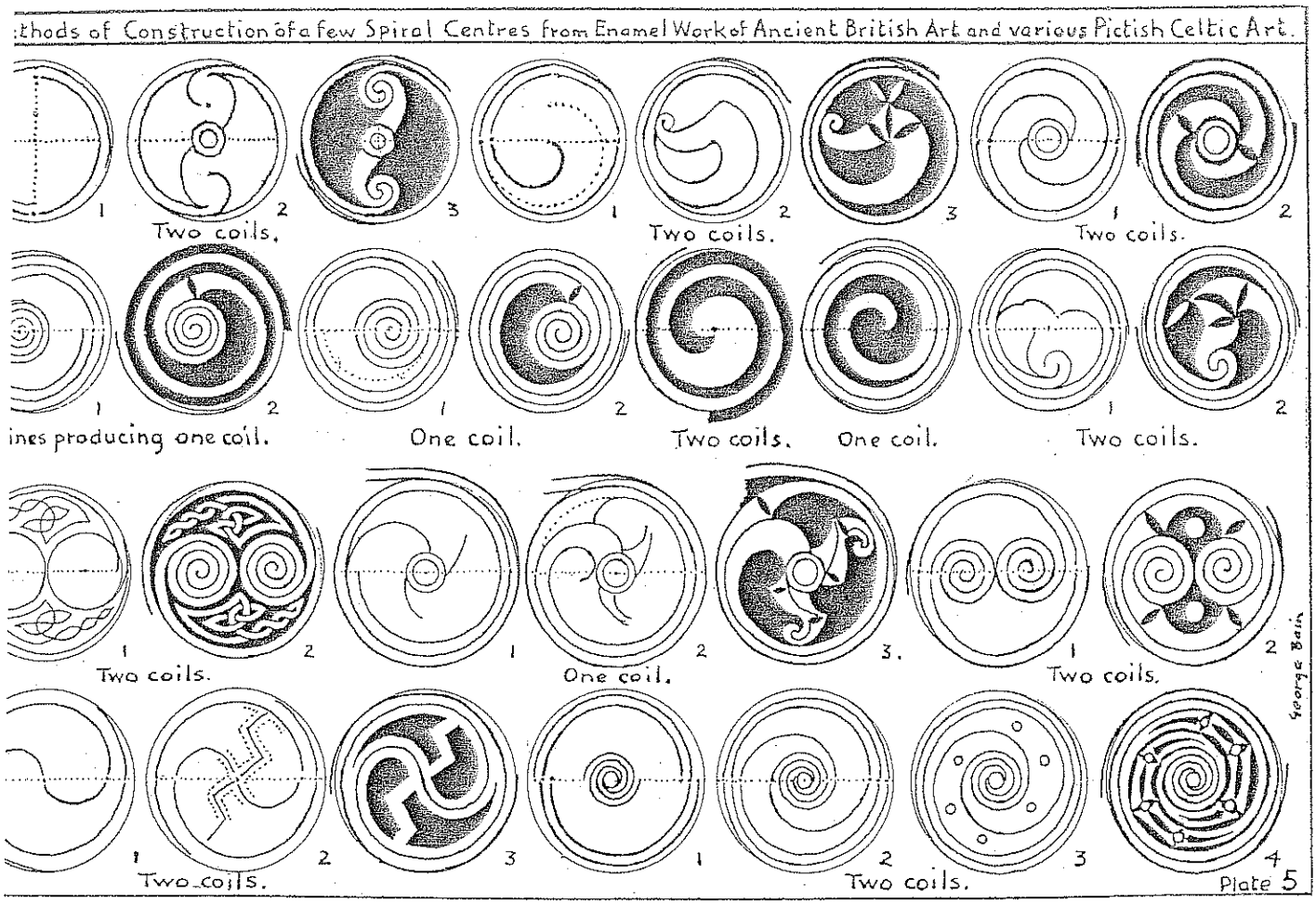
Instruments may be used for the First lay-out, but the final curvature will be the work of eye and hand. Each stage should be completed before the next is commenced. Plate 3.

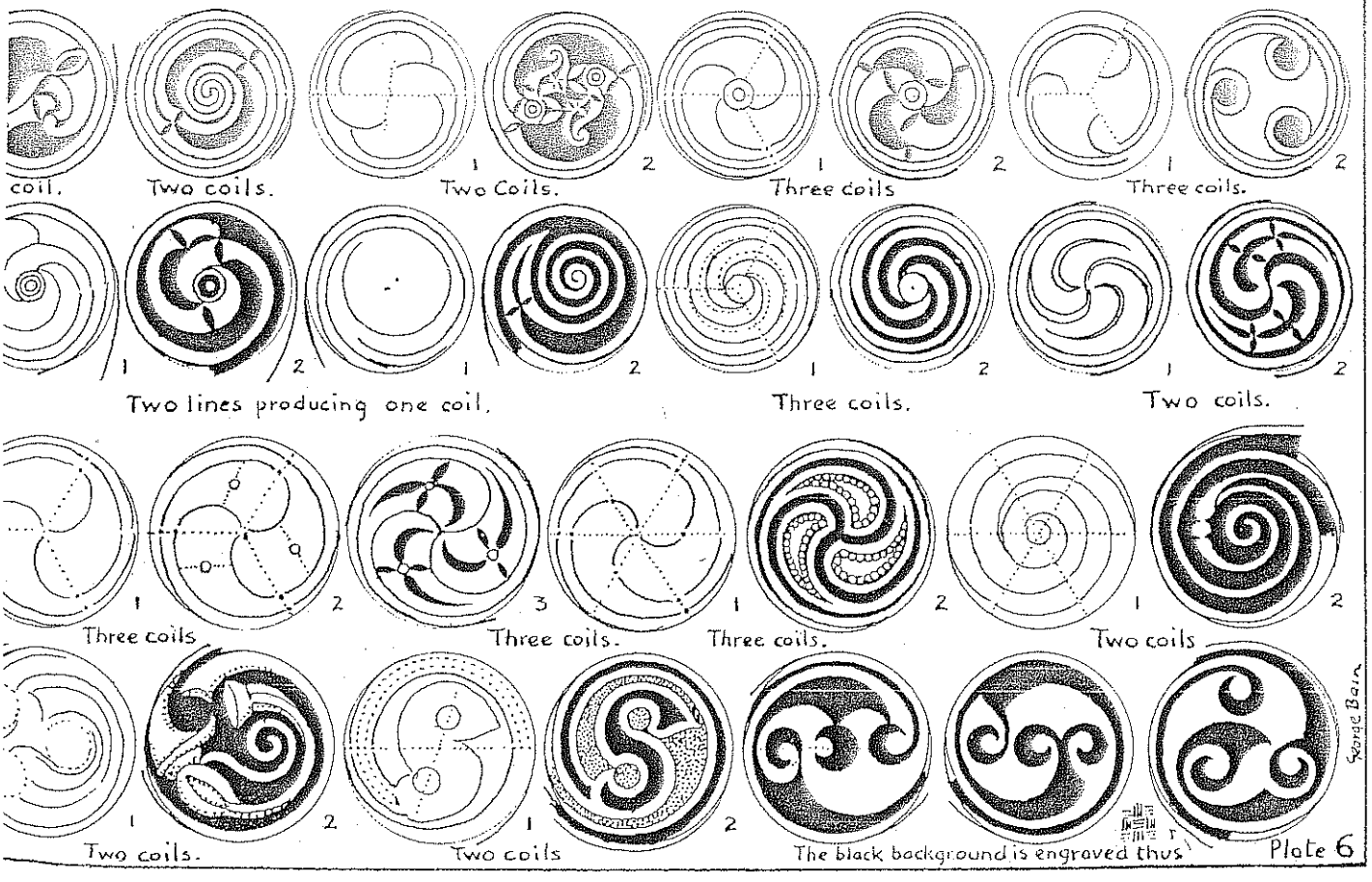
s of joining Spirals in "C" (top) and "S" (bottom) fashions. Top from "Book of Kells". Bottom from "Aberlemno Stone".



should be completed
next is commenced.

Plate 4.

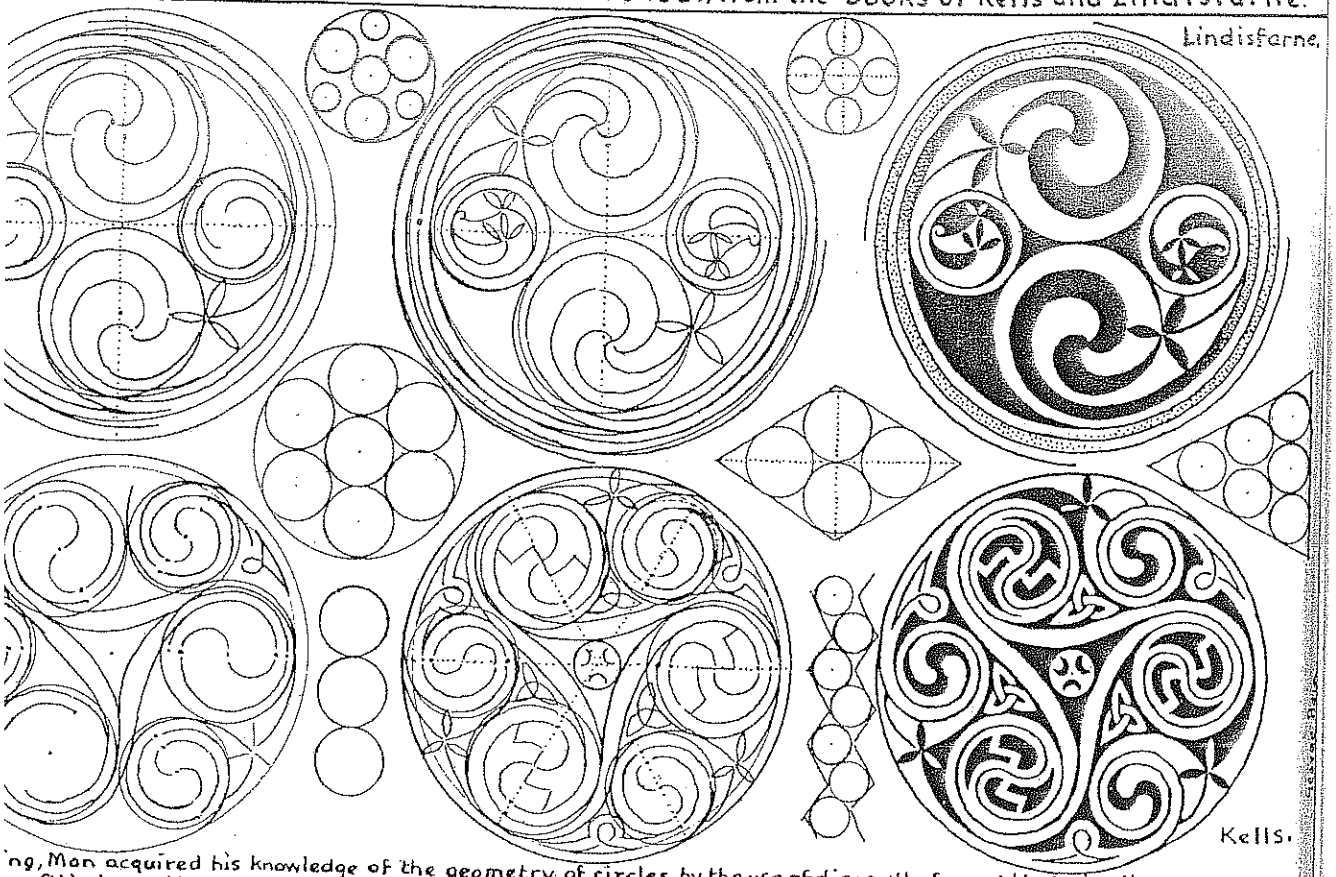

:thods of Construction of a few Spiral Centres from Enamel Work of Ancient British Art and various Pictish Celtic Art.
Two coils.
Two coils.
Two coils.
ines producing one coil.
One coil.
Two coils.
One coil.
Two coils.
Two coils.
One coil.
Two coils.
Two coils.
Two coils.
George Bain
Plate 5


lethods of Construction of a few Spiral Centres from M.S.S. and Enamel Works of Ancient British and Pictish Art.
coil.
Two coils.
Two Coils.
Three coils
Three coils.
Two lines producing one coil.
Three coils.
Two coils.
Three coils
Three coils.
Three coils.
Two coils
Two coils.
Two coils
The black background is engraved thus
George Bain
Plate 6

Groups in the manner of the Pictish School, from the Book of Durrow.

Plate 7.

Groups in the manner of the Pictish School, from the Books of Kells and Lindisfarne.

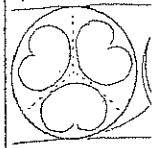


ng, Man acquired his knowledge of the geometry of circles by the use of discs. He found that six discs
ze, fitted exactly round one. The student is advised to experiment in this manner to gain knowledge.

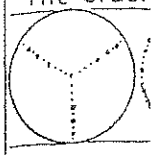
Plate 8

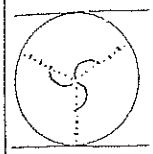
The Meth

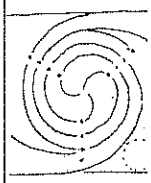
From the

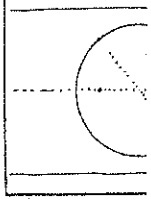


The order

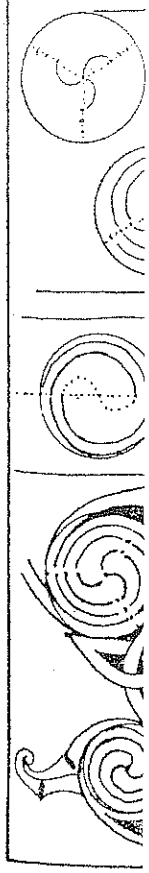






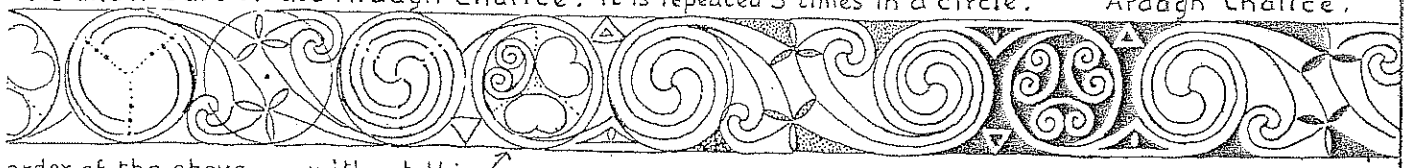


Some Spira



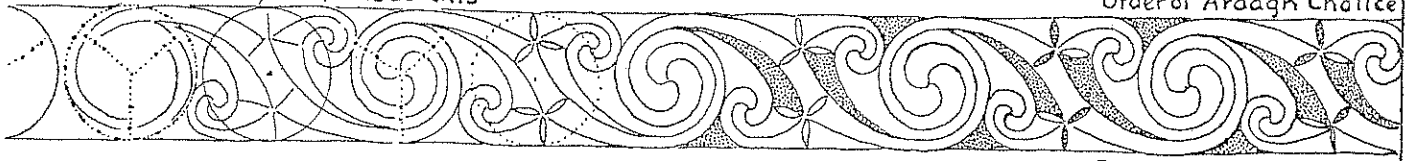
Methods for the Construction of Spiral Borders of the Pictish School of Celtic Art.

the under-base of the Ardagh Chalice. It is repeated 5 times in a circle. Ardagh Chalice.

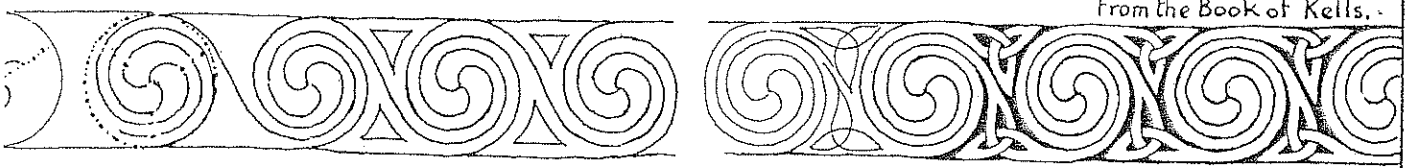


order of the above, without this ↗

Order of Ardagh Chalice



From the Book of Kells.



From the Book of Kells.

From the Book of Kells.

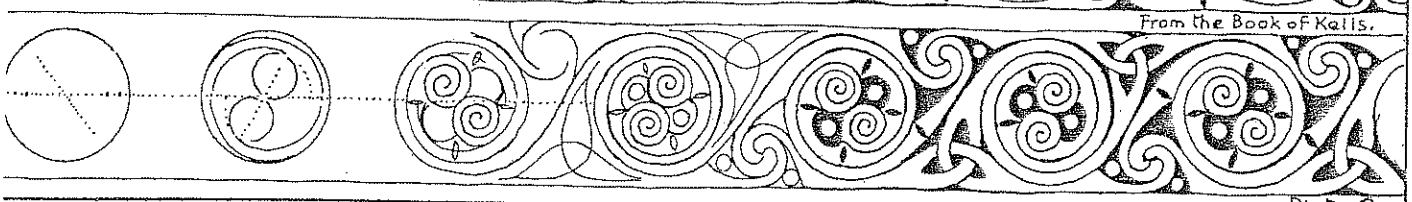
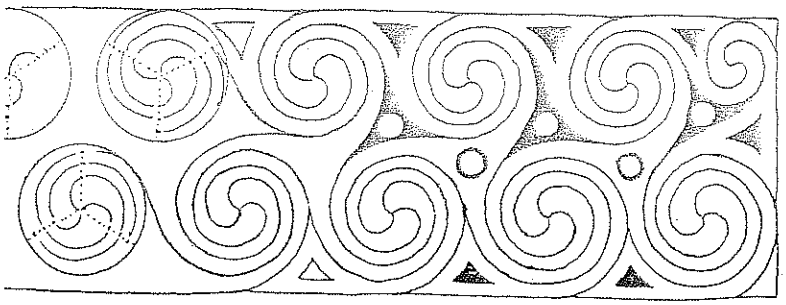
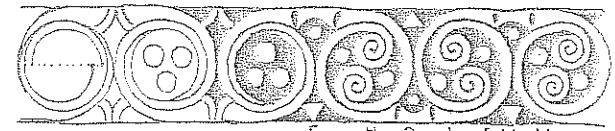


Plate 9.

Spiral Borders From the Book of Kells and Spiral terminals from various M.S.S. and Ornamented Stones.

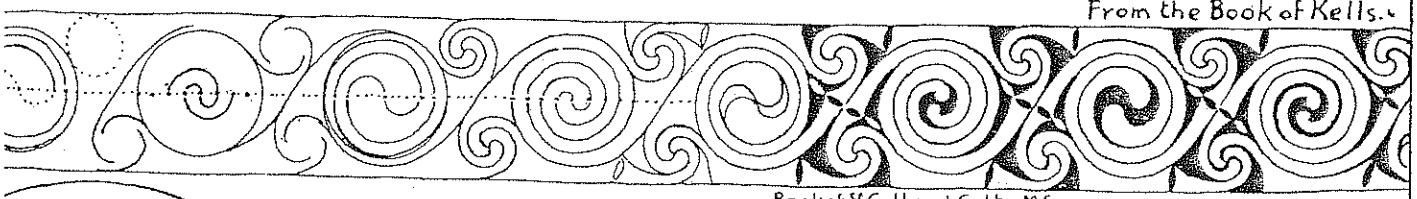
From the Book of Kells.





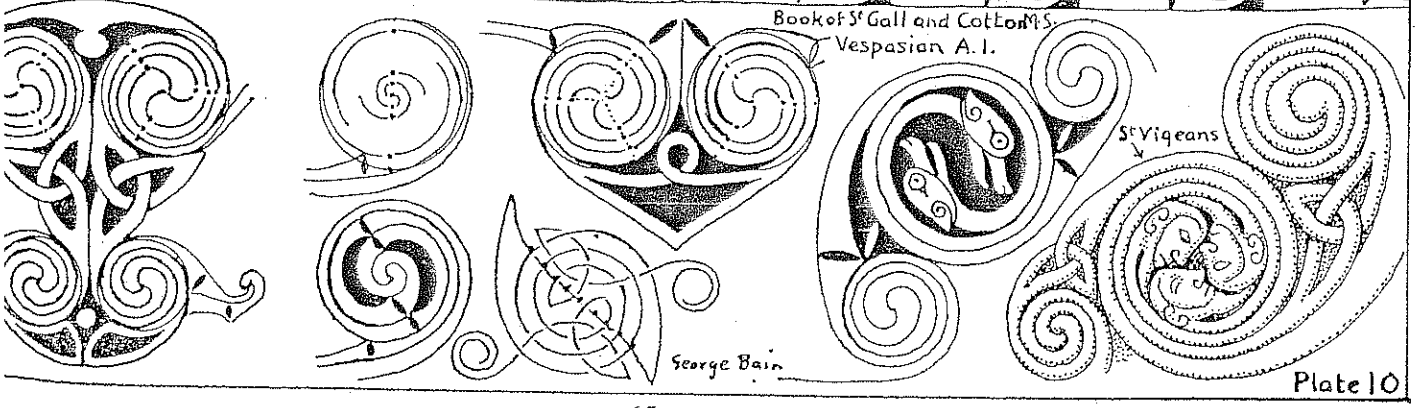
From the Book of Kells.

From the Book of Kells.



Book of St Gall and Cotton MS. Vespasian A. I.

St Vigeans

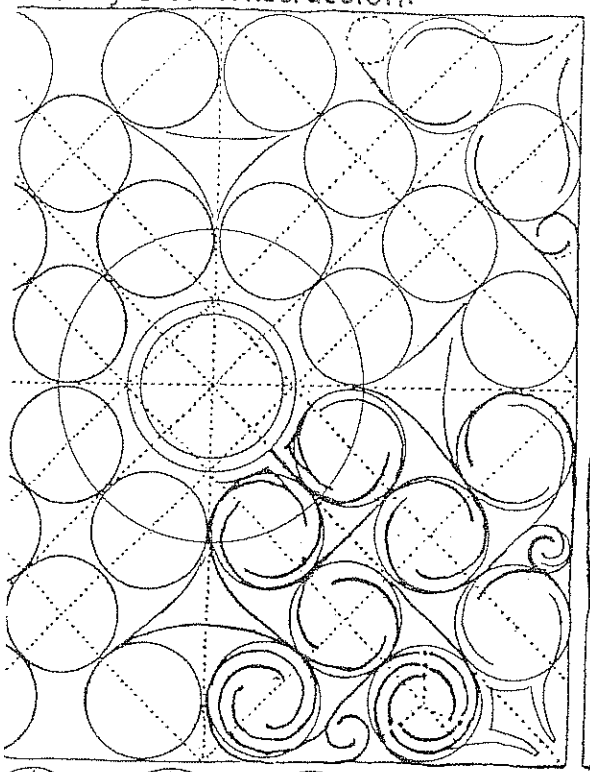


George Bain

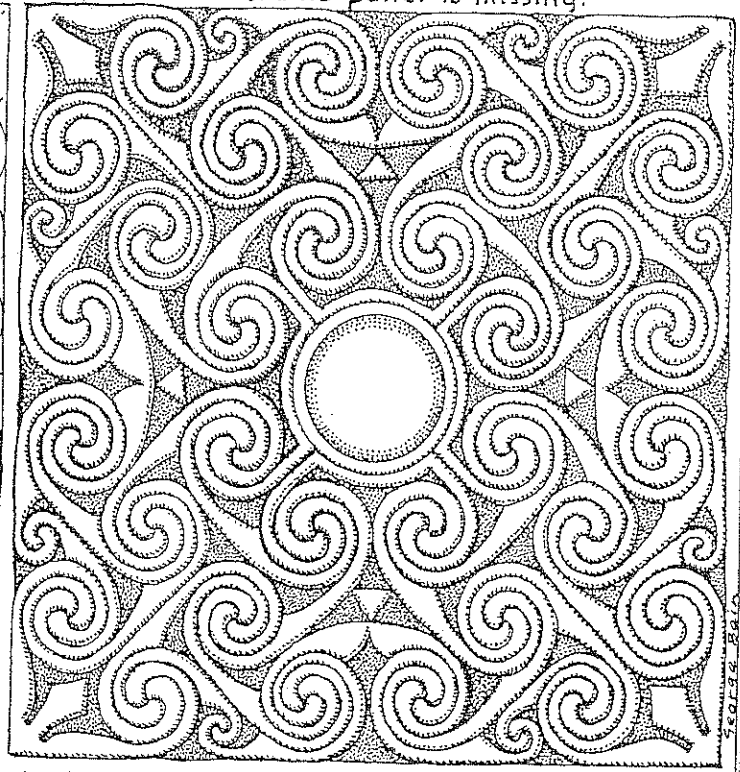
Plate 10

ıction of the Spiral Panel on the Hilton of Cadboll Stone, Ross-shire. (Pictish School.)

ıe stages of Construction.



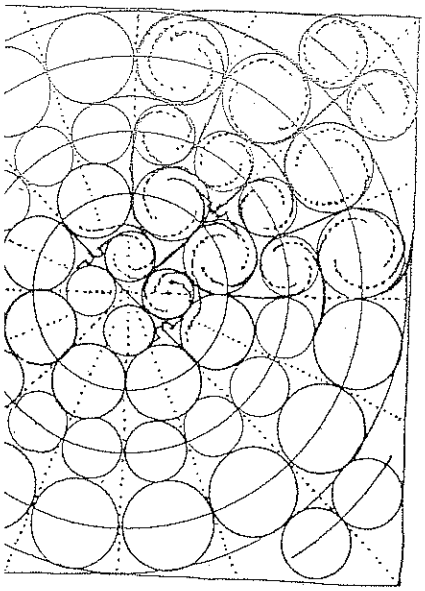
More than half of this panel is missing.

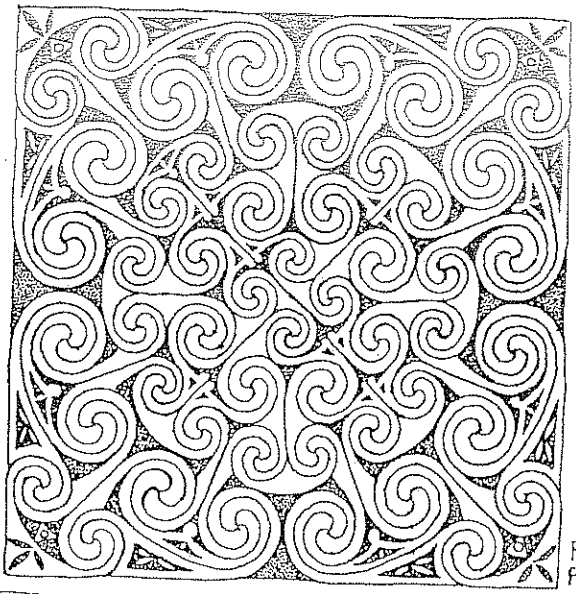


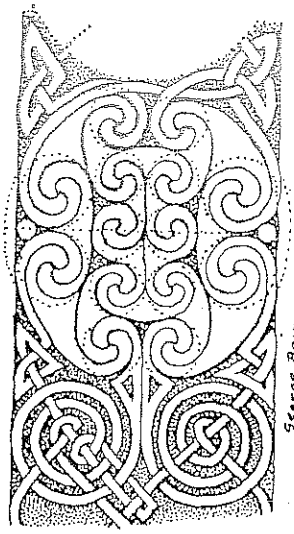
In this example, the development of the spirals is easiest from the outside of the rotation. The three lines should be started in each circle before the three coils are completed or joined together.

Plate 11.

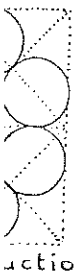
tructıon of the Spiral Panel on the Shandwick Stone Ross-shire..

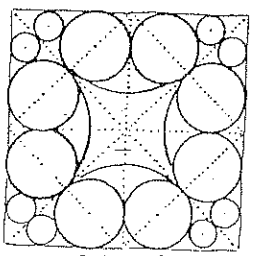


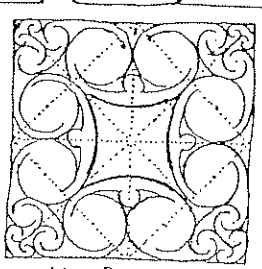


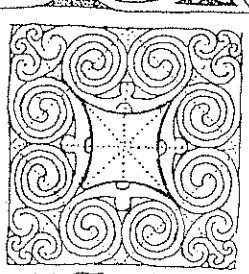


Reconstruction of a stone fragment (Lethnott, Brechin)







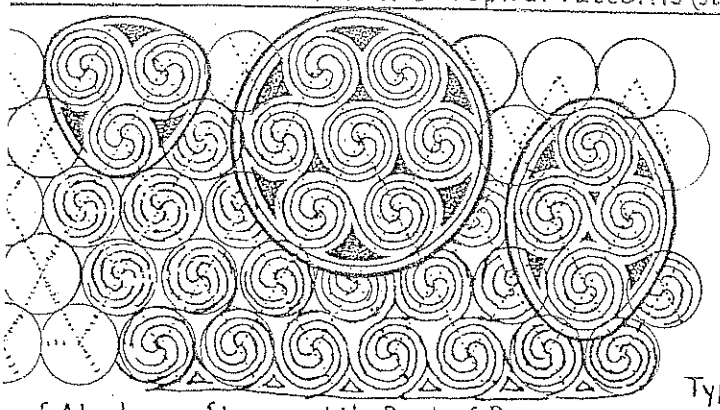


The student is advised to create new geometrical arrangements for use in three dimensional treatments.

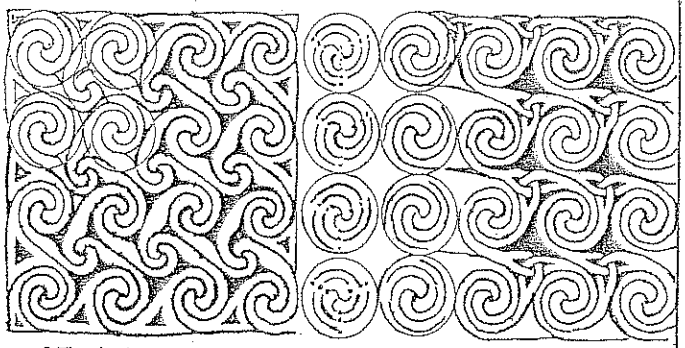
ıction of a Spiral Panel, from the Book of Kells, plate VII Studio. Actual Width $\frac{3}{8}$ inch

Plate 12.

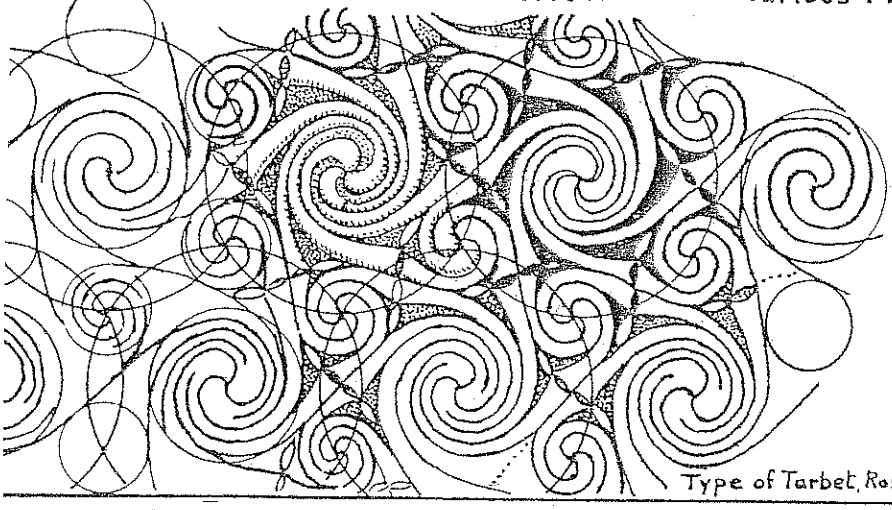
Methods of Construction of All-over Spiral Patterns (Stone and Mss.) of the Pictish School of Celtic Art.



e of Aberlemno Stone and the Book of Durrow



Type of Tarbet, Ross-shire, from stone fragments, Various M.s.s, and Pictish Stones.



Type of Tarbet, Ross-shire

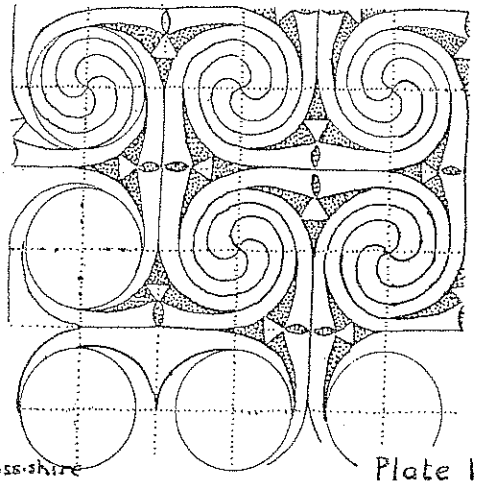


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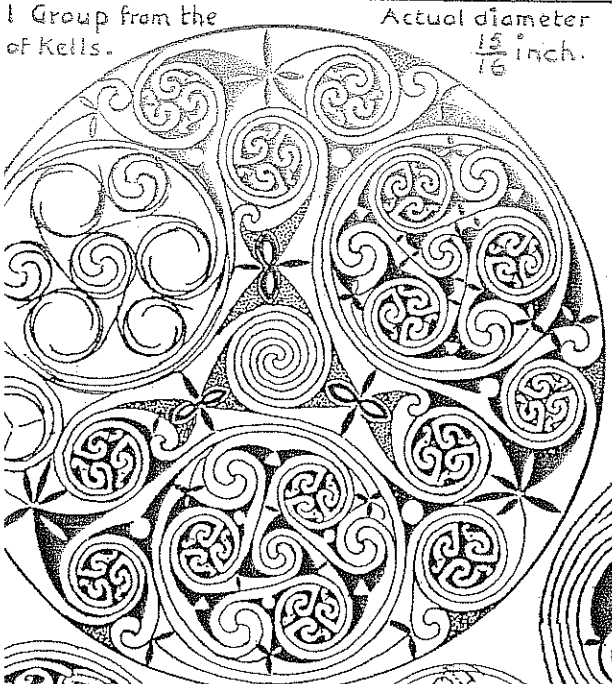
Plate 13.

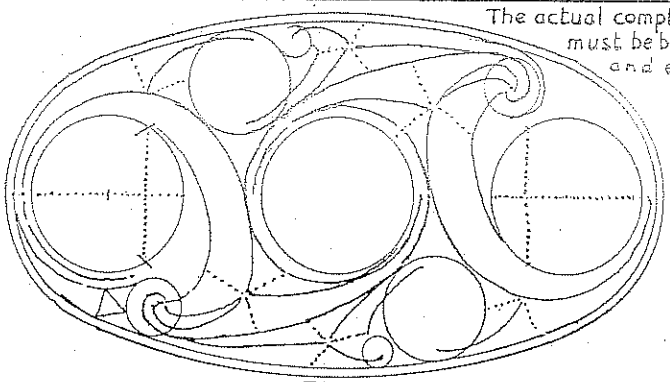
nples from the Books of Kells and Lindisfarne in the manner of the Pictish School.

l Group from the of Kells.

Actual diameter $\frac{15}{16}$ inch.

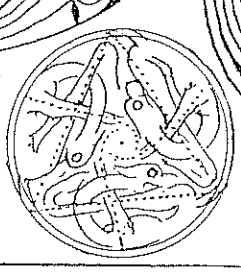


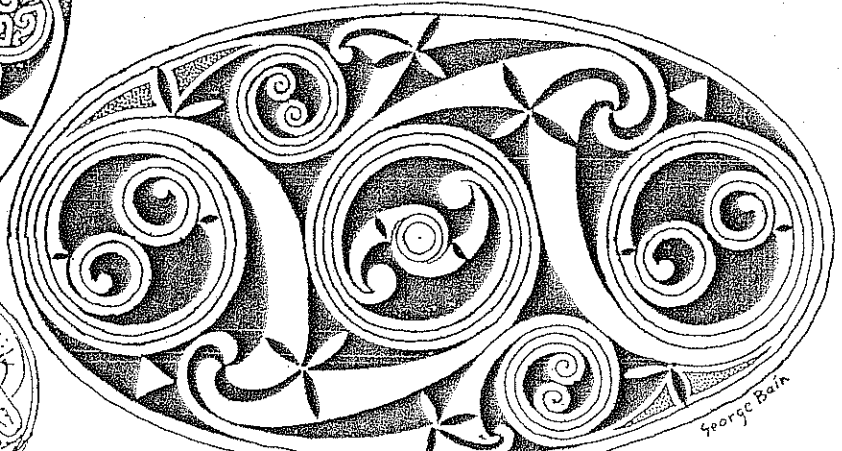
The actual completion must be by hand and eye.



Book of Kells

The tails of 3 dogs terminate in interlacing bodies, necks and limbs.





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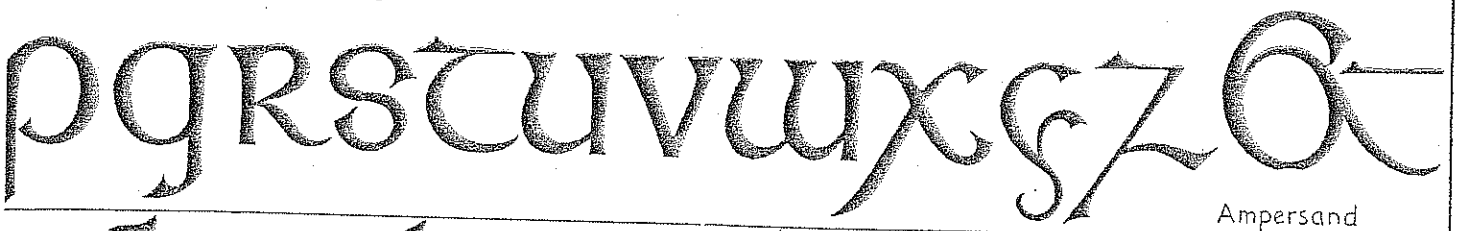
From Book of Lindisfarne. Width 2ins Plate 14.

Celtic Lettering from the Book of Kells Script. Quill Formations.

Period 4th – 6th Century.

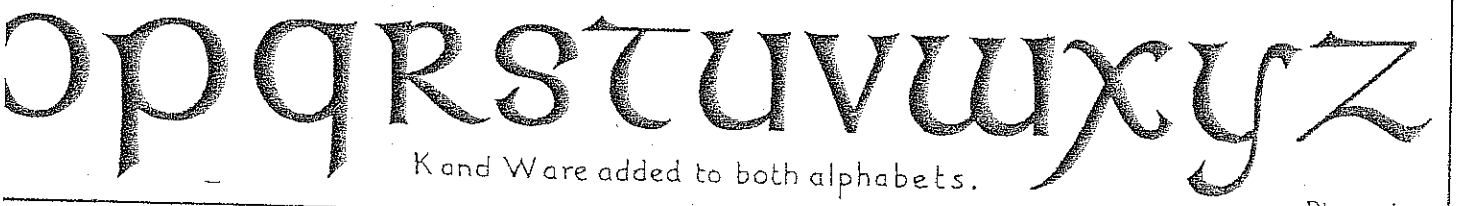
Actual formations.



Ampersand

A modification for modern uses.

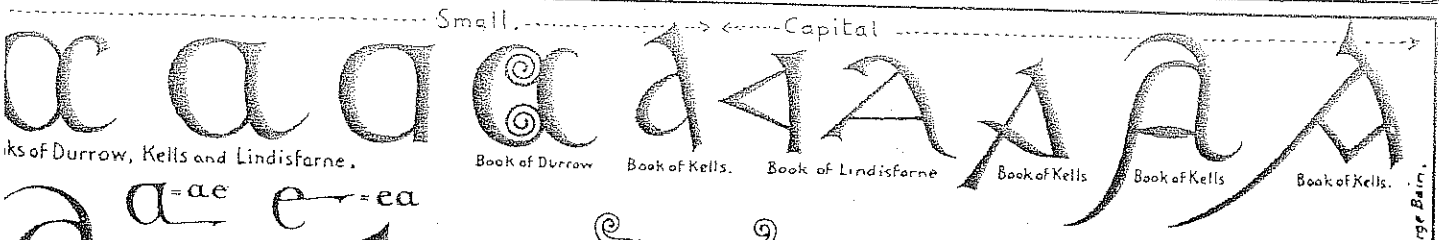
George Bain



K and W are added to both alphabets.

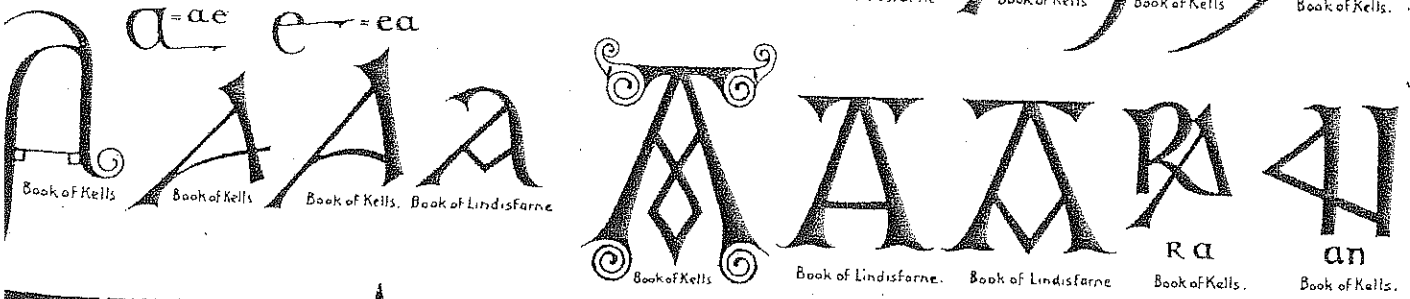
Plate 1.

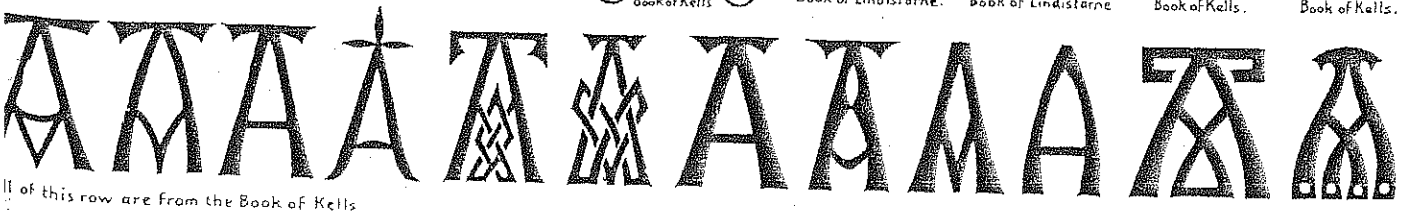
The Celtic Small Script a and Capital A from the Books Durrow, Kells and Lindisfarne.



ks of Durrow, Kells and Lindisfarne.

George Bain.



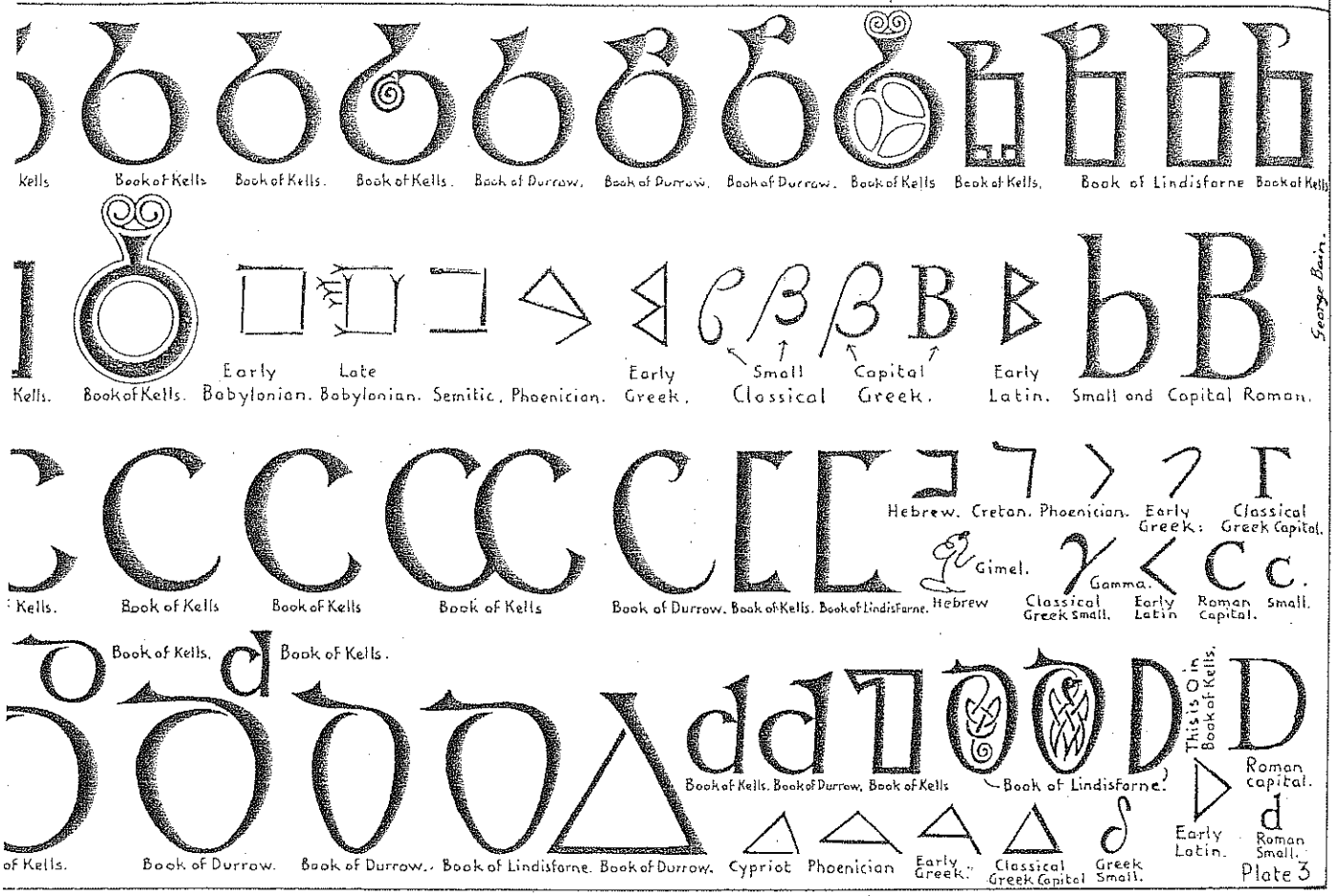


ll of this row are from the Book of Kells

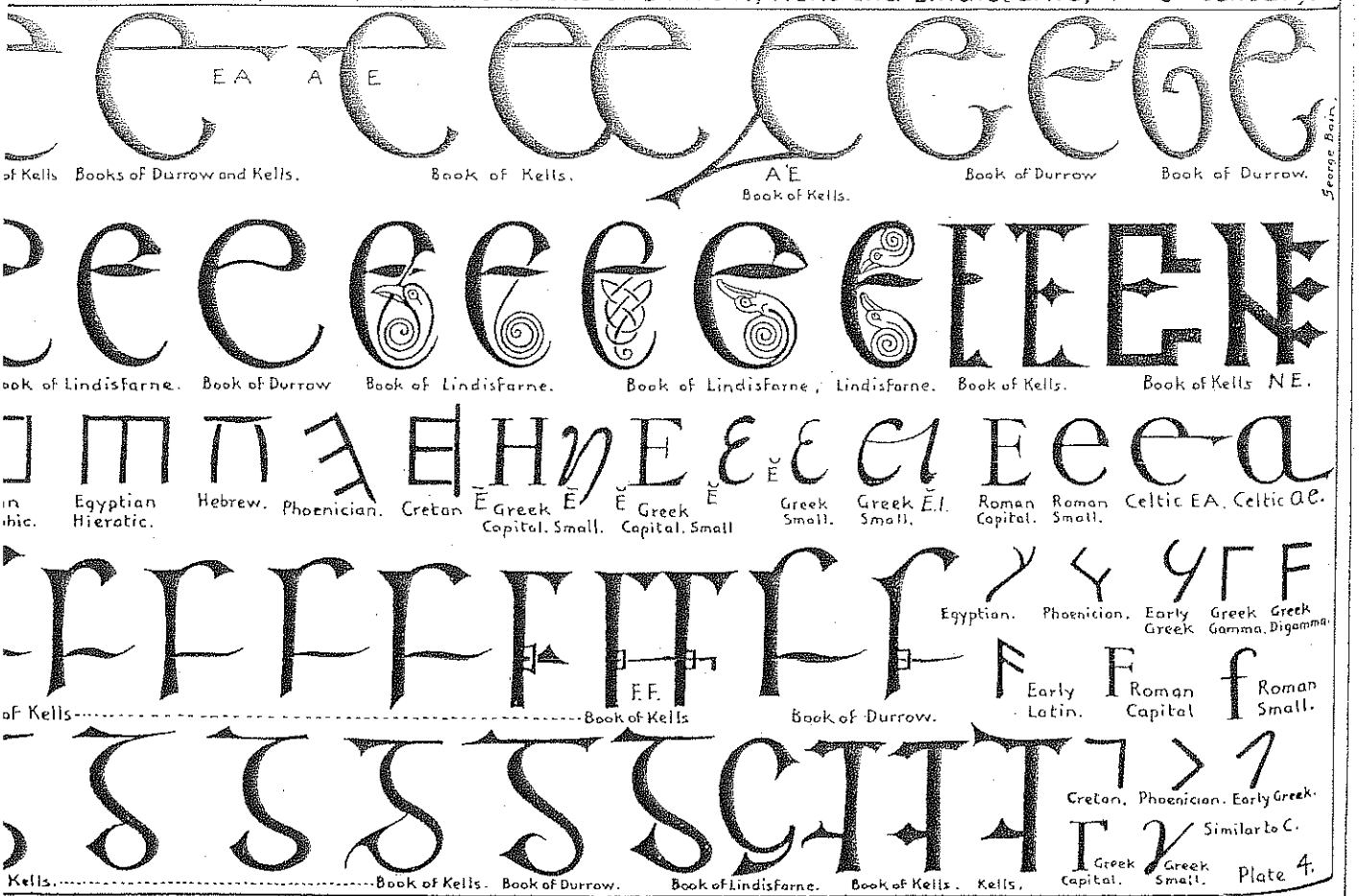
ek Capital and Small. Phoenician. Arabic. Hebrew. Contraction for a from the Book of Kells.

Plate 2.

Celtic letters B, C, and D, from the Books of Durrow, Kells and Lindisfarne.



Celtic Letters E, F, and G, from the Books of Durrow, Kells and Lindisfarne, 4th–6th Century.



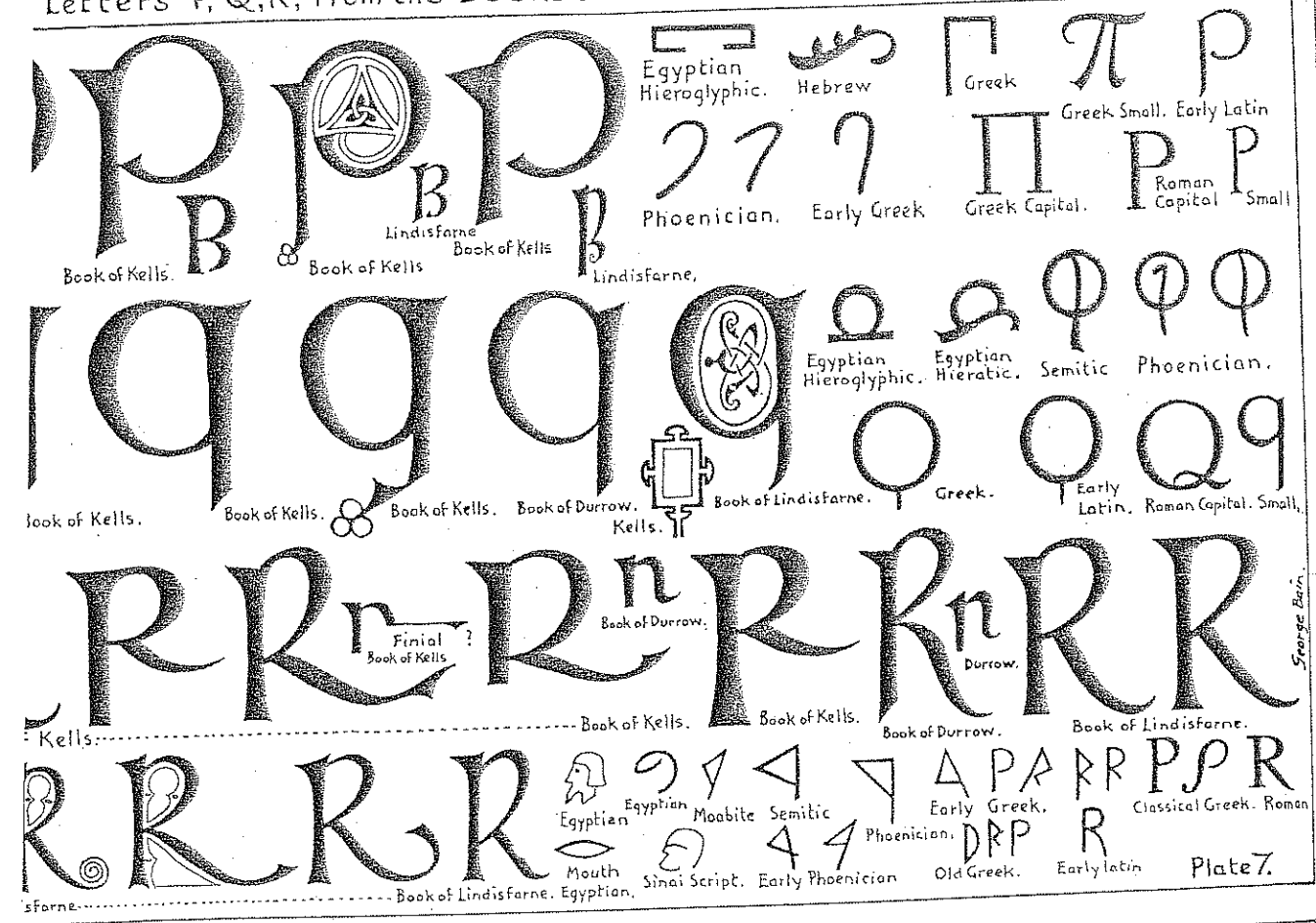
e Celtic Letters H, I, J, (no K in British and Irish Celtic Languages) and L from Books of Durrow, Kells and Lindisfarne.

Plate 5.

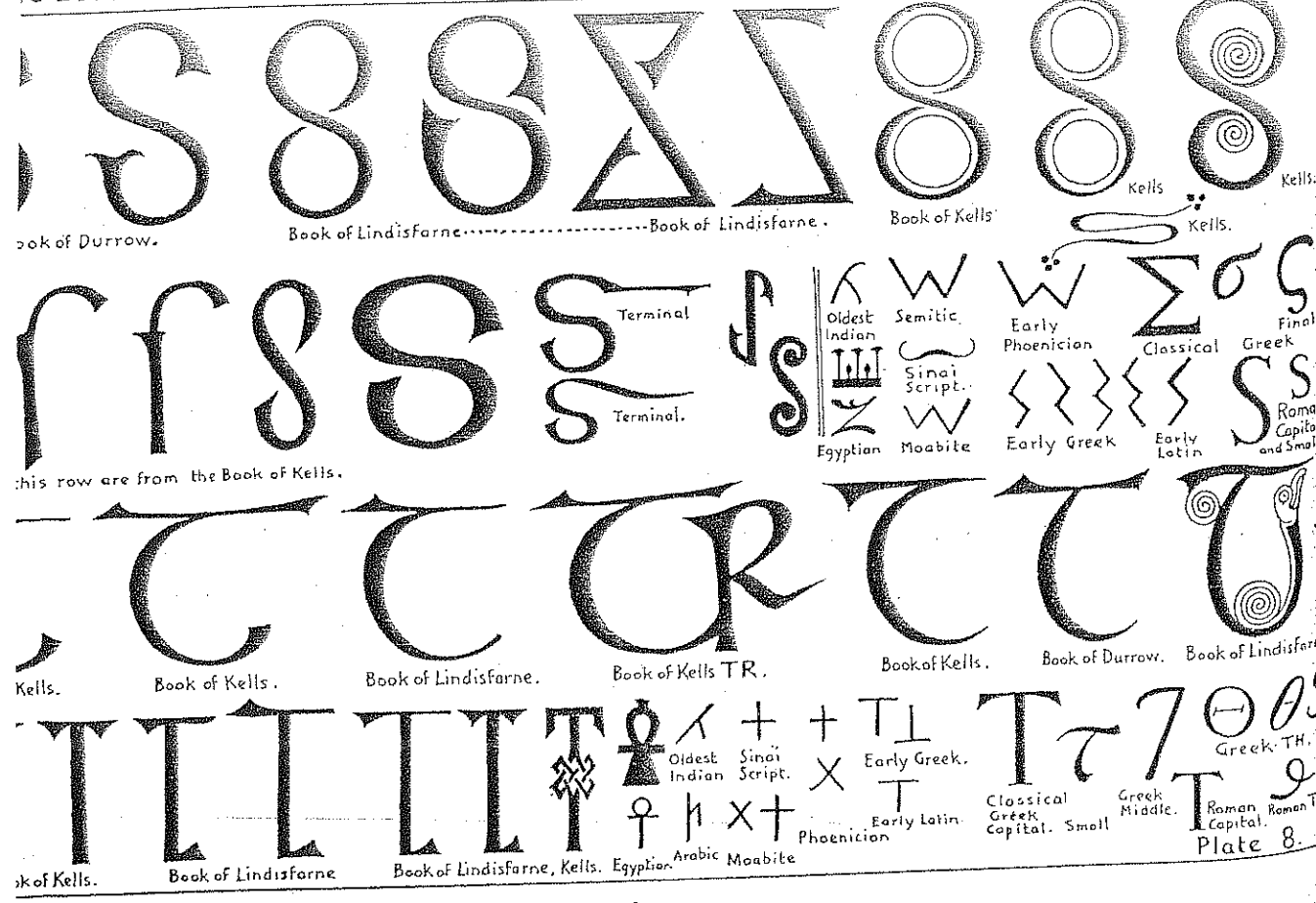
Celtic Letters M, N, and O from the Books of Durrow, Kells and Lindisfarne.

Plate 6.

Letters P, Q, R, from the Books of Durrow, Kells and Lindisfarne 4th-6th Century.

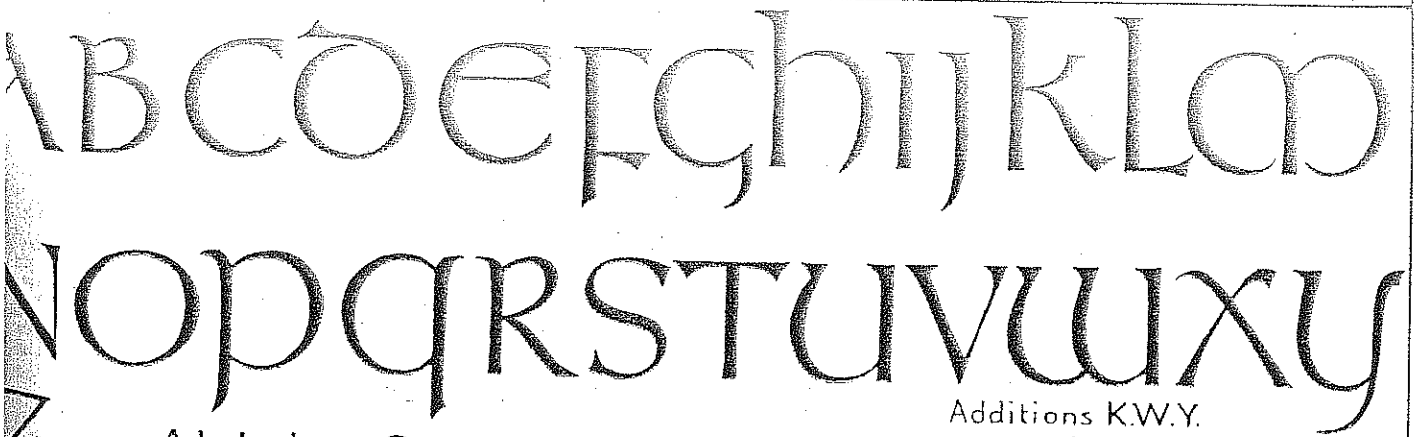


ic Letters S, T, from the Books of Durrow, Kells, and Lindisfarne. 4th-6th Century.



e Celtic Letters U, V, X, Y, Z, from the Books of Durrow, Kells and Lindisfarne, 4th-6th Century.

eltic Alphabets of Late 7th Century and the 4th to 6th Century.



Additions K.W.Y.

Alphabet, Cotton M.S. Vespasian A.I. Late 7th Century.

An Alphabet of straight-line letters from the Book of Kells.

4th - 6th Century

George Bain.

Somewhat similar alphabets are used in the Books of Durrow, and Lindisfarne.

Plate 10

rnamented Celtic Capital Letters from the Books of Durrow, Kells, and Lindisfarne.

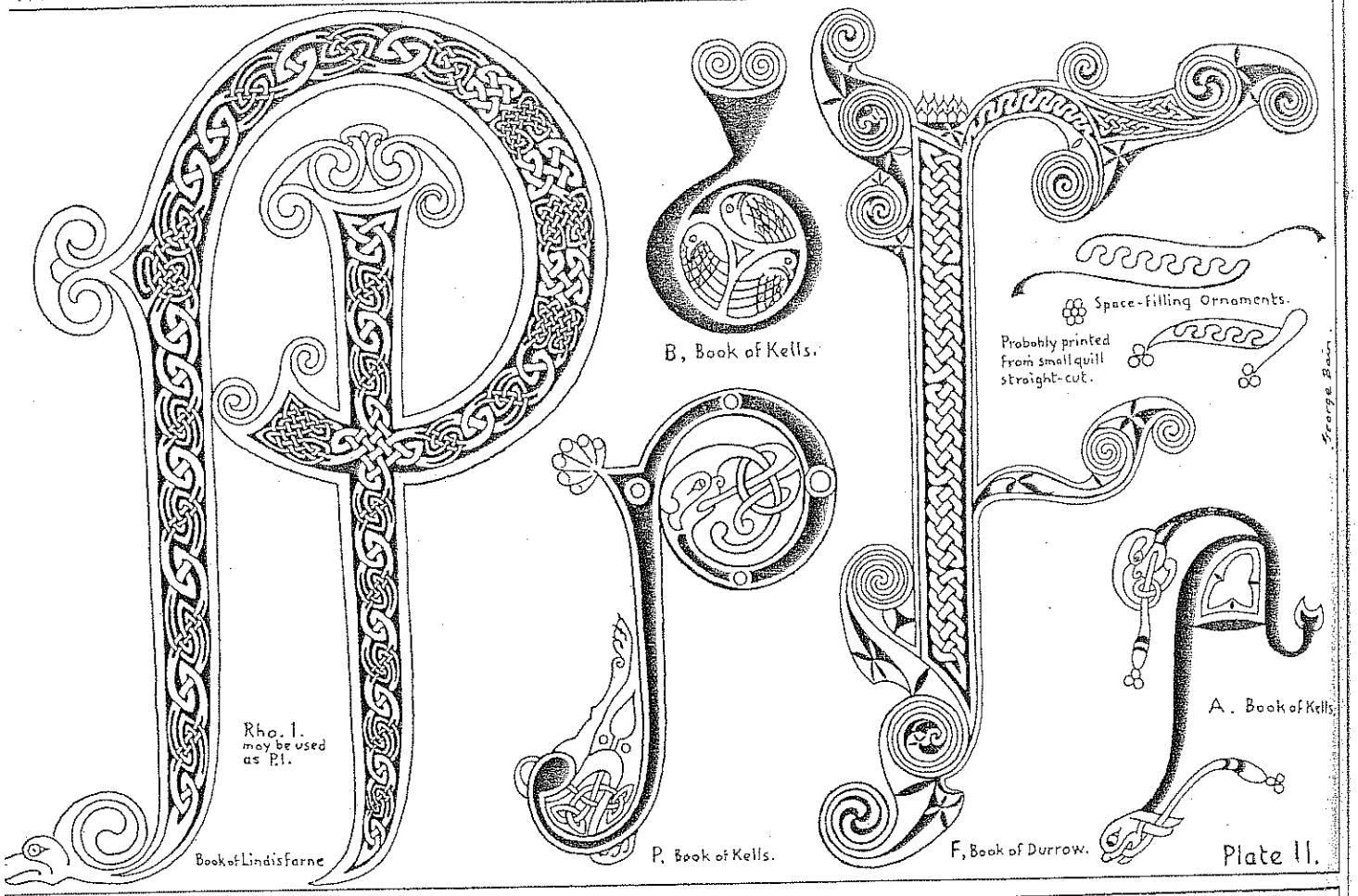


Plate II.

Ornamented Celtic Capitals from the Books of Durrow and Kells.

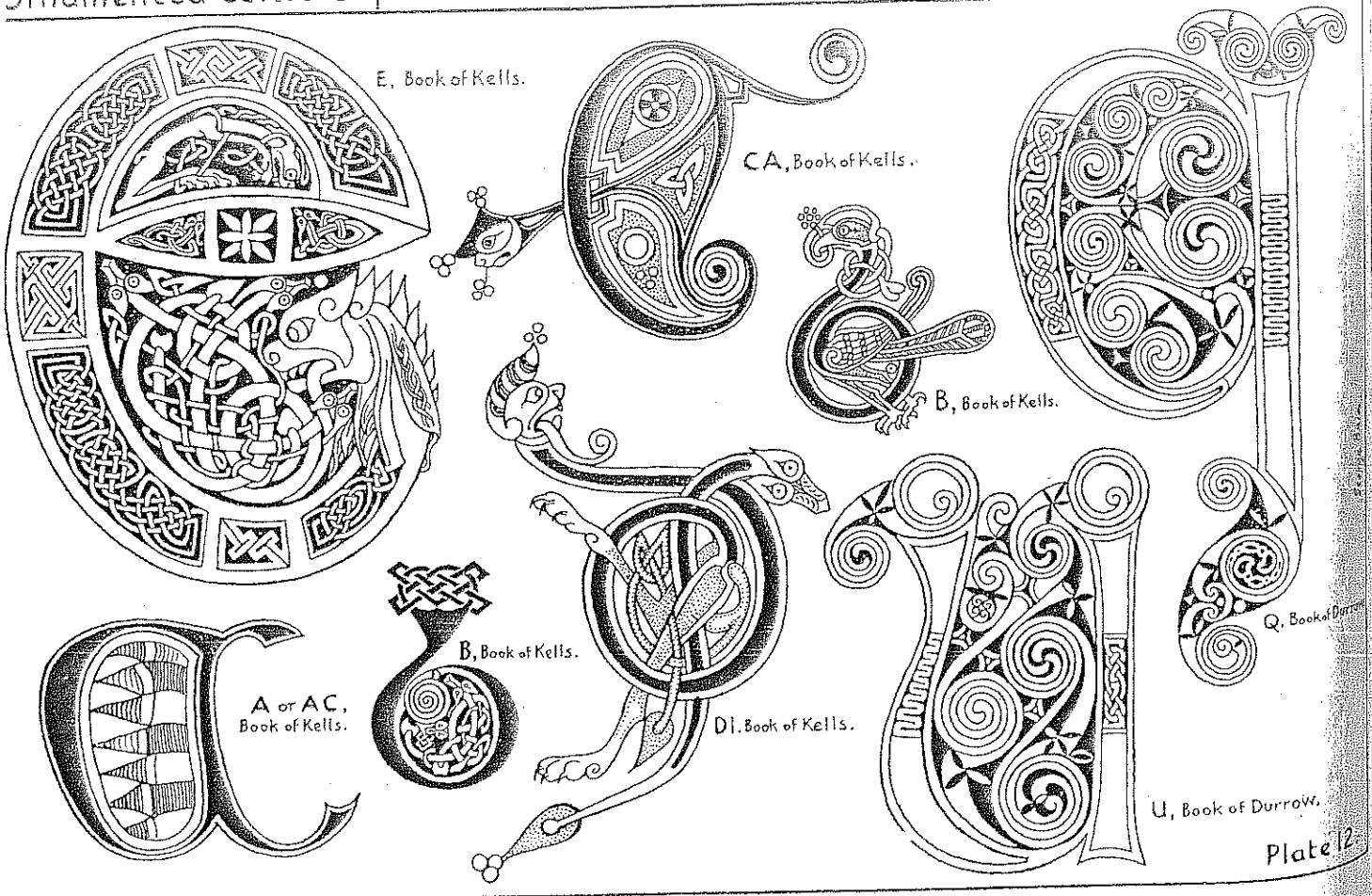
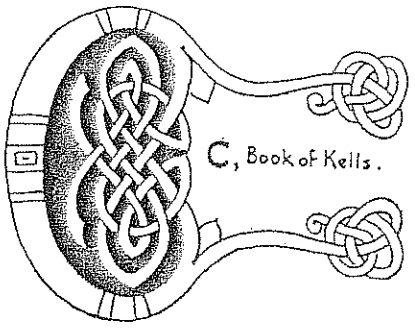
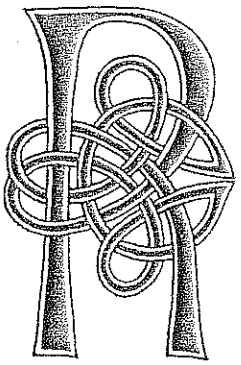
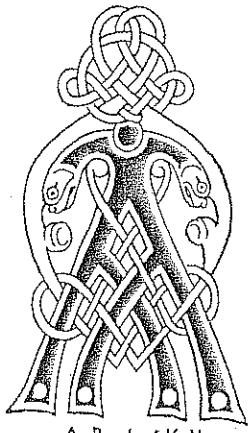


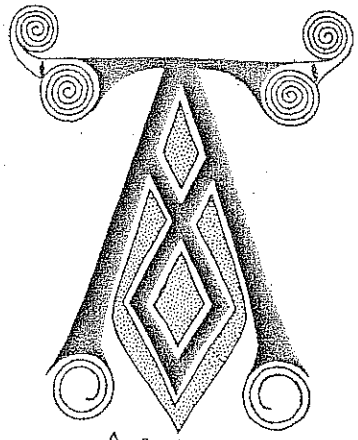
Plate 12.

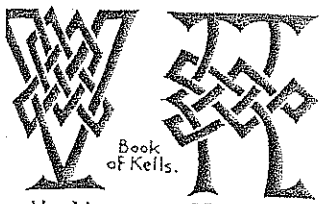
Ornamented Capitals From the Book of Kells.

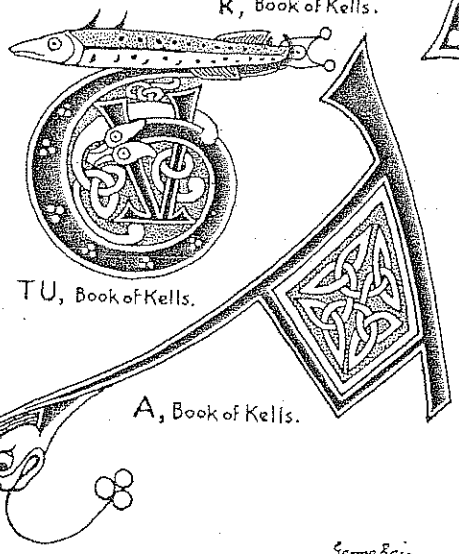

C, Book of Kells.


R, Book of Kells.

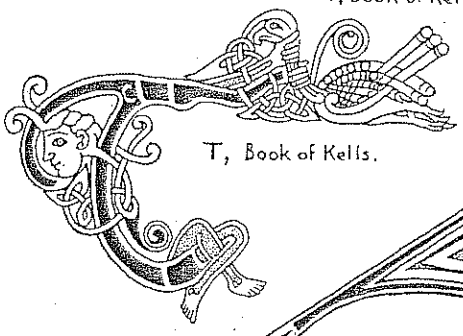

A, Book of Kells.


A, Book of Kells.


U or V, T E. Book of Kells.


TU, Book of Kells.

A, Book of Kells.


T, Book of Kells.

Book of Kells.

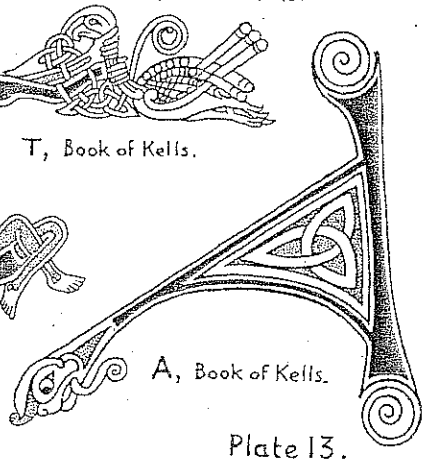

A, Book of Kells.

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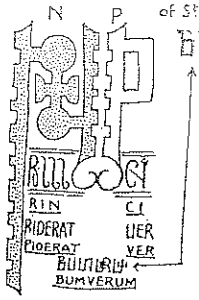
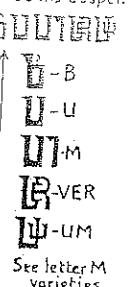
Plate 13.

Symbols and Contractions From Celtic M.s.s., and some problems for Language Experts From Inscribed Celtic Stones.

Book of Kells.

The opening words of St John's Gospel.

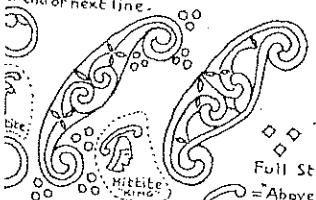




See letter M varieties Plate 6.

s wrongly read as incipio erat verbum et verbum". n principio erat verbum verum". e. beginning was the true word".

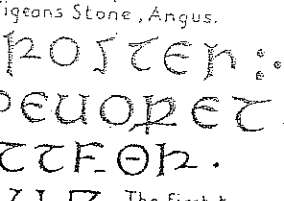
t Symbol. Letters following it are to be er end of next line.



Full Stops. ="Above" Altaic Symbol.

by the scribe doing the ornamented letters first and then filling in sentences. failed to complete in the line he put the after the stop of the sentence above ted the remainder of the sentence.

An incised inscription on the St Vigeans Stone, Angus.



DROSTEN :· (This sign may mean 'Priest')
IPE VORAET.

IPE may be = AP a Son or Ab. Abo, a Father or Abbot

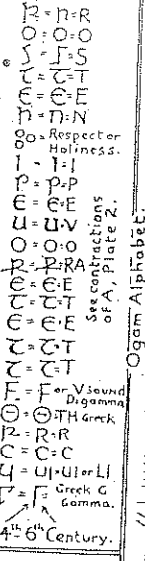
It may read "Drosten the Priest, Son of Voraet".

or "Drosten the holy Abbot of Voraet.

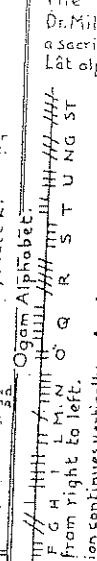
The remainder has been read as ETTE FORCUS. It may be ETTE V.THR·C·VIG

This inscription was undoubtedly added to the ornamented stone later.

The Celtic letters of this inscription are 4th-6th Century.

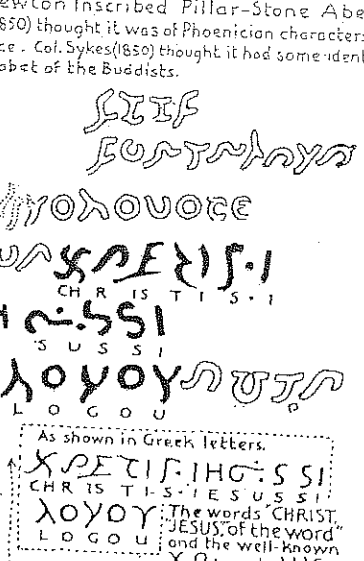


See contractions of A, Plate 2.



The Newton Inscribed Pillar-Stone Aberdeen-shire.

Dr. Mill (1850) thought it was of Phoenician characters, commemorating a sacrifice. Col. Sykes (1850) thought it had some identity with the ancient Lât alphabet of the Buddists.

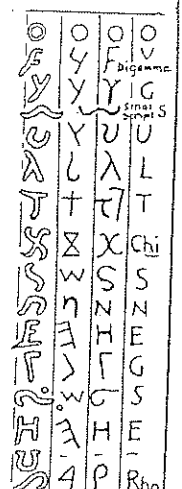


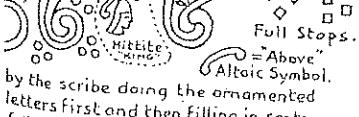
As shown in Greek letters.

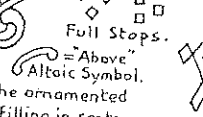
The words "CHRIST JESUS" of the word" and the well-known XPI and IHS placed together support this interpretation, even in an unknown language. More support is found in the Ogam inscription if it is read from right to left.

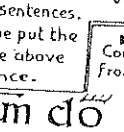
The commencing letters are IEASOISE CHR (or I)

X is unusual in Ogam and it may by itself mean "Christ" just as X in (Christ) mas, Xmas.



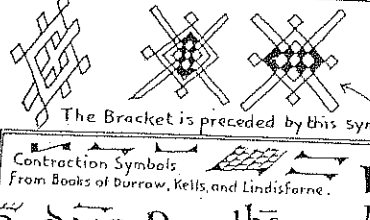






D N E

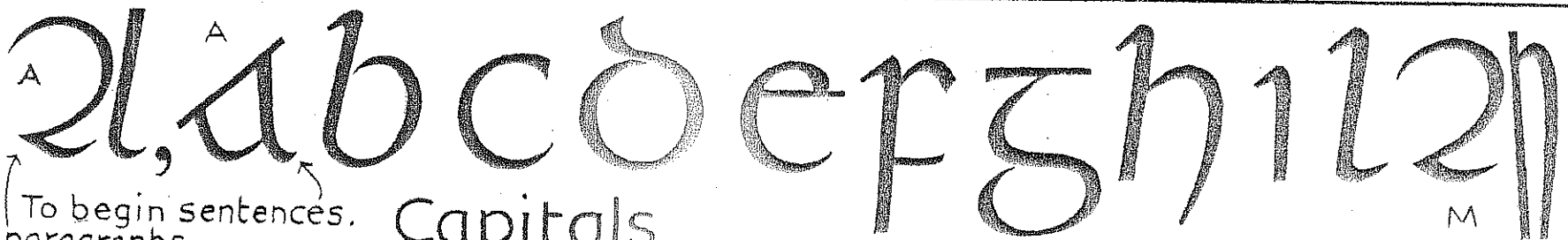
Contraction Symbols From Books of Durrow, Kells, and Lindisfarne.



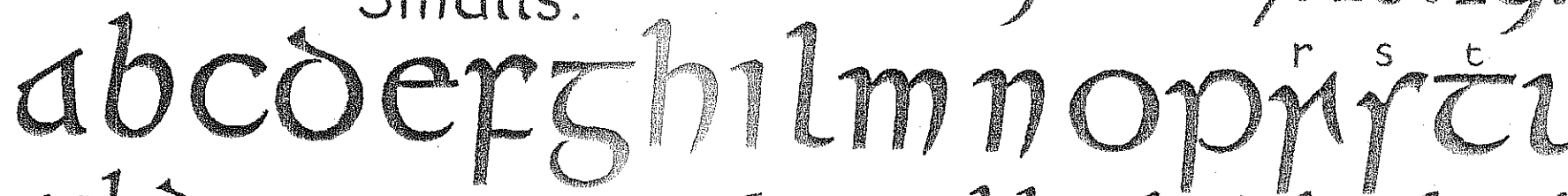
The Bracket is preceded by this symbol

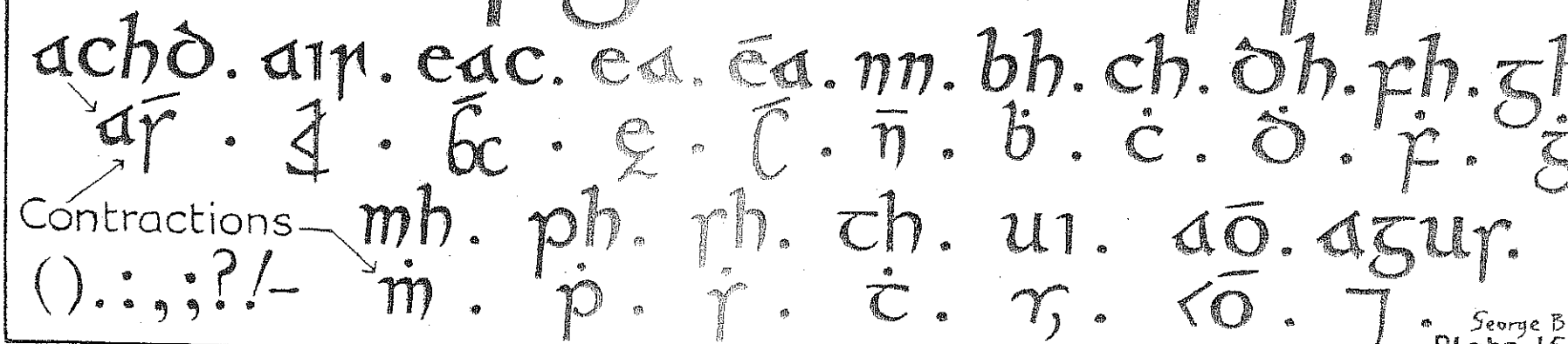
Plate 14.

Celtic Type from a book in Gaelic (Irish,) printed in 1711.

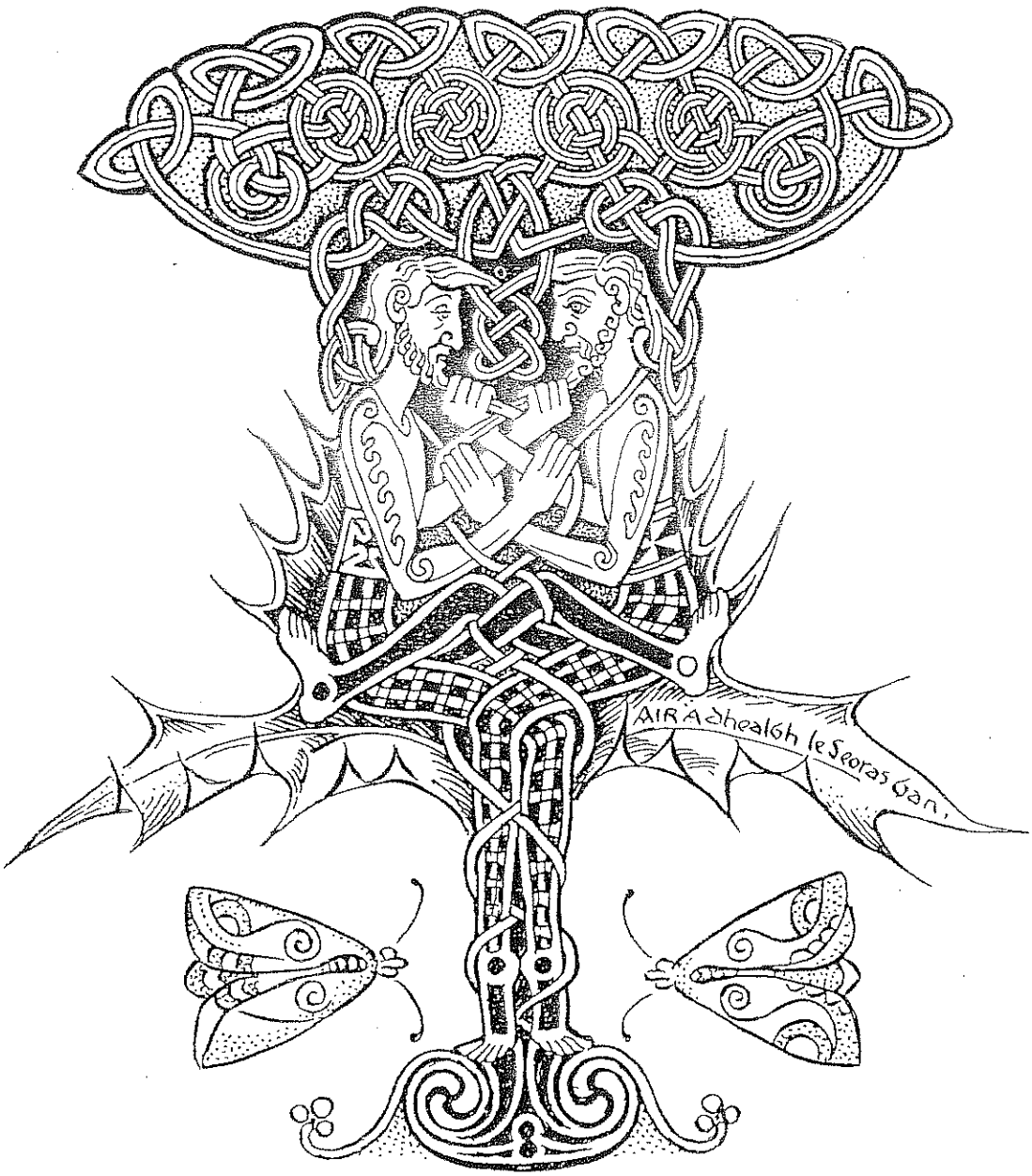


Smalls.

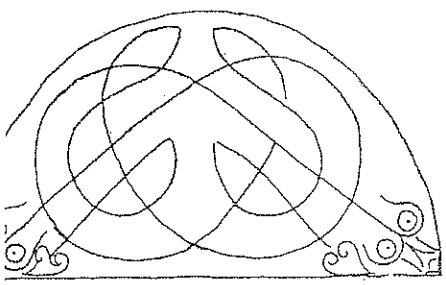




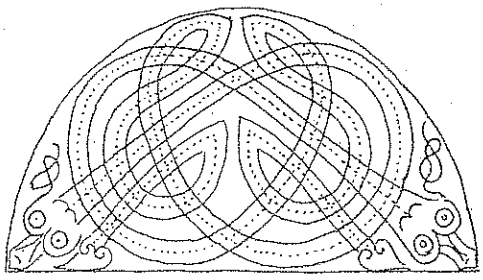
George Bain
Plate 15.


AIR Aghealgh le Seoras Gan,

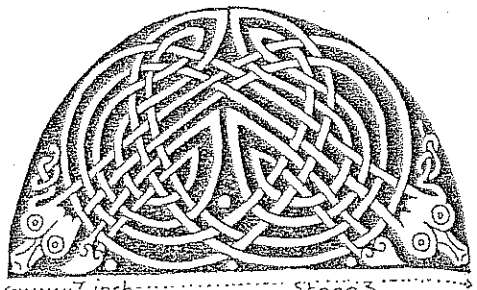
e Methods of Construction of Reptiles as Ornaments, from the Book of Kells.



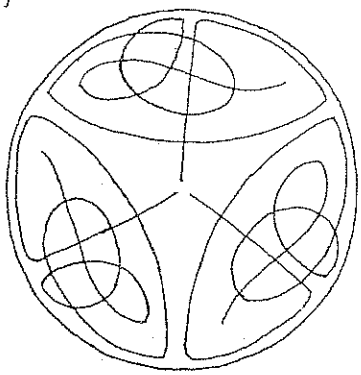
tage 1.



Stage 2.

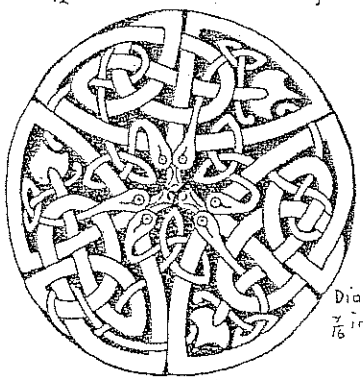


$\frac{7}{12}$ inch — Stage 3



Stage 1.

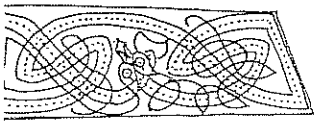
Stages 2 and 3.



Diameter $\frac{7}{16}$ inch.

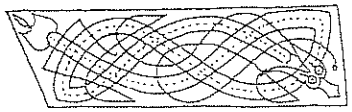
Stage 4.

George Bain

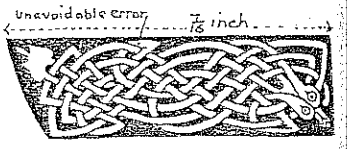


tages 1 and 2.

$\frac{7}{16}$ inch — Stage 3.



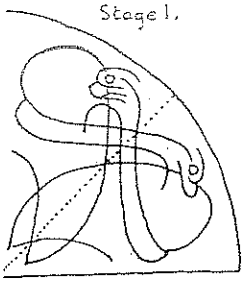
Stages 1 and 2.



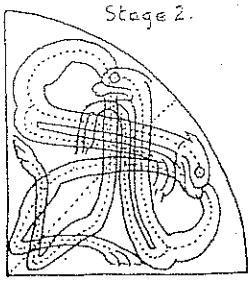
Unavoidable error — $\frac{7}{16}$ inch — Stage 3.

Plate 7

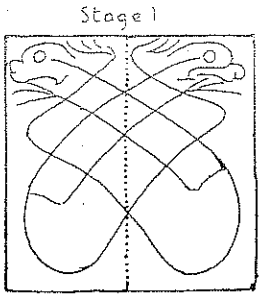
og-like Animals. Head, Top-knot, Tail, Hind-leg, Fore-leg and Body, from the Book of Kells.



Stage 1.

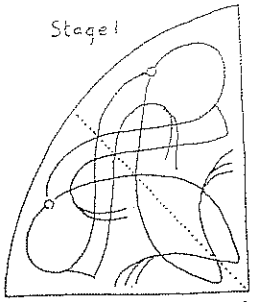


Stage 2.

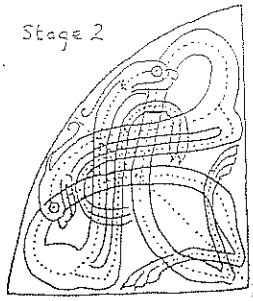


Stage 1

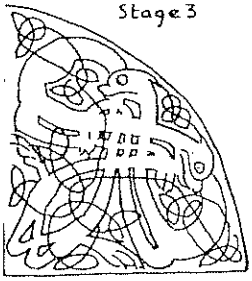
Stage 2.



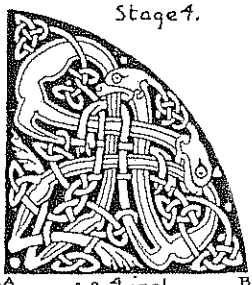
Stage 1



Stage 2



Stage 3

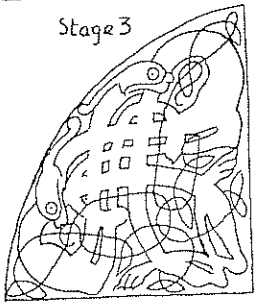


A A·B $\frac{4}{5}$ inch B

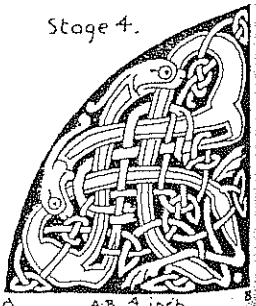
Stage 4.

A A·B $\frac{5}{16}$ inch B

Stage 2.

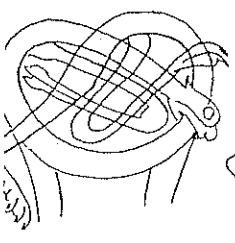


Stage 3

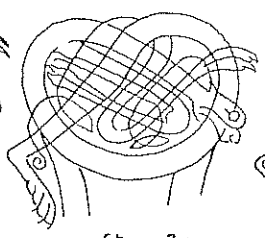


A A·B $\frac{4}{5}$ inch B

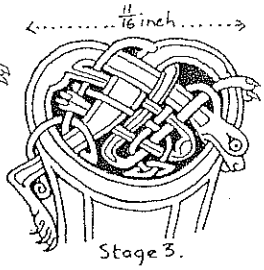
Stage 4.



Stage 1.

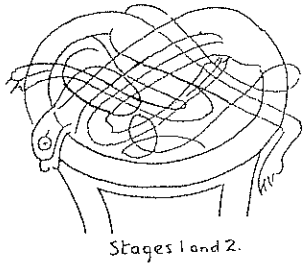


Stage 2.

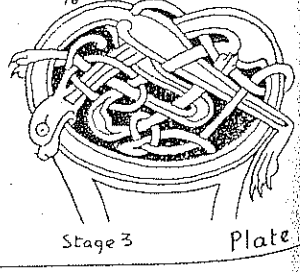


$\frac{11}{16}$ inch

Stage 3.



Stages 1 and 2.

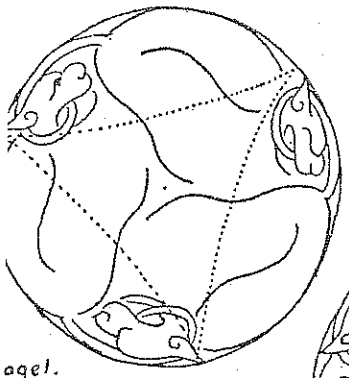


$\frac{13}{16}$ inch

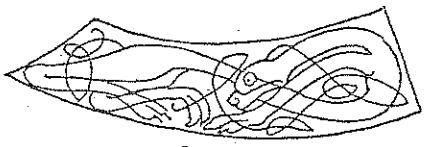
Stage 3

Plate 8

he Use of Animals as Interlacing Ornaments. From the Book of Kells.



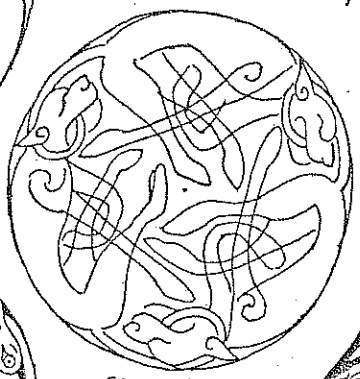
agel.



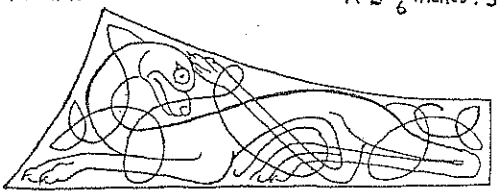
Stages 1 and 2.

A-B $\frac{5}{6}$ inches. Stage 3.

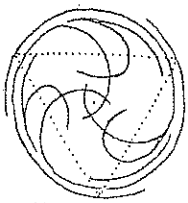
George Bain.



Stage 2.



Stages 1 and 2.

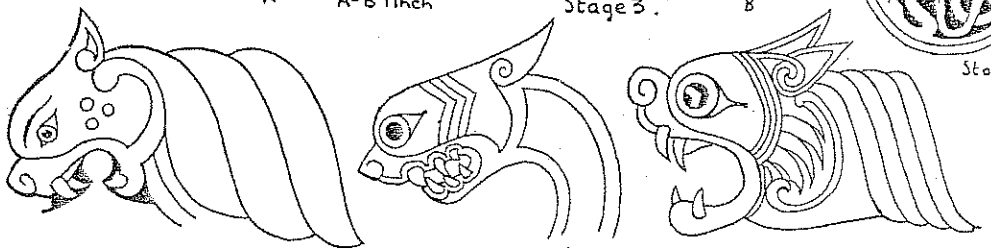


Stages 1 and 2.
Diameter $\frac{5}{16}$ inch

Stage 3. Diameter $\frac{5}{16}$ inch.

A-B 1 inch Stage 3.

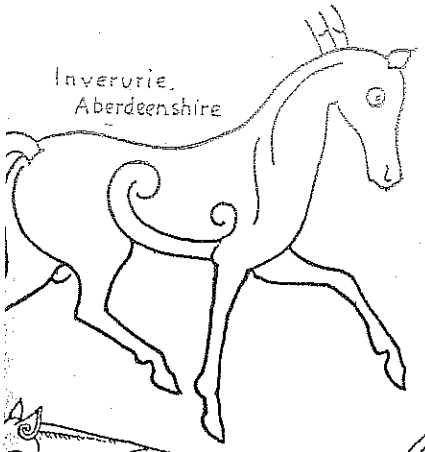
Stage 3.



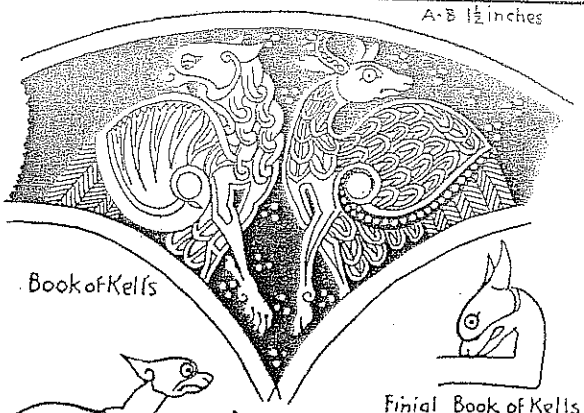
Types of Heads.

Plate 9.

ıı-realistical and mythical Animals from Scottish Stones and the Book of Kells.



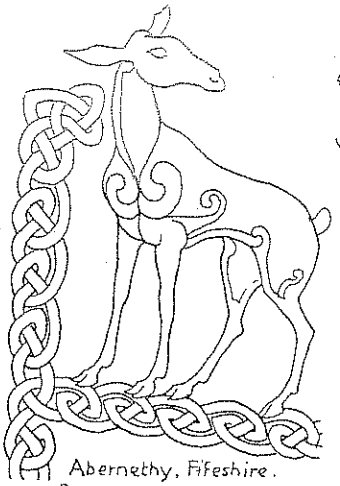
Inverurie, Aberdeenshire



A-B 1½ inches

Book of Kells

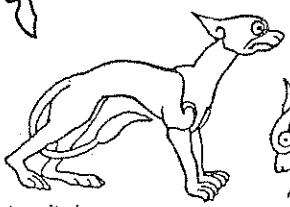
Finial, Book of Kells



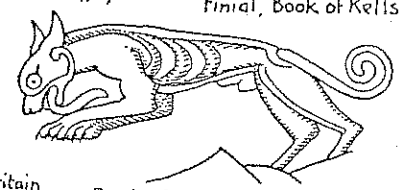
Abernethy, Fifeshire. Reconstructed from fragment.

George Bain

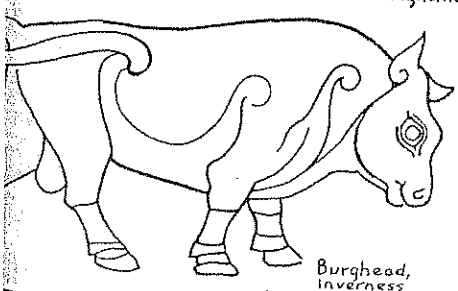
Book of Kells.



A scribe's rendering of the Fighting Dog of Ancient Britain Book of Kells.

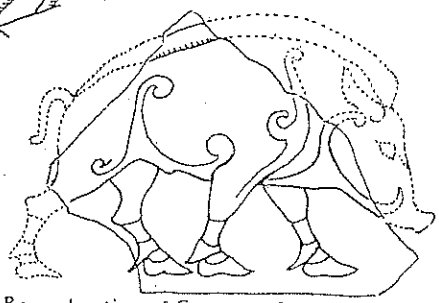


Book of Kells.



Burghead, Inverness

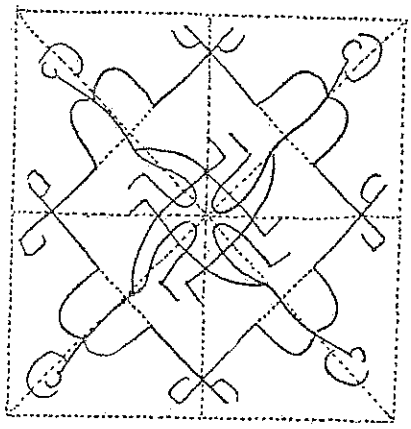
Book of Kells. $\frac{15}{16}$ inch



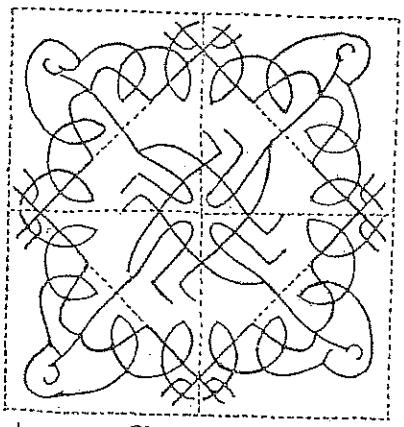
Reconstruction of Fragment from Dores, Inverness-shire.

Plate 10.

uman Male Figures in Ornament from Stone at Clonmacnoise, and Book of Kells

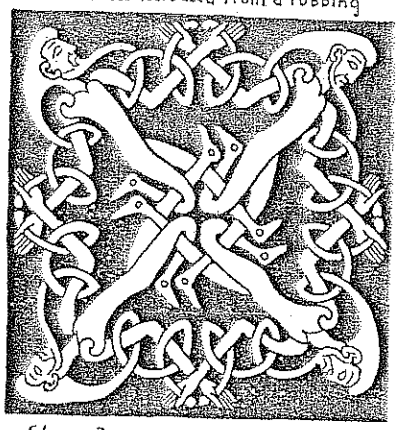


Stage 1.



Stage 2

Cross-shaft at Clonmacnoise, Ireland.
Reconstructed from a rubbing



Compare with Stone of Cong.

Stage 3.

Angel
Book of Kells

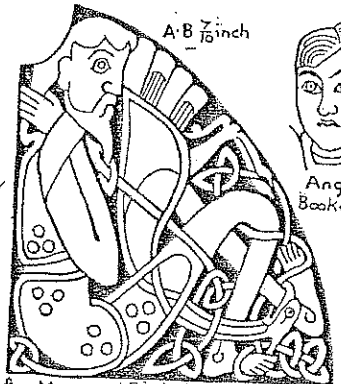
Finial, Book of Kells

B

A — A-B. 1 inch

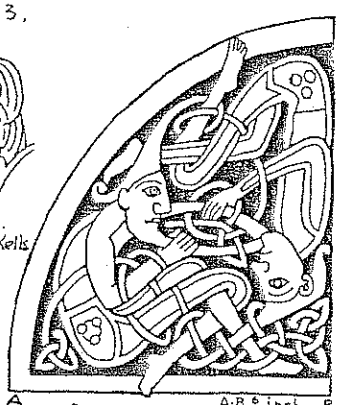
Angel, Book of Kells

A·B 7/10 inch



A Man and Bird. Book of Kells. B

Angel, Book of Kells

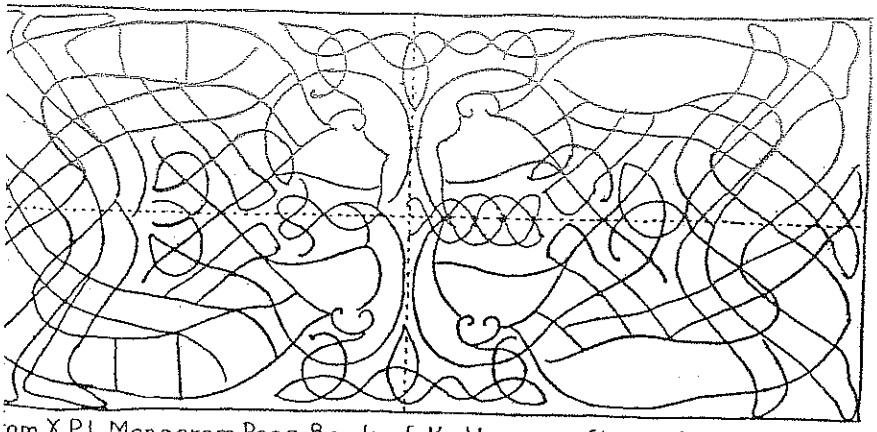


A Book of Kells. A·B 5/8 inch B

George Bain

Plate 13

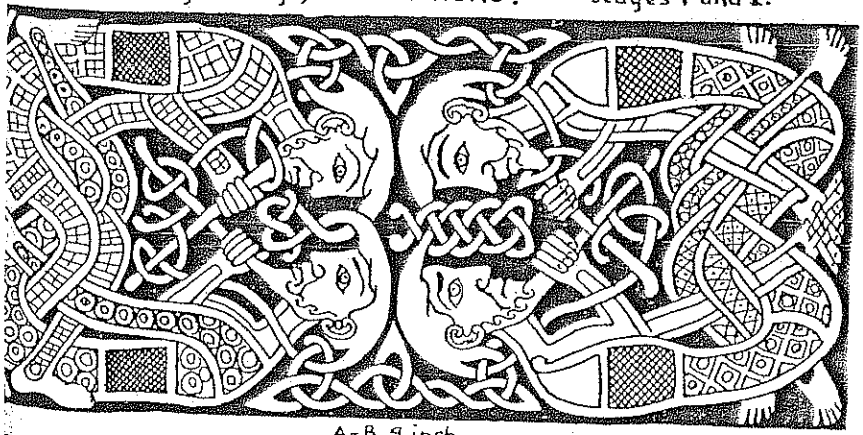
ard-pullers and other interlaced Human Male Figures in Ornament, from the Book of Kells.



om X.P.I. Monogram Page, Book of Kells. Stages 1 and 2.

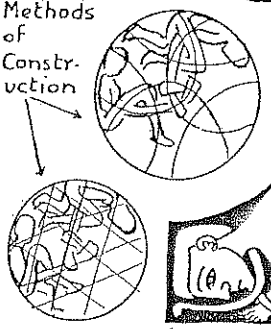
George Bain.

Diameter 7/16 inch
Book of Kells

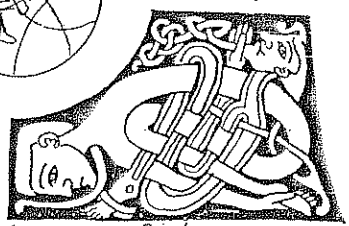


A-B 9/10 inch. B

Two Methods of Construction



Book of Kells.



9/16 inch

Plate 14.

ng Things of the Earth, Man, Beast, Bird and Reptile, Vegetation excluded.

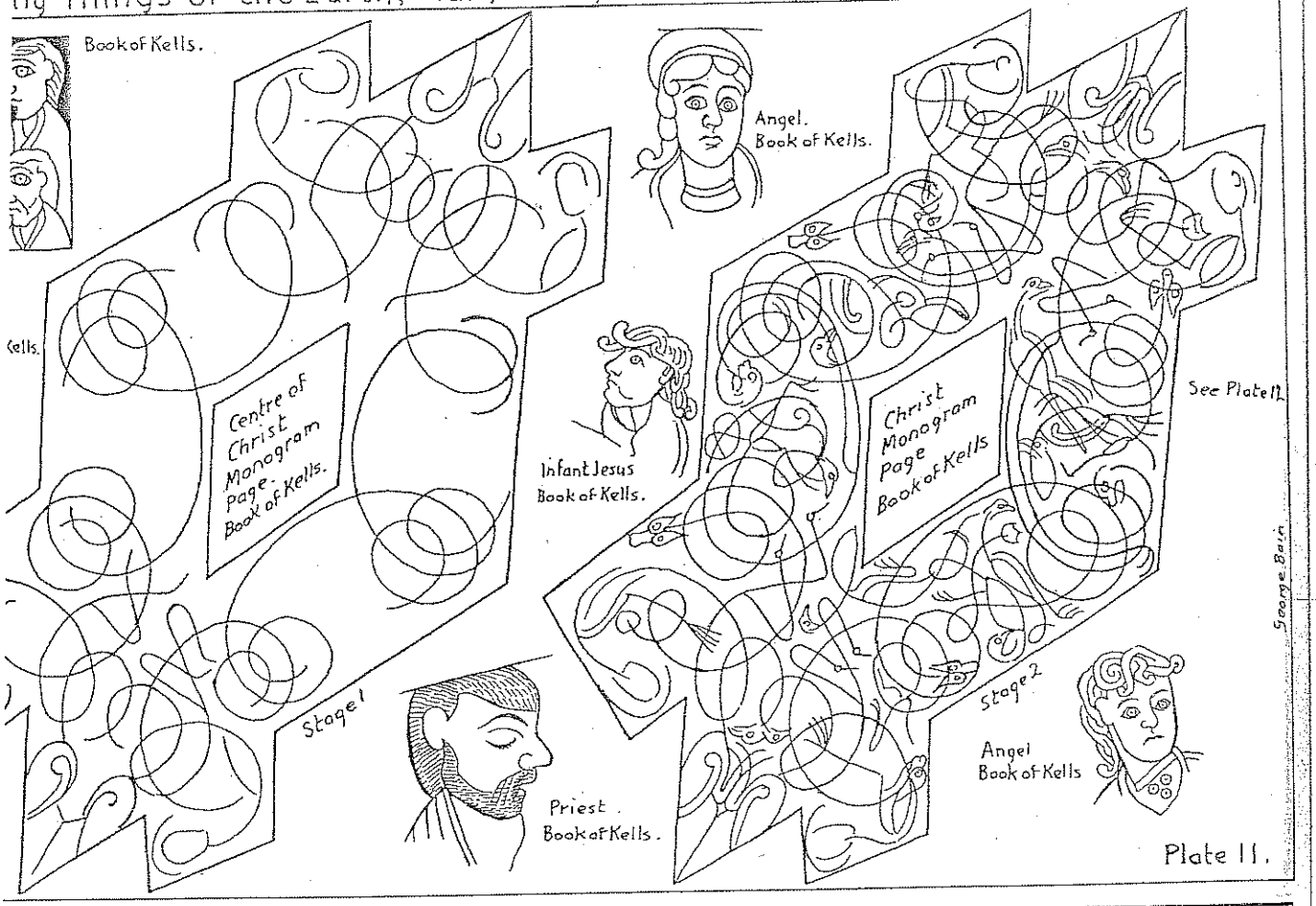


Plate 11.

cing Human Figures from the Book of Kells and the Clonmacnoise Stone.

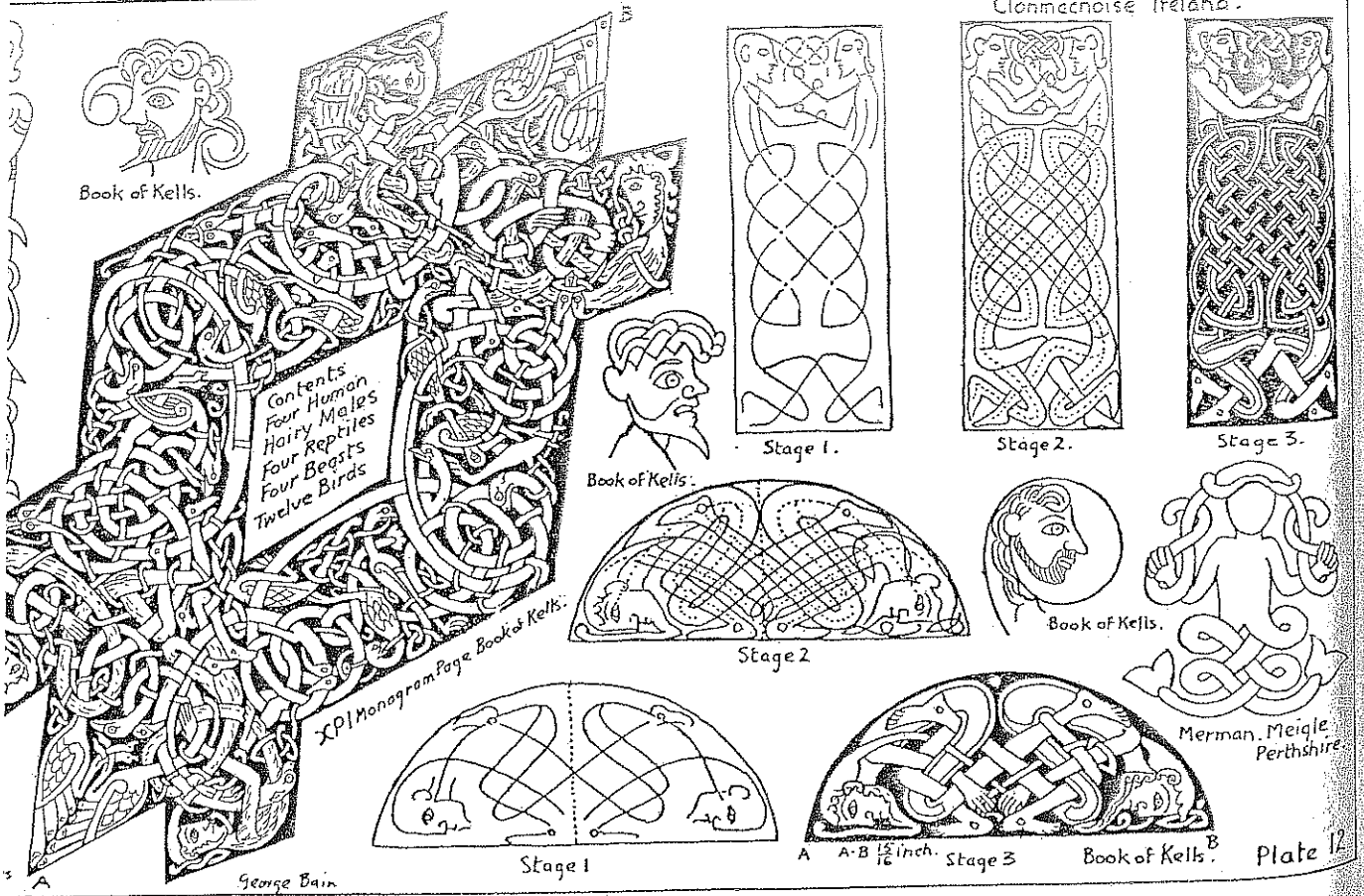


Plate 12.

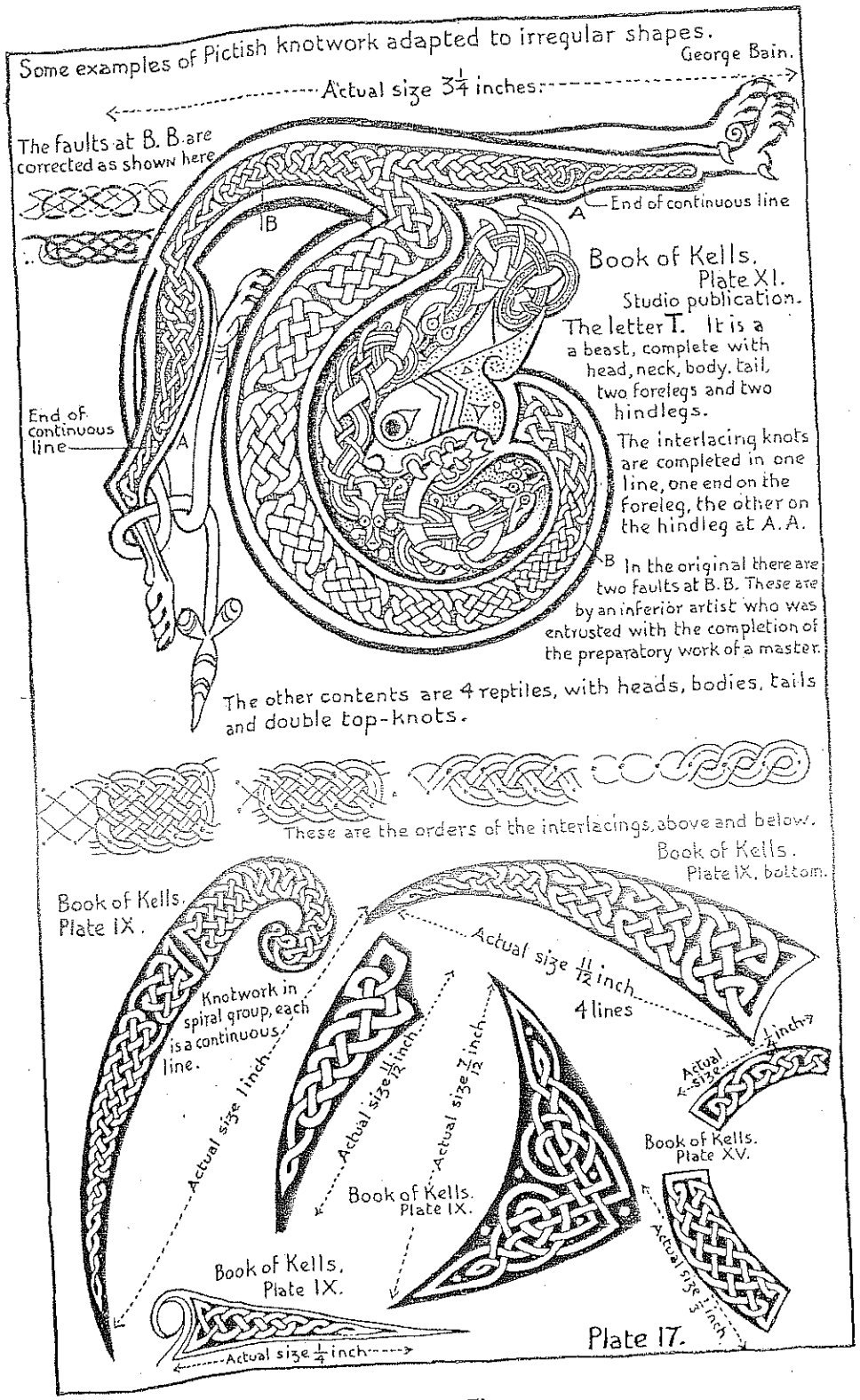
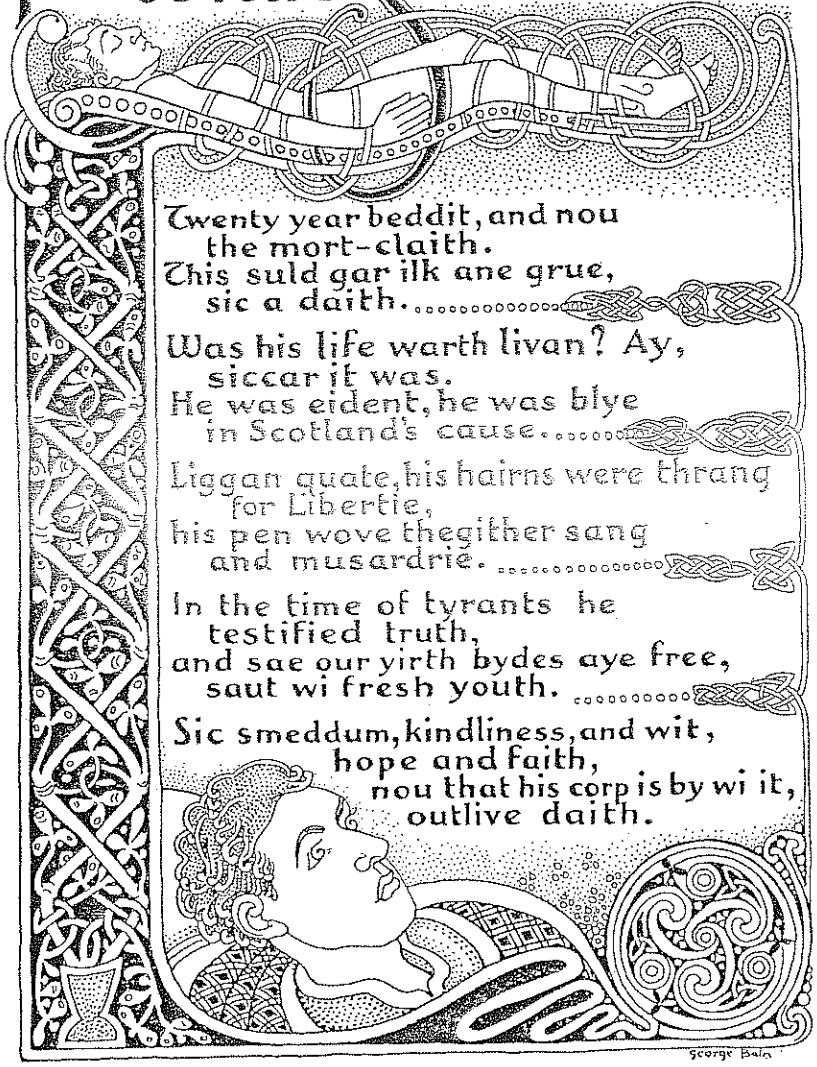

Some examples of Pictish knotwork adapted to irregular shapes.
George Bain.
Actual size 3¼ inches.
The faults at B. B are corrected as shown here.
B
A
End of continuous line
Book of Kells. Plate XI. Studio publication.
The letter T. It is a beast, complete with head, neck, body, tail, two forelegs and two hindlegs.
End of continuous line
The interlacing knots are completed in one line, one end on the foreleg, the other on the hindleg at A.A.
B In the original there are two faults at B.B. These are by an inferior artist who was entrusted with the completion of the preparatory work of a master.
The other contents are 4 reptiles, with heads, bodies, tails and double top-knots.
These are the orders of the interlacings, above and below.
Book of Kells. Plate IX, bottom.
Book of Kells. Plate IX.
Actual size 11/12 inch
4 lines
Knotwork in spiral group, each is a continuous line.
Actual size 1 inch
Actual size 1½ inch
Actual size 7/12 inch
Actual size ¼ inch
Book of Kells. Plate XV.
Book of Kells. Plate IX.
Book of Kells. Plate IX.
Actual size 5/12 inch
Actual size ¼ inch
Plate 17.

Plate T

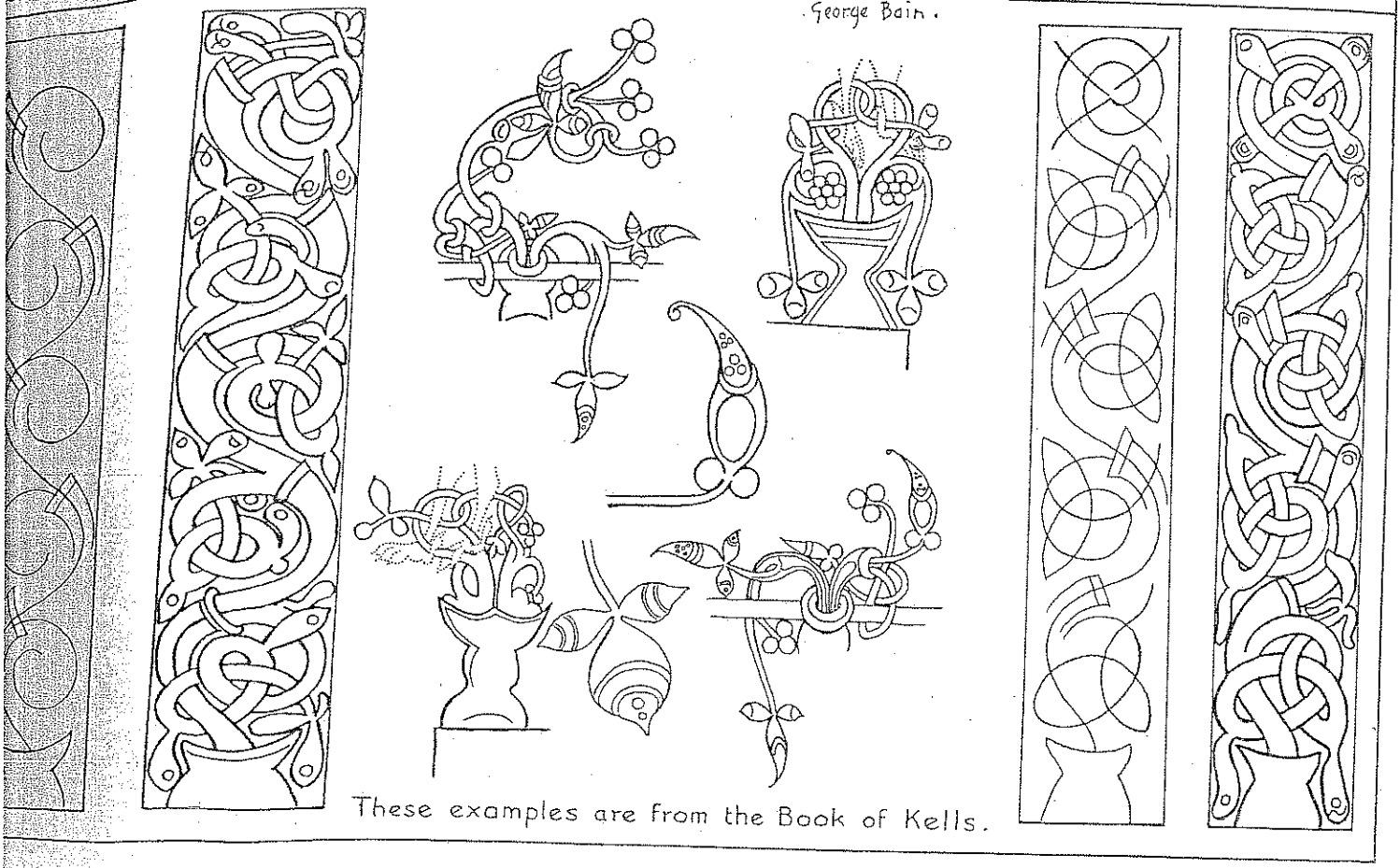
For Willie Outar October 1943.



Designed by the Author. Poem by Douglas Young

eltic Art. On Pictish Stones and in the Book of Kells the "Tree of Life" emerges from a Pot.

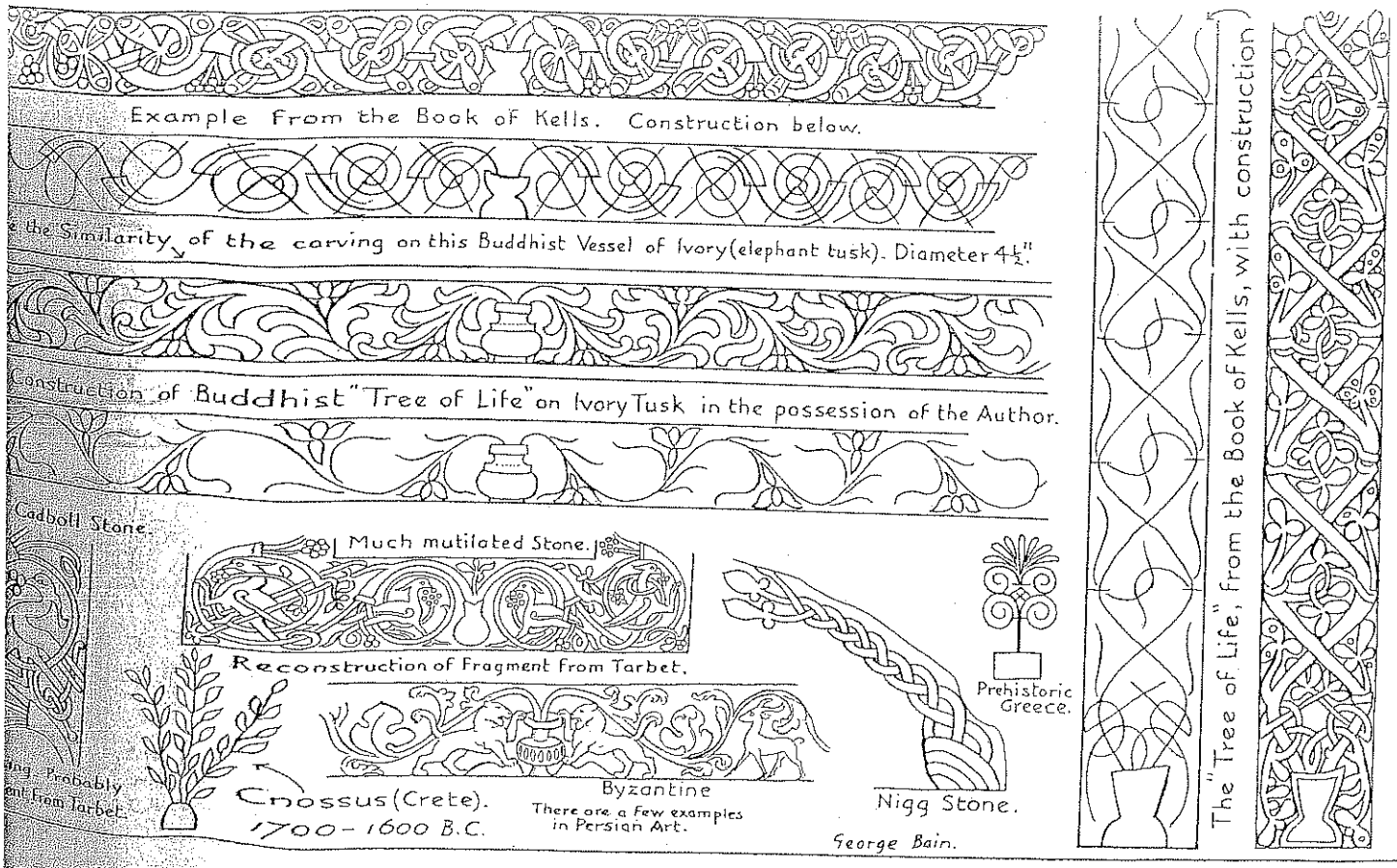
George Bain.



These examples are from the Book of Kells.

Plate, A.1.

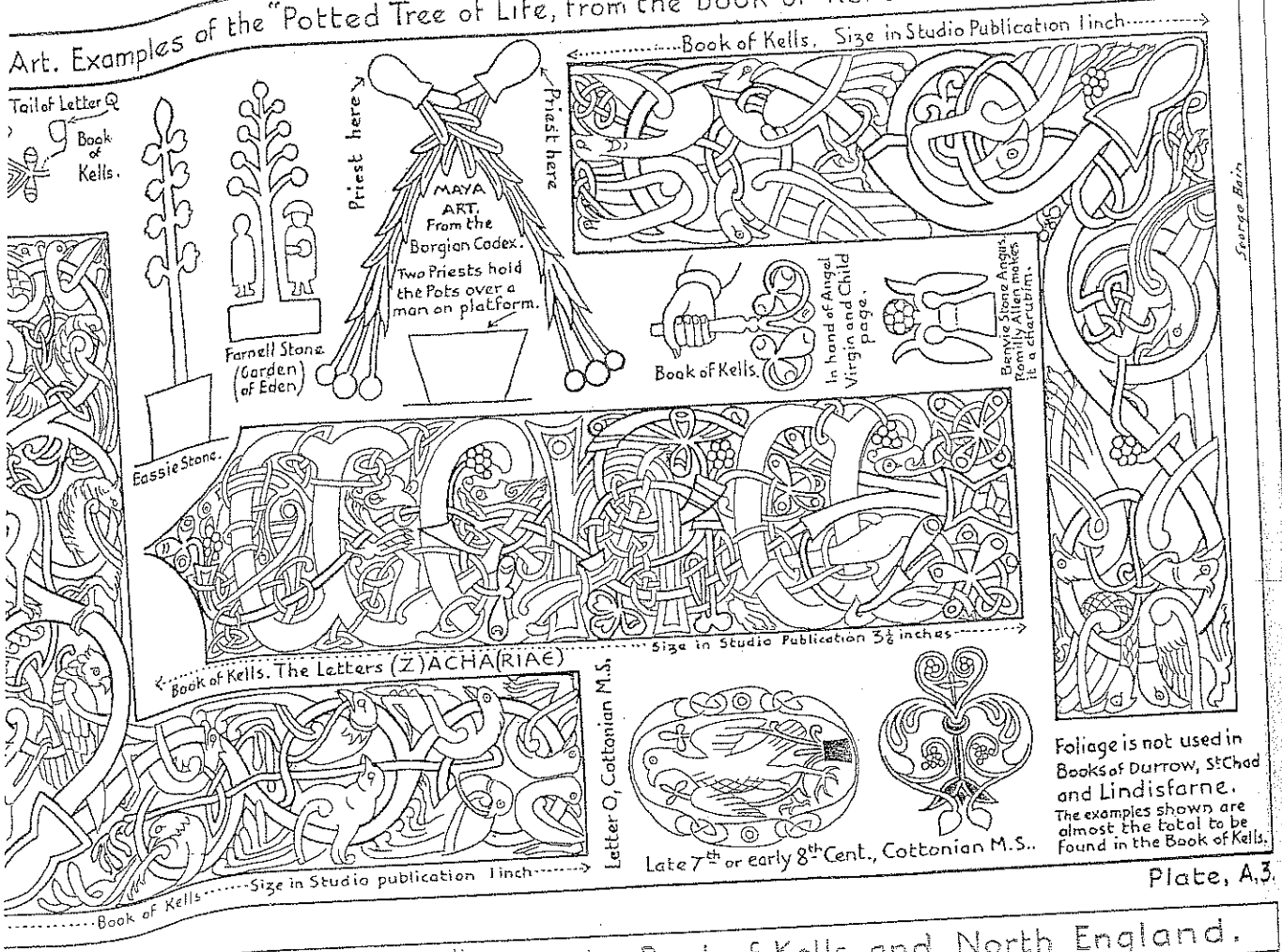
tic Art. The "Tree of Life" Symbol, From the Book of Kells, Pictish Stones and Asiatic Sources.



George Bain.

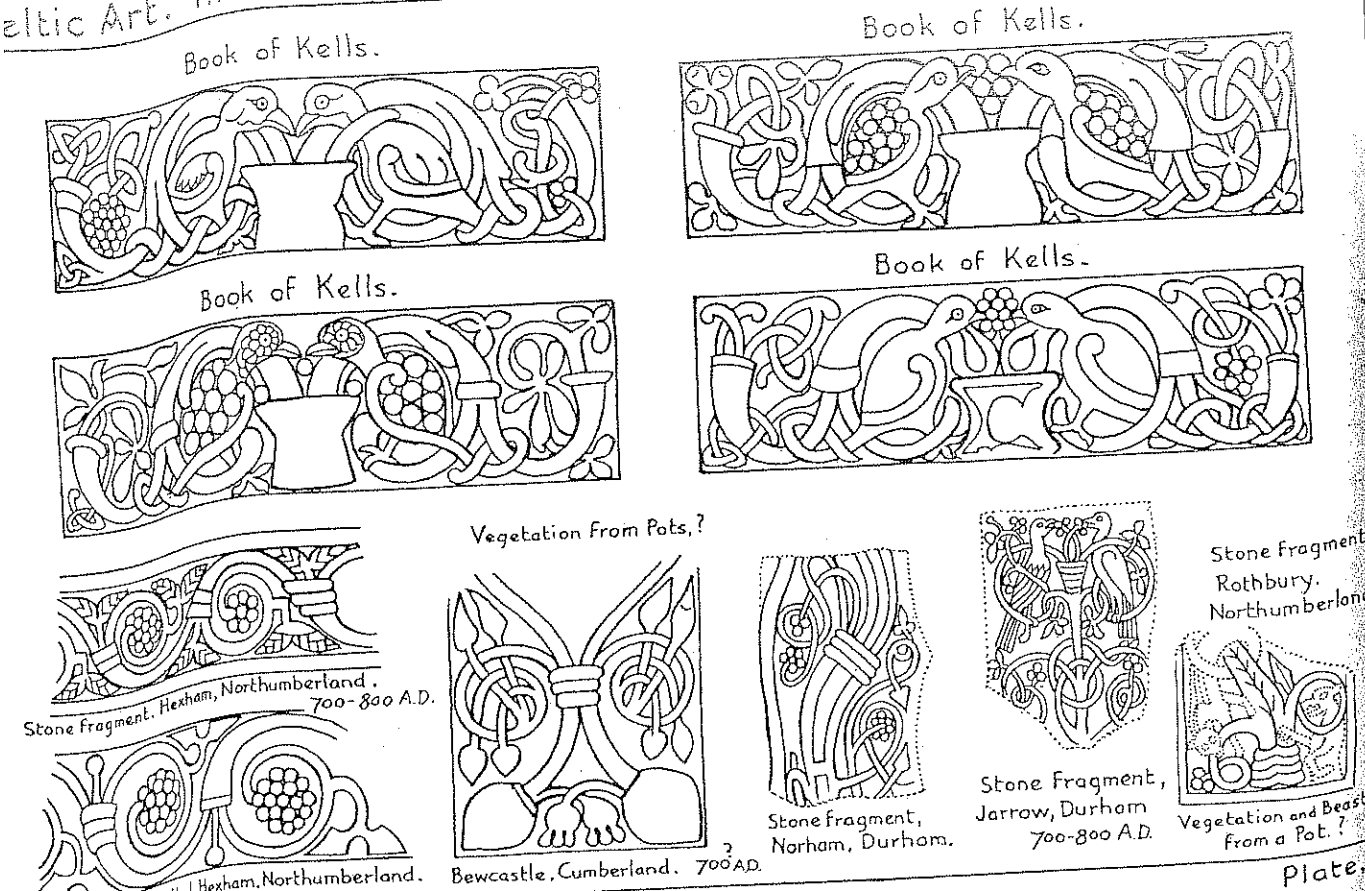
Plate, A.2.

Art. Examples of the "Potted Tree of Life," from the Book of Kells and elsewhere.



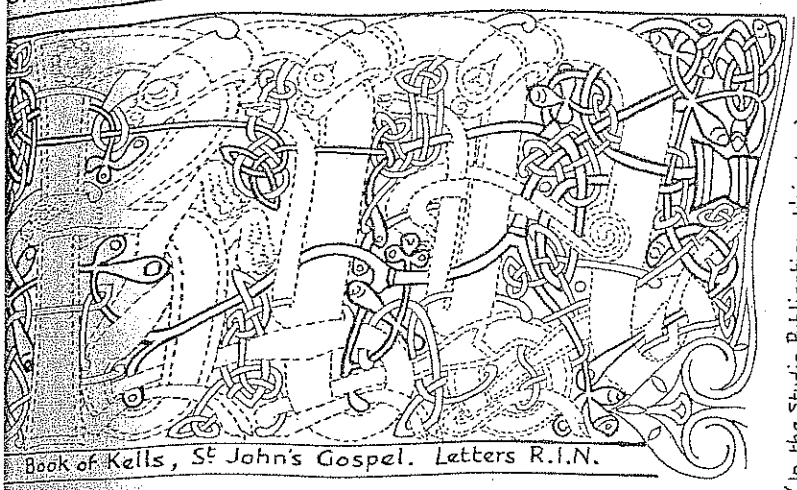
Plate, A.3.

Celtic Art. The "Tree of Life," From the Book of Kells and North England.



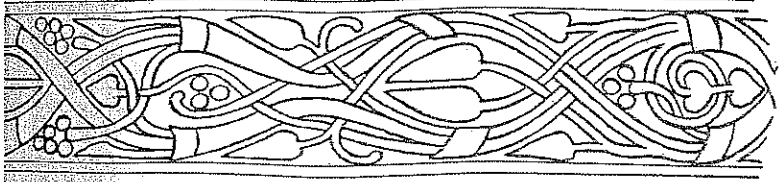
Plate, A.4.

eltic Art. Examples of the Celtic "Tree of Life" (with and without Pot) Book of Kells and South Scotland.

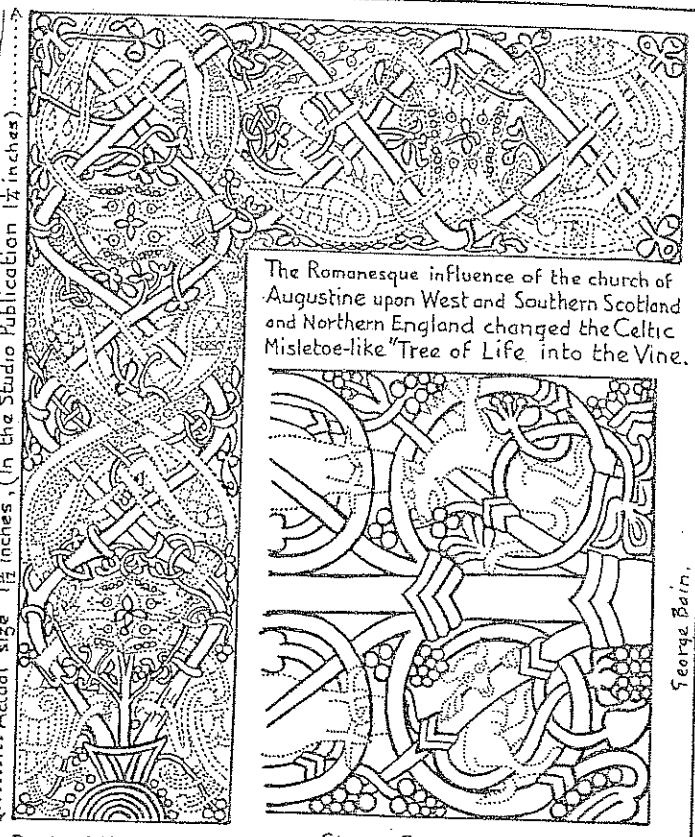


Book of Kells, St John's Gospel. Letters R.I.N.

Edge of St Vigean's Stone.



Stone fragment, Abercorn, Linlithgow.



Actual size 1 11/16 inches, (In the Studio Publication 1¼ inches)

Book of Kells.
XPI page.

The Romanesque influence of the church of Augustine upon West and Southern Scotland and Northern England changed the Celtic Mistletoe-like "Tree of Life" into the Vine.

Stone Fragment, Jedburgh, Roxburghshire.

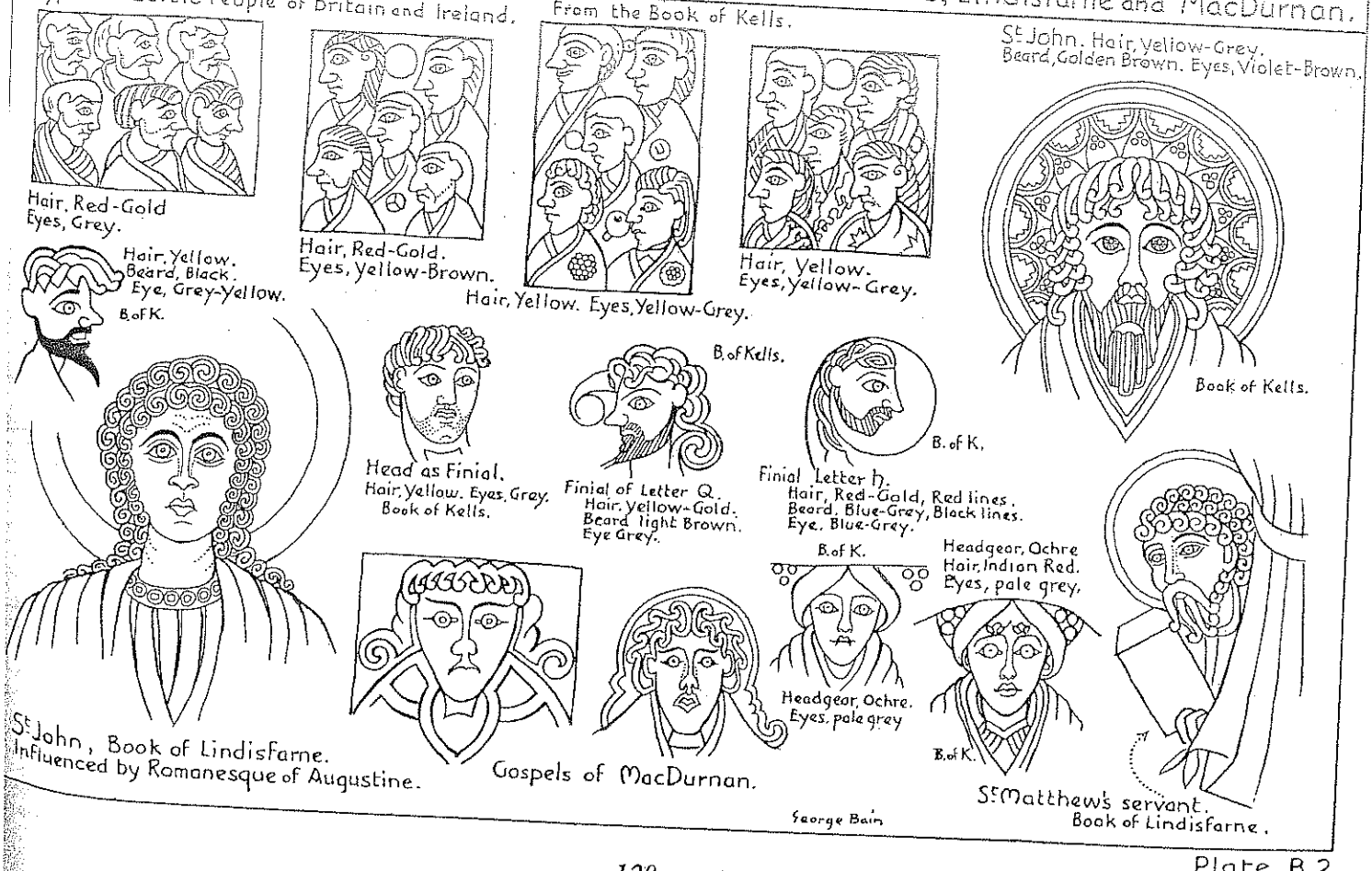
George Bain.

Plate, A,5.

Celtic Art. Semi-Realistic Human Portraits from the Book of Kells.

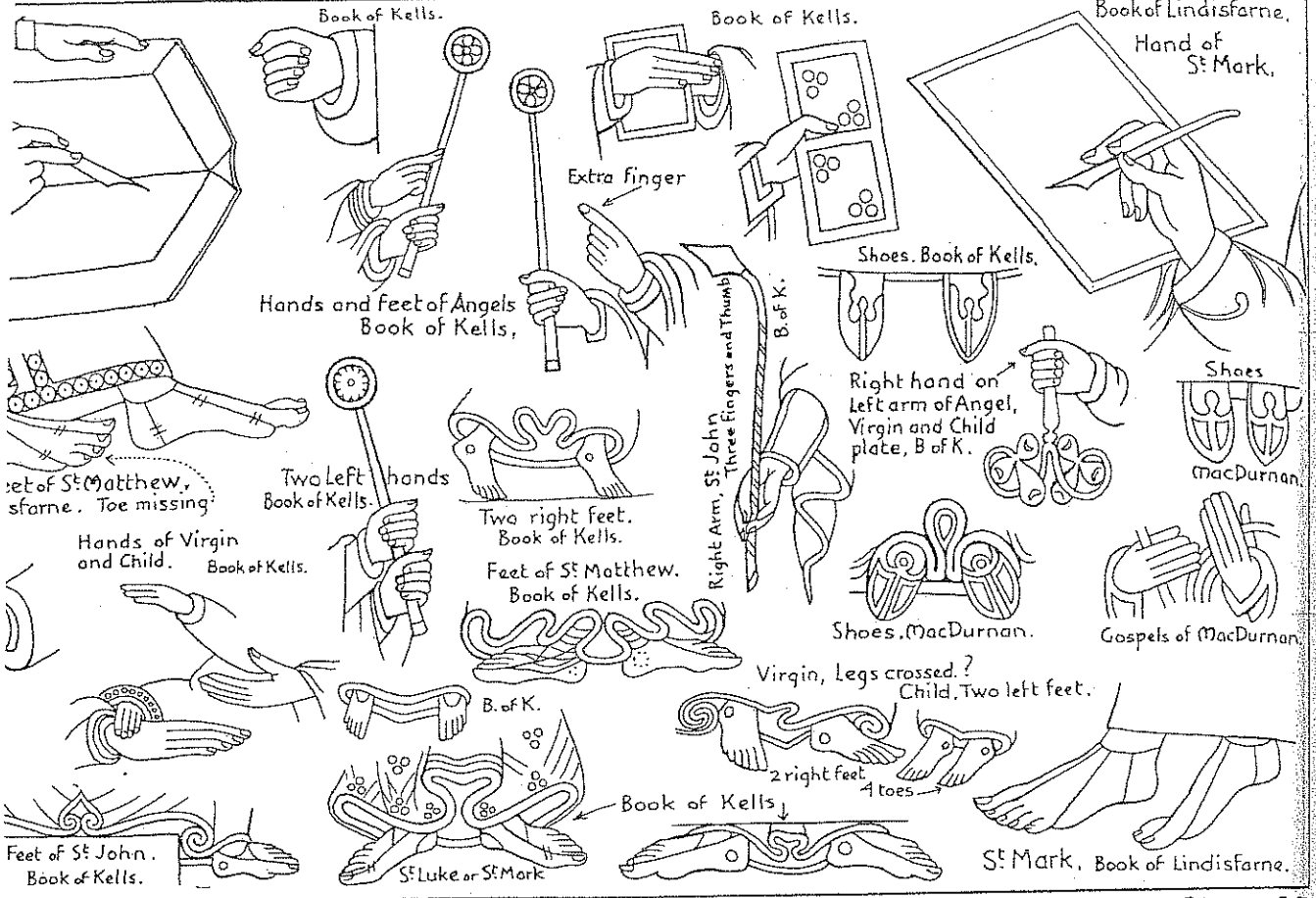
Plate, B, 1.

Celtic Art. Semi-Realistic Human Portraits, Books of Kells, Lindisfarne and MacDurnan.



Plate, B, 2.

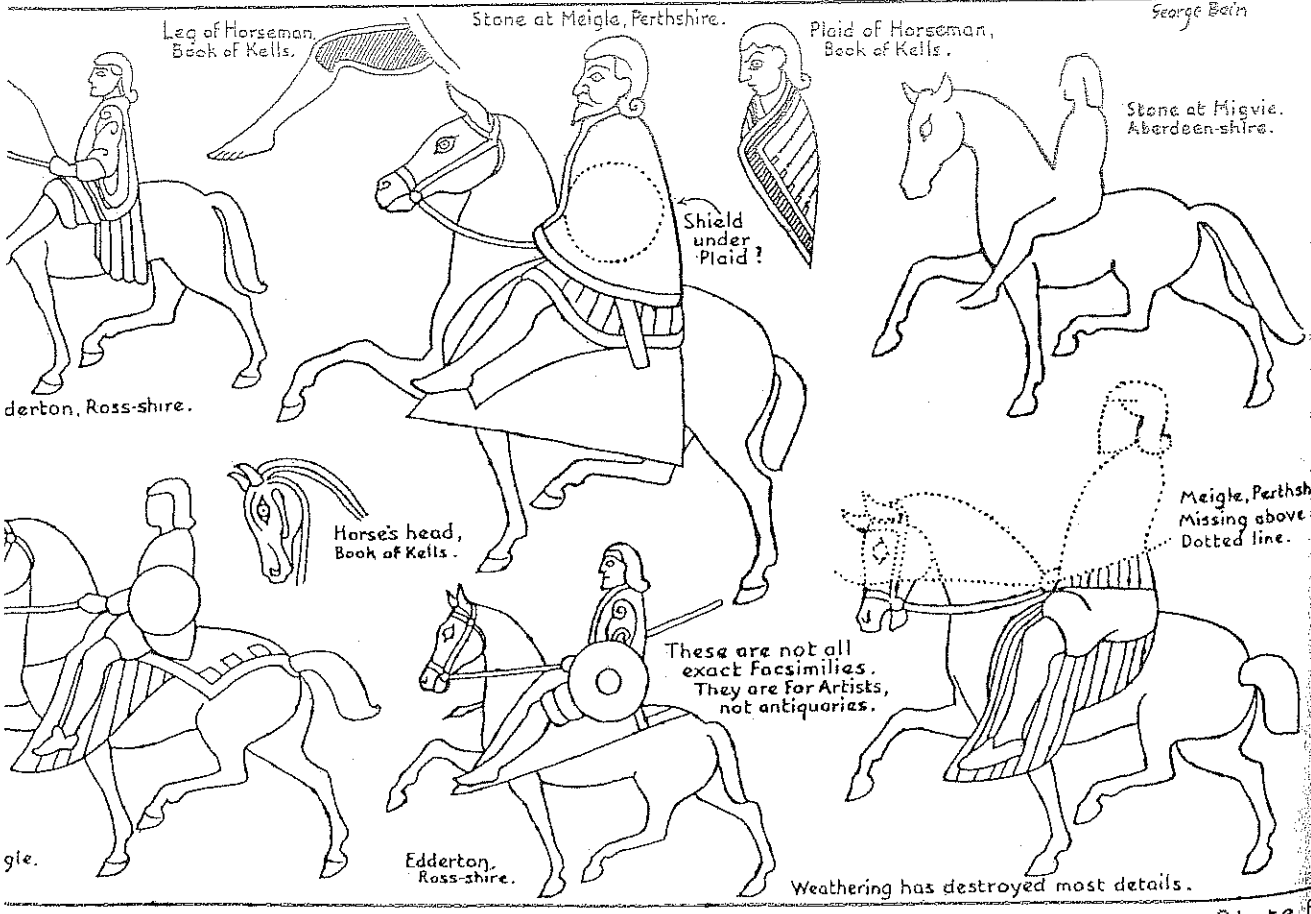
t. Hands and Feet from the Books of Kells, Lindisfarne and MacDurnan.



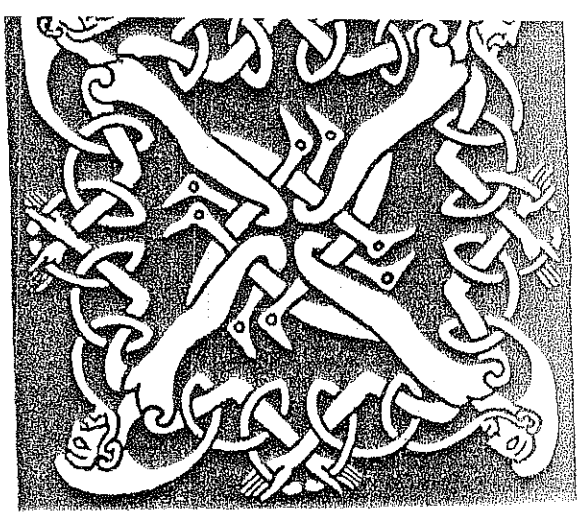
Plate, B,3.

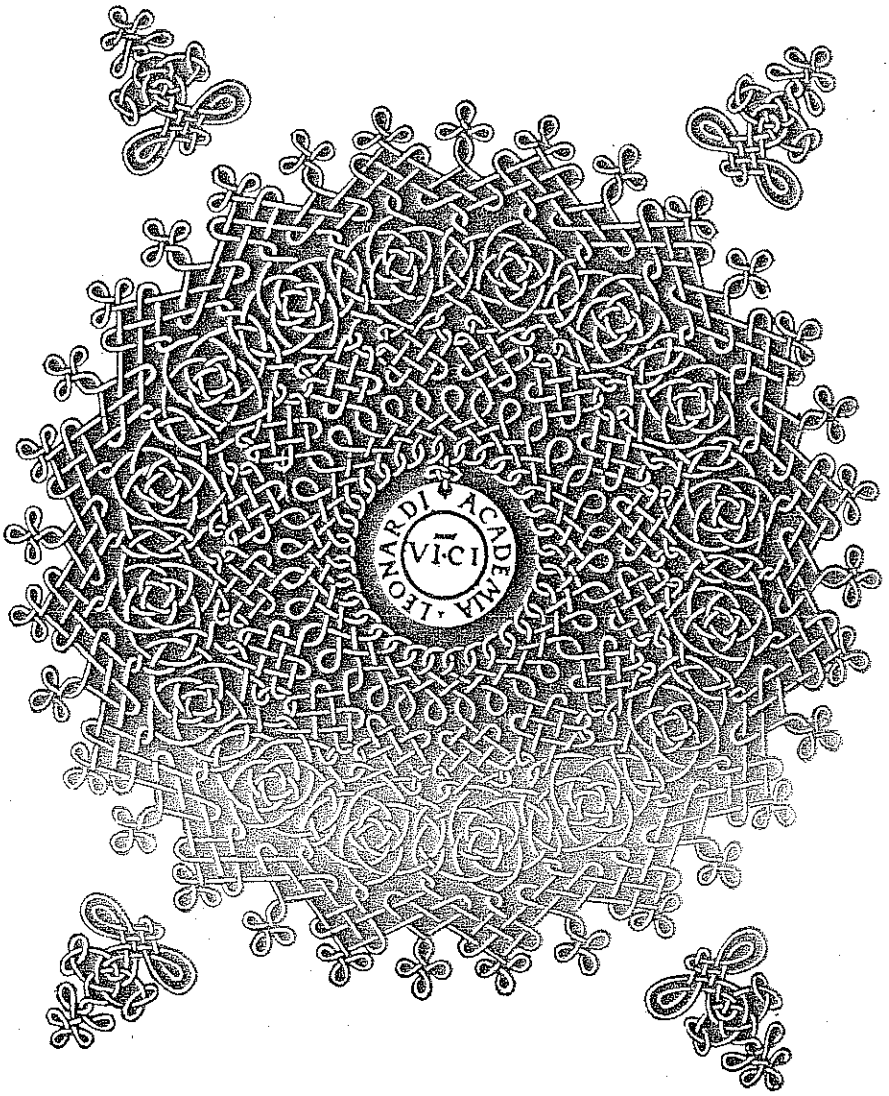
titudes of Horses in Celtic Art, From the Pictish Stones of East Scotland, and the Book of Kells.

George Bain



Plate, B.4

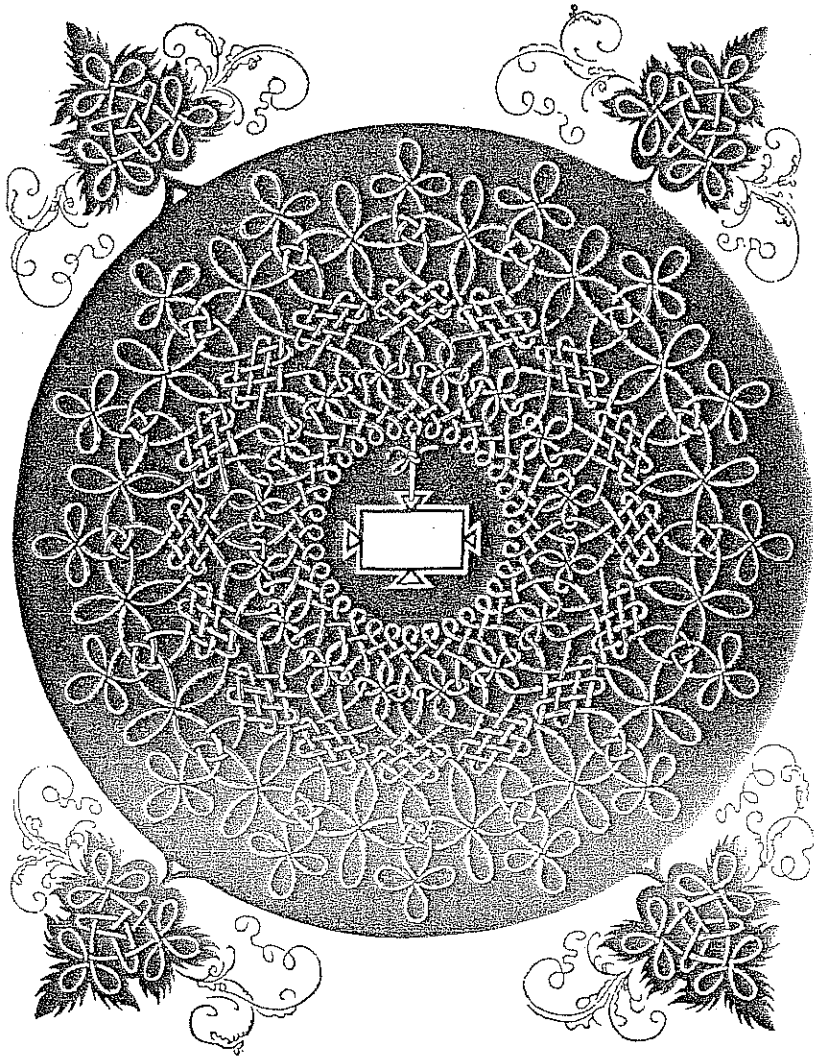




Leonardo's "Concatenation."

Plate 1

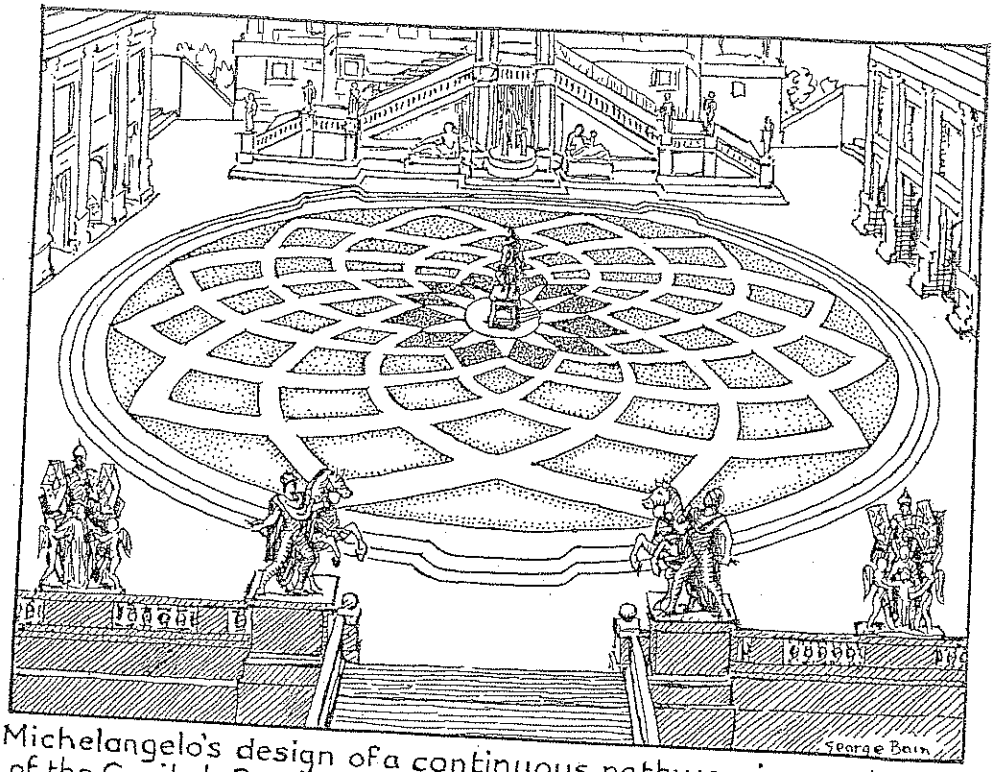
One of Leonardo da Vinci's designs for the use of craftworker.



Albrecht Dürer's "Sechs Knoten."

Plate 2

A design by Albrecht Dürer for the use of craftworkers.

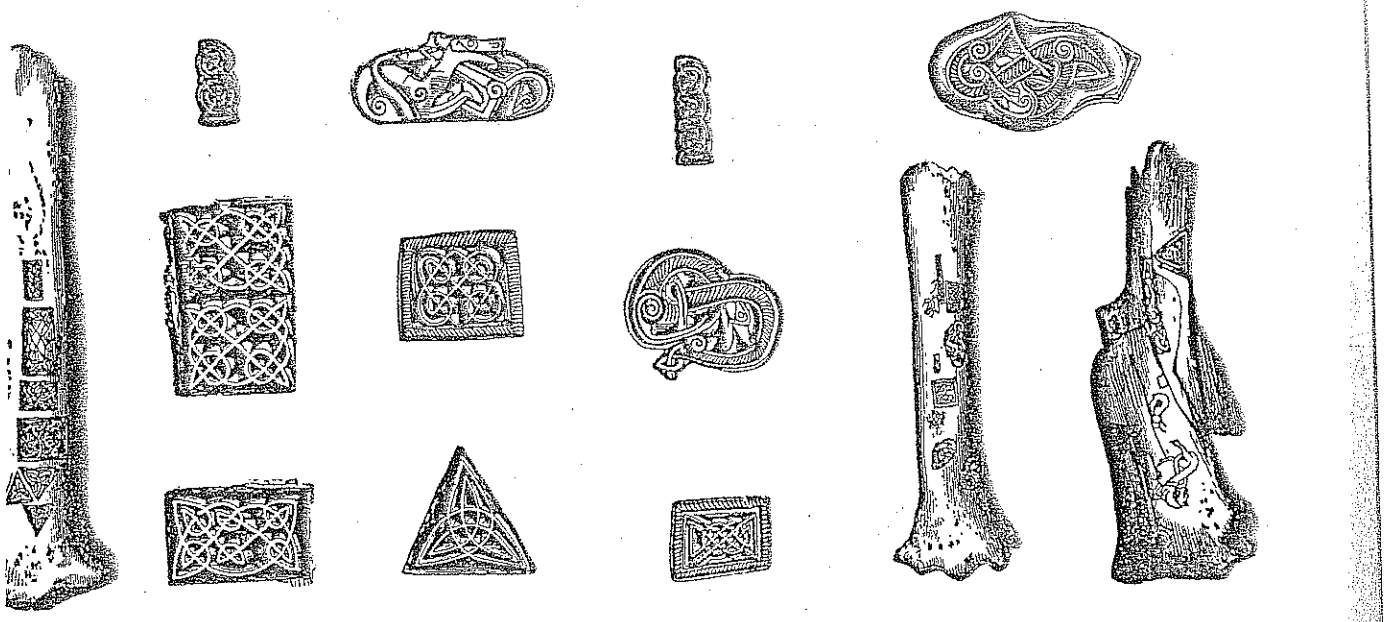


Michelangelo's design of a continuous pathway in quadrangle of the Capitol, Rome, from an engraving by Du Pérac in 1569.

Plate 3

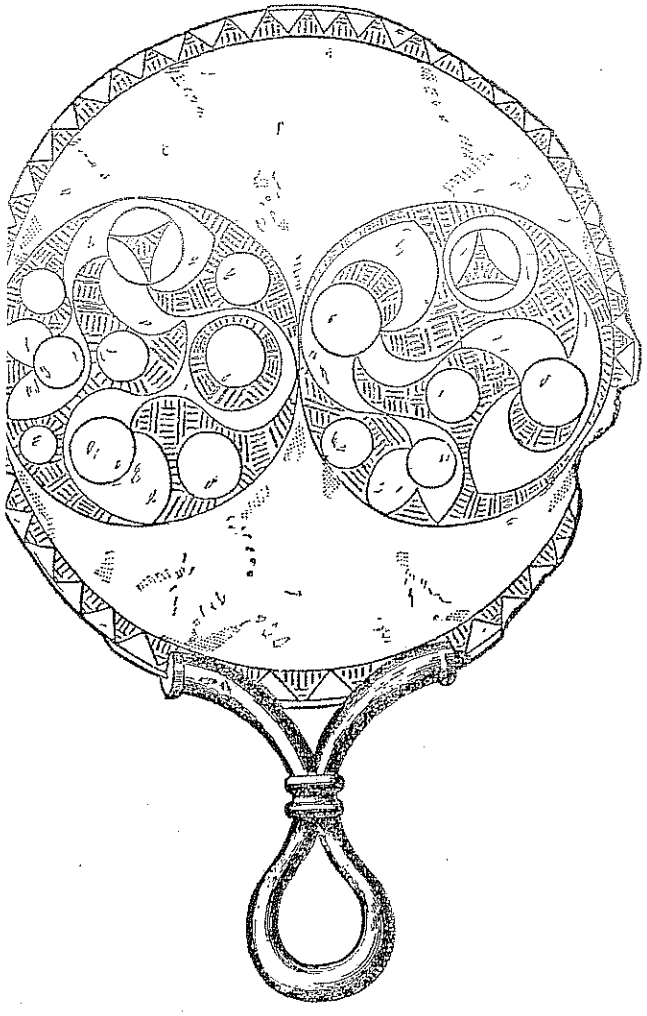
Plate 4

Bronze champfrein from Torrs, Kirkcudbrightshire a beautiful example showing the great skill of the pre Roman Celtic craftsmen of Britain.



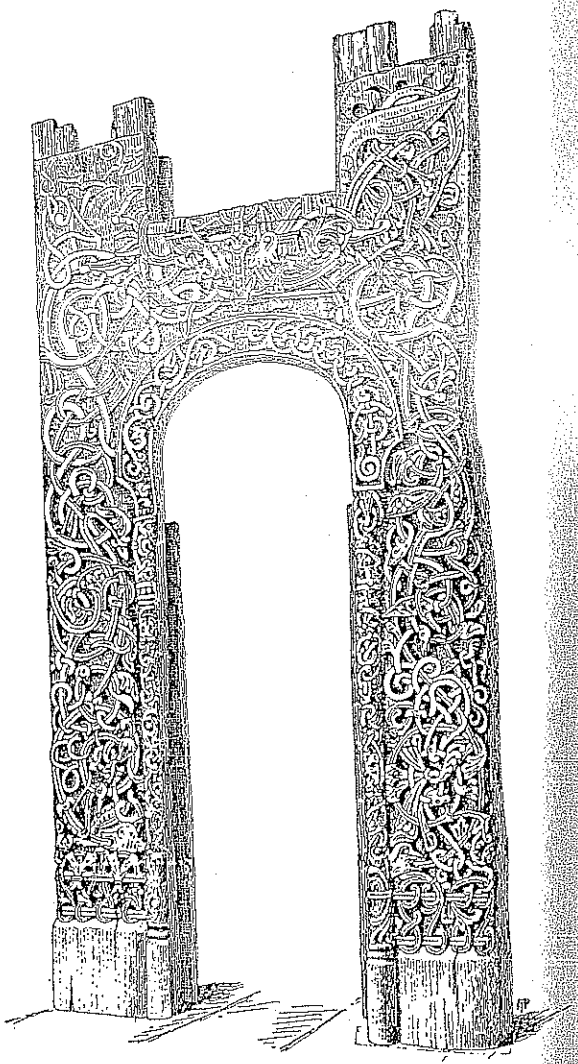
arvings, probable models for moulds for castings. (Irish crannogs, Stokestown and Lagore.)

Plate 5



V.—THE TRELAN BAHOW MIRROR.

Plate 6



DOORWAY OF FLAA CHURCH, HALLINGDAL

Plate 7

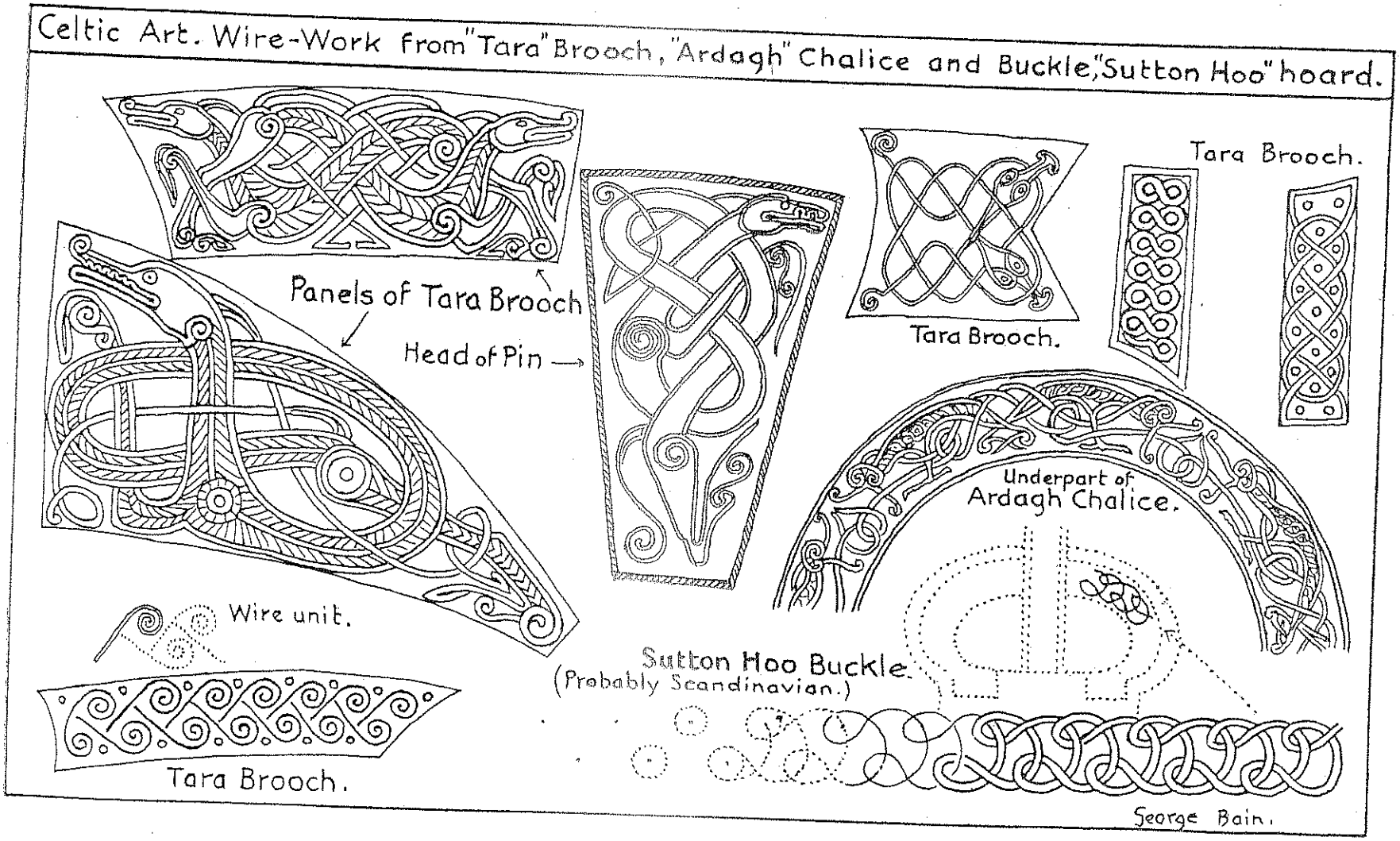

Celtic Art. Wire-Work from "Tara" Brooch, "Ardagh" Chalice and Buckle, "Sutton Hoo" hoard.
Panels of Tara Brooch
Head of Pin
Tara Brooch.
Tara Brooch.
Underpart of Ardagh Chalice.
Wire unit.
Sutton Hoo Buckle.
(Probably Scandinavian.)
Tara Brooch.
George Bain.

Plate 8

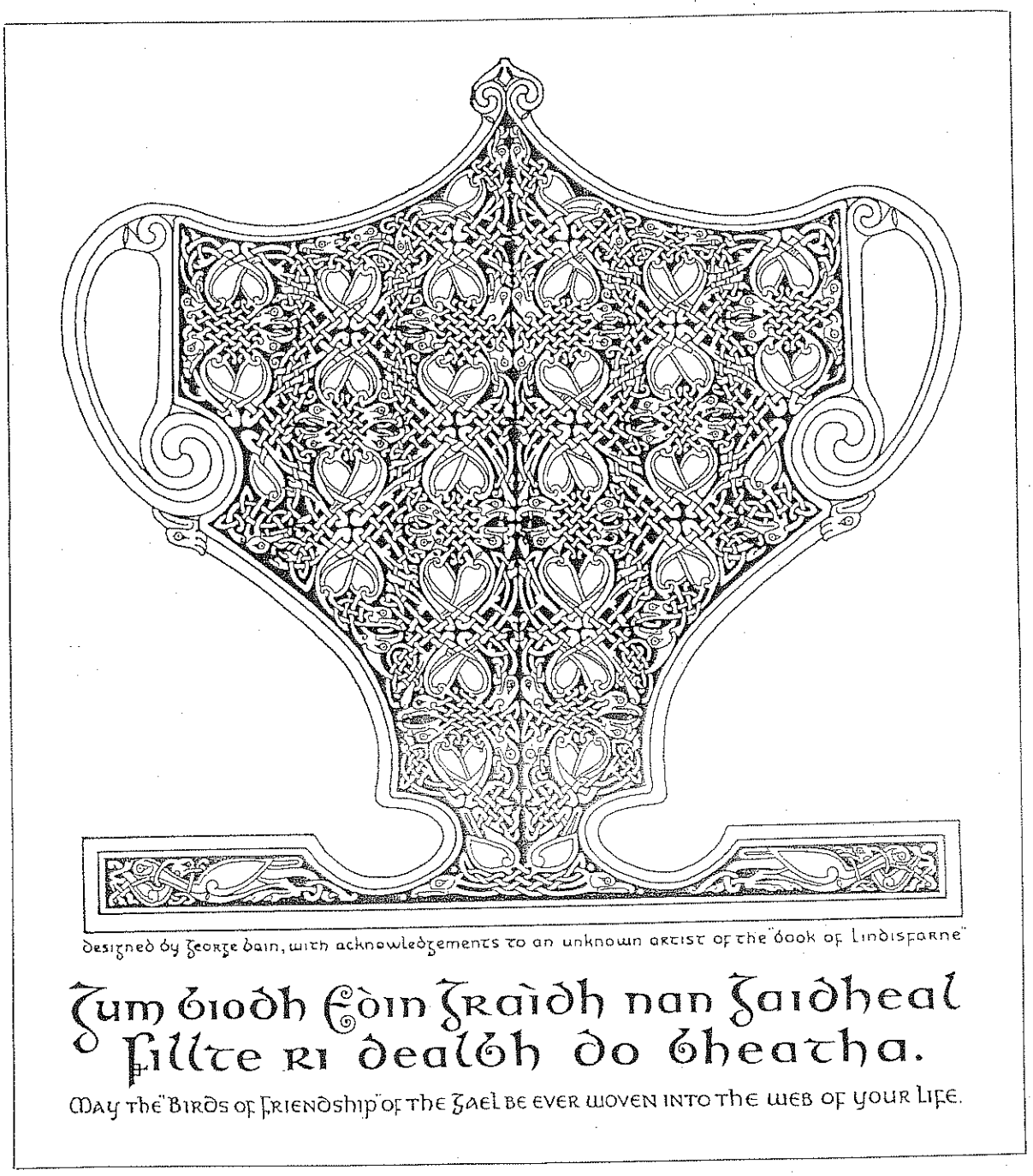


Plate 11

Design for Greeting Card.

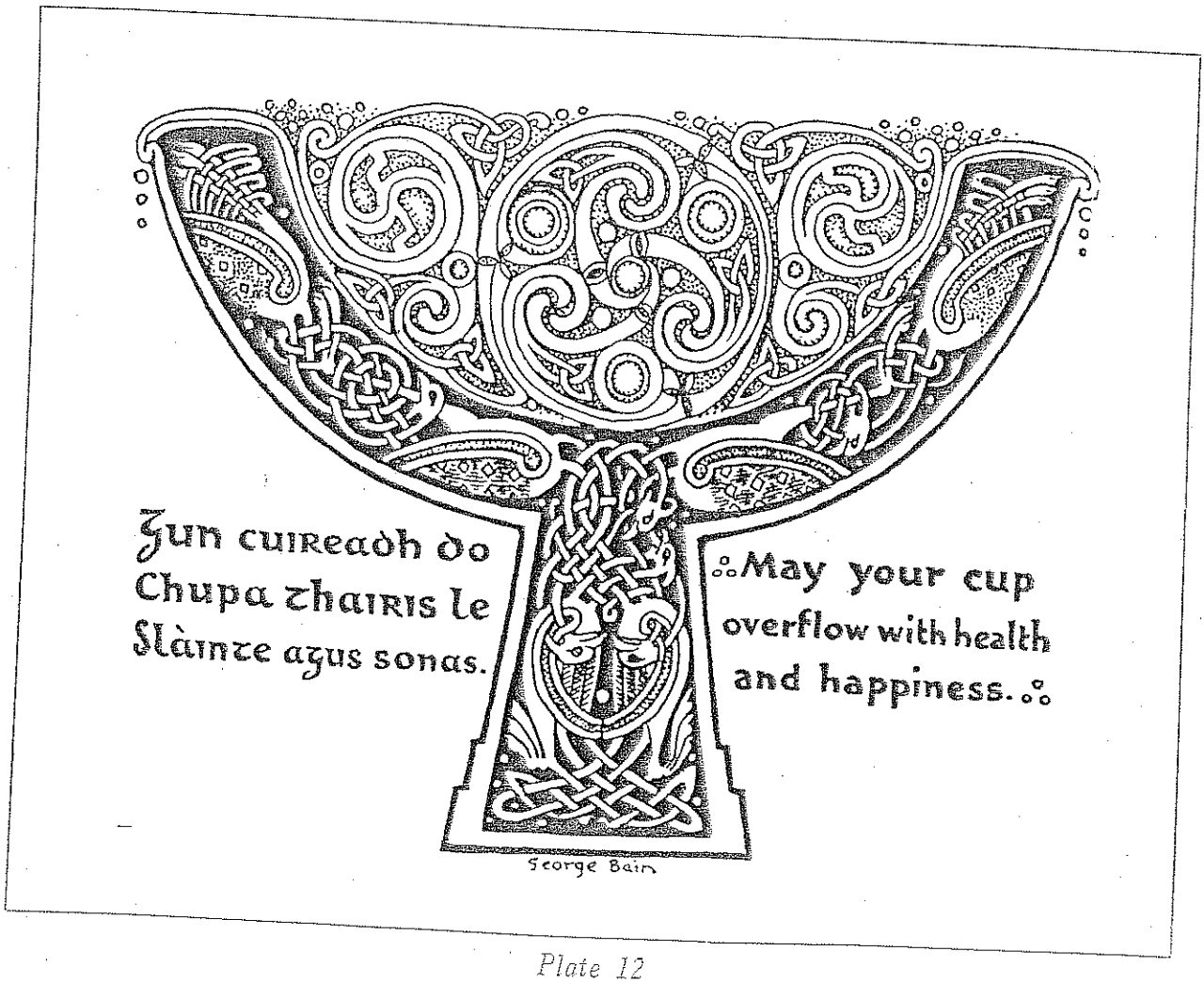


Plate 12
Design for Greeting Card.

Plate 13
Design for New Year Greeting Card.

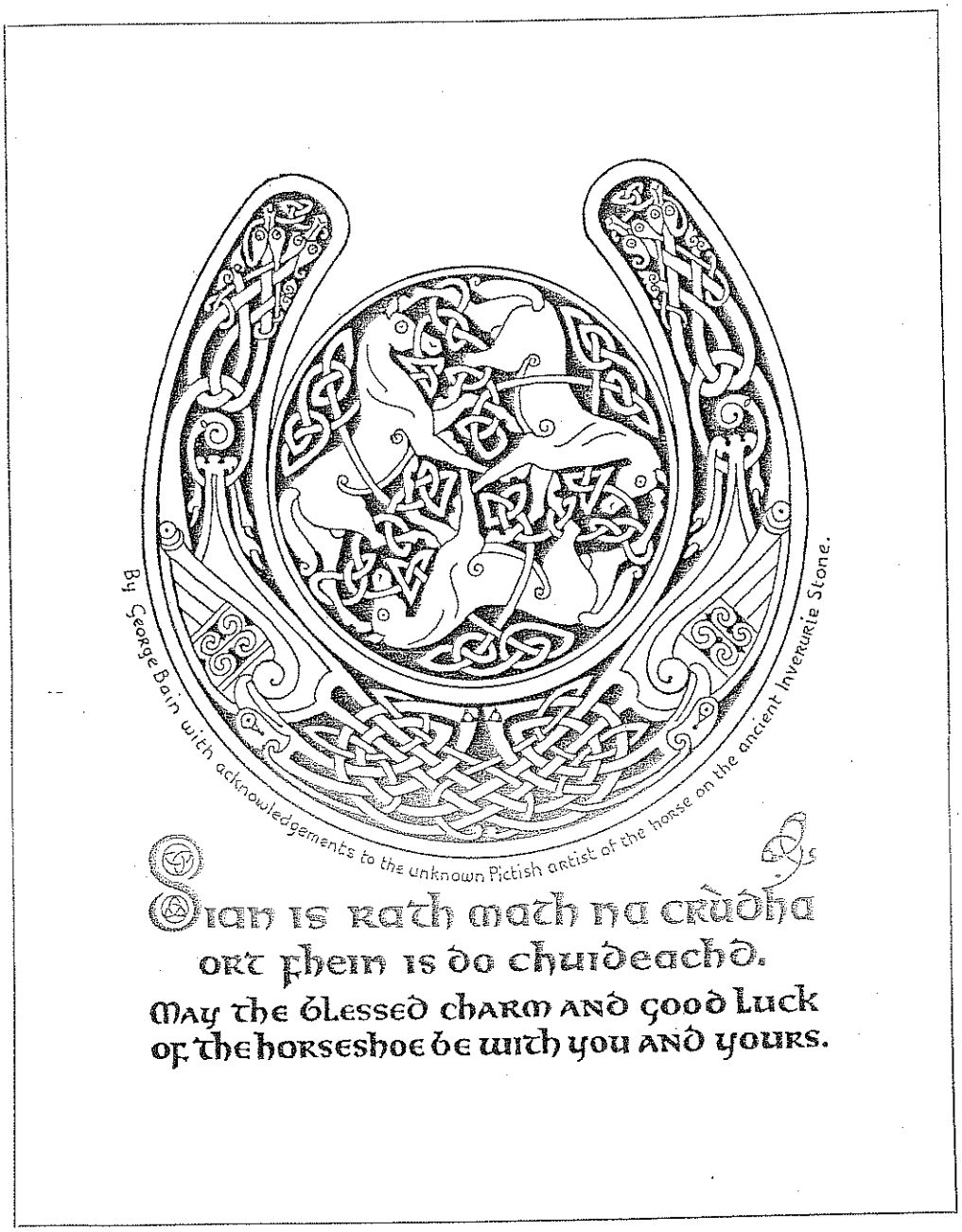


Plate 14

Design for Greeting Card.

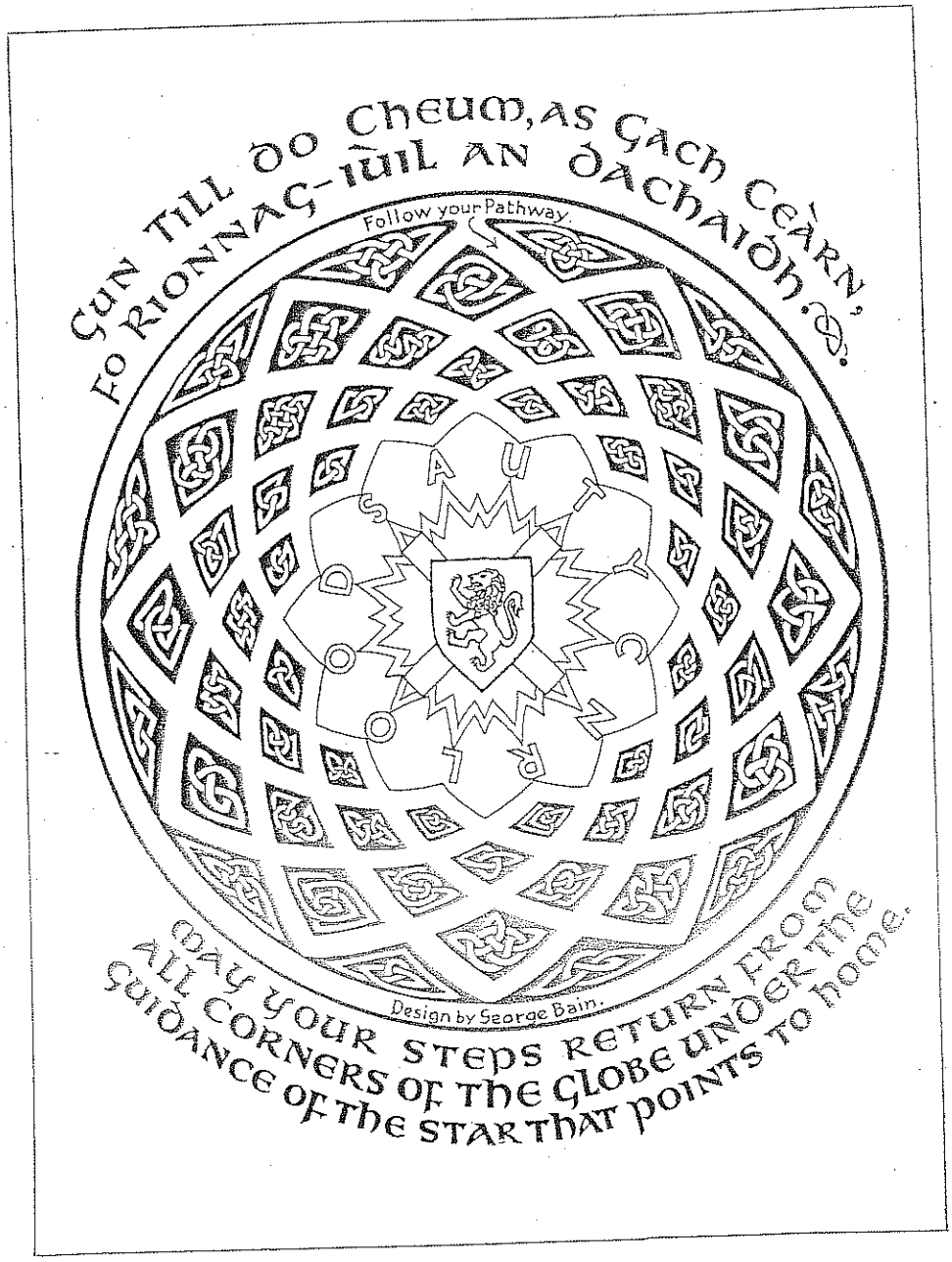
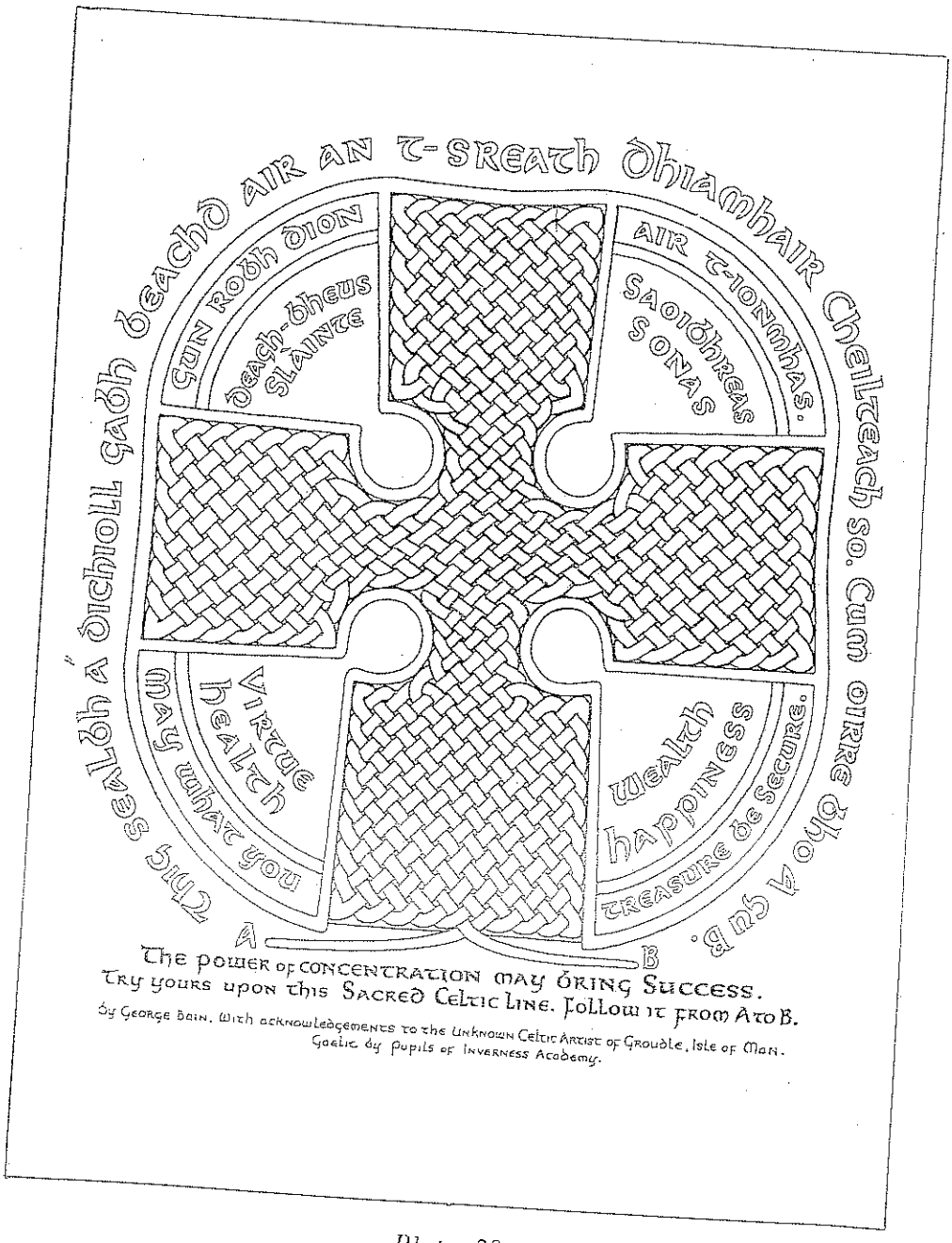


Plate 19

Design for Greeting Card.



The power of CONCENTRATION may ÓRING Success.
Try yours upon this Sacred Celtic Line. Follow it from A to B.

By George Bain. With acknowledgements to the Unknown Celtic Artist of Groudle, Isle of Man.
Gaelic by Pupils of Inverness Academy.

Plate 20

Greeting Card adapted from Groudle Stone
Isle of Man.

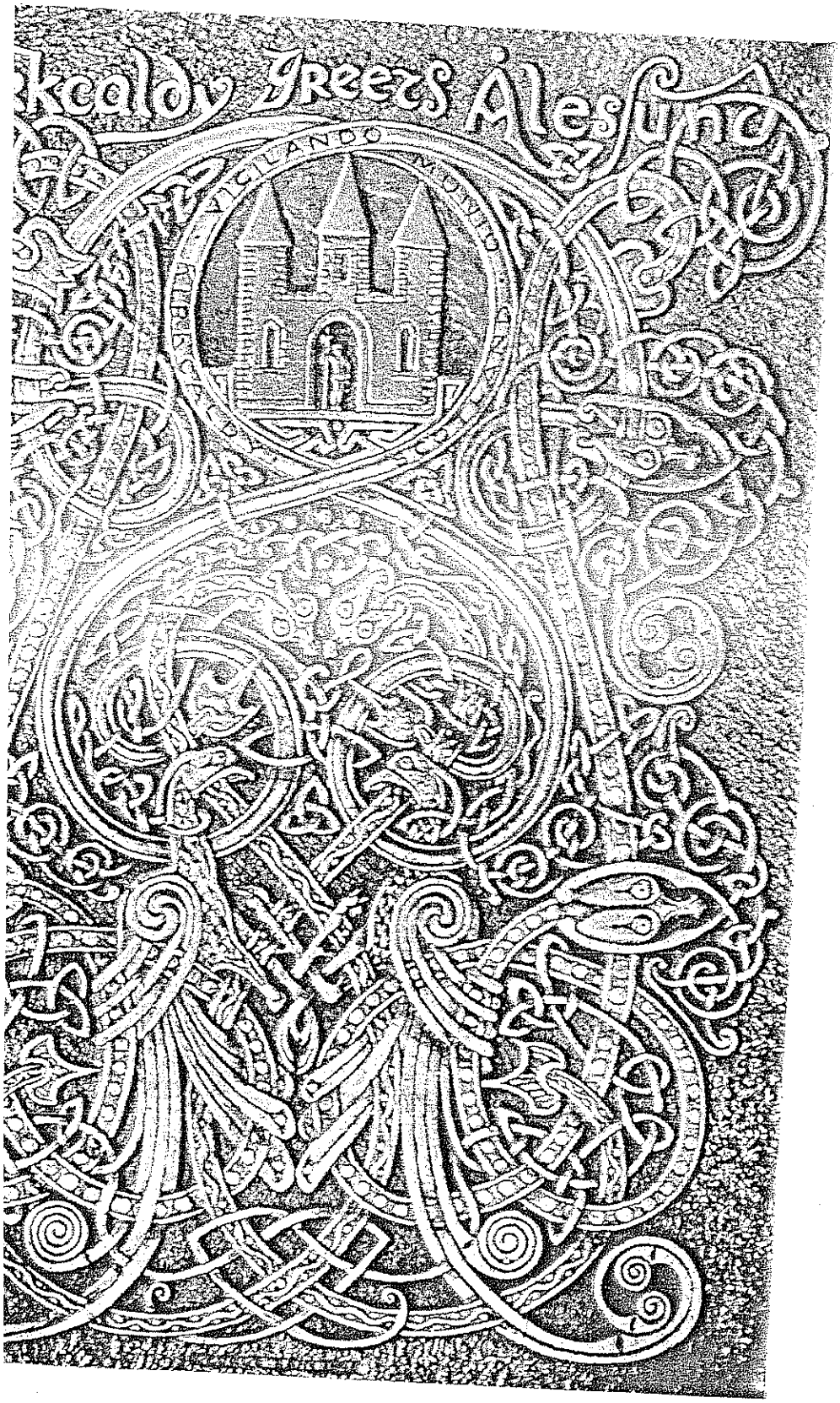


Plate 40