ORNAMENT AND ITS APPLICATION

LEWIS F. DAY

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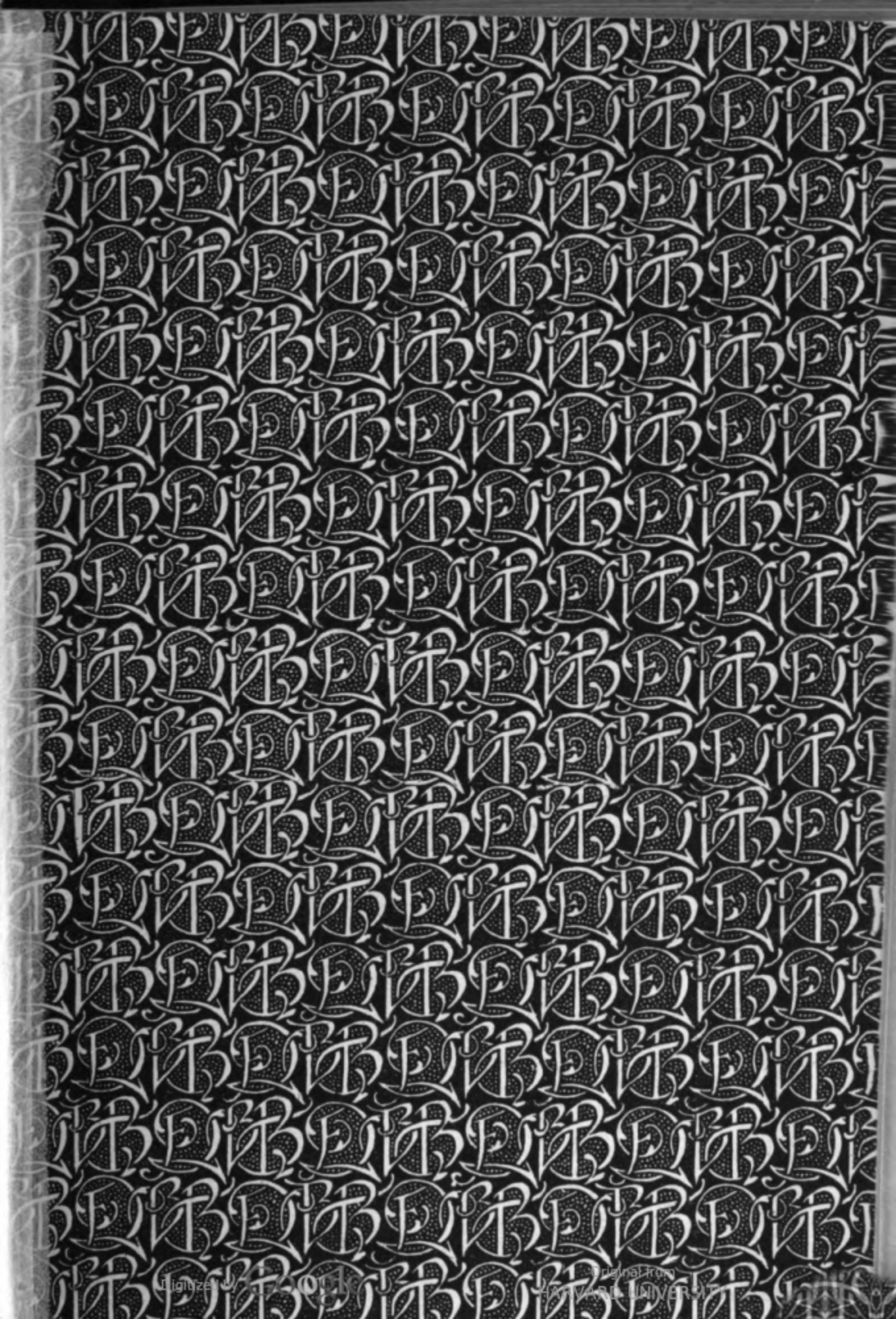
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LEWIS F. DAY

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PATTERN DESIGN

A BOOK FOR STUDENTS·TREATING IN A PRACTICAL WAY OF THE ANATOMY, PLANNING, AND EVOLUTION OF REPEATED ORNAMENT

OTHER WORKS

SOME PRINCIPLES OF EVERY-DAY ART. Second Edition.

NATURE IN ORNAMENT. Third Edition.

WINDOWS: A BOOK ABOUT STAINED GLASS. Second Edition.

ART IN NEEDLEWORK: A BOOK ABOUT EMBROIDERY. Second Edition.

ALPHABETS OLD & NEW. Fourth Impression.

LETTERING IN ORNAMENT.

MOOT POINTS: FRIENDLY DISPUTES UPON ART AND INDUSTRY, in conjunction with WALTER CRANE.

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ORNAMENT & ITS APPLICATION

A BOOK FOR STUDENTS TREATING IN A PRACTICAL WAY OF THE RELATION OF DESIGN TO MATERIAL, TOOLS AND METHODS OF WORK BY

LEWIS F. DAY

AUTHOR OF PATTERN DESIGN. NATURE IN ORNAMENT. LETTERING IN ORNAMENT. ALPHABETS, &c.

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PREFACE.

THIS book is based (like "Pattern Design") upon the foundation of an earlier volume. But, though it covers the ground of "the Application of Ornament," now out of print, it covers a larger area. It is really a new book. Here and there a fragment of the earlier one is incorporated in it; but even that has been shaped anew; for it seemed, looking back upon the work of fifteen years ago, there was little in it which could not be more simply said. The aim of "Ornament and its Application" is throughout practical. It appeals, however, less exclusively than some of my books to students of design; in fact, it is addressed to all who are really interested in ornament. To those not practically acquainted with the subject, it may serve as introduction to that quality of *workmanlikeness* which to a workman is of the very essence of design.

What I have endeavoured to do is, to show the clear and close relation of design to workmanship; to arouse interest in a side of art which, regarding it in the rather forbidding light of "technique," lovers of art are accustomed to dismiss from their minds as no concern of theirs; and so to open their eyes to what is indeed a never-failing source of interest in art.

Much of what is said will of course be familiar to artists

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and workmen practically engaged in design. To them I can only hope to open out perhaps a wider view of the limits of their craft; to show the difference between certain arts, crafts or trades commonly grouped together, and the likeness between others not usually regarded as in any way connected; and, generally, to stimulate workers in the arts to a more comprehensive study of their particular subject.

"Ornament and its Application" will be found to contain a great deal of information at once necessary to the student and interesting to the more general reader; but that is rather by the way. Its purpose is not to cram the student with knowledge, profitable only in proportion as it comes to him through personal experience or individual study; not so much to inform the reader as to stir in him a desire to inform himself; to indicate how much there is in ornament which nearly concerns him, did he but know it; to set him a-thinking and a-seeking, and to suggest directions in which search will be fruitful. If, when all is said, and read, he is still unconvinced that ornament is dependent upon conditions, perhaps purely practical; that the various styles of ornament, "historic," as we call them, grew to a great extent out of such conditions; and that the secret of appropriate design is in cheerful obedience to them, I have failed, so far as he is concerned, in the purpose of my book.

With regard to the illustrations, there remained constantly something of interest to be told about them which was not relevant to the point apropos to which they are referred to in the text. This, whether it refers to the source of the work, its author, date, country, or present whereabouts, its

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colour or the detail of its execution, will be found in the comparative and explanatory index of illustrations.

A friendly critic of "Pattern Design" found fault with it that it did not discuss the appropriateness of pattern to the process of its execution. The subject was purposely reserved for the present volume. The relation of ornament to natural form is, again, the subject of a separate treatise.

LEWIS F. DAY.

15 TAVITON STREET,
GORDON SQUARE, W.C.,
1st September 1904.

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CONTENTS.

CHAPTER		PAGE
I.	INTRODUCTORY	1
II.	CONVENTIONAL TREATMENT	6
III.	APPLIED ART	14
IV.	THE CHARACTER WHICH COMES OF TREATMENT	25
V.	THE TEACHING OF THE TOOL	70
VI.	AGAINST THE GRAIN	125
VII.	WHERE TO STOP	140
VIII.	WHERE TO STOP (*Continued*)	157
IX.	MORE THAN ENOUGH	172
X.	FROM PROCESS TO PROCESS	182
XI.	ALLIED PROCESSES	203
XII.	LIKE TO LIKE	232
XIII.	PARTNERSHIPS	241
XIV.	PRACTICAL DESIGN	260
XV.	OBEDIENT ORNAMENT	267
XVI.	THE ADAPTATION OF ORNAMENT TO REPETITION	281
XVII.	THE POSSIBLE PALETTE	292
XVIII.	THE INEVITABLE LINE	297
	INDEX	313

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COMPARATIVE & EXPLANATORY INDEX OF ILLUSTRATIONS.

B. M. = *British Museum.* V. & A. M. = *Victoria and Albert Museum.*

ANIMAL FORMS IN ORNAMENT. See — FIGURE

INCISED STONE - - - - - - 276
IVORY - - - - - - - - 247
WALL-PAPER - - - - - - - 274
WOVEN PATTERN - - - - - 26, 272, 273

APPLIQUÉ EMBROIDERY. BED FURNITURE. The pattern on the strip to the left, and the ground of that to the right, cut out of one piece of velvet, and laid on to the paler figured silk ground. Venetian, *ca.* 1550. V. & A. M. - - - 219

See also

EMBROIDERY - - - - - - - 47
PATCHWORK - - - - - - - 155

BASKET-WORK, African - - - - - - 65

BLOWN GLASS. See

GLASS - - - - - - - 15, 24, 25

BOOKBINDING. See

CUT LEATHER - - - - - - - 104
FILIGREE - - - - - - - 223
LEATHER BINDING - - - - 166, 70, 252, 121, 227
ONLAID LEATHER - - - - - - 285
ONLAY - - - - - - - - 226
SILVER GILT - - - - - - 199, 262
TOOLING - - - - - - - 123

BOULLE. See

INLAY - - - - - - - - 217

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FIGURE

BRASS WRITING-BOX LID, engraved, the ornament bright upon a blackened ground. Cashmere. V. & A. M. - - 182

BRASSHEADED NAIL WORK.—From a chest covered with Russia leather and mounted with brass. English. Seventeenth century - - - - - - - - 229

BRICK. WALL DECORATION, with enamels or glazes separated by raised outline. From the Palace of Darius at Susa. Assyrian. Louvre - - - - - - 1

BROCADE. See
WOVEN PATTERN - - - - - 29, 76, 34

BRONZE.
CANDLESTICK encrusted with silver. Arab. Fifteenth century. Spitzer Collection - - - - - - 164
DETAIL FROM A SCREEN in the Cathedral of Prato. Brunelleschi? - - - - - - - 101
PORTABLE FONT, cast, hammered, and chased. French? Twelfth century. Spitzer Collection - - - - 17

See also
HANDLE - - - - - - - - 19
ONLAY - - - - - - - - 282

BROOCHES of the safety pin type. Ancient Irish. B.M. - 11

BRUSHWORK. See
DIAGRAM - - - - - - - 214
LETTERING - - - - - - - 62
POTTERY - - - - - - 7, 144, 39, 38

BYZANTINE ORNAMENT from the Church of Theotokos, Constantinople - - - - - - - 172

CABINET in oak. French. Sixteenth century. (V. & A. M.?) 126

CARVED SANDSTONE glazed with vitreous enamels. Turkestan. V. & A. M. - - - - - - 178

CARVING. See
MARBLE, STONE, WOOD CARVING, &c.

CARPET. See
WOVEN PATTERN - - - - - - 26

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CHAINS. See FIGURE
GOLDSMITH'S WORK - - - - - - 22

CHAMPLEVÉ AND CLOISONNÉ ENAMEL.
BLENDED COLOURS. Italian. Eleventh century. B.M. - 186
ITALIAN. Eleventh century. B.M. - - - - 188

CHAMPLEVÉ
ENAMEL. Blended colours. German. Twelfth century. B.M. 187
ENAMEL. Bronze. French. Thirteenth century. B.M. - 185
ENAMEL. Designs by Johannes Baptist? Constantino. 1615 183
See also
INCISED - - - - - - - - - 147
INLAY - - - - - 191, 192, 193, 189, 194, 190
PIERCED BOWL - - - - - - - - 196
POTTERY - - - - - - - - 2, 51

CHASING. See
SILVER - - - - - - - - 110, 109
SILVER GILT - - - - - - - - 262

CHIP CARVING. Side of a box in the form of a book. Bought in Spain - - - - - - - - 81

CHISELLING. See
IRON - - - - - - - 98, 100, 99, 162

CIRCLE. See
DIAGRAMS - - - - - - - 264, 265, 266

CIRCULAR ceremonial fan or Flabellum with carved ivory handle. In the Bargello at Florence. Twelfth century. Also diagrams to illustrate the rings and radiating lines which the decoration of a circular space is apt to follow - - - - - 263

CLOISONNÉ.
ENAMEL ON COPPER. The cloisons of twisted wire, the enamel opaque blue, green, yellow, and black on a white ground. Part of a bookcover. Russian. V. & A. M. - 198
See also
CHAMPLEVÉ - - - - - - - 186, 188
INLAY - - - - - - - 184, 200, 201, 197

COUNTERCHANGE PATTERN. Mosaic and inlay - - - 53
See also
MOSAIC - - - - - - - - - 54

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FIGURE

CRYSTAL HANAP, cut and mounted in enamelled gold. Italian. Sixteenth century. Spitzer Collection - - 102

CUT LEATHER bookbinding. Hungarian - - - 104

CUT LINEN with needlepoint insertion. Italian. Seventeenth century. V. & A. M. - - - - - - 75

See also

LACE - - - - - - - - - 43

DAMASCENING.

DESIGN slightly enlarged from original. Sixteenth century - 181

See also

DESIGNS - - - - - - - - - 281

ONLAY - - - - - - - - - 282

DAMASK. See

WOVEN PATTERN - - - - - - 72

DARNING upon handmade net. Old Hungarian - - 27

DESIGNS for damascening in silver, or etching on steel. German. Sixteenth century. Virgil Solis - - - 281

DIAGRAM

OF THE LINES on which the decoration of the circle may be set out. 1. Ringed. 2. Bisymmetrical. 3. Rayed. 4. Diamond. 5. Pentagon-flowing. 6. Hexagon-flowing. 7, 8. Cruciform. 9. Ring on lines of the cross. 10. Flowing round. 11. Flowing in opposite directions. 12. Flowing - 264

SHOWING cruciform construction of design. The unit of repeat = $\frac{1}{4}$ of the whole. But for the interlacing of the pattern it would work as $\frac{1}{8}$ repeat, turning over - - 265

SHOWING lines on which the decoration of the circle may be set out - - - - - - - 266

TO SHOW how the consideration of ties may affect design. The upper border is a brushwork pattern which can equally well be stencilled. When it came to the stencilling of the *ground* instead of the ornament, the necessary modification of the forms led to something like a new design - - 214

See also

CIRCULAR CEREMONIAL FAN - - - - - 263

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DOOR. FIGURE
OAK, carved and inlaid, and clamped with pierced and enamelled iron. William Burges. Latter part of nineteenth century - - - - - - - 251
WOODEN. From S. Gengoult, Toul. Gothic. France - 66

See also
JOINERY - - - - - - - - - 10
WOOD CARVING - - - - - - - 261, 163, 88

EMBOSSED
AND LACQUERED leather. Designed by Stephen Webb - 125
LEATHER CASE. Italian. Sixteenth century. Spitzer Collection 105
WALL-PAPER, gilt and lacquered. L. F. D. - - - 42

See also
EMBROIDERY - - - - - - - - 106
ENAMELLED CANDLESTICK - - - - - 269
GOLD CUP - - - - - - - 80
GOLDSMITH'S WORK - - - - - - 78
IRON - - - - - - - - 245, 6
SILVER - - - - - - 109, 108, 107, 110

EMBROIDERY.
IN OUTLINE with portions of the ground tinted by partial darning - - - - - - - 270
IN SILVER and silver gilt thread on crimson velvet, from Stapleton Church, Shropshire. Second half of the sixteenth century - - - - - - - 286
OR QUILTING. Pattern in blue and gold thread stitched down upon red satin. Italian. Sixteenth century - - 106
SATIN STITCH on canvas, following the lines of the mesh. Chinese - - - - - - - 28
SILK APPLIQUÉ in various colours upon deep purple velvet, outlined in couched gimp, and gold and silver thread. Spanish. Sixteenth century. V. & A. M. - - - 47

See also
APPLIQUÉ - - - - - - - - 219
DARNING - - - - - - - - 27
LACE - - - - - - - - - 46
LEATHER - - - - - - - - 154
PATCHWORK - - - - - - - 155

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ENAMEL. See FIGURE
CHAMPLEVÉ - - - - - 186, 188, 187, 185
CLOISONNÉ - - - - - - - 198

ENAMELLED CANDLESTICK, painted in translucent enamel and gold. Limoges. Jean Flambeau. Sixteenth century. Spitzer Collection - - - - - - 269

FILIGREE
OF SILVER GILT WIRE enclosing jewels "au cabochon." From a processional cross at Hildesheim. Romanesque - - 222
OF SILVER WIRE, flat and twisted on a gilt ground. Part of a bookcover. German. Seventeenth century. B.M. - 223

FRET. See
GLASS - - - - - - - - 250
IRON - - - - - - 206, 203, 280, 245
JOINERY - - - - - - - - 209
PIERCED - - - - - - - - 202
STAINED GLASS - - - - - - - 195

FRETTED
BOXWOOD comb inscribed "de bon cœur je le donne." French. Sixteenth century. Spitzer Collection - - - 205
LEATHER from a shoe. White over green, stitched down with strips of gilded leather. Found in Britain. Roman. B.M. 220
OAK VALLANCE. L. F. D. - - - - - 204

GESSO.
GILDED. From a cassone. Italian. Fifteenth century. V. & A. M. - - - - - - - 114
SHIELD. The charge painted, the background gilded. Italian. V. & A. M. - - - - - - - 115

GLASS.
BLOWN. Greek. B.M. - - - - - 24
BLOWN. Oriental flask. Old Venetian glass with spots of opaque yellow enamel. Common Italian fiasco. V. & A. M. 133
BLOWN. Venetian. 1520. V. & A. M. - - - 25
BLOWN into a pierced silver cup, giving the effect of sapphires "en cabochon." Late Roman. B.M. - - - 250

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GLASS—*Continued.* FIGURE

BLUE AND WHITE MARBLING. Cut out of the solid conglomerate. North Italian. Eleventh century. Spitzer Collection - - - - - - - 59

BOTTLE. Alabastos. From a Greek tomb. Decorated with onlaid threads of coloured glass, drawn up and down into a zigzag pattern. Phœnician. Fifth century B.C. V. & A. M. 235

BOTTLE. White, with threads of white and coloured glass onlaid in the form of a scroll. In parts pressed down in the molten state with a tool. Greek. B.M. - - 236

CLEAR WHITE, decorated with strips of opaque white, alternately plain and twisted. Blown. Venetian. *ca.* 1600. V. & A. M. - - - - - - - 15

CUP with ribs of glass onlaid and pattern in white enamel and gold. Venetian. End of fifteenth century. Spitzer Collection - - - - - - - 231

CUT IN THE MANNER OF CRYSTAL. German. Thirteenth century. Nuremberg Museum - - - - 103

DRINKING CUP of greenish white with onlaid streaks of glass indented in the molten state with a tool. Anglo-Saxon? B.M. - - - - - - - - 233

DRINKING CUP, whitish, with threads and other appliqué of green glass. Spanish. V. & A. M. - - - - - 234

DRINKING VESSEL, green, with "prunts" softened in the fire. Metal foot. Flemish. Seventeenth century - - 142

DRINKING VESSEL, greenish white, with "prunts." German. Seventeenth century. B.M. - - - - - 141

SHALLOW CUP. The outside moulded with scale pattern. White. Inside, in the centre, the arms of France and Brittany. Louis XII. Venetian. Early sixteenth century. Spitzer Collection - - - - - - 116

VESSEL with ribs of glass onlaid. Émile Gallé of Nancy. Modern - - - - - - - 232

See also

GLAZING - - - - - - - - - 9

INLAY - - - - - - - - - 255

MOSAIC - - - - - - - - - 118

GLAZING in white glass, the leads forming the pattern of the window. L. F. D. - - - - - - - 9

See also

STAINED GLASS - - - - - - - - 283

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GOLDSMITH'S WORK. FIGURE

1. Chain of gold beads with dependent ornaments inlaid with precious stones. Cloisonné. Egyptian.
2. Gold chain with globular dependent ornaments. Greek or Graeco-Roman.
3. Gold beads with dependent crocodiles in embossed gold, alternating with drops of lapis. Egyptian.
4. Chain of stars. Gold. Late Greek.
5. Twisted ribbons of gold, one ornamented with seeds of gold grouped to form flowers. Finest Greek period.
6. Chain of silver gilt, with cut stones set in filigree. Spanish. Seventeenth century.
7. Gold beads, embossed and seeded. Greek Islands.
8. Chain of flat-twisted gold wire and beads of lapis. Roman.
9. Chain of gold, with pendant ornaments embossed and seeded. Sardinia.
10. Chain of gold, with pendant ornaments, wire. Beads of lapis. Roman.
11. Gold chain of looped wire. Anglo-Saxon - - - 22

CUP. Etruscan. Fifth century B.C. V. & A. M. (Compare 79) - - - - - - - 80

ENLARGED DETAIL of ornament in beads of gold soldered on. Etruscan. Fifth century B.C. V. & A. M. (Compare 80) 79

PENDANT. Pattern in gold wire soldered on. Wye Down, Kent. B.M. - - - - - - - 77

PENDANT. Pattern repoussé. Wye Down, Kent. B.M. - 78

See also

FILIGREE - - - - - - - 222

INLAY - - - - - - - 184, 197

PIERCED BOWL - - - - - - - 196

GOUGING. See

WOOD CARVING - - - - - - - 82, 83

GRANITE. Figure of Pasht carved in black granite. From Karnak. Egyptian. *ca.* 1400 B.C. B.M. - - - 94

GROTESQUE. See

INLAY - - - - - - - - 276

GUIPURE of gold and silver lace from St Mary's Church, Dantzig. Spanish. Seventeenth century - - - 278

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HANDLE FIGURE
OF JAPANESE FANS or hand screens. Modern - - 20
OF KETTLE. In bronze wire. Japanese - - - 19
OF LACQUER MEASURE. In bamboo. Indian or Burmese - 18
See also
IRON - - - - - - - - 23
HUMAN FIGURES IN ORNAMENT. See
WALL-PAPER - - - - - - - 274
WOVEN PATTERN - - - - - - 271

IMPRESSED. See
POTTERY - - - - - - - - 122
TOOLING - - - - - - - 123
INCISED
DETAIL OF CYPRESS WOOD COFFER. The ground once inlaid with coloured mastic. Italian. 1400-1420. V. & A. M. - 147
STONE. German. Late sixteenth century - - - 275
See also
LETTERING - - - - - - - 61
POTTERY - - - - - - - 63

INLAY. See
COUNTERCHANGE - - - - - - 53
INCISED - - - - - - - - 147
IVORY - - - - - - - - 247
LATTICE - - - - - - - - 246
MOSAIC - - - - - - 171, 118, 58, 117
PIERCED BOWL - - - - - - - 196
INLAY OF
BRASS AND TORTOISESHELL. "Boulle" and "counter." French. Louis XIV. Designed by Berain - - 217
BRASS WIRE INTO BROWN WOOD. India, N.W. Provinces. V. & A. M. - - - - - - - 224
BAKED CLAY INTO WOOD. Egyptian. B.M. - - - 191
CLAY INTO CLAY. Egyptian. B.M. - - - - 192
CLAY INTO CLAY. Egyptian. B.M. - - - - 193
CEMENT? IN MARBLE - - - - - - 276
EBONY in golden brown wood with ivory pegs, forming part of a design from a Portuguese cabinet. Seventeenth century. V. & A. M. - - - - - - - 149
GARNETS into cloisons of gold. Anglo-Saxon. B.M. - - 184

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INLAY OF — FIGURE

GARNETS in cloisons of gold (the eyes rounded) and filigree of twisted gold wire. Anglo-Saxon. B.M. (Larger than actual size) - - - - - - - 201

GLASS (coloured and foiled) in cloisons of gold on a bronze fibula. Merovingian - - - - - - 200

GLASS MOSAIC IN CARVED MARBLE. From the Bishop's throne at Ravello. Byzantine - - - - 255

HOLLY IN OAK. Detail and complete panel. From Sizergh Castle in Westmoreland. Latter part of sixteenth century. Now in V. & A. M. - - - - - - 148

IVORY INTO BROWN WOOD. Engraved. Panel of a small casket. German. Sixteenth century. V. & A. M. - 150

IVORY AND EBONY on brown wood. Oriental - - 55

IVORY INTO EBONY. Italian. V. & A. M. - - - 218

LAPIS, &C., INTO CARVED IVORY from North-West Palace of Nimrod. Egyptian. B.M. - - - - 189

LAPIS AND OTHER PRECIOUS STONES into cloisons of gold. Part of armlet. Græco-Bactrian. B.M. - - - 197

MARBLE. From the pavement of the Cathedral at Siena - 3

MOTHER-OF-PEARL in lacquer. Indian - - - 8

MOTHER-OF-PEARL into gilt and lacquered gesso. S. George and the Dragon. By Fred Marriott. 1902 - - - - 254

MARBLE (black and white). Details engraved and filled in with grey cement. From the pavement of the Cathedral at Siena. Fifteenth century - - - - - 152

MARBLE (red and grey into white). From the Cathedral at Florence. Italian. Fourteenth century - - - 151

MARBLE (white) into steatite. Saracenic - - - 50

MARBLES (white and tinted). From the pavement of the Cathedral at Siena. Beccafumi. Sixteenth century - 153

SERPENTINE (dark green) into white marble. From the floor of the baptistery at Florence. Thirteenth century - - 221

SLIPS (coloured) into impressed tiles. Modern. L. F. D. - 194

VITREOUS PASTES or pottery into engraved ivory or bone. Egyptian. B.M. - - - - - - 190

WOOD AND IVORY. Italian. Fifteenth century - - 56

WOOD AND IVORY. Italian - - - - - 57

WOOD. Showing Arab influence. Italian. Sixteenth century 60

INLAY PATTERN

IN BRASS WIRE. L. F. D. - - - - - 225

L. F. D. - - - - - - - - 279

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FIGURE

INTAGLIO carving in lacquered wood (black). Painted in dead colours and gold. From a folding screen. Chinese. V. & A. M. 256

IRON

CHISELLED HINGE. Nuremberg. *ca.* 1600 - - - 98

CHISELLED LOCK PLATES. French. Late fifteenth century - 100

CHISELLED TERMINALS of a washstand. Italian. V. & A. M. 99

DETAILS OF TERMINALS. Leafage, &c., beaten into "swages." English. Thirteenth century - - - - 157

DETAIL OF WROUGHT HINGE. Plates of shaped and beaten sheet metal superposed for the flowers. German. Sixteenth or seventeenth century - - - - - 161

DOOR KNOCKER with tracery background formed by two pierced plates, one laid over the other. French. Fifteenth century. Spitzer Collection - - - - - - 206

EMBOSSED sunflower leaf. Designed by B. J. Talbert. Nineteenth century - - - - - - 6

GATE with fretted panels. From the chapel in the castle of the Counts of Flanders at Ghent. Flemish. Sixteenth century - - - - - - - 203

GRILLE. Pierced. French Gothic. Fifteenth century. Bargello, Florence - - - - - - 280

GRILLE. Wrought. French. Thirteenth century - - 156

HANDLES or knockers. French. Sixteenth century - - 23

LOCK PLATE. Pierced, embossed, and engraved. German. *ca.* 1600 - - - - - - - 245

OR STEEL HORSE MUZZLE. Chiselled. German? 1567. Spitzer Collection - - - - - - 162

WROUGHT. Details chiselled, stems threaded. Augsburg. *ca.* 1600 - - - - - - 159

WROUGHT. Details of sheet metal, stems threaded. Nuremberg. *ca.* 1600 - - - - - - 160

WROUGHT GATES. Italian. Seventeenth century. V. & A. M. 158

IVORY.

CARVED and inlaid into lacquered wood. Modern Japanese - 247

CASKET with brass mounting, carved with fleurs de lis. French. Late sixteenth century. Salting Collection - 95

CASKET, carved. Spanish? Twelfth century. V. & A. M. - 244

FIGURE of Tragic Actor. Greek. First or second century. Dutuit Collection - - - - - - 96

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IVORY—*Continued.* FIGURE

FIGURE of Virgin. Gothic. Fourteenth century. Spitzer Collection - - - - - - - 97

See also

INLAY - - - - - 150, 55, 218, 189, 190, 56, 57

JOINERY.

DESIGNED IN THE FORM OF A FRET. Modern Japanese - 209

DOORS in Cardiff Castle. By William Burges. Nineteenth century - - - - - - - 10

See also

DOOR - - - - - - - 251, 66

KNIFE WORK. See

CHIP CARVING - - - - - - - 81

WOOD CARVING - - - - - - - 179

LACE.

GREEK (so called), or "Reticella," or "Point Coupé." Design by Federigo Vinciolo. Italian. 1587 - - - 120

NEEDLEPOINT. Linen foundation practically disappearing. The culmination of drawn or cut-work. Venetian. Sixteenth century - - - - - - - 43

NEEDLEPOINT or "Punto in Aria," with pearled "brides." Trimmings of an altar frontal. Venetian. *ca.* 1660. V. & A. M. 44

PILLOW WORK. Buckinghamshire. Nineteenth century - 45

PILLOW, with fancy réseau and open work. Buckinghamshire. Early nineteenth century - - - - - 74

ROSE POINT. The outline of cordonnet, the "brides" thorned. Spanish or Venetian - - - - 48

SO-CALLED, not really réseau but a sort of embroidery on net, the mesh pulled out of shape by the stitching. Limeric. 1885 - - - - - - - 46

See also

CUT LINEN - - - - - - - 75

GUIPURE - - - - - - - 278

PILLOW LACE - - - - - - - 215

LACQUER. See

INLAY - - - - - - - 8

INTAGLIO - - - - - - - 256

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FIGURE

LATTICE of turned and inlaid wood. Arab - - - 246

LATTICE WORK.
With turned spindles. Old Arab - - - - 119
With turned spindles. Arab - - - - - 127

LEATHER.
BOOKBINDING, inlaid and tooled. French. Henri II. - 166
BOOKBINDING, tooled, and the imprint of the tools used in producing the design. French. Louis XIII. - - 70
BOOKBINDING, tooled in gold. "Point coupé." French? - 121
BOOKBINDING, tooled in gold. Poinctillé. By Le Gascon. French. Louis XIII. Seventeenth century - - 227
BOOKBINDING, tooled in gold, with engraved and pierced silver mounts. German. Seventeenth century - - - 252
BOX-TOP. The centre onlay with leather of various colours, the pattern outlined with stitching in white. Embroidered border. Modern Indian. V. & A. M. - - - 154
TARGE. Embossed and studded with brass rivets. Rob Roy's shield - - - - - - - - 230

See also
CUT LEATHER - - - - - - - 104
EMBOSSED LEATHER - - - - - - 105
FRETTED LEATHER - - - - - - 220
ONLAID LEATHER - - - - - 284, 285

LETTERING.
BRUSH WRITING. Japanese - - - - - 62
GREEK. Incised with a stylus. Roman cut into stone. Uncials, and Lombardic Capitals and other pen work - 64
INCISED. Cuneiform inscription in stone. *ca.* 830 B.C. - 61

LINEN. See
WOVEN PATTERN - - - - - - 277

LINENFOLD.
PANEL. Late Gothic - - - - - - 67
PANELLING. Late Gothic - - - - - 69
PANELS. Late Gothic - - - - - - 240
Various examples. Late Gothic - - - - 68

LUSTRE. See
POTTERY - - - - 124, 145, 173, 113, 253

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MARBLE. FIGURE

ARABESQUE from a sarcophagus by Benedetto da Rovezzano, in the Church of SS. Apostoli. Florence. Sixteenth century 93

See also

INLAY - - - - - - 3, 152, 151, 153
MOSAIC - - - - - - 128, 4, 257, 117
PIERCED - - - - - - - - 202

MOSAIC.

DARK SERPENTINE and white marble. From the pavement of the baptistery at Florence. Thirteenth century - - 54
GLASS. From the cloisters of S. John Lateran, Rome. From a drawing by E. W. Nesfield - - - - 171
GLASS. Pillars from the cloisters of S. John Lateran, Rome. Drawn by W. E. Nesfield - - - - - 118
GLASS. The smaller detail *in* the glass itself. Roman? B.M. - - - - - - - - 58
GLAZED TILEWORK. Hispano-Moresque. Thirteenth or fourteenth century - - - - - - 49
MARBLE. Border of a pavement in black and white tesserae. Naples Museum - - - - - - 128
MARBLE. Details of Roman pavement now in the Campo Santo at Pisa - - - - - - - 4
MARBLE. Figure of a priestess modelled in relief. One of two panels. From Metaponto, now in the Museum at Naples - - - - - - - 257
MARBLE. Opus Alexandrinum with central disc of porphyry. From the Church of S. Marco, Rome - - - 117

See also

COUNTERCHANGE - - - - - - 53
INLAY - - - - - - - - 255

NIELLO. See

DESIGNS FOR DAMASCENING - - - - - 181
SILVER DRINKING CUP - - - - - 180

OAK cupboard with flat carving and wrought-iron hinges, lock plates, &c. German Gothic. Fifteenth century. V. & A. M. 260

ONLAID LEATHER.

OUTLINED WITH GILT TOOLING. Bookbinding. French. Sixteenth century - - - - - - 284
STITCHING FORMS OUTLINE. Top of an Indian box - - 285

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ONLAY. FIGURE
OF GOLD CORD. Couching on velvet. Bookbinding. Henry VIII. B.M. - - - - - - - 226
OF SILVER upon bronze. Kurdish - - - - 282
See also
BRONZE - - - - - - - - 164

OPUS ALEXANDRINUM. See
INLAY - - - - - - - - 117

OUTLINE.
WHICH HARDENS FORM - - - - - 288
WHICH SOFTENS FORM - - - - - 289
See also
EMBROIDERY - - - - - - 270, 286
ONLAID LEATHER - - - - - 284, 285
STAINED GLASS - - - - - - 283
WOVEN PATTERN - - - - - 287

PAINTED roof decoration. L. F. D. - - - - 259

PATCHWORK of appliqué silk. By Mr and Mrs R. A. Dawson 155

PIERCED.
AND CARVED MARBLE panel from the Church of Santa Maria dei Miracoli, Venice. By Tullio Lombardo - - - 202
BALCONY DECORATION. The planks sawn into shape before being put together. Traditional Swiss - - - 207
BOWL OF GOLD. Originally enclosing precious stones. Byzantine Gothic. Found at Petrossa, a village in Roumania. Probably by Dacian workman, *ca.* fifth century - - 196
LATTICES. The planks notched before being put together. Old Arab - - - - - - - 208
SPIRAL ORNAMENT. Javanese. B.M. - - - 129
See also
IRON GATE - - - - - - - 203
SILVER GILT - - - - - - - 262
STAINED GLASS - - - - - - - 195

PILLOW LACE in imitation of Venetian point, the "brides" knotted. Milan, Italy. Seventeenth century. V. & A. M. - 215

PLASTER.
ENRICHMENT. Arab. V. & A. M. - - - - 165
INCISED or stamped. Arab - - - - - 176

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PLASTER—*Continued.* FIGURE

STAMPED in high relief. From the Synagogue at Toledo.
Moorish - - - - - - - 177

See also
STAINED GLASS - - - - - - - 195

POINCTILLE.
PATTERN. L. F. D. - - - - - - 228

See also
LEATHER BOOKBINDING - - - - - 227

POTTERY.
BASE of a white salt-glazed stoneware candlestick with incised and stamped ornament. Siegburg, Germany - - 63

DETAIL from a cylindrical white salt-glazed stoneware jar, scratched pattern. Meckenheim, Germany - - - 174

DETAIL of earthenwere dish. Sgraffitto. Buff glaze streaked with green and yellow. Italian. Late fifteenth century. V. & A. M. - - - - - - - 175

DETAIL of raised yellow slip on a dark brown ground. Glazed. Persian. V. & A. M. - - - - - 137

DETAIL of salt-glazed stoneware. The ornamental details in relief. Slip applied to the body and stamped with a die—the stems dug in. Cobalt blue and manganese purple on greyish body. Dutch. 1691. V. & A. M. - - - 238

DETAIL of sunk ornament on salt-glazed stoneware. The leaves impressed with a stamp, the stems dug in with a tool. Ground cobalt. Limburg. V. & A. M. - - 237

DETAIL of white slip on a less pure white ground. Glazed. From a Turkish mug. Sixteenth century. V. & A. M. - 138

DETAILS of Rhodian and Persian ornament. Free brushwork in blue and white faience. V. & A. M. - - - 7

EARTHENWARE DISH. Painted in blue and manganese on white. Rhodian. *ca.* 1500. V. & A. M. - - - 144

EARTHENWARE JAR. Reddish, unglazed, with ornamentation in slip, in which are embedded jewels of blue glass or vitreous paste. Roman - - - - - 14

EARTHENWARE VESSEL with patternwork - - - 130

EARTHENWARE WITH EMBOSSING pushed out with the fingers in the moist state of the clay. Glazed and lustred. Gubbio, Italy. End of fifteenth century. V. & A. M. - - 124

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POTTERY—*Continued.* FIGURE

GLAZED EARTHENWARE dish painted in blue and silver lustre. Hispano-Moresque. Valencia. Fifteenth century. Spitzer Collection - - - - - - - 145

GLAZED EARTHENWARE, painted and lustred, with slip ornament in relief. Fine diaper picked out. Persian. V. & A. M. - - - - - - - - 173

GLAZED EARTHENWARE. Persian. V. & A. M. - - 136

PAINTED EARTHENWARE. Persian. V. & A. M. - - 268

PAINTING. Blue and white. Earthenware. Persian - 39

PAINTING in brown on greyish white. Stoneware. From Satsuma, Japan - - - - - - 38

PÂTE-SUR-PÂTE decoration. By M. L. Solon. Nineteenth century - - - - - - - 143

PATTERN stamped with bookbinders' tools in white earthenware, and filled in with coloured clay. French. Henri II. 122

PLAQUE OF EARTHENWARE. Inscription in raised slip, coloured, on a ground of lustre, with pattern in white. The fine diaper picked out. Persian. Spitzer Collection - 113

PORCELAIN vases with coloured glaze. Chinese. V. & A. M. 132

RED UNGLAZED EARTHENWARE with whitish slip decoration in high relief. Roman. B.M. - - - - 139

SALT-GLAZE STONEWARE. Beer jugs. Old German - - 131

SALT-GLAZE STONEWARE. Dutch. 1691. V. & A. M. - 239

STOVE SLAB of earthenware glazed with copper green. German. Sixteenth or seventeenth century. V. & A. M. - 112

TILE—star-shaped earthenware—just sufficiently modelled in slip to give value to the metallic lustre on it. The forms defined by painted outlines, &c. Persian. Sixteenth century - - - - - - - 253

TILES of clay shrunk in the drying so as to show "crackle" - 135

TILES. Modelled and glazed. L. F. D. - - - 52

TILES with raised outlines to form cells for coloured glazes. Made at Seville. Sixteenth century - - - - 2

TILES with raised outlines to form cells for the coloured glazes. L. F. D. - - - - - - - 51

UNGLAZED BLACK EARTHENWARE with refined slip decoration in creamy white. Found in Britain. Roman. B.M. - 140

See also

CARVED SANDSTONE - - - - - - 178

MOSAIC - - - - - - - - 49

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FIGURE

PRINTED COTTON. L. F. D. - - - - - 37
PATTERN DISCHARGED. L. F. D. - - - - 40
TWO PRINTS. Outline of flowers left clear between two prints. L. F. D. - - - - - - - 41

PRINTED VELVET. L. F. D. - - - - - 36

REPOUSSÉ. See
SILVER - - - - - - - - 11, 16
SILVER GILT - - - - - - - - 13

SGRAFFITTO. See
POTTERY - - - - - - 174, 175

SILVER.
BOWL. Embossed and chased. Parcel gilt. Russian. Seventeenth century - - - - - - 109
CROZIER. French. François I. - - - - 111
CUP. From a design by Hans Holbein. German. Sixteenth century - - - - - - - 16
CUP - - - - - - - - 267
DISH. English. Charles I. London. 1653 - - - 108
DRINKING CUP with decoration of strapwork and quasi-Arab ornament in niello. German. Sixteenth century - - 180
EMBOSSED or punched detail from a tankard. Viennese. 1731 - - - - - - - - 107
RIM OF A DISH. Embossed and chased. Venetian. *ca.* 1500 110
TANKARDS. English of the end of the sixteenth and beginning of the seventeenth centuries - - - - - 134
TANKARDS of simple shape. English. The shorter 1692, the taller 1640 - - - - - - - 12
See also
DESIGNS FOR DAMASCENING - - - - - 181
LEATHER BOOKBINDING - - - - - 252
ONLAY - - - - - - - - 282

SILVER GILT.
EWER. German. Sixteenth century - - - - 13
FILIGREE enclosing precious stones. Part of a book cover. Byzantine. Collection of Sir D. T. Gibson-Carmichael, Bart. 199

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SILVER GILT—*Continued.* FIGURE

MOUNTING to morocco bookcover. Pierced and chased. Dutch. 1670. V. & A. M. - - - - - 262

RELIQUARY. French? Gothic. Fifteenth century. Spitzer Collection - - - - - - - 21

SLIP. See

POTTERY - 137, 238, 138, 14, 173, 143, 122, 113, 139, 140

STAINED GLASS.

DETAIL showing—A. Glazing. B. Painting. C. Painting and glazing together - - - - - - 248

FRAMED IN PIERCED PLASTER. From Cairo. V. & A. M. - 195

GRISAILLE PATTERN. French. Thirteenth century - - 283

TESSERÆ of different colours fused on to a sheet of clear glass. French. 1900. Daumont Tournel - - - - 249

TWO LIGHTS with figures of a bishop and S. Elizabeth of Hungary under canopies. German. Fifteenth century Gothic. Spitzer Collection - - - - - 258

STAMPED. See

LEATHER BOOKBINDING - - - 166, 70, 121, 252, 227

POTTERY - - - - - - 122, 237

TOOLING - - - - - - - 123

STEEL. See

Designs for damascening - - - - - 281

STENCIL DESIGN. See

Diagram - - - - - - - 214

STENCIL PLATES. Japanese - - - - - 210

STENCILLED

LEAF FORMS with ties made use of to render veining, &c. Japanese - - - - - - - 5

PATTERN. Flights of wild ducks across the sky. Japanese - 213

PATTERN. By George F. Wood - - - - 216

PATTERN. Iris. Japanese - - - - - 211

PATTERNS. Cherry blossom. Japanese - - - 212

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STONE CARVING. FIGURE
GOTHIC. Laon, France. Thirteenth century - - - 92
ROMANESQUE from Le Puy. French. Thirteenth century - 91
SPANDRIL from Wells. Thirteenth century - - - 89

STONEWARE. See
POTTERY - - - - - 63, 238, 237, 131, 239

STRAPWORK. See
BYZANTINE ORNAMENT - - - - - 172
DESIGNS FOR DAMASCENING - - - - - 281
LEATHER BOOKBINDING - - - - - 166
PLASTER - - - - - - - 165
SILVER - - - - - - - 180, 107
WOOD CARVING - - - - 146, 163, 167, 170, 168, 169

TILES. See
INLAY - - - - - - - - 194
POTTERY - - - - - 253, 135, 52, 2, 51

TISSUE. See
WOVEN PATTERN - - - - - 33, 30, 31

TOOLING. The pattern impressed in blind. Italian. Sixteenth century - - - - - - - 123
See also
LEATHER BOOKBINDING - - - 166, 70, 121, 252, 227

TRANSLUCENT INLAY. See
PIERCED BOWL - - - - - - - 196

TURNING. See
LATTICE - - - - - - - 246, 119, 127

VELVET. See
WOVEN PATTERN - - - - - 35, 73, 287

WALL-PAPER
FOR A NURSERY. "The House that Jack built." Designed by Walter Crane for Jeffrey & Co. - - - - 274
See also
EMBOSSED - - - - - - - 42

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WOOD. See FIGURE

DOOR - - - - - - - 251, 66
FRETTED - - - - - - 205, 204
INLAY OF - - - - 149, 148, 150, 55, 56, 57, 60
LINENFOLD - - - - - 67, 69, 240, 68
PIERCED - - - - - - 207, 208

WOOD CARVING.

ARABESQUE in walnut from the stalls of S. Severino, Naples. Italian. Sixteenth century - - - - - 86
BOX of pine with flat strap ornament. Knife work. Icelandic. V. & A. M. - - - - - - - 179
COFFER (part of) in walnut. French. V. & A. M. - - 87
DOOR OF A CUPBOARD. Late Gothic. German - - 261
DOOR PANEL with strapwork in low relief. French. Sixteenth century. Edinburgh Museum - - - - 146
DOUBLE DOORS. Arab. Twelfth century - - - 163
END of a long shutter panel with raised centre. French Regency - - - - - - - 243
FLAT STRAPWORK ornament from the base of a walnut wood coffer of which the upper parts show Gothic influence. North of France. Sixteenth century. V. & A. M. - - 167
GOUGE WORK. From an oak coffer. French. 1550 to 1600. V. & A. M. - - - - - - - 82
GOUGE WORK. Salt bowl. Old Italian. V. & A. M. - 23
GROTESQUE from a cassone at Pistoja. Italian - - 85
HERALDIC. Cupboard door. Oak. German. Late Gothic - 88
MODERN INDIAN. V. & A. M. - - - - 84
OAK PANEL (detail of) sunk in a longer panel. French. François I. V. & A. M. - - - - - 241
SHOWING the relation of 241 to the long panel. French. François I. V. & A. M. - - - - - 242
OAK PANEL with strapwork and vine. English. Sixteenth century. V. & A. M. - - - - - 170
SOMERSETSHIRE. Fifteenth century - - - - 90
WALNUT WOOD door panel with flat strapwork ornament foliated. French. Sixteenth century. From a cast in the V. & A. M. - - - - - - - 168
WALNUT WOOD door panel with flat strapwork ornament. Lyons. Second half of sixteenth century. V. & A. M. - 169

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WOOD CARVING—*Continued.* FIGURE

See also

CHIP CARVING - - - - - - - 81
INCISED - - - - - - - - 147
OAK CUPBOARD - - - - - - - 261

WOVEN PATTERN.

BROCADE with diagonal "binding." Green satin warp (ground), white figure (weft), brocaded with gold. Italian. Seventeenth century - - - - - - 29
BROCADE. Green satin ground brocaded with colours, white and gold - - - - - - - 76
BROCADE. Yellow tabby ground, white ornamental figure. Colours of flowers brocaded - - - - - 34
BROCATELLE with design in yellow on a red ground, all crossed with gold. Part of a stole. The assumption and coronation of the Virgin. Italian. Fifteenth or sixteenth century. Cluny Museum, Paris - - - - 271
CARPET. Portion of border. Old Persian. V. & A. M. - 26
DAMASK. Fifteenth century - - - - - 72
DAMASK. Green and yellow on violet silk with silver thread running through. Spanish. Sixteenth century. Spitzer Collection - - - - - - - 272
FIGURED TABBY. Two warps, one shuttle. White ground, red figure. Eighteenth century - - - - 32
GERMAN. Fifteenth century - - - - - 71
LINEN DAMASK. Part of a tablecloth border designed by Walter Crane - - - - - - - 273
LINEN DAMASK. Seventeenth or eighteenth centuries. Dresden Museum - - - - - - 277
SATIN TISSUE. Ground purple (warp), leaves green, flowers white, and cream colour, changing shuttles. Eighteenth century - - - - - - - 33
TISSUE. Crimson satin ground (warp). Crimson and white figure (weft). Italian. Eighteenth century - - - 30
TISSUE. Red satin ground standing up above vellum coloured figure (Tabby). Silver tissue. Seventeenth century - 31
VELVET (crimson) with two piles. Italian. Fifteenth century. V. & A. M. - - - - - - - 35
VELVET (crimson). Italian. 1450 to 1500. V. & A. M. - 73
VELVET. Details showing the use of "terry" as an outline, &c., as intermediate texture between satin ground and soft pile - - - - - - - - 287

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I. INTRODUCTORY.

Ornament inseparable from the thing ornamented—Must be adapted, therefore, to conditions—Historic style the result of workmanlike acknowledgment of this—Necessity, therefore, of studying ancient ways of work—Modern workman must concern himself about other methods than those of his own workshop—Knowledge imperative—Not hurtful to originality but helpful to it.

ORNAMENT and its application, says the title of this book; but apart from its application there is no such thing as ornament. It is ornament relatively only to its place and purpose. In theory we may discuss it independently of them, in practice ornament is inseparable from the thing ornamented.

The absolute necessity, therefore, of adapting its design to inevitable conditions is obvious. The equal need of conforming to the more technical conditions imposed upon the workman by his materials and tools and the various ways of working, is not so generally appreciated—and naturally: it takes a workman thoroughly to appreciate that.

Working artists, no matter what their particular work, are aware of the strict subservience of their art to conditions inherent in it. A man may think that workers in some other medium are not so tightly bound; he may resent the conditions under which he works; he is wiser if he bows to them. For the truth is, and the closer we inquire into the matter the clearer it becomes, that they are common to all practical design. The art we most esteem is that of men who cheerfully accepted them. The style we

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recognise as "historic" grew out of obedience to them. It is for that reason, and for the light it throws upon technique and its very close connection with design, that some serious inquiry into the evolution of design is a necessary preparation to invention of our own.

There is a point of view from which the consideration of primitive and very likely obsolete ways of working may appear to the progressive mind worse than useless. The student of to-day, it is sometimes said, knows already more than enough of the art of other days and other nations; to inquire too curiously into the past is to confuse his mind; he should work by rights in the spirit of his own times. There would be more force in that contention if there were any question of disturbing the simple-minded and whole-hearted devotion of modern workers to a modest ideal of craftsmanship such as we may imagine to have been natural to workmen of the Middle Ages. There is no longer any fear of that: we have long since outgrown content with tradition. Whatever advantage it may have been to the old-world artist that the range of his experience was so limited—it certainly set natural and proper bounds to his ambition, bounds which we are not disposed willingly to accept—for good or ill, we have quite given up old precedent for new experience. And, though it were the substance that we have dropped for the shadow, the moment is passed when it is possible to recover what the stream of events has carried out of reach. We have outgrown the naïveté of innocence. The greater our need of knowing. Now that we have no longer trustworthy traditions to go by, we want all the enlightenment tradition can give us, if only that we may choose our own way. In fact, we live in days when it is as necessary that a workman should be acquainted with all manner of methods, as it was once natural for him to be ignorant of all but what was going on about him in the workshop.

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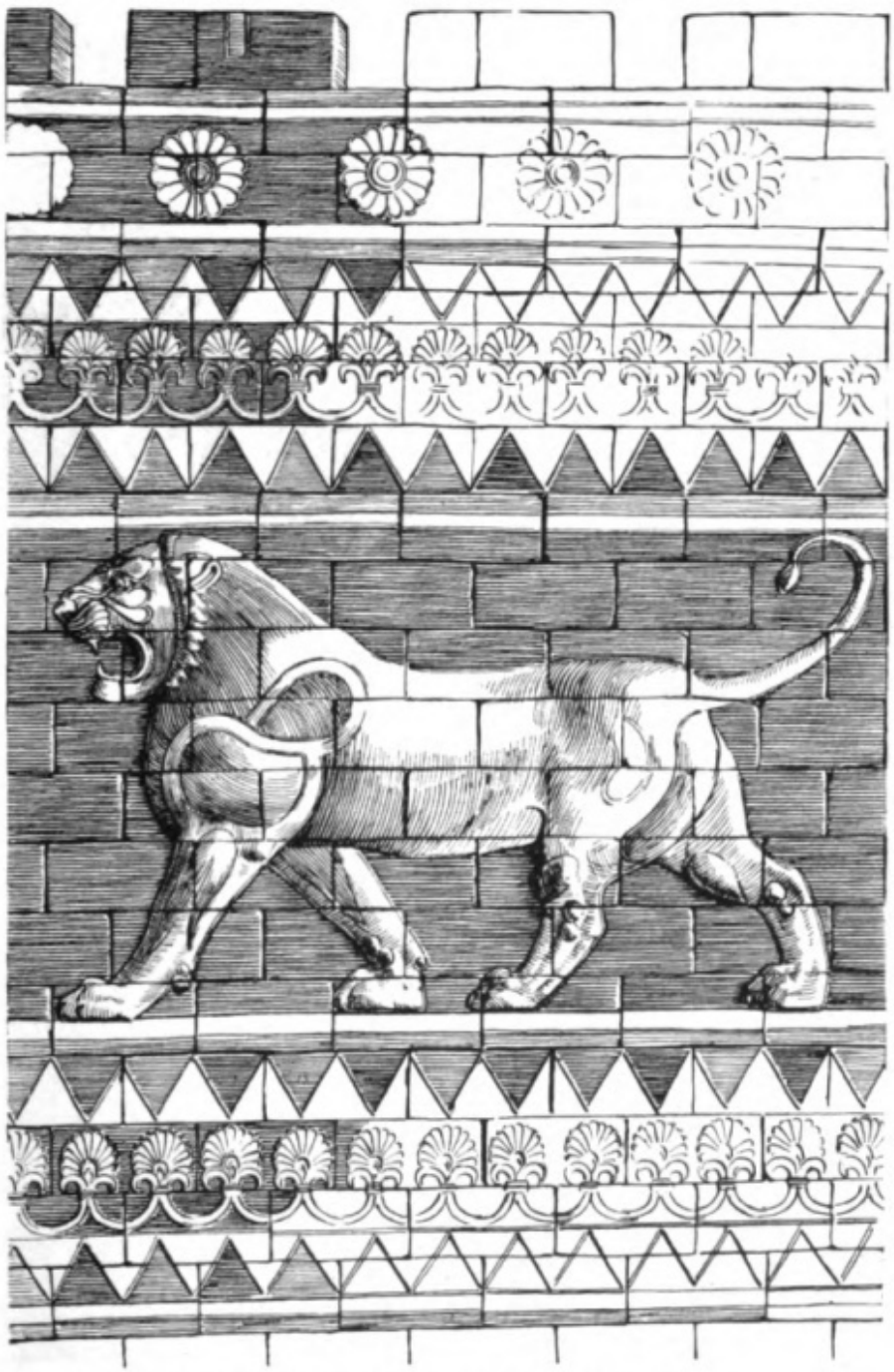

I. ANCIENT ASSYRIAN WALL DECORATION IN ENAMELLED BRICK.

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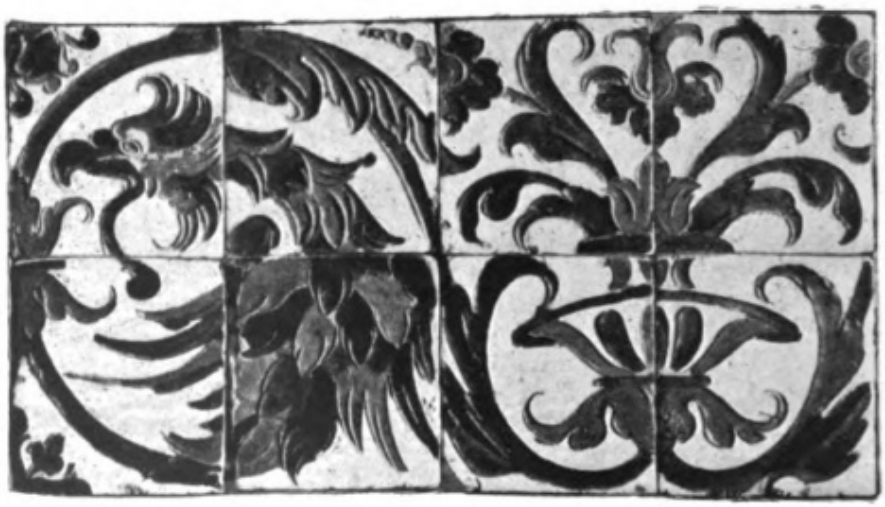

2. OLD SPANISH TILE DECORATION IN COLOURED GLAZES.

To refer merely to the glazed earthenware of the past. There was most admirable and essentially modern work in *grès* at the last Paris Exhibition, which would never have been done but for the remarkable enamelled brickwork from Susa, now in the Louvre (1); and some of the most effective of modern tiles have been designed on the hint given by the old Spanish work in coloured glaze (2).

It is a mistake, no doubt, to cram the artist with information he cannot properly digest, to load the workman with learning to an extent that would hinder the free play of his faculty. But, if art is to take its place in the world, artist and workman must be up to the level of contemporary enlightenment—they cannot afford not to know what is within general knowledge. And the choice is not between ignorance and cramming. There is the alternative of moderate indulgence. After a surfeit of good things we instinctively starve awhile. At the worst, however, the case is not desperate; nature comes to our relief; a moment's sickness and the evil is past, a healthy appetite asserts itself once more, knowledge is once again easily digested, ex-

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perience assimilated; and, refreshed and strengthened, the artist is more an artist than before.

It is strange that there should be any occasion to insist at this date upon the necessity of knowledge, and to combat the common superstition that the artistic faculty, because it is inborn, is all-sufficient. As if the faculty of learning from what went before, the distinctively human faculty, were not inborn! Whatever our native genius, it needs sustenance. Knowledge can but strengthen an artist in the exercise of his power. As for the theory that it weighs upon originality, we forget how rare a thing originality is—and was, even in the days when knowledge, too, was rare. If ever individuality was extinguished by the breath of education, it must have been at best a feeble flame, hardly worth nursing, certainly not worth keeping alive by screening off all knowledge: it could never have been kindled to much purpose, or it would not have been so soon snuffed out.

An artist is an artist very much because, however well informed, he is himself, and depends in the end upon his own initiative. For all that, sure sign of weakness though it be to rely upon the experience of others, inborn instinct is not all the guide he needs. There are times when he must follow that though all the world said no—but only after weighing what they had to say—and to do that he must not be entirely unequipped with what is common knowledge. He owes that much to his art.

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II. CONVENTIONAL TREATMENT.

The necessity of conventional treatment—The meaning of the word—Conventions proper to one craft not the conventions of another—Examples—Conventional as compared with natural—Ornament implies modification of natural form—Conventional treatment in the interests of reticence and self-restraint.

No artist will be found to deny the claims of "treatment" in design: many will protest it ought not to be conventional. I maintain it should.

It seems almost as if the terms employed to throw light upon the subject of art had been devised for the express purpose of making darkness darker. More especially is that so in the case of words which have a general as well as a technical meaning, and are used now in one sense now in the other, or it would be more exact to say another, for the choice of interpretation is not limited to two alternatives.

Lame and misleading, however, as the terms may be, without them discussion would progress at a pace so slow that nothing short of "parliamentary" would describe it. The language of all specialists is a sort of jargon, but it helps along discussion. It is the current coin of technical traffic. But we must first know its value; and in the case of words coined, shall we say, in Bohemia, that is not always precisely determined. We may, and must indeed, begin by defining the terms to be used. That is easily said; but the difficulty is not so easily overcome. No sooner do we set out to define than we fall into the use

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of words themselves in need of definition. And, then, it is not in art as in science where a precise line can always be drawn. The artist has the defects of his qualities, and, by his very temperament, he is disposed neither to accept a hard and fast definition nor to be precise in expressing his meaning. A perfect web of confusion has been woven about the subject of ornament by the cris-cross and hap-hazard use of the word "conventional." We must needs interpret it according to the speaker, to whose mind we have not always the key. Where one person means by conventional treatment just such rendering of natural form as may be consistent with the character of the work in hand, another uses the word to express a treatment which is no better than a foregone conclusion.

The respect and the contempt in which convention is held are alike intelligible when we understand that it stands in the speaker's mind, in the one case for the treatment of ornament after its kind, intelligently, reticently, and with the restraint which fits it for its

3. MARBLE INLAY, SIENA.

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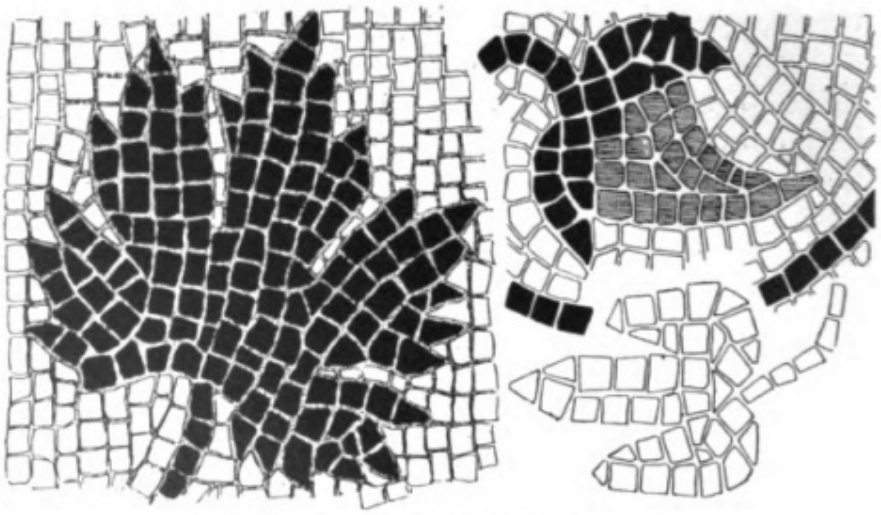

4. DETAILS OF ANCIENT FLOOR MOSAIC.

place and purpose; in the other for all that is outworn and lifeless. In the latter sense it is a term of reproach —and deservedly so. And there are grounds for the use of it in that way. A convention is literally something which has come to be accepted; and as a general rule we do not accept an idea until it is already stale, nor settle down into a way of doing until it is already overdone. It is but natural, therefore, to identify acceptance with dulness. And well we may, if convention is taken to imply certain stereotyped forms of ornament. Then indeed there is an end to the flow of invention: the word stands for stagnation.

But in the stricter and truer sense it is not the forms of ancient days which are to be accepted as models, but only a certain principle to be deduced from the best work of the best artists in the best periods all the world over— the principle of what artists in general call "treatment." And certain lines of treatment have been agreed upon, by those capable of forming an opinion upon design, as best suited to certain purposes, and in particular to certain

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5. DETAILS OF JAPANESE STENCILLING.

materials, to certain tools employed or processes used in working them; and so we have "conventions" not merely worthy of the respect of the workman but without which he is unequipped for his work.

The convention of one craft is often as remote from that of another as from nature itself. The mosaicist designs a leaf or bud adapted to be built up of three-or-four-sided rough chips of marble (4). The stenciller (5) turns the veins of his leaves into convenient "ties." The ironworker, too (6), makes ornament out of veining, but beats up the interspaces into ornamental bosses. The Persian potter (like the old Greek before him) invents for himself a kind of leafage which he can render fluently with the brush (7), and the Indian lacquer-worker (8) leaflets which will give him as little labour as possible in filing his mother-o'-pearl into shape.

It was perhaps an evil hour in which the word "convention" was chosen to express such treatment; it has led admittedly to much misunderstanding; but since we find it in use, it is as well not to be frightened by any odium that may cling to it, but to accept it, and try if we cannot turn a badge of undeserved reproach into an honourable

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distinction. As well fight under one banner as another, so long as it is for the cause we have at heart.

For my part I see nothing for it but to accept the term "conventional" to express the kind of treatment adapted both to the use and purpose of ornament and to the material, tools, and methods of work employed upon it—not by any means necessarily the treatment heretofore employed, though it will hardly be quite independent of it. Advance in art is a process not of uprooting but of growth, often very gradual, seldom sudden.

6. DETAIL OF EMBOSSED IRON, NINETEENTH CENTURY ENGLISH.

We talk of the "principles" of old work. They are at best elusive. Those who have attempted to grasp them have sometimes seized only upon the forms in which they happened to be embodied, forms expressive, it may be, to the seeing eye, but still only forms, which, even if not outworn, are probably in some degree unsuited to express a modern idea. We are, after all, moderns.

It is especially unfortunate that the examples referred to as illustrating the principle of conventionality, are commonly of a character so dry and rigid as to give colour to the notion that "convention" is a thing altogether without elasticity, another word in fact for "formula."

There is no great difference of opinion among artists as to the value of "treatment" in design; where they really differ is in their interpretation of the word "conventional." It is according to their interpretation of it that they esteem or despise it. By their estimate of it you may tell what it is they understand by the word.

If by conventional ornament we are to understand

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7. DETAIL OF PERSIAN POTTERY PAINTING ADAPTED TO FREE BRUSHWORK.

perpetual variation on the old, old tunes long since played out, if we take it to mean slavish adherence to well-worn types, if we identify it with the affectation of a manner not our own, if we argue from it a bigoted adherence

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8. DETAIL ADAPTED TO INLAY OF MOTHER-O'-PEARL—INDIAN

to the letter of an antiquated and obsolete law—no one with a spark of originality or invention in him (no artist, that is to say) can consistently belong to the party of convention.

If, on the other hand, we understand the term to imply just that judicious treatment of natural form inspired by the sense of fitness, and illustrated from time immemorial in the practice of all masters of ornament, then it is difficult to understand how any cultivated or thoughtful person can admit the idea of ornament other than conventional.

Natural and conventional represent, in common parlance, methods as wide apart as the poles. Yet all artists are the children and the servants of Nature, looking to her as the one source of inspiration. Those do not serve her best who most slavishly, or faithfully—in any case thought-

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lessly — copy the natural forms nearest at hand. There is no reason to conclude that natural forms, perfected for a natural purpose, are necessarily and without more ado adapted to the very different purposes of art. We are only following faithfully in the footsteps of Nature when we modify them as our purpose may require.

The very conception of ornament implies modification of the natural forms on which it may have been founded. There is little in nature which is ready made to the hand of the artist. A masterpiece of art is what it is in virtue of a something which was not in the natural *motif* of the artist, but in his treatment of it. A better word might very likely be found for this apt treatment of ornament, if it were worth while to go out of our way in search of it; but, call it what you will—conventional, ideal, individual—there is in all applied art (in all art for that matter, but it is here only the question of ornament) a something, non-natural it may be (in the sense that it is not borrowed from natural forms), but by no means contrary to nature, and least of all to human nature. Instinctively men shape things to their needs.

Conventionality in ornament is the natural consequence of reticence or self-restraint, of doing, not all that the artist could have done, but just what is called for by the occasion. And, apart from that reserve which is the surest characteristic of artistic strength, restraint is continually imposed upon the designer of ornament by the natural conditions of his work, by the consideration of its place and purpose, by the means employed in doing it, and very especially in view of that repetition which becomes in these days more and more a necessity of its very being.

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III. APPLIED ART.

The term "applied" used in reference not to ornament but to the art in it—Ornament properly no after-thought, inherent in the design of the thing ornamented, a consideration from the very beginning of the design —Examples—The test of well-applied ornament, that it does not seem to be added—Applied art always practical art, the solution of a problem—The logic of design.

THE proverbial distinction between use and ornament points to a mistaken but very prevalent idea that ornament is a sort of after-thought—a something added to a thing after it is made. A county councillor, for example, is quite capable of supposing that an engineer has only to plan a convenient and substantial bridge, and it is for the artist afterwards to make it beautiful with architectural trimmings.

Absurd as this misunderstanding is, it is quite a common one even with persons of intelligence, who are misled, perhaps, by the use of the word "applied" design. It is, however, by no means in the sense of added or superfluous ornament that artists use the term. It is not to the ornament but to the art that they refer as being applied or adapted to some decorative purpose—surely a perfectly natural and clearly comprehensible use of the word.

All art, it has been said, is in some sense applied. That may be so. Still, practically speaking, there *is* a difference between the art, let us say, of the modern painter or illustrator and the art of the decorator—still more of the designer of things manufactured. To pretend otherwise is to create a confusion in which discussion of the subject becomes hopeless.

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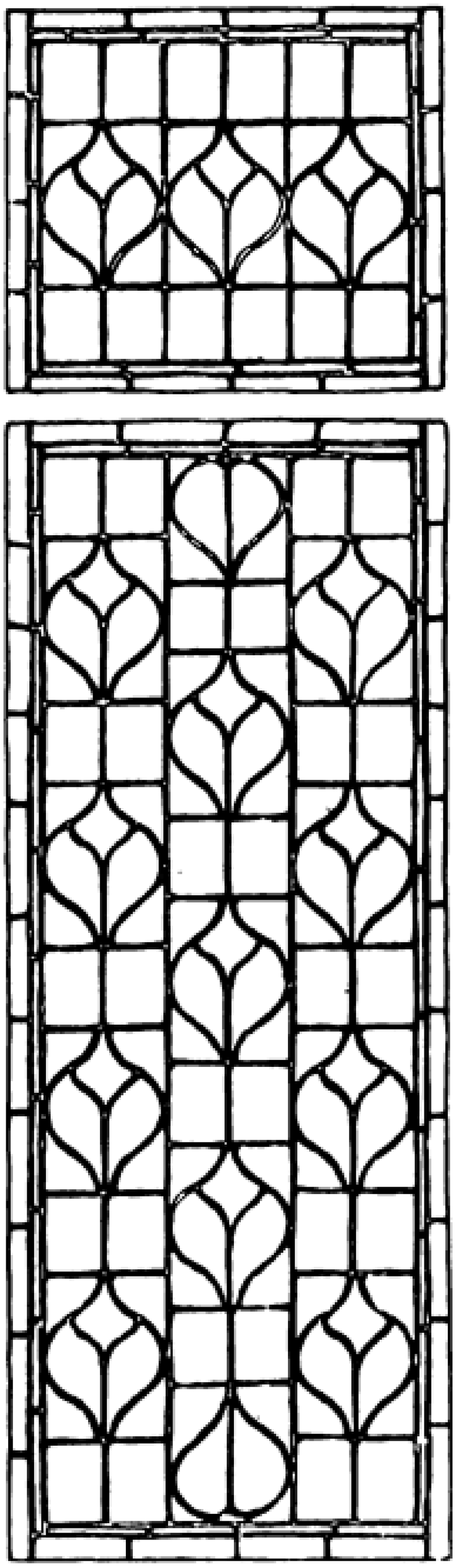
Some other term might possibly be found: "concerted," for example, would quite express the kind of art—art working, that is to say, in concert with some craft or useful purpose—and would definitely dissociate it from the art which has only to play its own fiddle. But fantastic terms are better avoided; and "applied" art does well enough to distinguish the art of the modest member of a band from that of the soloist: it is in use, and we may as well accept it. On no account, however, must it be taken to imply that ornament is separable from its use. It is not ornament until it is applied. The purpose to which it is to be put determines it from the very beginning. It is neither an after-thought nor an added something, but inherent in the design of the thing to which we say it is "applied"; it is not so much extra to it as a modification of it in the interests of beauty.

The designer is influenced in the very choice of his material by its colour and texture, by the ease with which it can be cut, beaten, or otherwise worked into the shape which is at once practi-



9. DESIGN APPLIED TO LEAD GLAZING.

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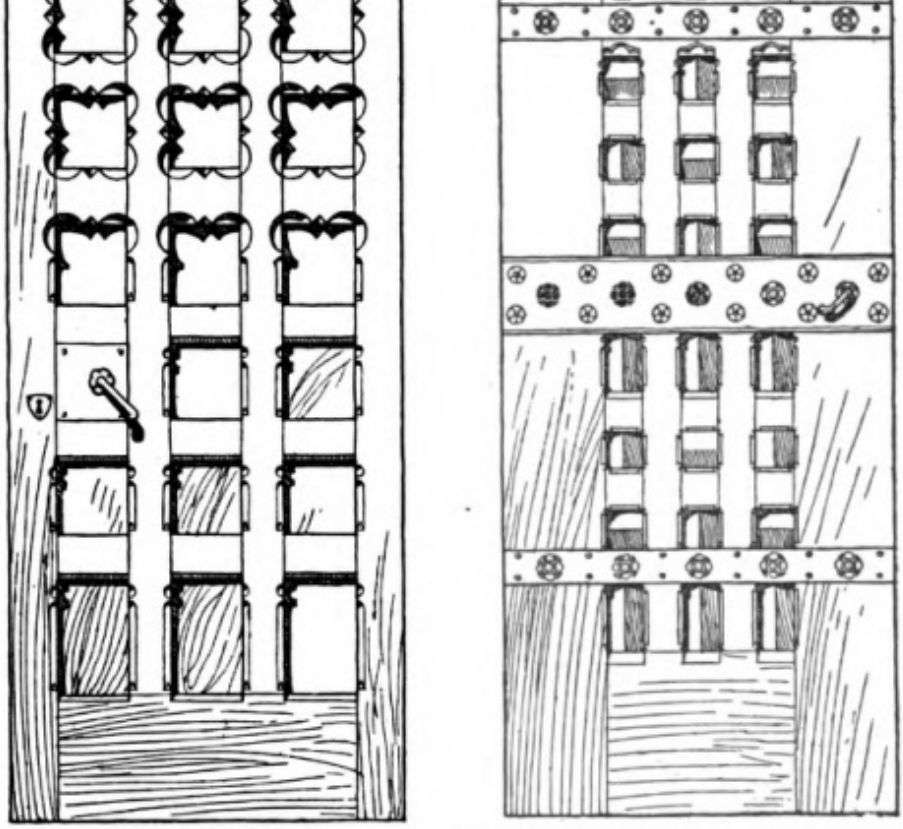
cally useful and artistically sufficing. In so far as his plan is affected by considerations not purely utilitarian, he is engaged from the beginning in ornamental design; and in so far as such design is schemed with a view to its practical purpose, it is in the strictest sense applied. To shape a thing beautifully is no less "applied" design than to ornament it



10. DESIGN APPLIED TO JOINERY—WILLIAM BURGES.

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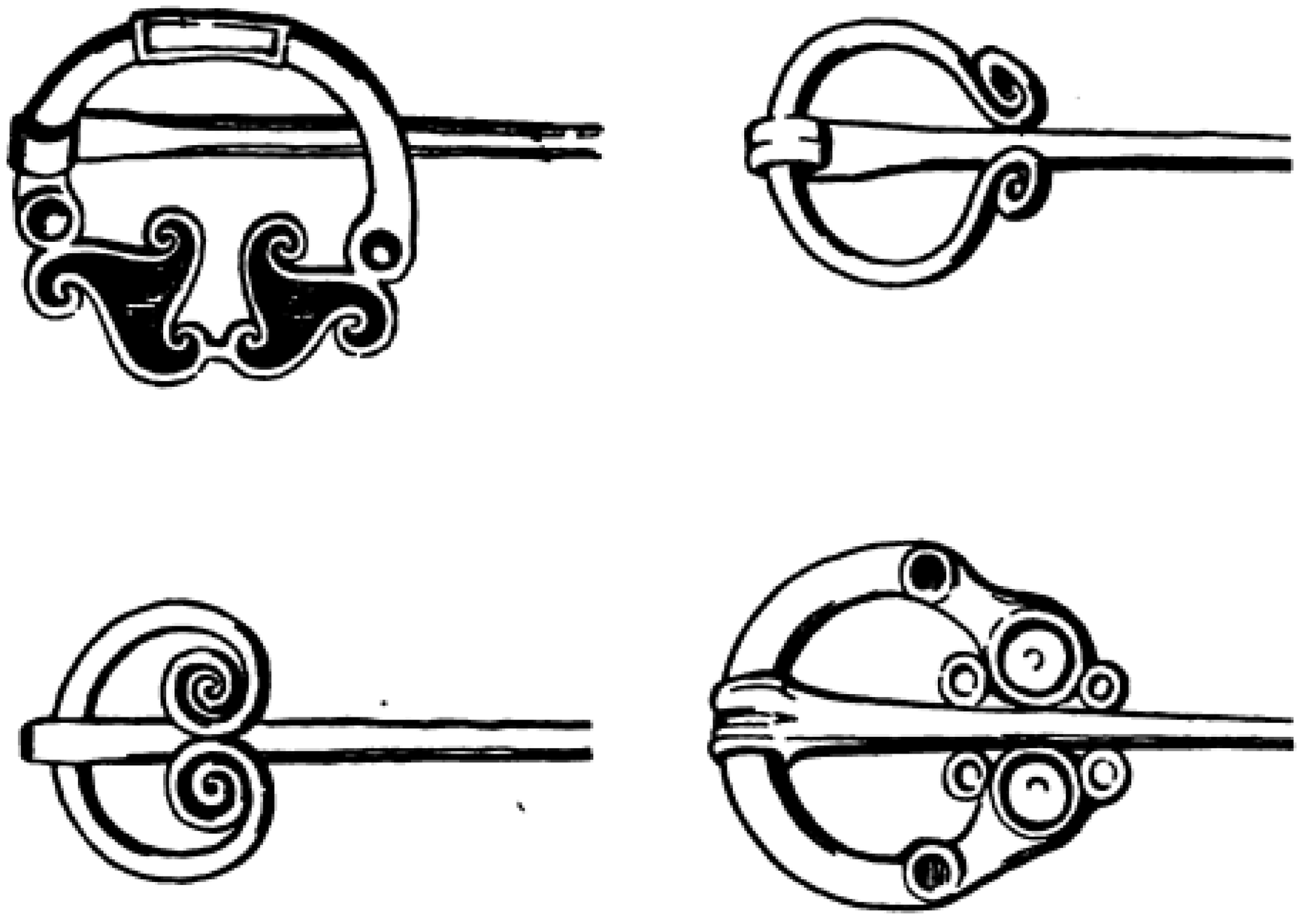

11. IRISH BROOCHES OF USEFUL FORM.

after it is made. The glazier who proposes to build up his window with small pieces of glass, as in old days he was obliged to do, and as it is still often expedient that he should (9), applies his art to leading them together at once securely and in satisfactory lines, and the result is a pattern. The joiner (or it may be, as in the case here illustrated—10—the architect) who is not content simply to frame his door together strongly, but is careful as to the proportion of its panels, is engaged in applied design before ever he bethinks him of ornamental chamfering. And in softening off the sharp edges of his stiles in that way, he is at once forestalling injury to them, and further applying his artistic powers to practical purpose, which he does again when he proceeds to make ornamental use of the broad bands of iron by which the wooden framework is in one instance strengthened.

Forms which we find ornamental were in some cases at least suggested by use. The Irish brooch (11) or the Roman

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12. OLD ENGLISH TANKARDS OF SERVICEABLE SHAPE.

fibula is in its simplest form just a safety pin. It was in the first instance designed to fasten and hold tight. When, however, the goldsmith or the bronze worker began to take thought of beauty and to modify its lines, however slightly, with a view to shapeliness, he ventured on what we call applied design, though he may not have added a feature to it which had not its origin in use.

It is use again which determines the shape of a drinking or other domestic vessel, which fixes its dimensions and capacity and suggests its general shape, which settles that its mouth shall be open or that its neck shall be narrow, that its spout shall be so devised as to pour out only at the right moment, that its foot shall be firm, its handle fitted to the hand and placed with due regard to equilibrium. The reconciling of purely utilitarian considerations such as these with considerations of proportion, grace, in short the look of the thing, is already the function of applied art before any thought occurs of what is generally understood by decoration. And art is by no means to be measured by the ornamental character

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of the design. There is more art in the severely simple silver tankards on page 18 (English manufacture of a not very flourishing period of art) than in the over-elaborately ornamented piece of German silversmith's work (13) of an earlier and better period. And of the two English tankards the more severely plain is the more artistic.

13. OVER-ELABORATED SIXTEENTH CENTURY EWER.

The application of art is shown again in the simple shape of the little Roman jar, overleaf, to be recognised at once as clay, whereas the excrescences upon it, applied in the sense that they are stuck on to it (the process of execution is described on page 197), are an ingenious aberration from art.

The reconciliation of the shape demanded by use with that proper to material—glass (15), earthenware (14), metal (16 and 17), or whatever it may be, and further to the kind of glass, blown or cut, the kind of clay, stiff porcelain or plastic earthenware, the kind of metal, beaten silver or cast bronze (see "Where to Stop," page 157 *et seq.*)—is again the function of applied design.

No better instance of applied design could be given than the shapely treatment of any feature, such as handle, spout, hinge, bolt, or lock, which may be necessary to use, and its judicious introduction.

The test of artistic application is that it should not appear

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to be added. There should be no suspicion of its having been an after-thought. It belongs by rights to the design, and must be foreseen by the artist from the earliest stage of his conception. It may even be its starting point, as it appears to have been in the case of the Japanese handscreen on page 24, in which the bamboo of the handle is shredded and spread out to hold the paper; or where the flat handle is made to expand at one end, in order to embrace the gathered shreds radiating from it; or where the haft of a screen of plaited bamboo is overlaid with strips of the same, at once enriching and giving grip to it.

The handle on page 23 is made out of a single length of bamboo which has been notched away where it bends over, leaving only a thick outer skin to cover the joint. It is curiously appropriate, by the way, to the lacquered measure to which it is frankly attached by narrow ties of bamboo.

The handle from which the bronze kettle on page 23 is suspended, after a fashion common in Japan, appears to have

14. JAR SHAPE APPROPRIATE TO EARTHENWARE, BUT WITH EXCRESCENT ORNAMENT.

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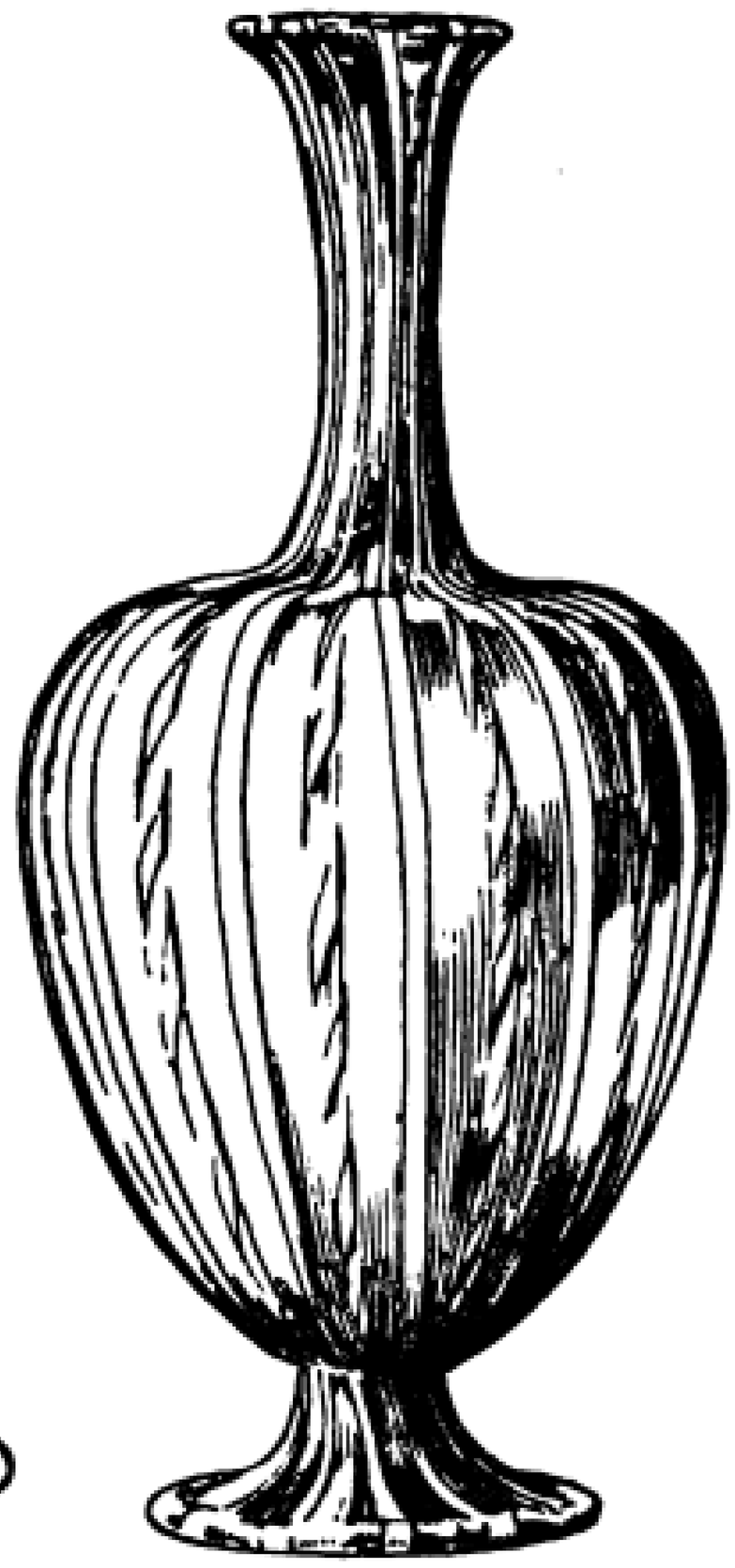
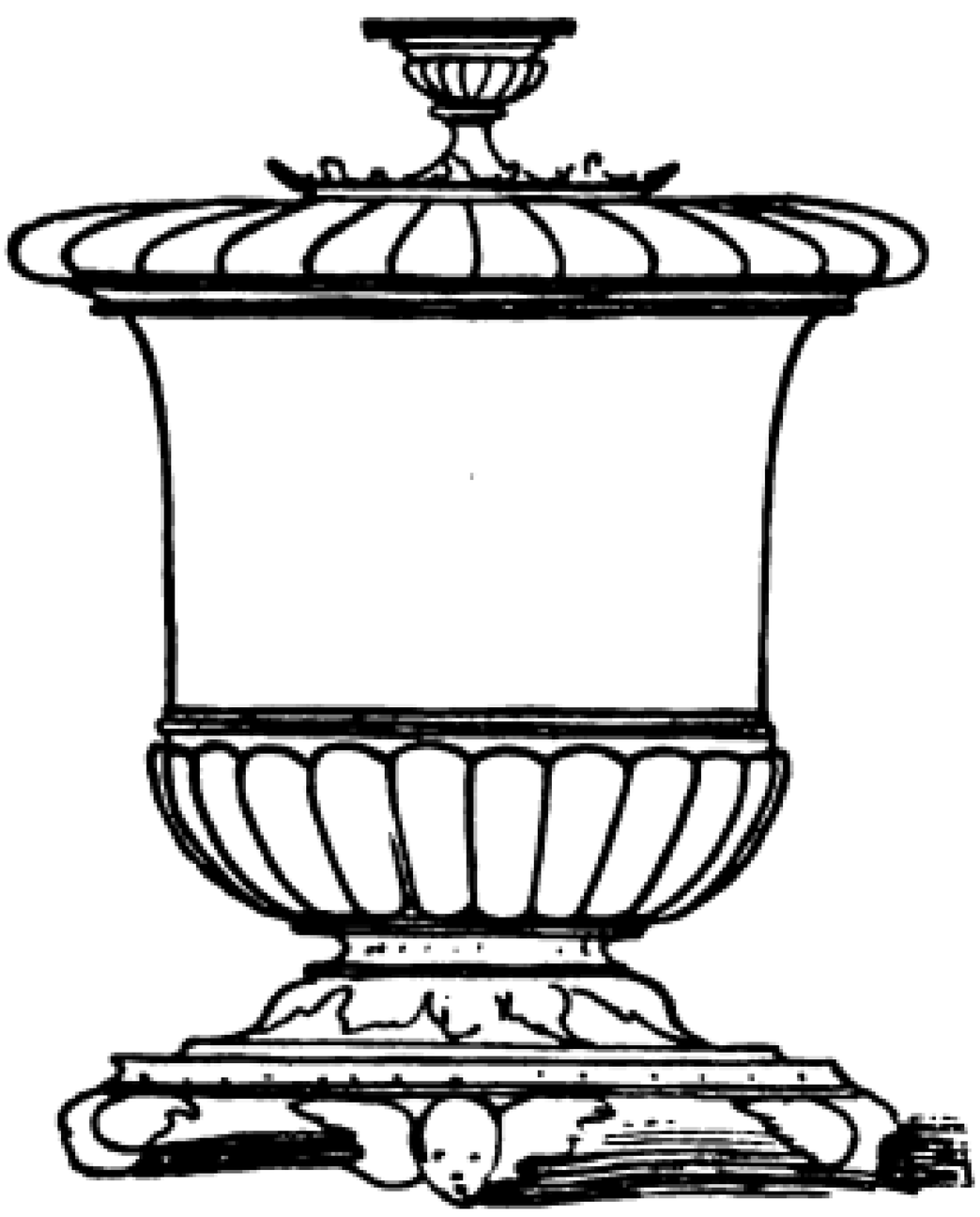
been devised with the idea of conducting the minimum of heat to the hand of the person holding it. It consists of closely compact copper wires entangled with loosely twisted ones, all brazed together at the ends, which hook into the eyes attached for that purpose to the body of the kettle. A handle solely for effect is artistically as superfluous as it is practically useless; and not much more is to be said of a second handle for symmetry's sake.

The few instances given will be enough to illustrate what is



15. SHAPE APPROPRIATE TO BLOWN GLASS.



16. SHAPE APPROPRIATE TO EMBOSSED SILVER.

meant by the contention that ornament is not something added—that applied art need have nothing to do with additional ornament, and is in fact at its best an integral part of the thing adorned.

Applied art means only practical art. The

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truth is, design is not a matter of emotion merely, but of logic also. It is deduced, whether we realise it or not at the time of designing, from the conditions of the case in hand, from the use and purpose of our work, the material available, the tools in use, the length of time or the amount of labour it is possible or desirable to expend upon it, from circumstances quite apart from the purely artistic question. Artists unaccustomed to work under con-

17. SHAPE APPROPRIATE TO CAST AND CHASED BRONZE.

ditions do not realise this, and find it difficult to believe. But practical experience in design leaves no doubt about it. In the case of design for manufacture it hardly needs demonstration. Take wallpaper printing. The given conditions are something like these: a dwelling-room of ordinary proportions, to serve as drawing-room, dining-room, bedroom, as the case may be; Gothic, Palladian, or nondescript architecture; fixed width of material; convenient dimensions of the printer's block; its material, wood or metal; the opaque

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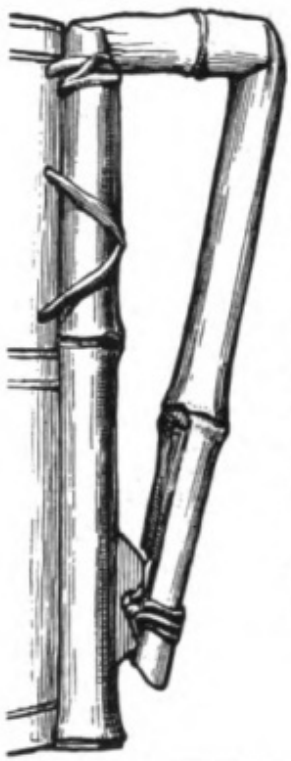
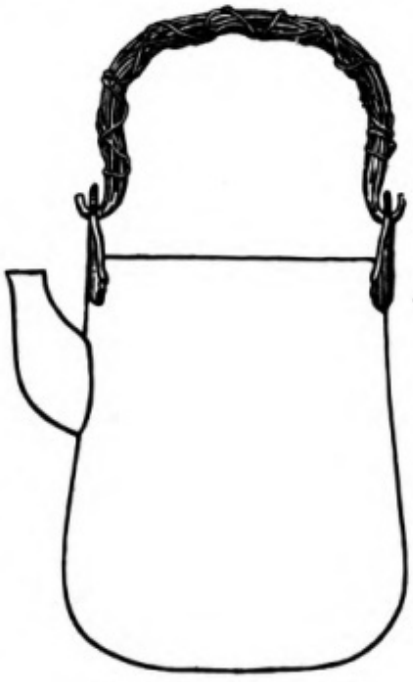


18. BAMBOO HANDLE.

quality of distemper colour; the number of printings commercially worth while. In short, the requirements of the public, of the decorator, and of the paperstainer, have all to be satisfied. How best to meet them, that is the problem which the artist has to solve in his design.

And it is so with other manufactures. In cotton printing there is the important consideration of dyes and mordants, in weaving of the jacquard loom, in pottery of clays and glazes, and the action of the fire—which to ignore is to court disaster.

The problem of the artist not connected with manufacture and who executes, it may be, his design with his own hands, will be in many respects different; but in his case, no less than in that of the man who works for a trade, applied design is always the solution of a problem. Such and such things being so and so, given such facilities, failing such other possibilities, what is to be done? He answers the question according to his art—but according to his intelligence also. Applied design makes never-ending demand upon common



19. WIRE HANDLE.

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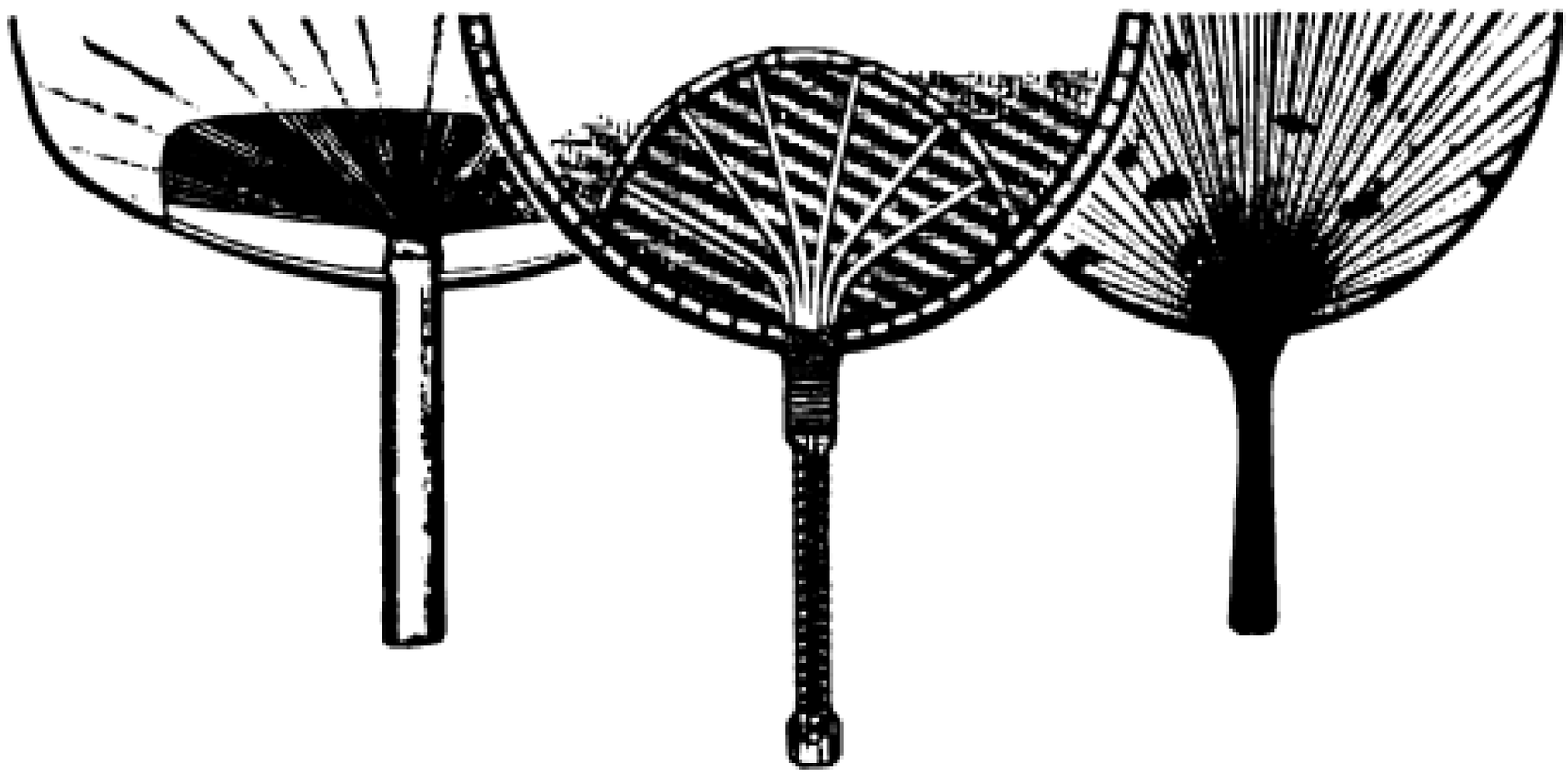
sense, a faculty which was never common, least of all among artists. That is why draughtsmanship is so much more frequently to be met with than design—a matter of feeling, no doubt, but of feeling under control, or perhaps more strictly speaking of feeling and reason combined, of logic as well as of art.

This logical side of the designer's faculty is not commonly enough recognised. In acknowledging the *art* of design we do not sufficiently appreciate the element of science which goes to it—which goes, it might be said, to achievement in art generally, but which is indispensable in art applied—the faculty, in fact, which guides us in its application, which steadies us and keeps us sober. Arab art, as we call it, which is more consistently ornamental than any other, is the work of a mathematical race if not of mathematicians. The orderliness essential to ornament generally is more a matter of the mind than of emotion. It may be doubted if any one will ever be very successful in applied design who is not capable of thinking out a question, balancing with something like precision what is for and what is against a step in design before he takes it. Applied design may or may not be imaginative, it must be logical.



20. HANDLES OF JAPANESE FANS.

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IV. THE CHARACTER WHICH COMES OF TREATMENT.

Processes give rise to appropriate ornamental form—Examples: clay, metal, &c.—Ancient ornament to be studied from the point of view of its application to material and process—Intelligent design—Appreciation of "treatment"—Natural form only the food of the artist—Conditions of manufacture leave their mark upon design—The treatment appropriate to design in itself of value, or of none—Design indicative of embroidery, of weaving and of various kinds of weaving—As affected by printing and by different kinds of printing—As affected by the use to be made of a woven or printed stuff—Lace design of various kinds—Embroidery design—Tile design and its relation to enamel—Design adapted to inlay and mosaic—Translation of design into the terms of craftsmanship.

THE fit treatment which it has been agreed to call "conventional" gives character to ornament. A new method of work gives rise to a new style of design.

A process of work itself gives rise to ornament. What is more, the forms arising in this way are sure to be appropriate.

Natural forms must needs be reconciled to their new conditions; forms which grow out of conditions are ready shaped to the hand of the designer. Ornament so formed is by birth, what ornament founded upon nature is only by adaptation. Material, tools, and methods of technique have determined it; and further treatment is unnecessary.

There are generic qualities of design which, when once our eyes are open to such things, we recognise immediately as belonging to wood or iron, clay or textile fabric, to carving or forging, to modelling or weaving, as the case

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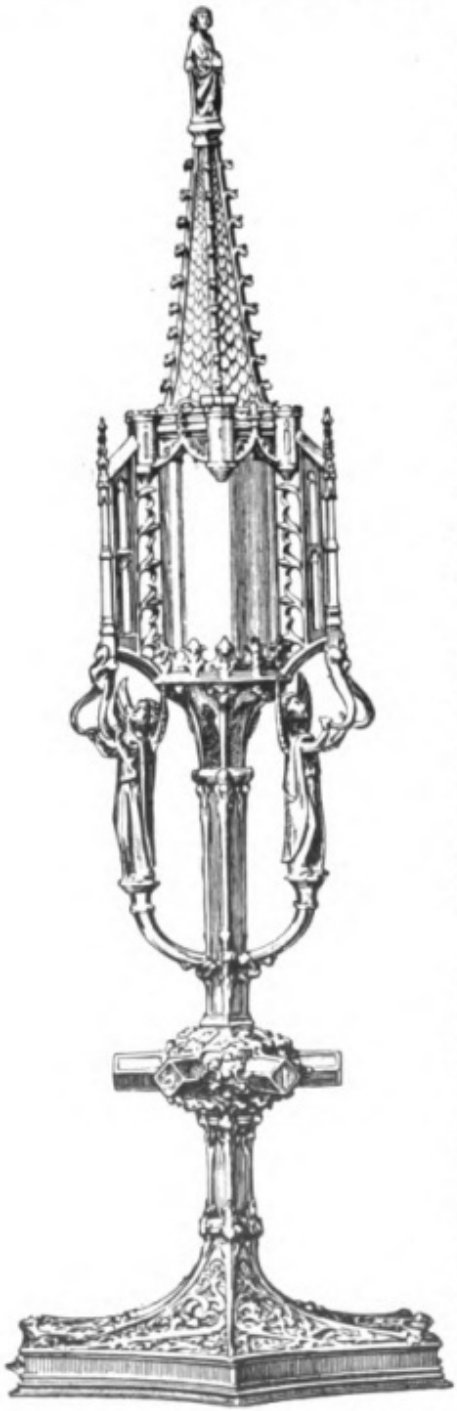

21. FIFTEENTH CENTURY SILVER GILT RELIQUARY.

may be. The material employed proclaims itself, it may be emphatically, it may be without asserting itself positively; but its influence is nearly always appreciable. This character in ornament is neither arbitrary nor accidental. It comes of following the hint which materials, tools, and ways of work, are so ready to give to the designer, and of his endeavour to get out of them what they can give and give best.

A practical designer of sufficiently wide experience can often tell at a glance the material of which a thing is made. Its shape alone tells him that a vessel is of clay, or of metal, and perhaps what kind of clay or metal.

The least experienced in such things hardly want telling that the reliquary here given (21) is silver, for all the architectural character of its design, or that the jewellery on page 27 is of gold. It is derived from various sources, Egyptian, Greek, Roman, Anglo-Saxon, Spanish; but whether it is beaten up from thin plates or drawn out in wire, bent into filigree, or twisted into chains, whether they are little pearls

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22. ANCIENT GOLDSMITH'S WORK.

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of gold that are soldered on, or cloisons to hold inlay of lapis and other precious stones, everywhere the ductility and yielding disposition of the metal is to be perceived, to say nothing of its fusibility. And so with other ornamental detail, a workman sees at once that it was designed to be done with a brush, a point, a chisel, a punch or a hammer. In the naïver work of early days this kind of character reveals itself more plainly than ever.

The stiffish curve which comes of bending an iron rod into shape, as in the knocker, opposite, to the left, is wholly different in character from the subtle undulation in the handles of the Venetian glass vessels on pages 30 and 31, which tell by a sort of sudden droop in the curve that they were shaped whilst the material was red-hot. So also the stiff twist in the iron handles is characteristically unlike that in the soft clay handles of the earthen jar on page 129.

The source of all practical design is in the sympathetic appreciation of material. We are born with sympathy (or, alas, without it); but it grows with knowledge, and appreciation comes of understanding. The secret of appropriate treatment is best learnt from the study of what has been done in the way of practical design, and from the observation of its relation to technique, old or new.

The way to get at the root of ornamental design is to ask yourself always in the presence of a satisfactory piece of work *why* the artist did just so. At first you can but conjecture; but, as you compare, and test, and cross-examine, conjecture grows into conviction. You say to yourself: This kind of thing occurs so continually in iron work, that so constantly in textile fabrics, there must be something in the nature of the metal or of the stuff, in the art of smithing, or of weaving, to account for it; and, with a very little knowledge of the craft, the light of certainty breaks in upon you. And one such secret solved is the key to another.

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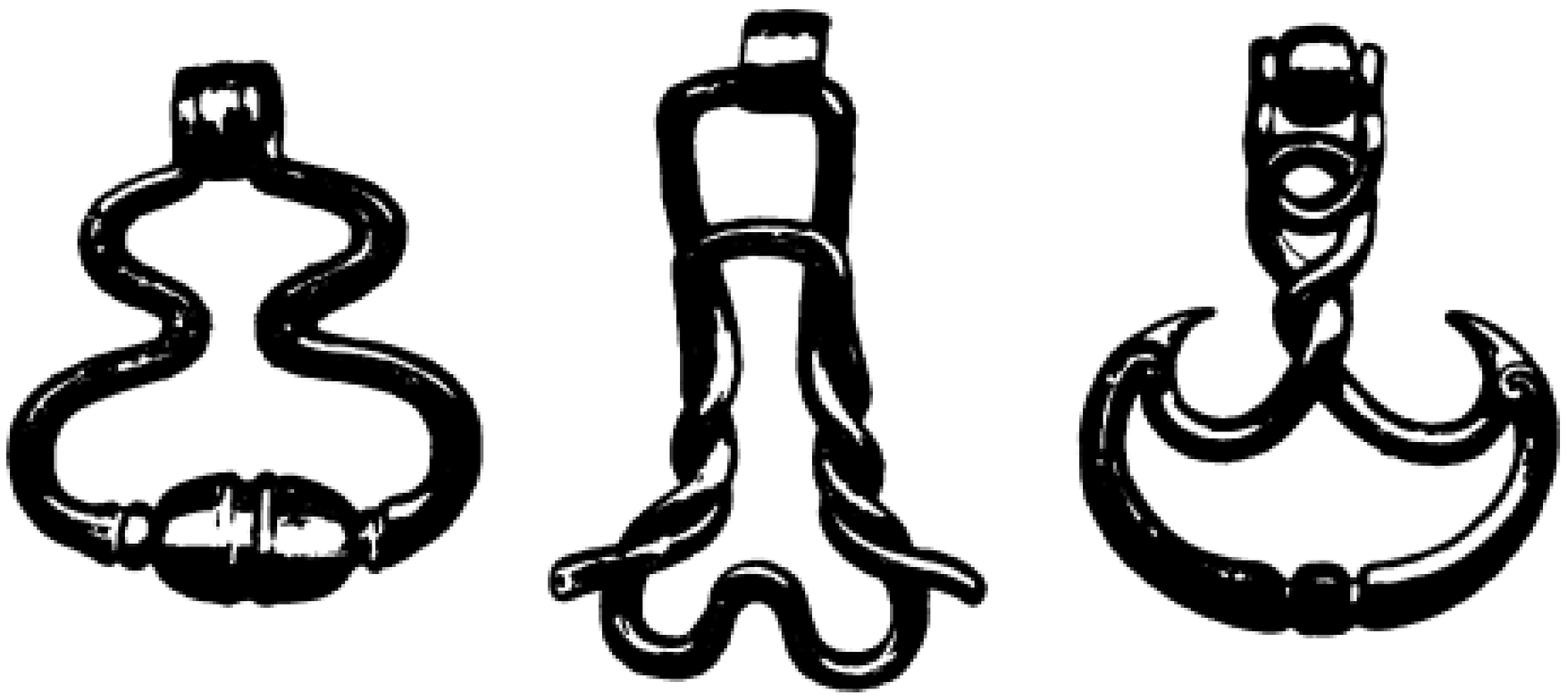

23. TWISTED IRON HANDLES AND KNOCKER.

It is a mistake to suppose that there is nothing to learn from processes which modern mechanical appliances have superseded. Methods of work may change, but the nature of materials does not. Many a new device has failed for want of attention to what the old one would have taught the innovator. Old work would teach us, if we had the modesty to study it, how to go about ours in a new way. The changes we have made are not all in the direction of progress—unless we are to call that progress which is in the wrong direction.

Design—and still more its application—makes considerable demands upon the intelligence. Art is to a great extent a matter of sense. It *may* be almost entirely sensuous, not taxing the intellect. There have been artists, and artists of great ability, who, apart from their painting or whatever it may have been, were rather stupid. It is not from excess of intellectuality that actors and musicians as a rule suffer; they cultivate the emotional at the cost of the intellectual side of their nature. Design, however, and the fit treatment of it, depend as much upon the judicial as upon the purely artistic faculty. It depends throughout upon the appreciation of actual conditions, a

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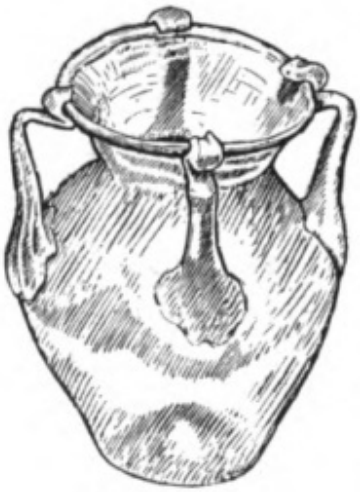

24. GREEK VESSEL WITH HANDLES—SUGGESTIVE OF THE RED-HOT GLASS.

faculty, it is true, no more common than that of design; but without it a man is not equal to the demands it makes at every turn upon his mother wit. For it is always the outcome of conditions, always in answer to something. It has to be thought out—not merely felt; and in proportion to the clearness of the artist's mind is the practicality of his design.

To the necessary equipment for practical design there go, intelligent appreciation of conditions (the outcome of a logical mind), readiness to meet them (implying sympathy), suppleness in coping with them (which asks resourcefulness and skill).

It is necessary, in view of the theory that art is nothing but emotional, to lay stress upon the mental side of design. It is only one side, of course; but it is the side upon which success in practical work largely depends; and it is the one most commonly neglected. There are twenty who can draw or paint for one who, when it comes to purposeful design, knows what use to make of drawing or modelling.

A student of design must keep his mind open as well as his eyes. He has to learn what to see and how to see it. That, it is sometimes said, he must discover for himself; and it has been urged that students taught to see, end in seeing only what they have been taught. Well, then, they had never either eyes or mind of their own, and they may as well see with the eyes and think with the mind of those who have both. What if we do begin by seeing very vividly what we have been taught to see? Suppose for a while we see nothing else! Is there any

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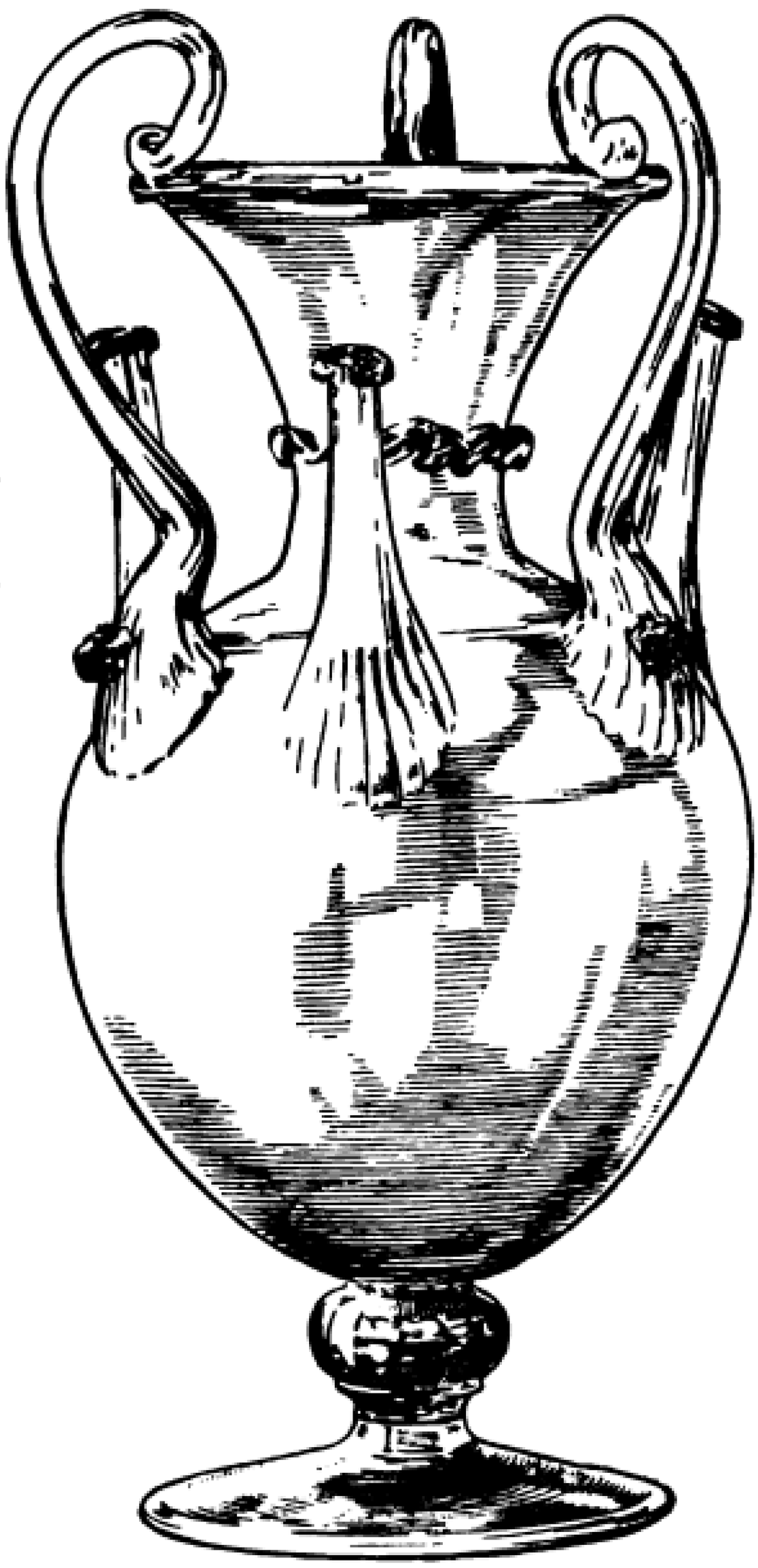
harm in that? Surely not. One great use in teaching is to show us what is there, to make us see it, and see it in focus. Half of the art of teaching *is*, to teach us what to see, and how to see it. It is to claim very little for a man's personality to suggest that he will see for long through any eyes but his own. No harm will be done by his seeing for a while through the eyes of artists more experienced than himself and better able to appreciate. It will never in the end hinder his individual outlook — supposing him to have one, or to be capable of having one. On the contrary, his trained sight will be the keener to discern every slightest detail which concerns him personally. What more can age do for youth than lead it open-eyed into the paths trodden smooth by experience for its uncertain feet?



25. VENETIAN GLASS WITH CHARACTERISTICALLY CURVED HANDLES.

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26. BROKEN LINES OF CARPET WEAVING.

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It would be difficult to lay too much stress upon "treatment." Therein lies the whole secret of designing ornament strictly so called. The very purpose of ornament, its position, the lines of its construction, the manner of its production, call for and insist upon it. There is no form of art in which it is not necessary—unless it be that of men whose boast it is to leave design out of their pictures, and in

27. STEPPED OUTLINES FOLLOWING THE SQUARE MESH OF NET.

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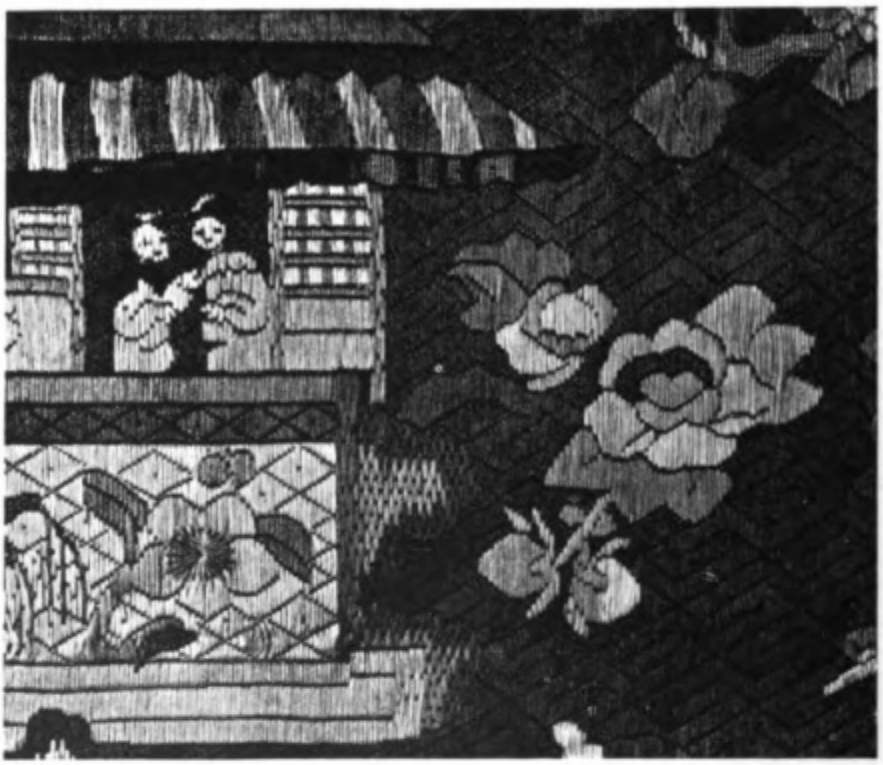

28. CHINESE EMBROIDERY INFLUENCED BY THE CANVAS GROUND.

whose eyes it is a positive demerit in a work of art that there should be composition in it. And even these advocates of artless art ask for some sort of treatment in painting, though it may consist in depicting nature as it appears to short-sighted people who see everything in a haze.

It is according to its treatment that we pronounce a design to be appropriate and workmanlike or the reverse. Fully to realise the treatment befitting some fixed place or purpose, some available material or convenient process of work, is to have mastered the first principle of ornamental design.

Fit treatment is, in fact, the translation of natural or other form, not merely into the language of art, but into

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29. BROCADE WEAVER'S "BINDER" TURNED TO ACCOUNT IN DESIGN.

the dialect of some particular handicraft. We detect in it the homely accent of sincere workmanship. It is that which charms us in mediæval or other simple ornament by no means cunning or accomplished. It is because we find in it no turn of native or vernacular expression that modern manufacture is so dull.

The part which nature plays in ornament is discussed at length elsewhere.*

* "Nature in Ornament."

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30. BROKEN LINE IN SATIN TISSUE.

There is usually in ornamental design some relation to natural form; there is always some occasion, if no actual necessity, to modify the forms derived from nature according both to the nature of the work and the method of its doing. The designer is confronted with the questions: how far it may be well to go in the direction of nature; to what extent must he accept the ruling of artistic fitness; how far shall he submit to the dictation of conditions, and especially of the materials and tools he works with? These are questions only to be answered in so far as they apply to a particular case. The balance between art and nature has always to be struck afresh.

Broadly speaking, one may say that natural form is the food of the artist; how much of it he may apportion to himself depends upon what he can digest. It is a question of the man's powers of artistic assimilation — always an uncertain quantity. That which is barely enough for one man's nourishment will lie heavy on the digestion of

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another. And, then, there are times when a man craves for natural sustenance, times when he is easily surfeited with it.

Precisely the same difficulty occurs in determining how far the artist should adhere to some preconceived idea he may have when he sets out to design, and how far he should allow conditions to affect it as they arise. All that is certain is that in applied design and ornament he must allow them their due weight. It may be very considerable.

There comes a point at which treatment is peremptory —though it should consist merely in leaving out so much as it is impossible to render. That amount of convention

31. TISSUE IN WHICH TINTS ARE REPRESENTED BY DIAPERS.

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32. SILK IN WHICH THE TINTS ARE GIVEN BY DIAPERS.

is not to be gainsaid. But long before the point of impossibility is neared we reach the limit beyond which it is at the risk of consistency that we go on, the point at which conditions begin to rule, where art dictates convention—some sort of treatment, that is to say, which the work itself suggests. To begin with a case about which there is no dispute: whether, for example, ornament is woven or printed, how it is woven, or on what it is printed, are considerations seriously affecting its design—if it is to answer in any sense to the term "applied."

It has been shown already ("Pattern Design," page 131 *et seq.*) how the conditions of the loom, of the wood block, of the

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copper roller, affect the planning of pattern; how in weaving the pattern is easily turned over; how the colour follows the lines of warp and weft, and gives stripes, checquers, and so forth; how, in fact, the reversing of the design and the band-wise arrangement of colour (characteristic of Byzantine, Sicilian, and early Italian silks) belong to the loom. The

33. SHADING SUGGESTED BY DIAPERING.

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kind of weaving employed leaves also its mark upon design. The relatively coarse weave of a carpet affects not the scale of the pattern only but its lines (26). It is not merely that they are jagged at the edges, or stepped according to the tesseræ of wool (a carpet is properly a sort of mosaic of square tufts), but that it is impossible to render delicate curves: they become at the best broken in the weaving; and the rational thing for the designer to do is, either to depend upon the square and diagonal lines that carpet weaving gives, or to rely (as the Orientals do) for his effect on colour, as to which there is in hand weaving literally no restriction. It is, after all, the more important thing in a carpet.

34. BROCADE IN WHICH THE TREATMENT IS NOT BEYOND REPROACH.

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35. BROAD TREATMENT OF OLD VELVET DESIGN.

A similar difficulty besets no less the needle-worker following the lines of a pronounced square mesh (27). A distinct, by no means unpleasing, character comes of frankly following its lines. It is wonderful what an artist with an eye to the essential in form can do in the way of rendering it under strict limitations, for example in darning rigidly confined within the square lines of open net. Naturally the needle-worker chooses the forms which she can render, and modifies them in the direction of the mesh. More cunning advantage is taken of the square lines of a canvas ground by the Chinese embroiderer (28), who, though working

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36. PRINTED VELVET WITH COLOUR IN BROAD MASSES.

in satin-stitch, follows its lines strictly, and by the length of the stitch (or more properly its well-judged shortness) gives not only the drawing of the design, but very pretty diaper work. The key-patterned background is most ingeniously chosen. It was absolutely necessary, unless the silk was to float dangerously loose upon the surface, to shorten the stitches. To have done that, and at the same time to have diapered the ground with pattern judiciously contrasting with the more important pattern work, is proof of considerable mastery in applied design. The embroiderer was under no sort of obligation to work on the square lines of the

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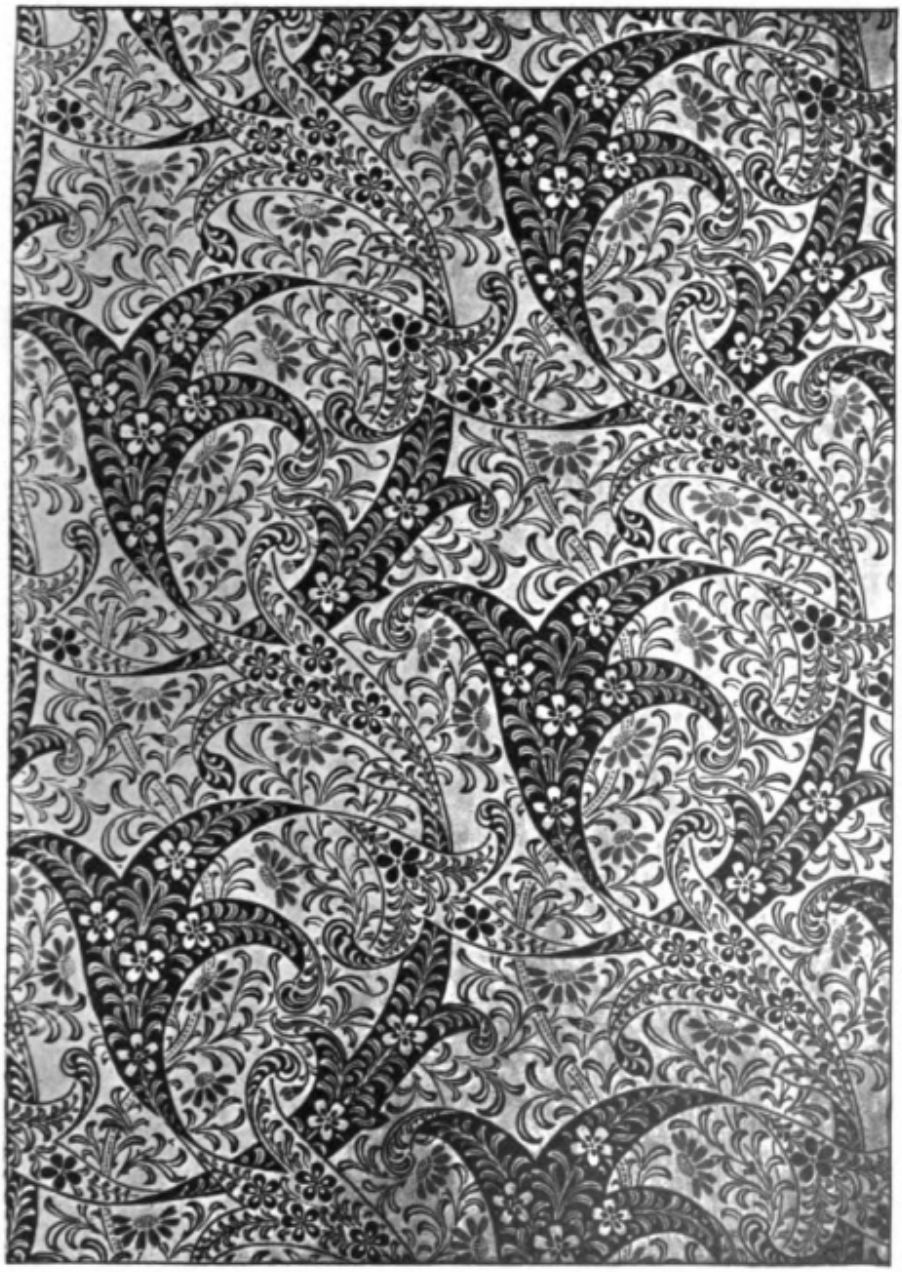

37. COTTON PRINT—"BUSY" PATTERN APPROPRIATE TO A POOR STUFF.

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canvas; but, having determined to do so, has played the game, except in the single instance of the stamens of the flower which radiate from the centre—a hint, as it were, that the worker was not so bigoted as to admit one only way of artistic salvation.

Another method of overcoming the objection to long "floats" of silk upon the surface is to stitch them down as the needlewoman does in "laid work," a process effectu-

38. JAPANESE AND (39) PERSIAN EARTHENWARE IN WHICH A SCRIBBLE OF LINES IS USED TO GIVE TEXTURE.

ally imitated by the weaver, who in brocade (which is a kind of mechanical embroidery upon the surface of the stuff, and no part of its texture) binds down the floating floss by cross lines of weaving. In the example on page 35 a difference of texture is given to the more leafy part of the scroll by bringing the diagonal "binding" lines closer together than in the more flowery parts of it.

Even in silks of relatively fine texture it is not artistically desirable (though nowadays mechanically possible) to

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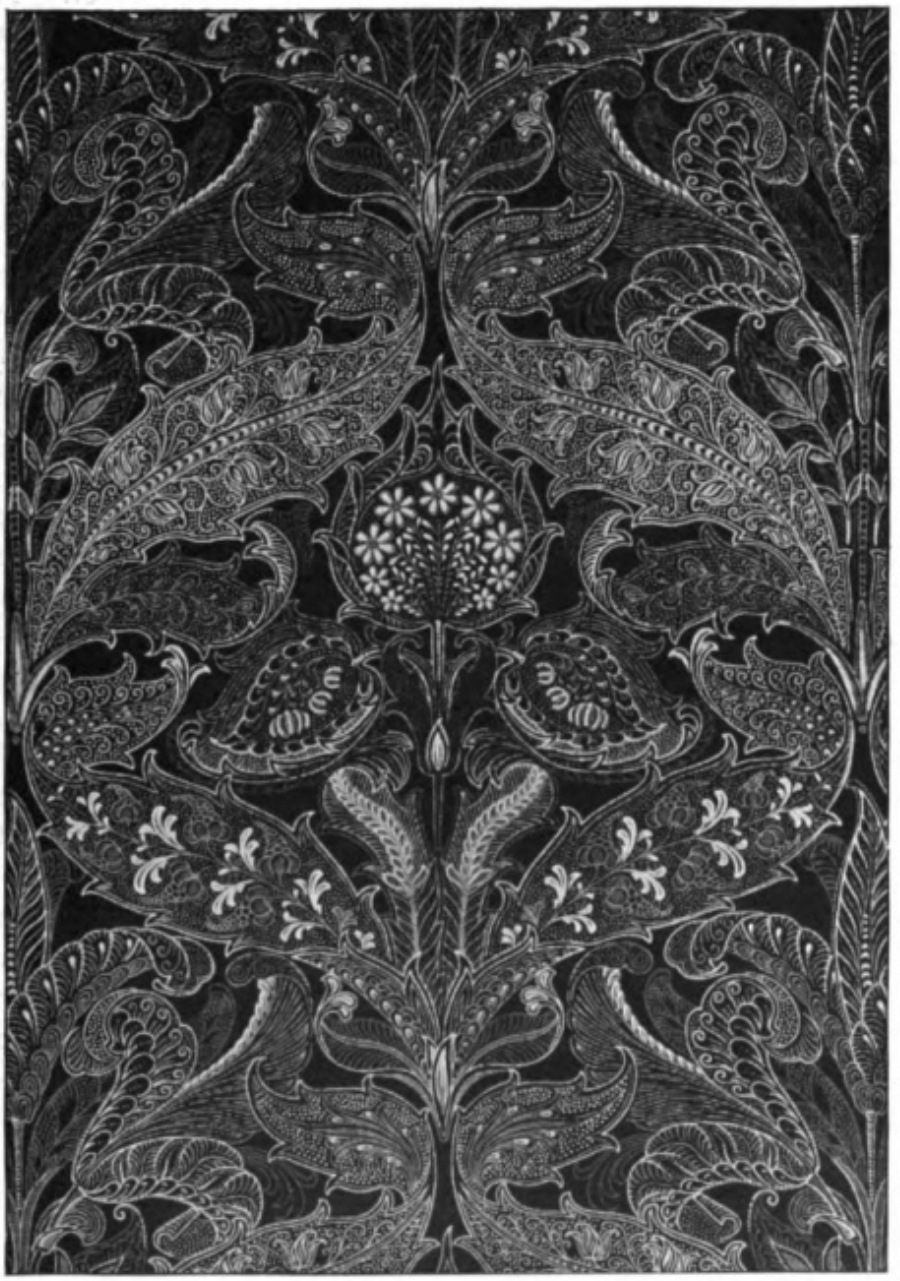

40. CRETONNE PATTERN IN LINES AND DOTS CONVENIENTLY TO BE DISCHARGED.

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obliterate the square jagging of the outline altogether. A slight "step" in the line softens it, at the distance from which the stuff is usually seen; and when you get near to it it tells its tale—to some of us, at all events, an interesting one—witness the old silks on pages 36, 37, 38, in two of which is to be noticed, in addition to the "stepped" outline, the diapering of parts of the design, always in patterns frankly built upon square and diagonal lines. This is really a device of the weaver for getting intermediate shades between ground and pattern colour without using more than a single shuttle. The happy practice lingered, as will be seen on page 39, even to a period when design was falling into naturalistic ways; but, so long as the attempt at shading did not go beyond what is seen in the satin tissue there illustrated, all individuality was not lost. It is impossible to compare the clumsy ugliness of the flower in the brocade on page 40 with the delicate and dainty lace-like patterning of the more conventional ornament without realising the wisdom of designing, so to speak, with the woof of the stuff; and this an expert never fails to do.

The texture of a material makes all the difference in the kind of pattern appropriate to it. A damask or velvet designer appreciative of the material designs his pattern, as in the fifteenth century example on page 41, broadly, to show the material to advantage, and keeps it flat, because he can rely upon its varying sheen to save it from possible harshness. It is the worst possible policy to adopt in designing for a noble material a method calculated to disguise the poverty of a base one. The weavers of shoddy have so naturally had recourse to fussy patterns that any textile worried all over with pattern lays itself open to suspicion.

We owe the looser character of the later Lyons silks partly to a loose age, but partly also to the fascinating colour of brocaded silk. In any less lustrous material it

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would have been seen how ugly were the forms of the design. True, in a dress fabric it is the colour that is important; but that is no reason why an artist should

41. PATTERN IN WHICH THE OUTLINE IS LEFT CLEAR BETWEEN THE TWO PRINTS—NOT SAFELY TO BE DONE IN BLOCK PRINTING.

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not take some heed of the forms he employs. Designers of an earlier period, more seriously considerate of their art, have shown that care in this respect is not incompatible with perfect colour—that it goes, on the contrary, to the beauty of the fabric.

Plenty of plain ground is the obvious device for showing the quality of damask, velvet, wood, marble, or whatever the intrinsically valuable material may be. But it is not the only one. Big patterns with broad surfaces show equally the inherent beauty of a rich material, and may therefore with advantage be allowed to crowd out a less significant ground.

It follows from what was said above that full and crowded pattern has its uses. The comparatively fussy detail which demeans a fine material helps to redeem a mean one. Printed wall-paper, for example, or common calico, wants detail to give it a richness which in itself it has not. There is a richness even in cotton velvet which allows one to indulge in flat masses of rich colour (36); and in printed linen, too, the material gleams through the dye and gives life and brilliancy to broad patches of colour; but in printed cotton flat colour looks dead and lifeless. The old cotton printers used what they called a "pinning roller"—a wooden roller (for hand printing) into which brass pins or wires were driven. The dots printed from this roller relieved the flatness of the printed colour, and gave "texture" to it. William Morris adopted this idea of dotting in his cretonne and wall-paper design with admirable effect. It became in his hands an admirable convention in place of more natural shading.

Ornament might well be described as, in the first instance, a means of getting texture—of making a difference between one part of a surface and another. It may be mere scribble with that purpose—and was often not much more. The pattern from a piece of Japanese stoneware (38), roughly drawn

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42. EMBOSSED WALL-PAPER, IN WHICH THE HIGH RELIEF IS KEPT CLEAR OF THE JOINTS.

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in brush lines, is not much more than scribbling to give a texture or tint, and the pattern on the pattern in the Persian earthenware (39) is still in the nature of a scribble. There is no reason why such unconsidered scribble should not develop into more coherent pattern, as in the cotton print on page 43, the relation of which to the last mentioned Persian earthenware will reveal itself at a glance. The enrichment of ground and pattern with secondary pattern—both alike overgrown with it—in order to make amends for the poor quality of the colour, gives a certain mystery to it which goes towards reconciling one to the absence of sheen in a cotton print. In a woven stuff of any worth it would not have been necessary thus to inhabit every part of the stuff with small pattern. There is yet another reason for the be-diapering of the main forms of the ornament, and in fact, for drawing the pattern in fine lines and dots, as in the cretonne on page 45, if it is to be *discharged*. It is possible for the dyer, it should be understood, to get a much deeper and richer ground colour than could be printed. Hence a practice of first dyeing the cloth and then discharging the pattern, or, what amounts to the same thing, printing in a medium which will *resist* the colour and then dyeing. There is always a risk, however, that the discharge or resist may not be perfect. The colour discharged may stain the white cloth, and stain it unequally. This, which in the case of flat surfaces might be very objectionable (at all events to the Philistine purchaser of the goods), is barely perceptible in lines and dots; and so there arises occasion for a kind of pattern which, to those who know the process, is confessedly designed for discharge or resist printing.

There is a difference, again, between patterns appropriate to block and to roller printing. The difficulty of printing first the ground and then the pattern (or some part of it, as in the cretonne on page 47), so as to leave a clear but narrow outline between the two, would be so great in block printing that it

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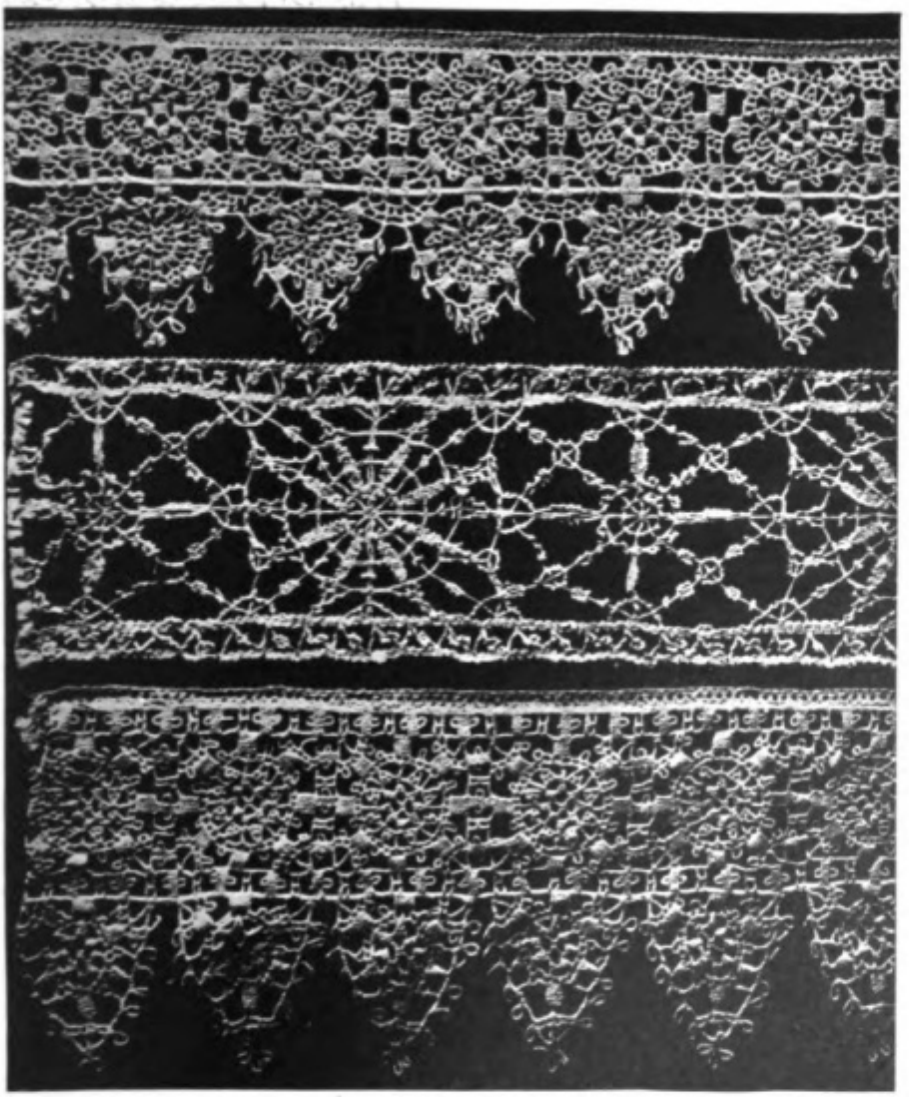
would not be worth while to attempt it; but a designer for roller printing may safely expect the printer to register his two prints so exactly as to give him the line he wants.

A wall-paper printer has to bear in mind in his design the consistency of thick distemper colour, which would clog the



43. SO-CALLED GREEK LACE, SHOWING, IN THE SQUARENESS OF ITS FORMS, TRACES OF ITS LINEN FOUNDATION.

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fine lines a printer in dye has no difficulty in leaving open. He has to plan a gold ground so that very little of it occurs on the joint, where there is always a difficulty of avoiding a discrepancy between the printing of one strip and another ("sheeriness" is the trade term for it). So in a highly embossed paper, such as that on page 49, parts in very high relief must escape the joints. On the other hand, the block printer has the option of blending and "patching" his colours so as to get variety of colour out of a single block. But all that has to be ingeniously planned, and seriously affects the possibilities of design.

The purpose of the pattern, again, to hang in folds, to be used for curtains, or straight on the walls, or for furniture coverings—is for the designer to consider; and whether a wall pattern is to be in itself attractive or a mere background.

The prospective purpose of the material affects equally the hand-worker—painter, stenciller, or needlewoman. This it is which has determined the comparative dignity and frivolity of the earlier and the later kinds of lace—once designed for church furniture or ceremonial costume, and by degrees accommodating itself to the conditions of modern dress.

The "Venetian point" on page 51 shows in its square design, like all so-called "Greek lace," the lingering influence of the linen foundation out of which it is worked. It is the culmination of "drawn" or "cut" work; and this trace of a groundwork which has practically disappeared is a pleasant reminder of the process. In lace not worked out of a foundation but stitched "in the air" as the Italians say (44), the square lines properly disappear from the design. A clumsy modern imitation of "Greek lace" in crochet has prejudiced us to some extent against it; but it is in its way as delightful as the "punto in aria." Both are as beautiful as they are characteristic of the way they are done. A feature in this last is the variety of filling stitches which, like the geometric patterns already referred to in weaving (page 46),

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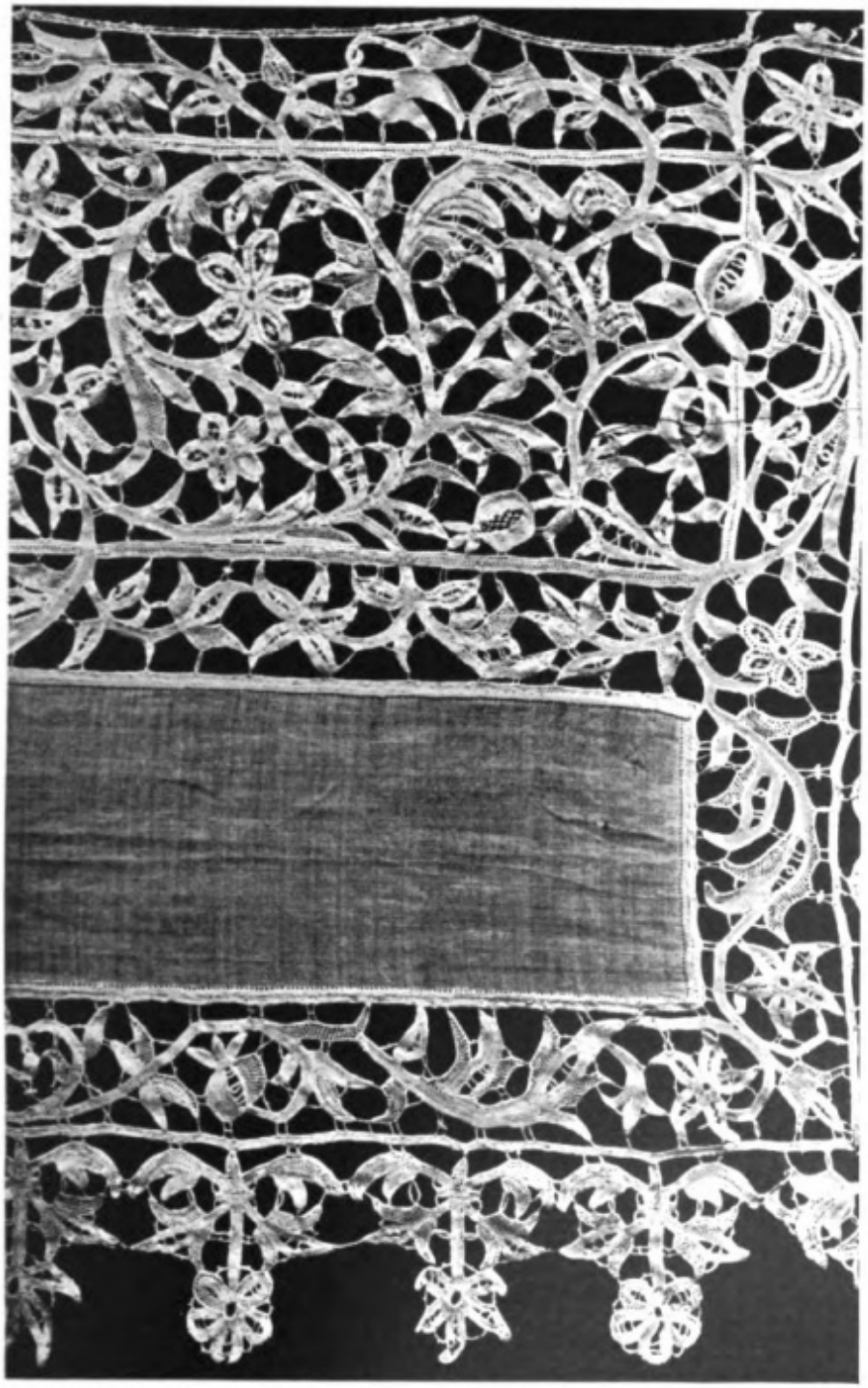

44. VENETIAN POINT OR "PUNTO IN ARIA."

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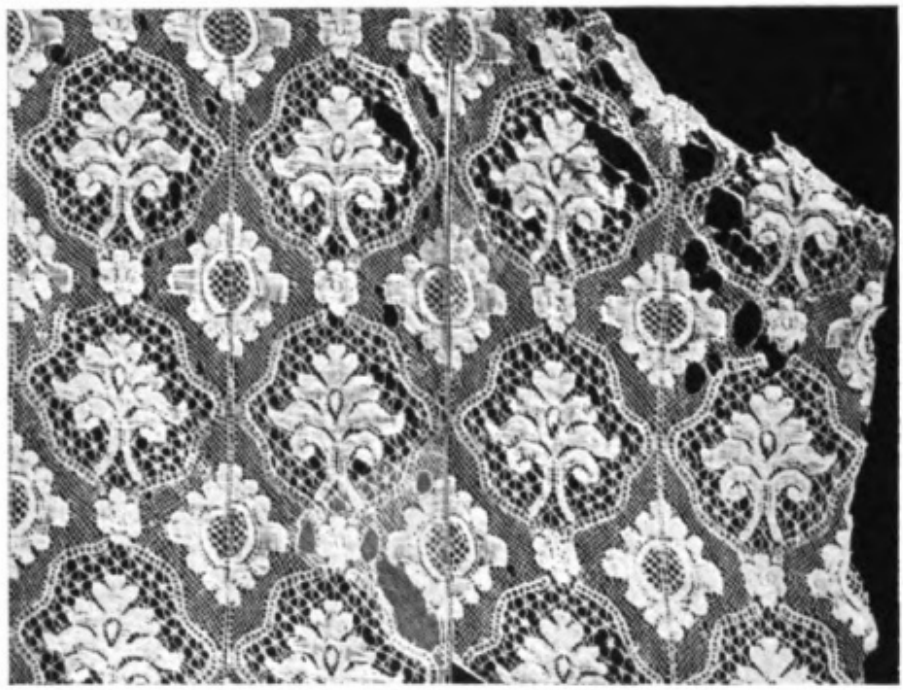

45. BUCKINGHAMSHIRE PILLOW LACE.

give the effect of tint, lighter or darker according as they are worked close together or open. The lighter the lace the more important becomes the consideration of these "filling stitches"—not stitches in the strict sense that a new way of using the needle constitutes a "stitch," but more properly speaking diaperings done with the needle. In pillow-made lace half the battle of design is to provide for well-planned difference of more or less gossamer groundwork, effectively contrasting with the simple net ground, and with the relatively solid but never dead white pattern on it. The specimen of Buckinghamshire lace above shows, in addition to the net, an open and an intermediate filling or *réseau*: the patch of very fine net *is* a patch. It shows, too, how convenient the pillow-worker finds it to work in narrow strips. The *réseau* of the bobbin-worker will be found on

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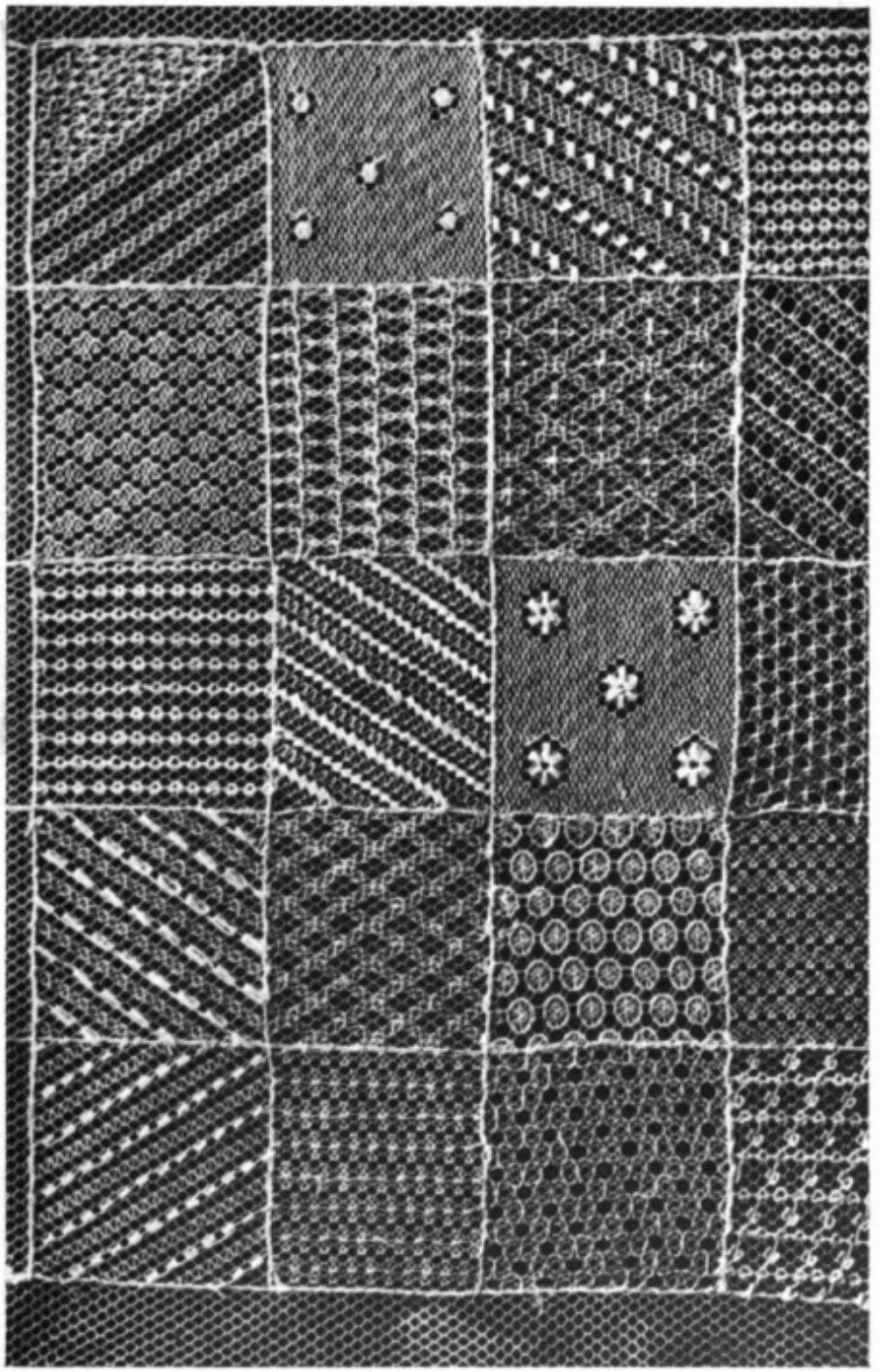

46. "LIMERIC" FILLINGS—NOT LACE BUT EMBROIDERY ON NET.

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47. APPLIQUÉ EMBROIDERY WITH COUCHED CORD OUTLINE.

inspection to take very different lines from the diapers worked out of ready-made net in what is called Limeric lace (46). It is really embroidery upon net. Whatever may be said against machine-made net—and it is *not* beautiful—it will be seen that it may be pulled out of its mechanical lines and compelled into characteristic pattern. Where that is done, and the hard net does not show through, it is only prejudice that can object to it. When the common net is left to show harsh and even under the embroidery it ceases to have artistic interest.

Embroidery is too large a subject to treat shortly, and I have elsewhere* said what I have to say on the subject. Design and stitch are inseparable one from the other. The artist has not only to think of a design for embroidery, but

* "Art in Needlework."

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48. ROSE POINT LACE WITH "CORDONNET" OUTLINE.

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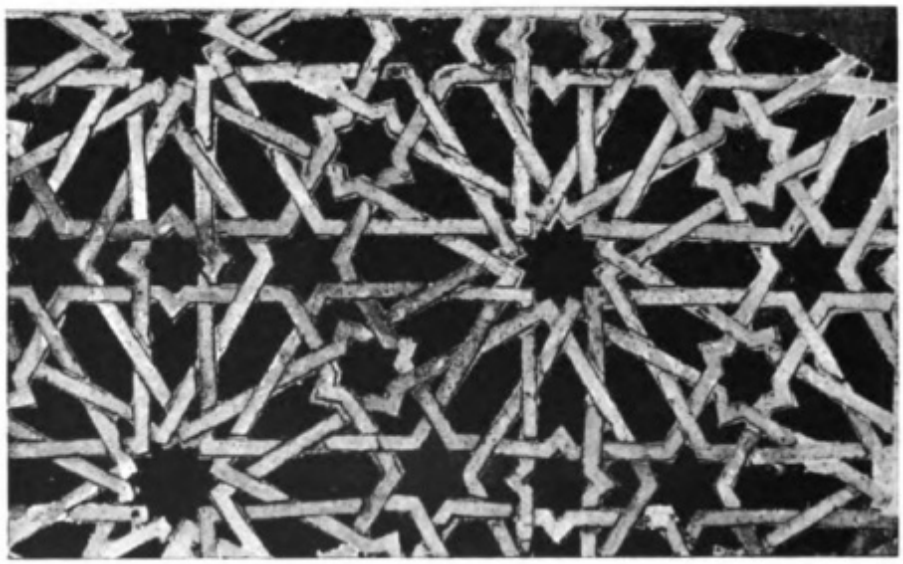
for a particular stitch or method. The actual stitches may either follow the forms of the pattern or be worked across them —but they should do one or the other, and not hesitate between the two courses. Worked in the direction of the drawing they are extremely helpful to it, explaining the form in a way possible only in handwork. That is the best of reasons for working in the direction of the pattern. For it is plainly expedient for the most part to do with the needle what the loom



49. MORESQUE PATCHWORK OR MOSAIC OF GLAZED EARTHENWARE.

cannot—not, for example, repeated pattern laboriously even in tint, but free-growing design, in stitches taking their direction from the design, and modified in colour according as they catch the light.

The preciousness of embroidery has been rightly insisted upon. It is superadded, and should be worth adding. But, though there is scope for work by no means ambitious or pretentious, the simplest needlework takes so much time to do that there is no excuse for shirking the labour of its design.

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50. SARACENIC INLAY OF MARBLE INTO STEATITE.

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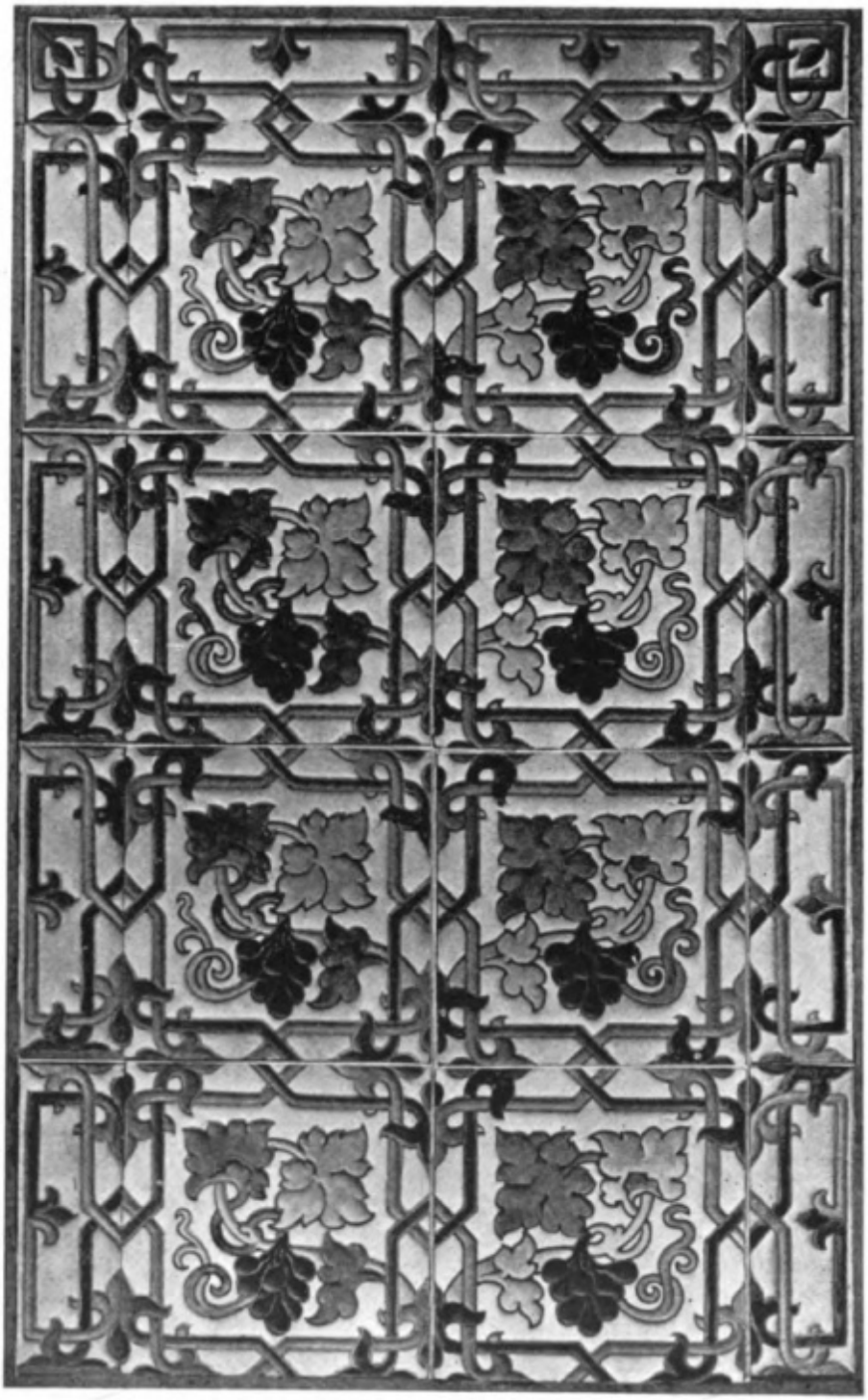

51. TILES DECORATED IN COLOURED GLAZES SEPARATED BY A RAISED OUTLINE.

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In the more boldly effective embroidery the pattern is not worked in stitches, but sewn on, a fretwork, as will be seen (page 219), of silk upon velvet, or what not, outlined either by stitches, sewing it down, or by couched cord masking the joint (47). The relation of this to the rose point lace on page 57 is evident; and that, too, has a firm raised outline or "cordonnet," necessary in this case to strengthen it.

The designer for tile-work is confronted by a difficulty peculiar to the size and shape of tiles. It is not that he has to design a repeat to the dimensions of a six or eight inch tile—he may spread his pattern over a number of such tiles (restricted only by the cost of so doing in the case of manufacture)—but that he must observe the lines of the jointing. At times he will find it to his purpose to accentuate the square lines; at times it will be advisable to divert attention from them—which is only done by very carefully considering them. Any design may, of course, be cut up into small squares; but it is only by a miracle that hap-hazard lines could help interfering awkwardly with those of the design. The designer, therefore, scores his paper across, and, with the joints thus marked out for his guidance, avoids forms

52. MODELLED TILES, IN WHICH THE GLAZE COLOUR SHOWS LIGHTER AND DARKER ACCORDING TO ITS DEPTH.

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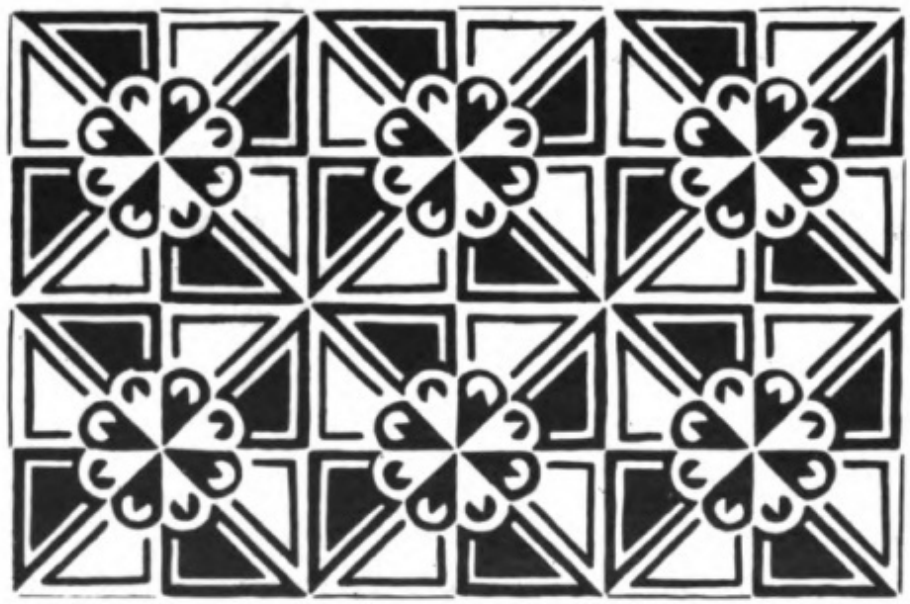
with which they will conflict. The joints must somewhere cut across a continuous pattern: he contrives that in so doing there shall be the least possible danger of their distorting or disturbing it. It has to be remembered that tiles will shrink in the fire, not always equally, and that perfectly fitting lines are not to be reckoned on.

In the same way the Assyrian of old (1) evidently scratched the jointing of his bricks on the "unbaked" clay, modelled his design with careful regard to them—look how the lion's head is placed in relation to them—and then cut up his slab into bricks, afterwards baking and enamelling them.

The raised outline, perceptible in the ornament, was, there is no doubt, necessary in his case to prevent the coloured enamel from running beyond its allotted compartment—a cloison in fact (see Chapter X.). This was equally the case with the Spanish tile maker, who arrived out of his own experience at the same means of keeping his coloured glazes within



53. COUNTERCHANGE PATTERN IN WHICH PATCHWORK AND INLAY ARE USED IN COMBINATION.

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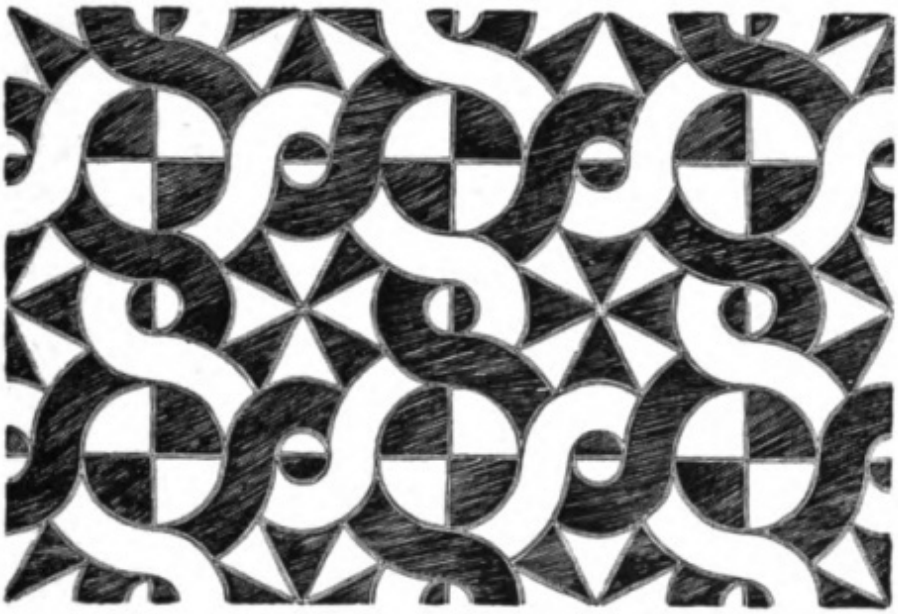

54. THIRTEENTH CENTURY PATCHWORK OF LIGHT AND DARK MARBLE COUNTERCHANGING.

bounds. He began by laboriously cutting up glazed tiles into little pieces and fitting them together mosaic-wise. He did, in fact, in glazed earthenware (49) very much what the marble worker did in his inlay (50), except that he had not a solid slab into which to set his pieces, but had to build up his design entirely out of small pieces of tile. And this he did because he had no other means of sufficiently controlling the flow of his enamels or glazes in the fire. When it occurred to him that by digging shallow cells into the clay he could get little party-walls between his colours, which would prevent their running together, he proceeded at once to do in square tiles what before he had done in mosaic, reproducing at first the very same patterns. Once familiar with the method, he was inspired by it to do work in which no trace of geometric pattern is to be found (2). In the modern tiles (51), designed on the principle of the raised outline, the ground has been sunk unequally so as to give, not modelling, but variety

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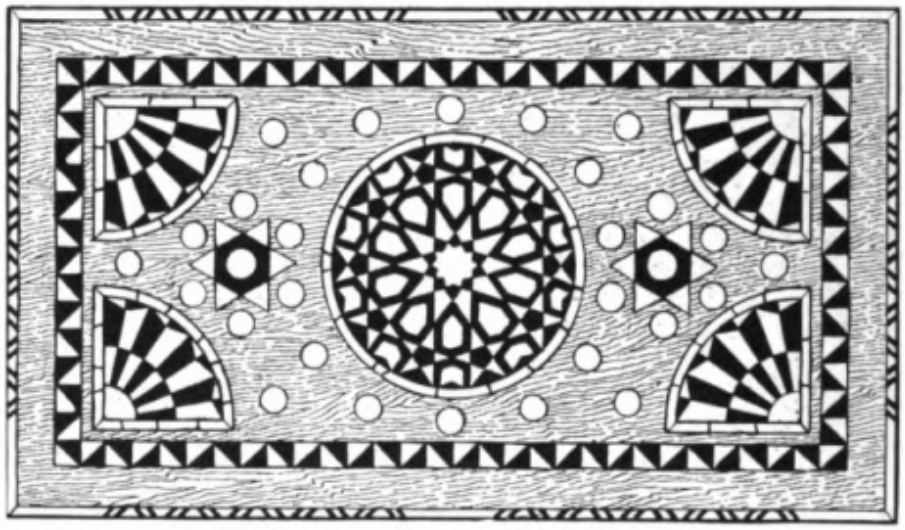

55. ORIENTAL INLAY INCLUDING PATCHWORK.

in the transparent glaze, according to its depth. (Compare "*basse taille*" enamel, page 200.)

The flowing of the glaze on a modelled tile (52), so that the colour shows lighter or darker according as the surface is in high relief or deep sunk, affects the spacing as well as the modelling of the design. If the raised edges are too sharp they will shoot off the colour and stare out white and startling. If the hollows are too deep, or there is no outlet from them, the colour will be so dense as to show no gradation at all. On the other hand, a modeller familiar with the process can, if he wishes it (let us hope he does not), produce an intaglio, which, when it is glazed, will have the effect of monochrome painting. What he in any case has to do is to realise the depth of colour which will result from a given relief in the modelling upon the ground or a given depression in it.

The difference between inlaid and mosaic pattern, between, that is to say, a ground into which a pattern is inlaid and a patchwork of separate pieces, is illustrated in the panel above (55).

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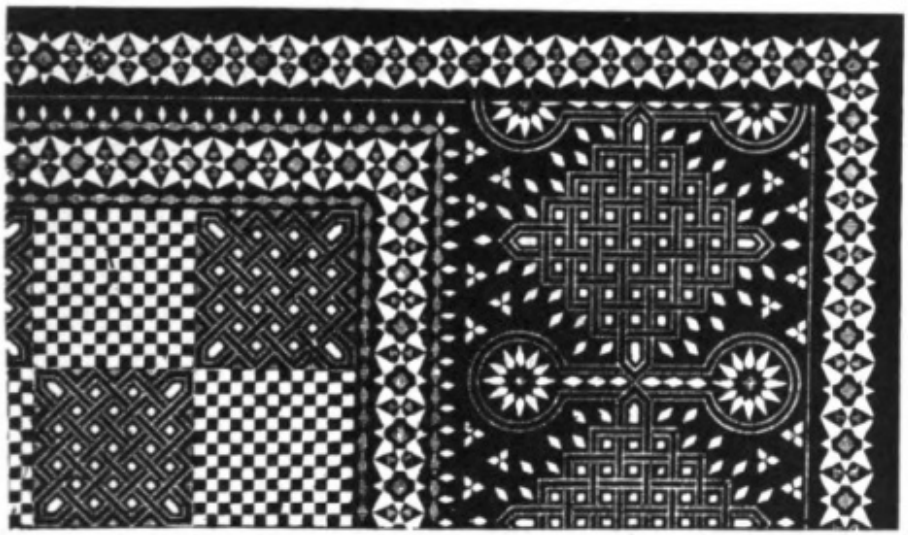

56. ITALIAN INLAY MORE OR LESS MECHANICALLY DONE.

A patchwork of only two colours is of itself enough to account for the origin of "counterchange," no matter whether or not it did actually arise in that way. It is quite certain that patchwork leads, as it seems infallibly, to a kind of design very different from that natural and appropriate to inlay (see pages 223-4). The perfect design from the Baptistery at Florence (54) could not possibly, for example, be stencilled (see again page 224); the inlaid patterns from the same floor (221) might well be. Still the two processes are constantly overlapping. The counterchange design on page 62 is a mosaic into which lines and eyes of the contrasting colour are inlaid. Again, the wood panel on page 64 is inlaid with patchwork of ivory and ebony: the central rosette, the fans in the corners, and the inner border are first built up of little pieces and then put into their place. The geometric pattern-work introduced in this way into Italian intarsia was actually the outcome of a process existent to this day in what is known as "Tonbridge ware." Long rods of wood of various colours are glued together (alternate rods of black and white give a

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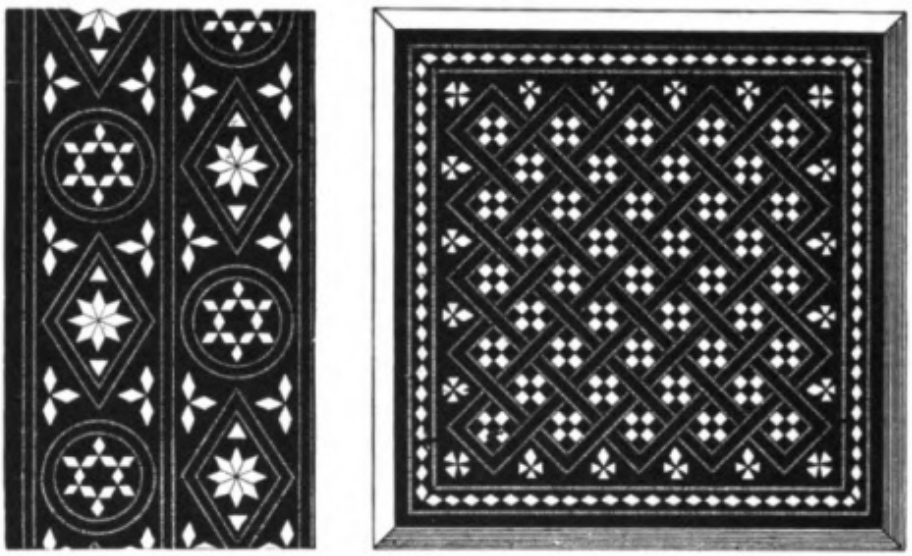

57. ITALIAN INLAY MORE OR LESS MECHANICALLY DONE.

checquer), and the mass has only to be cut in slices across to give thin slabs of diaper, which the marquetry worker uses as if they were pieces of simple veneer. The Italian work of the fifteenth and sixteenth centuries shows by contrast what very poor use we make of this practical device. The trick is so easily done that it is almost invariably overdone; but there is no valid reason except our want of self-restraint why we should not take real advantage of it. A practice of this kind was carried to extraordinary perfection in Egyptian or Græco-Egyptian art. Not only did the glass worker put together rods of glass in this way, and melt them together in the furnace; but, having made the compound rod red-hot, he drew it out to great length, thereby considerably reducing its circumference, so that, when this was cut into slices, the section appeared to be made up of the minutest tesseræ, like the miniature mosaic made in Rome for brooches and other trinketry. A slice of glass produced in this way would show of course on the under side of it the reverse or turn-over of the design; and the glass

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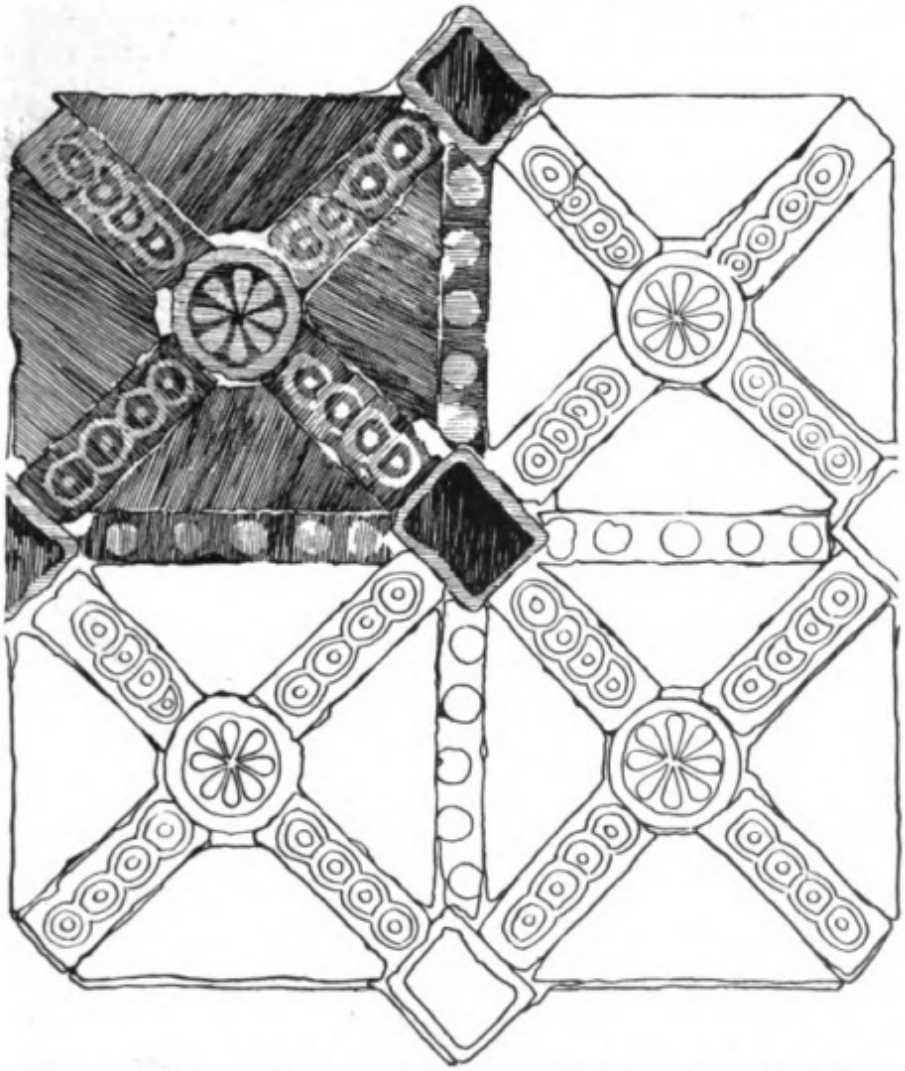
workers of old were cunning enough to avail themselves of such an opportunity of saving labour. They went even to the length of making one half of a design do duty in this



58. MOSAIC OF GLASS MORE OR LESS MECHANICALLY PATTERNED.

way for the two sides of a face—a questionable expedient, which may pass on the minute scale of the actual picture, though the line where the two halves are joined up may always be detected.

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The fragment of tile-like pavement on page 67 is put together in pieces of glass, some of which are inlaid with pattern, not built up of rectangular rods as above described, but worked in the molten state of the glass, more after the fashion of particoloured sugarsticks. The pateræ and other patterns are sections of such sticks of glass.

A different development of very much the same idea is shown in the "marbled" cup below, in which flat ribbons of white glass have been embedded in blue, the whole fused

59. VENETIAN CUP CUT OUT OF A CONGLOMERATE OF BLUE AND WHITE GLASS.

into a solid lump, and the cup carved out of it as if it had been agate or some other precious stone. It is, in fact, the combined work of glass worker and lapidary.

A much ruder but somewhat similar effect was more simply got in English earthenware by agglomerating shreds of different coloured clays, and working them together until a section of the solid lump gave very much the appearance of marbling—sufficient, when enhanced by a harmonising glaze of transparent colour, to justify the description of "agate-ware."

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