

5. Beavers and meltons. 1d. per yard extra on the above dyed and finished prices.

List 8c. Silks:—

1. Finishing and degumming plain silks. 27 in. wide, $1\frac{1}{4}$ d. per yard. 26 to 36 in. wide, $1\frac{1}{2}$ d. per yard.

2. Finishing and degumming brocades. 27 in. wide, $\frac{3}{4}$ d. per yard. 28 to 36 in. wide, 1d. per yard.

3. Spun-silk handkerchiefs. About 6d. per doz.

Price List 8d. For Dyeing and Finishing Moreens and Venetians (Cottons):—

(a) *Moreens*.—All widths from 27 to 42 in., average will be 38 in.

1. The price for 38 in. in ordinary finish, dyed and finished, 1d. per yard.

2. If mercerized and callendered, $1\frac{5}{8}$ d. per yard.

3. Mercerized and specially watered, $2\frac{7}{8}$ d. per yard.

(b) *Venetians*:—

1. Up to 35 in. wide, 2d. per yard for both blacks and colours.

2. 36 to 39 in., $2\frac{1}{4}$ d. " " " "

3. 40 to 45 in., $2\frac{3}{4}$ d. " " " "

4. 46 to 49 in., 3d. " " " "

50 to 60 in.—*the prices depend upon the weight.*

5. 28 lb. for 80 yd., $3\frac{1}{8}$ d. per yard for both blacks and colours

6. (Say) 42 lb., $3\frac{5}{8}$ d. " " " "

7. (Say) 50 lb., $4\frac{1}{4}$ d. " " " "

Examples in Costing:—

Example 1.—Mixture worsted coating.

Warp.

2/36 mixture botany.

9 threads shade A.

9 " " B.

9 " " C.

9 " " D.

68 threads per inch.

4480 threads in warp.

66 in. width in loom.

56 in. finished cloth width.

Weft.

2/36 mixture botany.
64 picks per inch (grey cloth).
Picked as warped.
70 yds. warp.
65 yds. grey cloth.
62 yds. finished cloth.

Weave.—3/3 twill, reversed (18 threads to the right and 18 to the left).

Finish.—Slightly milled and raised.

Weight of Material:—

$$\text{Warp } \frac{4480 \times 70}{18 \times 560} = 31\frac{1}{4} \text{ lb.} \qquad = 31\frac{1}{4} \text{ lb.}$$

$$\text{Weft } \frac{64 \times 66 \times 65}{18 \times 560} = 27\frac{1}{4} \text{ ,,} + 5 \text{ p.c. waste in weaving} = 28\frac{1}{2} \text{ ,,}$$

— material
58½ lb. grey cloth. 59¾ lb. required.

Cost of Material (Yarn).—See List 1a.

Price of 60's quality of botany top = 27¾d. per lb.

27¾d. + 12d. = 39¾d. per lb. price of 1/40's mixture yarn.

39¾d. - ½d. = 39¼d. ,, ,, 1/36's ,, ,,

39¼d. + ¾d. = 40d. ,, ,, 2/36's ,, ,,

£ s. d.

31¼ lb. warp at 3s. 4d. per lb. = 5 4 2

28½ ,, weft ,, ,, = 4 15 0

Total cost of yarn 9 19 2

Cost of Warp-dressing.—See List 2.

Calculated on a 10 cut warp (70 × 10 = 700 yds.).

700 ÷ 55 = 12 warp dresser's cuts.

4480 threads; 4 colours; 21d. per cut × 12 cuts = 252d.

Add 2s. 6d. for starting = 30d.

,, 1s. for over 42 in. wide = 12d.

Total cost of 10 cut warp = 294d.

294 ÷ 10 = 29½d. average cost per cut (70 yds.)

Cost of Looming (Drawing-in and Sleying).—See List 3.

4480 threads drafted on to 6 shafts =

4480 at 1s. 6d. per 1000 threads =

6s. 9d. cost of looming.

6s. 9d. ÷ 10 (cuts) = 8d. average cost per cut.

Cost of Weaving.—See List 4.

One weaver to 2 looms.

All weaves up to 8 shafts = 3¼d. per pick per ¼ in.

Add for drafted styles and up to 4 colours = 1d. per pick per ¼ in.

Add for drop box = 1¼d. per pick per ¼ in.

64 picks per inch at 6d. per pick per ¼ in.

$$= \frac{64}{4} \times \frac{6}{1} = 8s. \text{ per piece.}$$

Burling and Mending.—See List 5a.

Coloured 3/3 twill coating = 4s. 6d. per piece.

Other Expenses.—See List 7a.

Equal to price of weaving = 8s. per piece.

Finishing.—See List 8a.

Plain finish, 1½d. per lb., 58½ lb. at 1½d. = 7s. 4d.

Milled or vicuna finish extra = 2s. 6d.

Permanent finish = 5s. 6d.

15s. 4d. per piece.

EXAMPLE I.—DESCRIPTION OF CLOTH—MIXTURE WORSTED COATING.

	Per Piece of 70 yd. Warp.					
	£	s.	d.	£	s.	d.
Cost of material, viz. :—						
31¼ lb. warp at 3s. 4d.	5	4	2			
28½ lb. weft at 3s. 4d.	4	15	0	9	19	2
Prices paid for processes, viz. :—						
Warping (10 cut warp) at 24s. 6d.	0	2	5½			
Looming and sleying " " at 6s. 9d.	0		8			
Weaving	0	8	0			
Burling and mending	0	4	6			
" Other expenses "	0	8	0			
Finishing	0	15	4	1	18	11½
Total cost				11	18	1½
Yards finished, 62 yds.						
Cost per yard (finished), 3s. 10d.						

Example 2.—Mohair, lustre dress fabric.

Warp.

2/80's bleached cotton.

64 threads per inch.

3200 threads in warp.

50 in. reed width.
 49½ in. grey cloth width.
 44 in. finished cloth width.

Weft.

1/32's mohair.
 70 picks per inch (grey cloth).
 70 yds. warp.
 61 yds. grey cloth.
 67 yds. finished cloth.

Weave.—Plain.

Dye to light shade and lustre finish.

Weight of Material :—

$$\text{Warp } \frac{3200 \times 70}{40 \times 840} = 6.6 \text{ lb.} \quad = 6.6 \text{ lb.}$$

$$\text{Weft } \frac{70 \times 50 \times 61}{32 \times 560} = 12 \text{ ,, } + 5 \text{ per cent waste} = 12.6$$

Grey cloth 18.6 lb. material required 19.2 lb.

Cost of Material (Yarn) :—

£ s. d.

6.6 lb. warp at 2s. 2d. per lb. = 0 14 4

12.6 ,, weft at 3s. 6d. ,, = 2 4 1

Total cost of yarn £2 18 5

Cost of Warp Dressing.—See List 2.

Calculated on a 10 cut warp (70 × 10 = 700 yds.).

700 ÷ 55 = 12 warp dresser's cuts.

3200 threads; 1 colour; 10d. per cut × 12 cuts. = 120d.

Add 2s. 6d. for starting = 30d.

„ 1s. for over 42 in. wide = 12d.

Total cost of 10 cut warp = 162d.

162 ÷ 10 = 16½d. average cost per cut.

Cost of Looming (Drawing-in and Sleying).—See List 3.

4 shafts (straight hop shaft draft).

3200 threads at 1s. per 1000 = 3s. 2½d. cost of looming.

3s. 2½d. ÷ 10 (cuts) = 4d. average cost per cut.

Cost of Weaving.—See List 4.

Tappet loom. One weaver to 2 looms.

Over 47 in. reed space = 2½d. per pick per ¼ inch.

Add for white mohair weft = ¼d. „ „ „

„ for cop weft = ¼d. „ „ „

70 picks per inch at = 3d. „ „ „

$$\frac{70}{4} \times \frac{3}{1} = 4s. 4½d. \text{ per piece.}$$

Burling and Mending.—See List 5b.

Plain mohairs = 1s. 6d per piece.

“*Other Expenses.*”—See List 7b.

Equal to price of weaving = 4s. 4½d. per piece.

Dyeing and Finishing.—See List 8a.

For 50 yds. grey cloth, made from white

warps and dyeing into light colours . = 9s. per piece.

For 61 yds. of grey cloth add . . . = 2s. „ „

Total cost = 11s. „ „

EXAMPLE II.—DESCRIPTION OF CLOTH—MOHAIR LUSTRE DRESS FABRIC.

	Per piece of 70 yd. warp.					
	£	s.	d.	£	s.	d.
Cost of material, viz. :—						
6·6 lb. warp at 2s. 2d.	0	14	4			
12·6 lb. weft at 3s. 6d.	2	4	1	2	18	5
Prices paid for processes, viz. :—						
Warping (10 cut warp) at 13s. 6d.	0	1	4½			
Looming and sleying („ „) at 3s. 2½d.	0	0	4			
Weaving	0	4	4½			
Burling and mending	0	1	6			
“ Other expenses ”	0	4	4½			
Dyeing and finishing	0	11	0	1	2	11½
Total cost				4	1	4½
Yards finished, 67 yds.						
Cost per yard (finished), 1s. 2½d.						

CHAPTER XV.

DEFINITIONS.

Glossary of Terms Applied to Woven Fabrics.

Abb (Weaving Term).—The weft or filling which is inserted between the warp threads to form a cloth.

Alaska.—A yarn composed of combed wool and cotton carded and drawn together to form a mixture.

Alizarine.—A dye of coal-tar origin largely employed in the place of indigo for the production of navy blues and blacks.

Alpaca (Cloth).—A fabric in which the weft (which predominates) is spun from alpaca.

Alpaca (Wool Term).—Material of a long, fine, and silky nature, possessing characteristics of both wool and hair. It is obtained from the Peruvian sheep of the Llama species.

Amazon.—An all-wool fabric made from a B.A. mule-spun warp and a thicker soft spun woollen weft, the mule-spun warp being thrown on to the surface. The finish is more or less of a dress face character.

Aniline.—One of the substances produced from the fractional distillation of coal-tar.

Angola Yarn.—A yarn composed of wool and cotton scribbled together. The proportions may be varied according to requirements.

Angora Goat.—A species of goat originally bred in Asia Minor, but later introduced into Cape Colony, producing the mohair fibre, known under the three headings of Turkey, Van, and Cape mohair.

Armure.—A small weave effect usually of a fancy warp-rib character, employed in fabrics as a rule made wholly of wool.

Art Serge.—Any fabric of a serge character in æsthetic colours.

Asbestos.—A fibrous mineral of a long, fine, and flexible

nature, and usually of a white colour, which is not affected by fire, acids, gases, etc. It may be spun into yarn and woven into cloth.

Astrachan (Astrakan).—A wool of a curly character, coming from the town of Astrakhan, in Russia.

Astrakan (Weaving Term).—The name given to a pile fabric of a coarse texture presenting a curious curly surface. These fabrics are produced in two ways :—

1. On the weft principle, a shrinkage of the ground texture throwing the pile weft up as a loop.

2. As a warp texture, in which a thick curly warp yarn is brought over wires to form the necessary loops.

Axminster.—A carpet originally made at Axminster in Devonshire, but since the introduction of the Axminster power loom now produced in all the great carpet weaving centres. It is of the knotted pile structure, and no doubt took its origin in what is now termed the “Turkey” carpet.

Backed Cloth.—A single texture with extra threads (warp) or picks (weft) stitched on the back of the texture, thus adding weight but not interfering with the face texture.

Baffetas.—White or blue calico.

Bandanna.—A calico cloth in which white or brightly coloured spots are produced upon a red or dark ground.

Barathea.—A fine texture of broken weft-rib character, made in the best qualities from silk warp and fine botany weft.

Basket Effect.—An order of intersection, giving an enlarged hopsack or mat appearance, hence the special name.

Bead Yarn.—A yarn upon which is fastened either an actual bead or a lump of hardened gelatine of a bead-like form.

Beating.—A group of extra threads usually left with each warp from which the threads broken during weaving may be replaced.

Beaver.—A heavy texture made from woollen yarns, the fabric being milled, raised, and finally given a dress face finish, no doubt with the idea of matching the natural beaver skin.

Bedford Cord.—A texture in which the interlacing is so arranged that a warp surface fabric is produced with a rounded cord effect, running warp way, the indented effect being produced by two threads working plain.

Beege.—A fabric of a twill character, somewhat loose in texture.

Beetling.—A finishing process consisting of subjecting the fabric to an even hammering by means of a series of fallers.

Bengaline.—A bold warp-rib silk fabric.

Billiard Cloth.—A fine milled woollen texture of melton finish, usually dyed green.

Binding Threads.—Threads employed to unite two or more textures into one firm structure.

Bird's Eye Pattern.—A term originally applied to a peculiar small pattern produced on four shafts, but now applied to any similar fabric.

Bleaching.—The whitening of textile materials in the raw, semi-manufactured, or fully-manufactured state by "grassing," or by chemical means.

Bleeding.—A term applied to cloth or yarn from which, when subjected to the scouring or milling operation, the colour runs, which colour usually stains the whites or light shades there present.

Blister Cloth.—A fabric—usually a double texture—designed to produce a blistered or raised effect.

Boardy.—A term applied to fabrics which handle hard and cakey.

Boiling-off.—The operation of removing, by means of a hot liquid, the gum which covers the raw silk fibre.

Botany Twill.—A twilled texture the warp and weft of which are made from botany wool.

Botany Wool.—Originally merino wool grown near Botany Bay, Australia; at the present time a term applied to all classes of merino or fine wools.

Box Cloth.—An all-wool fabric made from yarn spun on the woollen principle with a milled finish giving a felt appearance.

Box Loom.—A loom by which different colours of weft may be thrown into the fabric by lifting or lowering the required shuttle into the picking plane.

Braid-Effect.—A weave developed style made so far as possible to imitate the appearance of braid.

Brilliantine.—A plain texture of medium weight composed of a cotton warp and a lustrous weft, the lustre weft predominating.

Broad Cloth.—A fine woollen cloth, usually woven plain, finely dyed, dressed, and finished. The original style was undoubtedly set very wide in the loom to allow for a considerable shrinkage in finishing—hence the name.

Brocade (Silk Fabric).—A rich texture of an elaborately figured description.

Broken-Ends.—Ends in the warp which have broken owing to weakness or being too heavily tensioned. The breaking may have taken place during weaving or during finishing.

Broken-Picks.—A defect in weaving caused by the weft breaking as it passes from edge to edge of the piece.

Broken Crow Twill.—The 4-sateen weave.

Broken Twill.—A design or plan in which the effect is that of an ordinary twill arranged in a broken or non-continuous order.

Buckskin Cloth.—A cloth of a fine warp surface, sateen twill texture; originally made of fine woollen yarns.

Buckskin Weave.—A point-paper plan usually based upon the 8-warp sateen to which a dot is added, thus producing an upright warp twill effect.

Buenos Ayres Wool.—Wool from Buenos Ayres, South America, which is composed of crossbreds and botanies. The quality is usually not quite equal in Australian wools.

Burl Dyeing.—The dyeing or inking of spots of vegetable matter which otherwise would give a grey appearance to the finished piece.

Burler.—A person who dresses cloth prior to finishing.

Burling.—The looking over of a piece of cloth and the taking out of all burrs, slubs, knots, etc., thus improving its appearance.

Calendering.—A heavy continuous pressing under heat.

Calico.—A plain cloth made from cotton.

Cambric.—A finely set weave linen cloth, originally made at Cambrai, in Belgium.

Campbell Twill.—An 8-thread weave of the irregular sateen derivative class.

Canvas Cloth.—An open plain texture, usually produced from hard-twisted yarns.

Cape Wool.—Wool, mostly merino, very fine and often very white, but slightly defective in soundness of staple, largely used for blending purposes with Australian wools.

Cashmere.—The pure under wool from the Cashmere goat.

Cashmere Cloth.—A fine, light texture; warp of cotton or wool, weft always of a fine botany yarn; weave 2/1 weft twill. The warp is set fairly close, but a great number of picks per $\frac{1}{4}$ in. are inserted, thus giving what is known as the "cashmere twill" or "plain-back".

- Cashmere Twill.**—The 2/1 weft twill.
- Cassimere Twill.**—The 2/2 twill.
- Cellulose.**—The substance forming the cellular tissue of plants now largely employed in the production of imitation silk yarns.
- Celtic.**—What is known as a 2/2 hopsack.
- Celtic Twill.**—A weave with a sateen base, otherwise spoken of as twilled hopsack.
- Centre Stitching Warp.**—An extra warp, usually of thin cotton, employed in double cloth structures for binding the two cloths together.
- Chaine or Chain.**—A word usually used in the market for “warp”.
- Chain Twill.**—A twilled fabric of a chain character or appearance obtained by a combination of weave and material.
- Chappe Silk Yarn.**—A term given to silk yarn made from special wastes.
- Chardonnet Silk.**—An artificial silk prepared by nitrating cellulose and dissolving in ether and alcohol.
- Check.**—The term given to the square appearance produced on a fabric by employing a special weave of two or more colours of warp and weft specially arranged to give this appearance.
- Chenille.**—A section or group of threads of a fabric woven on the gauze principle and cut up into stripes and subsequently twisted, frequently introduced as weft into what are termed chenille or Victorian Axminster carpets.
- Cheviot (Cloth).**—A texture, usually of a roughish character, made from wool of the Cheviot type.
- Chiffon.**—The name given to a light, flimsy texture of plain weave, the warp and weft usually being of a very fine silk material.
- China Grass.**—A vegetable fibre produced by two members of the nettle family, otherwise spoken of as Ramie or Rhea.
- Chiné.**—A name given to fabrics usually woven plain in which a figure has been printed on to the warp prior to weaving.
- Cloakings.**—A term given to textures suitable for making up into cloakings.
- Cloth Finish.**—A term usually applied to a fabric which has been finished to be “full” in the handle, the weave being more or less obliterated.
- Clothing Wool.**—A wool usually short and fine in fibre, specially suited in structure of fibre for the woollen trade.

Cloudy.—A term usually applied to a fabric which has been either unevenly dyed or unevenly steamed.

Cobblers.—A term applied to pieces returned as being of unsatisfactory build.

Cobourg.—A cloth made from cotton warp and botany weft, with a warp interlacing of the 2/1 or cashmere weave.

Cockled (Cockliness).—A curliness or crimpiness most marked in fine goods, but always appearing in fabrics when different runs of yarn or tensions on sections of the warp have been accidentally introduced.

Cockled Fabric.—A defective fabric, with an uneven surface appearance, usually due to irregular shrinkage during finishing. The cause of such irregularity must, however, be usually looked for much earlier on in the cycle of operations.

Combination Twill.—A twill produced by combining two simple twills together, thread and thread, or two threads and one thread, etc., or pick and pick, or two picks and one pick, etc.

Combing (Commission).—A branch of the wool trade. The commission comber is equipped with the plant, but receives his material from either the wool merchant or the spinner, and delivers it in the form of top and noil, simply receiving a commission for his work.

Compound Twill.—A twill composed of more weaves which weave well together, each weave, however, maintaining its individuality in its particular section of the design.

Conditioning.—The ascertaining of or the fixing of the amount of moisture present in textile materials. Thus to ascertain the true weight of a bulk lot of wool for instance, representative samples must be drawn from the exterior and interior of the bale or bales. These samples must then be absolutely dried, weighed, and their true or "conditioned" weight obtained by adding to the dry weight the standard "regain" moisture. The fixed Bradford standards of "regain" are, for tops—oil combed, 19 per cent; dry combed, 18 $\frac{1}{4}$ per cent; for noil, 14 per cent; for yarn worsted, 18 $\frac{1}{4}$ per cent; cotton, 8 $\frac{1}{2}$ per cent; silk, 11 per cent.

Coping.—A heavy cloth made of either worsted or woollen yarns for gentlemen's wear, with various weaves and colourings applied.

Cord-de-Chin.—A light fabric made from botany warp and

silk weft in which two threads are combined as one to form a lightly defined cord lengthways in the piece.

Corduroy.—A weft pile structure in which the floats of pile weft are bound into the ground texture in one continuous line warp way, so that upon being cut they project from this line and hence form a dense pile cord.

Corkscrew Cloth.—A closely set fabric usually made from fine worsted yarns and presenting the appearance of a warp rib running almost in the weft direction.

Corkscrew Weave.—A weave or plan based upon the 13-sateen which presents a peculiar appearance, best described as that of a warp rib running at a low angle.

Counts.—A term employed in the silk trade for indicating the number of threads and picks per inch.

Counts of Yarn.—The number given to a yarn of any material, usually indicating the number of hanks per lb. of that yarn.

Covert Coating.—A light or medium style of fabric constructed of a solid mixture or twist yarn presenting a smart upright twill appearance and usually shower proofed.

Covert Weave.—A smart upright warp twill, usually obtained by employing a warp sateen weave, or a modification of the same.

Crabbing.—A preliminary finishing operation which consists in running the fabric under tension on to a roller usually, but not always, running in a hot liquor and then steamed. This is sometimes termed “setting” the fabric.

Cracked Ends.—Broken ends in a lustre piece—the breaking having taken place in either (*a*) weaving, or (*b*) finishing—creating a defective bright spot at each position where an end has been cracked.

Crammed Stripe Fabric.—A fabric of a striped character produced by cramming a great number of threads into one section of the stripe, as compared with the other section or sections of the stripe. A special order of looming and sleying is obviously necessary, particularly when the jacquard is employed.

Cramping (Finishers' Term).—The operation of pressing a fabric between “cramps” after it has been cuttled.

Crash.—A coarse linen fabric mostly used for towels.

Cravenette.—A finishing process which causes the fabric submitted to it to be water-proof and spot-proof.

Crêpe de Chêne.—A fabric produced from a fine silk warp

and a right and left (open band and cross laid) tightly twisted worsted weft, this latter during the finishing operation disturbing the straightness of both itself and the warp, and thus creating a crêpe effect.

Crêpe Weave.—An interlacing of threads and picks in a more or less mixed or indiscriminate order to produce an appearance of a finely broken character, usually associated with crêpe cloths.

Crepline.—A fabric of a warp-rib character, in which the regular order of the weave is so broken as to give a “rib-rape” effect.

Crêpon.—A structure, as the name implies, of a crape-like character, this character being obtainable in at least five ways (a) by combination of materials, (b) by combination of weaves, (c) by combination of a and b, (d) by mechanical arrangements during weaving, (e) by subjecting fabrics specially constructed to a special chemical process during finishing.

Crimp.—A term synonymous with crêpon, but less frequently employed.

Crimpiness or Curliness.—The curls or crimps in the wool fibre, which in the case of merinos largely assist the felting of the fabric, which felting takes place during the finishing operation.

Crossband Twine.—The direction of the twist in yarns produced by cross spindle bands, as distinct from that produced by open spindle bands.

Cross band or warp twist is from right to left looking up the yarn; open band or weft twist is from left to right looking up the yarn.

Cross-dyed.—The dyeing of a fabric usually composed of two materials—say cotton and wool, one of these materials—usually the warp—having been yarn or warp dyed prior to weaving, so that there only remains the second material to be dyed.

Cross-over Style.—A style of fabric of a striped character, in which the stripe takes the direction of the weft.

Crow Foot.—A defective appearance in fabrics usually due to defectively-spun yarns.

Crow Foot Weave.—The 4-sateen or 3/1 broken twill.

Crow Twill.—The 3/1 twill.

Cut.—A standard length of warp. In the worsted district 70 yds., but in other districts sometimes 50 and sometimes 100 yds.

Cut or Lea.—A length of 300 yds. employed in the linen trade for measuring yarns. Thus the cuts or leas per lb. indicate the count. In the Galashiels trade the cuts or leas of 300 yds. per 24 oz. indicate the count.

Cut Pile.—A pile formed by looping the threads over wires, which carry at their ends knives, so that as each wire is withdrawn its knife severs the pile loop, thus producing cut pile.

Cutting.—The finishing operation, which consists in passing the fabric close to the blades of the cutting machine, so that all the surface fibres raised from the piece during the operation of raising, are cut off, leaving a clean and level piece.

Cutting Machine.—A machine employed in the finishing for shearing or cutting the fibre from the face of fabrics. The knives are usually arranged spirally in a circular box, as in the ordinary lawn-mower.

Cuttling (Finishers' term).—The folding of a fabric after finishing in a suitable manner for handling.

Damask.—A figured fabric formerly made of silk, taking its name from Damascus in Syria. Cotton, linen, and worsted are now used in the manufacture of the fabric.

Decatizing.—The process of fixing a cloth by steam.

Degumming.—The boiling-off of silk in soap and hot water, in order to dissolve and wash away the natural gum or sericin which surrounds the fibre.

Delaine.—A light all-wool cloth of plain weave. It is usually printed in various designs and colours. The term, no doubt, arose from "mousseline delaine," which signifies "wool muslin".

Demi-Lustre.—Not pure lustre. A term applied to long and fairly fine wools and yarns usually from 36's to 46's in quality and counts.

Denier System.—A method of counting silk yarns. The hank is 400 French ells, that is, 520 English yards; the weight is the denier, of which $533\frac{1}{3}$ weigh one English ounce. The number of deniers that one hank weighs is the count of the yarn.

Dhooty.—A plain fabric ornamented by the use of extra warp or weft in border form, and usually woven in a type of swivel loom.

Diagonal.—A term applied generally to bold twills.

Diamond or Diaper.—Terms applied to patterns of a twilled check character, such usually being produced by weave develop-

ment. The original diaper fabric was based upon the sateen weave, and was usually made of linen.

Dice Pattern.—A type of pattern consisting of squares of various dimensions emphasized in various weaves.

Dimity.—A stout cotton cloth similar to a fustian, but not usually so thick in texture, being usually figured with raised stripes. Dimity was originally imported from India, but is now largely produced in Lancashire.

Discharging.—Another term for degumming.

Doeskin.—A fine woollen cloth made from the best botany wool, finely spun and finely set in the loom, with the 5-sateen warp interlacing being employed. A soft dress face finish is given to the fabric.

Dolly.—A machine consisting of rollers and vats for scouring pieces which are stitched together to form an endless band.

Double Ends.—Two ends weaving as one in a cloth. This may be due either to a fault, or it may be that the cloth is specially arranged with either double ends or double picks.

Double Plain.—A combination of two plain makes produced at one and the same time but quite distinct from one another, although they may change places to form stripes, checks, or figures.

Doubling.—The twisting together of two or more threads, in order to make a stronger and firmer thread.

Doup.—An ordinary heald with the addition of a loose half-heald which is passed through the eye of the ordinary heald, and then in its turn receives the warp thread. It is made in several forms, tied or free, or entirely of string or partly of metal.

Doup Harness.—A term applied to either an ordinary harness with a doup mounted in front or to a specially-built gauze harness.

Draft (Weaving Term).—Exactly the same as drawing-in.

Drape.—A medium-weight, heavily milled worsted cloth.

Drawing-in.—A term employed to indicate the drawing-in of the warp threads, already dressed upon the loom beam, through the mails of the healds in the order indicated by the draft supplied by the designer.

Dresser (Warp).—The operator, usually a man, employed in dressing the warps delivered in ball form on to the loom beams.

Dressing (Weaving Term).—The process of preparing the warp previous to its being placed in the loom and really consisting

in the even distribution of the threads over a given space, and the placing of a similar tension on each thread.

Drill.—A twilled linen or cotton fabric used for sheeting.

Dry Finish.—One of the finishing processes applied to certain types of yarn dyed cloths, with the idea of obviating bleeding of colours, at the same time obtaining the required handle.

Dyed Slubbing.—A term applied to worsted tops which have been dyed in the top form. These dyed slubbings (or more properly speaking, dyed tops) are then recombed prior to drawing and spinning.

Dyeing.—The colouring of materials in the piece to enhance the value and appearance. There are five methods of producing colour in the fabric: (1) Raw material dyeing, (2) Yarn dyeing, (3) Cross dyeing, (4) Mixed dyeing, (5) Piece dyeing.

East India Wool.—Wool of a short, coarse and hairy nature coming from sheep in India, which from lack of cultivation grow material very near the original type of hairy wool. Largely used in the carpet trade.

End and End Warp.—A warp that is dressed from two balls of warp, taking one end from each ball alternately.

Ended Hank.—A term applied to yarn which being irregularly dyed in the hank, shows a regularly repeated unevenness corresponding with the hank length.

Ends.—A term applied to the threads in a warp.

Eolienne.—A very open texture, composed of silk warp and wool weft.

Estamene.—A cloth made from crossbred yarn usually employing the 2/2 or 3/3 twill. It is given a milled rough finish.

Estrella.—A plain woven fabric consisting of silk warp and botany weft, picked 2 right-twist yarn and 2 left-twist yarn. The weft yarn is very hard twist in order to produce the required crimped appearance.

Etamine.—A light cloth made of wool, silk, linen, etc., and of an openwork structure originally used as a filter cloth.

Extract.—A fibrous material of wool derived from waste cotton and wool mixed materials, the cotton being destroyed by the sulphuric acid or other process, leaving the wool intact to be ground or carded up into extract.

Extra Warp.—The term given to warp threads which are added to a single cloth with the object of:—

- (a) Increasing the weight of the cloth.
- (b) Figuring the cloth, or
- (c) Both increasing the weight and figuring at one and the same time.

Extra Weft.—A term given to extra weft threads or picks with the object of :—

- (a) Increasing the weight of the cloth.
- (b) Figuring the cloth, or
- (c) Both increasing the weight and figuring at one and the same time.

Fabric.—A term applied to structures which may be composed of either

- (a) Fibres milled together.
- (b) Threads interlaced at right angles, or
- (c) One thread interlaced with itself to produce a knitted structure.

Fancy Draft.—An entering or order of drawing threads into a set of gears in any regular or fancy manner.

Fast Colour.—A term applied to the colour on yarn or cloth which will withstand light and milling, etc.

Felling Marks.—Marks woven into fabrics at certain distances indicating that one piece has been finished and another piece started.

Felt.—A type of fabric which may be defined as “fibre” fabric as distinct from ordinary cloths which are “thread” fabrics. It is usually made from a wool having a strong tendency to felt. Films of wool, say 80 in. wide, are laid on the top of one another—number according to the thickness of felt required—by means of an apparatus added to the end of the ordinary carder. Upon due thickness being obtained, the films are milled into one compact mass or fabric.

Felting Property.—The property possessed by most wools which results in the interlocking of the fibres and consequently in the production of a firm cloth. This property may be said to be due to the fibre structure, to the natural curliness of the fibre, and to the nature of the fibre, which causes it to contract and curl under the action of alkalies and heat.

Fents.—Short damaged lengths of cloths or short lengths cut from piece ends.

Fibre.—The name given to the individual constituents of a

thread. Thus fibrils may be said to constitute fibres, fibres may be said to constitute threads, and threads may be said to constitute cloths.

Filling.—Weighting such as starch, size, etc., put into goods during or after the dyeing and finishing operations for the purpose of adding weight to the cloth and making it firmer.

Finishing.—The processes through which goods are put after leaving the loom, to improve them in appearance and give them the required characteristics. Dyeing may be considered a finishing operation, but it is perhaps better considered as a process distinct from the finishing.

Flake Yarn.—A yarn spotted with a round or elongated lump at varying distances, usually of a different material and colour.

Flannel.—An all-wool fabric usually of a plain or twilled make, of a soft, and, if possible, non-shrinking character, making it specially suitable for being worn next the skin.

Flannelette.—A structure made of cotton from soft mule spun yarns, the fabric being subsequently raised to give an imitation of the true wool flannel. It is necessarily very inflammable.

Flax.—The fibrous material of a long and strong nature, this being part of the stem of the flax plant (*Linum* family).

Flecked.—A spotted appearance on either yarns or fabrics due to some distinctive colour or material thrown in some way or other on to the ground texture or colour.

Flipes.—The folds into which a piece is thrown so that it may be looked over easily. The length varies from half to one yard.

Flocks.—The refuse or waste from wool (and sometimes cotton) produced in the milling, raising, and cropping machines.

Florantine Twill.—A weave suitable for lustre fabrics on eight threads and eight picks.

Florette Silk.—The external covering of the double fibre or filament exuded by the silkworm, this being known as waste silk. Some years ago it was practically useless, but now is spun into very satisfactory yarn and cloth.

Flyer Spinning.—Spinning on the flyer principle. This system is employed in spinning yarns such as mohair, etc., in which smoothness of thread is the most essential feature. The output is only about 50 per cent of that of the other systems of spinning.

Folded Yarn.—Yarn composed to two or more single threads, these being twisted together to produce a stronger yarn more suitable for weaving or for special twist effect.

Foulard.—A fairly fine silk cloth with a pattern printed on after weaving.

Foulie.—An all botany wool cloth which receives a severely milled finish, thus hiding the weave structure.

Foundation Cloth Embroidery (Term).—A fine gauze cloth made from exceedingly strong but fine silk yarns, used as a foundation for embroidering upon, for the production of the laces of St. Gaul, being subsequently destroyed by chemical treatment.

Fulling.—An operation through which wool cloth is passed to increase it in thickness, density, and solidity, and also to improve it in handle.

Gait or Gate.—A full repeat of the draft in healds, or, in the case of a jacquard, one complete row—usually of either eight or sixteen—in the harness.

Gala (Yarn Count).—The method of counting yarns employed in the Galashiels district of Scotland. The fixed weight is 24 oz., and the hank 300 yds. As usual, the number of hanks for the fixed weight gives the count number.

Gassed Yarn.—Yarn which has been subjected to the process of gassing.

Gassing.—A process which certain classes of yarns—especially certain silk, cotton, and braid yarns—are put through to take away all superfluous fibres, and thus make a very clean and smooth thread. A gas flame is usually employed, but occasionally a surface heated to white heat takes the place of the flame.

Gauge Point.—A fixed number—obtained by simplifying a compound number—employed as a quick means of working out certain calculations with reference to both machinery and materials.

Gauze.—A type of fabric in which certain of the threads, although keeping approximately in the same plane, are deflected from the straight line in order to produce spider's web and other well-recognized gauze styles.

Gaws.—A Scotch term for thin places in cloth.

Genapping.—A process through which certain classes of yarns—more particularly worsteds—are put with the idea of

leaving them perfectly clean and smooth. Practically the same as gassing.

Gig.—A finishing machine practically consisting of a large cylinder clothed with teasels, with suitable apparatus for bearing the cloth to be treated continuously upon these teasels.

Gigging.—The process of producing a nap or raised surface on cloths by passing them through the gig.

Gimp Yarns.—A term usually applied to twist yarns of a more or less ask nature. They are usually of a fancy character. Usually two or more coloured threads are twisted round a centre core thread, completely hiding it.

Gingham.—A plaided or checked cotton fabric of a somewhat stiff character suitable for dress goods.

Glacé.—A term applied to fine lustre fabrics usually of a figured character, made from a fine cotton warp with a comparatively thick mohair weft which is made to do all the bending.

Glass Fibre.—A fibre made from specially prepared glass, used in a very limited degree in textiles.

Glazed Cotton.—Cotton yarn specially prepared and coated giving a result in appearance somewhat similar to horse hair.

Gordon Cord.—The name applied to a weave of a twilled cord character.

Grandrella.—A term applied to solidly coloured cotton twists of an irregular character. These yarns are usually introduced in stripe or check form.

Grandrelle.—A type of twist yarn produced by twisting together of two threads usually very differently coloured.

Granite.—A type of weave effect giving a broken, irregular appearance of a granite-like character.

Grenada.—The name of a fabric woven from a three down two up 5-sateen weft twill, the warp usually being black cotton and the weft alpaca or mohair.

Grenadine.—An open-work, gauze-like fabric of silk or wool, or a combination of the two, extremely thin and transparent.

Grey.—A term given to yarn as it leaves the spinning frame, or to a piece upon leaving the loom.

Gross.—Twelve dozen, or 144 hanks, worsted wefts being sold by the gross.

Gross Grain.—A fine silk warp and cotton weft, producing a warp ribbed fabric.

Habutai.—A term applied to a soft, washable Japanese silk fabric.

Hair.—A smooth, almost straight, fibre, of varying length, fineness, and lustre, grown by various animals—the goat, the horse, the cow, etc. Its structure is cellular, the exterior surface of each hair being of a scaly character, although not apparent under the microscope owing to the fact that the scales are imbedded for two-thirds or more of their length close into the trunk of the fibre.

Hair (Camel's).—From the camel, which grows a long and bristly hair, at the root of which is a fine fibre usually of a fawn colour, and somewhat short. With this material the comb reverses the ordinary combing operation, rather extracting the short fibre—which forms the camel's hair of commerce—from the long, as against the ordinary operation of combing, which consists in extracting the long fibres from the short.

Hairline.—A term indiscriminately applied to fine, solid-coloured striped fabrics. Strictly speaking, these stripes should be formed on the true hairline principle, which is, that for the stripe in the warp direction each colour of warp must be covered by its own colour of weft, and for the weft direction that each colour of weft should be covered by its own colour of warp.

Hank (Yarn Term).—A term applied to a bundle of material of a suitable length for calculating from handling commercially. Its length in the worsted trade is due to the employment of a 1 yd. circumference reel, in the cotton trade to the employment of a 1½ yd. circumference reel. In other trades it is impossible to say how the hank length has been decided upon. The following are the most important :—

The worsted hank = 560 yds. (that is 7 smaller, of 80 yds. each).

The cotton hank = 840 yds.

The woollen hank = 256 yds.

The hanks per lb. usually indicate the "count" of a yarn. It should be noted, however, that the basis of the woollen hank is 1520 yds. to a 6 lb. unit of weight.

Hank Tester.—A machine for testing the strength and elasticity of a hank of yarn. It consists of two hooks upon which the yarn is suitably hanked, an arrangement for receding one of these hooks from the other, thereby putting strain upon the yarn, and a mechanism for recording the amount of such strain and

also of the elasticity. The best form is on the dead-weight principle.

Hard Twist.—A yarn which contains more than the usual number of turns per inch, and is consequently employed only in special cases. Any twist more than the square root of the count multiplied by four should be ranked as a hard twist.

Harlequin Check.—A plaid effect of a somewhat striking character in three or more distinct colours.

Head-end.—The commencement of a piece (in the loom).

Head-lease.—A term applied to the arrangement of the threads at the commencement of a warp, usually end-and-end.

Heald or Heddle.—An apparatus composed of two wooden shafts, the necessary cords, and the mail in the centre; a series of which control the warp in weaving.

Hemp.—The term hemp is often used in a generic sense, and is applied to fibres derived from entirely different plants. Sunn hemp is yielded by a species of *Crotalaria*, Manila hemp by a wild plantain, sisal hemp by an aloe (*Agave*), while "Chinese hemp" is applied indiscriminately to the fibre of an *Abutilon* pineapple.

Henrietta.—A cloth usually made from silk warp and from fine botany weft with a 2/1 weft twill heavily wefted.

Herring-bone.—A striped design, in which, by means of special drafting or a special weave, a certain number of threads are twilled first to the right and then to the left, thus opposing each other and giving the appearance of a herring-bone.

Honeycomb.—A type of interlacing which causes marked depressions and elevations of warp and weft, thus giving to a fabric more or less the appearance of being honeycombed.

Hopsack, Matt or Basket Weave.—A weave which is produced by dividing the warp into two sheds only, a 2/2 hopsack being produced by two threads and two picks working together; the 3/3 hopsack by three threads and three picks working together.

Hot-Pressed Finish.—A finish which is given to pieces to obtain the desired handle, and also to prevent the colour from bleeding.

Indigo.—A vegetable colouring matter obtained from a leguminous plant found in India, Africa, and America, of the genus *Indigofera*.

Ingrain.—A term particularly applied to certain carpets

indicating that the wool employed has been coloured prior to the manufacturing of the carpet.

Irregular Sateen.—A weave based on the sateen, but including certain irregular indications.

Italian Cloth.—A cloth made of cotton warp and fine botany or cotton weft, the weave being 5 sateen weft face, and the balance of the cloth a great number of picks to comparatively few threads. These fabrics are usually woven from black warp and grey weft, being piece dyed.

Jaconettes.—Tangibs, mulls, cambrics, and nainsooks are all varieties of plain cloth differing in width, length, counts of yarn, reed, and picks. These goods are all woven in the grey.

Jean.—A cotton term for a three-shaft twill 2/1 made with weft predominating.

Jeanette.—A similar fabric to the jean in which the warp predominates.

Jute.—The fibre from the *Corchorus Capsulasis* and other species. It is grown in India, China, America, and West Africa, and may be considered essentially a tropical plant.

Kaai Finish.—A type of finish imparted to crepon fabrics which have been manufactured from cotton and mohair. The cotton is caused to shrink, thus giving to the mohair the crinkled appearance associated with crepons.

Kersey.—A coarse worsted or woollen fabric of a serge-like character.

Keymo Finish.—A finish—said to consist in running the fabrics through a sulphuric acid solution—given to all-wool goods such as flannels, shirtings, etc., to render them unshrinkable.

Kink.—A snarl or curl produced by a hard-twisted thread receding upon itself.

Kirtle.—A mantle or upper garment.

Knickerbocker Goods.—A fabric in part or entirely made from knickerbocker yarns.

Knickerbocker Yarns.—Yarns which are spotted or striped often in several colours. They may be produced in several ways, but the true knickerbocker yarn is produced by flecking the spotting material on to the carder.

Knitted Fabric.—A fabric composed of a yarn interlacing with itself as distinct from a woven fabric in which two series of threads cross one another at right angles.

Knop Yarn.—A yarn upon which knops or lumps of yarn of one or more colours appear at intervals.

Knubs.—Waste silk produced during the operation of winding off from the cocoon.

Kurkee.—A coarse kind of blanket.

Lasting.—A fine, durable fabric made from strong wool or cotton, of a somewhat hard handle, but smooth in appearance.

Lawn.—A type of fine linen cloth usually employed as a dress fabric, the name being derived from the French "linon".

Lea (linen term).—The hank of 300 yds. in length employed in the linen trade. The number of leas per pound indicates the count.

Leaf.—A term sometimes used for a heald shaft.

Lease.—The division of the threads in a warp—either 1 and 1, 2 and 2, 8 and 8, 16 and 16, etc.

Linen.—A yarn or cloth made from fibres obtained by the process of retting, scutching, etc., the flax plant.

Lining.—A cloth usually made from cotton warp and cotton, alpaca or botany weft according to the type of cloth required, a sateen weave being usually employed. The Italian is a particular example.

List.—The edge or selvedge of a piece.

Listed.—A defect which occurs on the list or edge of a piece, such as the edge being torn away, stained or otherwise damaged.

Loading.—A method of adding weight to either yarn or cloth by loading with various substances.

Log-wood.—A wood extensively employed in the dyeing trade mostly for dyeing blacks.

Looker-over.—A person who looks over or passes pieces after they leave the loom and after the dyeing or finishing off operations. It is the duty of the looker-over to report damages, etc.

Looming.—The act of drawing the warp into gears which will ultimately be placed in the loom in a devised order. The term is very occasionally applied to putting the gears into the loom.

Loop Yarn.—A yarn which is made with loops at various distances apart as desired, usually made at two operations. It is largely employed in the production of astrakhan fabrics.

Lump.—A length of cloth which is woven double the ordin-

ary piece length, this particular length varying from 100 to 140 yds. of warp.

Lustre.—The glossy or shiny appearance which mohair, alpaca, and some English wools possess, and which causes materials made from them to look bright.

Lustre (Piece Term).—A piece made from a fine cotton warp and mohair or lustre weft with the plain weave. In the grey state, the fine cotton warp bends and the comparatively thick lustre yarn is straight, but in finishing, the cotton warp is pulled straight and the weft bent, and it is this bending of the weft which gives the lustre to the piece.

Lustre-wool.—Long wool from the Lincoln, Leicester, Wensleydale and other long wool sheep.

Make.—A term indicating the interlacing or weave structure of a fabric, sometimes employed even in a more general way.

Making-up.—A process which finished goods are put through, such as rolling, ticketing, papering, etc., in preparation for the market; different markets require goods to be made up in special ways.

Mantle Cloth.—A cloth suitable for making into cloaks or loose outer garments.

Mantua.—A lady's gown.

Marceline.—A thin silk tissue.

Marl.—A term sometimes applied to three-fold twists, but more correctly applied to a yarn coming between the wool mixture and the ordinary two-fold twist. It is produced by twisting the colours required together prior to the spinning, that is, in the roving form.

Marquise Finish.—A very lustrous finish applied to very fine set cotton venetians, etc.

Matelasse.—A type of fabric usually produced from a cotton warp interwoven with flush weaves of mohair weft; or it may be produced from mohair or silk warp or cotton or low quality weft. The true matelasse should have wadding material introduced to give a more or less raised appearance.

Mat-Weave.—Weaves of the hopsack type which give to fabrics an appearance similar to closely interwoven mats.

Maud.—A greyish striped wool plaid originally worn by shepherds in Scotland.

Mayo or Campbell Twill.—An irregular 8-sateen derivative

weave no doubt in the first instance employed for Scotch tartans but now largely employed in all types of fabrics.

Mazambeque.—A thin gauze fabric generally produced with a cotton warp and mohair weft, but distinguishable from an ordinary mohair fabric by its flimsy gauzy texture.

Melange.—A yarn produced from printed tops being distinguishable from a mixture yarn in that many fibres have more than one colour upon them whilst in a mixture yarn each fibre is the same colour.

Melton.—A heavily milled fabric in which the fibres have been caused to stand straight up and then the piece cut bare to obtain the typical melton. Careful selection of the material, spinning of the yarn, the correct twist for warp and weft, together with careful weaving and finishing is necessary. Both light and heavy meltons are now made with cotton warp and woollen weft.

Mending.—The repairing of a fabric, such as stitching in threads and picks which have been allowed to run down during weaving.

Mercerizing.—A process applied to yarns or fabrics to either shrink the same, or if the shrinkage is resisted by mechanical means to give permanent lustre to the same. Both yarns and fabrics after mercerizing under tension are so lustrous that they may be used as silk substitutes.

Milled Cloth.—A cloth which has been heavily milled and consequently presents a close compact surface.

Millerain.—A finishing process which causes the fabric subjected to it to be water and spot proof.

Milling.—The operation whereby fibres and threads composed of wool are caused to interlock more closely one with another.

Mixture Cloth.—A cloth produced from any type of mixture yarn.

Mixture Yarn.—A yarn in which two or more distinct colours are apparent. These colours are usually on distinct fibres, and the fibres are mixed together to produce the required mixture tone whether in the wool state or in the top or sliver state. Melanged types are also gilled to produce what is known as the “melange mixture,” in which colours are supposed to be more evenly blended than in the case of the ordinary fibre mixture.

Mock-gauze.—A type of fabric which, although woven in ordinary healds, has the appearance of a gauze or leno.

Moire.—A term applied to the watered or clouded appearance usually given to textiles by pressure in conjunction with a special set and count in warp and weft.

Moire-antique.—A type of figured silks from which waistcoats are made.

Moirette.—A fabric similar to the moreen but of lighter make.

Moquette.—A carpet of superior quality originally made by hand, but now mechanically. The pile consists of knotted tufts, and is not as a continuous warp thread.

Moreen.—A plain weave fabric composed of fine warp and thick polished cotton weft, so constructed that upon the fabric being pressed with itself it develops an excellent or moire effect. Sometimes these fabrics are figured with extra warp.

Mungo.—The waste produced by grinding up the harder cloths such as worsteds, woollens, etc. It is usually of a fine fibre nature though very short, and is used in the woollen trade as a blending material for purposes of cheapness.

Muslin.—A very fine, thin, open, plain cotton cloth.

Muslin-de-laine.—A muslin, originally a muslin texture, constructed of wool yarns, but now frequently made of cotton and wool.

Muslinet.—A sort of coarse muslin.

Nankeen.—A species of cloth originally from China made of a sort of yellowish cotton.

Nap.—A somewhat heavy woollen cloth severely raised in the finishing operations to give it the nap from which it derives its name.

Napery.—Linen for domestic use especially at table.

Nead-end.—The show end of woollen pieces.

“Neat” Silk.—Another term or “net” silk.

“Net” Silk.—Silk yarns produced from the cocoons by winding or throwing the single fibres as threads, as distinct from spun silk obtained by tearing the material into a fibrous mass and preparing and spinning as in the case of wool.

Noil.—The short fibre extracted from the long during the combing process in worsted, cotton and silk yarn preparation. It is used for blending purposes in worsted, and alone, or as a blend in woollen for purposes of cheapness.

Oatmeal Effect.—A style of mixed interlacing which gives

a mixed "crape" appearance to the fabric, of an appearance something like oatmeal.

Open Band Twine.—The direction of the twist in yarns produced by open spindle bands as distinct from that produced by crossed spindle bands. Open band or weft twist is from left to right, looking up the thread. Cross band or warp twist is from right to left, looking up the yarn.

Organzine.—A term applied to reeled or net silks in which several twisted strands are again combined (with maximum twist) into yarn suitable for warp.

Orlean.—A term applied to fabrics made from a fine-spun cotton warp and a worsted weft, the interlacing being plain weave.

Overcheck.—A check introduced over and above a ground or more subdued check. This type of design is mostly employed in worsted coatings and in some few dress fabrics.

Overspun.—Yarn which is very uneven owing to its having been drafted to too high a count for the material of which it is composed, the result being that it is twitty and in the thin places there is a preponderance of twist while in the thick places there is an absence of twist.

Oxford Shirtings.—Coloured cotton shirtings in which the ground weave is usually plain. There has been a tendency of late, however, to figure these goods as desired by means of dobby weaves.

Paisley Shawl.—An elaborately extra weft figured shawl; style imitated by the Paisley weavers from the cashmere shawls originally imported from India.

Pantograph.—An instrument for copying on a reduced or enlarged scale, designs or plans.

Paramatta.—A thin fabric composed of a cotton warp and a botany weft interlaced 2 × 1 weft twill.

Pattern.—A specimen or sample of a particular style of yarn or fabric.

Pattern Weaver.—A power or hand loom weaver whose time is occupied in producing "blankets" of new styles.

P. C. (Cotton Cop Term).—A term implying pin cop, that is, a small or weft size of cop.

Pea-jacket.—A thick woollen jacket worn by seamen.

Pegging Plan.—A plan reduced from a large design which

is required to be pegged on the loom lags, and which being so pegged, results, in conjunction with the draft, in the original design being produced.

Perch.—(a) A measure of $5\frac{1}{2}$ yards.

(b) Two rollers so fixed that fabrics may be rapidly passed over and examined in a good light.

Persian Cord.—A cloth made from worsted or cotton warp and worsted weft employing the plain weave, but with the warp threads working in twos, thus giving a rib effect.

Pick.—A single strand of weft reaching once across the piece. This term is also used to express the action of throwing or picking a shuttle in a loom.

Pick and Pick.—This implies the throwing of single picks of different colours into a fabric.

Piece.—A length of cloth woven from various warp lengths. As a rule the warp length is fixed, and under varying conditions will yield varying lengths of fabrics. The following are the principal warp lengths: Bradford, 70 yards; Huddersfield and Halifax, 60 yards; Lancashire, 100 yards.

Piece Glass.—A small magnifying glass of suitable size employed for the examining and counting of the threads and picks per inch or one-quarter inch in cloths. The most suitable sizes are 1 in. \times 1 in. and $\frac{1}{2}$ in. \times $\frac{1}{4}$ in.

Pile.—A nap of fibre on the surface of the fabric.

Pile Fabric.—A fabric in which either special threads or picks are caused to stand up from the surface. If left looped as more frequently is the case in warp piles the fabric is spoken of as "terry". If cut, as is sometimes the case with warp piles, and usually the case with weft piles, the fabric is spoken of as "cut".

Pilot Cloth.—A stout woollen cloth with a nap surface used for great overcoats, such as are worn by pilots.

Pina Cloth.—A fabric made in Manilla from the fibres of the leaf of the pine-apple plant.

Pirle Finish.—A finish which is given to all-wool dress goods with the idea of rendering them shower and spot proof and unshrinkable.

Plaid.—A woollen garment usually of a check style, still worn in the Highlands of Scotland. The term no doubt originated from the plaiting of straws or other materials of which the garments were in the first place made.

Plain Cloth.—The simplest form of a woven texture, both

warp and weft being over one and under one. By changes in materials, sizes of yarn and balance of structure, many of the best recognized styles of fabrics are produced with this interlacing.

Poncho.—A woollen cloth worn in South America with a slit in the middle for the head to pass through.

Poplin.—A plain weave fabric originally made with a fine silk warp and a comparatively thick gassed worsted weft, thus having the appearance of a warp ribbed fabric. It is now made in other materials such as worsted and cotton.

Proofing.—A process through which goods pass whereby they are rendered impervious to rain and are also supposed as a rule to be unspottable and unshrinkable.

Prunelle Twill.—The 2 and 1 warp twill taking its name from the possibilities of producing by this weave a bird's eye effect.

Prunello.—A light smooth fabric made from woollen yarns.

Quality.—The extent to which material in its various forms—wool, top or yarn—possess the features or characteristics essential to its successful utilization. In wool, quality chiefly refers to fineness in fibre, this being closely related to the fineness in yarn counts, the wool will spin to, but other features such as length, lustre or colour, soundness, elasticity, and felting property, are also involved.

Quality Number.—The count number by which wools, tops, noils, and yarns are known, this being based on the count of yarn the material will spin to. Thus, 60's tops are supposed to spin approximately to 60's yarn and should consequently be made from a 60's quality of wool. 60's noils are the noils taken from 60's quality of wool during combing.

Quilt.—A fabric composed of two fabrics stitched together, usually having wool, cotton, or some soft fibre as a kind of wadding, between.

Raising.—A process applied to heavy woollen goods and some few lighter weight goods, whereby fibres are raised out of the body of the cloth on to the surface.

Ramie.—A bast fibre obtained from the stems of one or other of the plants *Boehmeria nivea* or *Boehmeria tenacissima*.

Raw Silk.—A term applied to the fibre produced by the silkworm in the form of cocoons, and the term also applies to the thread produced by reeling a given number of cocoons together, thus each thread being composed of a number of filaments.

Reed Marks.—Marks or lines running up the warp way of the cloth, usually due to the warp threads being arranged too many in a dent or to faulty setting of the loom.

Reedy.—A term applied to cloth which shows reed marks.

Rep.—A term usually applied to fabrics of the warp ribbed class in which the rib or rep runs weft way. It is sometimes, however, applied to the weft rib also.

Rhea (See “Ramie”).—Sometimes this term is limited to *Boehmeria tenacissima*.

Rib Weave.—A weave in which, either owing to the interlacing or to the yarns used, warp or weft is the stronger and remains comparatively straight while the weaker material does all the bending. Thus in warp ribs the weft is the stronger, causing the warp to bend and form a warp surface rib running from list to list of a piece, while in weft ribs the warp is the stronger, forming a weft surface rib running lengthways up the piece. The ordinary corkscrew may be regarded as a (running or) twilled warp rib.

Rigged.—The term applied to a piece folded selvedge to selvedge.

Rigging.—The folding of a piece down the centre (after placing selvedge to selvedge) so that it may be handled with greater facility.

Rolling.—The rolling of a piece on to a board in preparation for the market. The pieces are sometimes measured at the same time for some market. Pieces are also rolled on to a steel plate which is afterwards pulled out.

Run.—A term applied to the same batch of wool which is run through the same set of machinery at one and the same time.

Russell Cord.—A cloth made from cotton warp and worsted weft employing plain weave, but with the warp woven double ends instead of single to give a rib or cord effect.

Samite.—A silk fabric.

Sarcanet.—A fine, thin, woven silk fabric.

Sateen.—The term applied to weaves which produce the satin (warp or weft) effect.

Satin.—A warp or weft surface cloth in which the intersection of warp and weft are so arranged as to be imperceptible, the fabric thus possessing the smoothness for which satins are noticeable.

Satinet.—An imitation of the true satin in mercerized cotton or other yarns.

Schappe.—A term referring to the yarn spun from silk waste which has not been fully discharged or degummed.

Selvedge.—The edge of a piece, this term being synonymous with the term “list”. Different yarns and different interlacings are often applied to give both strength and appearance to the selvedges of fabrics.

Serge.—A term applied to fabrics of a twill character and of a rough make as distinct from the finer make of worsteds; the weave is usually 2/2 twill and the yarns woollen or crossbred.

Set.—The term implying the number of threads of which a cloth is composed within a given width. The simplest application of the term is to say that a cloth is “set” so many threads per inch. In Bradford and other districts, however, the “set” implies the number of times a convenient number of threads repeat in a given distance: thus the Bradford “set” implies the number of times that 40 threads (that is a beer) repeats in 36 in.

Setting of Yarns and Pieces.—In the case of yarn, this is effected by storing the yarn in a damp place until the curl is taken out of it: sometimes the yarn is set by being steamed.

Shading Effects.—Effects produced by different colours or qualities of materials or by weave, the result being a gradual change of appearance from one colour or structure to another.

Shag.—A fabric with a long coarse nap.

Shearing (Finishing Term).—The cropping or cutting of the loose fibres from the surface of the fabric by means of the circular shearing or cropping machine.

Shed.—The opening made across the warp by raising some threads and depressing others; through this opening or shed the shuttle passes leaving the weft behind.

Shedding.—The dividing of the warp threads into two parts to form a passage for the shuttle.

Shirting.—A term applied to the fabrics made of pure wool; pure cotton or a mixture of the two; the colourings and structure are usually of a particular style.

Shoddy.—The worked-up waste of woollen or worsted goods in which the initial material has been of the long fibred class, as against the short fibred class which is worked up into mungo.

Shot Silk.—Silk usually woven with contrasting colours in

warp and weft so that under certain conditions the warp colour predominates and under other conditions the weft colour predominates.

Shower Proofing.—Various finishes such as cravenette, pirlé, etc., to which cloths are subjected, rendering them shower proof.

Shrinkage.—The amount of contraction which most cloths are subjected to from the loom to the finished state. It is interesting to know that the shrinkage of cloth is dependent upon three factors, namely, structural shrinkage, shrinkage due to twist in the yarn, and shrinkage due to absolute contraction of the fibres of which the yarn is composed.

Sicilian.—A cloth made from a fine cotton warp and a thick mohair weft employing the plain weave.

Silesia.—A species of linen cloth originally made in Silesia.

Singeing.—An operation in finishing to clear the yarn or cloth from all superfluous fibres. There are two forms, gas and plate singeing.

Single Yarn.—Yarn composed of only one strand or thread.

Singles.—A term referring to “thrown” silk threads which consist of minimum strands sufficient for manipulation. These are doubled if necessary in various numbers to give the requisite strength, appearance, and handle to the fabrics into which they are manufactured.

Sizing.—The process of dipping the warp into a suitable size in order that the threads may be strengthened and rendered more compact.

Spun Silk.—A yarn composed of fibres of silk which have not been reeled from the natural cocoon length, but have been dressed in lengths varying from five to twelve inches, to be later made into a cheaper type of yarn.

Stained (Cloth Term).—Marks or stains or a different colour of dye, etc., these getting on to the cloth while it is passing through the various operations, making it more or less defective.

Stoving.—The submitting of wool, yarn, or cloth in a damp state to an agent, such as sulphur fumes, with the object of bleaching it.

Straight Gate.—This is equivalent to straight draft.

String.—A length equivalent to 10 ft. English warps are frequently calculated by the string.

Stripe.—A term applied to patterns running longitudinally

with the warp in textile fabrics, produced by employing a special weave or two or more colours of warp specially arranged.

Stud Ewe.—A pure-bred ewe kept for breeding stud stock.

Stuffs.—Dress and lining cloths produced from cotton warp and worsted weft.

Tabby.—A term largely employed in the plush districts for plain cloth.

Tabs.—The bits of cloth cut from piece ends.

Taffeta.—A fine cloth made from silk warp and botany weft employing the plain weave.

Tail-end.—The end of a piece. The reverse to head-end.

Taker-in.—A person engaged in the taking-in or passing of pieces as they come from the loom.

Tartan.—A check cloth usually of an elaborate design and colour scheme, probably originated in the Highlands of Scotland, where each clan has its special tartan.

Tender.—A top, yarn, or cloth which has been abnormally weakened during any of the operations through which it has passed.

Tennis Cloth.—A cloth usually of a lightish texture and colour, soft to the handle, and usually made from wool.

Tentering.—A finishing process in which goods are widened out or tented by being hooked on to chains, which expand to the width required, then carry the cloth through a heated chamber or over gas jets so that the cloth is dried in this position.

Terry.—Uncut or loop pile.

Thrown Silk.—The silk produced on the throwster's mill. This is usually made from cultivated silk and from unbroken cocoons, the singles having previously been reeled. It is finer, stronger, and more lustrous than the spun type which is made from waste silks. There are various types, viz. singles (which may be considered as a thrown silk) tram, organzine, no-throw, and sewing silks.

Tinting.—A process of covering yarn with a fugitive colour so that it may be readily distinguished when in contact with other yarns. For example, for weaving right and left twist yarns, one of them is tinted so as to prevent them becoming mixed.

Tram.—Weft silk of the thrown type, arranged in the form of two, three, or more threads sufficiently twisted for strength but with a minimum of twist in, so that lustre may be preserved.

Trap.—A weaver's term for a smash or breaking down of ends caused by something going wrong in the loom, especially the shuttle being caught in the shed.

Tube.—A piece of rolled paper or cardboard shaped as a tube on which material in yarn form is wound. Its advantage lies in its weight and in the small cost at which it can be produced.

Tulle.—A very flimsy texture made from fine silk yarns.

Tussah Silk.—The wild silk of India and China. These cocoons are generally pierced, that is, open at one end or more or less damaged, and must thus form spun silk as distinct from thrown silk. In fibre it is usually less lustrous and coarser than cultivated silk, but its low price makes it very acceptable. Special types are exceedingly valuable for plushes as the fibres appear to split at the end.

Tweed.—A fancy coloured woollen cloth originally made from Cheviot wool, and said to have taken its name from an attempt being made to imitate the coloured stones on the bottom of the river Tweed.

Tweel.—The Scotch name for "Twill".

Twill.—An interlacing effect running in a diagonal direction across the piece, as distinct from non-twill effects which will follow the direction of either warp or weft, or may have no definite direction whatever.

Twist.—The turns inserted into a yarn to bind its fibres together and thereby to add more strength for manipulation and weaving. The amount of twist applied varies according to the material, process, means employed for its application, and ultimate requirements.

Twisting.—The binding of the fibres into a yarn to add to its strength. This is definitely accomplished by running the spindle at a decided number of revolutions according to the number of inches delivered by the front rollers of the spinning frame.

Twitty.—A term applied to yarn which is irregular, that is, thick and thin, the thin places being below the count required, and the thick places above. The defect is caused by the material being drafted to too high a count, or to either defective or badly running rollers.

Union Fabric.—Fabrics composed of mixed materials, usually a cotton warp and worsted or wool weft. The term, however, may also be applied to silk and cotton or silk and wool mixtures.

Union Yarn.—Yarns spun from a mixture of cotton and wool, silk and cotton, or silk and wool. This term is oftener applied to twist yarns of these materials rather than to carded or gilled mixtures.

Valentia.—A fabric composed of woollen, worsted, cotton, and silk yarns specially designed for waistcoats.

Variiegated Yarn.—A yarn composed of a number of colours usually obtained by printing.

Veiled Wool.—The wool partly disorganized in staple in which fibres from one staple have become attached and mixed to fibres from another staple.

Velvet.—A fabric covered with a close, short pile of silk formed on the warp pile basis.

Velveteen.—A fabric covered with a close, short, fine pile of cotton introduced on the weft pile basis.

Velvet Finish.—A finish in which a fairly dense pile of a velvet description is produced upon a woollen fabric by wet raising in various directions, and then cropping just to level the pile, but not to leave the fabric bare.

Venetian.—A fabric of an upright warp twill character produced by a sateen warp weave with a dot added. The term was originally applied to a dress face woollen cloth, but later worsted dress venetians have been made, and later still cotton venetians.

Vesting Fabric.—A fabric intended to be made up as a waistcoat.

Vicuna Wool.—The wool from an animal of the camel family which runs wild in Peru. Of this there is only a limited supply. The material is fine, long, and lustrous, and has a remarkably soft handle.

Viyella.—A light cloth largely made from cotton and wool scribbled together, principally used for underclothing.

Voile.—An open cloth of a canvas type made with plain weave interlacing, and hard twist cotton or worsted yarn.

Wadding Pick.—A thick pick usually of low quality which is inserted often without interlacing between the two fabrics in double cloths and between the two warps in a warp-backed structure, thus giving weight to the fabric and a certain amount of solidity without being seen or without being detrimental to the fabric in other respects.

Warp.—The series of threads placed longitudinally in the

loom and spread over any desired width. Each thread in the warp passes from the back rest, usually through lease rods, and then through a mail of one of the several heald shafts and forward through the reed to the front rest, over which the cloth woven passes. It is by means of the heald shafts that warp threads are lifted or depressed to enable the weft yarn thrown in by the shuttle to be interlaced according to requirements with the warp threads. Warp yarns as a rule are stronger than weft yarns, as they have to bear a more severe strain during the operation of weaving.

Warp Dresser.—One who sleys and dresses warps from the ball form or from warper's beams on to the true loom beam ready for the threads being passed through the healds or twisted to the warp already in the loom.

Warper.—One who makes warps by hand. The attendant of a warping mill.

Warp Rib.—A warp surface weave in which the weft picks being thicker or grouped together in greater numbers, lie straight, causing the warp threads to bend round them and thus produce a ribbed appearance across the piece, but with a warp surface. Hence the term warp rib.

Warp Wool.—Wool of a sound type, full, bold, compact, and free in its growth; in fact, of a character specially suiting it for warp yarns.

Watering.—A finishing process by which watered patterns are produced on plain woven fabrics. The principle of this operation is that two fabrics of precisely similar build when pressed together naturally water one another by the coincidence or non-coincidence of the threads or picks causing flatness or ribbedness of a sufficiently marked character under conditions of heat and pressure.

Waterproof.—A fabric which is made waterproof by one of three methods :—

(1) By some physical action on the material of which the fabric is composed.

(2) By impregnating the material with some water-resisting agent.

(3) By coating the material with a film of rubber or other water-resisting agent.

Weave.—The interlacing of warp and weft with one another to form a suitable cloth.

Weaving.—The process of producing a cloth by the insertion of weft between the warp threads in such a way as to form the desired interlacing.

Weft.—The series of threads—technically termed picks or shoots—thrown into a cloth at right angles to the warp by means of the shuttle. Weft yarns, as a rule, are softer spun and consequently weaker than warp yarns, some in fact only just standing the strain of weaving.

Weft Bars.—Broad bars or stripes running across fabrics usually caused by spools of different counts of yarn, different runs of yarn or different twists of yarn being woven in alongside one another. Such bars may also be caused by defective letting-off and irregular taking up, resulting in a variation in the picks per inch.

Whip Thread.—The crossing thread in a gauze fabric.

Winsey.—A cloth composed of a cotton warp and a woollen weft of a fairly heavy type.

Wool-dyed.—A term applied to coloured fabrics in which the colour was originally dyed on the wool in either the loose or top form as distinct from fabrics in which the colour has been placed on the wool by either yarn dyeing or piece dyeing.

Woollen Fabric.—The typical woollen is a full handling fabric in which structure and colouring cannot readily be defined, on account of the threads and picks and even the fibres having become thoroughly intermingled in passing through the operations of finishing. To insure a typical woollen fabric, the material selected, the method of preparation of spinning and weaving and of finishing, must all be applied with the woollen type of fabric in view. Strictly speaking, a woollen fabric should be made of fine wool (possibly noils included), but in the Law Courts a definition of woollen fabrics as being composed of mungo, shoddy, cotton, etc., has been accepted.

Woollen Yarn.—Yarns spun from wool in which anything but a parallel position of the fibres is noticeable as distinct from worsted yarn in which the wool fibres are markedly parallelized.

Worsted Coating.—Cloths for men's wear made from fine crossbred or botany yarns.

Worsted Fabric.—The typical worsted is a clear, smooth handling fabric in which structure and colour are clearly defined owing to the smoothness and clearness of both the yarns and the

interlacing, finishing in this case often developing clearness rather than otherwise. Of course there is every conceivable variety of fabric between the woollen and the worsted.

Worsted Yarn.—Yarns spun from wool in which the wool fibres are markedly parallelized as distinct from woollen yarns in which anything but a parallel position of the fibres is noticeable. Almost without exception, worsted yarns are combed yarns, but it is quite conceivable that wool fibres might be so parallelized by careful drawing and spinning that practically a yarn of worsted characteristics might be produced without combing. The old definition based upon length of fibre is to-day absolutely untenable, as in many cases shorter wools are spun into worsted yarn than into woollen yarn.

Xerga.—The Spanish name for a peculiar woollen blanket. Our common market term “serge” is derived from this word.

Yarn.—A filament of twisted fibres or any thread structure which has been spun.

Yarn-dyed.—A term applied to fabrics in which the colour has been introduced by dyeing the material in hank or cop form.

Zephyr.—A very light cotton cloth made in plain, stripe, or check form.

Zibeline.—A dress fabric made in cross-bred yarns, strongly coloured, usually in stripe form, and in finishing hardly raised with fibre laid in one direction.

Zig-Zag.—A term sometimes applied to herring-bone textures and designs.

APPENDIX.

1. Huddersfield weavers' standard wage list.
2. Leeds fine worsted, weavers' standard wage list.
3. Fancy dress goods manufacturers' warp-dressers' wage list.
4. Fancy dress goods manufacturers' twisters' price list.
5. Drawing-in and twisting cotton-warps price list.
6. Winding and beaming cotton yarns price list.
7. Bradford commission weaving price list.
8. Standard wage list at a Batley shoddy mill.
9. Uniform list of prices for weaving cotton goods.

List 9. The Huddersfield Weavers' Standard Wage List.

(For men weavers on wide looms—62 to 90 in. reed space).
 (One man to one loom.) Price in pence per 18 strings of 10 ft.
 each (60 yd. cloth). Looms running at 80 picks per minute :—

(a) *For Mixture or Solid Coloured Worsteds and Woollens :—*

	<i>A. One Shuttle.</i>	<i>B. Two Shuttles.</i>	<i>C. Three Shuttles.</i>	<i>D. Four Shuttles.</i>
(1) One beam.	3d. per pick per in., plus 1s.	5 per cent on 1A.	10 per cent on 1A.	17½ per cent on 1A.

(2) Two beams. 17½ per cent on the above.

(b) *Fancy Coloured Worsteds and Woollens :—*

(3) One beam. 5 per cent on those indicated at 1, A, B, C, D.

(4) Two beams. 32½ per cent on those indicated at 1, A, B, C, D.

(c) *Looms running at from 100 to 120 Picks per Minute :—*

(5) Deduct 5 per cent from the above prices.

(d) *Add 9d. per Cut for every two Heald Shafts above 16.*

(e) *For Men Attending to two Looms, These will be Paid 35 per cent less than Above Scale.*

(f) *Women's Wage List :—*

(1) Deduct 12½ per cent from above men's scale.

(2) For white worsteds (botany) 1 beam, 1 shuttle = 2·6d. per pick per in.

(3) For serges (crossbred) 1 beam, 1 shuttle = 2·12d. per pick per in.

List 10. Leeds Fine Worsted Weavers' Standard Wage List.

A large worsted manufacturer near Leeds submits the following as his rate of wages to weavers :—

Plain Looms.— $1\frac{1}{2}$ d. per pick per in. for 60 yd. of warp per cut.

Extras per Piece :—

1. 1d. per shaft above 12.
2. For colours and mixtures, 6d.
3. For woollen weft, 6d.
4. For 2 beams, 1s.
5. For every 10 sets above 100, 6d.
6. For looms with boxes at one end, 1s.

Dobercross Looms.—2d. per pick per in. for 60 yd. of warp per cut.

Extras per Piece :—

1. Each shuttle above one, 1s.
2. For two beams, 1s.
3. For colours and mixtures, 6d.
4. For woollen weft, 6d.
5. 1d. for each shaft above 18.

Hattersley Four-box Looms.— $1\frac{5}{8}$ d. per pick per in. for 60 yd. of warp per cut.

Extras.—As Dobercross Looms.

List 11. Fancy Dress Goods Manufacturers' Warp-dressers' Wage List.

<i>Silk and Cotton Warps (1 colour).</i>		<i>Worsted Warps, Serges, 2 Balls.</i>	
Up to 1000 ends,	$3\frac{1}{2}$ d. per 100 yd.	Up to 1000 ends,	$3\frac{1}{2}$ d. per 100 yd.
1001 „ 1500 „	5d. „ „	1001 „ 1500 „	4d. „ „
1501 „ 1750 „	6d. „ „	1501 „ 2000 „	5d. „ „
1751 „ 2000 „	$6\frac{1}{2}$ d. „ „	2001 „ 2500 „	6d. „ „
2001 „ 2250 „	7d. „ „	2501 „ 3000 „	7d. „ „
2251 „ 2500 „	$7\frac{1}{2}$ d. „ „	3001 „ 3500 „	8d. „ „
2501 „ 2750 „	$8\frac{1}{2}$ d. „ „	3501 „ 4000 „	9d. „ „
2751 „ 3000 „	9d. „ „	4001 „ 4500 „	10d. „ „
3001 „ 3250 „	10d. „ „	4501 „ 5000 „	11d. „ „
3251 „ 3500 „	$10\frac{1}{2}$ d. „ „		
3501 „ 3750 „	11d. „ „		
3751 „ 4000 „	12d. „ „		
Fast dyed warps	2d. „ „		
extra.			
Fast shirting warps	4d. „ „		
extra.			
Undyed or unbleached warps	1d. per 100 yd. less.		

Fast Dyed Worsted Warps.—Less than half-dyed, double grey price.

More than half-dyed, 3 times grey price, and 1d. extra for every 250 ends over 4000.

Warps of more than 1 colour :—

2 cols.	3 cols.	4 cols.	5 cols.	6 cols.
1d.	2d.	3d.	4d.	5d. per 100 yd. extra.

Warps of above 3000 ends :—

2 cols.	3 cols.	4 cols.	5 cols.	6 cols.
2d.	3d.	4d.	5d.	6d. per 100 yd. extra.

Warps on 7/4 beams, 1d. per 100 yd. extra. Running warps back, half price. Cutting warps in two, 3d. per 1000 ends. Tying ends 4d. per 100 ends.

Sleying plain warps	1 and 1	1 and 1	1 and 1	1 and 1	1 and 1	1 and 1
	4d.	6d.	8d.	10d.	per 100 ends.	

Sleying distinct colours :—

2 cols.	3 cols.	4 cols.	5 cols.	6 or more cols.
8d.	12d.	16d.	20d.	22d. per 1000 ends.

Sleying one in reed, double price.

All single twists cotton warps to be paid 1½d. per 100 yd. more for dressing than twofold. 10 per cent to add.

List 12. Fancy Dress Goods Manufacturers' Twisters' Price List.

Twisting 10d. per 1000 ends for thick genappe warp, and serges up to and including 20's sett and woollens.

Twisting 5d. per 1000 ends plain warps. Stripes 5½d. and ½d. per 1000 ends extra for single twists, and 1d. per 1000 ends extra for twisting in loom.

Sleying 4½d. per 1000 ends 4 or 2 or 3 in reed, one in reed 9d.

„ 6d. per 1000 ends Pekin stripe, 2 in dent grounds.

„ 12d. per 1000 ends Pekin stripe, 1 in dent and missing dents.

Side ends or cast out ends filling up 2d. per 100 ends.

Looming 4 to 8 shafts plain warp, 10d. per 1000 ends } Sleyed 4

„ 9 to 16 „ „ „ 12d. „ „ „ } in dent.

„ stripes 2d. per 1000 ends more than plain.

„ 2 in mail 1½ times price (per 1000 mails) 1 end in mail.

Sleyed 2 and 3 in reed, 2d. per 1000 ends more than 4 in reed.

„ 1 „ „ 6d. „ „ „ „ „ „ „

Harness looming 1s. 3d. per 1000 ends.

„ stripe 1s. 5d. per 1000 ends.

6d. extra for roller.

Time 6½d. per hour or as agreed to.

Broken leases, ½ hour's time for shirting-warps, 1 hour for dress warps.

2d. per 1000 ends extra for all casting out in frame-warps.

- 2 ends in mail twisting $1\frac{1}{2}$ times ordinary price per 1000 mails.
 3 ends in mail twisting twice " " " " "
 2 ends in mail slewing $5\frac{1}{2}$ d. per 1000 mails.
 3 ends in mail slewing $6\frac{1}{2}$ d. per 1000 mails.
 Healds dressing $\frac{1}{2}$ d. each.
 Looming wire healds 1s. extra.
 Organzine warps 4000 ends and over 1s. extra.
 Organzine warps under 4000 ends 6d. extra.

List 13. Drawing-in and Twisting Cotton Warps Price List.*Drawing-in Grey Warps :—*

	Per 1000 ends.
1. Plain 4 shafts, up to 80 threads per inch	5 $\frac{1}{4}$ d.
$\frac{1}{4}$ d. extra per 1000 for every 10 threads over 80 per inch.	
2. Twills or sateens, 3, 5, 6 or 7 shafts, 2 in a dent	7d.
" " " 3 in a dent, $\frac{1}{4}$ d. per 1000 extra.	
3. Shaft work :—	
5 to 7 shafts	7d.
8 " 13 "	8d.
Above 13 shafts, $\frac{1}{4}$ d. per 1000 ends per shaft extra.	

Drawing-in Coloured Warps :—

1. Plain, one colour	6 $\frac{1}{4}$ d.
2. Shaft work :—	
5 to 7 shafts	8d.
8 " 13 "	9d.
Above 13 shafts, $\frac{1}{4}$ d. per 1000 ends per shaft extra.	

Twisting Grey Warps :—

1. Plain 4 shafts, 26's to 80's twist	4d.
" " " coarser than 26's and over 80's to 90's	4 $\frac{1}{4}$ d.
" " " over 90's to 100's	4 $\frac{1}{2}$ d.
" " " over 100's	5d.
2. All shaft work other than 4 shafts	5 $\frac{1}{2}$ d.

Twisting Coloured Warps :—

1. Plain, one colour	4 $\frac{1}{2}$ d.
--------------------------------	--------------------

Jacquards :—

1. Ordinary one beam—leased and loom front taken out for drawer	1s. 0d.
2. Unleased—loom front taken out for drawer	1s. 6d.
3. Re-douping and re-sleying combined (leno healds in front of harness)	1s. 0d.
4. Twisting only—ordinary one beam	6d.

	Per 1000 ends.
5. Twisting, and drawing the twisting through the harness and reed	6½d.
<i>Sleying.</i> The same price as twisting.	
Extras :—	
1. For each beam over one, 3d.	
2. Over 80's to 100's twist, ¼d. per 1000 ends.	
3. Over 100's twist, ½d. per 1000 ends.	
<i>Gauze Jacquards.</i> Time work.	
<i>Dobby Gauzes</i> :—	
1. One or two doup cloths and one beam	11d.
1d. per 1000 ends extra for each additional doup.	
2. Twisting :—	
In room	7d.
In shed	8d.
<i>Time Work.</i> Minimum price per hour.	
1. Drawing-in :—	
In room not less than 8d.	
In shed ,, ,, ,, 8½d.	
2. Twisting :—	
In room not less than 6d.	
In shed ,, ,, ,, 6½d.	

List 14. Winding and Beaming Cotton Yarns Price List.*Winding.*

16's to 18's Twist	1s. 4½d.
20's ,, 22's ,,	1s. 6¼d.
24's ,, 26's ,,	1s. 7¼d.
28's ,, 30's ,,	1s. 8¼d.
32's ,, 34's ,,	1s. 9½d.
36's ,, 40's ,,	1s. 11d.
40's ,, 44's ,,	2s. 0½d.
44's ,, 48's ,,	2s. 2d.
48's ,, 52's ,,	2s. 3½d.
52's ,, 56's ,,	2s. 5d.
60's ,, 62's ,,	2s. 6½d.

Beaming.

For beaming 400 threads, 17,500 yd., 5 wraps, the payment to be as follows :—

4½d. per beam for creeling, and 4¼d. for each wrap irrespective of counts of twist.

For every 10 threads or fraction thereof, one half penny up or down, but no deduction below 370 threads thus :—

For 400 ends, 5 wraps, 17,500 yd., the price will be 2s. 1 $\frac{3}{4}$ d. per beam including creeling.

For 441 to 450 threads, the price will be 2s. 4 $\frac{1}{4}$ d. per beam, including creeling.

For 379 threads and below the price will be 2s. 0 $\frac{1}{4}$ d. per beam, including creeling.

List 15. Bradford Commission Weaving Prices.

1. *Cashmeres*.—Grey warp on beam : 3 $\frac{1}{2}$ d. per pick per $\frac{1}{4}$ in. up to 50 in.

2. *Cashmeres*.—Warp in ball : 4d. per pick per $\frac{1}{4}$ in. up to 50 in.

3. *Serges*.—Warp on beam :—

3 $\frac{1}{2}$ d. per pick per $\frac{1}{4}$ in. up to 44 in.

3 $\frac{3}{4}$ d. " " " 46 "

4d. " " " 50 "

4 $\frac{1}{2}$ d. " " " 54 "

5d. " " " 58 "

With extra roller 1d. per pick per $\frac{1}{4}$ in. on above.

" " " and boxes 2d. per pick per $\frac{1}{4}$ in. on above.

4. *Amures*.—Warp on beam : 6 $\frac{1}{2}$ d. to 7d. per pick per $\frac{1}{4}$ in. up to 48 in.

5. *Harness Work*.—Worsted warps on beam :—

6d. per pick per $\frac{1}{4}$ in. up to 44 in.

6 $\frac{1}{2}$ d. " " " 48 "

7d. " " " 52 "

For Dobby work $\frac{1}{2}$ d. per pick per $\frac{1}{4}$ in. less.

6. *Cotton Warp Harness Work*.—Warp in ball :—

5d. per pick per $\frac{1}{4}$ in. up to 42 in.

5 $\frac{1}{2}$ d. " " " 46 "

6d. " " " 50 "

7. *Lustre and Mohairs*.—Pieces delivered mended.—Warp in ball :—

5 $\frac{1}{2}$ d.-6d. per pick per $\frac{1}{4}$ in. up to 46 in.

6d. -6 $\frac{1}{2}$ d. " " " 50 "

7d. " " " 56 "

For harness work 1d. per pick per $\frac{1}{4}$ in. extra.

8. *Cheviots and Low Picked Tweeds*.—Warp to dress :—

8d. per pick per $\frac{1}{4}$ in. up to 44 in.

9d. " " " 48 "

Stripes (extra roller) 1d. extra, boxes 2d. extra, single picks 4d. extra.

9. *Panamas*.—Fine hopsacks, etc. Warp on beam :—

5 $\frac{1}{2}$ d. per pick per $\frac{1}{4}$ in. up to 48 in.

6d. " " " 54 "

Very high picked goods $\frac{1}{2}$ d. per pick per $\frac{1}{4}$ in. less.

10. $8\frac{1}{4}$ *Worsted Italian Linings* : 5d. per pick per $\frac{1}{4}$ in.

List 16. Standard Wage List at a Batley Shoddy Mill.

Heavy Woollen Looms from 60 in. to 96 in. Reed Space. Various Types Warps with Low Woollen Weft. 100 Picks per Minute.

Cotton Warps.				Worsted Warps.				Woollen Warp.				Worsted or Cotton Warps.			
Picks per Inch.	Yd. per Cut.	Beams.	Shuttles.	Price per Cut.	Picks per Inch.	Yd. per Cut.	Beams.	Shuttles.	Price per Cut.	Picks per Inch.	Yd. per Cut.	Beams.	Shuttles.	Price per Cut.	
36	90	1	2	10/2	36	100	2	2	13/2	17	106	1	1	5/10	
40	"	"	"	11/2	40	"	"	"	14/2	17	120	1	1	6/7	
44	"	"	"	12/2	44	"	"	"	15/2						
48	"	"	"	13/2	48	"	"	"	16/2						
52	"	"	"	14/2	52	"	"	"	17/2						
56	"	"	"	15/2	56	"	"	"	18/2						
60	"	"	"	16/2	60	"	"	"	19/2						
Extras: (1) Drop boxes, 6d. per 2 picks. (2) Extra shuttle, 1s. (3) Extra beam, 1s.								Extras: Drop boxes, 3d. per pick. Plain: Extra shuttle, 6d.				Drop boxes, 6d. per 2 picks.			
80 Picks per Minute.															
36	90	1	2	12/8	36	100	1	2	14/8	17	106	1	1	6/7	
40	"	"	"	13/9	40	"	"	"	16/-	17	120	1	1	7/7	
44	"	"	"	14/10	44	"	"	"	17/4						
48	"	"	"	15/11	48	"	"	"	18/8						
52	"	"	"	17/-	52	"	"	"	20/-						
Extras: (1) Drop boxes, 7d. per 2 picks. (2) Extra beam, 1/6. (3) Extra shuttle, 1/-.				(1) Drop boxes, 8d. per 2 picks. (2) Extra beam, 1/6. (3) Extra shuttle, 1/-.				(1) Drop boxes, 3d. per pick. (2) Plain: Extra shuttle, 6d.				Drop boxes, 6d. per 2 picks.			

17. Uniform List of Prices for Weaving Cotton Goods¹ :—

(1) *The Standard*.—The standard upon which this list is based is an ordinary made loom, 45 in. in the reed space.

Reed.—60 reed, 2 threads in a dent or 60 threads per inch.

Picks.—15 picks per quarter inch, with 1½ per cent added for contraction.

Length.—100 yd. of 36 in. measured on counter.

Count of Warp.—28's or any finer number.

Warp. In.	72 in. Loom. Per Cent.	Warp. In.	68 in. Loom. Per Cent.	Warp. In.	64 in. Loom. Per Cent.	Warp. In.	60 in. Loom. Per Cent.
65	1.38	61	1.49	57	1.35	53	1.45
64	2.76	60	2.98	56	2.7	52	2.91
63	4.14	59	4.47	55	4.05	51	4.36
62	5.52	58	5.96	54	5.4	50	5.81
61	6.9	57	7.2	53	6.74	49	6.98
60	8.28	56	8.44	52	8.09	48	8.14
59	9.66	55	9.69	51	9.44	47	9.3
58	11.04	54	10.93	50	10.79	46	10.47
57	12.19	53	12.17	49	11.87	45	11.63
Warp. In.	56 in. Loom. Per Cent.	Warp. In.	52 in. Loom. Per Cent.	Warp. In.	48 in. Loom. Per Cent.	Warp. In.	44 in. Loom. Per Cent.
49	1.26	45	1.35	41	1.08	37	.95
48	2.52	44	2.36	40	2.15	36	1.9
47	3.78	43	3.38	39	3.23	35	2.85
46	5.04	42	4.39	38	4.13	34	3.80
45	6.3	41	5.41	37	5.02	33	4.75
44	7.25	40	6.42	36	5.92	32	5.70
43	8.19	39	7.43	35	6.82	31	6.65
42	9.14	38	8.28	34	7.72	30	7.41
41	10.08	37	9.12	33	8.61	29	8.16
Warp. In.	40 in. Loom. Per Cent.	Warp. In.	36 in. Loom. Per Cent.	Warp. In.	32 in. Loom. Per Cent.	Warp. In.	28 in. Loom. Per Cent.
33	1	29	.84	25	.88	21	.93
32	2	28	1.69	24	1.76	20	1.85
31	3	27	2.53	23	2.65	19	2.78
30	3.8	26	3.37	22	3.53	18	3.7
29	4.6	25	4.21	21	4.41		
28	5.4	24	5.06	20	5.29		
27	6.2	23	5.9	19	6.18		
26	7	22	6.74	18	7.06		
25	7.8	21	7.58				

¹ From "Uniform List of Prices for Weaving," by T. Birtwistle, Esq., J.P., of Accrington.

Count of Weft.—31's to 100's both inclusive.

Price.—30d. or 2d. per pick per quarter inch.

(2) *Width of Looms.*—A 45 in. reed space loom being taken as the standard, the following allowances and deductions to be made for varying widths of looms :—

Allowances :—

(a) $1\frac{1}{2}$ per cent up to and including 51 in.

(b) 2 „ from 51 to 56 in.

(c) $2\frac{1}{2}$ „ „ 56 „ 64 „

(d) 3 „ „ 64 „ 72 „

Deductions :—

(a) $1\frac{1}{4}$ per cent from 45 to 37 in. inclusive.

(b) 1 „ „ 37 „ 24 „ „

Below 24 in. no further deduction is made.

(3) *Width of Warp in Reed.*—All looms shall be allowed to weave a warp to within 4 in. of the reed space, but whenever the difference between the width of warp and the reed space is less than 4 in., it shall be paid as if the loom were 1 in. broader and if less than 3 in. as if it were $2\frac{1}{2}$ in. broader.

(4) *Allowances for Warp being Narrower than Reed Space.*—When the warp is from 7 to 15 in. inclusive narrower than the reed space of the loom in which it is woven a deduction shall be made. No further deduction shall be made when the warp is more than 15 in. narrower than the reed space, or when the warp is narrower than 18 in.

The amount of deductions vary according to the tables on page 294.

(5) *Reeds.*—A 60 reed being taken as the standard, $\frac{3}{4}$ per cent shall be deducted for every two threads or count of reed from 60 to 50, but no deduction shall be made below 50. $\frac{3}{4}$ per cent shall be added for every two threads or count of reed from 60 to 68 : 1 per cent from 68 to 100 : $1\frac{1}{2}$ per cent from 100 to 110 : and 2 per cent from 110 to 132. All additions or deductions under this clause to be added to or taken from the price of the standard 60 reed.

(6) *Cloths Woven with One Thread in a Dent.*—Cloths woven with one thread in a dent to be paid three quarters of the reed—thus an 80 reed one end in a dent would be paid for a 60 reed two ends in a dent.

(7) *Picks.*—*Low.*—An addition of 1 per cent shall be made for each pick or fraction of a pick below 11, thus :—

Below 11 down to and including 10·1 per cent.

„ 10 „ „ 9·2 „

„ 9 „ „ 8·3 „

„ 8 „ „ 7·4 „

and so on adding 1 per cent for each pick or fraction thereof.

Deducted from Standard.		Added to Standard.			
Count of Reed.	Per-centage.	Count of Reed.	Per-centage.	Count of Reed.	Per-centage.
50	$3\frac{3}{4}$	62	$3\frac{3}{4}$	98	18
52	3	64	$1\frac{1}{2}$	100	19
54	$2\frac{1}{4}$	66	$2\frac{1}{4}$	102	$20\frac{1}{2}$
56	$1\frac{1}{2}$	68	3	104	22
58	$\frac{3}{4}$	70	4	106	$23\frac{1}{2}$
60	standard	72	5	108	25
		74	6	110	$26\frac{1}{2}$
		76	7	112	$28\frac{1}{2}$
		78	8	114	$30\frac{1}{2}$
		80	9	116	$32\frac{1}{2}$
		82	10	118	$34\frac{1}{2}$
		84	11	120	$36\frac{1}{2}$
		86	12	122	$38\frac{1}{2}$
		88	13	124	$40\frac{1}{2}$
		90	14	126	$42\frac{1}{2}$
		92	15	128	$44\frac{1}{2}$
		94	16	130	$46\frac{1}{2}$
		96	17	132	$48\frac{1}{2}$

High.—An addition of 1 per cent per pick shall be made whenever they exceed the following, if using

 Weft below 26's when picks exceed 16.

 ,, 26's to 39's inclusive. ,, 18.

 ,, 40's and above ,, 20.

In making additions for high picks any fraction of a pick less than the half shall not have any allowance; exactly the half shall have $\frac{1}{2}$ per cent added: any fraction over the half shall have the full 1 per cent added.

(8) *Twist or Counts of Warp.*—The standard being 28's or finer, the following additions shall be made, when coarser twist is woven in the following reeds:—

 Below 28's to 20's in 64 to 67 reed inclusive 1 per cent.

 ,, ,, ,, 68 ,, 71 ,, 2 ,,

 ,, ,, ,, 72 ,, 75 ,, 3 ,,

 Below 20's to 14's in 56 to 59 ,, 1 ,,

 ,, ,, ,, 60 ,, 63 ,, 2 ,,

 ,, ,, ,, 64 ,, 67 ,, 3 ,,

 Below 14's to 10's in 48 to 51 ,, 1 ,,

 ,, ,, ,, 52 ,, 55 ,, 2 ,,

 ,, ,, ,, 56 ,, 59 ,, 3 ,,

 ,, ,, ,, 60 ,, 63 ,, 4 ,,

and so on at the same rate. When twist is woven in coarser reeds no additions shall be made. The above prices are for single

and two-fold yarns. When three-fold yarns are woven one end in a dent, one half of the above percentages to be added.

(9) *Counts of Weft.—Ordinary Pin Cops.*—The standard being 31's to 100's both inclusive, shall be reckoned equal. Above 100's 1 per cent shall be added for every 10 hanks or fraction thereof. In lower numbers than 31's the following additions shall be made :—

For 30's,	add 1	per cent.	For 13 add 18	per cent.
„ 29's, 28's	„ 2	„	„ 12's „ 21	„
„ 27's, 26's	„ 3	„	„ 11's „ 25	„
„ 25's, 24's	„ 4½	„	„ 10's „ 30	„
„ 23's, 22's	„ 6½	„	„ 9's „ 38	„
„ 21's, 20's	„ 8	„	„ 8's „ 48	„
„ 19's, 18's	„ 10½	„	„ 7's „ 61	„
„ 17's, 16's	„ 13	„	„ 6's „ 76	„
„ 15's, 14's	„ 16	„	„ 5's „ 94	„

Large Cops.—When weft of the following counts is spun into large cops, so that there are not more than 22 in one pound, the following additions shall be made in place of the allowance provided for pin cops in preceding table :—

For 29's, 28's,	add 1	per cent.	For 12's add 15	per cent.
„ 27's, 26's,	„ 2	„	„ 11's „ 19	„
„ 25's, 24's, 23's	„ 3	„	„ 10's „ 24	„
„ 22's, 21's, 20's	„ 4½	„	„ 9's „ 30	„
„ 19's, 18's,	„ 6	„	„ 8's „ 38	„
„ 17's, 16's,	„ 8	„	„ 7's „ 48	„
„ 15's, 14's,	„ 10	„	„ 6's „ 61	„
„ 13's,	„ 12	„	„ 5's „ 76	„
			„ 4's „ 94	„

(10) *Four Shaft Twills.—Low Picks.*—In four shaft twills an addition of 1 per cent for each pick or fraction thereof below the picks mentioned in the following table shall be made when using weft as follows :—

Below 26's the addition shall begin at 13
„ 26's to 39's „ „ „ 14
„ 40's and above „ „ „ 15

High Picks.—When using weft.

Below 26's the addition for high picks shall begin at 21
„ 26's to 39's „ „ „ „ 22
„ 40's and above „ „ „ „ 23

In making additions for high picks, any fraction of a pick less than the half shall not have any allowance, exactly the half shall have ½ per cent added, any fraction over the half pick shall have the full 1 per cent added.

(11) *Herring-bone Twills.*—For weaving cloths known as

herring-bone twills, 4 shafts, 5 per cent extra on twill cloth prices shall be paid.

(12) *Coloured Edges or Borders*.—Coloured edges or borders with one or more coloured ends at the side shall be paid 5 per cent on plain cloth prices.

(13) *Splits*.—The following additions shall be made for splits :—

One split uncut add 5 per cent.

Two splits „ „ 7½ „

Empty dents only shall not be considered splits.

(14) *Sateens, Jeans, Jeanettes, Drills, Drillettes, and Flor-entines* :—

Basis.—Plain Cloth as per Uniform List with the following modifications.

Reeds.—When cloths are woven with three or more threads to one dent, the allowance for every two threads or counts of reed above 68 shall be $\frac{3}{4}$ per cent only, the same as from 60 to 68. When the reed exceeds the pick $\frac{3}{8}$ per cent shall be added for every additional count of reed above the number of picks per $\frac{1}{4}$ in.

Picks.—Cloths up to and including 25 picks to be paid 5 per cent extra, and for every additional pick or fraction beyond the half, up to and including 32 picks to have $\frac{1}{2}$ per cent per pick added, from 32 upwards to have an additional $\frac{1}{4}$ per cent per pick or fraction beyond the half added.

Pick Finding.—Where the employer requires the loom to be turned in order to find the broken picks the following percentages to be paid :—

5 per cent when using 26's or finer weft.

7½ „ „ „ 25's to 16's „

10 „ „ „ 15's „ 12's „

12½ „ „ „ 11's and under.

Coarse Twist in Fine Reeds.—Clause 8 of the Uniform List to apply, and when there are more than two threads in one dent, the reed and number of threads per inch to be added together and divided by two. Thus a 52 reed three ends in one dent, below 28's to 20's twist would be paid for as a 65 reed, and when using twist below 20's to 14's in a 45 reed, three threads in one dent would be paid for as a 56 reed for twist purposes only.

(15) *Sateens, etc., made with More than Five Shafts*.—Sateens made with more than 5 shafts to be paid by the Sateen List, with the following additions for shafts :—

6 shafts, 12 per cent.

7 and 8 „ 16 „ and so on.

Paragraph 6 of the Heald Shaft List not to apply to the above.

(16) *Heald Shaft Work*.—Cloth with dobby and tappet motions, one shuttle loom (lenos, sateens, jeans, drills, and similar goods excepted).

(a) *Basis*.—Plain cloth as per Uniform List.

(b) Cloth woven with the number of shafts as follows :—

4 shafts	12 per cent added.	13 shafts	20 per cent added.
5	„ 12 „ „	14	„ 22 „ „
6	„ 12 „ „	15	„ 23 „ „
7	„ 16 „ „	16	„ 24 „ „
8	„ 16 „ „	17	„ 25 „ „
9	„ 16 „ „	18	„ 26 „ „
10	„ 18 „ „	19	„ 27 „ „
11	„ 18 „ „	20	„ 28 „ „
12	„ 19 „ „		

(c) Single-lift dobbies to be paid 10 per cent extra.

(d) Stripes and other cloths with more than 2 threads in one dent to be paid for by the number of ends per inch.

(e) Skeleton shafts for edges not to be counted.

(f) Where the employer does not require the cards or lags to be turned in order to find the pattern 3 per cent less to be paid.

(g) Where the employer requires the loom to be turned in order to find the broken pick 10 per cent more to be paid.

(h) Single shuttle cord checks with more than two picks in one shed to be paid $2\frac{1}{2}$ per cent less.

(i) In single shuttle checks and all other special classes of goods in which more than one pick is put in one shed, such extra picks shall be counted.

(j) For cloths woven in tappet or doobby looms from more than one beam, 5 per cent extra shall be paid per beam. Lenos, crimps excepted.

(17) *Additions on Plain Cloth Prices for Jacquard Weaving* :—

Basis.—Uniform List with the following modifications :—

Plain and satin grounds 25 per cent.

Single lift machines 35 „

When cloths, satin ground, are woven with three or more threads in one dent, the allowance for every two ends or counts of reed above 68 shall be $\frac{3}{4}$ per cent only, the same as from 60 to 68.

Picks.—Uniform List up to and including 30 picks from 30 to 40, $\frac{3}{4}$ per cent per pick, all above 40, $\frac{1}{2}$ per cent per pick.

Mock lenos and lace brocades to be paid 5 per cent extra.

Pick Finding.—Where the employer requires the loom to be turned in order to find the broken picks the following percentages to be paid :—

$7\frac{1}{2}$ per cent when using 18's or finer weft.

10 „ „ „ 17's to 12's „

$12\frac{1}{2}$ „ „ „ 11's or under.

For each warp beam above one, 5 per cent per beam extra. Lenos, crimps, etc. excepted.

(18) *Cotton Crimps* :—

Basis.—Plain cloth as per Uniform List. Cloth woven with the number of shafts as follows :—

4 shafts	20 per cent added.	12 shafts	28 per cent added.
5 "	21 " "	13 "	30 " "
6 "	22 " "	14 "	32 " "
7 "	23 " "	15 "	34 " "
8 "	24 " "	16 "	37 " "
9 "	25 " "	17 "	40 " "
10 "	26 " "	18 "	44 " "
11 "	27 " "	19 "	48 " "

When coloured yarn is used to form a stripe 5 per cent extra is paid.

When all the warp is coloured, the price to be paid shall be by arrangement.

(19) *Lenos* :—

One doup 70 per cent on Plain List.

Two douns 80 " " "

Leno and crimp cloth combined to be paid leno price plus 10 per cent for crimp: the addition for crimp + leno to be put together.

(20) *All Classes of Grey Crammed Stripes*.—All classes of grey crammed stripes in which the ground warp is two end in a dent and made from one beam and one count of yarn, to be paid 4 per cent and reedage, and if made from two beams, $7\frac{1}{2}$ per cent and reedage; and if made from three beams, $12\frac{1}{2}$ per cent and reedage.

If the cloth is part one end in a dent then the percentage shall be $7\frac{1}{2}$ per cent, 11 per cent, and 16 per cent, and the reed to be found by the number of threads in the warp.

All classes of grey crammed stripes made from two or counts of yarn and made on one or two beams, to be paid $7\frac{1}{2}$ per cent and reedage. If the cloth is part one end in a dent, the reedage shall be found by dividing the difference between the actual reed employed and the number of ends in the cloth.

For each additional beam 5 per cent to be added.

(21) *Coloured Crammed Stripes*.—When employing up to 15 per cent of coloured yarn in the warp, 5 per cent extra to be paid. Over 15 per cent to 25 per cent of coloured yarn in the warp $7\frac{1}{2}$ per cent extra to be paid.

Over 25 per cent of coloured yarn in the warp the payment to be by the Colne Coloured List. Bleached warp and weft to be called a colour. If all the warp is grey yarn, and employing coloured or bleached weft, 5 per cent extra to be paid.

(22) *Grey Checks*.—Circular-box grey checks to be paid by the Colne Coloured Goods List, check basis, less 15 per cent for there being no colour.

This basis is equivalent to the Uniform List $7\frac{1}{2}$ per cent.

INDEX

A

- Alpaca, 7.
 Analysis by comparison, 205.
 — of colour and weave worsted, 197.
 — — corduroy woollen, 189.
 — — cotton and artificial silk dress fabric, 185.
 — — double cloth woollen, 191.
 — — extra warp striped cotton, 175.
 — — figured mohair, 172.
 — — mixture worsted, 209.
 — — piece dyed worsted, 206.
 — — striped mohair, 180.
 — — weft-pile corduroy, 195.
 — — worsted costume cloth, 169.
 — quick methods of, 201
 — without resort to calculations, 212.
 Angola yarn, 26.
 Animal fibres, 2.
 Artificial silks, 17.
 Ascertaining the contraction of warp and weft, 157.
- ### B
- Backed and double cloths calculations, 56.
 — — — — — tying of, 104.
 Bradford Commission Weavers' Price List, 292.
 — price for room and power in, 244.
 — textile trade, conditions and costing of, 229.
 — wool quality numbers, 8.
 — — — — — details of, 11.
 Bright finish, 140.
 Burling and mending, 240.
- ### C
- Calculations, Backed and double cloths, 56.
 — cloths with two or more counts, 55.
 — coloured warp, 54.
 — complicated, 54.
 — crammed stripe, 56.
 Calculations for warp and weft, 52.
 — for mails per shaft, 106.
 — relating to weights of cloths, 52.
 — — — — — yarns, 36.
 Camel's hair, 7.
 Cashmere wool, 8.
 Casting out, 109.
 Chemical reaction on textile fibres, 219
 China grass, 15.
 Classification of union dress fabrics, 144
 — — — — — weaves, 72.
 — — — — — wools, 7.
 — — — — — worsted yarns, 24.
 — — — — — woven structures, 92.
 Cloths woven on the square, 72.
 — — — — — grey and finished, 122.
 — — — — — setts and setting of, 68.
 Colour, fastness of, 227.
 Coloured yarns, 27.
 Commission weaving, prices, 292.
 Comparison, analysis by, 205.
 — of cotton fibres, 15.
 — — — — — dimensions, grey and finished, worsted cloths, 129.
 — — — — — — — — — — — union cloths, 146.
 — — — — — — — — — — — known and unknown cloths, 206.
 Conditions and costing in Bradford textile trade, 229.
 Contraction and shrinkage of yarns, 126.
 — of warp and weft, ascertaining, 157.
 — in width and elongation in length, 143.
 Cost of burling and mending, 241.
 — — — — — dyeing and finishing, dress goods, 247.
 — — — — — — — — — — — worsteds and woollens, 248.
 — — — — — — — — — — — cottons, 249.
 — — — — — — — — — — — finishing, silks, 249.
 — — — — — — — — — — — materials, 231.
 — — — — — — — — — — — other expenses, dress goods, 245.
 — — — — — — — — — — — worsted coatings, 244.
 — — — — — — — — — — — twisting-in, looming and slewing, 236.
 — — — — — — — — — — — two and many-fold yarns, 43.
 — — — — — — — — — — — warp-dressing, 235.
 — — — — — — — — — — — weaving, 239.
 — — — — — — — — — — — yarn, spun from botany top, 231.

- Cost of yarn spun from cross-bred, lustre, and mohair tops, 232.
 Costing, examples of, 249.
 — a mixture worsted, 250.
 — — mohair lustre, 251.
 — of woven fabrics, 229.
 Cotton, 13.
 — fibres, comparison of, 15.
 — goods, loading and filling of, 222.
 — — removing size or dressing from, 222.
 — grades of, 14.
 — mercerized, 14.
 — — test for, 228.
 — yarns, 25.
 Counts of two-fold yarns, 43.
 — — warp and weft, 159.
 — — worsted yarns, 24.
 — and sett, changes in, 78.
 Counting of threads and picks, 91.
 — yarns, 37.
 — — changing the denomination, 42.
 — — testing a given count, 38.
 — — two-fold yarns, 43.
 — — various systems of, 37.
 Crabbing union cloths, 142.
 Crammed stripes, 142.
 — — calculations for, 111.
 Crossband twist, 33.
 Crossbred wool, 6.
 — lustre and mohair tops, price of yarn spun from, 232.
 Cutting pattern for analysis, 154.
- D**
- Diameter of yarns, 71.
 Dissection for weave, 84.
 Distinguishing warp from weft, 83.
 — test for flax and jute, 220.
 — — — loaded wool fabrics, 221.
 Drafts and pegging-plans, 106.
 — calculations for, 107.
 — fancy, 108.
 Drafting, casting out, 109.
 — method of, 106.
 Dyeing and finishing dress goods, cost of, 247.
 — — — cottons, cost of, 249.
 — — — worsteds and woollens, cost of, 248.
 — — — wool cloths, 116.
 — — — — general conditions of, 116.
 — — — — shrinkage during the, 126.
 — — — — union cloths, 138.
- Dyeing and finishing union cloths, alteration in structure during the, 141.
 — — — — — general condition of, 138.
- E**
- Edges or lists, 166.
 Effects of dyeing and finishing on all wool fabrics, vicuna finish, 118.
 — — — — — on all wool fabrics, clear finish, 119.
 — — — — — on a worsted coating, clear finish, 119.
 — — — — — on a dyed union fabric, bright finish, 138.
 — — — — — on a bleached union fabric, bright finish, 145.
 — — — — — on an Italian lining, 150.
 — — — — — on cotton yarns and fabrics, 153.
 Estimating the count of yarns, 40.
 Ether process, net fatty matter by, 224.
 — test for insolubles, 224.
 Examples in costing, 249.
 Extract, 13.
- F**
- Fabrics, changing weights of, 59.
 — weights of, 52.
 Fancy drafts, 108.
 — yarns, 29.
 Fastness of colour, 227.
 Fibres, animal, 2.
 — re-manufactured, 4.
 — vegetable, 3.
 Figure analysis, 87.
 — — design painted on glass, 88.
 — — sketch squared, 89.
 Flocks, 13.
 Formula for ascertaining turns per inch, 50.
- G**
- Gauge points, 39.
 — yarn, 204.
 — — basis of calculation, 205.
 Glossary of terms applied to woven fabrics, 254.
 Grades of cotton, 14.
 Grey and finished cloths, comparison of dimensions of, 129.
 — — — — — weights of, 125.

- H**
 Hair, camel's, 7.
 Herring-bone twills, 33.
 Hopsacks, twilled, 66.
 Horse hair, imitation, 17.
- I**
 Imitation horse hair, 17.
 Indigo, nitric acid test for, 227.
 — tests for, 228.
 Insolubles, ether test for, 224.
 Italian lining, 150.
 — — variation after various finishing processes, 150.
- J**
 Jute, distinguishing test for flax and, 220.
- L**
 Length of finished cloth, 165.
 — — grey cloth, 164.
 — — warp, 164.
 Lincoln wool, 7.
 Lists or edges, 166.
 Llama wool, 8.
 Loading, cotton fabrics, 222.
 — silk fabrics, 223.
 — worsteds and woollens, 220.
 Loom, counts of warp and weft in, 159.
 — length of warp in, 164.
 — particulars from finished cloth, 155.
 — preparation for (warping), 234.
 — — — (winding), 233.
 — threads and picks per inch in, 161.
 — width in, 162.
 Looming and sleying, price list for twisting-in, 236.
 Loss in weight, cottons, 153.
 — — — unions, 149.
 — — — woollens, 127.
 — — — worsteds, 122.
- M**
 Marl coloured yarns, 28.
 Matching coloured yarns and fabrics, 29.
 Materials, cost of, 231.
 — raw, 1.
 Melange coloured yarns, 27.
 Mercerized cotton, 14.
 — — test for, 228.
 Merino wool, 6.
 Mixture coloured yarns, 27.
 Mixture union yarns, 26.
 Mohair, 7.
 Mungo, 12.
- N**
 Nitric acid test for indigo, 227.
 Noils, 10.
 — qualities of, 12.
- O**
 Open-band twist, 33.
 Ordinary warp and weft calculations, 52.
 "Other expenses" involved in cloth manufacture, 244.
- P**
 Pegging plans, 106.
 Perching, picking, burling, and mending, 240.
 Preparation for loom, 234.
 Preparing and spinning, method of, 18.
 Price list for yarn, spun from botany top, 231.
 — — — — spun from cross-bred, lustre, and mohair top, 232.
 — — — woollen yarn, 232.
 — — — burling and mending, dress goods, 242.
 — — — burling and mending, worsted coatings, 241.
 — — — dyeing and finishing, dress goods, 247.
 — — — dyeing and finishing, worsteds and woollens, 248.
 — — — dyeing and finishing, cottons, 249.
 — — — other expenses, dress goods, 245.
 — — — other expenses, worsted coatings, 244.
 — — — twisting-in, looming, and sleying, 236.
 — — — warp dressing, 234.
 — — — weaving, 238.
 — — Batley shoddy mill weavers, 293.
 — — drawing-in and sleying, cotton warps, 290.
 — — fancy dress goods manufacturer's, warp dressers, 288.
 — — fancy dress goods manufacturer's, twistors, 289.
 — — Huddersfield weavers, 287.
 — — Leeds fine worsted weavers, 288.
 — — room and power, 244.

- Price list, weaving, cotton goods, 294.
 — — winding and beaming, cotton yarns, 291.
- Q**
- Qualitative and quantitative analysis, 216.
 Qualities, comparison of wool, 5.
 — of noils, 12.
 — of wools, 8.
 Quality numbers, Bradford wool, 8.
 Quick methods of analysis, 201.
- R**
- Ramie and Rhea, 15.
 Reed, selection of, 163.
 Re-manufactured fibres, 4.
 Removing rubber from waterproof cloth, 227.
 Rib cloths, warp, 97.
 — — weft, 98.
 Routine of finishing processes, 118.
- S**
- Scales and weights, 88.
 Sett, methods of indicating the, 69.
 Setts and setting of cloths, 69.
 Shadow stripes, 35.
 Shoddy, 12.
 Shrinkage, effects of, 135.
 — — — counts of warp and weft, 133.
 — — — threads and picks per inch, 136.
 — — — weight per yard, 132.
 Silk, 16.
 — artificial, 17.
 — fabrics, loading and filling of, 223.
 — yarns, 25.
 — — net, 25.
 — — waste and spun, 25.
 Special yarns, 29.
 Standard weights, 201.
 — — basis of calculation, 202.
 Standardization of dimensions, 145.
 Structures, classification of, 92.
 — ordinary, 94.
 — — ribbed, 95.
- T**
- Testing a given count, 88.
 Tests, burning, 216.
 — for cotton and silk in unions, 225.
 — — cotton and wool, 224.
 — — jute and flax, 220.
 — — loaded wool fabrics, 221.
 — — mercerized cotton, 228.
- Tests for silk and wool in unions, 227.
 — general observations, 216.
 — microscopic, 217.
 Textile fibres, 219.
 — — chemical reaction on, 219.
 Threads and picks, counting of, 91.
 — — — variation of, 161.
 Tops, range of Bradford, 11.
 — various qualities of, 8.
 Trade names, glossary of, 254.
 Treatment of yarns, special, 20.
 Twine of yarn, influence of, 32.
 Twist coloured yarns, 28.
 — effects, right and left, 33.
 — in yarns, 48.
 — — — open-band, 33.
 — — — cross-band, 34.
 Twisting-in, looming and slewing, 236.
- U**
- Union cloths, 139.
 — — to ascertain amount of cotton and wool, 224.
 — — to ascertain amount of cotton and silk, 225.
 — — classification of, 144.
 — — contraction in width, 143.
 — — loss in weight, 149.
 — — standardization of dimensions, 145.
 — — variation of threads and picks per inch, 148.
 — yarns, mixture, 26.
 — — twist, 27.
- V**
- Variation in threads and picks per inch, 148.
 Various systems of counting yarns, 37.
 Vegetable fibres, 3.
 Vicuna wool, 8.
 — finish, 118.
 Viscose, 17.
- W**
- Warp dressing, 233.
 — rib cloths, 77.
 — and weft calculations, backed and double cloths, 56.
 — — — — coloured, 54.
 — — — — complicated, 54.
 — — — — crammed stripes, 56.
 — — — — ordinary, 52.
 Weave analysis, 80.
 — — instruments required, 81.
 Weaves, repetition of, 86.

- | | |
|---|--|
| <p>Weaves, method of dissecting for, 238.
 Weaving, cost of, 238.
 Weight per yard, 155.
 Weights and scales, 68.
 — of fabrics, 59.
 — — cloths, calculations relating to, 53.
 — — — changes in counts and setts, 61.
 — — — changing, 59.
 Width of cloth, influence of weave on, 93.
 — — — influence of picks and counts on, 96.
 Wool, 5.
 — cashmere, 8.
 — long, 7.
 — medium, 7.
 — quality numbers, 8.
 — short, 7.
 — various types of, 5.
 Woollen yarns, 24.</p> | <p>Woollen yarns, cost of, 232.
 Worsted yarns, 23.
 — — classification of, 24.
 — — counts of, 24.
 Woven fabrics, costing of, 229.
 — structures, backed, 100.
 — — double, 101.
 — — ordinary, 92.
 — — ribbed, 94.</p> <p style="text-align: center;">Y</p> <p>Yarn gauge, 204.
 — — basis of calculation, 205.
 Yarns, cost of two and many-fold, 46.
 — cotton, 25.
 — counting of, 36.
 — counts and their diameters, 71.
 — fancy, 29.
 — silk, 25.
 — twists, 48.
 — wool, 20.</p> |
|---|--|

Telegrams
"AGRICOLA," Manchester.
Codes:
5th Edition A B C.
Western Union.

Established 1852.

Telephone :
Nos. 1074 Central
2754 "

Sir James Farmer & Sons Limited,

Engineers to—

CALICO PRINTERS, DYERS, BLEACHERS, AND
FINISHERS, &c.

ADELPHI IRON WORKS,
Salford, MANCHESTER.

Specialities :

Complete Plants for Bleaching, Dyeing,
Printing and Finishing.

Book Cloth, Leather Cloth, Linoleum, &c.

Calenders, Starching & Drying Ranges

Mercerisers, Schreiner Calenders, Hot-Air
Stenters.

ESTIMATES AND FULL PARTICULARS ON APPLICATION.

Abridged Catalogue

OF

Special Technical Books.

INDEX TO SUBJECTS.

	PAGE		PAGE		PAGE
Adhesives	10	Engineering Handbooks	19, 20	Power-loom Weaving ...	14
Agricultural Chemistry ...	9	Engraving	24	Preserved Foods	23
Air, Industrial Use of ...	10	Essential Oils	7	Printers' Ready Reckoner	24
Alcohol, Industrial	9	Evaporating Apparatus ...	18	Printing Inks	3, 4, 5
Alum and its Sulphates ...	8	External Plumbing	21	Recipes	3, 13
Ammonia	8	Fats	6	Resins	9
Aniline Colours	3	Faults in Woollen Goods	15	Ring Spinning Frame ...	17
Animal Fats	6	Flax Spinning	17	Risks of Occupations ...	10
Anti-corrosive Paints ...	4	Food and Drugs	23	Riveting China, etc. ...	12
Architecture, Terms in ...	22	Fruit Preserving	23	Scheele's Essays	8
Architectural Pottery ...	12	Gas Firing	18	Sealing Waxes	10
Artificial Perfumes	7	Glass-making Recipes ...	13	Shale Oils and Tars ...	9
Balsams	9	Glass Painting	13	Sheet Metal Working ...	21
Bleaching Agents, etc. ...	17	Glue-making and Testing... ..	8	Shoe Polishes	6
Bone Products	8	Glycerine	7	Silk Dyeing	16
Bookbinding	24	Greases	6	Silk Throwing, etc. ...	17
Brick-making	11, 12	Gutta Percha	11	Smoke Prevention... ..	18
Burnishing Brass	21	Hat Manufacturing	15	Soap Powders	7
Carpet Yarn Printing	16	Hemp Spinning	17	Soaps... ..	7
Casein	4	History of Staffs Potteries	12	Spinning	15, 17
Celluloid	23	Hops	22	Spirit Varnishes	5
Cement	22	Hot-water Supply	21	Staining Marble, and Bone	23
Ceramic Books	11, 12	India-rubber... ..	11	Stain-removing Soaps ...	7
Charcoal	8	India-rubber Substitutes	5	Standard Cloths	13
Chemical Analysis... ..	8	Inks	3, 4, 5, 10	Steam Drying	10
Chemical Essays	8	Insecticides, etc.	22	Steel Hardening	18
Chemical Reagents	8	Iron-corrosion	4	Sugar Technology	24
Chemical Works	8	Iron, Science of	18	Sweetmeats... ..	23
Church Lace	14	Japanning	21	Tallow	6
Clays	12	Jute Spinning	17	Technical Schools, List ...	24
Coal Dust Firing	18	Lace-Making	14	Terra-cotta	12
Coal Gas By-Products ...	9	Lacquering	21	Testing Paint Materials ...	4
Colliery Recovery Work... ..	18	Lake Pigments	3	Textile Colour Mixing ...	16
Colour Matching (Textile)	16	Lead	10	Textile Design	14
Colour Recipes	3	Leather-working Mater'ls	6, 11	Textile Fabrics	13, 14, 15
Colour Theory	16	Linoleum	5	Textile Fibres	14
Combing Machines	17	Lithographic Inks	5, 23	Textile Materials	14
Compounding Oils, etc. ...	6	Lithography	23	Timber	22
Condensing Apparatus ...	18	Lubricants	6	Toilet Soapmaking	7
Cosmetics	7	Manures	8, 9	Varnishes	5
Cotton Dyeing	16	Meat Preserving	23	Vegetable Fats and Oils ...	6
Cotton Spinning	17	Medicated Soaps	7	Vegetable Preserving ...	23
Cotton Waste	17	Metal Polishing Soaps ...	7	Warp Sizing	15
Damask Weaving	15	Mineral Pigments	3	Waste Utilisation	9
Dampness in Buildings ...	22	Mineral Waxes	6	Water, Industrial Use ...	10, 11
Decorators' Books	4	Mine Ventilation	18	Water-proofing Fabrics ...	15
Decorative Textiles	15	Mining, Electricity	18	Waxes	6
Dental Metallurgy... ..	18	Needlework	14	Weaving Calculations ...	15
Disinfection	9	Oil and Colour Recipes ...	3	White Lead and Zinc White	5
Driers	5	Oil Boiling	5	Wiring Calculations ...	21
Drugs	23	Oil Merchants' Manual ...	6	Wood Distillation	22
Drying Oils	5	Oils	5, 6, 7	Wood Extracts	22
Drying with Air, etc. ...	10	Ozone, Industrial Use of... ..	10	Wood Waste Utilisation... ..	22
Dyeing Marble, etc.	23	Paint Manufacture	3	Wood-Dyeing	23
Dyeing Fabrics	16	Paint Materials	3	Wool Dyeing	16
Dyers' Materials	16	Paint-material Testing ...	4	Woollen Goods	15, 16
Dye-stuffs	16	Paint Mixing	3, 4	Worsted Spinning	15
Edible Fats and Oils ...	6	Paper-Mill Chemistry	13	Woven Fabrics	15
Electric Lamp Develop- ment	21	Pigments	3, 9	Writing Inks	10
Electric Wiring	21	Plumbers' Books	21	X-Ray Work	11
Electricity in Collieries ...	18	Pottery Clays	12	Yarn Sizing	15
Emery	24	Pottery Decorating	11	Yarn Numbering and Test- ing	14, 15
Enamelling Metal	13	Pottery Manufacture	11, 12	Zinc White Paints	5
Enamels	13	Pottery Marks	12		

PUBLISHED BY

SCOTT, GREENWOOD & SON.

8 BROADWAY, LUDGATE, LONDON, E.C. (ENGLAND).

FULL PARTICULARS OF CONTENTS

Of the Books mentioned in this ABRIDGED CATALOGUE
will be found in the following Catalogues of

CURRENT TECHNICAL BOOKS.

LIST I.

Artists' Colours—Bone Products—Butter and Margarine Manufacture—Casein—Cements—Chemical Works (Designing and Erection)—Chemistry (Agricultural, Industrial, Practical and Theoretical)—Colour Mixing—Colour Manufacture—Compounding Oils—Decorating—Driers—Drying Oils—Drysaltery—Emery—Essential Oils—Fats (Animal, Vegetable, Edible)—Gelatinous—Glues—Greases—Gums—Inks—Lead—Leather—Lubricants—Oils—Oil Crushing—Paints—Paint Manufacturing—Paint Material Testing—Perfumes—Petroleum—Pharmacy—Recipes (Paint, Oil and Colour)—Resins—Sealing Waxes—Shoe Polishes—Soap Manufacture—Solvents—Spirit Varnishes—Varnishes—White Lead—Workshop Wrinkles.

LIST II.

Bleaching—Bookbinding—Carpet Yarn Printing—Colour (Matching, Mixing Theory)—Cotton Combing Machines—Dyeing (Cotton, Woollen and Silk Goods)—Dyers' Materials—Dye-stuffs—Engraving—Flax, Hemp and Jute Spinning and Twisting—Gutta-Percha—Hat Manufacturing—India-rubber—Inks—Lace-making—Lithography—Needlework—Paper Making—Paper-Mill Chemist—Paper-pulp Dyeing—Point Lace—Power-loom Weaving—Printing Inks—Silk Throwing—Smoke Prevention—Soaps—Spinning—Textile (Spinning, Designing, Dyeing, Weaving, Finishing)—Textile Materials—Textile Fabrics—Textile Fibres—Textile Oils—Textile Soaps—Timber—Water (Industrial Uses)—Water-proofing—Weaving—Writing Inks—Yarns (Testing, Sizing).

LIST III.

Architectural Terms—Brassware (Bronzing, Burnishing, Dipping, Lacquering)—Brickmaking—Building—Cement Work—Ceramic Industries—China—Coal-dust Firing—Colliery Books—Concrete—Condensing Apparatus—Dental Metallurgy—Drainage—Drugs—Dyeing—Earthenware—Electrical Books—Enamelling—Enamels—Engineering Handbooks—Evaporating Apparatus—Flint Glass-making—Foods—Food Preserving—Fruit Preserving—Gas Engines—Gas Firing—Gearing—Glassware (Painting, Riveting)—Hops—Iron (Construction, Science)—Japanning—Lead—Meat Preserving—Mines (Haulage, Electrical Equipment, Ventilation, Recovery Work from)—Plants (Diseases, Fungicides, Insecticides)—Plumbing Books—Pottery (Architectural, Clays Decorating, Manufacture, Marks on)—Reinforced Concrete—Riveting (China, Earthenware, Glassware)—Sanitary Engineering—Steam Turbines—Steel (Hardening, Tempering)—Sugar—Sweetmeats—Toothed Gearing—Vegetable Preserving—Wood Dyeing—X-Ray Work.

COPIES OF ANY OF THESE LISTS WILL BE SENT
POST FREE ON APPLICATION.

(Paints, Colours, Pigments and
Printing Inks.)

THE CHEMISTRY OF PIGMENTS. By ERNEST J. PARRY, B.Sc. (Lond.), F.I.C., F.C.S., and J. H. COSTE, F.I.C., F.C.S. Demy 8vo. Five Illustrations. 285 pp. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

THE MANUFACTURE OF PAINT. A Practical Handbook for Paint Manufacturers, Merchants and Painters. By J. CRUICKSHANK SMITH, B.Sc. Second Edition, Revised and Enlarged. Demy 8vo. 288 pp. 80 Illustrations. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

DICTIONARY OF CHEMICALS AND RAW PRODUCTS USED IN THE MANUFACTURE OF PAINTS, COLOURS, VARNISHES AND ALLIED PREPARATIONS. By GEORGE H. HURST, F.C.S. Demy 8vo. 380 pp. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

THE MANUFACTURE OF LAKE PIGMENTS FROM ARTIFICIAL COLOURS. By FRANCIS H. JENNISON, F.I.C., F.C.S. **Sixteen Coloured Plates, showing Specimens of Eighty-nine Colours, specially prepared from the Recipes given in the Book.** 136 pp. Demy 8vo. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

THE MANUFACTURE OF MINERAL AND LAKE PIGMENTS. Containing Directions for the Manufacture of all Artificial, Artists and Painters' Colours, Enamel, Soot and Metallic Pigments. A text-book for Manufacturers, Merchants, Artists and Painters. By Dr. JOSEF BERSCH. Translated by A. C. WRIGHT, M.A. (Oxon.), B.Sc. (Lond.). Forty-three Illustrations. 476 pp. Demy 8vo. Price 12s. 6d. net. (Post free, 13s. home; 13s. 6d. abroad.)

RECIPES FOR THE COLOUR, PAINT, VARNISH, OIL, SOAP AND DRY-SALTERY TRADES. Compiled by AN ANALYTICAL CHEMIST. 330 pp. Second Revised and Enlarged Edition. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

OIL COLOURS AND PRINTERS' INKS. By LOUIS EDGAR ANDÉS. Translated from the German. 215 pp. Crown 8vo. 56 Illustrations. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

MODERN PRINTING INKS. A Practical Handbook for Printing Ink Manufacturers and Printers. By ALFRED SEYMOUR. Demy 8vo. Six Illustrations. 90 pages. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

THREE HUNDRED SHADES AND HOW TO MIX THEM. For Architects, Painters and Decorators. By A. DESAINT, Artistic Interior Decorator of Paris. The book contains 100 folio Plates, measuring 12 in. by 7 in., each Plate containing specimens of three artistic shades. These shades are all numbered, and their composition and particulars for mixing are fully given at the beginning of the book. Each Plate is interleaved with grease-proof paper, and the volume is very artistically bound in art and linen with the Shield of the Painters' Guild impressed on the cover in gold and silver. Price 21s. net. (Post free, 21s. 7d. home; 22s. 2d. abroad.)

HOUSE DECORATING AND PAINTING. By W. NORMAN BROWN. Eighty-eight Illustrations. 150 pp. Crown 8vo. Price 3s. 6d. net. (Post free, 3s. 10d. home and abroad.)

A HISTORY OF DECORATIVE ART. By W. NORMAN BROWN. Thirty-nine Illustrations. 96 pp. Crown 8vo. Price 1s. net. (Post free, 1s. 4d. home and abroad.)

WORKSHOP WRINKLES for Decorators, Painters, Paperhangers, and Others. By W. N. BROWN. Crown 8vo. 128 pp. Second Edition. Price 2s. 6d. net. (Post free, 2s. 10d. home and abroad.)

CASEIN. By ROBERT SCHERER. Translated from the German by CHAS. SALTER. Demy 8vo. Illustrated. Second Revised English Edition. 160 pp. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

SIMPLE METHODS FOR TESTING PAINTERS' MATERIALS. By A. C. WRIGHT, M.A. (Oxon.), B.Sc. (Lond.). Crown 8vo. 160 pp. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

IRON-CORROSION, ANTI-FOULING AND ANTI-CORROSIVE PAINTS. Translated from the German of LOUIS EDGAR ANDÉS. Sixty-two Illustrations. 275 pp. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home and abroad.)

THE TESTING AND VALUATION OF RAW MATERIALS USED IN PAINT AND COLOUR MANUFACTURE. By M. W. JONES, F.C.S. A Book for the Laboratories of Colour Works. 88 pp. Crown 8vo. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

For contents of these books, see List I.

THE MANUFACTURE AND COMPARATIVE MERITS OF WHITE LEAD AND ZINC WHITE PAINTS. By G. PETIT, Civil Engineer, etc. Translated from the French. Crown 8vo. 100 pp. Price 4s. net. (Post free, 4s. 4d. home and abroad.)

STUDENTS' HANDBOOK OF PAINTS, COLOURS, OILS AND VARNISHES. By JOHN FURNELL. Crown 8vo. 12 Illustrations. 96 pp. Price 2s. 6d. net. (Post free, 2s. 10d. home and abroad.)

PREPARATION AND USES OF WHITE ZINC PAINTS. Translated from the French of P. FLEURY. Crown 8vo. 280 pages. Price 6s. net. (Post free, 6s. 5d. home; 6s. 6d. abroad.)

(Varnishes and Drying Oils.)

THE MANUFACTURE OF VARNISHES AND KINDRED INDUSTRIES. By J. GEDDES MCINTOSH. Second, greatly enlarged, English Edition, in three Volumes. based on and including the work of Ach. Livache.

VOLUME I.—OIL CRUSHING, REFINING AND BOILING, THE MANUFACTURE OF LINOLEUM, PRINTING AND LITHOGRAPHIC INKS, AND INDIA-RUBBER SUBSTITUTES. Demy 8vo. 150 pp. 29 Illustrations. Price 7s. 6d. net. (Post free, 7s. 10d. home and abroad.)

VOLUME II.—VARNISH MATERIALS AND OIL-VARNISH MAKING. Demy 8vo. 70 Illustrations. 220 pp. Price 10s. 6d. net. (Post free, 11s. home and abroad.)

VOLUME III.—SPIRIT VARNISHES AND SPIRIT VARNISH MATERIALS. Demy 8vo. Illustrated. 464 pp. Price 12s. 6d. net. (Post free, 13s. home; 13s. 2d. abroad.)

DRYING OILS, BOILED OIL AND SOLID AND LIQUID DRIERS. By L. E. ANDÉS. Expressly Written for this Series of Special Technical Books, and the Publishers hold the Copyright for English and Foreign Editions. Second Revised Edition. Forty-three Illustrations. 352 pp. Demy 8vo. Price 12s. 6d. net. (Post free, 13s. home; 13s. 2d. abroad.)

(Analysis of Resins, see page 9.)

(Oils, Fats, Waxes, Greases, Petroleum.)**LUBRICATING OILS, FATS AND GREASES :**

Their Origin, Preparation, Properties, Uses and Analyses. A Handbook for Oil Manufacturers, Refiners and Merchants, and the Oil and Fat Industry in General. By **GEORGE H. HURST**, F.C.S. Third Revised and Enlarged Edition. Seventy-four Illustrations. 384 pp. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home ; 11s. 2d. abroad.)

MINERAL WAXES: Their Preparation and Uses. By **RUDOLF GREGORIUS**. Translated from the German. Crown 8vo. 250 pp. 32 Illustrations. Price 6s. net. (Post free, 6s. 5d. home ; 6s. 6d. abroad.)

THE PRACTICAL COMPOUNDING OF OILS, TALLOW AND GREASE FOR LUBRICATION, ETC. By An **EXPERT OIL REFINER**. Second Edition. Demy 8vo. 100 pp. Price 7s. 6d. net. (Post free, 7s. 10d. home ; 8s. abroad.)

THE MANUFACTURE OF LUBRICANTS, SHOE POLISHES AND LEATHER DRESSINGS. By **RICHARD BRUNNER**. Translated from the Sixth German Edition. Second English Edition. Crown 8vo. 188 pp. 10 Illustrations. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

THE OIL MERCHANTS' MANUAL AND OIL TRADE READY RECKONER. Compiled by **FRANK F. SHERRIFF**. Second Edition Revised and Enlarged. Demy 8vo. 214 pp. With Two Sheets of Tables. Price 7s. 6d. net. (Post free, 8s. home ; 8s. 2d. abroad.)

ANIMAL FATS AND OILS: Their Practical Production, Purification and Uses for a great Variety of Purposes. Their Properties, Falsification and Examination. Translated from the German of **LOUIS EDGAR ANDÉS**. Sixty-two Illustrations. 240 pp. Second Edition, Revised and Enlarged. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home and abroad.)

VEGETABLE FATS AND OILS: Their Practical Preparation, Purification and Employment for Various Purposes, their Properties, Adulteration and Examination. Translated from the German of **LOUIS EDGAR ANDÉS**. Ninety-four Illustrations. 340 pp. Second Edition. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home ; 11s. 2d. abroad.)

EDIBLE FATS AND OILS : Their Composition, Manufacture and Analysis. By **W. H. SIMMONS**, B.Sc. (Lond.), and **C. A. MITCHELL**, B.A. (Oxon.). Demy 8vo. 150 pp. Price 7s. 6d. net. (Post free, 7s. 10d. home and abroad.)

For contents of these books, see List I.

(Glycerine.)

GLYCERINE: Its Production, Uses, and Examination.
By S. W. KOPPE. Translated from the Second German Edition.
260 pp. 7 Illustrations. Crown 8vo. Price 7s. 6d. net. (Post
free, 8s. home and abroad.)

(Essential Oils and Perfumes.)

**THE CHEMISTRY OF ESSENTIAL OILS AND
ARTIFICIAL PERFUMES.** By ERNEST J. PARRY,
B.Sc. (Lond.), F.I.C., F.C.S. Second Edition, Revised and
Enlarged. 552 pp. 20 Illustrations. Demy 8vo. Price 12s. 6d.
net. (Post free, 13s. 1d. home; 13s. 8d. abroad.)

(Soap Manufacture.)

SOAPS. A Practical Manual of the Manufacture of
Domestic, Toilet and other Soaps. By GEORGE H. HURST, F.C.S.
2nd edition. 390 pp. 66 Illustrations. Demy 8vo. Price 12s. 6d.
net. (Post free, 13s. home; 13s. 2d. abroad.)

TEXTILE SOAPS AND OILS. Handbook on the
Preparation, Properties and Analysis of the Soaps and Oils used
in Textile Manufacturing, Dyeing and Printing. By GEORGE
H. HURST, F.C.S. Second Edition, Revised and partly re-
written by W. H. SIMMONS, B.Sc. (Lond.). Demy 8vo. 200 pp.
11 Illustrations. Price 7s. 6d. net. (Post free, 8s. home and
abroad.)

THE HANDBOOK OF SOAP MANUFACTURE.
By WM. H. SIMMONS, B.Sc. (Lond.), F.C.S., and H. A. APPLETON.
Demy 8vo. 160 pp. 27 Illustrations. Price 8s. 6d. net. (Post
free, 9s. home and abroad.)

MANUAL OF TOILET SOAPMAKING, including
Medicated Soaps, Stain-removing Soaps, Metal Polishing Soaps,
Soap Powders and Detergents. Translated from the German
of Dr. C. DEITE. Demy 4to. 150 pages. 79 Illustrations.
Price 12s. 6d. net. (Post free, 13s. home; 13s. 4d. abroad.)

(Cosmetical Preparations.)

**COSMETICS: MANUFACTURE, EMPLOYMENT
AND TESTING OF ALL COSMETIC
MATERIALS AND COSMETIC SPECIALITIES.**
Translated from the German of Dr. THEODOR KOLLER. Crown
8vo. 262 pp. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d.
abroad.)

(Glue, Bone Products and Manures.)

GLUE AND GLUE TESTING. By SAMUEL RIDEAL, D.Sc. (Lond.). Second Edition, Revised and Enlarged. Demy 8vo. 196 pp. 14 Illustrations. Price 10s. 6d. net. (Post free, 11s. home and abroad.)

BONE PRODUCTS AND MANURES: An Account of the most recent Improvements in the Manufacture of Fat, Glue, Animal Charcoal, Size, Gelatine and Manures. By THOMAS LAMBERT, Technical and Consulting Chemist. Second Revised Edition. Demy 8vo. 172 pages. 17 Illustrations. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

(See also Chemical Manures, p. 9.)

(Chemicals, Waste Products, etc.)

REISSUE OF CHEMICAL ESSAYS OF C. W. SCHEELE. First Published in English in 1786. Translated from the Academy of Sciences at Stockholm, with Additions. 300 pp. Demy 8vo. Price 5s. net. (Post free, 5s. 6d. home and abroad.)

THE MANUFACTURE OF ALUM AND THE SULPHATES AND OTHER SALTS OF ALUMINA AND IRON. Their Uses and Applications as Mordants in Dyeing and Calico Printing, and their other Applications in the Arts, Manufactures, Sanitary Engineering, Agriculture and Horticulture. Translated from the French of LUCIEN GESCHWIND. 195 Illustrations. 400 pp. Royal 8vo. Price 12s. 6d. net. (Post free, 13s. home; 13s. 2d. abroad.)

AMMONIA AND ITS COMPOUNDS: Their Manufacture and Uses. By CAMILLE VINCENT, Professor at the Central School of Arts and Manufactures, Paris. Translated from the French by M. J. SALTER. Royal 8vo. 114 pp. Thirty-two Illustrations. Price 5s. net. (Post free, 5s. 5d. home; 5s. 8d. abroad.)

CHEMICAL WORKS: Their Design, Erection, and Equipment. By S. S. DYSON and S. S. CLARKSON. Royal 8vo. 220 pp. With 9 Folding Plates and 10 Illustrations. Price 21s. net. (Post free, 21s. 6d. home; 21s. 10d. abroad.)

MANUAL OF CHEMICAL ANALYSIS, as applied to the Assay of Fuels, Ores, Metals, Alloys, Salts and other Mineral Products. By E. PROST, D.Sc. Translated by J. CRUICKSHANK SMITH, B.Sc. Royal 8vo. 300 pages. 44 Illustrations. Price 12s. 6d. net. (Post free, 13s. home; 13s. 4d. abroad.)

TESTING OF CHEMICAL REAGENTS FOR PURITY. Translated from the German of Dr. C. KRAUCH. Royal 8vo. 350 pages. Price 12s. 6d. net. (Post free, 13s. home; 13s. 4d. abroad.)

For contents of these books, see List I.

SHALE OILS AND TARS and their Products. By Dr. W. SCHEITHAUER. Translated from the German. Demy 8vo. 190 pages. 70 Illustrations and 4 Diagrams. Price 8s. 6d. net. (Post free, 9s. home and abroad.)

THE BY-PRODUCTS OF COAL-GAS MANUFACTURE. By K. R. LANGE. Translated from the German. Crown 8vo. 164 pages. 13 Illustrations. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

INDUSTRIAL ALCOHOL. A Practical Manual on the Production and Use of Alcohol for Industrial Purposes and for Use as a Heating Agent, as an Illuminant and as a Source of Motive Power. By J. G. McINTOSH. Demy 8vo. 1907. 250 pp. With 75 Illustrations and 25 Tables. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

THE UTILISATION OF WASTE PRODUCTS. A Treatise on the Rational Utilisation, Recovery and Treatment of Waste Products of all kinds. By Dr. THEODOR KOLLER. Translated from the Second Revised German Edition. Second English Revised Edition. Demy 8vo. 336 pp. 22 Illustrations. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

ANALYSIS OF RESINS AND BALSAMS. Translated from the German of Dr. KARL DIETERICH. Demy 8vo. 340 pp. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

DISTILLATION OF RESINS, RESINATE LAKES AND PIGMENTS, CARBON PIGMENTS AND PIGMENTS FOR TYPEWRITING MACHINES, MANIFOLDERS, ETC. By VICTOR SCHWEIZER. Demy 8vo. 185 pages. 68 Illustrations. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

DISINFECTION AND DISINFECTANTS. By M. CHRISTIAN. Translated from the German. Crown 8vo. 112 pages. 18 Illustrations. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

(Agricultural Chemistry and Manures.)

MANUAL OF AGRICULTURAL CHEMISTRY. By HERBERT INGLE, F.I.C., Late Lecturer on Agricultural Chemistry, the Leeds University; Lecturer in the Victoria University. Third and Revised Edition. 400 pp. 16 Illustrations. Demy 8vo. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

CHEMICAL MANURES. Translated from the French of J. FRITSCH. Demy 8vo. Illustrated. 340 pp. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

(See also *Bone Products and Manures*, p. 8.)

(Writing Inks and Sealing Waxes.)

INK MANUFACTURE: Including Writing, Copying, Lithographic, Marking, Stamping and Laundry Inks. By SIGMUND LEHNER. Translated from the German of the Fifth Edition. Second Revised and Enlarged English Edition. Crown 8vo. 180 pages. Three Illustrations. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

SEALING - WAXES, WAFERS AND OTHER ADHESIVES FOR THE HOUSEHOLD, OFFICE, WORKSHOP AND FACTORY. By H. C. STANDAGE. Crown 8vo. 96 pp. Price 5s. net. (Post free, 5s. 5d. home and abroad.)

(Lead Ores and Lead Compounds.)

LEAD AND ITS COMPOUNDS. By THOS. LAMBERT, Technical and Consulting Chemist. Demy 8vo. 226 pp. Forty Illustrations. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

NOTES ON LEAD ORES: Their Distribution and Properties. By JAS. FAIRIE, F.G.S. Crown 8vo. 64 pages. Price 1s. net. (Post free, 1s. 4d. home and abroad.)

(White Lead and Zinc White Paints, see p. 5.)

(Industrial Hygiene.)

THE RISKS AND DANGERS TO HEALTH OF VARIOUS OCCUPATIONS AND THEIR PREVENTION. By LEONARD A. PARRY, M.D., B.Sc. (Lond.). 196 pp. Demy 8vo. Price 7s. 6d. net. (Post free, 7s. 10d. home and abroad.)

(Industrial Uses of Air, Steam and Water.)

DRYING BY MEANS OF AIR AND STEAM. Explanations, Formulæ, and Tables for Use in Practice. Translated from the German of E. HAUSBRAND. Second Revised English Edition. Two folding Diagrams, Thirteen Tables, and Two Illustrations. Crown 8vo. 76 pp. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

(See also "Evaporating, Condensing and Cooling Apparatus," p. 18.)

PURE AIR, OZONE AND WATER. A Practical Treatise of their Utilisation and Value in Oil, Grease, Soap, Paint, Glue and other Industries. By W. B. COWELL. Twelve Illustrations. Crown 8vo. 85 pp. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

For contents of these books, see List III,

THE INDUSTRIAL USES OF WATER. COMPOSITION—EFFECTS—TROUBLES—REMEDIES—RESIDUARY WATERS—PURIFICATION—ANALYSIS. By H. DE LA COUX. Royal 8vo. Translated from the French and Revised by ARTHUR MORRIS. 364 pp. 135 Illustrations. Price 10s. 6d. net. (Post free, 11s. home; 11s. 6d. abroad.)

(See *Books on Smoke Prevention, Engineering and Metallurgy*, p. 18.)

(X Rays.)

PRACTICAL X RAY WORK. By FRANK T. ADDYMAN, B.Sc. (Lond.), F.I.C., Member of the Roentgen Society of London; Radiographer to St. George's Hospital; Demonstrator of Physics and Chemistry, and Teacher of Radiography in St. George's Hospital Medical School. Demy 8vo. Twelve Plates from Photographs of X Ray Work. Fifty-two Illustrations. 200 pp. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

(India-Rubber and Gutta Percha.)

INDIA-RUBBER AND GUTTA PERCHA. Second English Edition, Revised and Enlarged. Based on the French work of T. SEELIGMANN, G. LAMY TORRILHON and H. FALCONNET by JOHN GEDDES MCINTOSH. Royal 8vo. 100 Illustrations. 400 pages. Price 12s. 6d. net. (Post free, 13s. 1d. home; 13s. 8d. abroad.)

(Leather Trades.)

THE LEATHER WORKER'S MANUAL. Being a Compendium of Practical Recipes and Working Formulæ for Curriers, Bootmakers, Leather Dressers, Blacking Manufacturers, Saddlers, Fancy Leather Workers. By H. C. STANDAGE. Demy 8vo. 165 pp. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

(See also *Manufacture of Shoe Polishes, Leather Dressings, etc.*, p. 6.)

(Pottery, Bricks, Tiles, Glass, etc.)

MODERN BRICKMAKING. By ALFRED B. SEARLE, Royal 8vo. 440 pages. 260 Illustrations. Price 12s. 6d. net. (Post free, 13s. 1d. home; 13s. 7d. abroad.)

THE MANUAL OF PRACTICAL POTTING. Compiled by Experts, and Edited by CHAS. F. BINNS. Fourth Edition, Revised and Enlarged. 200 pp. Demy 8vo. Price 17s. 6d. net. (Post free, 18s. home; 18s. 2d. abroad.)

POTTERY DECORATING. A Description of all the Processes for Decorating Pottery and Porcelain. By R. HAINBACH. Translated from the German. Crown 8vo. 250 pp. Twenty-two Illustrations. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

A TREATISE ON CERAMIC INDUSTRIES. A Complete Manual for Pottery, Tile, and Brick Manufacturers. By EMILE BOURRY. A Revised Translation from the French, with some Critical Notes by ALFRED B. SEARLE. Demy 8vo. 308 Illustrations. 460 pp. Price 12s. 6d. net. (Post free, 13s. home; 13s. 6d. abroad.)

ARCHITECTURAL POTTERY. Bricks, Tiles, Pipes, Enamelled Terra-cottas, Ordinary and Incrusted Quarries, Stoneware Mosaics, Faïences and Architectural Stoneware. By LÉON LEFÈVRE. Translated from the French by K. H. BIRD, M.A., and W. MOORE BINNS. With Five Plates. 950 Illustrations in the Text, and numerous estimates. 500 pp. Royal 8vo. Price 15s. net. (Post free, 15s. 7d. home; 16s. 4d. abroad.)

THE ART OF RIVETING GLASS, CHINA AND EARTHENWARE. By J. HOWORTH. Second Edition. Paper Cover. Price 1s. net. (By post, home or abroad, 1s. 2d.)

NOTES ON POTTERY CLAYS. The Distribution, Properties, Uses and Analyses of Ball Clays, China Clays and China Stone. By JAS. FAIRIE, F.G.S. 132 pp. Crown 8vo. Price 3s. 6d. net. (Post free, 4s. home and abroad.)

HOW TO ANALYSE CLAY. By H. M. ASHBY. Demy 8vo. 72 pp. 20 Illustrations. Price 3s. 6d. net. (Post free, 3s. 10d. home and abroad.)

A Reissue of

THE HISTORY OF THE STAFFORDSHIRE POTTERIES; AND THE RISE AND PROGRESS OF THE MANUFACTURE OF POTTERY AND PORCELAIN. With References to Genuine Specimens, and Notices of Eminent Potters. By SIMÉON SHAW. (Originally published in 1829.) 265 pp. Demy 8vo. Price 5s. net. (Post free, 5s. 6d. home; 5s. 10d. abroad.)

A Reissue of

THE CHEMISTRY OF THE SEVERAL NATURAL AND ARTIFICIAL HETEROGENEOUS COMPOUNDS USED IN MANUFACTURING PORCELAIN, GLASS AND POTTERY. By SIMÉON SHAW. (Originally published in 1837.) 750 pp. Royal 8vo. Price 10s. net. (Post free, 10s. 7d. home; 11s. 6d. abroad.)

BRITISH POTTERY MARKS. By G. WOOLLISCROFT RHEAD. Demy 8vo. 310 pp. With over Twelve-hundred Illustrations of Marks. Price 7s. 6d. net. (Post free, 8s. home; 8s. 4d. abroad.)

For contents of these books, see List III.

(Glassware, Glass Staining and Painting.)

RECIPES FOR FLINT GLASS MAKING. By a British Glass Master and Mixer. Sixty Recipes. Being Leaves from the Mixing Book of several experts in the Flint Glass Trade, containing up-to-date recipes and valuable information as to Crystal, Demi-crystal and Coloured Glass in its many varieties. It contains the recipes for cheap metal suited to pressing, blowing, etc., as well as the most costly crystal and ruby. Second Edition. Crown 8vo. Price 10s. 6d. net. (Post free, 10s. 10d. home and abroad.)

A TREATISE ON THE ART OF GLASS PAINTING. Prefaced with a Review of Ancient Glass. By ERNEST R. SUFFLING. With One Coloured Plate and Thirty-seven Illustrations. Demy 8vo. 140 pp. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

(Paper Making and Testing.)

THE PAPER MILL CHEMIST. By HENRY P. STEVENS, M.A., Ph.D., F.I.C. Royal 12mo. 60 Illustrations. 300 pp. Price 7s. 6d. net. (Post free, 7s. 10d. home; 8s. abroad.)

THE TREATMENT OF PAPER FOR SPECIAL PURPOSES. By L. E. ANDÉS. Translated from the German. Crown 8vo. 48 Illustrations. 250 pp. Price 6s. net. (Post free, 6s. 5d. home; 6s. 6d. abroad.)

(Enamelling on Metal.)

ENAMELS AND ENAMELLING. For Enamel Makers, Workers in Gold and Silver, and Manufacturers of Objects of Art. By PAUL RANDAU. Second and Revised Edition. Translated from the German. With 16 Illustrations. Demy 8vo. 200 pp. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

THE ART OF ENAMELLING ON METAL. By W. NORMAN BROWN. Second Edition, Revised. Crown 8vo. 60 pp. Price 3s. 6d. net. (Post free, 3s. 10d. home and abroad.)

(Textile Subjects.)

THE FINISHING OF TEXTILE FABRICS (Woollen, Worsted, Union, and other Cloths). By ROBERTS BEAUMONT, M.Sc., M.I.Mech.E. With 150 Illustrations of Fibres, Yarns and Fabrics, also Sectional and other Drawings of Finishing Machinery. Demy 8vo. 260 pp. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

STANDARD CLOTHS: Structure and Manufacture (General, Military and Naval). By ROBERTS BEAUMONT, M.Sc., M.I.Mech.E. 342 pp. Numerous Illustrations. 16 Plates in Monochrome and Colour. Demy 8vo. Price 12s. 6d. net. (Post free, 13s. home; 13s. 4d. abroad.) [*Just published.*]

FIBRES USED IN TEXTILE AND ALLIED INDUSTRIES. By C. AINSWORTH MITCHELL, B.A. (Oxon.), F.I.C., and R. M. PRIDEAUX, F.I.C. With 66 Illustrations specially drawn direct from the Fibres. Demy 8vo. 200 pp. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

DRESSINGS AND FINISHINGS FOR TEXTILE FABRICS AND THEIR APPLICATION. Description of all the Materials used in Dressing Textiles: Their Special Properties, the preparation of Dressings and their employment in Finishing Linen, Cotton, Woollen and Silk Fabrics. Fireproof and Waterproof Dressings, together with the principal machinery employed. Translated from the Third German Edition of FRIEDRICH POLLEYN. Demy 8vo. 280 pp. Sixty Illustrations. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

THE CHEMICAL TECHNOLOGY OF TEXTILE FIBRES: Their Origin, Structure, Preparation, Washing, Bleaching, Dyeing, Printing and Dressing. By Dr. GEORG VON GEORGIEVICS. Translated from the German by CHARLES SALTER. 320 pp. Forty-seven Illustrations. Royal 8vo. Price 10s. 6d. net. (Post free, 11s. home; 11s. 4d. abroad.)

POWER-LOOM WEAVING AND YARN NUMBERING, According to Various Systems, with Conversion Tables. Translated from the German of ANTHON GRUNER. **With Twenty-six Diagrams in Colours.** 150 pp. Crown 8vo. Price 7s. 6d. net. (Post free, 7s. 11d. home; 8s. abroad.)

TEXTILE RAW MATERIALS AND THEIR CONVERSION INTO YARNS. (The Study of the Raw Materials and the Technology of the Spinning Process.) By JULIUS ZIPSER. Translated from German by CHARLES SALTER. 302 Illustrations. 500 pp. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. 1d. home; 11s. 8d. abroad.)

GRAMMAR OF TEXTILE DESIGN. By H. NISBET, Weaving and Designing Master, Bolton Municipal Technical School. Demy 8vo. 280 pp. 490 Illustrations and Diagrams. Price 6s. net. (Post free, 6s. 5d. home; 6s. 8d. abroad.)

ART NEEDLEWORK AND DESIGN. POINT LACE. A Manual of Applied Art for Secondary Schools and Continuation Classes. By M. E. WILKINSON. Oblong quarto. With 22 Plates. Bound in Art Linen. Price 3s. 6d. net. (Post free, 4s. home and abroad.)

HOME LACE-MAKING. A Handbook for Teachers and Pupils. By M. E. W. MILROY. Crown 8vo. 64 pp. With 3 Plates and 9 Diagrams. Price 1s. net. (Post free, 1s. 4d. home and abroad.)

CHURCH LACE. By M. E. W. MILROY. [*In preparation.*]

For contents of these books, see List II.

THE CHEMISTRY OF HAT MANUFACTURING.

Lectures delivered before the Hat Manufacturers' Association. By WATSON SMITH, F.C.S., F.I.C. Revised and Edited by ALBERT SHONK. Crown 8vo. 132 pp. 16 Illustrations. Price 7s. 6d. net. (Post free, 7s. 11d. home; 8s. abroad.)

THE TECHNICAL TESTING OF YARNS AND TEXTILE FABRICS.

With Reference to Official Specifications. Translated from the German of Dr. J. HERZFELD. Second Edition. Sixty-nine Illustrations. 200 pp. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

DECORATIVE AND FANCY TEXTILE FABRICS.

By R. T. LORD. For Manufacturers and Designers of Carpets, Damask, Dress and all Textile Fabrics. 200 pp. Demy 8vo. 132 Designs and Illustrations. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

THEORY AND PRACTICE OF DAMASK WEAVING.

By H. KINZER and K. WALTER. Royal 8vo. Eighteen Folding Plates. Six Illustrations. Translated from the German. 110 pp. Price 8s. 6d. net. (Post free, 9s. home; 9s. 2d. abroad.)

FAULTS IN THE MANUFACTURE OF WOOLLEN GOODS AND THEIR PREVENTION.

By NICOLAS REISER. Translated from the Second German Edition. Crown 8vo. Sixty-three Illustrations. 170 pp. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

SPINNING AND WEAVING CALCULATIONS,

especially relating to Woollens. From the German of N. REISER. Thirty-four Illustrations. Tables. 160 pp. Demy 8vo. 1904. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

WORSTED SPINNERS' PRACTICAL HANDBOOK.

By H. TURNER. 148 pp. 54 Drawings. Crown 8vo. Price 6s. net. (Post free, 6s. 5d. home; 6s. 6d. abroad.)

ANALYSIS OF WOVEN FABRICS.

By A. F. BARKER, M.Sc., and E. MIDGLEY. Demy 8vo. 316 pp. Numerous Tables, Examples and 82 Illustrations. Price 7s. 6d. net. (Post free, 8s. home; 8s. 4d. abroad.)

WATERPROOFING OF FABRICS.

By Dr. S. MIERZINSKI. Second Edition, Revised and Enlarged. Crown 8vo. 140 pp. 29 Illus. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

HOW TO MAKE A WOOLLEN MILL PAY.

By JOHN MACKIE. Crown 8vo. 76 pp. Price 3s. 6d. net. (Post free, 3s. 10d. home and abroad.)

YARN AND WARP SIZING IN ALL ITS BRANCHES.

Translated from the German of CARL KRETSCHMAR. Royal 8vo. 123 Illustrations. 150 pp. Price 10s. 6d. net. (Post free, 11s. home; 11s. 4d. abroad.)

(For "Textile Soaps and Oils" see p. 7.)

**(Dyeing, Colour Printing, Matching
and Dye-stuffs.)**

THE COLOUR PRINTING OF CARPET YARNS.

Manual for Colour Chemists and Textile Printers. By DAVID PATERSON, F.C.S. Seventeen Illustrations. 136 pp. Demy 8vo. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

TEXTILE COLOUR MIXING. By DAVID PATERSON,

F.R.S.E., F.C.S. Formerly published under title of "Science of Colour Mixing". Second Revised Edition. Demy 8vo. 140 pp. 41 Illustrations, with 5 Coloured Plates and 4 Plates showing Dyed Specimens. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

DYERS' MATERIALS : An Introduction to the Examination,

Evaluation and Application of the most important Substances used in Dyeing, Printing, Bleaching and Finishing. By PAUL HEERMAN, Ph.D. Translated from the German by A. C. WRIGHT, M.A. (Oxon.), B.Sc. (Lond.). Twenty-four Illustrations. Crown 8vo. 150 pp. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

COLOUR MATCHING ON TEXTILES. A Manual

intended for the use of Students of Colour Chemistry, Dyeing and Textile Printing. By DAVID PATERSON, F.C.S. Coloured Frontispiece. Twenty-nine Illustrations and **Fourteen Specimens of Dyed Fabrics.** Demy 8vo. 132 pp. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

COLOUR : A HANDBOOK OF THE THEORY OF COLOUR. By GEORGE H. HURST. **With Eleven**

Coloured Plates and Seventy-two Illustrations. Second Edition. Demy 8vo. 168 pp. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

Reissue of

THE ART OF DYEING WOOL, SILK AND COTTON. Translated from the French of M. HELLOT,

M. MACQUER and M. LE PILEUR D'APLIGNY. First Published in English in 1789. Six Plates. Demy 8vo. 446 pp. Price 5s. net. (Post free, 5s. 6d. home; 6s. 4d. abroad.)

THE CHEMISTRY OF DYE-STUFFS. By Dr. GEORG

VON GEORGIEVICS. Translated from the Second German Edition. 412 pp. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home; 11s. 4d. abroad.)

THE DYEING OF COTTON FABRICS : A Practical

Handbook for the Dyer and Student. By FRANKLIN BEECH, Practical Colourist and Chemist. 272 pp. Forty-four Illustrations of Bleaching and Dyeing Machinery. Demy 8vo. Price 7s. 6d. net. (Post free, 8s. home; 8s. 4d. abroad.)

THE DYEING OF WOOLLEN FABRICS. By

FRANKLIN BEECH, Practical Colourist and Chemist. Thirty-three Illustrations. Demy 8vo. 228 pp. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

For contents of these books, see List II.

(Silk Manufacture.)

SILK THROWING AND WASTE SILK SPINNING. By HOLLINS RAYNER. Demy 8vo. 170 pp. 117 illus. Price 5s. net. (Post free, 5s. 5d. home; 5s. 8d. abroad.)

(Bleaching and Bleaching Agents.)

A PRACTICAL TREATISE ON THE BLEACHING OF LINEN AND COTTON YARN AND FABRICS.

By L. TAILFER, Chemical and Mechanical Engineer. Translated from the French by JOHN GEDDES MCINTOSH. Demy 8vo. 303 pp. Twenty Illustrations. Price 12s. 6d. net. (Post free, 13s. home; 13s. 4d. abroad.)

MODERN BLEACHING AGENTS AND DETERGENTS. By Professor MAX BOTTLER. Translated from the German. Crown 8vo. 16 Illustrations. 160 pages. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

(Cotton Spinning, Cotton Waste and Cotton Combing.)

COTTON SPINNING (First Year). By THOMAS THORNLEY, Spinning Master, Bolton Technical School. 160 pp. 84 Illustrations. Crown 8vo. Second Impression. Price 3s. net. (Post free, 3s. 5d. home; 3s. 6d. abroad.)

COTTON SPINNING (Intermediate, or Second Year). By T. THORNLEY. Third Edition, Revised and Enlarged. 320 pp. 114 Drawings. Crown 8vo. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.) *[Just Published.]*

COTTON SPINNING (Honours, or Third Year). By T. THORNLEY. 216 pp. 74 Illustrations. Crown 8vo. Second Edition. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

COTTON COMBING MACHINES. By THOS. THORNLEY, Spinning Master, Technical School, Bolton. Demy 8vo. 117 Illustrations. 300 pp. Price 7s. 6d. net. (Post free, 8s. home; 8s. 4d. abroad.)

COTTON WASTE: Its Production, Characteristics, Regulation, Opening, Carding, Spinning and Weaving. By THOMAS THORNLEY. Demy 8vo. 286 pages. 60 Illustrations. Price 7s. 6d. net. (Post free, 8s. home; 8s. 4d. abroad.)

THE RING SPINNING FRAME: GUIDE FOR OVERLOOKERS AND STUDENTS. By N. BOOTH. Crown 8vo. 76 pages. Price 3s. net. (Post free, 3s. 4d. home and abroad.)

(Flax, Hemp and Jute Spinning.)

MODERN FLAX, HEMP AND JUTE SPINNING AND TWISTING. A Practical Handbook for the use of Flax, Hemp and Jute Spinners, Thread, Twine and Rope Makers. By HERBERT R. CARTER, Mill Manager, Textile Expert and Engineer, Examiner in Flax Spinning to the City and Guilds of London Institute. Demy 8vo. 1907. With 92 Illustrations. 200 pp. Price 7s. 6d. net. (Post free, 7s. 11d. home; 8s. 2d. abroad.)

(Collieries and Mines.)

RECOVERY WORK AFTER PIT FIRES. By ROBERT LAMPRECHT, Mining Engineer and Manager. Translated from the German. Illustrated by Six large Plates, containing Seventy-six Illustrations. 175 pp. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home; 11s. 2d. abroad.)

VENTILATION IN MINES. By ROBERT WABNER, Mining Engineer. Translated from the German. Royal 8vo. Thirty Plates and Twenty-two Illustrations. 240 pp. Price 10s. 6d. net. (Post free, 11s. home; 11s. 6d. abroad.)

THE ELECTRICAL EQUIPMENT OF COLLIERIES. By W. GALLOWAY DUNCAN and DAVID PENMAN. Demy 8vo. 310 pp. 155 Illustrations and Diagrams. Price 10s. 6d. net. (Post free, 11s. home; 11s. 4d. abroad.)

(Dental Metallurgy.)

DENTAL METALLURGY: MANUAL FOR STUDENTS AND DENTISTS. By A. B. GRIFFITHS, Ph.D. Demy 8vo. Thirty-six Illustrations. 200 pp. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

(Engineering, Smoke Prevention and Metallurgy.)

THE PREVENTION OF SMOKE. Combined with the Economical Combustion of Fuel. By W. C. POPPLEWELL, M.Sc., A.M. Inst., C.E., Consulting Engineer. Forty-six Illustrations. 190 pp. Demy 8vo. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)

GAS AND COAL DUST FIRING. A Critical Review of the Various Appliances Patented in Germany for this purpose since 1885. By ALBERT PÜTSCH. 130 pp. Demy 8vo. Translated from the German. With 103 Illustrations. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

THE HARDENING AND TEMPERING OF STEEL IN THEORY AND PRACTICE. By FRIDOLIN REISER. Translated from the German of the Third Edition. Crown 8vo. 120 pp. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

SIDEROLOGY: THE SCIENCE OF IRON (The Constitution of Iron Alloys and Slags). Translated from German of HANNS FREIHERR V. JÜPTNER. 350 pp. Demy 8vo. Eleven Plates and Ten Illustrations. Price 10s. 6d. net. (Post free, 11s. home; 11s. 4d. abroad.)

EVAPORATING, CONDENSING AND COOLING APPARATUS. Explanations, Formulæ and Tables for Use in Practice. By E. HAUSBRAND, Engineer. Translated by A. C. WRIGHT, M.A. (Oxon.), B.Sc. (Lond.). With Twenty-one Illustrations and Seventy-six Tables. 400 pp. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home; 11s. 6d. abroad.)

For contents of these books, see Lists II and III.

(The "Broadway" Series of Engineering Handbooks.)

Uniform in Size: Narrow Crown 8vo. (Pocket Size.)

- VOLUME I.—ELEMENTARY PRINCIPLES OF REINFORCED CONCRETE CONSTRUCTION.** By EWART S. ANDREWS, B.Sc. Eng. (Lond.). 200 pages. With 57 Illustrations. Numerous Tables and Worked Examples. Price 3s. net. (Post free, 3s. 5d. home; 3s. 6d. abroad.)
- VOLUME II.—GAS AND OIL ENGINES.** By A. KIRSCHKE. Translated and Revised from the German, and adapted to British practice. 160 pages. 55 Illustrations. Price 3s. net. (Post free, 3s. 5d. home; 3s. 6d. abroad.)
- VOLUME III.—IRON AND STEEL CONSTRUCTIONAL WORK.** By K. SCHINDLER. Translated and Revised from the German, and adapted to British practice. 140 pages. 115 Illustrations. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME IV.—TOOTHED GEARING.** By G. T. WHITE, B.Sc. (Lond.). 220 pages. 136 Illustrations. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME V.—STEAM TURBINES: Their Theory and Construction.** By H. WILDA. Translated from the German; Revised and adapted to British practice. 200 pages. 104 Illustrations. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME VI.—CRANES AND HOISTS.** Their Construction and Calculation. By H. WILDA. Translated from the German; revised and adapted to British practice. 168 pages. 399 Illustrations. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME VII.—FOUNDRY MACHINERY.** By E. TREIBER. Translated from the German; revised and adapted to British practice. 148 pages. 51 Illustrations. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME VIII.—MOTOR CAR MECHANISM.** By W. E. DOMMETT, Wh.Ex., A.M.I.A.E. 200 pages. 102 Illustrations. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME IX.—ELEMENTARY PRINCIPLES OF ILLUMINATION AND ARTIFICIAL LIGHTING.** By A. BLOK, B.Sc. 240 pages. 124 Illustrations and Diagrams and 1 Folding Plate. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME X.—HYDRAULICS.** By E. H. SPRAGUE, A.M.I.C.E. 190 pages. With Worked Examples and 89 Illustrations. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME XI.—ELEMENTARY PRINCIPLES OF SURVEYING.** By M. T. M. ORMSBY, M.I.C.E.I. 244 pages. With Worked Examples and 135 Illustrations and Diagrams, including 4 Folding Plates. Price 4s. net. (Post free, 4s. 5d. home; 4s. 6d. abroad.)
- VOLUME XII.—THE SCIENCE OF WORKS MANAGEMENT.** By JOHN BATEY. 232 pages. Price 4s. net. (Post free, 4s. 5d. home; 4s. 6d. abroad.)

- VOLUME XIII.—THE CALCULUS FOR ENGINEERS.**
By EWART S. ANDREWS, B.Sc.Eng. (Lond.), and H. BRYON HEYWOOD, D.Sc. (Paris), B.Sc. (Lond.). 284 pages. 102 Illustrations. With Tables and Worked Examples. Price 4s. net. (Post free, 4s. 5d. home; 4s. 6d. abroad.)
- VOLUME XIV.—LATHES:** Their Construction and Operation. By G. W. BURLEY, Wh.Ex., A.M.I.M.E. 244 pages. 200 Illustrations. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)
- VOLUME XV.—STEAM BOILERS AND COMBUSTION.** By JOHN BATEY. 220 pages. 18 Diagrams. Price 4s. net. (Post free, 4s. 5d. home; 4s. 6d. abroad.)
- VOLUME XVI.—REINFORCED CONCRETE IN PRACTICE.** By A. ALBAN H. SCOTT, M.S.A., M.C.I. 190 pp. 130 Illustrations and Diagrams and 2 Folding Plates. Price 4s. net. (Post free, 4s. 5d. home; 4s. 6d. abroad.)
- VOLUME XVII.—STABILITY OF MASONRY.** By E. H. SPRAGUE, A.M.I.C.E. 180 pp. 92 Illustrations. 3 Folding Plates and Worked Examples. Price 4s. net. (Post free, 4s. 5d. home; 4s. 6d. abroad.)
- VOLUME XVIII.—TESTING OF MACHINE TOOLS.** By G. W. BURLEY, Wh.Ex., A.M.I.M.E. 240 pp. 110 Illustrations. Price 4s. net. (Post free, 4s. 5d. home; 4s. 6d. abroad.)
- VOLUME XIX.—BRIDGE FOUNDATIONS.** By W. BURNSIDE, M.I.C.E. 148 pp. 31 Diagrams. Price 4s. net. (Post free, 4s. 4d. home and abroad.)
- [IN PREPARATION.]
- PORTLAND CEMENT.** Its Properties and Manufacture. By P. C. H. WEST, F.C.S.
- CALCULATIONS FOR A STEEL FRAME BUILDING.** By W. C. COCKING, M.C.I.
- GEAR CUTTING.** By G. W. BURLEY, Wh.Ex., A.M.I.M.E.
- MOVING LOADS BY INFLUENCE LINES AND OTHER METHODS.** By E. H. SPRAGUE, A.M.I.C.E.
- THE STABILITY OF ARCHES.** By E. H. SPRAGUE, A.M.I.C.E.
- DRAWING OFFICE PRACTICE.** By W. CLEGG.
- ESTIMATING STEELWORK FOR BUILDINGS.** By B. P. F. GLEED and S. BYLANDER, M.C.I.
- THE THEORY OF THE CENTRIFUGAL AND TURBO PUMP.** By J. WELLS.
- STRENGTH OF SHIPS.** By JAMES BERTRAM THOMAS.
- MACHINE SHOP PRACTICE.** By G. W. BURLEY, Wh.Ex., A.M.I.M.E.
- DESIGN OF MACHINE ELEMENTS (In 2 Volumes).** By W. G. DUNKLEY.
- IRON AND STEEL.** By J. S. GLEN PRIMROSE.
- ELEMENTS OF STRUCTURAL MECHANICS.** By E. H. SPRAGUE, A.M.I.C.E.
- ELEMENTARY MATHEMATICS FOR ENGINEERS AND ARCHITECTS.** By E. H. SPRAGUE, A.M.I.C.E.
- DRIVING OF MACHINE TOOLS.** By T. R. SHAW.
- ELECTRIC TRACTION.** By H. M. SAYERS.

For contents of these books, see List III.

(Sanitary Plumbing, Metal Work, etc.)

- EXTERNAL PLUMBING WORK.** A Treatise on Lead Work for Roofs. By JOHN W. HART, R.P.C. 180 Illustrations. 272 pp. Demy 8vo. Second Edition Revised. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)
- HINTS TO PLUMBERS ON JOINT WIPING, PIPE BENDING AND LEAD BURNING.** Third Edition, Revised and Corrected. By JOHN W. HART, R.P.C. 184 Illustrations. 313 pp. Demy 8vo. Price 7s. 6d. net. (Post free, 8s. home; 8s. 4d. abroad.)
- SANITARY PLUMBING AND DRAINAGE.** By JOHN W. HART. Demy 8vo. With 208 Illustrations. 250 pp. 1904. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)
- THE PRINCIPLES OF HOT WATER SUPPLY.** By JOHN W. HART, R.P.C. With 129 Illustrations. 177 pp. Demy 8vo. Price 7s. 6d. net. (Post free, 8s. home; 8s. 2d. abroad.)
- THE PRINCIPLES AND PRACTICE OF DIPPING, BURNISHING, LACQUERING AND BRONZING BRASS WARE.** By W. NORMAN BROWN. Revised and Enlarged Edition. Crown 8vo. 48 pp. Price 3s. net. (Post free, 3s. 4d. home and abroad.)
- A HANDBOOK ON JAPANNING.** For Ironware, Tinware, and Wood, etc. By WILLIAM NORMAN BROWN. Second Edition. Crown 8vo. 70 pages. 13 Illustrations. Price 3s. 6d. net. (Post free, 3s. 10d. home and abroad.)
- SHEET METAL WORKING.** Cutting, Punching, Bending, Folding, Pressing, Drawing and Embossing Metals, with Machinery for same. By F. GEORGI and A. SCHUBERT. Translated from the German. Demy 8vo. 160 pages. 125 Drawings and Illustrations. 2 Folding Plates. Price 7s. 6d. net. (Post free, 8s. home and abroad.)

(Electric Wiring, etc.)

- THE DEVELOPMENT OF THE INCANDESCENT ELECTRIC LAMP.** By G. BASIL BARHAM, A.M.I.E.E. Demy 8vo. 200 pages. 2 Plates, 25 Illustrations and 10 Tables. Price 5s. net. (Post free, 5s. 5d. home; 5s. 8d. abroad.)
- WIRING CALCULATIONS FOR ELECTRIC LIGHT AND POWER INSTALLATIONS.** A Practical Handbook containing Wiring Tables, Rules, and Formulæ for the Use of Architects, Engineers, Mining Engineers, and Electricians, Wiring Contractors and Wiremen, etc. By G. W. LUMMIS PATERSON. Crown 8vo. 96 pages. 35 Tables. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)
- ELECTRIC WIRING AND FITTING.** By SYDNEY F. WALKER, R.N., M.I.E.E., M.I.Min.E., A.M.Inst.C.E., etc., etc. Crown 8vo. 150 pp. With Illustrations and Tables. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

(Brewing and Botanical.)**HOPS IN THEIR BOTANICAL, AGRICULTURAL AND TECHNICAL ASPECT, AND AS AN ARTICLE OF COMMERCE.** By EMMANUEL GROSS.

Translated from the German. 78 Illus. 340 pp. Demy 8vo. Price 10s. 6d. net. (Post free, 11s. home ; 11s. 4d. abroad.)

INSECTICIDES, FUNGICIDES AND WEED-KILLERS. By E. BOURCART, D.Sc.

Translated from the French. Revised and Adapted to British Standards and Practice. Demy 8vo. 450 pages, 83 Tables, and 12 Illustrations. Price 12s. 6d. net. (Post free, 13s. home ; 13s. 4d. abroad.)

(For *Agricultural Chemistry*, see p. 9.)

(Wood Products, Timber and Wood Waste.)**WOOD PRODUCTS: DISTILLATES AND EXTRACTS.** By P. DUMESNY, Chemical Engineer,

Expert before the Lyons Commercial Tribunal, Member of the International Association of Leather Chemists; and J. NOYER. Translated from the French by DONALD GRANT. Royal 8vo. 320 pp. 103 Illustrations and Numerous Tables. Price 10s. 6d. net. (Post free, 11s. 1d. home ; 11s. 8d. abroad.)

TIMBER: A Comprehensive Study of Wood in all its

Aspects (Commercial and Botanical), showing the different Applications and Uses of Timber in Various Trades, etc. Translated from the French of PAUL CHARPENTIER. Royal 8vo. 437 pp. 178 Illustrations. Price 12s. 6d. net. (Post free, 13s. home ; 13s. 6d. abroad.)

THE UTILISATION OF WOOD WASTE. Translated from the German of E. HUBBARD.

Second Revised English Edition. Crown 8vo. 208 pp. 50 Illus. Price 5s. net. (Post free, 5s. 5d. home ; 5s. 6d. abroad.)

(See also *Utilisation of Waste Products*, p. 9.)

(Building and Architecture.)**ORNAMENTAL CEMENT WORK.** By OLIVER

WHEATLEY. Demy 8vo. 83 Illustrations. 128 pp. Price 5s. net. (Post free, 5s. 5d. home ; 5s. 6d. abroad.)

THE PREVENTION OF DAMPNES IN BUILDINGS; with Remarks on the Causes, Nature and

Effects of Saline, Efflorescences and Dry-rot, for Architects, Builders, Overseers, Plasterers, Painters and House Owners. By ADOLF WILHELM KEIM. Translated from the German of the Second Revised Edition. Eight Coloured Plates and Thirteen Illustrations. Crown 8vo. 115 pp. Price 5s. net. (Post free, 5s. 4d. home and abroad.)

HANDBOOK OF TECHNICAL TERMS USED IN ARCHITECTURE AND BUILDING, AND THEIR

ALLIED TRADES AND SUBJECTS. By AUGUSTINE C. PASSMORE. Demy 8vo. 380 pp. Price 7s. 6d. net. (Post free, 8s. home ; 8s. 4d. abroad.)

For contents of these books, see List III.

(Foods, Drugs and Sweetmeats.)**FOOD AND DRUGS.** By E. J. PARRY, B.Sc., F.I.C., F.C.S.

Volume I. The Analysis of Food and Drugs (Chemical and Microscopical). Royal 8vo. 724 pp. Price 21s. net. (Post free, 21s. 7d. home; 22s. 6d. British Colonies; 23s. 3d. other Foreign Countries.)

Volume II. The Sale of Food and Drugs Acts, 1875-1907. Royal 8vo. 184 pp. Price 7s. 6d. net. (Post free, 8s. home; 8s. 4d. abroad.)

THE MANUFACTURE OF PRESERVED FOODS AND SWEETMEATS. By A. HAUSNER. With

Twenty-eight Illustrations. Translated from the German of the third enlarged Edition. Second English Edition. Crown 8vo. 225 pp. Price 7s. 6d. net. (Post free, 7s. 11d. home; 8s. abroad.)

RECIPES FOR THE PRESERVING OF FRUIT, VEGETABLES AND MEAT. By E. WAGNER.

Translated from the German. Crown 8vo. 125 pp. With 14 Illustrations. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

(Dyeing Fancy Goods.)**THE ART OF DYEING AND STAINING MARBLE, ARTIFICIAL STONE, BONE, HORN, IVORY AND WOOD, AND OF IMITATING ALL SORTS OF WOOD.** A Practical Handbook for the Use of

Joiners, Turners, Manufacturers of Fancy Goods, Stick and Umbrella Makers, Comb Makers, etc. Translated from the German of D. H. SOXHLET, Technical Chemist. Crown 8vo. 168 pp. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

(Celluloid.)

CELLULOID: Its Raw Material, Manufacture, Properties and Uses. A Handbook for Manufacturers of Celluloid and Celluloid Articles, and all Industries using Celluloid; also for Dentists and Teeth Specialists. By Dr. FR. BÖCKMANN, Technical Chemist. Translated from the Third Revised German Edition. Crown 8vo. 120 pp. With 49 Illustrations. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

(Lithography, Printing and Engraving.)

ART OF LITHOGRAPHY. By H. J. RHODES. Demy 8vo. 344 pages. 120 Illustrations. 2 Folding Plates. Copious combined Index and Glossary. Price 10s. 6d. net. (Post free, 11s. home; 11s. 4d. abroad.)

PRINTERS' AND STATIONERS' READY RECKONER AND COMPENDIUM. Compiled by VICTOR GRAHAM. Crown 8vo. 112 pp. 1904. Price 3s. 6d. net. (Post free, 3s. 11d. home; 4s. abroad.)

ENGRAVING FOR ILLUSTRATION. HISTORICAL AND PRACTICAL NOTES. By J. KIRKBRIDE. 72 pp. Two Plates and 6 Illustrations. Crown 8vo. Price 2s. 6d. net. (Post free, 2s. 10d. home and abroad.)
(For Printing Inks, see p. 4.)

(Bookbinding.)

PRACTICAL BOOKBINDING. By PAUL ADAM. Translated from the German. Crown 8vo. 180 pp. 127 Illustrations. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

(Sugar Refining.)

THE TECHNOLOGY OF SUGAR: Practical Treatise on the Modern Methods of Manufacture of Sugar from the Sugar Cane and Sugar Beet. By JOHN GEDDES MCINTOSH. Third Edition, Revised and Enlarged. Demy 8vo. 540 pages. 244 Illustrations. Price 12s. 6d. net. (Post free, 13s. home; 13s. 6d. abroad.)
[Just published.
(See "Evaporating, Condensing, etc., Apparatus," p. 18.)

(Emery.)

EMERY AND THE EMERY INDUSTRY. Translated from the German of A. HAENIG. Crown 8vo. 45 Illus. 104 pp. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

(Bibliography.)

CLASSIFIED GUIDE TO TECHNICAL AND COMMERCIAL BOOKS. Compiled by EDGAR GREENWOOD. Demy 8vo. 224 pp. 1904. Being a Subject-list of the Principal British and American Books in Print; giving Title, Author, Size, Date, Publisher and Price. Price 5s. net. (Post free, 5s. 5d. home; 5s. 6d. abroad.)

HANDBOOK TO THE TECHNICAL AND ART SCHOOLS AND COLLEGES OF THE UNITED KINGDOM. Containing particulars of nearly 1,000 Technical, Commercial and Art Schools throughout the United Kingdom. With full particulars of the courses of instruction, names of principals, secretaries, etc. Demy 8vo. 150 pp. Price 3s. 6d. net. (Post free, 4s. home and abroad.)

SCOTT, GREENWOOD & SON,
TECHNICAL BOOK AND TRADE JOURNAL PUBLISHERS,
8 BROADWAY, LUDGATE, LONDON, E.C.

Telegraphic Address, "Printeries, Cent., London".

May, 1916.