	Pre	eface	39
1.	Ed	quipment for Rug Weaving	
	1.	THE LOOM	41
	Α.	Rug Looms in Use Today	41
		INTRODUCTION	41
		(i) THE HORIZONTAL GROUND LOOM	41
		(ii) THE WARP-WEIGHTED LOOM	43
		(iii) a. The vertical frame loom	43
		b. the horizontal frame loom	47
	В.	The Requirements of a Modern Horizontal Rug Loom	49
		(i) THE LOOM FRAME	49
		(ii) THE CONTROL OF WARP TENSION	50
		(iii) THE BATTEN AND THE REED	51
		(iv) THE SHEDDING MECHANISM	52
		(v) THE PEDALS (vi) APRON, FRONT AND BACK STICKS	53
		(vii) THE SEAT	53 53
		(viii) PROTECTING THE WOVEN RUG	54
		(ix) AN EXTENSION FOR DIFFICULT WARPS	54
		(x) VERTICAL AGAINST HORIZONTAL FRAME LOOMS	55
	2.	ADDITIONAL EQUIPMENT	55
	Α.	Shuttles	55
	В.	Temples	56
		Rug Forks or Beaters	57
		Yarn Winder	57
	E.	Miscellaneous Items	59
2.	W	arp and Weft Yarns	
	1.	WARP YARNS	60
	A.	For Weft-face Rugs	60
		For Warp-face Rugs	61
	C.	For Warp- and Weft-face Rugs	61
	2.	WEFT YARNS	61
	A.	For Weft-face Rugs	61

	B. For Warp-face RugsC. For Warp- and Weft-face Rugs	page 62 62			
3.	General Rug-Weaving Techniques				
	1. MAKING AND BEAMING A WARP	63			
	A. Using Warping Mill or Frame	63			
	A ONE-MAN METHOD OF BEAMING A WARP OF ANY WIDTH	63			
	B. Using Sectional Warp Beam	64			
	C. Putting a Warp on a Vertical Rug Frame	65			
	2. TYING TO FRONT STICK	66			
	3. OPENING OUT WARP GROUPS	67			
	4. WEAVING THE HEADING	68			
	5. STARTING THE WEFT	68			
	6. JOINING WEFTS	68			
	7. DARNING IN THE WEFT	70			
	8. WEAVING	71			
	A. Warp and Weft Tension	71			
	B. Beating	73			
	C. Cone Winding	73			
	D. Shuttle Winding and Throwing	74			
	E. Making Finger Hanks	76			
	F. Temple	77			
	G. Turning on the Warp H. Knots Encountered in Weaving	78 78			
	I. Marking the Length of the Rug	78 78			
	J. Viewing the Rug During Weaving	80			
	K. Taking the Rug from the Loom	80			
	L. Problems Connected with Weaving a Large Rug in Strips	81			
4.	Weft-face Rugs in Plain Weave				
••	Part One: Techniques in which the Weft runs from Se	elvage			
	to Selvage				
	1. GENERAL DETAILS	0.5			
	·	85			
	A. Introduction B. Warp and Weft Settings	85			
	C. Selvages	85 88			
	2. ONE-SHUTTLE TECHNIQUES	89			
	A. Colour Blending	89			

Contents	9
----------	---

	B. Colour Plying	page 91
	C. Handspun Wefts D. Tie and Dye Wefts	93 94
	E. Twisted Wefts	98
	3. TWO-SHUTTLE TECHNIQUES	102
	A. Weftway or Cross Stripes	102
	B. Warpway or Pick-and-Pick Stripes	103
	C. Spots	110
	D. Crossed Wefts	114
	(i) In Contrary Motion	114
	(ii) In Parallel Motion E. Skip Plain Weave	119 122
	F. Technique for Weaving Letters and Figures	124
5.	Weft-face Rugs in Plain Weave	
	Part Two: Techniques in which the Weft does n	ot run from
	Selvage to Selvage	
	INTRODUCTION	126
	1. MEET AND SEPARATE TECHNIQUE	126
	A. Normal Method	126
	(i) using two colours	126
	(ii) USING THREE COLOURS	129
	B. Method Using Clasped Wefts	130
	(i) USING TWO COLOURS	130
	(ii) USING THREE COLOURS	132
	2. COMPENSATED INLAY	133
	A. Basic Method	134
	B. Inlaying Several Blocks	137
	C. Two Inlay Wefts in One Block	137
	D. Four Inlay Wefts in One Block E. Several Blocks with One Inlay Weft	139 139
	(i) SPOTTED BLOCKS	139
	(ii) STRIPED BLOCKS	140
	3. TAPESTRY TECHNIQUES	141
	A. Slit Tapestry or Kilim	141
	INTRODUCTION	141
	HISTORY	142
	TECHNIQUE	142
	(i) WEAVING A TRIANGLE (a) Detailed Description	143 143
	(a) Detailed Description (b) Direction of Wefts	145
	(a) Discount of Trests	173

	(c) Controlling Angle of Colour Junction	page 147
	(d) Two Methods of Weaving	148
	(ii) PRACTICAL DETAILS	149
	(a) Beginning and Finishing the Wefts	149
	(b) Weft Tension	151
	(c) Warp and Weft Settings	151
	(iii) WEAVING VERTICAL COLOUR JUNCTIONS	151
	(a) Zigzag Junction	152
	(b) 'Brick Joining'	153
	(c) Dovetailing	154
	(d) Method found in Sehna Kilims	155
	(iv) VARIATIONS OF ANGLED COLOUR JUNCTIONS	156
	(v) 'LAZY LINES'	157
	(vi) OBLIQUE AND CURVED WEFTS. ECCENTRIC WEFTS (a) Outlining Areas	159 159
	(b) Building Up Whole Areas	160
	(c) Motifs Consisting Entirely of Curved Wests	162
	(d) Wedge-Weave Rugs	164
D	Interlocked Tapestry	169
D.	(i) SINGLE INTERLOCKED TAPESTRY	170
	(a) Scandinavian Method of Weaving	170
	· (b) Alternative Method of Weaving	174
	(ii) DOUBLE INTERLOCKED TAPESTRY	177
	(iii) TWO-COLOUR AREAS IN INTERLOCKED TAPESTRY	178
	(a) 2-and-2 Stripes	178
	(b) Pick-and-Pick Stripes	179
C.	Tapestry Techniques not in Plain Weave	180
•	(i) TWILL TAPESTRY	181
	(ii) TAPESTRY OF WEAVES	182
	eft-face Rugs in Plain Weave rt Three: Techniques giving a Raised Surface De	ecoration
	INTRODUCTION	183
1.	SOUMAK OR WEFT WRAPPING	183
	HISTORY	183
A.	General Technical Details	184
B.	Surface Angling	185
	(i) METHOD OF WRAPPING GIVING LOCKING, AND	
	NON-LOCKING SOUMAK	185
	(ii) direction in which soumak is worked	186
C.	Types of Soumak	187
	(i) SINGLE AND DOUBLE SOUMAK	187
	(ii) BUSHONGO TYPE OF SOUMAK	187

	(iii) TWO-COLOUR SOUMAK (iv) GAUZE SOUMAK	page 188 189
D.	Uses of Soumak (i) RIDGES (ii) BLOCKS (iii) ALL-OVER SOUMAK	191 191 191 194
E.	Practical Details (i) GENERAL (ii) STARTING AND FINISHING SOUMAK WEFTS (iii) SELVAGES	196 196 196 196
F.	Types of Vertical Soumak (i) VERTICAL SINGLE SOUMAK (ii) VERTICAL DOUBLE SOUMAK	198 198 202
2.	WEFT CHAINING	204
A.	First Type (i) USING ONE CHAINING WEFT (ii) USING TWO CHAINING WEFTS	204 204 206
В. С.	71	209 210
3.	WEFT LOOPING	211
A.	Pulled-up Weft Loops HISTORY (i) GENERAL TECHNICAL DETAILS (ii) PLACING THE LOOPS (iii) USES (iv) PRACTICAL DETAILS (v) CHAINED LOOPS	211 211 212 213 214 215 215
	Sehna Loops Pulled-up Loops Based on Soumak	218 219 222 223
4.	KNOTTED PILE	224
	HISTORY	224
A.	(i) GHIORDES, SMYRNA OR TURKISH KNOT (a) Knotting from Continuous Pile Yarn and Cutting each Knot as	226 226
	it is Tied (b) Knotting with Cut Lengths of Pile Yarn	226 227
	(c) Knotting over a Guide Rod	228
	(d) Cutting Weft Loops (e) Mechanical Methods of Tying Ghiordes Knots	229 229
	(ii) SEHNA OR PERSIAN KNOT	230
	(iii) SINGLE WARP OR SPANISH KNOT	232
	(iv) OTHER KNOTS	232

	В.	Construction of a Knotted Rug	page 234
		GENERAL DETAILS	234
		(i) LENGTH OF PILE	235
		(ii) MATERIAL OF PILE YARN	235
		(iii) amount of weaving between knot rows	236
		(iv) spacing of the knots	237
		(v) TREATMENT OF THE ARGATCH	240
		(a) Using One Weft	240
		(b) Using an Extra Weft	241
		(c) Using Two or More Extra Wefts	243
	_	(d) Using an Extra Weft in Kilim Fashion	245
		Double-sided Pile Rugs	246
	D.	Design	248
		(i) DESIGN LIMITATIONS IN RYAS	248
		(ii) COLOUR BLENDING IN RYAS	249
		(iii) RELATING THE PAPER DESIGN TO THE KNOTTED RUG	250
		(a) Using a Knot Diagram	250
	,	(b) Using a Coloured Sketch	250
		(c) Some Eastern Methods	252
		(d) General Points	252
	E.	Variations in Knotted Pile Rugs	253
		(i) COMBINING FLAT WOVEN WITH KNOTTED PILE AREAS	253
		(ii) COMBINING CUT AND UNCUT PILE	254
		(iii) UNCUT GHIORDES KNOTS PRODUCING A RIDGE	254
		(iv) UNCUT GHIORDES KNOTS LYING VERTICALLY OR AT AN ANGIOR OR AS A BRAID	.е 255
		OK AS A BRAID	255
7.	W	eft-face Rugs in Multishaft Weaves	
	Pa	art One: Techniques giving All-over Effects	
	INT	FRODUCTION	256
	EX.	PLANATION OF WEAVE DIAGRAMS	256
	NO	TE ON THE NOMENCLATURE OF TWILLS	258
	1.	THREE-SHAFT DRAFTS	258
		HISTORY	258
	Δ	Twills and Other Weaves Using a Straight Three-Shaft Draft	259
	7 %.	(i) DOUBLE-FACED 2/1 TWILL	260
		(ii) TWO RELATED DOUBLE-FACED WEAVES	261
	В.		263
	D.	(i) DOUBLE-FACED WEAVE BASED ON A WEFT COURSE OF OVER THREE	3,
		UNDER ONE	264
		(ii) DOUBLE-FACED WEAVE BASED ON A WEFT COURSE OF OVER THREE	
		UNDER ONE, OVER ONE, UNDER ONE	265
		(iii) THREE-SHAFT KROKBRAGD	267

2.	FOUR-SHAFT DRAFTS page	2 69
A.	Twills and Other Weaves Using a Straight Four-Shaft Draft	269
	(i) WOVEN AS A STRAIGHT 2/2 TWILL	269
	HISTORY	269
	COLOUR AND WEAVE EFFECTS	269
	(a) Three-pick colour sequences	270
	(b) Four ,, ,,	271
	(c) Five ,, ,,	272
	(d) Six ,, ,, ,,	272
	(e) Seven ,, ,,	272
	(f) Nine ,, ,,	272
	(g) Ten ,, ,,	272
	(h) Twelve ,, ,,	272
	PRACTICAL DETAILS	272
	(ii) woven as a broken 2/2 twill	273
	COLOUR AND WEAVE EFFECTS	274
	(a) Three-pick colour sequences	274
	(b) Four- ,, ,,	274
	(c) Five- ,, ,,	274
	(d) Seven- ", ", ",	274
	(e) Eight- ,, ,,	275
	(f) Twelve- ,, ,,	275
	OTHER POSSIBILITIES FOR BOTH STRAIGHT AND BROKEN 2/2 TWILL	276
	analysis of straight and broken 2/2 twill	277
	(iii) 2/2 TWILL 'WOVEN ON OPPOSITES'	278
	(iv) woven as straight 2/2 twill, but using only three lifts	27 9
	(v) DOUBLE-FACED 3/1 TWILL	279
	(vi) THREE-WEFT DOUBLE-FACED WEAVES	281
	(vii) OTHER WEAVES	283
	(a) Treating a Straight Four-Shaft Draft as a Pointed Three-Shaft Draft	283
	(b) Woven Ridge	284
В.	Four-Shaft Skip Twills	284
	(i) SKIP TWILL REPEATING ON EIGHT ENDS	285
	(ii) ,, ,, ,, sixteen ends	286
	(iii) ", ", ", TWENTY-FOUR ENDS	287
C.	Twilled Overshot Blocks	289
	Four-Shaft Shadow Weave	290
	Four-Shaft Honeycomb	292
F.	· · · · · · · · · · · · · · · · · · ·	293
G.	Alternated Two-Shaft Blocks	295
3.	SIX-SHAFT DRAFTS	297
A.	Using a Straight Draft	297
	(i) 2/2/1/1 TWILL	297
	(ii) 1/3/1/1 TWILL	299
	(iii) 3/3 TWILL	300

	C. D.	(iv) COMBINATION OF 3/3 TWILL WITH 2/2/1/1 TWILL (v) WEAVE BASED ON A THREE-SHAFT WEAVE Six-Shaft Shadow Weave Six-Shaft Skip Twills Six-Shaft Honeycomb Other Weaves	page 301 301 302 303 304 305
	4.	EIGHT-SHAFT DRAFTS	305
		DOUBLE TWO-TIE UNIT WEAVE	305
8.	W	eft-face Rugs in Multishaft Weaves	
		art Two: Techniques giving Block Designs controlled	hy
		nafts	Dy.
	INT	roduction	307
	1.	FOUR-SHAFT BLOCK WEAVES	308
		Part 1. Two-Tie Unit Drafts	
	A.	Three-End Block Draft	308
		VARIATIONS	310
		PRACTICAL DETAILS	312
	_	DEVELOPMENTS OF THIS TECHNIQUE; SHAFT-SWITCHING	313
		Four-End Block Draft	317
	C.	Six-End Block Draft Part 2. Other Drafts	320
	Δ	Part 2. Other Drafts Draft Based on Single End Spot Draft	322
	В.		325
		Traditional M's and O's Draft	328
	2.	SIX-SHAFT BLOCK WEAVES	331
		Part 1. Six-Shaft Developments of Two-Tie Unit Drafts	
	A.	Development of Three-End Block Draft	331
	В.	", ", Four-End ", ",	335
	C.	" " Six-End " "	336
		Part 2. Six-Shaft Block Weaves Based on Three-Shaft Weaves	227
		Block Weave Based on Double-faced 2/1 Twill Block Weave Based on Three-Shaft Krokbragd	337 338
	3.		340
	٠.		340
	Α.	Part 1. Further Developments of Two-Tie Unit Drafts Double Two-Tie Unit Draft	340
	В.	Three-Colour Block Weave	340
	٠.	Part 2. Development of Four-Shaft Weaves	JTA
	A.	Block Weave Based on Double-Faced 3/1 Twill	347
	B.	Block Weave Based on Four-Shaft Krokbragd	349
	C.	Block Weave Based on Plain Weave Double Cloth	351

15

	HISTORY	page 351 351
	INTRODUCTION WEFT-FACE PLAIN WEAVE DOUBLE CLOTH	351
	(i) WOVEN ON FOUR SHAFTS	355
	(ii) WOVEN ON EIGHT SHAFTS	356
	(a) Blocks	356
	(b) Ovals	358
	(c) Block Weaves Based on the Analysis of Rameses' Girdle	359
	D. Block Weaves Based on the Three-Weft Double-faced Weaves	365
	(i) WITH A HIDDEN WEFT IN PLAIN WEAVE	365
	(ii) " " " " HOPSACK	367
9.	Weft-face Rugs in Multishaft Weaves	
	Part Three: Techniques giving Block Designs controlle	ed by
	Pick-up Methods	•
		269
	INTRODUCTION TWO METHODS OF PICK-UP	368 368
	1. PICK-UP VERSION OF BLOCK WEAVE USING THE THREE-END BLOCK DRAFT	369
	A. Centre Shed Pick-up B. Raised End Pick-up	369 373
	-	315
	2. PICK-UP VERSION OF BLOCK WEAVE BASED ON DOUBLE-FACED 2/1 TWILL	376
	A. Centre Shed Pick-up	376
	B. Raised End Pick-up	377
	3. PICK-UP VERSION OF ONE OF THE BLOCK WEAVES USING THE FOUR-END BLOCK DRAFT	S 378
	A. Centre Shed Pick-up	378
	B. Raised End Pick-up	379
	4. PICK-UP VERSION OF BLOCK WEAVE USING THE	
	SIX-END BLOCK DRAFT	379
	A. Centre Shed Pick-up	379
	B. Raised End Pick-up	380
	5. PICK-UP VERSION OF ONE OF THE BLOCK WEAVES USING M'S AND O'S DRAFT	S 380
	A. Centre Shed Pick-up	380
	B. Raised End Pick-up	381
	6. PICK-UP VERSION OF BLOCK WEAVE BASED ON	
	DOUBLE-FACED 3/1 TWILL	382

	A. B.	Centre Shed Pick-up Raised End Pick-up	age 382 383
	7.	PICK-UP VERSION OF PLAIN WEAVE DOUBLE CLOTH	383
	B. A V A.	Centre Shed Pick-up Raised End Pick-up Variation Centre Shed Pick-up Raised End Pick-up	383 384 385 385 385
	8.	PICK-UP VERSION OF BLOCK WEAVE BASED ON THREE-WEFT DOUBLE-FACED WEAVE	386
	A. B. Wit A.	th Hidden Weft in Plain Weave Centre Shed Pick-up Raised End Pick-up th Hidden Weft in Hopsack Centre Shed Pick-up Raised End Pick-up	386 386 386 387 387 387
	9.	PICK-UP VERSION OF THREE-COLOUR BLOCK WEAVE	387
	A. B.	Centre Shed Pick-up Raised End Pick-up	387 389
	10.	PICK-UP METHOD USING A RIGID HEDDLE	391
10.	W	eft Pile Techniques	
	INT	TRODUCTION	392
	1.	SINGLE CORDUROY ON NORMAL THREADING	392
	A. B.	Using Four Shafts Using Eight Shafts	392 394
	2.	SINGLE CORDUROY USING FOUR-END BLOCK DRAFT	396
	A. B.	Using Four Shafts Using Eight Shafts	396 398
	3.	DOUBLE CORDUROY	399
	A.	Using Four Shafts VARIATIONS IN DOUBLE CORDUROY (i) COLOUR (a) Warpway Stripes (b) Mixing Two Colours (c) Inlaying Colours (ii) PILE LENGTH (a) Alternate Long and Short Tufts	399 406 406 406 410 413 413
		(b) Double Cutting (c) Cutting Floats Off-Centre	414 416
		(d) Combining Long and Short Floats with Off-Centre Cutting	417

	(iii) THREADING DRAFT	page 418
	(a) Shortening or Extending Whole Draft	418
	(b) Extending One Block in Draft to give Areas of Pile and	410
	Flat Weave (c) Pointed Draft giving Long and Short Pile	418 419
	(iv) DOUBLE-FACED CORDUROY	419
	(v) COMBINATION WITH OTHER PILE TECHNIQUES	422
	(a) Knotted Pile	422
	(b) Cut Pulled-up Loops	422
	B. Using Five Shafts	426
	C. Using Eight Shafts	428
	(i) BLOCK WEAVE	428
	(a) Single-faced	428
	(b) Double-faced	428
	(ii) TWILL CORDUROY	430
	(iii) HALF CORDUROY	432
	4. OTHER WEFT PILE TECHNIQUES RELATED TO	
	CORDUROY	434
	A Inlaid Flaces on Other Long Fibre	434
	A. Inlaid Fleece or Other Long Fibre B. Cut Wrapped Loops	435
	C. Using Stick and Leash Loom	436
	C. Coing State and Double 200m	
11	. Warp-face Rugs of all Types	
	INTRODUCTION	438
	1. GENERAL TECHNICAL DETAILS	439
	A. Warping	439
	B. Beaming	439
	C. Drawing-in	440
	D. Number of Shafts Used	440
	E. Sleying	441
	F. Tying to Front Stick	441
	G. Pedal Tie-up	441
	H. Batten I. Weaving	441 442
	I. Weaving	
	2. WARP-FACE RUGS IN PLAIN WEAVE	443
	A. Colour Blending	443
	B. Tied and Dyed Warps	443
	(i) IN HANK FORM	443
	(ii) IN WARP FORM	443
	C. Warpway and Weftway Stripes and Spots	444
	D. Combining Thick and Thin Wefts	444
	E. Bringing Spots of Weft to the Surface	446
	F. Combining Warp-face with Weft Twining G. ,, ,, Weft-face	447 447
	G. " " " Weft-face	44/

	H.	Two Pick-up Techniques Related to Plain Weave (i) BEDOUIN SAHA TECHNIQUE (ii) ONE-WEFT DOUBLE CLOTH	page 449 449 450
	I.	Practical Details for Warp-face Rugs in Plain Weave	451
	3.	WARP-FACE RUGS WITH DISCONTINUOUS WARPS	452
	4.	WARP-FACE RUGS WITH RAISED SURFACE DECORATION	452
	5.	WARP-FACE RUGS IN MULTISHAFT WEAVES	453
	B.	Converting Weft-face Weaves into Warp-face Weaves Block Weaves Pick-up Weaves	453 455 457
12.	Rι	ıgs in which both Warp and Weft contribute to the Su	urface
	1. 2.	RODUCTION EQUAL WARP AND WEFT SETTING WITH PREDOMINANT WEFT WITH PREDOMINANT WARP	459 459 460 461
13.	W	eft and Warp Twining	
	ніs 1.	TORY WEFT TWINING	463 463
	A. B. C. D. E.	Application to Rugs Woven on a Frame Two-colour Weft Twining (i) CONTROL OF COLOUR AND TWIST SEQUENCES (ii) COMBINATION WITH PLAIN WEAVE (iii) ENCIRCLING ONE, TWO OR THREE WARP ENDS (iv) TANIKO Three- and Four-Colour Weft Twining Twined Tapestry Open Shed Weft Twining Practical Details (i) STARTING AND FINISHING TWINING WEFTS (ii) WEFT JOINS (iii) WARP AND WEFT SET	463 464 465 465 469 470 471 472 473 474 476 476 477
	2.	WARP TWINING	477
	A. B.	Tablet-Woven Rugs Warpway Stripes in Navajo Selvage Technique	477 478

14.	Rug Finishes				
	INTRODUCTION	page 481			
	1. WEFT PROTECTORS	481			
	A. Overhand Knots B. Philippine Edge C. Damascus Edge D. Half Damascus Edge and Related Finishes (i) DOUBLE KNOTTING (ii) INDIAN EDGE (iii) ANOTHER VARIATION	481 483 484 486 486 487 487			
	E. Looped Edges (i) LOCKED LOOPS (ii) CHAINED LOOPS	487 487 488			
	F. Maori Edge G. Four-strand Sennit Edge	489 491			
	2. WARP PROTECTORS	492			
	 A. Darning B. Overhand Knots C. Plaiting D. Plying E. Alternate Hitches F. Four-strand Square Sennit 	492 493 493 495 495 496			
	3. WARP AND WEFT PROTECTORS	497			
	A. Swedish Tapestry Edge B. Woven Edge (i) VARIATIONS IN STARTING (ii) VARIATIONS IN WEAVING METHOD (iii) VARIATIONS IN WEAVE (a) Two-Pick Woven Edge (b) Three-Pick Woven Edge (iv) VARIATIONS IN COLOUR	497 497 499 500 500 501 503			
	C. Twined Edge D. Wrapped Edge E. Combinations of Woven, Twined and Wrapped Edges F. Woven Edge Using Extra Warp G. Twined Edge Using Extra Yarn H. Specific Finishes (i) FOR RUG WOVEN ON A FRAME WITH A FINITE WARP (ii) FRINGELESS FINISH FOR A KNOTTED RUG (iii) FOR WARP-FACE RUGS. DOUBLE TWINED EDGE	503 504 505 506 508 510 510 511			
	I. General Remarks	513			

	и	r	١
_	٨	l	

Bibliography	page 514
Suppliers of Equipment and Yarns	517
American Suppliers of Equipment and Yarns	520
Index	521