The Metal Trades REFEREE

with other useful information

The Metal Trades' REFEREE

8th EDITION

Being a general guide for Ironworkers, Storekeepers, Country Residents. etc., containing tables of Weights, Measurements, Average Rainfall, Postal and other useful Information.

THE SPECIALTY PRESS PTY. LTD.
189 Little Collins Street, Melbourne

1708

CALENDAR—1914

JANUARY

S		4	11	18	25
M		5	12	19	26
T		6	13	20	27
W		7	14	21	28
T	1	8	15	22	29
F	2	9	16	23	30
S	3	10	17	24	31

FEBRUARY

1	8	15	22	...
2	9	16	23	...
3	10	17	24	...
4	11	18	25	...
5	12	19	26	...
6	13	20	27	..
7	14	21	28	...

MARCH

1	8	15	22	29
2	9	16	23	30
3	10	17	24	31
4	11	18	25	..
5	12	19	26	...
6	13	20	27	...
7	14	21	28	...

APRIL

S		5	12	19	26
M		6	13	20	27
T		7	14	21	28
W	1	8	15	22	29
T	2	9	16	23	30
F	3	10	17	24	...
S	4	11	18	25	...

MAY

31	3	10	17	24
...	4	11	18	25
...	5	12	19	26
...	6	13	20	27
...	7	14	21	28
1	8	15	22	29
2	9	16	23	30

JUNE

	7	14	21	28
1	8	15	22	29
2	9	16	23	30
3	10	17	24	...
4	11	18	25	..
5	12	19	26	...
6	13	20	27	..

JULY

S		5	12	19	26
M		6	13	20	27
T		7	14	21	28
W	1	8	15	22	29
T	2	9	16	23	30
F	3	10	17	24	31
S		11	18	25	..

AUGUST

30	2	9	16	23
31	3	10	17	24
...	4	11	18	25
...	5	12	19	26
...	6	13	20	27
...	7	14	21	28
1	8	15	22	29

SEPTEMBER

	6	13	20	27
	7	14	21	28
1	8	15	22	29
2	9	16	23	30
3	10	17	24	...
4	11	18	25	...
5	12	19	26	...

OCTOBER

S		4	11	18	25
M		5	12	19	26
T		6	13	20	27
W		7	14	21	28
T	1	8	15	22	29
F	2	9	16	23	30
S	3	10	17	24	31

NOVEMBER

1	8	15	22	29
2	9	16	23	30
3	10	17	24	...
4	11	18	25	...
5	12	19	26	...
6	13	20	27	...
7	14	21	28	...

DECEMBER

	6	13	20	27
	7	14	21	28
1	8	15	22	29
2	9	16	23	30
3	10	17	24	31
4	11	18	25	...
5	12	19	26	...

REMEMBERED long after price is forgotten.

The Evolution of Galvanized Iron

IT is interesting to note at the present day, when the use of Galvanized Iron has become so widely extended, that its introduction dates back only to 1837. Although a plain sheet was exhibited at the Great Exhibition in 1851, it was not until the application of steam power for the purpose of corrugating was brought about in 1854, that Galvanized Iron really came into practical use

In 1857 the celebrated "ORB" Brand was first manufactured by Mr. JOHN LYSAGHT

During the half-century which has since elapsed, greatly improved methods for its production, and extreme care displayed in its manufacture, have secured for **LYSAGHT'S GALVANIZED IRON** an unrivalled reputation throughout the world, and so universally has it been adopted to meet the needs of modern civilisation, that it may with truth be said that the sun is always shining on "ORB IRON"

Consumers of Galvanized Iron are respectfully requested to note that every sheet of LYSAGHT'S "ORB" IRON has the Trade Mark stencilled thereon in blue, and is guaranteed. Beware of Imitations.

INDEX

EIGHTH EDITION

The various tables contained herein have been carefully compiled from existing sources of information. No responsibility is accepted, and no originality is claimed in respect thereof. They are intended to give closely approximate information which may not always be readily accessible elsewhere.

The Publisher will be thankful to receive suggestions for further improvements, or to have pointed out any printers' or other's errors which may have inadvertently crept in. Communications may be addressed to P.O. Box 52, Stock Exchange, Melbourne.

Galvanized Iron—Corrugated.

Approximate number of sheets to a case (ordinary Corrugations) weighing about 10cwt.

Length.	Gauges. 18	20	22	24	26	28
5 feet	42	53	66	83	118	134
6 feet	35	44	55	69	98	111
7 feet	30	38	47	59	84	95
8 feet	26	33	41	51	73	83
9 feet	23	29	36	45	65	74
10 feet	21	26	32	41	58	66

BRANDS ALWAYS RELIABLE

Approximate weight per sheet in lbs. (based on above table) to nearest ¼ lb.

Gauge.	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.
18	26½	32	37¼	43	49	53 lbs.
20	21	25½	29½	34	38½	43 ,,
22	17	20¼	24	27¼	31	35 ,,
24	13½	16¼	19	22	25	27¼ ,,
26	9½	11½	13½	15½	17¼	19¼ ,,
28	8¼	10	11¾	13½	15¼	17 ,,

Cases of LYSAGHT'S Brands of Corrugated Iron usually contain sheets in excess of the numbers given in above tables

Sections of Lysaght's Corrugations.

The Sizes stocked in Australia are:—

$\frac{1}{2}$ in. x $\frac{1}{8}$ in. 1 in. x $\frac{1}{4}$ in. 3 in. x $\frac{3}{4}$ in.

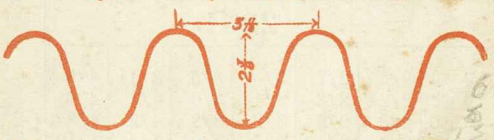
The following are also supplied to order, viz.:—

$1\frac{1}{2}$ in. x $\frac{3}{8}$ in. 2 in. x $\frac{1}{2}$ in. $2\frac{1}{2}$ in. x $\frac{5}{8}$ in.
4 in. x 1 in. 5 in. x $1\frac{1}{4}$ in. 5 in. x $1\frac{1}{2}$ in.
$5\frac{1}{10}$ in. x 1 in. 6 in. x $1\frac{1}{2}$ in.

Made in widths from 24 in. to 33 in.

Weight-Bearing Sections as follows:—

$3\frac{1}{16}$ in. x $2\frac{3}{8}$ in. (illustrated).



The following are the approximate weights per sq. ft. of the above.

16 g.—5 lbs 8 ozs. 18 g.—4 lbs 4 ozs.
20 g.—3 lbs 12 ozs. 22 g.—2 lbs 14 ozs.
24 g.—2 lbs 6 ozs.

Lysaghts also supply Section 4in. x 2in. if required

The "ORB" Brand on a sheet of

Galvanized Iron—Corrugated.

Approximate price per sheet based on given rates per ton.

20-G.

Price per ton.	5	6	7	8	9	10	Feet
£							
14 0 0	2/7	3/2	3/8	4/3	4/10	5/5	
14 10 0	2/8	3/3	3/10	4/5	5/-	5/7	
15 0 0	2/10	3/5	3/11	4/6	5/2	5/9	
15 10 0	2/11	3/6	4/1	4/8	5/4	5/11	
16 0 0	3/-	3/8	4/3	4/10	5/6	6/2	
16 10 0	3/1	3/9	4/4	5/-	5/8	6/4	
17 0 0	3/2	3/10	4/6	5/2	5/10	6/6	
17 10 0	3/4	4/-	4/7	5/4	6/-	6/9	
18 0 0	3/5	4/1	4/9	5/5	6/2	6/11	
18 10 0	3/6	4/2	4/10	5/7	6/5	7/1	
19 0 0	3/7	4/4	5/-	5/9	6/7	7/4	
19 10 0	3/8	4/5	5/2	5/11	6/9	7/6	
20 0 0	3/9	4/7	5/3	6/1	6/11	7/8	

22-G.

14 0 0	2/1	2/7	3/-	3/5	3/11	4/5	
14 10 0	2/2	2/8	3/1	3/6	4/-	4/6	
15 0 0	2/3	2/9	3/2	3/8	4/2	4/8	
15 10 0	2/4	2/10	3/3	3/9	4/4	4/10	
16 0 0	2/5	2/11	3/5	3/11	4/5	5/-	
16 10 0	2/6	3/-	3/6	4/-	4/7	5/2	
17 0 0	2/7	3/1	3/7	4/2	4/9	5/4	
17 10 0	2/8	3/2	3/9	4/3	4/10	5/6	
18 0 0	2/9	3/3	3/10	4/5	5/-	5/8	
18 10 0	2/10	3/4	3/11	4/6	5/2	5/9	
19 0 0	2/11	3/5	4/1	4/8	5/3	5/11	
19 10 0	2/11	3/7	4/2	4/9	5/5	6/1	
20 0 0	3/-	3/8	4/3	4/11	5/7	6/3	

For sheets per case see page 8.

Galvanized Iron—Corrugated.

Price per sheet based (on weights and counts on Page 8) on given rates per ton.

24-G.

Price per ton.	5	6	7	8	9	10	Feet
£							
16 0 0	2/-	2/4	2/9	3/2	3/7	4/-	
16 10 0	2/1	2/5	2/10	3/3	3/8	4/1	
17 0 0	2/1	2/6	2/11	3/4	3/10	4/2	
17 10 0	2/2	2/6	3/-	3/6	3/11	4/3	
18 0 0	2/2	2/7	3/1	3/7	4/-	4/5	
18 10 0	2/3	2/8	3/2	3/8	4/1	4/6	
19 0 0	2/4	2/9	3/3	3/9	4/3	4/8	
19 10 0	2/4	2/10	3/4	3/10	4/4	4/9	
20 0 0	2/5	2/11	3/5	3/11	4/5	4/11	
20 10 0	2/6	3/-	3/6	4/-	4/6	5/-	
21 0 0	2/7	3/1	3/7	4/1	4/8	5/2	
21 10 0	2/7	3/1	3/8	4/3	4/9	5/3	
22 0 0	2/8	3/2	3/9	4/4	4/10	5/5	
22 10 0	2/9	3/3	3/10	4/5	5/-	5/6	
23 0 0	2/10	3/4	3/11	4/6	5/1	5/8	
23 10 0	2/10	3/5	4/-	4/7	5/2	5/9	
24 0 0	2/11	3/6	4/1	4/8	5/4	5/10	
24 10 0	3/-	3/7	4/2	4/10	5/5	6/-	
25 0 0	3/-	3/7	4/3	4/11	5/6	6/1	
25 10 0	3/1	3/8	4/4	5/-	5/8	6/3	
26 0 0	3/2	3/9	4/5	5/1	5/9	6/4	

Galvanized Iron—Corrugated.

Price per sheet based (on weights and counts on Page 8) on given rates per ton.

26-G.

Price per ton. £	5	6	7	8	9	10	Feet
16 0 0	1/5	1/8	1/11	2/3	2/6	2/10	
16 10 0	1/6	1/8	2/-	2/4	2/6	2/11	
17 0 0	1/6	1/9	2/-	2/5	2/7	3/-	
17 10 0	1/7	1/9	2/1	2/6	2/8	3/1	
18 0 0	1/7	1/10	2/2	2/7	2/9	3/2	
18 10 0	1/8	1/11	2/2	2/7	2/10	3/3	
19 0 0	1/8	1/11	2/3	2/8	2/11	3/4	
19 10 0	1/9	2/-	2/4	2/9	3/-	3/5	
20 0 0	1/9	2/1	2/5	2/9	3/1	3/6	
20 10 0	1/10	2/2	2/5	2/10	3/2	3/7	
21 0 0	1/10	2/2	2/6	2/11	3/3	3/8	
21 10 0	1/11	2/3	2/7	2/11	3/4	3/9	
22 0 0	1/11	2/4	2/7	3/-	3/5	3/10	
22 10 0	2/-	2/5	2/8	3/1	3/6	3/11	
23 0 0	2/-	2/5	2/9	3/2	3/6	4/-	
23 10 0	2/1	2/6	2/10	3/3	3/7	4/1	
24 0 0	2/1	2/6	2/10	3/3	3/8	4/2	
24 10 0	2/2	2/7	2/11	3/4	3/9	4/3	
25 0 0	2/2	2/8	3/-	3/5	3/10	4/4	
25 10 0	2/3	2/8	3/1	3/6	3/11	4/5	
26 0 0	2/3	2/9	3/2	3/7	4/-	4/6	

and even quality, is a perfect roofing sheet.

Galvanized Iron—Plain.

Approximate price per sheet based on given rates per ton and corresponding with tables on Page 14.

Price per ton.	24-G.			26-G.			28-G.		
	24 in	30 in	36 in	24 in	30 in	36 in	24 in	30 in	36 in
£									
16 0 0	1/10	2/4	2/10	1/4	1/8	2/-	1/2	1/6	1/9
16 10 0	1/11	2/5	2/11	1/5	1/9	2/1	1/3	1/7	1/9
17 0 0	2/-	2/6	3/-	1/5	1/10	2/2	1/4	1/7	1/10
17 10 0	2/-	2/6	3/1	1/6	1/10	2/2	1/4	1/8	1/11
18 0 0	2/1	2/7	3/2	1/6	1/11	2/3	1/4	1/8	1/11
18 10 0	2/2	2/8	3/3	1/7	2/-	2/4	1/5	1/9	2/-
19 0 0	2/3	2/9	3/4	1/7	2/-	2/5	1/5	1/9	2/1
19 10 0	2/3	2/10	3/5	1/8	2/1	2/5	1/6	1/10	2/1
20 0 0	2/4	2/11	3/6	1/8	2/1	2/6	1/6	1/10	2/2
20 10 0	2/5	3/-	3/7	1/9	2/2	2/7	1/7	1/11	2/2
21 0 0	2/5	3/1	3/8	1/9	2/3	2/8	1/7	2/-	2/3
21 10 0	2/6	3/2	3/9	1/10	2/3	2/8	1/7	2/-	2/4
22 0 0	2/7	3/3	3/10	1/10	2/4	2/9	1/8	2/1	2/4
22 10 0	2/7	3/4	3/11	1/11	2/5	2/10	1/8	2/1	2/5
23 0 0	2/8	3/5	4/-	1/11	2/5	2/11	1/9	2/2	2/6
23 10 0	2/9	3/6	4/1	2/-	2/6	2/11	1/9	2/2	2/6
24 0 0	2/9	3/7	4/2	2/-	2/6	3/-	1/10	2/3	2/7
24 10 0	2/10	3/8	4/3	2/1	2/7	3/1	1/10	2/3	2/8
25 0 0	2/11	3/8	4/4	2/1	2/8	3/2	1/10	2/4	2/8
25 10 0	3/-	3/9	4/5	2/2	2/8	3/2	1/11	2/4	2/9
26 0 0	3/-	3/10	4/6	2/2	2/9	3/3	1/11	2/5	2/10

Galvanized Iron—Plain

Approximate number of 6 ft. sheets to a case. Plain Iron averaging about 10 cwt.				Approximate weight per sheet 6 ft. long, in lbs., based on foregoing list			
Gauge	Width			Gauge	Width		
	24 in.	30 in.	36 in.		24 in.	30 in.	36 in.
16	36	29	24 shts.	16	31	38⅔	46⅔ lbs.
18	47	37	31 ,,	18	24	30¼	36 ,,
20	57	45	38 ,,	20	19½	25	29½ ,,
22	74	59	49 ,,	22	15	19	23 ,,
24	86	69	57 ,,	24	13	16¼	19⅔ ,,
26	120	97	80 ,,	26	9⅓	11½	14 ,,
28	140	112	92 ,,	28	8	10	12¼ ,,

Cases of Lysaght's Brands of Plain Galvanized Iron usually contain sheets in excess of the number given in the above tables.

QUEEN'S HEAD

LYSAGHT'S "Queen's Head" Special Flat Plain Galvanized Iron is a high grade sheet of exceptional finish. It will stand the severest tests and commands the confidence of Ironworkers everywhere—obtainable also in special sizes other than the above, to order.

LYSAGHT'S "Fleur de Lis" Plain Iron is largely used for the manufacture of the lighter classes of guttering, down-pipe, ridging, &c., its smoothness of surface and freedom from buckle being conspicuous features


FLEUR DE LIS

Iron—Black Sheet.

Weight and Thickness.

Gauge	Lbs. per square foot	Thickness inches	Thickness mm.	Gauge	Lbs. per square feet	Thickness inches	Thickness mm
$\frac{3}{16}$	7·50	·1874	4·770	19	1·76	.0440	1·118
8	6·28	·1570	3·988	20	1·56	·0392	·996
9	5·59	·1398	3·551	21	1·39	·0349	·886
10	5·00	·1250	3·175	22	1·25	·0312	·794
11	4·45	·1113	2·827	23	1·11	·0278	·707
12	3·96	·0991	2·517	24	·99	·0247	·629
13	3·52	·0882	2·240	25	·88	·0220	·560
14	3·14	·0785	1·994	26	·78	·0196	·498
15	2·79	·0699	1·775	27	·69	·0174	·443
16	2·50	·0625	1·587	28	·62	·0156	·396
17	2·22	·0556	1·412	29	·55	·0139	·353
18	1·98	·0495	1·257	30	·50	·0124	·315

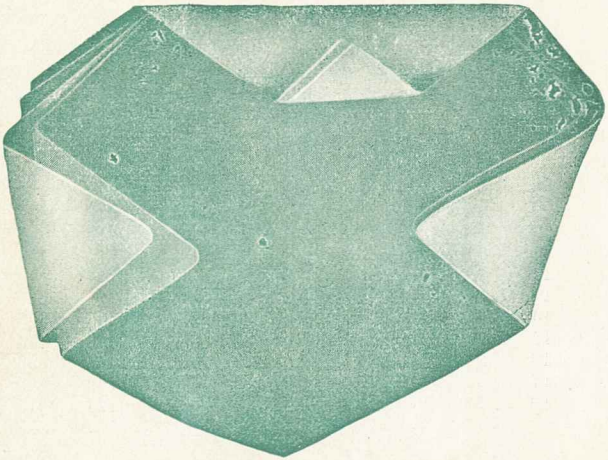
Approximate Number of Sheets contained in 20 Bundles of Black Sheet Iron, averaging about 20 cwt.

Gauge	WIDTH.		
	24	30	36
12g	42	33	28
14	57	45	37
16	76	62	50
18	96	76	64
20	118	100	74
22	152	124	101
24	190	155	126
26	254	198	164
27	280	218	174
28	340	256	208

Weight of Steel is about 2% more than Iron.

"ORB" IRON. You know it at once by its

Lysaght's Black Steel Sheets.



1. **Charcoal Tenax, C.R.C.A.**—Very highest quality and finish. For purposes where a sheet of exceptional finish is required. It is sometimes used as a substitute for Copper.
2. **Queen's Head T. Crown, C.R.CA.**—A specially prepared high grade sheet, suitable for all working-up purposes.
3. **Southern Cross, C.R.C.A.**—An excellent quality of sheet for the majority of purposes—cold rolled, close annealed, and specially flattened. Every sheet true to size and gauge. Guaranteed to seam and bend both ways of grain.

All the above qualities are obtainabie in all gauges from $\frac{3}{16}$ to 30-g and in widths up to 56 inches.

Bar Iron—Flat.

Approximate Weight per Lineal Foot.

	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4
In.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
1	·83	1·04	1·25	1·45	1·66	2·08	2·50	2·91	3·33
1 1/8	·94	1·17	1·40	1·64	1·87	2·34	2·81	3·28	3·75
1 1/4	1·04	1·30	1·56	1·82	2·08	2·60	3·12	3·64	4·16
1 3/8	1·14	1·43	1·71	2	2·29	2·86	3·43	4·01	4·58
1 1/2	1·25	1·56	1·87	2·18	2·50	3·12	3·75	4·37	5
1 5/8	1·35	1·69	2·03	2·36	2·70	3·38	4·06	4·73	5·41
1 3/4	1·45	1·82	2·18	2·55	2·91	3·64	4·37	5·10	5·83
1 7/8	1·56	1·95	2·34	2·73	3·12	3·90	4·68	5·46	6·25
2	1·66	2·08	2·50	2·91	3·33	4·16	5	5·83	6·66
2 1/8	1·77	2·21	2·65	3·09	3·54	4·42	5·31	6·19	7·08
2 1/4	1·87	2·34	2·81	3·28	3·75	4·68	5·62	6·56	7·50
2 3/8	1·97	2·47	2·96	3·46	3·95	4·94	5·93	6·92	7·91
2 1/2	2·08	2·60	3·12	3·64	4·16	5·20	6·25	7·29	8·33
2 5/8	2·18	2·73	3·28	3·82	4·37	5·46	6·56	7·65	8·75
2 3/4	2·29	2·86	3·43	4·01	4·58	5·72	6·87	8·02	9·16
2 7/8	2·39	2·99	3·59	4·19	4·79	5·98	7·18	8·38	9·58
3	2·50	3·12	3·75	4·37	5	6·25	7·50	8·75	10
3 1/4	2·70	3·38	4·06	4·73	5·41	6·77	8·12	9·47	10·83
3 1/2	2·91	3·64	4·37	5·10	5·83	7·29	8·75	10·20	11·66
3 3/4	3·12	3·90	4·68	5·46	6·25	7·81	9·37	10·93	12·50
4	3·33	4·16	5	5·83	6·66	8·33	10	11·66	13·33
4 1/4	3·54	4·42	5·31	6·19	7·08	8·85	10·62	12·39	14·16
4 1/2	3·75	4·68	5·62	6·56	7·50	9·37	11·25	13·12	15
4 3/4	3·95	4·94	5·93	6·92	7·91	9·89	11·87	13·85	15·83
5	4·17	5·20	6·25	7·29	8·33	10·41	12·50	14·58	16·66
5 1/4	4·37	5·46	6·56	7·65	8·75	10·93	13·12	15·31	17·50
5 1/2	4·58	5·72	6·87	8·02	9·16	11·45	13·75	16·04	18·33
5 3/4	4·79	5·98	7·18	8·38	9·58	11·97	14·37	16·77	19·16
6	5	6·26	7·50	8·75	10	12·50	15	17·50	20

Weight of Steel is about 2% more than Iron.

WEIGHT OF ROUND & SQUARE IRON & STEEL.

Size (dia.)	IRON.		STEEL.	
	Round Weight per lineal foot.	Square Weight per lineal foot.	Round Weight per lineal foot.	Square Weight per lineal foot.
3/16 in.	0.092lbs	0.117lbs	0.094lbs	0.120lbs
1/4	0.164	0.208	0.157	0.213
5/16	0.256	0.326	0.261	0.332
3/8	0.368	0.469	0.376	0.478
7/16	0.501	0.638	0.511	0.651
1/2	0.654	0.833	0.668	0.849
9/16	0.828	1.062	0.845	1.076
5/8	1.023	1.302	1.043	1.328
11/16	1.237	1.576	1.262	1.607
3/4	1.473	1.875	1.502	1.912
13/16	1.728	2.201	1.763	2.245
7/8	2.004	2.552	2.044	2.603
15/16	2.301	2.930	2.347	2.988
1	2.618	3.333	2.670	3.400
1 1/8	3.313	4.219	3.380	4.303
1 1/4	4.091	5.208	4.172	5.312
1 3/8	4.950	6.302	5.049	6.428
1 1/2	5.890	7.500	6.008	7.750
1 5/8	6.913	8.802	7.051	8.978
1 3/4	8.018	10.208	8.178	10.412
1 7/8	9.204	11.719	9.388	11.953
2	10.472	13.333	10.681	13.600
2 1/8	11.82	15.05	12.06	15.35
2 1/4	13.25	16.87	13.52	17.21
2 3/8	14.77	18.80	15.06	19.18
2 1/2	16.36	20.83	16.69	21.25
2 5/8	18.04	22.97	18.40	23.43
2 3/4	19.80	25.21	20.19	25.71
2 7/8	21.64	27.55	22.07	28.10
3	23.56	30.00	24.03	30.60
3 1/4	27.65	35.21	28.21	35.91
3 1/2	32.07	40.83	32.71	41.65
3 3/4	36.82	46.87	37.55	47.81
4	41.89	53.33	42.73	54.40
4 1/4	47.29	60.21	48.23	61.41
4 1/2	53.01	67.50	54.07	68.85
4 3/4	59.07	75.21	60.25	76.71
5	65.45	83.33	66.76	85.00
5 1/4	79.19	100.83	80.78	102.85
6	94.25	120.00	96.13	122.40

Table Shewing Weight in Pounds

OF VARIOUS AREAS OF

Iron Plates of Different Thickness

Area in feet.	THICKNESS IN FRACTIONS OF AN INCH.									
	1/8	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
1	5	10	12·5	15	17·5	20	25	30	35	40
2	10	20	25·0	30	35·0	40	50	60	70	80
3	15	30	37·5	45	52·5	60	75	90	105	120
4	20	40	50·0	60	70·0	80	100	120	140	160
5	25	50	62·5	75	87·5	100	125	150	175	200
6	30	60	75·0	90	105·0	120	150	180	210	240
7	35	70	87·5	105	122·5	140	175	210	245	280
8	40	80	100·0	120	140·0	160	200	240	280	320
9	45	90	112·5	135	157·5	180	225	270	315	360
10	50	100	125·0	150	175·0	200	250	300	350	400
11	55	110	137·5	165	192·5	220	275	330	385	440
12	60	120	150·0	180	210·0	240	300	360	420	480
13	65	130	162·5	195	227·5	260	325	390	455	520
14	70	140	175·0	210	245·0	280	350	420	490	560
15	75	150	187·5	225	262·5	300	375	450	525	600
16	80	160	200·0	240	280·0	320	400	480	560	640
17	85	170	212·5	255	297·5	340	425	510	595	680
18	90	180	225·0	270	315·0	360	450	540	630	720
19	95	190	237·5	285	332·5	380	475	570	665	760
20	100	200	250·0	300	350·0	400	500	600	700	800
30	150	300	375·0	450	525·0	600	750	900	1050	1200
40	200	400	500·0	600	700·0	800	1000	1200	1400	1600
50	250	500	625·0	750	875·0	1000	1250	1500	1750	2000
60	300	600	750·0	900	1050	1200	1500	1800	2100	2400
70	350	700	875·0	1050	1225	1400	1750	2100	2450	2800
80	400	800	1000	1200	1400	1600	2000	2400	2800	3200
90	450	900	1087	1350	1575	1800	2250	2700	3150	3600
100	500	1000	1250	1500	1750	2000	2500	3000	3500	4000

STEEL JOISTS—British Standard Sections.

A = Depth C = Thickness of Web.
B = Width of Flange. D = Thickness of Flange.

Dimensions in inches.				Weight lbs. per foot-run.	Safe Load Tons distributed for Spans of					
A	B	C	D		6 ft.	10 ft.	12 ft.	16 ft.	20 ft.	30 ft.
3	1½	0·16	0·248	4·0	0 92	0·55	0·46	—	—	—
3	3	0·20	0·332	8·5	2·0	1·2	1·0	—	—	—
4	1¾	0·17	0·24	5·0	1·5	0·91	0·76	—	—	—
4	3	0·22	0·336	9·5	3·1	1·9	1·6	—	—	—
4¼	1⅝	0·18	0·325	6·5	2·4	1·4	1·2	—	—	—
5	3	0·22	0·376	11·0	4·5	2·7	2·3	1·7	—	—
5	4½	0·29	0·448	18·0	7·6	4·5	3·8	2·8	—	—
6	3	0·26	0·348	12·0	5·6	3·4	2·8	2·1	—	—
6	4½	0·37	0·431	20·0	9·6	5·8	4·8	3·6	—	—
6	5	0·41	0·520	25·0	12·0	7·3	6·0	4·5	—	—
7	4	0·25	0·387	16·0	9·4	5·6	4·7	3·5	2·8	—
8	4	0·28	0·402	18·0	11·0	7·0	5·8	4·3	3·5	—
8	5	0·35	0·575	28·0	18·0	11·0	9·0	7·0	5·5	—
8	6	0·44	0·597	35·0	23·0	14·0	11·0	8·6	7·0	—
9	4	0·30	0·460	21·0	15·0	9·0	7·5	5·6	4·5	—
9	7	0·55	0·924	58·0	42·0	25·0	21·0	16·0	12·0	—
10	5	0·36	0·552	30 0	24·0	14·0	12·0	9·0	7·2	—
10	6	0·40	0·736	42·0	35·0	21·0	17·0	13·0	10·0	—
10	8	0·60	0·970	70·0	53·0	34·0	28·0	21·0	17·0	—
12	5	0·35	0·550	32·0	30·0	18·0	15·0	11·0	9·0	—
12	6	0·40	0·717	44·0	40·0	26·0	22·0	16·0	13·0	—
12	6	0·50	0·883	54·0	52·0	31·0	26·0	19 0	15 0	10·0
14	6	0·40	0·698	46·0	43·0	31·0	26·0	19·0	15·0	10·0
14	6	0·50	0·873	57·0	59·0	38·0	31·0	24·0	19·0	12·0
15	5	0·42	0·647	42·0	47·0	28·0	24·0	18·0	14·0	9·5
15	6	0·50	0·880	59·0	62·0	42·0	35·0	26·0	21·0	14·0
16	6	0·55	0·847	62·0	73·0	45·0	38·0	28·0	22·0	15·0
18	7	0·55	0·928	75·0	—	64·0	53·0	40·0	32·0	21·0
20	7½	0·60	1·01	89·0	—	83·0	69·0	52·0	41·0	27·0
24	7½	0·60	1·07	10 ·0	—	102·0	92·0	69·0	55·0	36·0

Span should not exceed 20 x A, or deflection will be excessive.

Various Metals.

The Comparative Weight of a Superficial Foot.

Thickness in Inches.	Wrought Iron.	Cast Iron.	Steel.	Copper.	Brass.	Lead.	Zinc.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1/16	2·526	2·344	2·552	2·891	2·734	3·708	2·344
1/8	5·052	4·687	5·104	5·781	5·469	7·417	4·687
3/16	7·578	7·031	7·656	8·672	8·303	11·125	7·031
1/4	10·104	9·375	10·208	11·563	10·938	14·833	9·375
5/16	12·630	11·719	12·760	14·453	13·672	18·542	11·719
3/8	15·156	14·062	15·312	17·344	16·406	22·250	14·062
7/16	17·682	16·406	17·865	20 234	19·141	25·958	16·406
1/2	20·208	18·750	20·417	23·125	21·875	29·667	18·750
9/16	22·734	21·094	22·969	26·016	24·609	33·375	21·094
5/8	25·260	23·437	25 521	28·906	27·344	37·083	23·437
11/16	27·786	25·781	28·073	31·797	30·078	40·792	25·781
3/4	30·312	28·125	30·625	34·688	32·813	44·500	28·125
13/16	32·839	30·469	33·177	37·578	35·547	48·208	30·469
7/8	35·635	32·812	35·729	40·469	38·281	51·917	32·812
15/16	37·801	35·156	38·281	43·359	41·016	55·625	35·156
1	40·417	37·500	40·833	46·250	43·750	59·333	37·500

Gauge.	Iron.	Copper.	Brass.	Gauge.	Iron.	Copper.	Brass.
30	·48	·550	·527	15	2·88	3·298	3·161
29	·52	·595	·579	14	3·32	3·801	3·644
28	·56	·641	·615	13	3·80	4·351	4·170
27	·64	·733	·702	12	4·36	4·992	4·785
26	·72	·824	·790	11	4·80	5·496	5·268
25	·80	·916	·878	10	5·36	6·137	5·883
24	·88	1·008	·966	9	5·92	6·778	6·497
23	1·00	1·145	1·097	8	6·60	7·557	7·248
22	1·12	1·282	1·229	7	7·20	8·244	7·902
21	1·28	1·466	1·405	6	8·12	9·297	8·912
20	1·40	1·603	1·536	5	8·80	10·076	9·658
19	1·68	1·924	1·844	4	9·52	10·900	10·448
18	1·96	2·244	2·151	3	10·36	11·862	11·370
17	2·32	2·656	2·546	2	11·36	13·007	12·468
16	2·60	2·977	2·853	1	12·00	13·740	13·170

Zinc Sheets.

Gauge No.	Approx. Weight per sq. ft.	Thousandths of an inch.	7′ x 2′ 8″ Approximate		7′ x 3′ Approximate		8′ x 3′ Approximate		Nearest Wire Gauge.
			Weight per sht.	No. of shts. in 10 cwt.	Weight per sht.	No. of shts. in 10 cwt.	Weight per sht.	No. of shts. in 10 cwt.	
	oz.		lb. oz.		lb. oz.		lb. oz.		
1	2¼	·004	2 10	427	—	—	—	—	41
2	3¼	·006	3 13	294	—	—	—	—	38
3	3¾	·007	—	—	4 15	227	—	—	37
4	4¾	·008	—	—	6 4	180	—	—	34
5	5¾	·010	—	—	7 9	148	—	—	31
6	6¾	·011	7 14	142	8 14	126	10 2	111	30
7	7¾	·013	9 1	124	10 3	110	11 10	96	29
8	9	·015	10 8	107	11 13	95	13 8	83	28
9	10	·017	11 11	96	13 2	85	15 0	75	27
10	11½	·019	13 7	83	15 2	74	17 4	65	25
11	13	·021	15 3	74	17 1	66	19 8	57	24
12	15	·025	17 8	64	19 11	57	22 8	50	23
13	17	·028	—	—	22 5	50	25 8	44	22
14	19	·031	—	—	24 15	45	28 8	39	21
15	22	·036	—	—	28 14	39	33 0	34	20
16	25	·041	—	—	32 13	34	37 8	30	19
17	28	·046	—	—	36 12	30	42 0	27	18
18	31	·051	—	—	40 11	28	46 8	24	—
19	35	·059	—	—	45 15	24	52 8	21	17
20	39	·065	—	—	51 3	22	58 8	19	16
21	43	·072	—	—	56 7	20	64 8	17	15

Tin Plates.

The Principal Denominations and Sizes with their Equivalent Thicknesses in Millimetres.

Strength or Gauge.	Size.	Sheets per Box.	Weight per Box.	Thicknesses of Sheets.	
	Inches		lb.	Mm.	Inch.
IC	14 x 10	225	108	0·313	0·0123
IX	,,	,,	136	0·395	0·0155
IXX	,,	,,	156	0·453	0·0179
IXXX	,,	,,	176	0·511	0·0201
IC	20 x 14	112	108	0·315	0·0123
ICL	,,	,,	100	0·292	0·0114
ICL	,,	,,	95	0·277	0·0109
ICL	,,	,,	90	0·262	0·0103
ICL	,,	,,	85	0·248	0·0097
ICL	,,	,,	80	0·233	0·0091
IX	,,	,,	136	0·396	0·0155
IXX	,,	,,	156	0·455	0·0179
IXXX	,,	,,	176	0·513	0·0201
IXXXX	,,	,,	196	0·571	0·0223
IC	28 x 20	,,	216	0·315	0·0124
IX	,,	,,	272	0·396	0·0156
IC	,,	56	108	0·315	0·0123
IX	,,	,,	136	0·396	0·0155
1C	20 x 10	225	154	0·313	0·0123
IX	,,	,,	194	0·394	0·0155
IC	14 x 18¾	124	110	0·309	0·0122
IC	14 x 19¼	120	110	0·311	0·0122
IC	30 x 21	112	243	0·315	0·0124
CL	,,	,,	224	0·290	0·0114
CLL	,,	,,	190	0·246	0·0097
CLLL	,,	,,	176	0·228	0·0090
CLLLL	,,	,,	160	0·207	0·0081
DC	17 x 12½	100	94	0·404	0·0160
DX	,,	,,	122	0·525	0·0206
DXX	,,	,,	143	0·615	0·0242
DXXX	,,	,,	164	0·706	0·0278
DXXXX	,,	,,	185	0·796	0·0313

Tin Plates.

Thickness of Tinplates by Gauge.

Tinplate.	Gauge.	Tinplate.	Gauge.
IC	30	DXXXX.. ..	22
IX	28	DXXXXX ..	21
IXX	27	DXXXXXX ..	20
IXXX	26	S D C	28 full
IXXXX	25	S DX	25 easy
IXXXXX ..	24	S DXX	25 full
IXXXXXX ..	22 easy	S DXXX ..	24
DC	28 full	S DXXXX ..	24 full
DX	26	S DXXXXX ..	22 easy
DXX	25	S DXXXXXX ..	22 full
DXXX	24		

LEAD.

Weight per Super Foot.

Inch.	Lbs.	Inch.	Lbs.	Inch.	Lbs.
1/16	3·7	7/16	25·9	3/4	44·7
1/8	7·4	1/2	29·5	13/16	48·3
3/16	11·1	9/16	33·2	7/8	51·0
1/4	14·8	5/8	36·9	15/16	55·1
5/16	18·5	11/16	40·6	1	59·4
3/8	22·2				

LEAD.—Sheet.

Weight per Roll—30 feet x 7 feet 9 inches.

	C.	Q.	L.		C.	Q.	L.
3 lbs. ..	6	0	14	5 lbs. ..	10	1	14
3½ ,, ..	7	0	20	6 ,, ..	12	1	0
4 ,, ..	8	1	0	7 ,, ..	14	2	0
4½ ,, ..	9	1	0				

EXPANSION OF METAL.

A comparison between the common metals at 32° Fahr. and 212° Fahr. showed the following results :—

Lead expands	1	part in	349	Block Tin expands	1	part in	403
Zinc ,,	1	,,	322	Cast Iron ,,	1	,,	901
Copper ,,	1	,,	581	Wrought Iron ,,	1	,,	846
				Brass ,,	1	,,	584

It would be observed that in expansiveness lead is only beaten by zinc

Sheet Copper — Weights of.

No.	Per Square Foot	No.	Per Square Foot
1	14 lbs. 0 oz.	16	3 lbs. 0 oz.
2	13 ,, 0 ,,	17	2 ,, 12 ,,
3	12 ,, 0 ,,	18	2 ,, 4 ,,
4	11 ,, 0 ,,	19	2 ,, 0 ,,
5	10 ,, 2 ,,	20	1 ,, 12 ,,
6	9 ,, 8 ,,	21	1 ,, 8 ,,
7	8 ,, 8 ,,	22	1 ,, 6 ,,
8	7 ,, 10 ,,	23	1 ,, 3 ,,
9	7 ,, 0 ,,	24	1 ,, 0 ,,
10	6 ,, 4 ,,	25	0 ,, 14 ,,
11	5 ,, 8 ,,	26	0 ,, 13 ,,
12	5 ,, 0 ,,	27	0 ,, 11½ ,,
13	4 ,, 8 ,,	28	0 ,, 10 ,,
14	4 ,, 0 ,,	29	0 ,, 9 ,,
15	3 ,, 8 ,,	30	0 ,, 8 ,,

Gauges of Copper Sheets.

48 in. x 24 in. x 8 lbs. = 24 W G
,, 10 ,, ,, 23 ,, full
,, 12 ,, ,, 21 ,,
,, 14 ,, ,, 20 ,,
,, 16 ,, ,, 19 ,,
,, 18 ,, ,, 18 ,,
,, 24 ,, ,, 16 ,,

ALUMINIUM.

Gauge.	Weight per square foot in lbs.	Weight of Sheet 24 in. x 96 in. in lbs.
12	1.406	11¼
16	.906	7¼
18	.687	5½
20	.25	4

A cube foot of Aluminium weighs 166 lbs.

SOLDERS.

For Lead	...	1 part Tin, 2 parts Lead
For Brass	...	2 parts Brass, 1 Part Zinc.
Hard Solder	...	2 parts Copper, 1 part Zinc.
Soft Solder	...	2 parts Tin, 1 part Lead.

FLUXES—For Soldering.

Tinned Iron	...	Resin or Spirits of Salts.
Copper and Brass	...	Sal. Ammonia or Spirits of Salts
Zinc ...	...	Spirits of Salts.
Lead ...	...	Resin.

Fusing Temperature of Metals.

	Degrees Fahr.
Solder	330
Tin	426
Lead	630
Zinc.	800
Brass	1650
Silver	1830
Copper	2192
Gold	2280
Cast Iron	2912

AMENDED ALUMINIUM TABLE.

Gauge.	Weight per Square Ft. in lbs.	Weight of Sheet 24 x 48 in lbs.
16	·875	7
18	·656	5¼
20	·5	4
22	·375	3

A cube foot of Aluminium weighs 166 lbs.

SOLDERS.

For Lead	...	1 part Tin, 2 parts Lead
For Brass	...	2 parts Brass, 1 Part Zinc.
Hard Solder	...	2 parts Copper, 1 part Zinc.
Soft Solder	...	2 parts Tin, 1 part Lead.

FLUXES—For Soldering.

Tinned Iron	...	Resin or Spirits of Salts.
Copper and Brass	...	Sal. Ammonia or Spirits of Salts
Zinc ...	...	Spirits of Salts.
Lead ...	...	Resin.

Fusing Temperature of Metals.

	Degrees Fahr.
Solder	330
Tin	426
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Brass	1650
Silver	1830
Copper	2192
Gold	2280
Cast Iron	2912

value for corrugated sheets.

Something about TANKS

CIRCULAR CORRUGATED IRON REPUTED CAPACITY			
Diam.	Height of Tank		
	4ft.	5 ft.	6 ft.
ft. in	Gall.	Gall.	Gall.
3 3	200	250	300
3 6	240	300	360
3 9	280	350	420
4 0	310	390	470
4 4	—	—	540
4 6	—	—	590
5 0	—	—	720
6 0	—	—	1050

SQUARE IRON CAPACITY	
2 ft. 8 in. sq,	100 Gall.
3 ,, 3 ,,	200 ,,
3 ,, 8 ,,	300 ,,
4 ,, 0 ,,	400 ,,

Water. A cube foot of water contains nearly 6¼ gallons (6.2321) and weighs a fraction over 62½ lbs. (62.5)

To compute the capacity of a Tank

Square or Rectangular. Multiply the length by the breadth and the product by the depth; the result multiplied by 6¼ (6.2321) will give the base and contents in gallons.

Circular. Multiply the diameter into itself and deduct one-fifth from the product, then multiply the remainder by the depth, and the result by 6¼ (6.2321) will give the contents in gallons.

A GOOD TANK

It is highly necessary that a **Corrugated Iron Tank** should possess lasting properties, and adaptability to withstand the climatic conditions of the locality in which it is to be used.

Thousands of Tanks are made every year from **Lysaght's Corrugated "ORB" Sheets,** the durable properties of which, in a pure dry atmosphere remote from the sea, are almost unlimited.

In tropical countries and other localities in which the water possesses mineral properties, the result is, however, less satisfactory, and in such cases Tanks should be made from **Lysaght's Special Blue Tank-Making Sheets,** which are largely used for this purpose in India and other tropical countries.

Weight per Lineal Foot of Seamless Drawn Copper Tubes.

Imp. St'd Gauge.	Thickness of Copper.							
	6	8	10	12	14	16	18	20
Inch's	0.192	0.160	0.128	0.104	0.080	0.064	0.048	0.036
Inside Diam. Inch's	Weight of a Lineal Foot in Pounds.							
¼	1.03	0.79	0.58	0.44	0.32	0.24	0.17	0.12
⅜	1.32	1.04	0.78	0.60	0.44	0.34	0.25	0.18
½	1.61	1.28	0.97	0.76	0.56	0.44	0.32	0.23
⅝	1.90	1.52	1.17	0.92	0.68	0.53	0.39	0.29
¾	2.19	1.76	1.36	1.07	0.80	0.63	0.46	0.34
⅞	2.48	2.00	1.55	1.23	0.92	0.73	0.54	0.40
1	2.77	2.24	1.75	1.39	1.04	0.82	0.61	0.45
1⅛	3.06	2.49	1.94	1.55	1.17	0.92	0.68	0.51
1¼	3.35	2.73	2.13	1.70	1.29	1.02	0.75	0.56
1⅜	3.64	2.97	2.33	1.86	1.41	1.11	0.83	0.61
1½	3.93	3.21	2.52	2.02	1.53	1.21	0.90	0.67
1⅝	4.22	3.45	2.71	2.17	1.65	1.31	0.97	0.72
1¾	4.51	3.70	2.91	2.33	1.77	1.40	1.04	0.78
1⅞	4.80	3.94	3.10	2.49	1.89	1.50	1.12	0.83
2	5.09	4.18	3.29	2.65	2.01	1.60	1.19	0.89
2⅛	5.38	4.42	3.49	2.80	2.13	1.69	1.26	0.94
2¼	5.67	4.66	3.68	2.96	2.25	1.79	1.33	1.00
2⅜	5.96	4.91	3.88	3.12	2.38	1.89	1.41	1.05
2½	6.25	5.15	4.07	3.28	2.50	1.98	1.48	1.10
2⅝	6.83	5.63	4.46	3.59	2.74	2.18	1.62	1.21

To ascertain the weight of a Seamless Tube of other metal, multiply the weight of a similar Copper Tube by 0.9626 for Brass (70 & 30 alloy)—by 0.86 for Wrought Iron—by 0.81 for Cast Iron—or by 1.28 for Lead.

The above weights are theoretically correct, but in practice a slight deviation from the theoretical weights must be expected.

Lead Pipe—Water and Gas.

Inside Dia.	Strength.	Weight per Yard.	Average Length.	Inside Dia.	Strength.	Weight per Yard.	Average Length,
Inch.		Lbs.	Yards.	Inch.		Lbs.	Yards.
⅜	Thin	3½	35	1¼	Thin	10	17
,,	Middle	4	32	,,	Thin	11	16
,,	Strong	4½	28	,,	Middle	12	14
,,	Strong	5	24 or 48	,,	Middle	12½	13
,,	Strong	5½	22 or 44	,,	Strong	14	12
½	Thin	3	39	,,	Strong	16	11
,,	Thin	3½	35	1½	Thin	12	14
,,	Middle	4	32	,,	Thin	14	12
,,	Strong	4½	28	,,	Middle	15½	11
,,	Strong	5	48	,,	Strong	17½	9
,,	Strong	6	38	,,	Strong	21	8
,,	Strong	7	33	1¾	Thin	15	11
,,	Strong	8	29	,,	Middle	17	10
⅝	Thin	4½	28	,,	Strong	19	9
,,	Middle	5	24 or 48	2	Thin	19	9
,,	Strong	6	38	,,	Middle	23	7
,,	Strong	7	33	,,	Strong	26	7
,,	Strong	8	29	,,	Thin	19	
¾	Thin	5	24	,,	Middle	23	
,,	Thin	6	20	,,	Strong	26	
,,	Middle	7	25	,,	Strong	30	
,,	Strong	8	22	2½	Thin	26	
,,	Strong	8½	20	,,	Thin	27	
,,	Strong	9	19	,,	Middle	30	
,,	Strong	10	17	,,	Strong	33	
,,	Strong	11	16	3	Thin	36	
,,	Strong	12	14	,,	Middle	42	
1	Thin	7	25	,,	Strong	44	
,,	Thin	8	22	3½	Thin	45	
,,	Middle	9	19	,,	Middle	49	
,,	Middle	9½	18	,,	Strong	52	
,,	Strong	10	17	4	Thin	48	
,,	Strong	11	16	,,	Middle	57	
,,	Strong	12	14	,,	Strong	61	
,,	Strong	14	12	5	Thin	73	
,,	Strong	15	11	,,	Strong	84	
				6		68	

12-foot Length.

Trade Price-List of Gas, Water, and Steam Tubes

Issued Sept. 1st, 1907, cancelling all other Lists.

TUBES

Internal Diam. in Inches	⅛&¼	⅜	½	¾	1	1¼	1½	1¾	2	2½	2⅔	2¾	3	3½	4	4½	5	5½	6
Tubes, 2 to 14ft. long, per ft	-/3½	-/4	-/5	-/6½	-/9	1/-	1/4	1/8	1/10	2/6	2/9	3/-	3/3	4/3	4/9	5/6	6/-	6/9	7/6
Pieces 12 to 23½ in. long (each)	-/9	-/10	1/1	1/4	1/10	2/6	3/4	4/3	4/9	6/9	8/-	9/-	10/-	13/6	15/6	21/-	24/-	28/6	32/6
Pieces 3 to 11½ in. long (each)	-/5½	/6	-/8	-/10	1/2	1/6	2/-	2/7	3/-	4/3	5/3	6/-	6/9	9/3	10/9	15/6	18/-	21/9	25/3
Long screws, 12 to 23½ in. long (each)	-/10	/11	1/2	1/5	2/-	2/8	3/7	4/8	5/3	7/6	9/-	10/-	11/6	15/6	17/-	23/-	26/6	31/6	35/6
Long screws, 3 to 11½ in. long (each)	-/6½	-/7	-/9	-/11	1/3	1/8	2/3	3/-	3/3	4/8	6/3	6/7	8/-	10/9	12/3	17/-	20/-	24/-	28/-
Barrel nipples (each)	-/5	-/5	-/6	-/7	-/9	1/-	1/4	1/8	1/9	2/6	3/-	3/6	4/-	6/-	7/-	10/-	12/6	15/-	20/-
Bends (each)	-/7	-/8	-/10	1/-	1/6	2/6	3/-	4/-	5/-	8/6	12/-	15/-	18/-	25/-	32/6	80/.	105/	135/	150/
Springs, not socketted (each)	-/5	-/6	-/7	-/9	1/1½	1/11½	2/3½	3/1	3/11	6/9	9/6	12/-	14/6	20/-	26/6	70/.	93/-	120/	132/

Trade Price-List of Water and Steam Fittings

Issued Sept. 1st. 1907, cancelling all other Lists.

FITTINGS

Internal Diam. in Inches	⅛&¼	⅜	½	¾	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3½	4	4½	5	5½	6
Socket or pipe union each	2/-	2/6	3/-	4/-	5/6	6/9	8/-	9/-	10/-	15/-	17/6	20/-	22/6	27/6	35/-	48/-	66/.	84/.	105/
Elbows, square - ,,	-/8½	-/9	-/10	1/-	1/4	1/10	2/5	3/-	3/10	6/3	9/-	11/6	14/-	22/-	28/-	75/.	95/.	120/	150/
Do. round - ,,	-/9½	-/11	1/-	1/3	1/6	2/1	2/7	3/6	4/6	6/9	10/-	13/-	17/-	25/-	32/-	75/-	95/-	120/	150/
Tees - - - ,,	-/9	-/10	-/11	1/2	1/5	2/-	2/6	3/2	4/3	6/6	9/6	12/6	16/6	24/-	30/-	78/-	98/.	125/	155/
Crosses - - - ,,	1/4	1/6	1/11	2/4	3/-	4/-	4/10	6/-	7/9	14/-	21/4	28/-	40/-	56/-	66/8	175/	220/	280/	350/
Sockets plain - - ,,	-/2	-/2	-/3	-/3½	-/4½	-/6½	-/8½	-/11	1/1	1/9	2/6	3/-	3/6	5/-	6/-	10/-	12/-	15/-	18/-
Do. diminished ,,	-/3	-/4	-/5	-/6	-/7	-/9	-/11	1/2	1/4	2/3	3/3	4/-	5/-	7/-	9/-	25/.	35/.	45/-	55/-
Flanges - - - ,,	-/9	-/10	1/-	1/2	1/4	1/9	2/-	2/3	2/9	4/-	5/-	6/9	8/6	10/-	11/6	16/.	18/-	23/-	27/-
Caps - - - ,,	-/3½	-/3½	-/5	-/6	-/8	1/-	1/3	1/7	2/-	3/-	4/4	5/3	6/-	9/9	10/6	25/.	30/-	37/6	45/.
Plugs - - - ,,	-/3	-/3	-/4	-/5	-/6	-/8	-/10	1/-	1/3	2/-	2/6	3/6	4/9	7/-	10/-	22/.	30/.	39/.	48/.
Backnuts - - - ,,	-/2	/2	-/3	-/3½	-/5	-/6	-/8	-/10	1/1	1/9	2/3	3/-	3/6	4/6	5/6	14/.	18/.	21/-	26/-
Nipples - - - ,,	-/2	-/2	-/3	-/3½	-/4	-/6	-/8	-/10	1/-	1/9	2/3	3/-	3/6	4/6	5/6	14/.	18/.	21/.	26/.
Union bends - - ,	2/7	3/-	3/9	5/-	6/3	8/6	10/-	11/6	13/6	21/-	27/-	32/-	37/-	49/.	58/-	78/-	100/	135/	160/
Main cocks - - ,,	2/3/	2/9	3/6	4/6	6/6	8/6	11/-	14/-	18/-	27/-	40/-	50/-	60/-	85/.	110/	210/	270/	360/	420/
Do. with brass plugs ,,	...	7/-	8/9	11/6	16/-	21/6	28/-	35/-	45/-	68/-	100/	112/	125/	212/	250/	360/	450/	570/	660/
Round way cocks - ,,	..	3/6	4/-	5/6	7/6	10/-	13/-	17/6	22/	38/-	60/-	65/-	75/-	120/	160/	...	..	....	....
Do. with brass plugs ,,	..	10/6	12/-	16/6	22/6	30/-	39/-	52/6	66/-	114/	180/	195/	225/	360/	480/	....	..	....	....
Cock spanners, wrought,,	..	1/6	1/8	2/2	2/8	3/2	3/6	4/-	4/3	4/9	6/-	7/6	9/-	12/-	14/-	16/-	19/-	22/.	24/.
Do. Malleable cast ,,	..	1/-	1/4	1/8	2/-	2/4	3/-	3/6	4/-	4/9	6/-	7/6	9/-	12/-	14/.	16/-	19/.	22/.	24/-
Syphon boxes, 1quart ,,	..	..	22/9	23/-	23/4	24/-	24/6	25/2	26/3	28/6	..	..	..	....	....	....	....	....	....
Do. do. 2 quarts ,,	..	..	...	27/-	27/4	28/-	28/6	29/2	30/3	32/6	35/6	38/6	42/6	...	...	....	....	....	....
Do. do. 3 do. ,,	..	..	...	32/-	32/4	33/-	33/6	34/2	35/3	37/6	40/6	43/6	47/6	55/6	61/6	....	....	....	....
Do. do. 4 do. ,,	..	..	...	38/-	38/4	39/-	39/6	40/2	41/3	43/6	46/6	49/6	53/6	61/6	67/6	....	....	....	....

Composition Pipe

(INSIDE DIAMETER)

Inch	lbs.	oz.		Inch	lbs.	oz.	
$\frac{1}{4}$	0	13	per yard	$\frac{5}{8}$	3	4	per yard
$\frac{5}{16}$	1	0	,,	$\frac{3}{4}$	4	4	,,
$\frac{3}{8}$	1	5	,,	$\frac{7}{8}$	4	12	,,
$\frac{7}{16}$	1	10	,,	1	5	8	,,
$\frac{1}{2}$	2	2	,,				

Length of Coils up to $\frac{1}{2}$ inch, usually 50 yards

$\frac{5}{8}$ inch	$\frac{3}{4}$ inch	$\frac{7}{8}$ inch	1 inch
40 yards	30 yards	25 yards	20 yards

Pipes—Cast Iron (Water)

Spigot and Faucet

NINE FEET LENGTHS

Diameter	Cwts.	Qrs.	Lbs.	Diameter	Cwts.	Qrs.	Lbs.
$2\frac{1}{2}$	0	3	2	14	9	1	26
3	1	0	10	15	9	3	26
4	1	1	16	16	10	3	6
5	2	0	14	18	14	0	25
6	2	2	0	20	16	1	20
7	3	0	20	22	17	3	2
8	3	2	14	24	22	0	0
9	4	2	10	27	24	0	21
10	5	1	0	30	27	0	0
12	7	0	0	33	32	0	0

Galvanized Piping—(Iron)

Weight per 100 feet.

Size	Per 100 Feet			Size.	Per 100 Feet		
	C.	Q.	L.		C.	Q.	L.
$\frac{1}{2}$	0	3	0	$1\frac{1}{2}$	2	3	2
$\frac{3}{4}$	1	0	5	2	4	0	6
1	1	1	22	3	6	0	8
$1\frac{1}{4}$	2	1	10				

SIZES of PIPES for WATER.

The table below gives approximately suitable diameters of pipes for passing different quantities of water. For short mains up to 200 yards long, the diameter of same, if smaller than the figures given, is not of much importance, but when they exceed 200 yds. in length the diameters given in this table are desirable.

Gallons per Minute.	Diameter of pipe in in.	Gallons per minute.	Diameter of pipe in in.
½	½	60	4
¾	¾	100	5
1½	1	160	6
3	1¼	220	7
5	1½	300	8
10	2	450	9
15	2½	500	10
20	3	800	12
40	3½	1,000	14

ACETYLENE PIPE SERVICE

Number of half-foot Burners or equivalent of of other sizes, to burn at 2½ inches or higher pressure at the burners.	Distance from Generating apparatus if a main pipe, or distance from main pipe if a branch.	Sizes of Pipes.
2	15 feet	⅛ inch
5	30 ,,	¼ ,,
10	40 ,,	⅜ ,,
20	50 ,,	½ ,,
50	100 ,,	¾ ,,
70	130 ,,	1 ,,
100	150 ,,	1¼ ,,
150	180 ,,	1½ ,,
270	250 ,,	2 ,,

Consumers of Galvanized Iron are respectfully requested to note that every sheet of LYSAGHT'S "ORB" IRON has the Trade Mark stencilled thereon in blue, and is guaranteed. Beware of Imitations.

Iron, Copper & Brass Wires.

	IRON.			100 FEET.	
S.W.G. No.	Weight of 100 yards in Avoir. lbs.	Weight of 1 Statute Mile in Avoir. lbs.	Length of 1 cwt. in Yards.	Copper Wire in Lbs.	Brass Wire in Lbs.
7/0	193·4	3,404	58	76·576	72·006
6/0	166·5	2,930	67	65·947	62·010
5/0	144·4	2,541	78	57·104	53·752
4/0	123·8	2,179	91	49·009	46·083
3/0	107·1	1,885	105	42·388	39·858
2/0	93·7	1,649	120	37·095	34·88
0	81·2	1,429	138	32·155	30·235
1	69·6	1,225	161	27·5445	25·922
2	58·9	1,037	190	23·333	21·940
3	49·1	864	228	19·451	18·290
4	41·6	732	269	16·486	15·502
5	34·8	612	322	13·768	12·940
6	28·5	502	393	11·792	10·617
7	24·0	422	467	9·4882	8·921
8	19·8	348	566	7·8414	7·373
9	16·0	282	700	6·3516	5·972
10	12·7	223	882	5·0185	4·7189
11	10·4	183	1,077	4·1217	3·8756
12	8·4	148	1,333	3·313	3·1153
13	6·5	114	1,723	2·5926	2·4378
14	5·0	88	2,240	1·9603	1·8433
15	4·0	70	2,800	1·5879	1·4931
16	3·2	56	3,500	1·2546	1·1767
17	2·4	42	4,667	0·96058	0·9324
18	1·8	32	6,222	0·70573	0·6636
19	1·2	21	9,333	0·49000	0·46083
20	1·0	18	11,200	0·39698	0·37328
21	0·795	13·9	14,199	0·21366	0·29493
22	0·609	10·7	18,418	0·24014	0·22529
23	0·448	7·8	25,070	0·17643	0·1659
24	0·376	6·6	29,835	0·14826	0·1394
25	0·311	5·4	36,100	0·12252	0·1152
26	0·252	4·4	44,568	0·099243	0·093318

Weight of a Cubic Inch of

Lead	equals .4103 lbs	Iron, cast	equals .263 lbs.
Copper, sheet	„ .3225 „	Tin	„ .2636 „
Brass	„ „ .3037 „	Zinc	„ .26 „
Iron	„ „ .279 „	Water	„ .03617„

Steel Wire.

Table showing quantity required per mile of fencing

Gauge.	Length per cwt	WEIGHT REQUIRED PER MILE.															
		1 Wire			2 Wires			3 Wires			4 Wires			5 Wires			
No.	YDS.	C.	Q.	L.	C.	Q.	L.	C	Q.	L.	C.	Q.	L.	C.	Q.	L.	
4	269	6	2	4	13	0	8	19	2	12	26	0	16	32	2	20	
5	322	5	1	24	10	3	20	16	1	16	21	3	12	27	1	12	
6	393	4	1	26	8	3	24	13	1	22	17	3	20	22	1	18	
7	467	3	3	2	7	2	4	11	1	6	15	0	8	18	3	10	
8	566	3	0	12	6	0	24	9	1	8	12	1	20	15	2	4	
9	700	2	2	2	5	0	4	7	2	6	10	0	8	12	2	10	
10	882	1	3	27	3	3	26	5	3	25	7	3	24	9	3	23	
11	1077	1	2	15	3	1	2	4	3	17	6	2	4	8	0	19	
12	1333	1	1	8	2	2	16	3	3	24	5	1	4	6	2	12	

Iron Wire is 2 % less than Steel

Galvanized Barbed Wire Fencing

DESCRIPTION.	WEIGHT.		Length of 112 lbs.
	100 yards	1 Mile	
	LBS.	LBS.	YARDS.
2-point ordinary round, one wire only, 5 in. apart ...	19	335	598
2-point thick set, 2½ in. apart	21	370	533
4-point ordinary, 6 in. apart ...	20	352	560
4-point thick set, 3 in. apart ...	25	440	448
4-point ordinary round, both wires 6 in. apart	20	352	560
4-point thick set, round, both wires 3 in. apart	25	440	448

The Galvanized Hexagon Wire-Netting List.

New Table of Prices for all Widths, per Roll of 50 Yards,

AS FROM JANUARY 1, 1910.

Mesh	Gauge	12 in. wide	18 in. wide	24 in. wide	30 in. wide	36 in. wide	42 in. wide	48 in. wide	60 in. wide	72 in. wide	Gauge	Mesh
½ in.	22	0 14 6	1 0 11	1 7 2	1 13 2	1 19 9	2 6 5	2 13 0	3 6 4	3 19 6	22	½ in.
,,	20	0 17 7	1 5 3	1 12 10	2 0 0	2 8 0	2 16 0	3 4 0	4 0 0	4 16 0	20	,,
,,	19	1 3 6	1 13 7	2 3 9	2 13 4	3 4 0	3 14 8	4 5 4	5 6 8	6 8 0	19	,,
⅝ in.	22	0 11 0	0 15 9	1 0 6	1 5 0	1 10 0	1 15 0	2 0 0	2 10 0	—	22	⅝ in.
,,	20	0 13 8	0 19 7	1 5 4	1 11 0	1 17 2	2 3 4	2 9 6	3 2 0	—	20	,,
,,	19	0 18 9	1 6 9	1 14 10	2 2 6	2 11 0	2 19 6	3 8 0	4 5 0	—	19	,,
¾ in.	20	0 9 3	0 13 2	0 16 10	1 0 6	1 4 0	1 8 0	1 12 0	2 0 0	2 8 0	25	¾ in.
,,	19	0 11 10	0 17 0	1 1 6	1 6 4	1 10 9	1 15 11	2 1 0	2 11 4	3 1 6	19	,,
,,	18	0 16 1	1 3 1	1 9 5	1 15 10	2 2 0	2 9 0	2 16 0	3 10 0	4 4 0	18	,,
1 in.	20	0 7 5	0 10 7	0 13 5	0 16 5	0 19 2	1 2 4	1 5 6	1 11 11	1 18 4	20	1 in.
,,	19	0 8 10	0 12 8	0 16 1	0 19 8	1 3 0	1 6 10	1 10 8	1 18 4	2 6 0	19	,,
,,	18	0 10 9	0 15 5	0 19 7	1 3 11	1 8 0	1 12 8	1 17 4	2 6 8	2 16 0	18	,,
,,	17	0 14 5	1 0 8	1 6 3	1 12 0	1 17 6	2 3 9	2 10 0	3 2 6	3 15 0	17	,,
1¼ in.	19	0 7 1	0 10 2	0 12 11	0 15 7	0 18 0	1 1 0	1 4 0	1 10 0	1 16 0	19	1¼ in.
,,	18	0 8 8	0 12 5	0 15 9	0 19 1	1 2 0	1 5 8	1 9 4	1 16 8	2 4 0	18	,,
,,	17	0 11 4	0 16 4	1 0 9	1 5 1	1 9 0	1 13 10	1 18 8	2 8 4	2 18 0	17	,,
,,	16	0 15 3	1 1 11	1 8 0	1 13 9	1 19 0	2 5 6	2 12 0	3 5 0	3 18 0	16	,,

The Galvanized Hexagon Wire-Netting List—*Continued.*

Mesh	Gauge	12 in wide	18 in. wide	24 in. wide	30 in. wide	36 in. wide	42 in. wide	48 in. wide	60 in. wide	72 in. wide	Guage	Mesh
1½in.	19	0 5 7	0 8 1	0 10 3	0 12 4	0 14 3	0 16 8	0 19 0	1 3 9	1 8 6	19	1½in
" "	18	0 7 1	0 10 2	0 12 1	0 15 7	0 18 0	1 1 0	1 4 0	1 10 0	1 16 0	18	" "
" "	17	0 9 3	0 13 3	0 16 10	1 0 4	1 3 6	1 7 5	1 11 4	1 19 2	2 7 0	17	" "
" "	16	0 11 9	0 16 11	1 1 6	1 5 11	1 10 0	1 15 0	2 0 0	2 10 0	3 0 0	16	" "
1⅝in	19	0 5 2	0 7 5	0 9 5	0 11 5	0 13 2	0 15 4	0 17 6	1 1 11	1 6 4	19	1⅝in
" "	18	0 6 4	0 9 1	0 11 7	0 14 0	0 6 2	0 18 10	1 1 6	1 6 11	1 12 4	18	" "
" "	17	0 8 3	0 11 10	0 15 1	0 18 2	1 1 0	1 4 6	1 8 0	1 15 0	2 2 0	17	" "
" "	16	0 10 4	0 14 10	0 18 10	1 2 9	1 6 3	1 10 8	1 15 0	2 3 9	2 12 6	16	" "
2in.	19	0 4 5	0 6 4	0 8 1	0 9 8	0 11 0	0 12 10	0 14 8	0 18 4	1 2 0	19	2in
" "	18	0 5 7	0 8 1	0 10 3	0 12 3	0 14 0	0 16 4	0 18 8	1 3 4	1 8 0	18	" "
" "	17	0 7 3	0 10 5	0 13 3	0 15 9	0 18 0	1 1 0	1 4 0	1 10 0	1 16 0	17	" "
" "	16	0 9 5	0 13 6	0 17 3	1 0 7	1 3 6	1 7 5	1 11 4	1 19 2	2 7 0	16	" "
" "	15	0 11 10	0 17 0	1 1 8	1 5 10	1 9 6	1 14 5	1 19 4	2 9 2	2 19 0	15	" "
" "	14	0 15 3	1 1 10	1 7 11	1 13 3	1 18 0	2 4 4	2 10 8	3 3 4	3 16 0	14	" "
2½ in.	19	0 3 9	0 5 6	0 7 0	0 8 4	0 9 6	0 11 1	0 12 8	0 15 10	0 19 0	19	2½in
" "	18	0 4 8	0 6 8	0 8 6	0 10 3	0 11 8	0 13 5	0 15 7	0 19 6	1 3 4	18	" "
" "	17	0 6 2	0 8 10	0 11 4	0 13 7	0 15 6	0 18 1	1 0 8	1 5 10	1 11 0	17	" "
" "	16	0 7 9	0 11 3	0 14 4	0 17 6	0 19 6	1 2 9	1 6 0	1 12 6	1 19 0	16	" "
" "	15	0 9 7	0 13 9	0 17 7	1 1 0	1 4 0	1 8 0	1 12 0	2 0 0	2 8 0	15	" "
3 in.	19	0 3 6	0 5 0	0 6 4	0 7 7	0 8 8	0 10 1	0 11 6	0 14 5	0 17 4	19	3in
" "	18	0 4 1	0 5 10	0 7 5	0 8 11	0 10 2	0 11 10	0 13 6	0 16 11	1 0 4	18	" "
" "	17	0 5 8	0 7 7	0 9 8	0 11 7	0 13 2	0 15 4	0 17 6	1 1 11	1 6 4	17	" "
" "	16	0 6 11	0 9 6	0 12 1	0 14 5	0 16 6	0 19 3	1 2 0	1 7 6	1 13 0	16	" "
" "	15	...	0 11 3	0 14 4	0 17 1	0 19 6	1 2 9	1 6 0	1 12 6	1 19 0	15	" "
" "	14	...	0 13 8	0 17 4	1 0 9	1 3 8	1 7 7	1 11 6	1 19 5	2 7 4	14	" "
4 in.	17	0 5 10	0 6 3	0 8 1	0 9 7	0 11 0	0 12 8	0 14 5	0 18 3	1 2 0	17	4in
" "	16	0 6 9	0 7 7	0 9 8	0 11 4	0 13 2	0 15 3	0 17 5	1 2 0	1 6 4	16	" "
" "	15	...	0 9 8	0 12 4	0 14 6	0 16 9	0 19 5	1 2 4	1 8 2	1 13 10	15	" "
" "	14	...	0 11 1	0 14 3	0 16 9	0 19 5	1 2 6	1 5 9	1 12 4	1 18 10	14	" "

Wire Netting.

Estimated weight per Mile, 24 inches wide.

(Other widths may be estimated *pro rata.*)

The above is not to be regarded as a Standard, but is merely an approximate guide.

Size.	Weight.	Size.	Weight.
Inches.	cwt. qr. lbs.	Inches.	cwt. qr. lbs.
24 x ½ x 20	18 0 26	24 x 2 x 19	6 1 21
24 x ¾ x 19	16 3 25	,, x 2 x 18	8 1 12
,, x ¾ x 20	12 2 12	,, x 2 x 17	12 0 14
24 x 1 x 19	12 2 8	,, x 2 x 16	14 0 25
,, x 1 x 20	9 3 17	24 x 2½ x 18	6 3 8
24 x 1¼ x 19	9 3 8	,, x 2½ x 17	9 3 17
,, x 1¼ x 18	12 0 10	,, x 2½ x 16	11 2 15
,, x 1¼ x 17	16 2 19	24 x 3 x 18	5 1 8
24 x 1½ x 19	8 2 14	,, x 3 x 17	7 2 13
,, x 1½ x 18	11 1 1	,, x 3 x 16	9 2 18
,, x 1½ x 17	14 1 10	,, x 3 x 15	13 0 14
24 x 1⅝ x 19	7 0 17	,, x 3 x 14	15 0 12
,, x 1⅝ x 18	8 2 7	24 x 4 x 16	7 2 22
,, x 1⅝ x 17	13 1 6	,, x 4 x 15	9 2 6
		,, x 4 x 14	11 0 26

Birmingham Wire Gauge.

Comparative Sizes.

No.	1	4	7	11	16	22	gauges =
	5/16	1/4	3/16	1/8	1/16	1/32	of an inch.

Relative Value based on Mile Measurements.

Per Mile.	Per 100 Yards.
£40 0 0	£2 5 5
39 0 0	2 4 4
38 0 0	2 3 2
37 0 0	2 2 1
36 0 0	2 0 11
35 0 0	1 19 9
34 0 0	1 18 8
33 0 0	1 17 6
32 0 0	1 16 4
31 0 0	1 15 3
30 0 0	1 14 1
29 0 0	1 12 11
28 0 0	1 11 10
27 0 0	1 10 8
26 0 0	1 9 7
25 0 0	1 8 5
24 0 0	1 7 3
23 0 0	1 6 2
22 0 0	1 5 0
21 0 0	1 3 10
20 0 0	1 2 9
19 0 0	1 1 7
18 0 0	1 0 5
17 0 0	0 19 4
16 0 0	0 18 2
15 0 0	0 17 1
14 0 0	0 15 11
13 0 0	0 14 9
12 0 0	0 13 8
11 0 0	0 12 6
10 0 0	0 11 4
9 0 0	0 10 3
8 0 0	0 9 1
7 0 0	0 7 11
6 0 0	0 6 10
5 0 0	0 5 8

Discount

Per cent.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
	0	3	0	6	1	0	2	0	3	0	4	0	5	0	6	0	7	0	8	0	9	0	10	0
5	—		—		0	0½	0	1	0	2	0	2½	0	3	0	3½	0	4	0	5	0	5½	0	6
7½	—		0	0½	0	1	0	2	0	2½	0	3½	0	4½	0	5½	0	6½	0	7	0	8	0	9
10	0	0½	0	0½	0	1	0	2½	0	3½	0	5	0	6	0	7	0	8½	0	9½	0	11	1	0
12½	0	0½	0	0½	0	1½	0	3	0	4½	0	6	0	7½	0	9	0	10½	1	0	1	1½	1	3
15	0	0½	0	1	0	2	0	3½	0	5½	0	7	0	9	0	11	1	0½	1	2½	1	4	1	6
17½	0	0½	0	1	0	2	0	4	0	6½	0	8½	0	10½	1	0½	1	2½	1	4½	1	7	1	9
20	0	0½	0	1	0	2½	0	5	0	7	0	9½	1	0	1	2½	1	5	1	7	1	9½	2	0
22½	0	0½	0	1½	0	2½	0	5½	0	8	0	11	1	1½	1	4	1	7	1	9½	2	0½	2	3
25	0	0½	0	1½	0	3	0	6	0	9	1	0	1	3	1	6	1	9	2	0	2	3	2	6
27½	0	1	0	1½	0	3½	0	6½	0	10	1	1	1	4½	1	8	1	11	2	2½	2	5½	2	9
30	0	1	0	2	0	3½	0	7	0	11	1	2½	1	6	1	9½	2	1	2	5	2	8½	3	0
32½	0	1	0	2	0	4	0	8	0	11½	1	3½	1	7½	1	11½	2	3½	2	7	2	11	3	3
35	0	1	0	2	0	4	0	8½	1	0½	1	5	1	9	2	1	2	5½	2	9½	3	2	3	6
37½	0	1	0	2	0	4½	0	9	1	1½	1	6	1	10½	2	3	2	7½	3	0	3	4½	3	9
40	0	1	0	2½	0	5	0	9½	1	2½	1	7	2	0	2	5	2	9½	3	2½	3	7	4	0
42½	0	1½	0	2½	0	5	0	10	1	3½	1	8½	2	1½	2	6½	2	11½	3	5	3	10	4	3
45	0	1½	0	2½	0	5½	0	11	1	4	1	9½	2	3	2	8	3	2	3	7	4	0½	4	6
47½	0	1½	0	3	0	5½	0	11½	1	5	1	11	2	4½	2	10	3	4	3	9½	4	3	4	9
50	0	1½	0	3	0	6	1	0	1	6	2	0	2	6	3	0	3	6	4	0	4	6	5	0
52½	0	1½	0	3	0	6½	1	0½	1	7	2	1	2	7½	3	2	3	8	4	2½	4	9	5	3
55	0	1½	0	3½	0	6½	1	1	1	8	2	2½	2	9	3	3½	3	10	4	5	4	11½	5	6
57½	0	1½	0	3½	0	7	1	2	1	8½	2	3½	2	10½	3	5½	4	0½	4	7	5	2	5	9
60	0	2	0	3½	0	7	1	2½	1	9½	2	5	3	0	3	7	4	2½	4	9½	5	5	6	0
62½	0	2	0	3½	0	7½	1	3	1	10½	2	6	3	1½	3	9	4	4½	5	0	5	7½	6	3
65	0	2	0	4	0	8	1	3½	1	11½	2	7	3	3	3	11	4	6½	5	2½	5	10	6	6
67½	0	2	0	4	0	8	1	4	2	0½	2	8½	3	4½	4	0½	4	8½	5	4½	6	1	6	9
70	0	2	0	4	0	8½	1	5	2	1	2	9½	3	6	4	2½	4	11	5	7	6	3½	7	0
72½	0	2	0	4½	0	8½	1	5½	2	2	2	11	3	7½	4	4	5	1	5	9½	6	6½	7	3
75	0	2	0	4½	0	9	1	6	2	3	3	0	3	9	4	6	5	3	6	0	6	9	7	6
77½	0	2½	0	4½	0	9½	1	6½	2	4	3	1	3	10½	4	8	5	5	6	2½	6	11½	7	9
80	0	2½	0	5	0	9½	1	7	2	5	3	2½	4	0	4	9½	5	7	6	5	7	2½	8	0

Table.

s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
11	0	12	0	13	0	14	0	15	0	16	0	17	0	18	0	19	0	20	0
0	6½	0	7	0	8	0	8½	0	9	0	9½	0	10	0	11	0	11½	1	0
0	10	0	11	0	11½	1	0½	1	1½	1	2½	1	3½	1	4	1	5	1	6
1	1	1	2½	1	3½	1	5	1	6	1	7	1	8½	1	9½	1	11	2	0
1	4½	1	6	1	7½	1	9	1	10½	2	0	2	1½	2	3	2	4½	2	6
1	8	1	9½	1	11½	2	1	2	3	2	5	2	6½	2	8½	2	10	3	0
1	11	2	1	2	3½	2	5½	2	7½	2	9½	2	11½	3	1½	3	4	3	6
2	2½	2	5	2	7	2	9½	3	0	3	2½	3	5	3	7	3	9½	4	0
2	5½	2	8½	2	11	3	2	3	4½	3	7	3	10	4	0½	4	3½	4	6
2	9	3	0	3	3	3	6	3	9	4	0	4	3	4	6	4	9	5	0
3	0½	3	3½	3	7	3	0	4	1½	4	5	4	8	4	11½	5	2½	5	6
3	3½	3	7	3	11	4	2½	4	6	4	9½	5	1	5	5	5	8½	6	0
3	7	3	11	4	2½	4	6½	4	10½	5	2½	5	6½	5	10	6	2	6	6
3	10	4	2½	4	6½	4	11	5	3	5	7	5	11½	6	3½	6	8	7	0
4	1½	4	6	4	10½	5	3	5	7½	6	0	6	4½	6	9	7	1½	7	6
4	5	4	9½	5	2½	5	7	6	0	6	5	6	9½	7	2½	7	7	8	0
4	8	5	1	5	6½	5	11½	6	4½	6	9½	7	2½	7	8	8	1	8	6
4	11½	5	5	5	10	6	3½	6	9	7	2½	7	8	8	1	8	6½	9	0
5	3	5	8½	6	2	6	8	7	1½	7	7	8	1	8	6½	9	0	9	6
5	6	6	0	6	6	7	0	7	6	8	0	8	6	9	0	9	6	10	0
5	9	6	3½	6	10	7	4	7	10½	8	5	8	10½	9	5½	9	11½	10	6
6	0½	6	7	7	2	7	8½	8	3	8	9½	9	4	9	11	10	5½	11	0
6	4	6	11	7	5½	8	0½	8	7½	9	2½	9	9½	10	4	10	11	11	6
6	7	7	2½	7	9½	8	5	9	0	9	7	10	2½	10	9½	11	5	12	0
6	10½	7	6	8	1½	8	9	9	4½	10	0	10	7½	11	3	11	10½	12	6
7	2	7	9½	8	5½	9	1	9	9	10	5	11	0½	11	8½	12	4	13	0
7	5	8	1	8	9½	9	5½	10	1½	10	9½	11	5½	12	1½	12	10	13	6
7	8½	8	5	9	1	9	9½	10	6	11	2½	11	11	12	7	13	3½	14	0
7	11½	8	8½	9	5	10	2	10	10½	11	7	12	4	13	0½	13	9½	14	6
8	3	9	0	9	9	10	6	11	3	12	0	12	9	13	6	14	3	15	0
8	6	9	3½	10	1	10	10	11	7½	12	5	13	2	13	11½	14	8½	15	6
8	9½	9	7	10	5	11	2½	12	0	12	9½	13	7	14	5	15	2½	16	0

Hoops

Weight of a Ten-foot Length in Pounds.

Width	16 W G	18 W G	19 W G	20 W G	21 W G	22 W G
½	1·10	·83	·71	·60	·54	·48
⅝	1·38	1·04	·89	·74	·68	·60
¾	1·66	1·25	1·07	·89	·82	·71
⅞	1·80	1·35	1·16	·97	·88	·77
	10 W G	**12 W G**	**14 W G**	**16 W G**	**17 W G**	**18 W G**
1	4·68	3·65	2·60	2·08	1·81	1·55
1⅛	5·26	4·10	2·92	2.34	2·04	1·75
1¼	5·85	4·56	3·25	2·60	2·27	1·93
1⅜	6·43	5·01	3·57	2·86	2·49	2 13
1½	7·02	5·47	3·90	3·12	2.72	2·32
1⅝	8·15	6·35	4·55	3·60	3·15	2·70
2	9·36	7·30	5·20	4·16	3·63	3·10
2⅛	10·53	8·20	5·85	4·68	4·08	3·50
2½	11·71	9.12	6·50	5·20	4·54	3·87
2¾	12·87	10·03	7·15	5·72	4·99	4·26
3	14·05	10·95	7·80	6·25	5·45	4·65
3¼	15·10	11·80	8·40	6·70	5·80	5·00
3½	16·30	12·70	9·10	7·20	6·30	5·40
3¾	17·50	13·60	9·70	7·70	6·70	5·80
4	18·73	14·60	10·40	8·33	7·26	6·20
4¼	19·19	15·50	11·05	8·84	7·70	6·60
4½	21·07	16·40	11·70	9·36	8·17	7·00
4¾	22·23	17·33	12·35	9·88	8·62	7·36
5	23·42	18·25	13·00	10·41	9·08	7·75
5½	25·75	20·07	14·30	11·45	9·98	8·22
6	28·10	21·90	15·60	12·50	10·90	9·30

(Galvanized Hoops slightly exceed these weights)

"QUEEN'S HEAD" IRON branded in blue.

Wire Ropes—Weights and Strength.

Circumference.	Diameter.	Weight in lbs. per fathom.			Breaking strain in gross tons.				Circumference.
		Patent Steel Hoisting Ropes.	B.B. Wire Rigging.	Flexible Hawsers.	Patent Cast Steel.	Plough quality Cast Steel.	Galv'd. B. B. Rigging.	Galv'd. C. S. Hauser.	
6"	1⅞"	34¾	32	30	115	170	55	88	6"
5½	1¾	29	26	26	95	142	42	74	5½
5	1⅝	24	22	21	80	120	34	59	5
4¾	1½	21¾	20	17	71	107	32	47	4¾
4½	1⅜	17½	16	12½	57	85	26	36	4½
4	1¼	15½	14	11	51	75	22	33	4
3½	1⅛	12	11	8	39	58	16	26	3½
3	1	8¾	8	6	28	42	11	18	3
2¾	⅞	7	7	5	24	36	8.55	15½	2¾
2½	13-16	6	6	4	20	29	7·4	12	2½
2¼	11-16	5	5	3	15½	23	6·35	9½	2¼
2	⅝	4	4	2½	12½	18½	4·3	7	2
1¾	9-16	3	3	2	9½	14¼	3·25	5½	1¾
1½	½	2	2	1½	7	10½	2·25		1½
1¼	7-16	1½	1½	1⅛	4½	7	1·75	3	1¼
1	5-16	1	1	¾	3	4½	1	1¾	1

MANILA ROPE.

Approximate Weight for given Lengths :

Coils of 800 Feet.

Size in.	Weight cwt	qrs	lbs	Size in.	Weight cwt	qrs	lbs	Size in	Weight cwt	qrs	lbs
$\frac{1}{2}$	0	0	14	$1\frac{1}{4}$	0	1	20	$2\frac{1}{4}$	1	1	0
$\frac{3}{4}$	0	0	18	$1\frac{3}{8}$	0	2	10	$2\frac{3}{8}$	1	1	2
1	0	1	0	$1\frac{3}{4}$		2	21	$2\frac{3}{4}$	1	2	20
$1\frac{1}{8}$	0	1	7	2	1	0	5	3	2	0	12

Coils of 100 feet.

Size in.	Weight cwt	qrs	lbs	Size in.	Weight cwt	qrs	lbs	Size in.	Weight cwt	qrs	lbs
$3\frac{1}{2}$	0	1	16	5	0	3	4	6	1	0	14
4	0	2	0	$5\frac{1}{2}$	0	3	22	$6\frac{1}{2}$	1	1	8
$4\frac{1}{2}$	0	2	14								

Covering Capacity of Galvanized Corrugated Iron

One ton of Galvanized Corrugated Iron has the following approximate covering capacity—

	24g 3 in. Cor.	26g 3 in. Cor.	26g 1 in Cor.	28g 1in. Cor.
Single Lap	1,600 sq.ft.	2,200 sq.ft.	2,327 sq ft.	2,645 sq.ft.
Lap and half	—	2,000 ,,	—	—
Double Lap	1,400 ,,	1,900 ,,	2,230 ,,	2535 ,,

NOTE.—To ascertain number of squares (10 ft. x 10 ft.) divide by 100.

To ascertain cost per square divide price per ton by number of squares.

SPRING HEAD NAILS

One packet (100 nails) is usually allowed to one square of roofing.

Pipes, Spouting, and Ridging.

Victorian Trade Price List, as at 1st May, 1913.

DOWN PIPE.

1½ in	2 in	2½ in	3 in	3½ in	4 in
10d	10d	11½d	1/1½	1/3	1/5

O.G. SPOUTING.

3 in	3½in	4 in	4½ in	5 in	6 in
11d	11d	1/-	1/1½	1/2½	1/5

HALF-ROUND SPOUTING.

3 in	4 in	5 in	6 in
10d	11d	1/1	1/3

RIDGING.

12 in	14 in	15 in	16 in	18 in
1/2½	1/4½d	1/5½	1/6½	1/9

per 6 ft. length

The above are based on 28 gauge
Cost of heavier gauges would be proportionately greater

Weight per 6 Lengths.

DOWN PIPE Weighs

2 in	2½ in	3 in	4 in
13	17	20	28 lbs

SPOUTING Weighs

3½ in	4 in	4½ in	5 in	6 in
18	19	23	24	29 lbs

RIDGING Weighs

12 in	14 in	16 in	18 in
23	28	33	35 lbs

BRICKS, about 800, 2 bags lime and one load of **SAND** are required for an ordinary **COTTAGE CHIMNEY,** and 1500 bricks 3½ bags lime, and 1½ loads sand to a double chimney.
About 1000 bricks, on an average, go to 3½ tons weight
LATH and PLASTER. 100 square yards requires 4 bags lime, 3 yards sand, 16 bundles 4 ft. 6 in. American Laths, 8 lbs. 1¼ in. nails, and ½ bag hair.
COLONIAL LATHS.—A bundle 4 ft. 6 in. weighs about 36 lbs. and covers 5 square yards.
AMERICAN LATH.—A bundle 4 ft. 6 in. weighs about 56 lbs., and covers 6½ square yards.
OIL per 5 gallon drum, weighs about 56 lbs.
CEMENT, per barrel weighs about 3¾ cwt.
PLASTER OF PARIS, per barrel weighs about ¾ cwt.

Timber, Etc.

Deals	as 9 x 3	No. of running feet to ton (20 cwt.)			350
Flooring	6 x 1⅛	,,	,,	,,	... 1557
,,	6 x 1	,,	,,	,,	... 1750
,,	6 x ⅞	,,	,,	,,	... 2000
,,	6 x ¾	,,	,,	,,	... 2330
Matchboards	6 x ⅝	,,	,,	,,	... 2800
,,	6 x ½	,,	,,	,,	... 3400
,,	6 x ⅜	,,	,,	,,	... 4800
Weatherboards, single		,	,,	,,	.. 3100
Oregon		No. of Super feet		,,	... 790
V.D.L. Hardwood		,,	,,	,,	... 450
Jarrah		,,	,,	,,	... 400
Iron Bark		,,	,,	,,	... 310
Black Butt		,,	,,	,,	... 333
Shelving (American)	12 x ⅞		,,	,,	... 1050
6 feet Tasmanian Palings (Hobart)			No. to	,,	... 650
5 ,, ,,		,,	,,	,,	... 800
6 ,, ,,		,, (Launceston)		,,	... 400
5 ,, ,,		,,	,,	,,	... 500
Spruce Deals	as 9 x 3	No. of running feet to		,,	... 400
Kauri		No. of super feet to		,,	... 600
Cedar		,,	,,	,,	... 600
Clear Pine		,,	,,	,,	... 900
Doors	6 ft. 8 ins. x 2 ft. 8 ins. x 1½ in.		No. to ton		... 55
,,	6 ft. 8 in. x 2 ft. 8 ins. x 1¼ in.			,,	... 70
,,	6 ft. 6 ins. x 2 ft. 6 ins. x 1½ in.			,,	... 58
,,	6 ft. 6 in. x 2 ft. 6 in. x 1¼ in.			,,	... 75

Superficial Feet in a Board or Plank

is known by multiplying the length by the breadth. If the board be tapering, add the breadth of the two ends together, and take half their sum for the mean breadth and multiply the length by this mean breadth.

SLATES, Roofing (Approximate)

Description	Size	No. Required to Cover 100 feet super. Lap. 2 in.	3 in.	4 in	Weight per 1000
Duchess ...	24 x 12	115	120	126	2 10 0 0
Countess ...	20 x 10	168	178	189	1 10 1 14
Viscountess	18 x 10	189	202	216	1 10 0 0
Ladies ...	16 x 8	270	292	315	1 0 3 14

COVERING CAPACITY & WEIGHT OF FRENCH TILES.

127 Tiles cover 100 super feet of roof.
100 super feet of Tiling weight 635 lbs.
90 lineal feet of 2 in. x 1 in. battens to one square of roofing.

TABLE OF MEASUREMENTS FOR WALL PAPERS.

Approximate number of pieces of English Wall Paper required for any room, allowance to be made for doors and windows

Measurement in feet round walls.	Height of Room in ft. from Skirting to Cornice									
	6	7	8	9	10	11	12	13	14	15
	Number of Pieces Required.									
32	4	4	5	5	6	6	7	7	8	8
36	4	5	5	6	6	7	7	8	9	9
40	4	5	6	6	7	8	8	9	9	10
44	5	5	6	7	8	8	9	10	10	11
48	5	6	7	7	8	9	10	10	11	12
52	6	6	7	8	9	10	10	11	12	13
56	6	7	8	8	9	10	11	12	13	14
60	6	7	8	9	10	11	12	13	14	15
64	7	8	9	10	11	12	13	14	15	16
68	7	8	9	10	11	12	13	15	16	17
72	7	9	10	11	12	13	14	15	17	18
76	8	9	10	11	13	14	15	16	17	19
80	8	9	11	11	13	15	16	17	18	20
84	9	10	11	12	14	15	17	18	19	21
88	9	10	12	12	14	16	17	19	20	22
92	9	11	12	13	15	17	18	19	21	22
96	10	11	13	13	16	17	19	10	22	23
100	10	12	13	13	16	18	20	21	24	24

Hints for Reckoning.

TO FIND THE SUPERFICIAL MEASUREMENT OF TIMBER.

Multiply the breadth by the thickness in inches, divide by 12, then multiply product by the length.

TO FIND THE VALUE OF A GIVEN WEIGHT AT A GIVEN PRICE PER TON.

EXAMPLE.— Tons cwt. qr. lbs.
2 10 1 18 @ £5/10/- per ton.

Reckon the tons as pounds; cwts. as shillings; each qr. 3d. and for every 9 lbs. 1d., equals

£2 10 5 multiplied by the price per ton = $5\frac{1}{2}$ pounds sterling.

£12 12 1
1 5 $2\frac{1}{2}$

£13 17 $3\frac{1}{2}$ Answer.

TO FIND THE PREMIUM OR DISCOUNT OF ANY SUM.

EXAMPLE :—£24/10/6 @ $3\frac{1}{2}$ %.

Multiply the sum named by double the rate per cent. and point off the product one to the right.

£24 10 6
Double $3\frac{1}{2}$ = 7

£17·1 13 6 Answer 17 1/10th of a shilling say 17/2.

ANOTHER SIMPLE CALCULATION is to divide the discount rate by 5; and multiply the amount to be dealt with by the quotient; then by reading the pounds as shillings, and the shillings in equal proportion, the result will be the amount of discount or premium, as the case may require.

EXAMPLE :—£9 10 0 @ 40 %.

Divide 40 by 5 leaves 8; multiply

£9 10 0
by 8

£76 0 0 Answer 76 shillings.

and even quality, is a perfect roofing sheet.

MENSURATION.

Simple Rules.

The **Area** of a **circle** is about three-fourths of the area of a square, having a side equal to its diameter.

The **Circumference** of a circle is about three and one-seventh times its diameter.

The cubical contents of **cones or pyramids** are one-third that of cylinders or prisms, respectively, which have the same size base and are equal in height.

The **area** of the **curved surface** of a **cone** can be found by multiplying the slope of the cone by the circumference of the base and dividing by two.

Drums or Pulleys.

Rules for Calculating the Speed.

The diameter of the driven being given, to find its number of revolutions :—

RULE: Multiply the diameter of the driver by its number of revolutions, and divide the product by the diameter of the driven; the quotient will be the number of revolutions of the driven.

The diameter and revolutions of the driver being given, to find the diameter of the driven, that shall make any number of revolutions in the same time.

RULE: Multiply the diameter of the driver by its number of revolutions, and divide the product by the number of revolutions of the driven, the quotient will be its diameter.

To ascertain the size of the driver :

RULE: Multiply the diameter of the driven by the number of revolutions you wish it to make, and divide the product by the revolutions of the driver; the quotient will be the size of the driver.

Amended Postal Rates 1913

COMMONWEALTH (*As at October 1st*)

Letters, including United Kingdom, Oversea Dominions, British Colonies, and Protectorates, one penny per half ounce.

Letter cards, single, 1d. each; reply, 1d. each half.

Post-cards, single, 1d.; reply, 1d. each half.

Printed papers, other than newspapers, as prescribed, ½d. per 2 oz., or part of 2 oz. up to 5 lbs.

Catalogues (wholly set up and printed in Australia), ½d. every 4 oz., or part of 4 oz.

Books, printed outside Australia, ½d. per 4 oz., or part of 4 oz.

Books, printed in Australia, ½d. per 8 oz., or part of 8 oz.

Newspapers, For places within the Commonwealth, or to New Zealand, Fiji, and Papua. Each newspaper (published and registered in the Commonwealth) for every 10 oz. or under, ½d.

(Newspapers printed or published outside the Commonwealth, when posted in the Commonwealth, are subject to Magazine Rates of Postage.)

United Kingdom: Not exceeding 8 oz., 1d. each newspaper; exceeding 8 oz., but not exceeding 10 oz., 2½d., every additional 2 oz., or fraction thereof, ½d. All Sea Route up to 16 oz., 1d. (one paper only to be enclosed in same wrapper).

All other places: Not exceeding 4 oz., 1d. each newspaper and ½d. for every additional 2 oz., or fraction thereof.

(a) **Magazines,** reviews, serials, and other similar publications printed and published in Australia, in numbers at intervals not exceeding three months, ½d. for 8 oz., or part of 8 oz.

(b) **Magazines,** reviews, serials and other similar publications (including newspapers), printed and published outside Australia, in numbers at intervals not exceeding three months, ½d. per 4 oz., or part of 4 oz.

Commercial papers, patterns, samples, and merchandise, as prescribed, 1d. per 2 oz., or part of 2 oz.

Parcels Post, Inland, 1 lb. or under 6d., each additional 1lb., 3d.

Parcels Post, Interstate, 1 lb. or under 8d., each additional 1 lb., 6d.

REGISTRATION FEE. Letters, 3d.

Amended Postal Rates

CONTINUED

MONEY ORDERS.

Commonwealth, £5, 6d.; £10, 1s.; £15, 1s. 6d.; £20, 2s.
New Zealand and Fiji, £2, 6d.; £5, 1s.; £7, 1s. 6d.; £10, 2s.; £12, 2s. 6d.; £15, 3s.; £17, 3s. 6d.; £20, 4s.
Foreign, 6d. in £ up to £20.
Papua, 9d. in every £5.

POSTAL NOTES.

Payable throughout the Commonwealth, 1s., 1s. 6d., ½d.; 2s., 2s. 6d., 3s., 3s. 6d., 4s., 4s. 6d.,1d.; 5s., 1½d.; 7s. 6d., 2d.; 10s., 10s 6d., 15s., 20s., 3d.

TELEGRAPHIC.

Including address and signature.

Town and Suburban—16 words, 6d. Each additional word, 1d.
Country—16 words, 9d. Each additional word, 1d.
Inter-State—16 words, 1s. Each additional word, 1d.
New Caledonia—Per word, 9d.
New Zealand—Per words, 4½d.
Norfolk Island—Per word, 3d.
United Kingdom—Per word, 3/-.
Suva, Fiji—Per word, 8d.
Cape Colony—Per words, 2s. 3d.
New York—Per word, 2s. 8d.

BRITISH WEIGHTS AND MEASURES.

IMPERIAL STANDARD.

Apothecaries' Weight.

Used for compounding Medical Prescriptions. The Grain, Ounce and Pound are the same as Troy.

20 Grains	=	1 Scruple	=	20 Grains	Troy
3 Scruples	,,	1 Dram	,,	60 ,,	,,
8 Drams	,,	1 Ounce	,,	480 ,,	,,
12 Ounces	,,	1 Pound	,,	5760 ,,	,,

Apothecaries' Fluid Measure.

60 Minims	= 1 Dram	20 Ounces	= 1 Pint
8 Drams	,, 1 Ounce	8 Pints	,, 1 Gallon

Troy Weight.

By this weight, Gold, Silver, Platina, and Precious Stones (except Diamonds) are weighed. Diamonds and Pearls are weighed by Carats of 4 Grains each (equal only to 3·2 Troy Grains). The Troy Ounce is equal to 151½ Diamond Carats. Gold when pure is said to be 24 Carats fine; if it contains one part alloy, it is said to be 23 Carats fine, and so on.

3·17 Grains	=	1 Carat			
24 Grains	,,	1 Pennyweight	=	24	Grains
20 Pennyweights	,,	1 Ounce	,,	480	,,
12 Ounces	,,	1 Pound	,,	5760	,,

Avoirdupois Weight.

Used for all General Merchandise.

27⅓ Grains	=	1 Dram			
16 Drams	,,	1 Ounce	=	437½	Grains
16 Ounces	,,	1 Pound	,,	7000	,,
14 Pounds	,,	1 Stone			
28 Pounds	,,	1 Quarter			
4 Quarters	,,	1 Hundredweight	=	112	Pounds
20 Cwts.	,,	1 Ton	,,	2240	,,

The Avoirdupois Pound exceeds Troy in the proportion of 17 to 14 nearly, and the Troy Ounce is greater than the Avoirdupois in the proportion of 79 to 72 nearly.

British Weights & Measures--*(Cont.)*

Bag of Flour

English, 280 lbs. ; Australian, 150 lbs.

A Bag of Flour for shipment from Australia to South Africa contains 98 lbs.

A Bag of Flour for shipment from Australia to England contains 140 lbs.

Measure of Surface.

144 Inches	= 1 Foot	40 Perches	= 1 Rood
9 Feet	,, 1 Yard	4 Roods	,, 1 Acre
30¼ Yards	,, 1 Rod or Perch	10 Chains	,, 1 Acre*
16 Rods	,, 1 Chain	640 Acres	,, 1 Mile

* That is, 10 Chains long by 1 chain broad, or a Square whose side is 70 yards, is nearly an Acre.

The following Table has been added as a basis for estimating the approximate acreage of any given enclosed area of land :—

YARDS WIDE.		YARDS LONG.	CONTAINS.	FEET WIDE.		FEET LONG.	CONTAINS.
5	by	968	1 Acre	60	by	726	1 Acre
10	,,	484	,,	110	,,	396	,,
20	,,	242	,,	120	,,	363	,,
40	,,	121	,,	220	,,	198	,,
70	,,	69⅓	,,	240	,,	181½	,,
80	,,	60½	,,	440	,,	99	,,

Measure of Solidity.

1728	Cubic Inches	= 1	Cubic Foot
27	,, Feet	,, 1	Cubic Yard
5	,, ,,	,, 1	Barrel Bulk Shipping
40	,, ,,	,, 1	Ton Shipping
40	,, ,,	,, 1	Load Hard English Timber, &c.
50	,, ,,	,, 1	Load Foreign Fir

British Weights & Measures—(*Continued*).

Geographical and Nautical Measure.

6 Feet = 1 Fathom
110 Fathoms or 660 Feet = 1 Furlong
6080 Feet = 1 Knot
3 Knots = 1 League
20 Leagues or 60 Geographical Miles = 1 Degree
360 Degrees, or 24,856 Miles, the Earth's Circumference.

Measure of Length.

12 Inches	= 1 Foot	4 Poles	= 1 Chain
3 Feet	,, 1 Yard	10 Chains	,, 1 Furlong
5½ Yards	,, 1 Pole	8 Furlongs	,, 1 Mile

1760 Yards (5280 Feet) = 1 Mile.

In scientific calculations and by Revenue Officers the inch is divided into tenths and hundredths. Mechanics divide it into eighths. The chain is divided into 100 links, each 7·92 inches.

Measure of Capacity.

Used for Liquids and Dry Goods generally.

4 Gills	= 1 Pint	=	34⅔	Cubic Inches	nearly	
2 Pints	,, 1 Quart	,,	69⅓	,,	,,	,,
4 Quarts	,, 1 Gallon	,,	277½	,,	,,	,,
2 Gallons	,, 1 Peck	,,	554⅓	,,	,,	,,
4 Pecks	,, 1 Bushel	,,	2218⅓	,,	,,	,,
8 Bushels	,, 1 Quarter	,,	10¼	,,	Feet	,,
5 Quarters	,, 1 Load	,,	51⅓	,,	,,	,,

A Bushel of Wheat, on an average, weighs 60 pounds; Barley, 47 pounds; Oats, 40 pounds. The gallon contains 10 pounds Avoirdupois of Distilled Water exactly.

Grain and Produce.

	Per bushel.	Average bushels per bag.		Per bushel.	Average bushels per bag.
Barley	.. 50 lb.	.. 4	Oats	.. 40 lb.	.. 4
Beans	.. 60 ,,	.. 4	Peas	.. 60 ,,	.. 4
Bran	.. 20 ,,	.. 8	Pollard	... 20 ,,	.. 9
Maize	.. 56 ,,	.. 4	Wheat	.. 60 ,,	.. 4
Malt	.. 40 ,,	.. 4			

A Bag of Flour:—Australian, 200 lb.; English, 280 lb.

Foreign Monies

And their English Equivalents.

(Subject to variation in Standard Currencies.)

ENGLISH Money	UNITED STATES and CANADA	FRANCE.	GERMANY.
£ s. d.	Dol. Cent.	Franc. Cent,	Mark. Pfen.
0 5 0	1 22	6 30	5 10
0 6 0	1 46	7 50	6 12
0 7 0	1 70	8 80	7 14
0 8 0	1 94	10 0	8 16
0 9 0	2 19	11 30	9 18
0 10 0	2 43	12 61	10 20
0 11 0	2 67	13 80	11 22
0 12 0	2 92	15 10	12 24
0 13 0	3 16	16 30	13 26
0 14 0	3 40	17 60	14 28
0 15 0	3 65	18 90	15 30
0 16 0	3 89	20 10	16 32
0 17 0	4 12	21 40	17 34
0 18 0	4 38	22 60	18 36
0 19 0	4 62	23 90	19 38
1 0 0	4 86	25 22	20 40

INDIA:—RUPEE is nominally of the value of 1/4 sterling.
SPAIN:—One PESETA ... ... nearly 9½d. ,,
AUSTRIA :—One KRONER ... 10d. ,,
JAPAN:—10 ren = 1 sen = ¼d. 100 sen = 1 yen = 2/1.

To ascertain the ENGLISH equivvlent of AMERICAN dollars and Cents, divide the same by 2, then by 12, and again by 20.

Answer—£104 4s. 4d.

EXAMPLE:—

DOL. CENT.	
2	500-25 to English equiv.
12	250.12—1
20	2084-4 shillings & pence
	104-4 pounds & shillings

From Official Year Book: Page 684.

Government Railways.

Commonwealth.

State or Territory.	Mileage Open for Traffic.	Cost of Construction and Equipment.
New South Wales ..	3,832	£53,514,903
Victoria	3,622	45,836,573
Queensland	4,266	27,751,227
South Australia	1,939	14,927,649
Western Australia ..	2,598	13,233,093
Tasmania	496	4,253,013
Northern Territory ..	145	1,040,702
Commonwealth ..	16,898	£160,557,160

Page 685.

Mileage under Different Gauges.

5ft. 3in. Gauge.	..	4,126 Miles.
4ft. 8½in. ,,	..	3,832 ,,
3ft. 6in. ,,	..	8,794 ,,
2ft. 6in. ,,	..	122 ,,
2ft. 0in. ,,	..	24 ,,

Page 698.

Distances by Rail and Times between Capitals.

Brisbane to Sydney .. .. 725 miles in 26 hours 55 minutes.
Sydney to Melbourne .. 582½ miles in 16 hours 51 minutes.
Melbourne to Adelaide .. 482¾ miles in 17 hours 26 minutes.

From Commonwealth Year Book: Page 1202.

Commonwealth.

Estimated Population, December 31st, 1912.

States, &c.	Males.	Females.	Totals.
New South Wales	934,846	842,688	1,777,534
Victoria	689,825	690,736	1,380,561
Queensland	344,139	292,286	636,425
South Australia	218,613	211,477	430,090
Western Australia	174,056	132,073	306,129
Tasmania	101,561	95,644	197,205
Northern Territory	2,854	621	3,475
Federal Capital Territory	1,074	866	1,940
Commonwealth	2,466,968	2,266,391	4,733,359

From Commonwealth Year Book: Page 14.

Areas of States and Territories.

Date of Creation.	Name of State, &c.	Area in Square Miles.
1786	New South Wales	309,460
1825	Tasmania	26,215
1829	Western Australia	975,920
1834	South Australia	380,070
1851	Victoria	87,884
1859	Queensland	670,500
1863	Northern Territory	523,620
1911	Federal Capital Territory	912
	Commonwealth	2,974,581

From Official Year Book: Page 1202.

Commonwealth.

1912.	Vital Statistics.	
BIRTHS.	Number	133,088
	Rate	28.65 per 1,000
DEATHS.	Number	52,177
	Rate	11.23 per 1,000
MARRIAGES.	Number	42,147
	Rate	9.07 per 1,000

From Summary: Page xxxi.

Agricultural Statistics for Commonwealth, 1911.

Product.	Acres Cultivated.	Yield.	Average per Acre.
Wheat	7,427,834	71,636,347	9.64 bushels.
Oats	616,857	9,561,771	15.50 ,,
Barley	116,466	2,056,836	17.68 ,,
Maize	340,065	9,039,855	26.58 ,,
Hay	2,518,288	2,868,032	1.14 tons.
Potatoes	130,463	301,489	2.31 ,,
Sugar Cane	101,010	1,682,250	16.65 ,,
Vineyards	60,602	4,975,147	Gallons.

Total Value: £38,773,678.

FERTILISERS.

Analysis of fertilisers for different purposes, reprinted from pamphlet issued by Messrs. George Shirley Limited, Sydney :—

	Phosphoric Acid (Soluble in water)	Equal to Tri-calcic Phosphate (Soluble in water)	Nitrogen	Equal to Ammonia (Fixed)	Sulphate of Potash	Equal to Pure Potash
SUPERPHOSPHATE for WHEAT ...	17·	36/38	—	—	—	—
Mangold, Turnips, Carrots, etc.	15·	33	1·6	2	1·80	1
Cabbages, Hay Crops, Maize, Sorghum, Millets, Pumpkins, Oats	13·	28	3·3	4	3·70	2
Potatoes, Tomatoes, Citrus Fruits, Apples, Pears, Tobacco	12·	26	3·3	4	12·95	7
Top-dressing Pastures—**Rape**...	11·4	25	1·6	2	1·85	1
Onions, Stone Fruits, Sugar Cane, Flowers, Strawberries	6·5	14	4·1	5	7·40	4
Peas, Beans, Clover, **Lucerne** (for Top-dressing Lucerne)	11·4	25	—	—	12·95	7

Commonwealth Imports of Fertilizers.

(1911 Figures Latest Available.)

Fertilizers.	Cwts.	Value.
Bonedust	4,164	£1,086
Guano	484,003	52,447
Superphosphates	1,254,892	183,832
Rock Phosphates	1,721,140	228,292
Other	161,121	47,479
Total	3,625,320	£513,136

(From Commonwealth Year Book, p. 408.)

BENEFITS DERIVED FROM USE OF FERTILIZERS.

There is little doubt that the increased and increasing use throughout the Commonwealth of fertilizers, natural and artificial, combined with the greater attention being devoted to fallowing and to the combination of sheep farming with agriculture, is having the effect of improving the prospects of those dependent for a livelihood on the products of the soil. Reference has been made, previously, to the loss to the soil of phosphoric acid which the Commonwealth export of wheat and its milled products involves, and the necessity which then arises for returning this ingredient in some form. Similarly, other staple products exported impose their respective tolls upon the soil of the Commonwealth, and the increased use of fertilizers furnishes evidence that producers are alive to the necessity for making good the deficiency so arising."

Tables of Distances between Ports.

SYDNEY TO ROCKHAMPTON.

Sydney.					
510	Brisbane.				
690	180	Maryborough.			
782	272	92	Bundaberg.		
882	372	192	100	Gladstone.	
982	472	292	200	100	Rockhampton.

TOWNSVILLE TO CAIRNS.

Townsville.					
60	Lucinda Point.				
85	25	Cardwell.			
130	70	45	Mourilyan.		
145	85	60	15	Innisfail.	
153	93	68	23	8	Goondi.
208	148	123	78	63	55 Cairns.

THE SOUTH SEA ISLAND EXCURSIONS.

Sydney to Fiji (Suva) . . . . . 1,733 miles.

Tables of Distances between Ports.

FREMANTLE TO BURKETOWN.

Fremantle.													
1378	Adelaide.												
1886	508	Melbourne.											
2450	1072	564	Sydney.										
2960	1582	1074	510	Brisbane.									
3310	1933	1424	860	350	Keppel Bay.								
3500	2122	1614	1050	540	190	Mackay.							
3605	2227	1719	1155	645	295	105	Bowen.						
3708	2330	1822	1258	748	398	208	103	Townsville.					
3868	2490	1982	1418	908	558	368	263	160	Cairns.				
3903	2525	2017	1453	943	593	403	298	195	35	Port Douglas.			
3968	2590	2082	1518	1008	658	468	363	260	100	65	Cooktown.		
4408	3030	2522	1958	1448	1098	908	803	700	540	505	440	Thursday Island.	
4908	3530	3022	2458	1948	1598	1408	1303	1200	1040	1005	940	500	Normanton.
5040	3668	3160	2596	2086	1736	1546	1441	1338	1178	1143	1078	638	138 Burketown.

AVERAGE RAINFALL IN AUSTRALIA

This Information is compiled from Official Year Book of the Commonwealth

VICTORIA

	Inches		Inches
Bairnsdale	29.01	Omeo	25.73
Ballarat	28.45	Outtrim	45.69
Bendigo	21.53	Portland	32.87
Casterton	25.60	Port Albert	25.48
Castlemaine	23.86	Sale	23.74
Cape Otway	34.15	Swan Hill	13.43
Colac	26.28	Wodonga	26.58
Echuca	17.05	Warracknabeal	14.68
Geelong	16.74	Warragul	39.76
Hopetoun	11.74	Warrnambool	25.03
Horsham	17.30	Wilson's Promty.	42.45
Melbourne	25.43	Yarrawonga	19.98
Mildura	11.01		

TASMANIA

	Inches		Inches
Hobart	23.29	Stanley	33.17
Launceston	27.72	Waratah	84.53

NEW SOUTH WALES

	Inches		Inches
Armidale	31.85	Lismore	53.69
Bathurst	23.95	Maitland	33.79
Bourke	15.29	Moulamein	14.60
Broken Hill	9.25	Mudgee	26.26
Condoblin	17.82	Mungindi	20.45
Cobar	14.81	Manilla	26.09
Deniliquin	16.58	Moree	23.61
Delegate	26.70	Newcastle	47.33
Dubbo	22.23	Narrandera	17.45
Eden	34.45	Orange	36.71
Forbes	20.28	Parramatta	36.67
Grafton	38.62	Sydney	48.80
Goulburn	25.95	Walgett	18.88
Hay	14.50	Wagga	21.87
Hungerford	12.70	Wentworth	11.84
Kempsey	48.65	Wilcannia	10.46
Kiama	52.26		

QUEENSLAND

	Inches		Inches
Adavale	15.73	Georgetown	31.77
Brisbane	48.36	Geraldton	145.71
Burketown	29.03	Isisford	20.01
Birdsville	6.38	Longreach	17.28
Boulia	11.09	Mackay	69.42
Banana	28.50	Maryborough	46.58
Cooktown	65.92	Mein	44.33
Charters Towers	26.66	Normanton	37.97
Cloncurry	19.93	St. George	21.70
Clermont	25.99	Thursday Island	60.30
Charleville	20.32	Taroom	27.36
Fairview	38.07	Winton	14.91

NORTHERN TERRITORY

	Inches		Inches
Alice Springs . .	10.78	Port Darwin . .	61.56
Charlotte Water	5.38	Tennant's Creek	15.18
Daly Waters . .	27.14		

WEST AUSTRALIA

	Inches		Inches
Broome	23.41	Laverton	10.43
Bunbury. . . .	36.56	Lawlers	8.68
Carnarvon . . .	8.81	Magnet	7.20
Coolgardie . . .	9.08	Nullagine . . .	13.69
Derby	27.25	Northampton . .	20.74
Eucla	10.11	Onslow	8.13
Eyre	10.89	Perth	33.35
Esperance . . .	25.13	Peak Hill	10.60
Geraldton . . .	17.35	Southern Cross .	9.06
Hall's Creek . .	21.40	Walebing . . .	18.55
Katanning . . .	17.49	Wyndham . . .	28.08
Kellerberrin . .	11.86	York	17.05

SOUTH AUSTRALIA

	Inches		Inches
Adelaide	20.32	Port Augusta. .	9.14
Blinman	12.94	Oodnadatta . . .	4.67
Cape Borda . .	24.80	Streaky Bay . .	15.11
Cowell	11.70	Ororoo	13.33
Kooringa . . .	17.64	William Creek .	5.32
Mount Gambier	31.80	Wilgena	6.81

CALENDAR—1915

JANUARY

S	31	3	10	17	24
M	...	4	11	18	25
T	...	5	12	19	26
W	...	6	13	20	27
T	...	7	14	21	28
F	1	8	15	22	29
S	2	9	16	23	30

FEBRUARY

	7	14	21	28
1	8	15	22	...
2	9	16	23	...
3	10	17	24	...
4	11	18	25	...
5	12	19	26	..
6	13	20	27	...

MARCH

	7	14	21	28
1	8	15	22	29
2	9	16	23	30
3	10	17	24	31
4	11	18	25	..
5	12	19	26	...
6	13	20	27	...

APRIL

S		4	11	18	25
M		5	12	19	26
T		6	13	20	27
W		7	14	21	28
T	1	8	15	22	29
F	2	9	16	23	30
S	3	10	17	24	...

MAY

30	2	9	16	23
31	3	10	17	24
...	4	11	18	25
...	5	12	19	26
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1	8	15	22	29

JUNE

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	7	14	21	28
1	8	15	22	29
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5	12	19	26	..

JULY

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M		5	12	19	26
T		6	13	20	27
W		7	14	21	28
T	1	8	15	22	29
F	2	9	16	23	30
S	3	10	17	24	31

AUGUST

1	8	15	22	29
2	9	16	23	30
3	10	17	24	31
4	11	18	25	...
5	12	19	26	...
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7	14	21	28	...

SEPTEMBER

	5	12	19	26
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	7	14	21	28
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2	9	16	23	30
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4	11	18	25	...

OCTOBER

S	31	3	10	17	24
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T	..	5	12	19	26
W	...	6	13	20	27
T	...	7	14	21	28
F	1	8	15	22	29
S	2	9	16	23	30

NOVEMBER

	7	14	21	28
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6	13	20	27	...

DECEMBER

	5	12	19	26
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	7	14	21	28
1	8	15	22	29
2	9	16	23	30
3	10	17	24	31
4	11	18	25	...

Lysaght's Trade Marks.

"ORB" Galvanised Corrugated Iron is favorably known and used throughout the world. Its uniformly reliable character is recognised by consumers everywhere. There are many imitations, but to those who compare its covering capacity with other nominally cheaper brands, its superiority in all respects is at once apparent

"REDCLIFFE" Corrugated Iron—A brand of well established repute and in large demand, occupying a premier position in those markets in which price is a primary consideration.

'WEIGHT BEARING Iron Lysaght's "ORB" brand used for building purposes, maintains the maker's reputation, and may be specified by Architects and Engineers in the full confidence that it will justify their preference for British Manufactures.

Lysaght's Trade Marks.

"ORB" Tenax Flat Sheet Iron, for working up, is of the finest possible quality suitable for special high-class work, and is, in many instances used as a substitute for copper.

"QUEEN'S HEAD" Galvanized Tinned Special Flat Sheets. This brand will stand the severest tests, and commands the confidence of iron-workers everywhere.

QUEEN'S HEAD

"BLACK SHEETS" of the same brand are extensively used by manufacturers of ventilating and other Pipes, Trunks, Stoves, Fender Bottoms, Ovens, Stamping, Perforating, &c., and the many other purposes where a reliable quality is necessary.

"FLEUR DE-LIS" Galvanized Tinned Flat Sheets enter largely into consumption in the lighter gauges, for that class of work in which a somewhat cheaper sheet is asked for. It will be found equal to all such requirements.

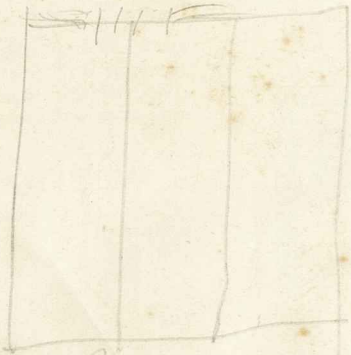

FLEUR DE LIS

Memoranda

Memoranda

5 Off front

40 ft Deep



Iron

The following appendix (for which the Publisher accepts no responsibility), has been compiled from standard sources of information—and will it is hoped prove of value to residents in country districts—who may be remote from medical aid.

FIRST AID TO THE INJURED

Wounds

Bleeding from Arteries

HEAD.—Pad and bandage the wound.

NECK.—Place thumb in wound and press backward against spine.

ARMPIT.—Press thumb into wound, second person to press main artery behind middle of collar-bone.

UPPER AND FOREARM.—Press with fingers, or apply tourniquet to inside of upper arm where pulsating. When below elbow, place pad in hollow or bend of elbow, and bend forearm against upper arm.

PALM OF HAND.—Bandage hand, closed over a piece of stick, or press arteries at front of wrist.

THIGH.—Hand pressure at centre of fold of groin, or by tourniquet on inside of thigh.

HAM OR BACK OF KNEE-JOINT.—Same as for a thigh, or press by hand or tourniquet in ham above wound.

FRONT OR BACK OF LEG.—Press by hand or tourniquet at back of knee-joint, or double the leg up against a pad placed in the ham.

A tourniquet can be made by placing a stone over the main artery, tieing a handkerchief loosely over it, and then twisting it tight with a stick.

Blood from an artery is bright red, and flows in jets.

Blood from a vein is dark bluish, and flows slowly.

The flow in arteries is from heart to head, hands to feet.

The flow in veins is just the reverse.

INSTEP.—Pressure to the middle of front of ankle.

SOLE OF FOOT.—Bandage with pads behind inner ankle bones and middle of instep.

FOR ALL SITUATIONS.—Elevate the part and apply pad and bandages.

FLESH WOUNDS.—Wash, stop bleeding, fix parts in natural position without delay.

GUNSHOT WOUNDS OF CHEST OR BELLY.—Place patient on wounded side with knees drawn up; give complete rest; no stimulants.

BRUISED WOUNDS. — Wash, apply wet cloths; if about head, poultices.

Broken Bones

LOWER JAW.—Bandage the lower to upper jaw with handkerchief.

COLLAR BONE.—Place pad in armpit, bandage elbow to side, sling forearm.

RIBS.—Apply bandage 6 inches wide, 8 yards long, round chest.

UPPER ARM.—Bend arm and apply roller bandage to hand and forearm, splints to back and front, and sling forearm.

FOREARM.—Apply padded splints to back and front from hand to elbow, holding the arm extended with thumb pointing upwards.

HAND.—Apply splint bandage, and support in sling.

THIGH.—Apply a long splint from armpit to outside of heel, and short one from fork to knee on inside, and bandage.

LEG.—Apply splints inside and outside and bandage.

Stretcher Drill

1. Three men fall in, facing feet of injured man, and are numbered off from the right.
2. Place foot of stretcher at patient's head in a line continuous with the body.
3. Nos. 1 and 2 one at either side—locking hands underneath the shoulders and hips, raise the patient, carry him forward over the stretcher, and then lower him on to it.

century. It still holds the foremost place.

4. No. 3 takes charge of the injured portion (limb or head) and steadies it with a hand on either side of the wound.

5. Nos. 1 and 2 then take their places at the head and foot of the stretcher, lift, and carry off, while No. 3 walks at side of stretcher.

Signs of Broken Bones

Motion at the part; crackling sensation on moving broken ends; alteration in shape; often shortening. Always apply splints before lifting or carrying. Dangers are of pushing the ends through flesh, blood-vessels, nerves, or internal organs (lungs).

Splints may be formed of soldiers' weapons—rifles, swords—and scabbards, umbrellas, walking sticks, broom handles, folded newspapers, etc. Bandages from handkerchiefs, sheets, and shirts. Stretchers from doors, ladders, or two rifles and a blanket.

General

AGUE.—As a preventative, give five grains of quinine every morning. As a cure, act on the bowels, give ten grains of quinine three times a day, and a vapour bath every evening.

APOPLEXY.—Act on the bowels, apply wet cloths to the head, undo collar.

BITES.—Of Snakes, mad dogs. Apply a ligature (a cord) on the side nearest the heart; suck the wound, scratch the edges with a penknife, and apply caustic or carbolic acid to the wound.

BURNS.—Place the part in a natural position, and apply cloths, soaked in oil.

COLIC AND DIARRHOEA.—Give 20 drops of chlorodyne in a little brandy and water.

DYSENTERY.—A small teaspoonful of Ipecacuanha, and a powder every two hours.

DRUNKENNESS.—An emetic of a teaspoonful of mustard in water, and douch the head with cold water.

DELIRIUM TREMENS.—Act on the bowels, beef-tea every half hour, 20 grains of chloral in water as a sleeping draught.

DROWNING.—Strip the patient to the waist, open and clear the mouth and throat with the face downwards, placing one arm under the forehead; turn the patient well and instantly on the side, supporting the head, replace on the face, raising and supporting chest, turn body gently on the side and a little beyond and then briskly on the face, back again, repeat about fifteen times a

minute; each time the body is placed on the face, make uniform but efficient pressure on the back between the shoulder blades, with brisk movement; excite breathing by smelling salts or snuff. If unsuccessful within five minutes, place the patient on his back with his clothing underneath his shoulders, draw forward tongue, and keep it projecting beyond the lips, and grasping the arm above the elbows, raise them above his head for two seconds, then lower and press against the sides for two seconds. Repeat these motions fifteen times per minute for an hour if necessary. On restoring the breathing, apply warmth to the body by hot bottles, rubbing the skin, hot bath, and weak brandy and water.

EMETICS.—Substances which cause vomiting. A tablespoonful of salt, or mustard and water; an ounce of Ipecacuanha wine; 15 grains of sulphate of zinc in water.

FAINTING.—From loss of blood, weakness, or shock. Keep the body in the lying position, undo the dress, give plenty of air, sprinkle the face and chest with cold water; smelling salts to nostrils.

FITS.—Loosen the clothing about the neck; fresh air, and prevent patient from injuring himself.

FROSTBITE.—Avoid heat, and restore circulation in the part by rubbing the skin.

ITCH.—Soap and water, followed by sulphur ointment.

POISONS.—Emetics, castor or salad oil.

RHEUMATISM.—Avoid its causes; wet clothes, damp ground, liquor.

RUPTURE.—The escape of a portion of the bowel from the belly at the groin. To return it, place the patient on his back, with the knees drawn up, and apply pressure to the swelling in an upward and outward direction.

SORE FEET.—Anoint with oil or soap before marching, and harden the skin at night by washing with salt and water or spirits.

SCALDS.—Smear with a solution of lime oil, and envelope in cotton wool.

SPRAINS.—Elevate and rest limbs, apply cold water cloths.

SUNSTROKE.—Loosen dress at neck, act on bowels, cold water to head.

WATER.—Bad water may produce worms, diarrhoea, dysentery, fevers. Always use boiled or filtered water.

EMETICS.—Substances which cause vomiting. A tablespoonful of salt, or mustard and water; an ounce of Ipecacuanha wine; 15 grains of sulphate of zinc in water.

FAINTING.—From loss of blood, weakness, or shock. Keep the body in the lying position, undo the dress, give plenty of air, sprinkle the face and chest with cold water; smelling salts to nostrils.

FITS.—Loosen the clothing about the neck; fresh air, and prevent patient from injuring himself.

MENINGITIS.—Violent headache, unusual irritability or drowsiness, frequent vomiting, tendency to curl up in bed on side, resisting interference, feverish tendencies. Keep in dark room until doctor comes.

POISONS:—1. Give an emetic in the case of poisons which do not stain the mouth, such as Arsenic, Phosphorus, Strychnine, Prussic Acid, Belladonna, and also in the case of Ptomaine Poisoning, Alcoholic Poisoning, Opium, Morphia, Laudanum, Paregoric, Chlorodyne, Syrup of Poppies, etc. (See Emetics above).

2. DO NOT give an emetic for the following poisons, which burn or stain the mouth, viz.:—

(a) Acids, i.e., Nitric Acid, Sulphuric Acid, Hydrochloric Acid, Muriatic Acid (Spirits of Salt), Carbolic Acid, Oxalic Acid, etc.

(b) Alkalies, i.e., Caustic Potash, Caustic Soda, and Ammonia, etc.

TREATMENT.—

(a) Acid Poisoning: Give an alkali, i.e., Lime Water, Magnesia, Chalk, Whiting (and soda, except in the case of Oxalic Acid poisoning); also Oil (Olive, Salad, Cod Liver or Castor).

(b) Alkali Poisoning: Give an acid, i.e., Lemon Juice or Vinegar, diluted with an equal quantity of water, also Oil (Olive, Salad, Cod Liver or Castor).

NOTE.—STRONG TEA is a direct neutraliser of many poisons, and is always safe to take.

RHEUMATISM.—This painful malady is generally due to errors of diet or other causes, such as damp ground; wet clothes, or excess of alcohol, and before any cure can be attempted the cause must first be removed. TREATMENT—Any good saline preparation, mineral water, etc., while for external application Eucalyptus or other warming and stimulating embrocation will be found to give good results.

RUPTURE.—The escape of a portion of the bowel from the belly at the groin. To return it, place the patient on his back, with the knees drawn up, and apply pressure to the swelling in an upward and outward direction.

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SPRAINS.—Elevate and rest limbs, apply cold water cloths.

SUNSTROKE.—Loosen dress at neck, act on bowels, cold water at head.

Door 6 $\frac{8}{2}$ 8 1/2

Eva Ann Patience

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1 3 6 Proctor

Beth
