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FURTHER EXCAVATIONS AT MOHENJO-DARO

Being an official account of Archæological Excavations at Mohenjo-daro carried out by the Government of India between the years 1927 and 1931

By

E. J. H. MACKAY, M.A., D.Litt., F.S.A.,

Late Special Officer for Exploration,
Archæological Survey of India

With Chapters by A. S. Hemmy, B.A., M.Sc., and by
B. S. Guha, Ph.D., and P. C. Basu, M.Sc., M.B.

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Chapter XVII.

SYSTEM OF WEIGHTS.

BY

A. S. Hemmy, B.A., M.Sc.

In Chapter XXIX of "Mohenjo-daro and the Indus Civilization", Vol. II, p. 589, the system of weights revealed by 157 specimens found at Mohenjo-daro and Harappā before 1927 was discussed. A further series of 220 weights found subsequently are now submitted to analysis.[1]

These weights have been analysed by the same method as then adopted and the great majority of them are found to fall into the classes shown in Table III, p. 591 in the earlier work, but with an upward extension of the system. The results have then been combined with those there given and at the same time the opportunity has been taken to incorporate some weights described by Dr. E. Mackay in Chapter XXIV of that book, pp. 461-464, Vol. II, which had not then been brought to my observation.

The method adopted was as follows: inspection shows that the weights with a few exceptions fall into a series of groups, the mean weights of which bear simple ratios to one another. Giving the smallest the arbitrary value of unity, the others are in simple ratios, 2, 4, 8, etc. The mean weight of each group is divided by this ratio and multiplied by the number of specimens. The products for all the groups are added together and divided by the total number of specimens. This gives a mean value of the group of smallest weight in which every specimen is allowed equal importance. The mean values for all the other groups are then obtained by multiplying this mean value by the ratios already found. In this way we arrive at the calculated values shown in column (8) in Table I. The list of weights include specimens in varying conditions of preservation. In making the calculations, all those marked as badly chipped have been omitted, although Dr. Mackay states that in no case can the error be more than five per cent. Further, in the case of specimens weighing less than 10 gms., only those marked as slightly chipped have been included with the perfect specimens.

TABLE I.—Weights given in list.

(1) Designation.	(2) No. of Spec.	(3) Mean weight observed.	(4) Mean Dev.	(5) Limits. Lower.	(6) Limits. Upper.	(7) Ratio.	(8) Calc. value.	(9) Diff. bet. Cols. (3) & (8).
A	4	·872 gm.	·031	·813	·928	1	·8565	+·016
B	7	1·780	·057	1·684	1·891	2	1·713	+·067
D	19	3·449	·086	3·313	3·780	4	3·426	+·023
E	19	6·841	·129	6·305	7·310	8	6·852	−·011
F	50	13·662	·197	13·079	14·290	16	13·704	−·042
G	55	27·425	·411	26·312	29·225	32	27·408	+·017
H	16	54·416	·370	53·627	55·900	64	54·816	−·400
J	4	136·127	·348	135·50	136·75	160	137·04	−·913
L	2	269·72	5·219	264·50	274·94	320	274·08	−4·36
N	2	1438·76	7·09	1431·67	1445·85	1600	1370·4	+68·4
V	2	2656·0	79·7	2576·3	2735·8	3200	2740·8	−84·8
Y	1	11467·6	..	..	..	12800	10963·2	+504·4

[1] The list of weights is given on pp. 607-612. Also Table X, pp. 676-678.

The unit value ·8565 gm. is almost identical with the value ·857 gm. previously found.

These results were combined with those considered in Chapter XXIX of Sir John Marshall's book and at the same time the following weights given on pp. 461-464, Chapter XXIV, were incorporated.

TABLE II.

Field No.	Type.	Weight.	Material.	Level.
VS 1821	B	5556 gm.	Limestone	– 1′
DK 3079	D	10262	Limestone	– 1′ 9″
VS 1899	D	6903	Slate	– 6′

Of the other weights given in Chapter XXIV, I may say that VS 1173 weighing 2792 gms., being marked as unfinished, has been omitted. It appears to be a specimen of class V, C 2974 weighing 6·7 gm. is a sample of class E, DK 2255 weighing 27·2 gm. of class G, HR 1115 weighing 14·019 gm. of class F, DK 7056 weighing 26·5 gm. of class G, VS 2509 weighing 33·553 gm. made of black stone and of barrel shape is equal to 4 shekels, whilst DK 3131 weighing 15·264 gm. also made of black stone and of conical shape may possibly be 2 shekels.

In Table III the result of combining all the observations is given.

TABLE III.—COMBINED RESULTS.

(1) Designa. tion.	(2) No. of Spec.	(3) Mean weight observed.	(4) Mean Dev.	(5) Limits. Lower.	(6) Limits. Upper.	(7) Ratio.	(8) Calc. value.	(9) Diff. bet. Cols. (3) & (8).
A	5	·871 gm.	·020	·813	·928	1	·857	+·014
B	13	1·770	·075	1·684	1·891	2	1·714	+·056
C	2	2·285	·045	2·240	2·330	8/3	2·285	·00
D	31	3·434	·072	3·240	3·780	4	3·428	+·006
E	45	6·829	·107	6·305	7·310	8	6·856	–·027
F	91	13·731	·206	13·079	14·940	16	13·712	+·019
G	94	27·405	·368	26·312	29·225	32	27·424	–·019
H	23	54·359	·329	53·627	55·900	64	54·848	–·489
J	11	136·02	·785	134·59	137·81	160	137·12	–1·10
K	1	174·50	..	..	..	200	171·40	+3·10
L	4	271·33	3·73	264·5	275·2	320	274·24	–2·91
M	1	546·70	..	..	..	640	548·48	–1·78
N	3	1417·5	26·4	1375	1446	1600	1371·2	+46·3
V	3	2701·4	83·4	2576	2792	3200	2742·4	–41·0
W	1	5556	..	..	..	6400	5485	+71
X	1	6903	..	..	..	8000	6856	+47
Y	2	10865	602	10262	11467	12800	10970	–105

Unit weight is ·8570 gm. The weight of Group F 13·712 gms., equals 211·6 grains troy.

The limits of the various groups were determined by there being a continuous series of specimens with small intervals between the values of the weights. Considering the date, the weights are remarkably accurate, the percentage ratio of the mean deviation of the mean value of the weight being as follows :—

TABLE IV.—Ratio of Mean Deviation to Weight.

Designation.	No. of Specimens.	Percentage Ratio of Mean Deviation to Weight.	Designation.	No. of Specimens.	Percentage Ratio of Mean Deviation to Weight.
A	5	2·98	H	23	·61
B	13	4·24	J	11	·58
C	2	1·97	L	4	1·36
D	31	2·09	N	3	1·87
E	45	1·57	V	3	3·08
F	91	1·50	Y	2	5·54
G	94	1·34	..	..	..

This ratio is much lower than is found in other countries at about the same period ; it appears to point to a stricter regulation of commerce. Table I includes 181 out of the 220 specimens in the list. Of the remainder, 14 actually have weights within the limits considered, but, being badly chipped, were omitted, leaving 25 to be accounted for. Of these, 8 marked as badly chipped have weights just below one or other of the classes. Evidently if they had been perfect specimens they would come within the limits. A list of the 17 remaining to be considered follows. (Table V).

In column (7) of Table V are given possible attributions.

TABLE V.—ABERRANT WEIGHTS.

1 Field No.	2 Condition.[1]	3 Type.	4 Weight.	5 Level.	6 Material.	7 Possible Attribution.
DK 12774	p.	A	·550	−10·1	Chert	P/2 or C/4.
DK 10790	ch.	A	7·900	−3·3	Do.	Shekel.
DK 6346	ch.	A	8·850	−12·5	Agate	Shekel or 4 C.
DK 3746	p.	A	15·937	−7·3	Chert	2 Shekels.
DK 3542	p.	A	16·640	−6·2	Do.	Do.
DK 10694	ch.	A	17·183	−0	Do.	Do.
DK 5679	p.	C	17·970	−12·4	Grey Stone	8 C.
DK 10862	ch.	A	20·370	−5·8	Chert	2½ Shekels.
DK 5503	p.	A	25·354	−18·3	Black Stone	G.
DK 6693	bc.	A	30·813	−13·5	Limestone	4 Shekels.
DK 6778	ch.	A	31·964	−14·0	Steatite	Do.
DK 11232E	bc.	E	40·402	−5·7	Black Stone	5 Shekels.
DK 101·85	bc.	A	56·872	−3·2	Chert	H.
DK 5307	p.	E	96·476	−13·7	Black Stone	2 U.
DK 11417	ch.	A	123·864	−5·5	Green Stone	Quarter Mina.
DK 11232D	sc.	E	151·424	−5·7	Black Stone	3 U.[2]
DK 5581	p.	B	185·5	−13·5	Do.	Mina/3.

Three of the weights are in simple ratios to a series of 7 weights previously found to which on account of the simplicity of their ratios with one another, provisional designations : P, Q, R, S, U, were given. These formed a series 1, 2, 3, 4, 24, 48, with a unit weight equal to ·98 gm. The present observations, however, merely add three more classes to the series without any addition to these classes themselves. The existence of a separate system is therefore not confirmed.

In fact, this series might very well be correlated with the Babylonian system, except that weights in the neighbourhood of classes T and U are not found. If, however, we accept such an attribution, these weights, together with those shown in Table V would give a total of about 22 coincidences out of 377 specimens with the Babylonian system. As the coincidences lie scattered over the whole system, and, moreover, include weights rare in Mesopotamia itself, and as the weights are quite different in shape, the coincidences are most probably accidental and may be disregarded. We may conclude that these exceptional weights are simply bad or fraudulent. Group F with a mean weight of 13·731 approximates to the Egyptian *Beqa* which has a mean weight of 13·61. This, the earliest of Egyptian weights, is found even in early Amratian graves, where it is in the form of short cylinders with domed ends. In Gerzian times it takes the form of a hemisphere with convex base, neither resembling the characteristic Indus form. There may be some significance in the coincidence in view of the *beqa* being the earliest Egyptian weight, but the difference of shape makes this doubtful.

In shape the great majority (203 out of 220) are cubical (type A). 8 are spheres with plane bases and tops (type B), 2 are cylindrical with plane ends

[1] Condition : p. perfect, sc. slightly chipped, ch. chipped, bc. badly chipped.

[2] Col. N. T. Belaiew, C.B., identifies this with 5 *Su*, the *Su* being a Susian weight = 30·71 gm.

(type C), 1 is conical (type D), and 6 are of an elongated barrel shape (type E) with plane ends. This is different from the Mesopotamian barrel shape which nearly always has rounded ends.

In material the great majority are of chert, the distribution of the 220 specimens being as follows: Chert 162, Alabaster or limestone 15, Black and white stone 11, Agate 10, Steatite 7, Black stone (Quartzite) 8, Slate 2, and one each of Grey stone, hard Green stone, Paste, Jasper, whilst the material of one is not specified. It is interesting to note that all the weights which are not cubical are not made of chert.

The weights not made of chert are on the whole not so accurate as those that are. We find that the mean deviation of such weights for a given group is always and in some cases considerably, larger than the mean deviation of the chert weights of the same group.

TABLE VI.—Variability of Chert and other Weights compared.

(1) Group.	(2) No. of Specimens.	(3)	(4) Mean Deviation.	(5)
	Chert.	Others.	Chert.	Others.
D	13	6	·043	·104
E	14	6	·121	·154
F	40	10	·187	·224
G	46	9	·389	·472
H	12	4	·271	·711

All the specimens of Groups L, N, V, and Y are of limestone and in these cases the mean deviations as well as the divergences from the calculated values are relatively large.

It may be that there was a manufactory of chert weights at Mohenjo-daro where the products were particularly well made and most popular, probably under royal patronage. The weights of other materials were very likely made elsewhere and less skilfully.

The possibility of two slightly differing units being present was tested by taking each weight, dividing by the ratio of its group and multiplying by 16. This gives the value of Group F in terms of this weight. The calculation was confined to Groups B to J (omitting C), as the number of specimens in the other groups is too small to have an appreciable effect on the result. Arranging the values of Group F so found in order of magnitude, we get a series between the limits of 13 and 15 gms. with only 5 exceptions. Take the number of values within each successive decigram to form a class. We find that the class between 13·6 and 13·7 gm. decidedly preponderates, having 79 cases out of 276 values of the group. This is what Prof. Karl Pearson calls the *mode* of the group (the *mean* value is 13·712 gm.). The evidence for a secondary maximum slightly above 13·9 gm. is so small that for most practical purposes it may be neglected.

An analysis was made to discover if there was any indication of a change of value in the weights during the period of occupation of the site. Dr. Mackay states that the average level of door-sills and pavements below datum level is 9′ 9″ for the lowest phase of the last period whilst the average for the uppermost phase of the Intermediate Period is 13′ below datum. As a rough method of separating the two periods, I have divided the weights according as they were found higher than, or lower than, 11′ below the surface. This has the advantage also that the numbers for the more numerous groups are not too disparate.

Table VII shows for each group the mean values for the two divisions as well as the upper and lower limits.

TABLE VII.—Differences between later and earlier weights, *i.e.*: Those found respectively higher than, or lower than, a plane 11′ below the surface.

(1) Group.	(2) No. of Specimens.	(3)	(4) Mean Weight.	(5)	(6) Lower Limit.	(7)	(8) Upper Limit.	(9)	(10) Diff. bet. cols. (4) & (5).
	Higher.	Lower.	Higher.	Lower.	Higher.	Lower.	Higher.	Lower.	
D	13	6	3·438	3·411	3·313	3·329	3·556	3·780	+·027
E	14	5	6·780	6·890	6·305	6·769	7·310	7·296	−·110
F	31	19	13·666	13·655	13·113	13·079	14·188	14·290	+·011
G	33	22	27·486	27·332	26·312	26·480	29·225	28·437	+·154
H	9	7	54·654	54·255	53·820	53·627	55·900	54·653	+·399

A comparison of columns (4) and (5) shows that except for Group E the later weights have an average value slightly greater than have the earlier. Column (10) shows how small the differences are, less than the mean deviation ; further, the weights for each division range between almost the same limits, as is shown in columns (6) to (9). The differences, therefore, have probably no significance, nor do the figures for weights found more than 20′ below the surface furnish any other indication.

Conclusion. The weights found at Mohenjo-daro form a series in the following ratios : 1, 2, 8/3, 4, 8, 16, 32, 64, 160, 200, 320, 640, 1600, 3200, 6400, 8000, 128000. The unit weight has the calculated value of ·8570 gms., the largest weight, 10970 gms. Groups F and G, with weight 13·712 gms. or 211·6 gr. troy, and double that amount respectively, are much more common than the others. The great majority of the weights are cubical and made of chert, and these are on the whole more accurate than those of other shapes and materials.

With the exception of a few weights which may doubtfully be multiples of the shekel, none bear any relation to the Babylonian system, moreover the shapes are different. The Egyptian *beqa* has a weight nearly the same as Group F, but again the shapes differ. The system may be regarded as quite independent.[1]

The weights are in the great majority of cases made with considerable accuracy, much more so than in other countries at that period. The unit does not change during the whole period of the occupation of the site.

[1] See Appendix II, p. 672.

Appendix I.—Tabulation of Weights.

ld No.	Condition. Perfect.	Condition. Slightly Chipped.	Condition. Chipped.	Condition. Badly Chipped.	Weight in Grammes.	Types. A.	Types. B.	Types. C.	Types. D.	Types. E.	Sizes (Ins.). Length.	Sizes (Ins.). Width.	Sizes (Ins.). Height.	Sizes (Ins.). Diameter.	Materials. Chert.	Materials. Agate.	Materials. Limestone.	Materials. Steatite.	Materials. Paste.	Materials. Jasper.	Materials. Slate.	Materials. Black stone (Quartzite?).	Materials. Not identified.	Locus. Block.	Locus. House.	Locus. Room.	Level (ft.)	Designation.
12774 .	×	—	—	—	0·550	×	—	—	—	—	0·3	0·28	0·19	—	×	—	—	—	—	—	—	—	—	9	XII	94	−10·1	?
3261 .	×	—	—	—	0·813	×	—	—	—	—	0·32	0·32	0·19	—	×	—	—	—	—	—	—	—	—	7	VIII	23	−16·3	A
11735 .	—	×	—	—	0·867	×	—	—	—	—	0·32	0·30	0·28	—	×	—	—	—	—	—	—	—	—	14	I	4	−9·0	,,
5555 .	×	—	—	—	0·879	×	—	—	—	—	0·3	0·3	0·28	—	×	—	—	—	—	—	—	—	—	1	,,	74	−13·4	,,
244 .	×	—	—	—	0·928	×	—	—	—	—	0·32	0·32	0·25	—	×	—	—	—	—	—	—	—	—	6	III	17	−10·4	,,
3262	—	—	×	—	1·552	×	—	—	—	—	0·55	0·5	0·24	—	—	—	—	—	—	—	—	—	—	7	VIII	23	−16·3	B
461 .	×	—	—	—	1·684	×	—	—	—	—	0·36	0·36	0·36	—	×	—	—	—	—	—	—	—	—	First St. (9)			−12·8	,,
381 .	×	—	—	—	1·734	×	—	—	—	—	0·39	0·39	0·3	—	×	—	—	—	—	—	—	—	—	First St. (9)			−13·6	,,
12284 .	×	—	—	—	1·750	×	—	—	—	—	0·41	0·4	0·37	—	—	—	—	×	—	—	—	—	—	18	—	9	−8·7	,,
3989 .	×	—	—	—	1·754	×	—	—	—	—	0·4	0·4	0·26	—	×	—	—	—	—	—	—	—	—	First St. (14)			−9·0	,,
3634 .	×	—	—	—	1·815	×	—	—	—	—	0·4	0·3	0·3	—	×	—	—	—	—	—	—	—	—	7	VIII	16	−8·1	,,
11199 .	×	—	—	—	1·835	×	—	—	—	—	0·38	0·38	0·34	—	×	—	—	—	—	—	—	—	—	Central St.			−6·4	,,
10172 .	×	—	—	—	1·891	×	—	—	—	—	0·45	0·45	0·27	—	×	—	—	—	—	—	—	—	—	21	IV	23	−2·8	,,
5023 .	—	—	×	—	3·306	×	—	—	—	—	0·5	0·43	0·4	—	×	—	—	—	—	—	—	—	—	1	VII	37	−10·4	D
10250 .	×	—	—	—	3·313	×	—	—	—	—	0·48	0·48	0·39	—	×	—	—	—	—	—	—	—	—	18	—	35	−5·2	,,
7129 .	×	—	—	—	3·329	×	—	—	—	—	0·5	0·46	0·37	—	—	—	×	—	—	—	—	—	—	10A	—	7	−19·8	,,
473 .	×	—	—	—	3·343	×	—	—	—	—	0·49	0·49	0·41	—	×	—	—	—	—	—	—	—	—	First St. (9)			−12·5	,,
11831 .	—	×	—	—	3·362	×	—	—	—	—	0·45	0·4	0·45	—	×	—	—	—	—	—	—	—	—	15	I	1	−10·7	,,
973 .	×	—	—	—	3·367	×	—	—	—	—	0·5	0·5	0·36	—	×	—	—	—	—	—	—	—	—	3	,,	6	−15·4	,,
4111 .	×	—	—	—	3·394	×	—	—	—	—	0·5	0·49	0·4	—	×	—	—	—	—	—	—	—	—	9	II	11	−8·3	,,
7112 .	×	—	—	—	3·414	×	—	—	—	—	0·5	0·4	0·4	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 10(III) and 12.			−21·7	,,
10850 .	×	—	—	—	3·381	×	—	—	—	—	0·5	0·48	0·4	—	×	—	—	—	—	—	—	—	—	8A	—	44	−4·8	,,
11602	—	×	—	—	3·405	×	—	—	—	—	0·49	0·47	0·4	—	×	—	—	—	—	—	—	—	—	16	II	13	−4·2	,,
10340 .	×	—	—	—	3·418	×	—	—	—	—	0·47	0·47	0·42	—	×	—	—	—	—	—	—	—	—	First St. (2)			−6·6	,,
11521 .	—	×	—	—	3·424	×	—	—	—	—	0·51	0·5	0·35	—	×	—	—	—	—	—	—	—	—	Central St.			−8·1	,,
5102 .	×	—	—	—	3·422	×	—	—	—	—	0·5	0·49	0·32	—	×	—	—	—	—	—	—	—	—	1	V	47	−8·4	,,
3856 .	×	—	—		3·465	×	—	—	—	—	0·5	0·5	0·38	—	—	×	—	—	—	—	—	—	—	6	III	26	−8·4	,,
10959 .	—	×	—	—	3·484	×	—	—	—	—	0·45	0·45	0·45	—	×	—	—	—	—	—	—	—	—	8	,,	47	−6·9	,,
4071 .	—	×	—	—	3·520	×	—	—	—	—	0·55	0·5	0·39	—	—	×	—	—	—	—	—	—	—	5	I	12	−8·9	,,
5403 .	×	—	—	—	3·554	×	—	—	—	—	0·58	0·58	0·31	—	—	—	—	×	—	—	—	—	—	1	VI	40	−8·7	,,
11929 .	—	×	—	—	3·556	×	—	—	—	—	0·51	0·5	0·38	—	×	—	—	—	—	—	—	—	—	19	—	5	−5·6	,,
7161 .	—	×	—	—	3·604	×	—	—	—	—	0·5	0·45	0·37	—	—	—	—	—	×	—	—	—	—	3	III	43	−14·4	,,
11163 .	—	—	×	—	3·640	×	—	—	—	—	0·5	0·5	0·38	—	×	—	—	—	—	—	—	—	—	Central St.			−6·4	,,
0651 .	×	—	—	—	3·780	×	—	—	—	—	0·51	0·5	0·45	—	—	—	—	—	—	×	—	—	—	7	IX	29	−31·6	,,
10479 .	—	—	—	×	6·195	—	×	—	—	—	—	—	5·4	0·71	—	×	—	—	—	—	—	—	—	8A	—	37	−1·4	E
4459 .	×	—	—	—	6·305	×	—	—	—	—	0·6	0·6	0·45	—	×	—	—	—	—	—	—	—	—	9	VI	33	−4·7	,,
12148 .	—	—	×	—	6·548	×	—	—	—	—	0·6	0·6	0·48	—	×	—	—	—	—	—	—	—	—	Surface.			—	,,
3830 .	×	—	—	—	6·600	×	—	—	—	—	0·6	0·6	0·45	—	×	—	—	—	—	—	—	—	—	First St. (13)			−9·0	,,
5544 .	—	—	×	—	6·705	×	—	—	—	—	0·63	0·45	0·45		×	—	—	—	—	—	—	—	—	1	I	63	−16·0	,,

TABULATION OF WEIGHTS—*contd.*

Field No.	Condition.				Weight in Grammes.	Types.					Sizes (Ins.).				Materials.									Locus.			Level (ft.).	Designation.
	Perfect.	Slightly Chipped.	Chipped.	Badly Chipped.		A.	B.	C.	D.	E.	Length.	Width.	Height.	Diameter.	Chert.	Agate.	Limestone.	Steatite.	Paste.	Jasper.	Slate.	Black stone (Quartzite?).	Not identified.	Block.	House.	Room.		
DK 5152 .	—	×	—	—	6·769	×	—	—	—	—	0·65	0·63	0·45	—	×	—	—	—	—	—	—	—	—	3	V	10	−11·0	E
,, 10351 .	—	×	—	—	6·774	×	—	—	—	—	0·58	0·58	0·5	—	×	—	—	—	—	—	—	—	—	6A	—	37	−5·6	,,
,, 7034 .	×	—	—	—	6·779	×	—	—	—	—	0·58	0·57	0·5	—	—	—	×	—	—	—	—	—	—	3	III	26	−15·5	,,
,, 4297 .	×	—	—	—	6·781	×	—	—	—	—	0·6	0·6	0·5	—	×	—	—	—	—	—	—	—	—	6	II	9	−13·2	,,
,, 7365 .	—	×	—	—	6·791	×	—	—	—	—	0·59	0·59	0·5	—	×	—	—	—	—	—	—	—	—	1	III	16	−13·2	,,
,, 10387 .	×	—	—	—	6·791	—	×	—	—	—	—	—	0·8	0·35	—	—	—	—	—	—	—	—	×	Surface			−10·95	,,
,, 11211 .	—	—	×	—	6·792	×	—	—	—	—	0·65	0·64	0·5	—	—	—	—	—	—	—	—	—	×	15	VI	29	−3·5	,,
,, 11494 .	×	—	—	—	6·802	×	—	—	—	—	0·57	0·57	0·54	—	×	—	—	—	—	—	—	—	—	21	IV	30	−7·7	,,
,, 4097 .	×	—	—	—	6·817	×	—	—	—	—	0·6	0·6	0·45	—	×	—	—	—	—	—	—	—	—	3	VI	31	−11·9	,,
,, 12642 .	—	×	—	—	6·824	×	—	—	—	—	0·65	0·62	0·45	—	×	—	—	—	—	—	—	—	—	9A	VIII	54	−5·3	,,
,, 3288 .	×	—	—	—	6·830	×	—	—	—	—	0·5	0·5	0·5	—	—	—	—	—	—	—	—	×	—	9	I	22	−5·7	,,
,, 11659 .	—	—	×	—	6·841	×	—	—	—	—	0·62	0·62	0·48	—	×	—	—	—	—	—	—	—	—	Central St.			−8·1	,,
,, 5460 .	—	—	×	—	6·848	×	—	—	—	—	0·62	0·55	0·55	—	—	—	—	×	—	—	—	—	—	1	I	12	−11·5	,,
,, 11043 .	×	—	—	—	6·862	×	—	—	—	—	0·65	0·65	0·45	—	×	—	—	—	—	—	—	—	—	18	—	9	−7·8	,,
,, 10847 .	×	—	—	—	6·877	×	—	—	—	—	0·58	0·58	0·5	—	×	—	—	—	—	—	—	—	—	18	—	7	−6·0	,,
,, 10224 .	—	×	—	—	6·932	—	×	—	—	—	—	—	0·57	0·72	—	×	—	—	—	—	—	—	—	7	II	93	−5·7	,,
,, 11049 .	—	×	—	—	6·880	×	—	—	—	—	0·62	0·62	0·5	—	×	—	—	—	—	—	—	—	—	22	I	4	−5·7	,,
,, 5744 .	×	—	—	—	6·957	×	—	—	—	—	0·6	0·59	0·51	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 (V) and 10.			−9·8	,,
,, 9448 .	—	×	—	—	7·296	×	—	—	—	—	0·63	0·63	0·5	—	×	—	—	—	—	—	—	—	—	7	I	15	−24·2	,,
,, 4746 .	×	—	—	—	7·310	—	×	—	—	—	—	—	0·55	0·75	—	×	—	—	—	—	—	—	—	12	,,	10	−6·4	,,
,, 10790 .	—	×	—	—	7·900	×	—	—	—	—	0·67	0·67	0·5	—	×	—	—	—	—	—	—	—	—	8A	—	44	−3·3	?
,, 6346 .	—	—	×	—	8·850	×	—	—	—	—	0·69	0·60	0·55	—	—	×	—	—	—	—	—	—	—	Bet. Bls. 1 and 10 (I).			−12·5	?
,, 4581 .	×	—	—	—	13·079	×	—	—	—	—	0·7	0·7	0·65	—	—	—	×	—	—	—	—	—	—	2	I	7	−15·2	F
,, 10941 .	—	—	×	—	13·113	×	—	—	—	—	0·73	0·73	0·63	—	×	—	—	—	—	—	—	—	—	21	IV	24	−5·7	,,
,, 4990 .	—	—	×	—	13·284	—	—	×	—	—	—	—	0·57	0·3	—	—	—	×	—	—	—	—	—	11	III	40	−13·6	,,
,, 10775 .	×	—	—	—	13·373	×	—	—	—	—	0·74	0·71	0·62	—	—	—	—	—	—	—	—	—	×	Bet. Bls. 18 (51) and 21.			−6·1	,,
,, 5744 .	—	×	—	—	13·372	×	—	—	—	—	0·73	0·73	0·6	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 (V) and 10.			−9·8	,,
,, 9525 .	—	—	×	—	13·399	×	—	—	—	—	0·76	0·76	0·6	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 and 10 (I).			−26·2	,,
,, 11941 .	—	×	—	—	13·407	—	×	—	—	—	—	—	0·45	0·99	—	—	—	—	—	—	—	—	×	19	—	5	−5·6	,,
,, 6218 .	—	—	×	—	13·440	×	—	—	—	—	0·75	0·75	0·6	—	×	—	—	—	—	—	—	—	—	1	I	82	−16·9	,,
,, 4441 .	—	—	×	—	13·447	×	—	—	—	—	0·71	0·7	0·65	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 (III) and 3.			−10·0	,,
,, 4645 .	—	—	×	—	13·450	×	—	—	—	—	0·7	0·7	0·58	—	×	—	—	—	—	—	—	—	—	1	I	18	−9·1	,,
,, 5303 .	—	—	×	—	13·451	×	—	—	—	—	0·72	0·61	0·6	—	×	—	—	—	—	—	—	—	—	1	IV	26	−13·9	,,
,, 4535 .	—	—	×	—	13·456	×	—	—	—	—	0·8	0·75	0·51	—	—	—	—	—	—	—	—	—	—	1	III	3	−7·1	,,
,, 10583 .	—	×	—	—	13·459	×	—	—	—	—	0·74	0·72	0·58	—	—	—	—	—	—	—	—	×	—	9	X	85	−4·6	,,
,, 3637 .	—	—	×	—	13·467	×	—	—	—	—	0·8	0·8	0·6	—	×	—	—	—	—	—	—	—	—	7	II	89	−9·4	,,
,, 3857 .	×	—	—	—	13·512	×	—	—	—	—	0·7	0·7	0·65	—	—	×	—	—	—	—	—	—	—	8	,,	21	−6·2	,,

Tabulation of Weights—*contd.*

Field No.	Condition. Perfect.	Slightly Chipped.	Chipped.	Badly Chipped.	Weight in Grammes.	Types. A.	B.	C.	D.	E.	Sizes (Ins.). Length.	Width.	Height.	Diameter.	Materials. Chert.	Agate.	Limestone.	Steatite.	Paste.	Jasper.	Slate.	Black stone (Quartzite?).	Not identified.	Locus. Block.	House.	Room.	Level (ft.).	Designation.
DK 3714 .	×	—	—	—	13·540	×	—	—	—	—	0·78	0·78	0·58	—	×	—	—	—	—	—	—	—	—	3	V	9	-7·1	F
,, 5417 .	×	—	—	—	13·555	×	—	—	—	—	0·75	0·7	0·65	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 12 and 12A.			-14·0	,,
,, 6629 .	×	—	—	—	13·575	×	—	—	—	—	0·72	0·71	0·62	—	×	—	—	—	—	—	—	—	—	9	VI	38	-7·5	,,
,, 10301 .	—	×	—	—	13·587	×	—	—	—	—	0·8	0·8	0·58	—	—	×	—	—	—	—	—	—	—	First St. (30)			-7·0	,,
,, 3357 .	—	—	×	—	13·594	×	—	—	—	—	0·78	0·75	0·58	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 9 (IV) and 9A.			-5·5	,,
,, 11776 .	—	—	×	—	13·600	×	—	—	—	—	0·75	0·75	0·65	—	×	—	—	—	—	—	—	—	—	27	II	9	-7·6	,,
,, 12673 .	—	—	×	—	13·610	×	—	—	—	—	0·8	0·8	0·57	—	×	—	—	—	—	—	—	—	—	24	,,	4	-6·1	,,
,, 6056 .	—	—	×	—	13·621	×	—	—	—	—	0·76	0·76	0·6	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 10A and 11.			-21·7	,,
,, 6415 .	×	—	—	—	13·625	×	—	—	—	—	0·8	0·76	0·57	—	×	—	—	—	—	—	—	—	—	4	—	16	-17·7	,,
,, 6057 .	—	—	×	—	13·642	×	—	—	—	—	0·9	0·83	0·48	—	—	—	—	—	—	—	—	—	×	Bet. Bls. 10A and 11.			-21·7	,,
,, 10656 .	—	×	—	—	13·656	×	—	—	—	—	0·76	0·75	0·62	—	×	—	—	—	—	—	—	—	—	21	I	1	-5·0	,,
,, 12864 .	×	—	—	—	13·660	×	—	—	—	—	0·73	0·72	0·63	—	×	—	—	—	—	—	—	—	—	9	X	88	-8·8	,,
,, 11940 .	×	—	—	—	13·666	×	—	—	—	—	0·78	0·75	0·64	—	×	—	—	—	—	—	—	—	—	19	—	5	-5·6	,,
,, 9420 .	×	—	—	—	13·670	×	—	—	—	—	0·8	0·75	0·6	—	×	—	—	—	—	—	—	—	—	7	I	3	-24·8	,,
,, 11036 .	×	—	—	—	13·677	×	—	—	—	—	0·75	0·75	0·7	—	×	—	—	—	—	—	—	—	—	8	III	47	-6·1	,,
,, 5610 .	×	—	—	—	13·680	×	—	—	—	—	0·9	0·88	0·51	—	×	—	—	—	—	—	—	—	—	11	,,	25	-20·2	,,
,, 3758 .	×	—	—	—	13·680	×	—	—	—	—	0·75	0·75	0·6	—	×	—	—	—	—	—	—	—	—	6	I	3	-1·1	,,
,, 5610A .	×	—	—	—	13·690	×	—	—	—	—	0·78	0·78	0·55	—	×	—	—	—	—	—	—	—	—	11	III	25	-20·2	,,
,, 5552 .	×	—	—	—	13·697	×	—	—	—	—	0·88	0·8	0·55	—	×	—	—	—	—	—	—	—	—	1	II	33	-16·1	,,
,, 4730 .	—	—	×	—	13·709	×	—	—	—	—	0·77	0·77	0·58	—	×	—	—	—	—	—	—	—	—	7	I	15	-8·7	,,
,, 4655 .	×	—	—	—	13·757	×	—	—	—	—	0·83	0·83	0·6	—	×	—	—	—	—	—	—	—	—	1	,,	17	-10·2	,,
,, 5450 .	×	—	—	—	13·766	×	—	—	—	—	0·7	0·7	0·6	—	×	—	—	—	—	—	—	—	—	9	VII	47	-17·9	,,
,, 11933 .	—	×	—	—	13·768	×	—	—	—	—	0·78	0·78	0·62	—	×	—	—	—	—	—	—	—	—	Surface			—	,,
,, 11937 .	×	—	—	—	13·873	—	×	—	—	—	—	—	0·68	0·9	—	×	—	—	—	—	—	—	—	17	III	20	-6·6	,,
,, 11934 .	—	—	×	—	13·914	×	—	—	—	—	0·81	0·8	0·55	—	—	×	—	—	—	—	—	—	—	Surface			—	,,
,, 5734 .	×	—	—	—	13·917	×	—	—	—	—	0·78	0·7	0·62	—	×	—	—	—	—	—	—	—	—	1	IV	23	-13·0	,,
,, 11153 .	×	—	—	—	13·954	×	—	—	—	—	0·78	0·78	0·65	—	×	—	—	—	—	—	—	—	—	6A	—	38	-7·8	,,
,, 3845 .	—	—	×	—	13·970	—	—	—	—	×	1·96	—	—	0·55	—	—	—	—	—	—	×	—	—	3	II	34	-13·0	,,
,, 10990 .	—	×	—	—	13·972	×	—	—	—	—	0·8	0·8	0·55	—	×	—	—	—	—	—	—	—	—	18	—	48	-6·1	,,
,, 6839 .	×	—	—	—	14·001	×	—	—	—	—	0·79	0·79	0·56	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 (III) and 7.			-15·0	,,
,, 11963 .	—	—	×	—	14·028	×	—	—	—	—	0·78	0·78	0·62	—	×	—	—	—	—	—	—	—	—	19	—	9	-4·5	,,
3760 .	×	—	—	—	14·094	×	—	—	—	—	0·73	0·72	0·56	—	×	—	—	—	—	—	—	—	—	9	III	35	-5·8	,,
,, 3332 .	—	—	×	—	14·177	×	—	—	—	—	0·75	0·7	0·62	—	×	—	—	—	—	—	—	—	—	9	II	11	-4·8	,,
,, 11064 .	—	×	—	—	14·188	×	—	—	—	—	0·79	0·79	0·56		×	—	—	—	—	—	—	—	—	18	—	19	-5·6	,,
,, 12538 .	—	×	—	—	14·290	×	—	—	—	—	0·78	0·78	0·68	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 (III) and 7			-15·0	,,
,, 3746 .	×	—	—	—	15·937	×	—	—	—	—	0·72	0·72	0·6	—	×	—	—	—	—	—	—	—	—	9	VII	17	-7·3	,,
,, 3542 .	×	—	—	—	16·640	×	—	—	—	—	0·75	0·65	0·65	—	×	—	—	—	—	—	—	—	—	7	II	89	-6·2	,,

TABULATION OF WEIGHTS—*contd.*

Field No.	Condition. Perfect.	Slightly Chipped.	Chipped.	Badly Chipped.	Weight in Grammes.	Types. A.	B.	C.	D.	E.	Sizes (Ins.). Length.	Width.	Height.	Diameter.	Materials. Chert.	Agate.	Limestone.	Steatite.	Paste.	Jasper.	Slate.	Black stone (Quartzite?).	Not identified.	Locus. Block.	House.	Room.	Level (ft.).	Designation.
DK 10694 .	—	—	×	—	17·183	×	—	—	—	—	0·8	0·8	0·66	—	×	—	—	—	—	—	—	—	—	Surface			—	?
,, 5679 .	×	—	—	—	17·970	—	—	×	—	—	—	—	0·91	0·78	—	—	—	—	—	—	—	—	×	Bet. Bls. 1 (III) and 3.			-12·4	?
,, 10862 .	—	—	×	—	20·370	×	—	—	—	—	0·93	0·85	0·67	—	×	—	—	—	—	—	—	—	—	21	IV	20	-5·8	?
,, 5503 .	×	—	—	—	25·354	×	—	—	—	—	0·91	0·89	0·69	—	—	—	—	—	—	—	—	×	—	Bet. Bls. 12 and 12A.			-18·3	G
,, 4296 .	—	—	—	×	26·050	×	—	—	—	—	0·86	0·86	0·85	—	—	—	×	—	—	—	—	—	—	5	I	9	-13·2	,,
,, 10618 .	×	—	—	—	26·312	×	—	—	—	—	0·95	0·93	0·8	—	×	—	—	—	—	—	—	—	—	9	IX	66	-5·0	,,
,, 5728 .	×	—	—	—	26·480	—	×	—	—	—	—	—	0·5	1·39	—	—	—	—	—	—	×	—	—	1A	—	1	-16·2	,,
,, 5488 .	—	—	—	×	26·613	×	—	—	—	—	0·96	0·96	0·8	—	×	—	—	—	—	—	—	—	—	10	I	4	-11·4	,,
,, 3300 .	—	—	×	—	26·597	×	—	—	—	—	0·92	0·92	0·75	—	×	—	—	—	—	—	—	—	—	8	,,	8	-0·96	,,
,, 11388 .	—	—	×	—	26·751	×	—	—	—	—	0·93	0·93	0·79	—	×	—	—	—	—	—	—	—	—	18	—	37	-7·5	,,
,, 3585 .	—	—	×	—	26·836	×	—	—	—	—	0·9	0·9	0·8	—	×	—	—	—	—	—	—	—	—	7	II	89	-7·3	,,
,, 10115 .	—	—	×	—	26·884	×	—	—	—	—	0·91	0·9	0·8	—	×	—	—	—	—	—	—	—	—	First St. (29)			-7·6	,,
,, 4595 .	—	—	×	—	26·995	×	—	—	—	—	0·96	0·96	0·8	—	×	—	—	—	—	—	—	—	—	1	I	10	-10·6	,,
,, 4858 .	—	—	—	×	27·044	×	—	—	—	—	0·95	0·9	0·85	—	×	—	—	—	—	—	—	—	—	1	VI	56	-7·8	,,
,, 5839 .	—	—	—	×	27·067	×	—	—	—	—	0·95	0·95	0·72	—	×	—	—	—	—	—	—	—	—	9A	V	66	-14·0	,,
,, 5440 .	—	—	×	—	27·068	×	—	—	—	—	0·96	0·96	0·76	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 12 and 12A.			-17·5	,,
,, 9628 .	—	—	×	—	27·070	×	—	—	—	—	1·06	1·0	0·61	—	—	—	—	—	—	—	—	—	×	7	I	14	-28·7	,,
,, 5376 .	×	—	—	—	27·086	×	—	—	—	—	0·92	0·92	0·95	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 9A and 12A.			-15·7	,,
,, 7305 .	×	—	—	—	27·090	×	—	—	—	—	0·95	0·95	0·75	—	×	—	—	—	—	—	—	—	—	7	VIII	22	-14·3	,,
,, 10574 .	—	—	×	—	27·096	×	—	—	—	—	0·98	0·95	0·8	—	×	—	—	—	—	—	—	—	—	16	III	16	-6·2	,,
,, 10239 .	—	—	×	—	27·103	×	—	—	—	—	1·0	0·98	0·7	—	×	—	—	—	—	—	—	—	—	First St. (29)			-6·5	,,
,, 3607 .	—	—	×	—	27·113	×	—	—	—	—	0·95	0·95	0·75	—	×	—	—	—	—	—	—	—	—	7	II	89	-7·4	,,
,, 10899 .	—	×	—	—	27·117	×	—	—	—	—	0·91	0·91	0·83	—	×	—	—	—	—	—	—	—	—	8A	—	44	-6·5	,,
,, 3866 .	—	—	×	—	27·120	×	—	—	—	—	0·97	0·91	0·79	—	×	—	—	—	—	—	—	—	—	3	VI	47	-13·1	,,
,, 11418 .	×	—	—	—	27·139	×	—	—	—	—	0·9	0·9	0·85	—	×	—	—	—	—	—	—	—	—	Central St.			-8·4	,,
,, 9819 .	×	—	—	—	27·150	×	—	—	—	—	0·97	0·97	0·8	—	×	—	—	—	—	—	—	—	—	7	I	3	-32·9	,,
,, 5515 .	—	—	×	—	27·164	×	—	—	—	—	1·0	1·0	0·72	—	×	—	—	—	—	—	—	—	—	12	V	89	-13·1	,,
,, 11904 .	—	—	×	—	27·174	×	—	—	—	—	0·99	0·97	0·72	—	×	—	—	—	—	—	—	—	—	16	III	16	-9·7	,,
,, 5177 .	—	—	×	—	27·177	×	—	—	—	—	0·95	0·95	0·77	—	×	—	—	—	—	—	—	—	—	12A	II	19	-11·8	,,
,, 3437 .	—	—	—	×	27·180	×	—	—	—	—	0·97	0·92	0·75	—	×	—	—	—	—	—	—	—	—	9	III	35	-4·7	,,
,, 3908 .	—	—	×	—	27·200	×	—	—	—	—	1·0	1·0	0·68	—	×	—	—	—	—	—	—	—	—	3	II	23	-11·8	,,
,, 5450 .	×	—	—	—	27·203	×	—	—	—	—	0·9	0·9	0·79	—	×	—	—	—	—	—	—	—	—	9	VII	47	-17·9	,,
,, 4711 .	—	—	×	—	27·227	×	—	—	—	—	0·92	0·9	0·76	—	×	—	—	—	—	—	—	—	—	9	VI	79	-6·3	,,
,, 3655 .	×	—	—	—	27·229	×	—	—	—	—	0·95	0·9	0·8	—	×	—	—	—	—	—	—	—	—	7	I	9	-5·6	,,
,, 3663 .	×	—	—	—	27·276	×	—	—	—	—	0·95	0·9	0·75	—	×	—	—	—	—	—	—	—	—	9	III	35	-5·8	,,
,, 12792 .	—	×	—	—	27·293	×	—	—	—	—	0·91	0·85	0·81	—	—	—	—	—	—	—	—	—	×	9	X	80	-10·5	,,
,, 10259 .	×	—	—	—	27·295	×	—	—	—	—	0·98	0·98	0·64	—	—	—	—	—	—	—	—	—	×	West Street			-2·8	,,

Tabulation of Weights—*contd.*

Field No.	Condition.				Weight in Grammes.	Types.					Sizes (Ins.).				Materials.									Locus.			Level (ft.).	Designation.
	Perfect.	Slightly Chipped.	Chipped.	Badly Chipped.		A.	B.	C.	D.	E.	Length.	Width.	Height.	Diameter.	Chert.	Agate.	Limestone.	Steatite.	Paste.	Jasper.	Slate.	Black stone (Quartzite?).	Not identified.	Block.	House.	Room.		
DK 5895	×	—	—	—	27·298	×	—	—	—	—	0·9	0·9	0·88	—	×	—	—	—	—	—	—	—	—	7	III	52	−11·9	G
„ 12422	×	—	—	—	27·326	×	—	—	—	—	0·98	0·95	0·7	—	×	—	—	—	—	—	—	—	—	6	„	23	−8·9	„
„ 11089	—	—	×	—	27·333	×	—	—	—	—	0·9	0·9	0·8	—	×	—	—	—	—	—	—	—	—	8A	—	44	−8·0	„
„ 5408	—	—	×	—	27·336	×	—	—	—	—	0·95	0·9	0·75	—	×	—	—	—	—	—	—	—	—	11	III	26	−19·2	„
„ 5907	—	—	×	—	27·336	×	—	—	—	—	0·96	0·96	0·75	—	×	—	—	—	—	—	—	—	—	1	II	9	−14·0	„
„ 4621	—	—	×	—	27·352	×	—	—	—	—	0·9	0·9	0·78	—	×	—	—	—	—	—	—	—	—	1	I	17	−10·6	„
„ 4940	×	—	—	—	27·362	×	—	—	—	—	0·95	0·75	0·7	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 9A and 12A.			−15·2	„
„ 3983	×	—	—	—	27·437	×	—	—	—	—	1·0	1·0	0·6	—	×	—	—	—	—	—	—	—	—	2	II	25	−12·6	„
„ 10804	—	—	×	—	27·440	×	—	—	—	—	1·2	1·0	0·62	—	×	—	—	—	—	—	—	—	—	21	IV	29	−5·8	„
„ 12785	×	—	—	—	27·462	×	—	—	—	—	0·96	0·95	0·77	—	×	—	—	—	—	—	—	—	—	14	II	17	−11·3	„
„ 5110	—	—	×	—	27·496	×	—	—	—	—	0·95	0·93	0·75	—	×	—	—	—	—	—	—	—	—	3	V	10	−11·0	„
„ 6293	—	—	×	—	27·498	×	—	—	—	—	0·99	0·95	0·72	—	—	—	×	—	—	—	—	—	—	1	I	73	−17·2	„
„ 3412	×	—	—	—	27·515	×	—	—	—	—	0·95	0·9	0·75	—	×	—	—	—	—	—	—	—	—	7	VIII	16	−6·0	„
„ 12026	—	×	—	—	27·527	×	—	—	—	—	0·9	0·9	0·82	—	×	—	—	—	—	—	—	—	—	18	—	100	−6·9	„
„ 4241	—	—	—	×	27·532	×	—	—	—	—	0·97	0·97	0·75	—	×	—	—	—	—	—	—	—	—	6	III	17	−10·4	„
„ 11004	—	—	×	—	27·575	×	—	—	—	—	1·0	0·85	0·8	—	—	—	—	—	—	—	—	—	×	6A	—	40	−8·2	„
„ 12510	—	—	×	—	27·667	×	—	—	—	—	0·98	0·94	0·71	—	×	—	—	—	—	—	—	—	—	6A	—	34	−8·4	„
„ 5349	×	—	—	—	27·749	×	—	—	—	—	1·0	0·97	0·73	—	×	—	—	—	—	—	—	—	—	4	—	14	−9·4	„
„ 5864	—	—	×	—	27·825	×	—	—	—	—	0·9	0·9	0·73	—	—	—	×	—	—	—	—	—	—	7	III	52	−11·6	„
„ 4090	×	—	—	—	28·020	×	—	—	—	—	1·0	1·0	0·75	—	×	—	—	—	—	—	—	—	—	3	VI	31	−11·9	„
„ 11154	—	×	—	—	28·083	×	—	—	—	—	0·92	0·92	0·81	—	×	—	—	—	—	—	—	—	—	6A	—	38	−7·8	„
„ 3342	—	—	—	×	28·111	×	—	—	—	—	0·9	0·9	0·58	—	—	—	×	—	—	—	—	—	—	Bet. Bls. 7 & 8			−5·6	„
„ 11152	—	×	—	—	28·366	×	—	—	—	—	0·95	0·95	0·82	—	×	—	—	—	—	—	—	—	—	6A	—	38	−7·8	„
„ 5594	—	—	×	—	28·437	×	—	—	—	—	0·98	0·96	0·73	—	×	—	—	—	—	—	—	—	—	10	IV	74	−20·3	„
„ 10894	—	×	—	—	28·463	×	—	—	—	—	1·12	1·0	0·65	—	—	—	—	—	—	—	—	—	×	15	VI	33	−3·3	„
„ 4486	×	—	—	—	28·470	—	—	—	—	×	1·8	—	—	0·78	—	—	—	—	—	—	—	×	—	7	VIII	53	−4·1	„
„ 3912	—	—	×	—	28·693	×	—	—	—	—	0·98	0·98	0·68	—	×	—	—	—	—	—	—	—	—	3	V	18	−8·2	„
„ 10526	—	×	—	—	28·844	×	—	—	—	—	0·95	0·95	0·8	—	×	—	—	—	—	—	—	—	—	21	IV	23	−3·8	„
„ 4622	×	—	—	—	29·225	×	—	—	—	—	1·0	1·0	0·78	—	×	—	—	—	—	—	—	—	—	1	I	17	−10·6	„
„ 6693	—	—	—	×	30·813	×	—	—	—	—	1·05	1·05	0·85	—	—	—	×	—	—	—	—	—	—	Bet. Bls. 1 and 10 (I).			−13·5	?
„ 6778	—	—	×	—	31·964	×	—	—	—	—	0·95	0·95	0·81	—	—	—	—	×	—	—	—	—	—	Bet. Bls. 1 & 7			−14·0	?
„ 11232E	—	—	—	×	40·402	—	—	—	—	×	3·25	—	—	0·9	—	—	—	—	—	—	—	×	—	15	VI	28	−5·7	?
„ 5159	—	—	—	×	52·776	×	—	—	—	—	1·32	0·95	0·9	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 12 and 12A.			−10·2	H
„ 5568	—	—	—	×	52·861	×	—	—	—	—	1·18	1·15	0·95	—	×	—	—	—	—	—	—	—	—	1	II	33	−16·4	„
„ 5590	—	—	×	—	53·627	×	—	—	—	—	1·1	1·1	1·05	—	—	—	—	×	—	—	—	—	—	1	I	12	−14·8	„
„ 3403	—	—	×	—	53·820	×	—	—	—	—	1·2	1·2	0·9	—	×	—	—	—	—	—	—	—	—	4	—	10	−8·0	„
„ 4464	—	—	—	×	53·952	×	—	—	—	—	1·36	1·36	0·74	—	×	—	—	—	—	—	—	—	—	First St. (9)			−12·8	„
„ 11344	—	—	×	—	53·986	×	—	—	—	—	1·29	1·23	0·88	—	—	—	—	—	—	—	—	—	×	First St. (29)			−9·5	„
„ 4138	—	—	×	—	54·077	×	—	—	—	—	1·3	1·25	0·85	—	×	—	—	—	—	—	—	—	—	6	III	27	−10·7	„

TABULATION OF WEIGHTS—*contd.*

Field No.	Condition. Perfect.	Slightly Chipped.	Chipped.	Badly Chipped.	Weight in Grammes.	Types. A.	B.	C.	D.	E.	Sizes (Ins.). Length.	Width.	Height.	Diameter.	Materials. Chert.	Agate.	Limestone.	Steatite.	Paste.	Jasper.	Slate.	Black stone (Quartzite?).	Not identified.	Locus. Block.	House.	Room.	Level (ft.).	Designation.
DK 8433	—	—	×	—	54·076	×	—	—	—	—	1·35	1·35	0·75	—	×	—	—	—	—	—	—	—	—	9	III	26	−2·0	H
,, 5735	—	—	×	—	54·080	×	—	—	—	—	1·15	1·15	0·98	—	×	—	—	—	—	—	—	—	—	12A	I	15	−11·0	,,
,, 6362	×	—	—	—	54·297	×	—	—	—	—	1·2	1·15	0·99	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 (III) and 7.			−14·4	,,
,, 11646	—	—	×	—	54·400	×	—	—	—	—	1·4	1·15	0·82	—	—	—	—	—	—	—	—	—	×	23	II	13	−7·5	,,
,, 10634	×	—	—	—	54·452	×	—	—	—	—	1·2	1·2	0·93	—	×	—	—	—	—	—	—	—	—	8A	—	44	−2·4	,,
,, 10708	×	—	—	—	54·496	×	—	—	—	—	1·23	1·1	1·05	—	×	—	—	—	—	—	—	—	—	9	X	86	−6·5	,,
,, 4676	—	—	×	—	54·510	×	—	—	—	—	1·1	1·1	1·0	—	×	—	—	—	—	—	—	—	—	10	III	55	−6·5	,,
,, 10655	—	—	×	—	54·611	×	—	—	—	—	1·17	1·17	1·02	—	×	—	—	—	—	—	—	—	—	First St. (34)			−5·7	,,
,, 3387	—	—	×	—	54·617	×	—	—	—	—	1·2	1·2	1·02	—	×	—	—	—	—	—	—	—	—	7	III	41	−4·8	,,
,, 6677	—	—	×	—	54·653	×	—	—	—	—	1·2	1·2	0·99	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 (III) and 7.			−13·8	,,
,, 4750	—	—	×	—	55·052	×	—	—	—	—	1·15	1·15	1·0	—	×	—	—	—	—	—	—	—	—	Bet. Bls. 1 (V) and 10.			−5·0	,,
,, 11096	×	—	—	—	55·900	—	—	—	—	×	2·14	—	—	1·05	—	—	—	—	—	—	—	×	—	First St. (34)			−9·9	,,
,, 10185	—	—	—	×	56·872	×	—	—	—	—	1·39	1·34	0·95	—	×	—	—	—	—	—	—	—	—	7	V	78	−3·2	?
,, 5302	×	—	—	—	96·476	—	—	—	—	×	3·84	—	—	0·95	—	—	—	—	—	—	—	×	—	1	IV	62	−13·7	?
,, 11417	—	—	×	—	123·864	×	—	—	—	—	1·62	1·58	1·38	—	—	—	—	—	—	—	—	—	×	16	I	10	−5·5	?
,, 5961	—	—	—	×	129·500	×	—	—	—	—	1·64	1·55	1·32	—	×	—	—	—	—	—	—	—	—	7	I	19	−12·4	J
,, 6394	—	—	—	×	133·5	×	—	—	—	—	1·5	1·5	1·42	—	×	—	—	—	—	—	—	—	—	1	I	82	−15·2	,,
,, 6339	—	—	×	—	135·5	×	—	—	—	—	1·57	1·57	1·35	—	×	—	—	—	—	—	—	—	—	4	—	16	−19·5	,,
,, 5865	—	—	×	—	136·058	×	—	—	—	—	1·64	1·6	1·25	—	×	—	—	—	—	—	—	—	—	7	III	52	−11·6	,,
,, 3635	—	—	×	—	136·200	×	—	—	—	—	1·6	1·6	1·3	—	×	—	—	—	—	—	—	—	—	7	II	89	−9·4	,,
,, 12409	—	—	×	—	136·750	×	—	—	—	—	1·58	1·58	1·37	—	×	—	—	—	—	—	—	—	—	18	—	40	−9·5	,,
,, 11232D	—	×	—	—	151·424	—	—	—	—	×	3·88	—	—	1·20	—	—	—	—	—	—	—	×	—	15	VI	28	−5·7	?
,, 5581	×	—	—	—	185·5	—	×	—	—	—	—	—	1·7	2·15	×	—	—	—	—	—	—	—	—	10	III	67	−13·5	?
,, 6411	—	—	—	×	258·5	×	—	—	—	—	2·15	2·15	1·5	—	×	—	—	—	—	—	—	—	—	1	I	82	−15·2	L
,, 6109	—	—	×	—	264·5	×	—	—	—	—	2·2	2·2	1·41	—	—	—	×	—	—	—	—	—	—	1	I	21	−13·2	,,
,, 12301	—	×	—	—	274·938	×	—	—	—	—	2·1	2·0	1·61	—	×	—	—	—	—	—	—	—	—	17	III	25	−8·1	,,
,, 5607	×	—	—	—	1431·675	—	×	—	—	—	—	—	3·0	4·52	—	—	×	—	—	—	—	—	—	1	IV	63	−18·0	N
,, 5581	×	—	—	—	1445·85	—	×	—	—	—	—	—	3·15	4·4	—	—	×	—	—	—	—	—	—	10	III	67	−13·5	,,
,, 10742	—	×	—	—	2576·31	—	×	—	—	—	—	—	3·9	5·4	—	—	×	—	—	—	—	—	—	9	IX	56	−6·4	V
,, 6329	×	—	—	—	2735·78	—	×	—	—	—	—	—	3·92	5·41	—	—	×	—	—	—	—	—	—	1	IV	23	−16·7	,,
,, 10135	—	—	×	—	11467·58	—	—	—	×	—	—	—	8·9	7·1	—	—	×	—	—	—	—	—	—	26	II	14	−5·8	Y

Weights made in unusual stones are given below:—

Page 607.	DK	6262	Alabaster.
,, 608.	,,	10387	Black and white stone.[1]
,, 608.	,,	11211	,, ,, ,, ,,
,, 608.	,,	10775	,, ,, ,, ,,
,, 609.	,,	6057	,, ,, ,, ,,
,, 610.	,,	5679	Hard grey stone.
,, 610.	,,	4296	Yellow limestone.
,, 610.	,,	9628	Black and white stone.
Page 610.	DK	12792	Black and white stone.
,, 610.	,,	10259	,, ,, ,, ,,
,, 611.	,,	11004	,, ,, ,, ,,
,, 611.	,,	10894	,, ,, ,, ,,
,, 611.	,,	11344	,, ,, ,, ,,
,, 612.	,,	11646	,, ,, ,, ,,
,, 612.	,,	11417	Hard green stone.

[1] For particulars of this black and white stone, now see p. 660.

APPENDIX II.

Relation to Egyptian and Susian Weights

BY

A. S. Hemmy, B.A., M.Sc.

Since Chapter XVII was written, two references to the Indus system of weights have been made which call for consideration.

In his book *Measures and Weights*[1] Sir Flinders Petrie has made the definite statement that the Beqa is found in Mohenjo-daro, whilst Col. Belaiew in his examination of weights found by the French expeditions to Susa from 1921 to 1933,[2] identifies 40 out of 424 of them as belonging to the Indus system. As I have expressed the opinion above that no evidence is apparent that the Indus system is related to the systems of other countries, it is perhaps desirable to make a closer examination of the matter.

In considering the variation of weights which is found, the view I take is that, whilst cases of deliberate fraud are rare, the balances used in those days were of primitive construction and only capable of rough weighing. Consequently, though the standards kept might be artistically and carefully finished, they would not be consistent amongst themselves according to our modern scientific ideas of accuracy. This is clearly shown in the ten exquisitely finished weights in the British Museum found at Erech, Iraq, and examined by M. Thureau-Dangin.[3] So, by the time copies of copies had been repeated several times, we might get considerable variation in the resultant weights. As the errors would be fortuitous, provided a sufficiently large number of weights are examined, the values of the units derived therefrom will be distributed according to "The Law of Errors," $y=ke^{-h^2x^2}$", where y is the number of observations with error x and h and k are constants. Collating the whole series of weights recorded to date at Mohenjo-daro and Harappā, the following examination has been made. Arranging the weights in order of value and dividing by their ratio in terms of Group F, a group which gives a unit more comparable with other systems than does Group A, we get the values of the unit derived from this particular weight. In a very few cases there is some uncertainty as to the most suitable ratio to choose but the error resulting is insignificant. All weights found in good condition have been included (*vide* Table X, pp. 676 to 678).

The whole range of values is divided up into steps of ·05 gm. and the number of examples within the range of each step is counted. In Table VIII is given the result. Col. 1 gives the lower limit of the step, *i.e.*, step 13·50

[1] Flinders Petrie, *Measures and Weights*, London, 1934, p. 21.

[2] *Memoirs de la Mission Archéologique de Perse*, vol. XXV, p. 134 et seq.

[3] *Revue d'Assyriologie*, XXIV, 1927, p. 69.

ranges from that number to 13·55. Col. 2 gives the number of weights with units within the range.

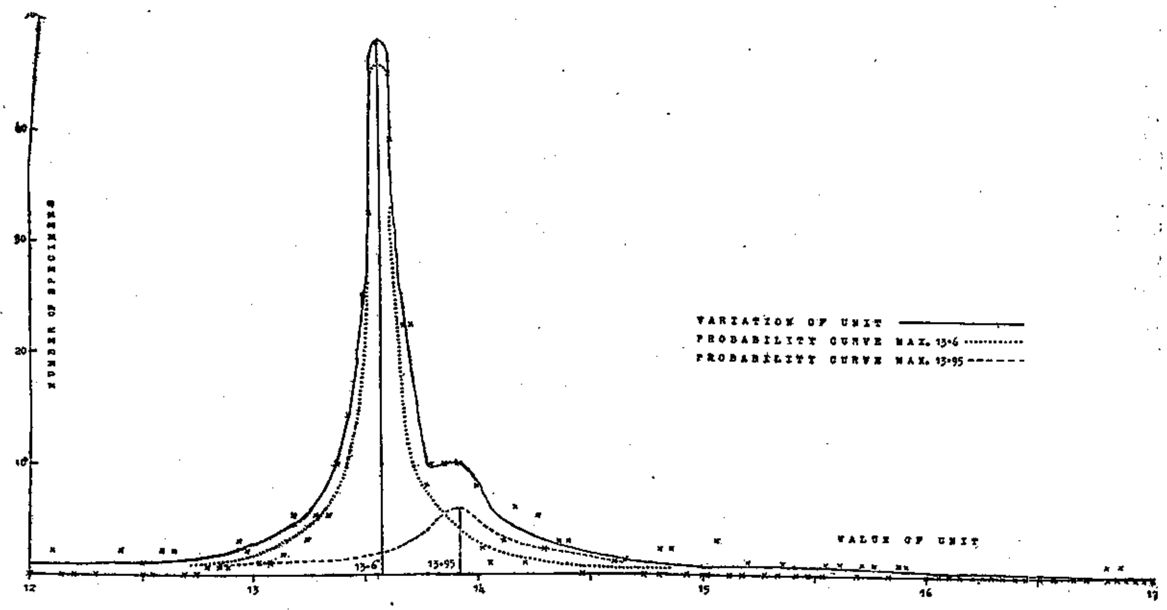
TABLE VIII.—Frequency of Unit.

1 Step.	2 No. of Spec.	1 Step.	2 No. of Spec.	1 Step.	2 No. of Spec.	1 Step.	2 No. of Spec.
17·95	1	14·70	1	13·75	22	12·90	1
17·70	1	14·65	1	13·70	22	12·85	1
17·60	1	14·55	2	13·65	39	12·80	1
17·15	1	14·45	3	13·60	48	12·65	2
16·75	1	14·40	3	13·55	32	12·60	2
16·60	1	14·35	2	13·50	25	12·45	1
15·95	1	14·30	5	13·45	14	12·40	2
15·90	1	14·25	1	13·40	10	12·35	1
15·80	2	14·20	6	13·35	5	12·25	1
15·75	1	14·15	3	13·30	5	12·10	2
15·65	1	14·10	1	13·25	3	12·05	1
15·60	1	14·05	3	13·20	5	10·15	1
15·40	1	14·00	8	13·15	2	10·10	1
15·25	1	13·95	10	13·10	1	10·00	1
15·10	3	13·90	10	13·05	1		
14·90	2	13·85	10	13·00	2		
14·85	2	13·80	8	12·95	3		

Omitted steps have no representatives.

In the Figure the results are plotted out, the abscissa being the value of the unit and the ordinate the number of specimens with unit within the corresponding range. Values above 17 or below 12 have not been included.

FIGURE.—Curve showing distribution of values of Indus Unit.



There is a surprisingly sharp maximum at 13·60, *i.e.*, for the range 13·60 to 13·65. This shows the great accuracy in general of the Indus weights, remarkable at such a date. There is a small secondary maximum at 13·95.

In the figure the continuous line gives a smoothed representation of the actual observations, the dotted line is a line drawn according to the Law of Errors, the Probability curve corresponding to the maximum value 13·60. The broken line is obtained by plotting the differences of the ordinates of the other two. It forms a Probability Curve corresponding to a maximum about 13·95. It is much broader than the other. The smaller area included shows that examples are much less frequent, the broader slope shows that the examples are on the whole less accurate. The evidence therefore is that the great majority of the specimens were made to suit a standard of 13·62 gms.,[1] that the variation from that standard is slight, that it is fortuitous; that there is also a less common and less accurate set of weights made to fit a standard of 13·95 gms. The residue of the observations is spread irregularly over a wide base, and, though a mean value of about 15 gms. can be observed, the corresponding maximum value is so small and the deviations so nearly of the same order that little importance can be attached to it. The most reasonable hypothesis to make of these outlying weights is that they are merely inaccurate copies. There is no indication that they are imported weights or copies of imported standards.

Analysis of the Harappā weights separately, so far as a limited number can do so, shows exactly the same features, the same two maxima in much the same proportions. There is no tendency for the secondary maximum to favour one of the localities. The contiguity of the two maxima shows that the secondary standard is merely a variant of the first and not independent. For some reason, a not particularly accurate copy of the main standard has been used as standard for a make of inferior weights.

The above analysis clearly confirms the hypothesis that the variation in the values of the weights is purely a fortuitous one about two neighbouring standards of local origin. In India, therefore, we have the advantage that we can study an ancient system of weights without the complication due to conflicting systems being co-existent.

2. In Egypt it was quite otherwise. Sir Flinders Petrie has found that there are no less than eight systems: the *Peyem*, ranging from 7·4 to 8·1 gm., the Daric from 8·1 to 8·6 gm., the *Stater* from 8·6 to 9·0 gm., the Qedet from 9·0 to 9·6 gm., the *Necef* from 9·6 to 11·0 gm., the *Khoirine* from 11·0 to 12·2 gm., the *Beqa* from 12·2 to 14·0 gm., and the *Sela* from 13·0 to 14·8 gm. Most of these standards were in existence by the time of the pyramid builders, which corresponds roughly to the Mohenjo-daro period. It is inevitable that the Indus standard should be within the range of one or other of these. Until, therefore, independent evidence is forthcoming that there were trade or other relations between Egypt and Mohenjo-daro, it is hardly justifiable to make any definite assertion that the units of weights of the two countries have a common origin.

3. Col. N. T. Belaiew has examined a series of 424 weights found between 1921 and 1933 at Susa of date about 2,000 B. C., and he considers the following 40 to be of Mohenjo-daro type:

[1] A subsequent analysis (*vide*, *Ancient Egypt*, Dec. 1935, p. 88) carries the determination of the standard to another decimal place, giving it as 13·625 gm. (210·2 gn.)

TABLE IX.—Weights at Susa of Indus Type.

1	2	3	4	5	1	2	3	4	5
	In M. D.	Units.	In Darics.			In M. D.	Units.	In Darics.	
Weight.	Ratio.	Value.	Ratio.	Value.	Weight.	Ratio.	Value.	Ratio.	Value.
5243 gm.	375	13·98	600	8·74	3·25	¼	13·00	⅓	9·75
2695	200	13·48	320	8·42	3·23	¼	12·92	⅓	9·69
1381	100	13·81	160	8·63	2·375	1/6	14·25	¼	9·50
540·0	40	13·50	60	9·00	2·335	1/6	14·01	¼	9·34
526·15	37·5	14·03	60	8·77	2·328	1/6	13·97	¼	9·31
353·3	25	14·13	40	8·83	2·30	1/6	13·80	¼	9·20
249·0	20	12·45	30	8·30	2·30	1/6	13·80	¼	9·20
249·0	20	12·45	30	8·30	2·25	1/6	13·50	¼	9·00
172·08	12·5	13·77	20	8·60	2·23	1/6	13·38	¼	8·92
13·58	1	13·58	3/2	9·05	2·200	1/6	13·20	¼	8·80
8·81	2/3	13·22	1	8·81	2·200	1/6	13·20	¼	8·80
7·065	½	14·13	1	7·06	2·218	1/6	13·31	¼	8·87
6·87	½	13·74	¾	9·16	2·216	1/6	13·30	¼	8·86
6·38	½	12·76	¾	8·64	1·867	⅛	14·92	¼	7·47
3·50	¼	14·00	½	7·00	1·782	⅛	14·26	1/5	8·91
3·327	¼	13·31	⅓	9·98	1·724	⅛	13·69	1/5	8·62
3·30	¼	13·20	⅓	9·90	1·656	⅛	13·24	1/5	8·28
3·262	¼	13·05	⅓	9·79	1·650	⅛	13·20	1/5	8·25
3·261	¼	13·04	⅓	9·78	0·855	1/16	13·68	1/10	8·55
3·25	¼	13·00	⅓	9·75	0·800	1/16	12·80	1/10	8·00

The weights found at Susa form a very complex series running almost continuously from ·95 gm. to nearly 90 gm. before the first real break. An analysis of the whole series on the lines given above shows, as might be expected, that more than one unit is involved. There is a decided maximum at 8·2 gm., and a lesser one at 8·75 gm. These perhaps correspond to the light and heavy Babylonian shekel. Less marked are at least two other maxima, but none of these correspond with the Indus standard.

Turning to Table IX, we see that to weight 5243 is given the attribution of a ratio 375, to weight 526·15, the ratio 37·5, to weight 8·810, the ratio 2/3. These classes are not represented at Mohenjo-daro itself. Again, 10 of the 40 are given the ratio 1/6, although at Mohenjo-daro only 2 (Group C) out of nearly 360 weights belong to that class. It would be remarkable if the rarest of the classes at the site of origin should become the commonest in a foreign country. The fact that weights 2·30 and 2·25 are marked with four strokes is evidence that they are one quarter of some other weights, obviously the Shekel. The attribution of the ten weights of neighbouring value to Group C, for which the factor would be six, is consequently not justifiable. Again, weight 540·0 is marked with six strokes, showing that it is six times another weight, in this case ten shekels.

On the other hand, at Mohenjo-daro the two commonest classes are F with 91 examples, and G with 94, whereas of the Susian weights only one is attributed to class F and none to G. Further, in the 27 specimens of the usual classes, we find no tendency for the values of the unit to concentrate about the value 13·62. On the contrary, of the 27, 16 give values of the unit either above 14·0 or below 13·2, which an inspection of the graph shows to be the limits of common occurrence at the type site itself.

Columns 2 and 3 in Table IX give the ratios and unit values according to Col. Belaiew, in columns 4 and 5 the ratios and values in terms of the Daric unit, the shekel. The values of the shekel obtained are at least as good as the calculated values of the Indus unit given in col. 3. At the same time, it is quite likely that some of them would be better expressed in terms of some other unit certainly represented at Susa. The point is that there is no need to go to the Indus to explain these weights.

Col. Belaiew also tentatively assigns a number of weights to the "Exceptional Series" discussed on p. 591 of Sir John Marshall's Report on Mohenjo-daro. There I tentatively put forward the idea of a separate system with respect to seven weights which were isolated from the general system. The examination of the additional weights has not increased the specimens of this tentative system whilst it has diminished the isolation. As the system has been abandoned, it is unnecessary to discuss the Susian weights particularly as they have been explained by Col. Belaiew himself in terms of the Peyem as well, or better.

TABLE X.—Unit Values of Indus Weights.

1 Weight.	2 Ratio to F.	3 Value of Unit.	1 Weight.	2 Ratio to F.	3 Value of Unit.	1 Weight.	2 Ratio to F.	3 Value of Unit.
11467·6	800	14·33	54·617	4	13·65	28·020	2	14·01
10262		12·83	54·611		13·65	27·85		13·92
6903	500	13·81	54·510		13·63	27·825		13·91
5556	400	13·89	54·500		13·62	27·75		13·88
2792	200	13·96	54·496		13·62	27·749		13·87
2735·8		13·68	54·452		13·61	27·68		13·84
2656		13·28	54·45		13·61	27·667		13·83
2576		12·88	54·45		13·61	27·575		13·79
1446	100	14·46	54·400		13·60	27·527		13·76
1431·7		14·32	54·32		13·58	27·515		13·76
1375		13·75	54·297		13·57	27·50		13·75
1375		13·75	54·080		13·52	27·498		13·75
546·7	40	13·67	54·077		13·52	27·496		13·75
275·2	20	13·76	54·076		13·52	27·462		13·73
274·9		13·74	54·05		13·51	27·45		13·72
264·5		13·22	53·986		13·49	27·440		13·72
258·5		12·92	54·01		13·50	27·437		13·72
185·5	12·5	14·84	53·820		13·46	27·43		13·71
174·5		13·96	53·627		13·41	27·40		13·70
151·4	10	15·14	52·861		13·22	27·40		13·70
137·8		13·78	52·776		13·19	27·352		13·68
136·75		13·68	49·73		12·43	27·35		13·68
136·5		13·65	47·30		11·88	27·35		13·68
136·25		13·62	40·402		10·10	27·336		13·67
136·20		13·62	33·553	2	16·78	27·333		13·67
136·06		13·61	31·964		15·98	27·33		13·66
135·86		13·59	30·813		15·41	27·326		13·66
135·50		13·55	29·225		14·61	27·30		13·65
135·38		13·54	29·00		14·50	27·30		13·65
135·28		13·53	28·844		14·42	27·295		13·65
134·59		13·46	28·693		14·35	27·293		13·65
133·50		13·35	28·64		14·32	27·29		13·64
129·50		12·95	28·620		14·31	27·28		13·64
123·86		12·39	28·470		14·24	27·276		13·64
96·476	8?	12·06	28·463		14·23	27·25		13·62
56·872	4	14·22	28·437		14·22	27·25		13·62
55·900		13·98	28·366		14·18	27·229		13·61
55·052		13·76	28·21		14·10	27·227		13·61
54·653		13·66	28·083		14·04	27·22		13·61

TABLE X.—Unit Values of Indus Weights.

1 Weight.	2 Ratio to F.	3 Value of Unit.	1 Weight.	2 Ratio to F.	3 Value of Unit.	1 Weight.	2 Ratio to F.	3 Value of Unit.
27·22	2	13·61	13·917	1	13·92	13·373	1	13·37
27·21		13·60	13·914		13·91	13·372		13·37
27·203		13·60	13·91		13·91	13·37		13·37
27·200		13·60	13·90		13·90	13·284		13·28
27·177		13·59	13·873		13·87	13·113		13·11
27·174		13·59	13·87		13·87	13·079		13·08
27·164		13·58	13·85		13·85	8·850	½ ?	17·70
27·150		13·58	13·81		13·81	7·900	"	15·80
27·15		13·57	13·79		13·79	7·310	½	14·62
27·139		13·57	13·78		13·78	7·296		14·59
27·120		13·56	13·768		13·77	7·27		14·54
27·12		13·56	13·766		13·77	6·98		13·96
27·117		13·56	13·757		13·76	6·957		13·91
27·113		13·56	13·71		13·71	6·932		13·86
27·103		13·55	13·709		13·71	6·92		13·84
27·10		13·55	13·70		13·70	6·91		13·82
27·10		13·55	13·70		13·70	6·90		13·80
27·10		13·55	13·697		13·70	6·89		13·78
27·096		13·55	13·690		13·69	6·880		13·76
27·086		13·54	13·69		13·69	6·877		13·75
27·070		13·54	13·680		13·68	6·87		13·74
27·068		13·53	13·680		13·68	6·87		13·74
27·06		13·53	13·677		13·68	6·87		13·74
27·05		13·53	13·670		13·67	6·862		13·72
27·05		13·52	13·67		13·67	6·85		13·70
27·01		13·50	13·67		13·67	6·84		13·68
26·995		13·50	13·666		13·67	6·84		13·68
26·93		13·46	13·660		13·66	6·830		13·66
26·92		13·46	13·656		13·66	6·83		13·66
26·884		13·44	13·65		13·65	6·83		13·66
26·88		13·44	13·642		13·64	6·824		13·65
26·85		13·42	13·64		13·64	6·82		13·64
26·836		13·42	13·64		13·64	6·82		13·64
26·79		13·40	13·625		13·62	6·817		13·63
26·597		13·30	13·621		13·62	6·802		13·60
26·480		13·24	13·62		13·62	6·80		13·60
26·312		13·16	13·62		13·62	6·791		13·58
26·050		13·02	13·62		13·62	6·79		13·58
25·354		12·68	13·62		13·62	6·781		13·56
25·31		12·66	13·62		13·62	6·78		13·56
24·50		12·25	13·62		13·62	6·779		13·56
20·370	?	10·19	13·62		13·62	6·774		13·55
17·970	1 ?	17·97	13·610		13·61	6·77		13·54
17·183		17·18	13·61		13·61	6·769		13·54
16·640		16·64	13·600		13·60	6·76		13·54
15·937		15·94	13·60		13·60	6·76		13·52
15·264	1	15·26	13·60		13·60	6·73		13·42
14·94		14·94	13·594		13·59	6·66		13·36
14·90		14·90	13·589		13·59	6·65		13·32
14·59		14·59	13·58		13·58	6·600		13·20
14·46		14·46	13·575		13·58	6·31		12·60
14·41		14·41	13·555		13·56	6·305		12·62
14·35		14·35	13·54		13·54	3·96	¼	15·81
14·290		14·29	13·512		13·51	3·93		15·74
14·188		14·19	13·50		13·50	3·90		15·62
14·177		14·18	13·49		13·49	3·780		15·10
14·094		14·09	13·459		13·46	3·604		14·42
14·028		14·03	13·456		13·46	3·556		14·22
14·019		14·02	13·451		13·45	3·554		14·22
14·001		14·00	13·450		13·45	3·520		14·02
13·972		13·97	13·447		13·45	3·51		14·08
13·970		13·97	13·440		13·44	3·49		13·94
13·954		13·95	13·407		13·41	3·484		13·96
13·95		13·95	13·399		13·40	3·48		13·94

TABLE X.—Unit Values of Indus Weights.

1 Weight.	2 Ratio to F.	3 Value of Unit.	1 Weight.	2 Ratio to F.	3 Value of Unit.	1 Weight.	2 Ratio to F.	3 Value of Unit.
3·465	½	13·82	3·362	¼	13·45	1·79	⅛	14·32
3·44		13·76	3·343		13·37	1·754		14·03
3·44		13·76	3·329		13·32	1·750		14·00
3·44		13·76	3·313		13·25	1·734		13·87
3·43		13·72	3·30		13·20	1·70		13·60
3·43		13·72	3·24		12·96	1·70		13·60
3·424		13·70	3·24		12·96	1·69		13·52
3·422		13·69	3·12		12·48	1·684		13·47
3·418		13·67	3·03		12·12	9·255	⅛ ?	10·04
3·414		13·66	2·33	⅙	13·98	0·98	1/16	15·68
3·405		13·62	2·07		12·42	0·928		14·85
3·394		13·60	1·891	⅛	15·13	0·879		14·06
3·39		13·56	1·86		14·88	0·87		13·92
3·39		13·56	1·835		14·68	0·867		13·87
3·381		13·52	1·815		14·52	0·813		13·01
3·38		13·52	1·81		14·48	0·550	1/32 ?	17·60