

***Tables of rain gauge inspections in British Association for the Advancement of Science reports***

1866 Report - 17 double pages of inspections

1867 Report - 8 double pages of inspections

1868 Report - 2 double pages of inspections

1869 Report - 6 double pages of inspections

1870 Report - 10 double pages of inspections

1871 Report - no table of inspections present

1872 Report - no table of inspections present

1873 Report - 5 double pages of inspections

1874 Report - 7 double pages of inspections

1875 Report - 7 double pages of inspections

1876 Report - 3 double pages of inspections

EXAMINATION OF  
RAIN-GAUGES.

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.			Equivalent of water.	Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.	
							Above ground.	Above sea-level.	Diameters (that marked M = mean).					
1.	1862. Aug. 5.	Westmoreland ...	Kendal, S. Marshall, Esq. ....	VIII.	Mr. S. Marshall...	9 a.m.	ft. 4	in. 6	feet. 149	in. 7'95 8'04 M 7'995	1260 2520	+·001 +·001	In garden S.E. of the house, and about 120 feet from it; it is quite open in all directions. Measuring-glass more than a foot long, but only holds 0·25 in. It is beautifully divided to thousandths.	1.
2.	Aug. 6.	Lancashire.....	Holker, Cartmel, Duke of Devonshire, Mr. W. Wilson.	VIII.	Mr. S. Marshall...	8 a.m.	4	8	155	8'01 8'00 8'02	1255 2510	+·001 +·003	Gauge stands in the middle of a large garden, quite removed from any object that could interfere with its indications.	2.
3.	Aug. 6. Aug. 20.	Lancashire.....	Pitt Farm, Cartmel, Mr. Binyon	VIII.	Mr. S. Marshall...	9 p.m. of 31st.	6	1	170.	M 8'010 8'00 8'00 8'07 8'00	1240 2500 3750 5000	+·003 +·004 +·006 +·008	Stands in the garden; quite unsheltered.	3.
4.	Aug. 7.	Lancashire.....	Althwaite, Cartmel, Mr. Nash	III.	Casella .....	8 p.m.	1	0	88	5'00 5'00 4'99	1030 1540 2520	-·008 -·011 -·009	From N.E. to S.S.E. there are shrubs and trees from 8 to 16 ft. high, at distances of 15 to 40 ft. The house (perhaps 30 ft. high) is to W.S.W., at distance of 40 ft. The gauge may possibly be slightly sheltered by the shrubs.	4.
5.	Aug. 9.	Lancashire.....	Monk Coniston Park, J. G. Marshall, Esq.	IX.	Marshall & Co. ...	9 a.m. 1st.	4	11	150	9'96 10'02 10'03 10'05 M 10'027	.....	.....	Owing to the peculiar construction of this gauge, it was found impossible to test it. Its position is unexceptionable; fixed in the middle of the park, and free from all obstructions.	5.
6.	Aug. 10.	Lancashire.....	Wray Castle, Windermere, Dr. Dawson, Mr. Paisley.	VIII.	Mr. S. Marshall...	9 a.m.	4	9	250	8'02 7'98 8'00	1250 2510	+·001 +·002	Gauge stands on a small hill; the trees and castle are too distant to affect it.	6.
7.	Aug. 10.	Westmoreland ...	Lesketh How, Ambleside, Dr. J. Davy, F.R.S.	.....	.....	8 a.m.	2	2	200	M 7'998 8'04 8'06 8'02 8'01 M 8'032	3000 6000 9000 12000	+·005 correct. +·005 +·004	Gauge on a little rise, having a few trees on the top. In E.S.E. and E.N.E. trees 15 or 20 ft. high are 10 or 20 ft. distant, and in S.S.W. some 20 feet high and only 18 feet off.	7.
8.	Aug. 14.	Cumberland ...	Borrowdale, Seathwaite, I. Fletcher, Esq.	III.	Potter.....	9 a.m.	1	0	422	5'04 4'97 5'03 4'99	490 980 1500 1990	+·001 +·003 -·002 correct.	Gauge is at the elbow, where the valley bends from about N.E. by N. to S.S.E., with high perpendicular hills on both sides. No small objects of any importance near the gauge.	8.
9.	Aug. 16.	Cumberland .....	Keswick, Mr. J. F. Crosthwaite	VIII.	Mr. S. Marshall...	9 a.m.	6	3	270	M 5'007 8'04 7'64 8'30 7'87 M 7'962	2480 1230 2490 3760 5000 6320	+·001 +·002 +·002 +·001 +·002 -·003	Gauge very old, and receiver out of shape. Now stands in a timber-yard, but will be moved Jan. 1, 1863, to a better position, same height above sea. [New gauge, started in 1865.]	9.
10.	Aug. 16.	Cumberland .....	Mirehouse, Bassenthwaite, T. S. Spedding, Esq.	III.	.....	9 a.m.	0	5	300	5'01 4'99 5'00 M 5'000	510 1030 1510 2520	-·003 -·007 -·005 -·004 -·006	Gauge in flower-garden, and quite free from any object that could interfere with its accuracy. From N.N.E. to S.E. mountains rise gradually from the house.	10.

## EXAMINATION OF RAIN-GAUGES (continued).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalent of Water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
11.	1862. Aug. 22.	Lancashire.....	Hest Bank, R. B. Peacock, Esq.	II.	.....	9 a.m.	t. in. t 1	feet. 82	in. 12'00 12'01 11'96 12'04 M 12'002	520 1030 1540 2030 2400	-'005 -'008 -'012 -'011 -'016	Gauge placed just over the brow of a small hill, on the N. side. House and a tree are W.S.W., distant 45 ft.; also trees in S.S.E., about 60 ft. off; testing not complete owing to absence of observer.	11.	
12.	"	Lancashire.....	Caton, Rev. A. Christopherson.	III.	Davis, Leeds .....	Uncertain.	t 4	120	4'99 4'99 4'99 M 4'990	'1 '2 '3 '4 '47	520 1030 1540 2030 2400	On S.S.W. slope of a small hill, there are at present a few small fruit-trees near it, but they will be mowed in the winter.	12.	
13.	Aug. 24.	Middlesex .....	Finchley Road, G. J. Symons, Esq., G. W. Moon, Esq.	X.	Negretti & Zambra	9 a.m.	t 4	270	7'95 7'96 7'95 7'94 M 7'950	'1 '2 '3 '3 '5	1300 2500 3780 6270	House 35 ft. high, 55 ft. W.N.W. of gauge. Walls 7 ft. high in E.S.E., N.N.E., and S.S.W., but not within 18 ft. of gauge.	13.	
14.	"	Middlesex .....	Finchley, Upper, G. J. Symons, Esq., G. W. Moon, Esq.	X.	Negretti & Zambra	9 a.m.	t 4	306	7'97 7'95 7'94 7'94 M 7'950	'1 '2 '3 '5	1300 2500 3780 6270	On roof of house perfectly exposed, the wind having no obstruction westward for many miles.	14.	
15.	Sept. 21.	Orkney .....	Sandwick (Lawn Gauge), Rev. C. Clouston.	VIII.	.....	9 a.m.	0	78	11'4 11'1 11'3 11'3 M 11.275	'1 '2 '3 '4 '5	2650 5250 7750 10400 12960	In vegetable garden, at foot of lawn, sloping gently to the west, about two miles from the sea, between which and the gauge there is no obstruction whatever.	15.	
16.	"	Orkney .....	Sandwick (North Park Gauge), Rev. C. Clouston.	VIII.	.....	9 a.m.	6	94	11'32 11'15 11'15 11'37 M 11.247	'1 '2 '3 '4 '5	2650 5250 7750 10400 12960	On a slight knoll above the lawn and manse, in a very exposed position.	16.	
17.	Sept. 22.	Orkney .....	Kirkwall, Dr. R. B. Baikie, Mr. J. G. Iverack.	I.	.....	9 p.m.	4	8	3'00 3'00 3'00 2'99 M 2'998	'3 '6 '3 '5	415 830	Dr. Baikie's gauge temporarily placed in Mr. Iverack's garden; a 6-foot wall 40 ft. S.W., another 20 ft. N., the house 25 ft. high, 45 ft. E. The proper glass is broken, and an ordinary 2-oz. glass is used instead, 1 oz. being taken = 30 in.	17.	
18.	Sept. 24.	Aberdeen .....	Aberdeen, A. Cruickshank, Esq.	I.	.....	9 a.m.	4	95	8'45 8'45 8'45 8'45 M 8'450	.....	.....	Observer absent and measure inaccessible. Gauge sunk in a grass-plot, rather sheltered, especially on E., where a 5-ft. wall is only 9 ft. distant.	18.	
19.	"	Kincardine.....	Banchory House, A. Thomson, Esq., Mr. J. Forrest.	I.	.....		4	95	6'05 6'05 6'05 6'10 M 6'063	'1 '2 '3 '4 '5	.....	correct. Float-gauge sunk in a plot of Spargula pilifera. Gauge correct, but if absolutely emptied it shows 0.20 too little. I found that it was sometimes emptied, sometimes set to the zero properly.	19.	
20.	Oct. 7.	Cambridge.....	Cambridge Observatory, Prof. Adams, Mr. A. Bowden.	IV.	.....		6	85	9'35 9'33 9'29 9'35 M 9'330	.....	.....	Too leaky to be tested. Rather an old gauge, and much the worse for repeated repairs, necessitated by its frequent bursting in frosty weather—a new one has been	20.	

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalent of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
	ft. in.	feet.	in.	in.										
	1862.													
21.	Oct. 8.	Cambridge.....	Cambridge, Christ's College, Mr. Hays.	IV.	Negretti & Zambra	2 p.m.	5 3	32	.....	.....	.....	.....	erected since]. It stands on a grass-plot 100 ft. W. of the Observatory, which may be 30 ft. high. In N.W. and S.W. are shrubs about 5 ft. high and 10 ft. distant.	21.
22.	Oct. 8.	Suffolk .....	Abbey Gate St., Bury St. Edmunds, Mr. E. Skepper.	III.	.....	9 a.m.	41 0	240 ?	6.00 6.02 6.00 6.00	'0625 '1875 '25 M 6.005	420 1280 1770	+.004 +.009 +.003	A 12-in. copper gauge, inaccessible, measuring-tube of small diameter, and divided on its own stem; rain not allowed to pass into the tube except at time of measurement.	22.
23.	Oct. 9.	Suffolk .....	Beech Hill, Bury St. Edmunds, H. Turner, Esq.	III.	.....	daily.	0 9	136 ?	6.00 6.02 5.99 6.00	.....	.....	.....	Gauge on ridge of roof, and well placed, except that there is a chimney in the N. 6 ft. distant, and nearly 6 ft. higher than the gauge.	23.
24.	Oct. 9.	Suffolk .....	Botanic Gardens, Bury St. Edmunds.	III.	.....	monthly.	1 0	130 ?	6.00 6.02 6.00 6.00	'0625 '1875 '25 M 6.000	420 1280 1770	+.004 +.008 +.003	Glass inaccessible, but said to be identical with No. 22. Placed in a flower-garden freely exposed. On the gentle slope of a hill.	24.
25.	Oct. 9.	Suffolk .....	Westley, Bury St. Edmunds, R. Burrell, Esq.	III.	.....	monthly.	1 6	216 ?	4.98 4.99 5.00 4.98	'1 '2 '3 '4 M 4.987	520 1020 1510 2020 2510	-.005 -.007 -.006 -.009 -.009	Well exposed in all directions, near the river, in a very damp situation.	25.
26.	Oct. 9.	Suffolk .....	Culford, Mr. P. Grieve.	III.	Casella .....	8 a.m.	1 2	84 ?	5.00 5.00 5.00 5.00 5.00	'1 '2 '3 '4 M 5.000	510 1010 1510 2010 2520	-.003 -.004 -.004 -.005 -.008	Freely exposed in a large garden; placed in a large box to protect from frost or accidental overthrow.	26.
27.	Oct. 9.	Suffolk .....	Barton Hall, Sir C. Bunbury, and Mr. Allan.	III.	Casella .....	9 a.m.	1 0	145 ?	5.00 4.99 5.00 5.00 5.00	'1 '2 '3 '4 M 4.998	500 1000 1500 2000 2500	-.001 -.002 -.003 -.004 -.005	Gauge perfectly exposed in a very large garden.	27.
28.	Oct. 9.	Suffolk .....	Nether Hall, Thurston, Bury St. Edmunds, W. C. Bassett, Esq.	V.	Horne & Thornthwaite.	monthly.	2 6	55 ?	6.05 6.05 6.05 6.05	'1 '2 '3 '4 M 4.998	920 1800 2740 3620 2500	correct +.005 +.003 +.008 -.005	Gauge perfectly exposed on large lawn —nothing within 150 ft. save a very light iron fence placed round the gauge to protect it.	28.
29.	Oct. 9.	Suffolk .....	Nether Hall, Thurston, W. C. Bassett, Esq.	III.	Watkins and Hill .....	.....	1 0?	53 ?	5.00 5.00 5.00 5.00	'1 '2 '3 M 6.050	500 1000 1500 4550	-.001 -.002 -.003 +.008	Gauge fastened on short stump of a tree in the centre of the kitchen-garden, quite freely exposed.	29.
30.	Oct. 9.	Suffolk .....	Thurston Vicarage, Bury St. Edmunds, Rev. W. Steggall.	VI.	Watkins and Hill .....	.....	3 0	168 ?	10.00 10.00 10.00	.....	.....	.....	This gauge has been removed and supplanted by a new one because measuring-glass broken off at 0.30 in.	30.
													Well placed on lawn, very good exposure. On December 31st each year is taken to pieces by a watch-	

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean)	Equivalents of water.	Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.	
							Above ground.	Above sea-level.						
31.	Oct. 10.	Northampton ...	Marholm, Peterborough, Rev. R. S. C. Blacker.	III.	.....	9 a.m.	0 6	108	M 10'00 5'05 5'05 5'05 5'05 M 5'05	in. 10'00 10'000 5'05 5'05 5'05 5'05	in.	maker, carefully cleaned, and replaced. Position good, well exposed. On visiting this gauge, found that the measuring-glass had been entirely destroyed a short time previously; graduated a glass roughly for temporary use, and ordered one for the above diameter to be sent to Mr. B. immediately.	31.	
32.	Oct. 13.	Rutland .....	Empingham, Mr. W. Fancourt.	II.	Private .....	daily.	4 0	220 ?	6'00sq. 6'05 " 6'00 5'95 M 6'000	in.	.....	A bad gauge badly placed, the house 30 feet high, being only 15 feet S.E. of the gauge. The rim of gauge, instead of being knife-edged, is 0'04 in. thick; the float is large bung. Having found the gauge standing at 1'15 in., added 500 grs., it showed 1'17; added 1000 grs., it showed 1'20; added 1000 grs., it showed 1'30; added 1000 grs., it showed 1'40; added 1000 grs., it showed 1'50; added 1000 grs., it showed 1'60; added 1000 grs., it showed 1'71; added 1000 grs., it showed 1'81; added 1000 grs., it showed 1'92; added 1000 grs., it showed 2'02; added 1000 grs., it showed 2'11. From the bad position and bad construction of the gauge, the observations, extending over 30 years, are evidently useless.	32.	
33.	Oct. 13.	Lincolnshire .....	Wytham-on-the-Hill, Bourne, General Johnson.	II.	.....	monthly.	4 3	167 ?	6'18 6'20 6'18 6'16 M 6'180	'10 21 33 44 .....	1000 2000 3000 4000 .....	—.032 —.054 —.066 —.088	A very old metal float-gauge, freely exposed, except to W., where there is an apple-free, 30 ft. distant and 20 ft. high.	33.
34.	Oct. 13.	Lincolnshire .....	Greatford Hall, Capt. Peacock	II.	Casella .....	monthly.	0 9	32 ?	5'00 5'00 5'00 5'01 M 5'003	.....	.....	.....	Perfectly open situation, on a very fine lawn. Glass not properly tested, but believed to be correct.	34.
35.	Oct. 14.	Leicestershire ...	Belvoir Castle, Grantham, W. Ingram, Esq.	X.	Negretti and Zambra.	9 a.m.	1 0	237 ?	8'00 7'98 8'02 8'00 M 8'003	'1 '2 '3 '35 .....	1270 2520 3830 4470 .....	correct. + .001 — .002 — .001	In the gardens below the castle; perfectly exposed.	35.
36.	Oct. 15.	Lincolnshire .....	Grantham, J. W. Jeans, Esq. ...	X.	.....	9 a.m.	0 6	179	8'00 7'95 8'07 8'00 M 8'000	'102 '56 7050 4470 .....	3900 7050 .....	— .005 + .005	In small garden at rear of house. It is more or less sheltered from all points, but not seriously from any.	36.
37.	Oct. 16.	York .....	Wheldrake, Rev. R. B. Cooke ...	III.	.....	Saturday.	1 4	36	6'35 6'37 6'37 6'40 M 6'372	'1 '2 '3 '4 .....	850 1700 2510 3360 .....	— .005 — .011 — .012 — .017	In kitchen-garden, quite exposed.	37.

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameter (that marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
38.	1862. Oct. 17.	York .....	Holme on Spalding Moor, G. Dunn, Esq.	III.	Davis, of Leeds ...	9 p.m.	7 ft. 6	32 feet.	in. 5'00 5'00 5'00 5'00 M 5'000	'1 '2 '3 '4 '5	530 1020 1505 1980 2490	—'007 —'006 —'003 correct. —'002	Neither trees nor buildings within a considerable distance. Gauge is thoroughly exposed on a frame, elevating it to the above height. Flat country all round.	38.
39.	Oct. 20.	York .....	Scarborough, Mr. Roberts .....	X.	Negretti & Zambra	9 a.m.	8 ft. 6	96	M 7'955	'1 '2 '3	1220 2480 3700	+ '003 + '002 + '005	Position very unsatisfactory, in a confined back yard, sure to catch drippings from a tree in N.E.; had it moved a few feet as being better, but still very objectionable.	39.
40.	Oct. 21.	York .....	Old Malton, H. Hurtley, Esq....	VII.	.....	.....	0 ft. 10	61	10'00 10'08 9'92 10'00	'1 '2 '3	2520 5010 7720	correct. + '002 —'006	Gauge in a large garden, quite exposed.	40.
41.	Oct. 23.	York .....	York, Bootham, J. Ford, Esq.	III.	Casella .....	9 a.m.	0 ft. 6	50	M 10'000	'1 '2 '3	502 1000 2000	—'001 —'002 —'003	Gauge kept at the Friends' school, on a very large lawn, and well exposed. Glasses often broken and fresh ones bought.	41.
42.	Oct. 24.	York .....	Harrogate, Dr. Bainbridge .....	X.	Negretti & Zambra	9 a.m.	0 ft. 6	420	M 5'002	'1 '2	1220 2450	+ '004 + '006	Gauge in garden of a house, said to be in High Harrogate, but certainly not in highest part thereof. Well exposed.	42.
43.	Oct. 24.	York .....	Leeds, Holbeck, Messrs. Marshall & Co.	IX.	Messrs. Marshall & Co.	monthly.	4 ft. 0	127	M 7'985	.....	.....	.....	Fastened to a stone slab on the roof of the factory, but as its area is 2 acres, the height above ground is measured to the turf, wherewith the roof is covered, and not to the street. The ground level is 95 ft., the height of the factory 28 ft., and of the gauge 4 ft.	43.
44.	Oct. 24.	York .....	Leeds, Manor Road, Holbeck, Leeds Water-works.	VI.	.....	daily.	Level.	95	10'05 9'95 10'00 10'00 10'00	.....	.....	.....	Sufficiently exposed; sunk in a pit 6 ft. square at top, sides formed with flagstones, sloping at 40°; gauge stands in the middle, its top level with the ground.	44.
45.	Oct. 24.	York .....	Bradford, Horton Hall, E. Hailstone, Esq.	X.	Negretti & Zambra	.....	0 ft. 7	496	M 10'000	.....	.....	.....	Freely exposed; there are conservatories to the E. about 40 ft. distant, but only about 10 ft. high. Glass not accessible. Very hilly.	45.
46.	Oct. 25.	York .....	Well Head, Halifax, J. Waterhouse, Esq.	I.	.....	monthly.	0 ft. 11	487	M 7'993	.....	.....	.....	Gauge on slope of lawn, quite open to S.W. Scale-rod measured at several points, and appeared correct. Cylinder also true size at the places measured. [Since reported to give different results from a new gauge placed near it. Perhaps this one has been stretched by frost.]	46.
47.	Oct. 25.	York .....	Wakefield, W. R. Milner, Esq.	VIII.	Mr. Milner .....	daily.	4 ft. 0	115	10'00 10'00 10'02	'1 '2	2530 5070	correct. —'001	In the garden of the prison; very well placed.	47.

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scales-point.	Grains.			
48.	Oct. 27.	York .....	Huggate, Pocklington, Rev. T. Rankine.	VII.			c 10	550	M 10'01sq 10'008 10'03sq 9'98.. 10'00.. 9'98.. M 9'997				Bad gauge, badly placed. Mr. Rankine had no measure except a scale of inches, halves, and quarters, painted on a box into which the water was poured. A shrub, nearly a foot higher than the gauge, grew close to it and overhanging it, and about 15 feet to E. there was a tree 20 feet high. Observations useless.	48.
49.	Oct. 27.	York .....	Middleton, Beverley, Rev. H. D. Blanchard.	III.	Casella .....	monthly.	1 0	150	5'03 5'00 5'05 5'00	'1 '2 '3 '5	500 1000 1510 2530	correct correct -'002 -'006	Freely exposed in kitchen-garden.	49.
50.	Oct. 28.	York .....	7 York Parade, Beverley Road, Hull, J. Smith, Jun., Esq.	X.	Negretti & Zambra .....	daily.	3 10	11	M 5'020 8'00 7'98 8'02 8'00	'1 '2 '4 '5	1230 2470 5090 6300	+'003 +'005 -'001 +'004	Rather sheltered, house 30 feet high, being scarcely 30 feet distant in N.E.	50.
51.	Oct. 28.	York .....	Patrington Flax Works .....	IX.	Messrs. Marshall and Co. ....	monthly.	4 8	32	M 8'000 10'02 9'98 10'00 9'97				Not tested for same reason as No. 5. Gauge in flower-garden, 150 feet from house or nearest tree. Level ground for miles; but a ditch near gauge.	51.
52.	April 6.	Sussex .....	39 Tower, Leonards-on-Sea, J. C. Savery, Esq.	III.	Private .....		1 3	11	M 9'992 5'00 4'98 5'01 5'00	'1 '5	500 2510	-'001 -'006	In the garden of Martello Tower, No. 39; quite exposed. About 100 yards from high-water line.	52.
53.	April 6.	Sussex .....	Marina, Leonards-on-Sea, J. C. Savery, Esq.	III.	Casella .....	daily.	level	31	M 4'998 5'00 5'02 5'01 5'00	'1 '5	500 2510	-'001 -'005	In yard at back of Marina; very much sheltered by buildings on S.E., S., and S.W.	53.
54.	April 6.	Sussex .....	Ebleak House, Hastings (Old gauge) Mr. J. Banks.	II.	Newman.....	daily.	3 0	80	M 5'007 12'00 12'10 11'70 11'90	'1 '21 '31	3000 6000 9000	-'006 -'003 -'009	On the slope of a steep hill facing S.W. House 20 feet high, 10 feet to N.E., all else quite open.	54.
55.	April 6.	Sussex .....	Fairlight, J. Rock, Esq. ....	X.	Negretti & Zambra .....	daily.	0 6	500	M 11'925 8'02 7'98 8'01 8'00	'1 '3	1300 3880	-'002 -'005	Very fair position, on S. slope of the hill; house 25 feet high, 30 feet to N.	55.
56.	April 8.	Kent .....	West Wickham, Rev. J. T. Austen.			daily.	1 2	380	M 8'003 12'75 12'09 12'10 12'16				Freely exposed, in kitchen-garden, on the W. slope of a small hill, not far from its top.	56.
57.	June 12.	Middlesex .....	Colney Hatch, Mr. Rose .....	X.	Negretti & Zambra .....	10 & 5 daily.	10 0	264	M 12'125 8'00 7'95 8'03	'1 '2 '3	1300 2540 3830	-'003 -'001 -'002	On sloping roof of asylum facing S.W., in which direction, however, there is a chimney about 20 ft. distant and	57.

**EXAMINATION OF MAIN-GAUGES (continued).**

Reference number.	Date of examination.	County.	Name of station, owner, and observer,	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M=mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
1863.														
58.	July 27.	Kent .....	Chartwell, Westerham, J. C. Colquhoun, Esq.	III.	Casella .....	Saturdays.	1 0	500?	ft. in. feet.	in.	in.	-'002	15 ft. higher than the gauge. Gauge about 1 ft. above slate.	58.
59.	July 27.	Kent .....	River Hill, Sevenoaks, J. Rogers, Esq.		Knight .....	daily.	9 7	520	M 7'990	'4	5040	-'002	Some trees W. of gauge, but not near enough to influence the amount collected. It is placed on face of a hill sloping to E.	59.
60.	Aug. 4.	Antrim .....	Linen Hall, Belfast, Mr. Stewart.	IV.		9 a.m.	4 8	24	5'02	'5	6300	-'001	Funnel fixed about 1 ft. above the garden wall; rain runs down a pipe into a graduated glass receiver.	60.
61.	Aug. 4.	Antrim .....	Queen's College, Belfast, Mr. J. Bell	IV.			7 1	58	4'98	'2	1000	-'002	Quite unsheltered.	61.
									5'00	'3	1510	-'004		
									M 5'000	'4	1980	+001		
									4'98	'2	1000?	-'003		
									4'99	'3	1440	+008		
									M 4'985	'5	2460	correct.		
									1'0	'0	4920	+002		
									11'28	'5	1250	correct.		
									11'29	'1	2500	+001		
									M 11'285					
									11'29	'05	1240	+001		
									11'29	'1	2500	+001		
									11'35					
									11'24					
									M 11'293					
62.	Aug. 31.	Northumberland	Rosella Place, N. Shields, R. Spence, Esq.	X.	Negretti & Zambra	9 a.m.	1 0	124	7'98	'1	1200	+005	Formerly stood E. of the college buildings, 9 ft. above ground; but having been intentionally damaged, was removed about two months since to the S., where it now stands, 7 ft. 1 in. above ground; it will finally be erected on a stone pier 9 ft. 3 in. above ground.	62.
									8'02	'2	2480	+004	In vegetable garden, more sheltered by fruit-trees than is desirable.	
									7'95	'3	3760	+002		
									7'96	'4	5100	-004		
									2'1	'5	6280	+003		
									2'1	'0	440	-003		
									M 7'978		880	-006		
									2'1					
									M 2'100					
63.	Sept. 2.	Durham .....	Sunderland, West Hendon, T. W. Backhouse, Esq.		Dr. Ogden .....		3 6	126?					An extraordinary gauge, consisting of a stout glass tube about a foot long and half an inch internal diameter, opened out at the top to a cylinder 2-1 inches in diameter; the divisions are on the tube; the whole is of glass, and there is no provision against frost or evaporation. Position good.	63.
													Very near to No. 63 (the grounds adjoin). Position very good.	64.
64.	Sept. 2.	Durham .....	Hendon Hill, Sunderland, J. W. Mounsey, Esq.	III.		8 a.m.	0 6	150	4'97	'1	510	-004		
									4'95	'2	1010	-006		
									4'98	'5	2540	-019		
									4'97					
									M 4'968					
65.	Sept. 2.	Durham .....	Field House, Sunderland, Rev. G. Iliff.	VII.	Private .....	8 a.m.	1 5	98	9'95	'05	1260	-001	In kitchen-garden of Field House, subsequently called "The Hall."	65.
									10'00	'1	2520	-001		
									9'85					
									M 9'925					
									5'00	'1	500	-001		
									4'97	'3	1500	-004		
									4'99	'4	1980	-001		
									5'00	'5	2490	-004		
									M 4'990					
									5'01	'1	510	-002		
									4'99	'2	1000	-001		
									5'03	'3	1500	-001		
									5'02	'5	2480	+002		
66.	Sept. 9.	Devon .....	Plymouth, Saltram Gardens, Mr. J. Snow.	III.		weekly.	0 4	96					Well exposed; but being so close to the ground, recommended that moss or short cut turf be put round it to prevent splashing.	66.
67.	Sept. 9.	Devon .....	Plymouth, Ridgeway, Miss B. T. Phillips.	III.			0 3	116					Well placed, on grass plot, but rather too near an apple-tree; suggested its being moved a few feet.	67.

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.		
							Above ground.	Above sea-level.		Scale-point.	Grains.					
68.	Sept. 9.	Devon.....	Plympton, Goodamoor, H. H. Treby, Esq.	III.	.....	9 a.m.	ft. in.	feet.	in.	2950 5'012 5'01 5'00 4'99 5'00 M 5'000	.6 .1 .2 .3 .5 .6 .1 .2 .3 .4 .5 .6 .8 1'0 1'0	2950 500 1000 1490 2480 2950 500 960 1420 1920 2500 2900 3950 4950 correct. —.001 —.002 correct. —.003 —.004 —.005 —.006 +015 +013 —.004 +015 +004 +002	+.008 —.001 —.002 correct. +.005 —.001 +.015 +.013 —.004 +.015 +.004 +.002	In grass plot, in kitchen-garden; very well placed. The second set of readings are from a large glass, not generally used.	68.	
69.	Sept. 10.	Devon.....	Dartmoor, Morley Clay Works, W. Martin, Esq.	III.	.....	.....	0 2	900	5'03 4'98 5'00 5'02 M 5'007	.1 .2 .5 1'0	500 1000 2430 4850	.1 .2 .5 1'0	500 1000 2430 4850	correct. —.001 +.011 +.024	On lawn, fully exposed, except to N.W., where the house, 20 feet high, is nearly 50 feet distant.	69.
70.	Sept. 10.	Devon.....	Dartmoor, Prison Reservoir, Mr. H. Watts.	III.	.....	9 a.m.	0 2	1400	5'00 5'02 4'98 5'01 M 5'002	.1 .3 .5 1'0	495 1440 2480 4940	.1 .3 .5 1'0	495 1440 2480 4940	correct. +.010 correct. +.004	Placed near the lower reservoirs, on the E. slope, and nearly at the foot of North Hessary Tor. It is about 100 feet W. of the prison, fully exposed, and about 20 feet higher than the ground on which the prison stands.	70.
71.	Sept. 10.	Devon.....	Dartmoor, North Hessary Tor, Mr. H. Watts.	III.	.....	monthly.	1 0	1596	5'00 5'00 5'04 5'00 M 5'010	.1 .3 .5 1'0	495 1440 2480 4940	.1 .3 .5 1'0	495 1440 2480 4940	+.001 +.011 +.002 +.008	Nearly at the top of the hill, about $\frac{1}{2}$ of a mile N.W. of No. 70.	71.
72.	Sept. 11.	Devon.....	Milton Abbot, Edgecumbe, H. Clarke, Esq.	III.	.....	weekly.	0 10	160?	5'00 5'00 5'00 5'01 M 5'002	.1 .2 .3 .4 .5	500 1000 1500 2000 2500	.1 .2 .3 .4 .5	500 1000 1500 2000 2500	—.001 —.002 —.003 —.003 —.004	On slope of a hill facing S., sufficiently exposed; at foot of the hill (20 feet below the gauge) is a small surface of running water.	72.
73.	Sept. 11.	Devon.....	Milton Abbot, Endsleigh Gardens, Mr. Cornelius.	III.	.....	.....	0 6	180?	5'00 4'99 5'01 5'00 M 5'002	.1 .2 .3 .4 .5	500 1000 1500 2000 2500	.1 .2 .3 .4 .5	500 1000 1500 2000 2500	—.001 —.002 —.003 —.003 —.004	Gauge well placed, in a level part of the kitchen-gardens.	73.
74.	Sept. 12.	Devon .....	Plymouth, Ham, Rev. C. Trelawny.	See remarks.	.....	daily.	3 0	94	6'75 6'70 6'70 6'65 M 6'700	.1 .2 .3 .4	1200 2050 2900 3900	.1 .2 .3 .4	1200 2050 2900 3900	—.035 —.030 —.026 —.038	A very old established, but also a very unusual gauge, consisting essentially of a catching apparatus, and a separate one for measuring; the former may be described as Fig. X, fixed on a dwarf post, and provided with a tap for drawing off the water into the measuring-apparatus; a cylinder about 2 inches diameter in which floats a bung carrying a divided rod; a constant correction for "sinkage" is included in the above tabu-	74.

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean.)	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.	
							Above round.	Above sea-level.		Scale-point.	Grains.				
75.	Sept. 12.	Devon .....	Ivybridge, Torrhill, J. Widdicombe, Esq.	III.			o 4	270	5'02 5'00 4'98 5'00	'1 '2 '3 '4	510 1020 1580 2080	-.003 -.006 -.019 -.020		lated errors, which the said correction of .02 increases. In terraced garden, 3 feet from the 5-foot fall of an E. and W. wall. House 20 feet high, about 20 feet N. of gauge.	75.
76.	Sept. 14.	Devon .....	Torquay, Woodfield, E. Vivian, Esq.	X.	Negretti & Zambra monthly.		o 4	150	M 5'000 8'00 7'81 8'16 8'02	'5 '09 '2 '465	2580 1230 2640 6000	-.020 -.007 -.008 -.008	[Correct glass forwarded 17 Nov. 1863.] Funnel very much out of shape, had been much battered. Position not good, on a steep declivity facing S.W. Another gauge (inaccessible) on roof.	76.	
77.	Sept. 14.	Devon .....	Newton Bushel, High Wick, Dr. Barham.	VIII.		daily.	1 6	250?	M 7'998 5'008 5'02 5'00 4'98	1 c. in. '1 '2 '4 '5	260 520 1020 1280	-.001 -.003 -.003 correct.	Moderately good position, in a garden sloping slightly to N.W.	77.	
78.	Sept. 14.	Devon .....	Bovey Tracey, John Divett, Esq.	III.	Knight .....		o 6	94	M 5'000 5'05 5'05 5'05	.....	.....	.....	Measuring-glass broken and almost useless. A new one supplied. Gauge in flower-garden, rather too near the house.	78.	
79.	Sept. 15.	Devon .....	Teignmouth, W. C. Lake, Esq.	X.	Negretti & Zambra .....		o 8	60	M 5'050 7'98 7'98 7'98 8'00	'1 '2 '3	1320 2600 6370	-.004 -.005 -.003	Observations from this station suppressed, the position being extremely unsuitable, and no improvement practicable.	79.	
80.	Sept. 15.	Devon .....	Teignmouth, W. C. Lake, Esq.	III.			o 8	60	M 7'987 5'00 5'05 5'02 5'00	'1 '2 '3 '5	480 980 1500 2490	+.004 +.004 correct. +.001	See above; gauges Nos. 79 and 80 were close together.	80.	
81.	Sept. 15.	Devon .....	Teignmouth, Westbrook, Miss K. T. Clark.	III.		daily.	o 6	50	M 5'017 5'05 5'04 5'00 5'02	'1 '2 '3 '4 '5	498 980 1500 2000 2500	+.001 +.004 +.001 +.001 +.001	Very good position, near the crest of the hill; ground undulating.	81.	
82.	Sept. 15.	Devon .....	Dawlish, Charlton Villa, P. J. Margary, Esq.	III.		Saturday.	o 8	62	M 5'027 4'95 5'01 5'05 5'03	'1 '2 '2 '3 '4	550 1020 1550 2020 2570	-.010 -.007 -.011 -.008 -.016	On lawn in a good position, very open to all but N.E., and not much sheltered even from that. [Diameter of funnel increased to 5·12 inches, and gauge thereby rendered almost correct, Oct. 1863.]	82.	
83.	Sept. 16.	Devon .....	Exeter, Pennsylvania, G. Kennaway, Esq.	III.	Amateur .....		o 10	293	M 5'03 5'04 5'04 5'05 5'03	'1 '2 '3 '5	410 820 1120 1930 2570	+.019 +.038 +.078 +.118 -.016	Thoroughly exposed, on a large lawn. Had not been in use many months; previous observations cancelled. [New glass graduated correctly, supplied Nov. 1863.]	83.	
84.	Sept. 16.	Devon .....	Exeter, Albert Terrace, W. Vinary, Esq.	X.	Negretti & Zambra	9 a.m.	o 6	140	M 5'040 7'95 8'02 8'02 7'97	'1 '2 '2 '3 '5	1260 2510 3830 6310	correct. +.002 +.003 +.022	Position moderately good, on small grass plot in rear of house.	84.	
85.	Sept. 16.	Devon .....	Exeter, Albert Terrace, W. Vinary, Esq.	X.	Negretti & Zambra .....		o	160	M 7'990 7'96 7'96	'1 '2	1260 2510	correct. +.001	Fixed with the funnel rising 1 ft. above the top of the gable-end of	85.	

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number	
							Above ground.	Above sea-level.		in.	in.	Scale-point.	Grains.		
	1836.														
86.	Sept. 16.	Devon .....	Exeter, Albert Terrace, R. Dymond, Esq.	III.		9 a.m.			M 7'972	7'97 8'00 M 7'972	'3 '5	500 990 1460 2460	—'004 —'001 +001 +006 +005	the coach house; about 6 ft. of pipe conducts the rain into a bottle placed in an accessible position. This gauge is 30 ft. from No. 84.	86.
87.	Sept. 16.	Devon .....	Exeter, High Street, W. H. Ellis, Esq.	VIII.			44 0	180	M 5'007	9'87 10'12 9'92 10'10	'1 '2 '3 '5	2050 4120 6200 10330	—'003 —'007 —'012 —'020	About 200 ft. from No. 84. In a good-sized garden, rather sheltered by some peas, which were removed, and a promise was given that nothing should shelter it again.	87.
88.	Sept. 16.	Devon .....	Exeter Institution.....	II.			13 7	155	M 10'003	9'622 9'616	..	..	..	Rises about a foot above flat roof of observatory; funnel taken down, restored to a truly circular figure, and a correct glass supplied.	88.
89.	Sept. 16.	Devon .....	Exmouth, Bystock, E. Divett, Esq.	III.	Knight & Foster.	9 a.m.	30 0	340	5'12 4'98 5'14 4'96	'1 '2 '3 '4 M 5'050	520 1000 1500 2020 2520	—'003 +002 +003 +001 +002	Gauge so constructed that true diameters could not be taken; position very unfavourable; fastened on a wall, and with a very fine holly tree 6 ft. above the gauge and not 3 ft. from it. It was immediately cut down.	89.	
90.	Sept. 17.	Devon .....	Exeter, St. Thomas's Hospital	II.			3 0	50?						On a raised part of the roof, near its centre, and perhaps 20 ft. from the nearest side.	90.
91.	Sept. 17.	Devon .....	Honiton, Broadhembury, Rev. W. Heberden.	III.			2 4	400	4'96 4'98 5'00 4'97	'1 '2 '3 '5	500 985 1500 2480	—'002 correct. —'005 —'005	Very old and roughly made, much sheltered by trees, especially by a wall-like row of lofty poplars.	91.	
92.	June 8.	Wilts.....	Calne, Castle House, Col. Ward.	III.	Casella .....	9 a.m.	0 11	250	M 4'977	5'00 5'00 5'00 5'00 M 5'000	'1 '2 '3 '4 '5	500 1010 1510 2010 2520	—'001 —'004 —'005 —'005 —'008	In the hollow stump of a tree, well exposed in every direction except E., where some laurels were growing too high. Mr. Heberden promised to have them cut.	92.
93.	June 8.	Wilts.....	Calne, Castle House, Col. Ward.	III.	Casella .....	9 a.m.	32 0	282	M 4'993	4'99 5'01 4'97 5'00	'1 '2 '3 '4	500 1100 1520 2020	—'001 —'004 —'007 —'008	On lawn in an open position; ground level for some distance round the gauge, but it falls to a lower level about 100 yards to the S.	93.
94.	Sept. 26.	Kent .....	Dover Castle Keep, H. J. Poulter, Esq.	III.			99 0	512	M 4'988	5'03 5'01 4'94 4'97	'1 '2 '3 '5	500 1000 1520 2520	—'001 —'003 —'008 —'012	On roof, water conveyed by pipe into ground floor; experiments often repeated show that the loss in passing through this length of pipe is almost inappreciable.	94.
95.	Sept. 26	Kent .....	Castle Street, Dover, H. J. Poulter, Esq.	III.			1 0	16	4'78 4'79 4'79	'1 '2 '3	500 1000 1520	—'009 —'017 —'030	By permission of the officer in command of the garrison this gauge was placed on the summit of the keep, the highest point of the Castle, and regimental orders issued for its protection by the bombardiers on duty.	95.	
														Funnel made by a local workman as "exactly 5 inches." A new funnel, 5·03 in. in diameter, was sent to re-	

EXAMINATION OF RAIN-GAUGE (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
							ft. in.	feet.		in.	in.			
	1864.								M 4'797	.5	2520	-.048	place this one. Position rather sheltered, but the best available.	
96.	Jan. 4.	Surrey .....	Cobham Lodge, Miss Molesworth.	III.	Knight .....		0 6	100	5'00	.1	500	-.001		96.
									5'02	.2	1000	-.001		
									5'01	.3	1500	-.002		
									5'00	.4	2000	-.002		
									M 5'007	.5	2510	-.005		
									10'15	.1	2550	-.025		
									10'16	.2	4900	-.031		
									10'11	.3	7250	-.036		
									10'15	.4	9050	-.045		
									M 10'142	.5	11050	-.042		
									5'02	.1	450	+.010		
									5'02	.2	950	+.010		
									5'02	.3	1480	+.004		
									5'02	.4	2000	correct.		
									M 5'020	.5	2500	correct.		
									8'00	.1	1240	+.002		
									8'01	.2	2475	+.005		
									7'98	.3	3700	+.008		
									8'00	.4	4970	+.008		
									M 7'997	.5	6280	+.005		
									8'00	.1	1250	+.001		
									8'00	.2	2500	+.003		
									7'99	.3	3750	+.004		
									8'00	.4	5050	+.002		
									M 7'998	.5	6280	+.005		
									5'00	.1	496	correct.		
									5'00	.2	1000	-.002		
									5'00	.3	1490	-.001		
									5'00	.4	2000	-.003		
									M 5'000	.5	2490	-.002		
									9'95	.05	1100	-.005		
									10'12	.10	2000	correct.		
									10'03	.15	3000	correct.		
									10'11	.20	3990	+.001	[Reexamined June 2nd, 1866, and found in good order.]	
									M 10'052	.25	4910	+.005		
									8'67	.1	1420	+.001	About 100 yards from the sea-shore in garden of principal medical officer; quite exposed.	101.
									8'55	.2	2840	+.002		
									8'26	.4	5720	+.002		
									M 8'510				Gauge very rough, the measure being a tin can with a glass slit. [New gauge since supplied, as the correctness indicated by these measurements was believed to be fortuitous.]	102.
									8'03	.2	2480	+.004		
									7'97	.4	4950	+.009		
									7'99				In garden at back of Osborne Place, rather sheltered, especially by a tree 20 feet high, 10 feet N.E. of gauge.	104.
									7'98					
									M 7'993					
									3'00	.1	170	+.005	This and the following gauges, to No. 113 inclusive, are placed in the garden of St. Martin's Vicarage, about $\frac{1}{2}$ of a mile S.E. of Blue Pits station.	105.
									3'01	.2	340	+.010		
									3'00	.3	550	+.007		
									3'01	.4	720	+.002		

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean.)	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
106.	Sept. 13.	Lancashire.....	Manchester, Castleton Moor, Rev. J. C. Bates.	X.	Casella .....	9 a.m.	ft. in.	feet.	M 3'005	in.			The situation is quite open, and the gauges are well placed.	106.
107.	Sept. 13.	Lancashire.....	Manchester, Castleton Moor, Rev. J. C. Bates.	VII.	Casella .....	9 a.m.	1	0	475	7'99	'1	1260	correct.	107.
										7'98	'2	2540	—'001	
										7'95	'3	3800	—'001	
										8'00	'4	5050	correct.	
										M 7'980	'5	6300	+ '001	
										10'00 <sup>sq</sup>	'1	2560	—'001	
										10'00,,	'2	5120	—'003	
										10'00,,	'3	7630	—'002	
										10'00,,	'4	10160	—'002	
										M 10'000	'5	12620	correct.	
										5'00	'1	506	—'002	
										5'00	'2	1020	—'006	
										5'02	'3	1500	—'002	
										4'98	'4	2000	—'003	
										M 5'000	'5	2520	—'008	
										5'00	'1	500	—'001	
										4'98	'2	980	+ '002	
										5'00	'3	1480	correct.	
										4'98	'4	1975	correct.	
										M 4'990	'5	2474	—'001	
										5'00	'1	506	—'002	
										4'98	'2	1020	—'006	
										5'00	'3	1500	—'003	
										5'00	'4	2000	—'004	
										M 4'995	'5	2520	—'009	
										7'99	'1	1260	correct.	
										7'97	'2	2510	+ '002	
										8'00	'3	3750	+ '004	
										8'00	'4	5020	+ '004	
										M 7'990	'5	6310	+ '002	
										7'98	'1	1260	+ '001	
										8'00	'2	2510	+ '002	
										7'98	'3	3750	+ '004	
										8'03	'4	5020	+ '004	
										M 7'998	'5	6310	+ '003	
										8'00	'1	1260	+ '001	
										8'02	'2	2510	+ '002	
										7'97	'3	3750	+ '004	
										8'00	'4	5020	+ '004	
										M 7'993	'5	6310	+ '002	
										5'00	'1	500	—'001	
										4'99	'2	990	correct.	
										5'00	'3	1490	—'001	
										5'01	'4	1980	+ '001	
										M 5'000	'5	2480	correct.	
										5'00	'1	500	—'001	
										5'00	'2	1000	—'002	
										4'98	'3	1500	—'003	
										5'02	'4	2010	—'005	
										M 5'000	'5	2505	—'005	
										5'95	'1	640	+ '010	
										5'99	'3	1990	+ '020	
116.	1865. Mar. 22.	Kent .....	Welling, Bexley Heath, H. S. H. Wollaston, Esq.	III.	H. S. H. Wollaston, Esq.	9 a.m.	7	1	150				Tree 12 feet high, 8 feet S.E. of gauge, which is 9 inches above roof of green-	116.

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M—mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
117.	Mar. 22.	Surrey .....	Kew, Kew Committee, B. Baker, Esq.	VII.		10 a.m.	1 ft. 3 in.	19 feet.	M 5'962	in. '3			house at foot of slope to S. Ground generally level in the neighbourhood.	117.
									10'00	'1	2570	—.002	In Observatory enclosure, but quite freely exposed. Ground level for some distance, especially towards the Thames.	
									10'00	'2	5100	—.002		
									10'01					
									10'00					
118.	July 1.	Kent .....	Acol, Margate, British Association, E. S. Lendon, Esq.	III.	Casella .....	9 a.m.	1 ft. 0 in.	60	M 3'002	in. '1	495	correct.	South end of the village, in a field clear of all obstructions. About 2 miles from sea. Ground gently undulating.	118.
									5'00	'2	990	correct.		
									4'99	'3	1495	correct.		
									5'01	'5	2485	—.001		
119.	July 2.	Kent .....	Ramsgate, R. Cramp, Esq. ....	VIII.	Cusella .....	9, 12, 3, 9	7 ft. 6 in.	78	M 5'000	in. '1	2970	—.004	Gauge mounted on top of thermometer stand, in the centre of a kitchen-garden and quite exposed.	119.
									11'7	'2	5850	—.006		
									12'2	'3	8670	—.005		
									12'0	'4	11700	—.011		
									12'0	'5	14550	—.011		
120.	Sept. 13.	Warwickshire ...	Calthorpe Street, Birmingham, W. Southall, Esq.	X.	Negretti & Zambra	9 a.m.	1 ft. 3 in.	510	M 11'975	in. '0	1120	+.012	Very much sheltered by trees, except to S. and S.W. The observer has always taken 0.10 as 0.09, 0.20 as 0.19, &c., thereby nearly correcting the error.	120.
									8'00	'1	2510	+.012		
									8'01	'2	520	+.009		
									7'99	'5				
									8'00					
121.	Sept. 14.	Warwickshire ...	63 Bloomsbury Street, Birmingham, D. Smith, Esq.	X.	Negretti & Zambra	9 a.m.	2 ft. 10 in.	340	M 8'000	in. '1	1400	correct.	Very well placed, in kitchen-garden; quite open.	121.
									8'06	'2	2500	+.04		
									7'97	'4	4980	+.010		
									8'03					
									8'03					
122.	Sept. 16.	Bedfordshire .....	Bedford, Dr. Barker.....	II.			5 ft. 10 in.	112	M 8'022	in. '1			Internal diameter of cylinder 4·1, and each 1'1 of scale = 895, therefore gauge very nearly correct; sheltered, however, on all sides by houses and trees.	122.
									12'1					
									12'2					
									12'5					
									M 12'267					
123.	Sept. 21.	Derbyshire.....	Chatsworth, Duke of Devonshire, Mr. Taplin.	VIII.	Mr. S. Marshall...	8 a.m.	6 ft. 0 in.	360?	M 7'972	in. '1	1240	+.003	Gauge on pedestal in kitchen-garden, quite open.	123.
									8'05	'2	2470	+.006		
									8'00	'3	3700	+.010		
									8'03	'4	4970	+.010		
									8'00	'5	6250	+.010		
124.	Sept. 25.	Flintshire .....	Hawarden, Dr. Moffat.....	X.	Negretti & Zambra	10 a.m.	0 ft. 5 in.	270	M 8'020	in. '1	1280	—.002	At west end of the village, in large garden; position satisfactory in every respect.	124.
									7'99	'2	2480	+.003		
									7'96					
									7'94					
									8'00					
125.	Sept. 27.	Denbighshire.....	Llandudno, Dr. Nicol .....	X.	Negretti & Zambra	9 a.m.	0 ft. 9 in.	99	M 7'972	in. '1	4900	+.014	On the eastern slope of Ormes Head, the crest of the hill in N.E. rising 45° above gauge; in other respects well placed.	125.
									8'02	'2	1900	correct.		
									8'05	'5	1230	—.002		
									7'90	'095				
									7'96					
									8'07					
126.	Sept. 27.	Carnarvon .....	Llanfairfechan, R. Luck, Esq....	III.	Casella .....		0 ft. 8 in.	150	M 8'000	in. '1	500	—.001	Freely exposed on the E. side of a hill, half a mile S.E. of Llanfairfechan railway station.	126.
									5'00	'2	1000	—.003		
									5'00	'3	1480	correct.		
									4'95	'4	1940	+.006		
									M 4'987	'5	2490	—.005		

## EXAMINATION OF

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalents of water.		Error at scale point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
127.	Sept. 27.	Carnarvon .....	Bangor, Rev. Canon Purvis.....	X.	Negretti & Zambra	9 a.m.	ft. in. 4 0	feet. 105	in. 7'98 8'00 8'00 8'00 8'00 M 7'995 5'00 4'99 5'01 5'00	in. '1 '2 '3 '4 '5 6120 500 990 1400 1980 2480	1250 2550 3800 4950 6120 500 990 1400 1980 2480	+·001 -·001 correct. +·010 +·018 -·001 correct. -·001 +·001 correct.	On the N. face of a hill, and near its foot; fair position; mounted on a pillar in the middle of a garden.	127.
128.	Sept. 28.	Carnarvon .....	Llanberis, Royal Victoria Hotel, Mr. Williams.	III.*	Casella .....	9 a.m.	1 0	370					In the garden of the hotel, a good position, but accessible to tourists; the ratio between these returns and those of the other gauges on the shores of the lake are however very steady.	128.
129.	Sept. 29.	Carnarvon .....	Beddgelert, Sygun, Mr. Searell.	III.*	Casella .....	9 a.m.	5 6	330	5'00 5'01 4'99 5'00 5'00 M 5'000	'1 '2 '3 '4 '5	500 1000 1480 1980 2480	-·001 -·002 +·002 +·001 correct.	On a post (otherwise would be sheltered by trees) near the bottom of a gorge, running nearly E. and W.	129.
130.	Sept. 30.	Flintshire .....	Rhyl, Mr. Evans .....	XII.	Casella .....	Saturday.	4 2	20	5'00 5'00 4'99 5'02 5'002	.....	.....		Gauge placed in a 6-inch iron water-main, in the yard of the gas-works, west end of Rhyl, 100 yards from sea-shore, and nearly level therewith. Glass inaccessible, Mr. Evans being absent.	130.
131.	Dec. 28.	Surrey .....	Weybridge, Rev. Dr. Spyer, W. F. Harrison, Esq.	X.	Negretti & Zambra	9 a.m. on first.	0 8	53	8'00 8'01 8'04 7'99 M 8'010	'1 '2 '3 '4 '5	1270 2540 3800 5100 6380	correct. correct. +·001 -·001 -·002	In kitchen-garden, clear, save that there is a cedar 40 ft. high 60 ft. N.W. of gauge.	131.
132.	Dec. 28.	Surrey .....	Weybridge Heath, Bartropps, W. F. Harrison, Esq.	X.	Negretti & Zambra		0 6	150	8'00 8'02 7'99 8'01 M 8'015	.....	.....		In kitchen-garden of Bartropps, on the northern slope of a rising ground $\frac{1}{2}$ of a mile E.S.E. of Weybridge railway station. Forgot to test glass. Mr. Harrison informed me it agreed with a tested one subsequently sent.	132.
133.	May 23.	Kent .....	Nelson Crescent, Ramsgate, Dr. Smiles.	XI.	Negretti & Zambra	9 a.m.	1 6	90	5'00 5'00 5'00 5'02 M 5'005	'1 '25 '40 '50	510 1240 1983 2459	-·003 correct. +·001 +·005	Rather sheltered by trees in N.E. and E., and the house 30 ft. high, 20 ft. S.W. of gauge. Recommended that the gauge be placed on a shelf 8 ft. high, as securing a better position, but still objectionable.	133.
134.	May 28.	Kent .....	Canterbury, Chatham, C. T. Drew, Esq.	X.	Negretti & Zambra	9.30 to previous day.	2 6	40	8'05 7'95 7'96 8'02 M 7'995	'01 '1 '2 '4 '5	130 1330 2550 3050 6340	correct. -·005 -·001 +·002 correct.	At the paper mills, in a valley running about E. and W. Rather sheltered by trees and buildings; moved to a clearer spot.	134.
135.	May 28.	Kent .....	Canterbury Barracks .....	X.									Gauge not tested; it is noticed simply to record that at the date stated this gauge was enclosed by a high palisade so close round it as to utterly vitiate the returns.	135.

\* These and all other gauges in North Wales, started under the joint auspices of Captain Mathew and Mr. Symons, are made with a cylinder about 5 inches high, rising from the rim,

whereby snow is more adequately measured. For the comparison of a gauge of this kind, with an ordinary No. III. gauge, see British Rainfall, 1866.

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters that marked (M=mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
136.	1866. May 29.	Kent .....	Bragdale, Faversham, W. C. Stunt, Esq.	XII.	Casella .....	9 a.m.	ft. in. ° 9	ft. 140	in. 4'96 5'02 4'99 5'01 M 4'995	'01 '1 '2 '3 '4 '5	50 504 1000 1490 1980 2480	correct. —'002 —'002 —'001 correct. —'001	In flower-garden, quite clear except in the W., where there are elms 50 ft. distant and 70 ft. high.	136.
137.	May 29.	Kent .....	New Place, Hartlip, W. Bland, Esq.	VII.	Private .....	9 a.m. preceding.	3 °	169	4'00 sq. 4'00 4'05 4'10 M 4'038	'031 '063 '125 '188 '25 '50	100 250 500 720 980 1900 cub. in.	+'.007 +'002 +'004 +'013 +'012 +'042	Gauge on a stump in flower-garden. In the N.W. are trees about 70 ft. distant and 50 ft. high, all else quite open.	137.
138.	May 29.	Kent .....	Sittingbourne, Tonge, G. Eley, Esq.	VII.	Horne & Thornthwaite .....	9 a.m.	1 °	2	5'00 sq. 5'04 " " 5'02 " " 5'00 " " M 5'015,	'01 '1 '2 '3 '4 '5	'22 2'5 5'0 7'6 10'2 12'6	+'001 +'001 +'001 —'002 —'006 —'001	In flower-garden, fairly open in all directions.	138.
139.	May 29.	Kent .....	Sheerness Water-works, J. Laud, Esq.	XI.	Negretti & Zambra .....	9 a.m.	1 °	9	5'00 4'99 5'00 5'01 M 5'000	'01 '1 '2 '3 '4	50 500 1000 1500 1980 2480	correct. —'001 —'002 —'003 +'.001 correct.	In yard of water-works, slightly sheltered from E. by the tower, otherwise clear.	139.
140.	June 4.	Kent .....	Sandwich, Eastry, Walton House, Col. Rae.	XII.	Elliott .....	9 a.m.	1 ° 2	53	5'00 5'02 5'01 5'00 M 5'007	'01 '1 '2 '3 '4	48 500 1000 1490 2000 2480	correct. —'001 —'001 correct. —'002	In open vegetable garden, clear, except in N.E., where there are lofty elms about 90 ft. off.	140.
141.	June 4.	Kent .....	Eastry, The Vicarage, Rev. C. Wilson.	XII.	Elliott .....	9 a.m.	1 ° 2	62	4'98 5'03 5'05 5'05 M 5'027	'1 '2 '3 '4 '5	502 1020 1540 2000 2500	correct. —'004 —'007 +'.001 +'.001	In centre of large lawn, quite clear, very good position.	141.
142.	June 5.	Kent .....	Hythe, H. B. Mackeson, Esq....	X.	Negretti & Zambra .....	° 6	12	8'00 7'96 8'05 8'00 M 8'027	'1 '2 '3 '4 '5	1270 2540 3900 5170 6320	correct. correct. —'007 —'007 correct.	First $\frac{1}{10}$ th not marked, it was therefore cut on with the writing diamond. In large kitchen-garden, level and quite clear. West end of Hythe.	142.	
143.	June 6.	Kent .....	Hythe, Saltwood Stone, G. S. Court, Esq.	X.	Negretti & Zambra .....	° 6	325	8'02 7'98 7'98 8'03 M 8'002	'01 '1 '2 '3 '4	130 1300 2550 3900 5100	correct. —'002 —'001 —'007 —'002	On high ground near the railway tunnel; well placed, in kitchen-garden.	143.	
144.	June 6.	Kent .....	Hythe, Horton Park, J. Kirkpatrick, Esq.	X.	Negretti & Zambra .....	° 1	400?	7'97 8'04 8'04 7'98 M 8'007	'1 '2 '3 '4 '5	1250 2500 3700 4850 6100	+'002 +'003 +'009 +'018 +'020	In large flower-pot in centre of lawn. Hills rise somewhat in N.	144.	

### **EXAMINATION OF**

#### RAIN GAUGES (continued).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).		Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.	Scale-point.	Grains.					
145.	June 7.	Kent .....	Rolvenden, Maytham Hall, R. Appach, Esq.	X.	Negretti & Zambra	9 a.m.	ft. in. 1 3	feet. 171	in. 7'97 8'00 8'00 8'01	in. 1270 2550 3800 5100	correct. -001 correct. -002		In kitchen-garden; fair exposure.	145.	
146.	June 9.	Sussex .....	Hastings, Hollington, High Beach, Capt. Lewis.	XII.	Casella .....	10 a.m.	1 0	286	M 7'995 5'00 4'99 5'01 4'99	5 50 500 2 1500	correct. -001 -002 -003		On terraced walk, on a hill facing W., perfectly open in every direction.	146.	
147.	June 9.	Sussex .....	Hastings, High Wickham, E. Field, Esq.	XII.	Casella .....	9 a.m.	0 9	212	5'00 5'00 5'00 5'00 M 5'000	1 1000 1500 2020 2500	-001 -002 -003 -008		Open in all directions except S.W., where the house, 30 ft. high, is only about 30 feet off.	147.	
148.	June 11.	Sussex .....	Bleak House, Hastings (new gauge), J. Banks, Esq.	X.	Negretti & Zambra	8 a.m.	1 3	80	8'00 7'98 7'97 8'00	05 1 2 3	640 1320 2550 3900	-001 -004 -001 -008		House 20 ft. high, 10 ft. distant in E., all else clear. [Close to gauge No. 54; both are regularly observed, the readings are "generally nearly alike, if anything No. 148 is in excess," which is exactly what the testing shows.]	148.
149.	June 11.	Sussex .....	Hastings Cemetery, J.C. Savery, Esq.	III.	Private .....		0 6	500	5'02 5'04 4'96 5'08	.....	.....	.....		In the middle of the cemetery; high ground and very open; measured occasionally, but no glass there on that date.	149.
150.	June 12.	Sussex .....	Battle, F. Webster, Esq., Mr. T. Cruse.	III.	Casella .....		0	.....	M 5'003 4'98 5'00 4'97 5'02	01 1 2 3	50 510 1030 1530	-003 -008 -009 -010		In a garden, the house 25 ft. high, being 40 ft. N. of the gauge, otherwise clear.	150.
151.	June 12.	Sussex .....	Battle, Abbey Gardens, F. Webster, Esq.; Mr. Jaques.	III.	Casella .....	9 a.m. preceding	0	.....	4'93 5'04 5'00 5'03 M 5'000	1 2 3 4	510 1010 1510 2020 2530	-003 -004 -005 -008 -012		Slightly sheltered from S.E., but on the whole in a good position.	151.
152.	June 12.	Sussex .....	Salehurst, Church House, Mr. S. Boorman.	III.	Casella .....		0	.....	5'00 5'02 5'02 4'98	1 2 3 4	510 1010 1520 2030	-003 -003 -006 -009		On a post in garden; rather sheltered in W. by a tree 30 ft. high, 30 ft. off, and in S.W. by others 20 ft. high and 20 ft. off.	152.
153.	June 12.	Sussex .....	Lamberhurst, Scotney Castle, E. Hussy, Esq.	III.	Knight? .....		0	241	M 5'005 5'03 5'05 5'08 5'02	1 2 3 4	540 1050 1550 2010 2560	-007 -008 -007 +002 -007		At angle of the castle terrace, quite open.	153.
154.	June 13.	Sussex .....	Lamberhurst, Court Lodge, W. C. Morland, Esq.	III.	.....		.....	190	5'04 5'08 5'03 5'08	1 2 3 4	550 1050 1530 2030	-009 -007 -002 correct.		Not in operation, but to be started January 1st, 1867.	154.

## EXAMINATION OF RAIN GAUGES (continued).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (M = mean).	Equivalent of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.	
							Above ground.	Above sea-level.		in.	feet.	Scale-point.	Grains.		
155.	June 13.	Kent	Goudhurst, Mr. Stevens	XII.	Casella				5'00	'1	500	-'001	Slightly sheltered, but probably not injuriously; in N.E., however, the house is only 30 ft. off, and perhaps 30 ft. high.	155.	
									5'00	'2	990	-'002			
									5'00	'3	1490	-'003			
									M 5'000	'4	1980	+'001			
										'5	2480	correct.			
156.	June 13.	Kent	Cranbrook, Hartley, G. File, jun., Esq.	XII.	Casella	7 a.m.	4 0	350	5'01	'1	500	-'001	Mounted on a brick column in the middle of a field, very carefully placed.	156.	
									4'98	'2	1000	-'002			
									5'00	'3	1490	-'003			
									M 5'000	'4	2000	-'004			
										'5	2500				
										'6	1000				
										'7	1500				
										'8	2000				
										'9	2500				
157.	June 14.	Kent	Cranbrook, Til-d'en, Mr. T. Pile.	II.	Mason		0 2							In a valley, and too much sheltered by trees; there is an apple-tree 35 ft. high only 25 ft. to E., and a fig-tree 10 ft. high 8 ft. to S.	157.
										'08	500				
										'16	1000				
										'24	1500				
										'32	2000				
										'39	2500				
158.	June 14.	Kent	East Sutton Park, Sir E. Filmer, Mr. Skinner.	X.	Negretti & Zambra	9 a.m. preceding.	0 8	387	7'99	'1	140	-'001	Found some currant bushes very near. They have since been moved.	158.	
									8'05	'1	1300	-'002			
									8'04	'2	2570	-'002			
									M 8'013	'4	5110	-'001			
										'5	6380	-'001			
									7'96	'1	1250	+'001			
									7'98	'2	2600	-'006			
									7'99	'3	3890	-'003			
									8'00	'4	5240	-'014			
									M 7'983	'5	6500	-'014			
										'6	1290	-'002			
									8'00	'1	2580	-'003			
									8'01	'2	3840	-'002			
									7'99	'3	5100	-'002			
									M 8'000	'4	6340	+'001			
										'5	2500	-'001			
160.	June 16.	Kent	Hunton Court, W. Bannerman, Esq.	X.	Negretti & Zambra		0 8	80					In kitchen-garden, somewhat sheltered by shrubs in N.E. Close to ornamental lake.	160.	
161.	June 16.	Kent	East Peckham, Orchard Cottage, S. T. Harris, Esq.	XI.	Negretti & Zambra	9 a.m. preceding.	1 6	76					On the grass margin of a large tank provided for water-fowl; clear, and in a level tract of country.	161.	
162.	June 15.	Kent	Tunbridge, Dr. Fielding	III.	Bates	9 a.m. preceding.	1 3	71					In flower-garden, clear, except a tree 10 ft. high 40 ft. S.S.W. of gauge.	162.	
163.	.....	Kent	Maidstone, Fane Road, J. H. Baverstock, Esq.	V.	Casella	monthly.	0						Houses 40 ft. high about 30 ft. off, in E.S.E. and N; all else clear.	163.	
164.	June 16.	Kent	Maidstone, Soverfield, F. Dobell, Esq.	II.	Annan of Hoddesdon.	monthly.	0		20'25				Diameter of tube 10½ inches, and scale 4 inches =inch, therefore reads correctly. Quite open, in kitchen-garden.	164.	
									20'50						
									20'75						
									M 20'50						
165.	June 16.	Kent	Aylesford, Capt. Cheere	XII.	Casella		10		4'98	'1	500	-'001	On lawn, sloping to river. Araucaria 8 ft. high, 10 ft. W.	165.	
									5'01	'2	1000	-'002			
									4'99	'3	1490	-'001			
									4'97	'2	1010	-'006			
									4'96	'3	1500	-'006			
									M 4'973	'4	2000	-'008			
										'5	2500	-'010			
166.	June 16.	Kent	Maidstone, Larkfield, Rev. W. Dinock.	III.	Casella		6						Found in rather a sheltered position; suggested removal, which was adopted.	166.	

## EXAMINATION OF

## RAIN-GAUGES.

## ON THE RAINFALL IN THE BRITISH ISLES.

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.					Equivalents of water.	Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.	Diameters (those marked. M = mean).	Scale-point.	Grains.				
167.	1866. Aug. 16.	Cumberland .....	Borrowdale, Seathwaite, Mrs. Abberley.	III.	Potter .....	9 a.m.	1 ft. 0 in.	422 feet.	in. 5'04" 4'96" 5'02" 5'00" M 5'005	1' 1020 1500 1950 2480	510 1260 2540 3790 5060 6350	—'002 —'005 —'002 —'007 —'001	Gauge was tested in 1862 (see No. 8) and the funnel remains unaltered; but the glass had been broken and a new one (rather incorrect) supplied. [This has been in turn supplanted by another perfectly accurate one.—Nov. 1866.]	167.	
168.	Aug. 28.	Nottingham .....	Nottingham, Welford Bridge, R. W. Mylne, Esq.	X.	Negretti & Zambra .....	9 a.m.	0 ft. 4 in.	90	8'00" 8'00" 7'98" 8'00" M 7'995	1' 2' 3' 4' 5'	1260 2540 3790 5060 6350	+ '001 correct + '001 + '001 + '001	In railed enclosure, about 3ft. 6in. high and 6 ft. square. Mr. Mylne ordered it to be cut down to 2 ft., the position will then be unexceptionable, just above the level of the highest floods in the Trent, from which it is only 200 yards distant.	168.	
169.	Aug. 31.	Derby .....	Chapel-en-le-Frith, M. S. & L. R.	VIII.	Casarcelli .....	9 a.m.	2 ft. 6 in.	965	8'48" 8'49" 8'50" 8'48" M 8'488	1' 2' 3' 4' 5'	1460 2870 4280 5630 496	—'002 —'001 correct —'002 + '006	Clear open position, on the slope of a hill just above the top of the inclined plane.	169.	
170.	Sept. 18.	Cumberland .....	Derwent Island, H. C. Marshall, Esq.	III	Casella .....	9 a.m.	1 ft. 0 in.	240	5'02" 4'98" 5'01" 5'00" M 5'003	1' 2' 3' 4' 5'	496 990 1500 1990 2480	correct + '001 —'002 —'001 correct	The island is so thickly wooded no very open spot can be found; when visited there were some flowers 3 ft. high, 2 ft. S.E. of the gauge, and a tree 60 ft. high about 40 ft. S.W.; the results are checked by No. 171.	170.	
171.	Sept. 18.	Cumberland .....	Keswick, Crow Park, H. C. Marshall, Esq.	XII.	Casella .....	monthly.	1 ft. 9 in.	260	6'95" 7'00" 7'02" 6'97" M 6'985	1' 2' 3' 4' 5'	1010 2000 3000 3950 4950	—'004 —'007 —'010 —'008 —'011	On the circular knoll, formerly known as the racecourse an exposed position quite clear of trees. A number IX. gauge is in the same railed enclosure with this gauge, and both are read. Placed close to No. 8 for comparison therewith. Gauge identical with those placed by Mr. Fletcher at	171.	
172.	Sept. 19.	Cumberland .....	Borrowdale, Seathwaite, I. Fletcher, Esq., F.R.S., Mrs. Abberley.	See page 466.	Cooke .....	monthly.	0 ft. 8 in.	422	4'03" 4'03" 4'03" 4'02" M 4'027	1' 2' 3' 4' 5'	320 1585 3160	+ '001 + '008 + '008 + '018	Scawfell Pike ... 3200 ft. Sprinkling Tarn 1985 Esk Hause ... 2350 Mosedale ..... 624 Great End ..... 2982 Styhead Tarn... 1472 Wasdale Head... 247 The Styre ..... 1077 Brant Riggs ..... 695 Stonethwaite ... 330	2.	
173.	Sept. 19.	Cumberland .....	Keswick, Greta Bank, T. S. Spedding, Esq.	III.	Dixey .....	.....	0 ft. 6 in.	377	5'04" 5'02" 5'03" 5'05" M 5'035	1' 2' 3' 4' 5'	530 1050 1525 2010 2500	—'005 —'009 —'003 —'003 + '003	In flower-garden, and quite bedded in geraniums; asked that it might be moved to a clearer spot. There was also a tree 60 ft. high about 40 ft. distant in E.	173.	
174.	Sept. 24.	Westmoreland ...	Patterdale, W. Marshall, Esq....	XII.	Casella .....	weekly.	1 ft. 6 in.	490	6'99" 7'01" 7'00" M 7'000	1' 2' 3' 4' 5'	1000 1950 3000 3900 4900	—'003 —'001 —'009 —'001 —'004	In railed enclosure in a field at the head of Ullswater, a capital open position. A number IX. gauge has been in the same enclosure for some years, but I could not learn how long it had been given up; it was not in use when visited.	174.	
175.	Sept. 24.	Westmoreland ...	Greenside, Stang End, W. Marshall, Esq., J. Birmingham.	XII.	Casella .....	9 a.m.	.....	1550	7'03" 6'97" 7'01" 6'99" M 7'000	05" 10" 20" 25" 50"	580 1090 2000 2500 4900	—'010 —'012 —'006 —'007 —'004	On a shelf-like ledge of rock, quite overhung by other rocks; a bad position. Scale-point equivalents not certain; it was raining hard and blowing a gale, so that it was not easy to hold	175.	

## EXAMINATION OF

#### RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.	
							Above ground.	Above sea-level.	Diameters (those marked M = mean).	Scale-point.	Grains.			
176.	Sept. 25.	Cumberland .....	Ullswater, Hallsteeds, A. Marshall, Esq.	IX.	Marshall & Co. ....	monthly.	4 6	490	9'99 10'00 10'00 10'02	.....	.....	the glasses steady, and there was nothing to set them down upon. In a large open field, raised in and in all respects well placed.	176	
177.	Sept. 26.	Cumberland .....	Ullswater, Watermillock, W. Marshall, Esq.	IX.	Marshall & Co. ....	monthly.	4 8	720	M 10'002 10'02 10'00 9'98 10'00	.....	.....	In garden S.E. of the house and sufficiently exposed. A few trees, but not high ones.	177	
178.	Oct. 5.	Westmoreland ..	Ambleside, Loughrigg, E. B. W. Balme, Esq.	X.	Negretti & Zambra .....	9 a.m.	0 6	553	M 10'00 7'97 8'01 8'02 8'00 5'00	'1 '2 '3 '4 '5 5370	-'002 -'006 +'001 correct -'002 correct	On the lawn quite exposed. The position is somewhat unusual, the hill dropping rapidly to E., W., and S. from the small plateau on which the gauge is placed.	178	
179.	Oct. 5.	Lancashire.....	Coniston, R. J. Bywater, Esq.	XI.	Negretti & Zambra .....		1 0	287	M 8'000 4'98 5'03 5'00 5'02 M 7'007	'01 '10 '20 '30 '40 50	-'001 -'001 -'001 -'001 -'002 correct	On edge of lawn, east side of Coniston Water, about one mile from its head. Ground rises gently to the east of the gauge. No trees near.	179	
180.	Oct. 8.	Westmoreland ..	Trotbeck, The Howe, Admiral Wilson.	VIII.	Marshall, Kendal .....		1 6	470	8'03 7'99 8'00 7'97	'01 '1 '2 '3	110 1254 2520 3800	+-'001 +'001 +'001 correct	On the south side of the valley, $\frac{1}{2}$ of a mile W. of Troutbeck Church; the house is 40 or 50 ft. S. of the gauge, which is on the lawn sloping to the beck.	180
181.	Oct. 16.	Westmoreland ..	Lowther Castle, Earl Lonsdale.	X.	Pastorelli .....	9 a.m. & 9 p.m.	3 6	810	M 7'998 8'02 8'03 7'97 7'94 M 7'990	'1 '2 '3 '4 '5	1290 2560 3880 5100 6430	-'002 -'002 -'006 -'003 -'008	On a post in the kitchen-garden, clear of obstructions, save perhaps a few trees. There was no inside can to this gauge, and the water running about the large vessel would doubtless be always diminished by evaporation and the difficulty of pouring out without occasional spilling.	181
182.	Oct. 18.	York .....	York, Coney Street. Mr. Sigsworth.	III.	Cooke .....	9 a.m.	7 0	40	4'98 5'05 5'01 4'97 M 7'993	'1 '2 '3 '4 '5	500 1000 1490 1990 2490	-'001 -'001 correct -'001 -'002	Gauge fastened to a wall close to, and 30 ft. above, the river Ouse. Rather sheltered in the N. by the houses.	182
183.	Oct. 18.	Westmoreland ..	Penrith, Great Strickland, H. H. Plummer, Esq.	XI.	Negretti & Zambra .....		1 0	650	M 5'003 5'03 4'98 5'02 5'00 M 5'008	'1 '1 '2 '3 '4 '5	500 1000 1490 1980 2490	-'001 -'001 -'001 correct +'002 -'001	Gauge on lawn well placed, and clear of all obstacles.	183
184.	Oct. 19.	Westmoreland ..	Penrith, Brougham Hall, Lord Brougham, Mr. Campbell.	II.			4 6	418	12'00 12'08 12'02 12'10 M 12'005	.....	.....	The diameter of lesser tube at top was 4'04 in., and the scale (where perfect) gave about 11'3 in. for each in., therefore the gauge was probably correct when new, but it is very old, and the cylinder has been repeatedly burst by frost and soldered up again; the rod has also been broken and spliced,	184	

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (those marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
	1866.						ft. in.	feet.	in.	in.				
185.	Oct. 20.	Cumberland .....	Penrith, Edenhall, Mr. Bowstead.	III.	Newcomb .....	.....	0 10	320 <sup>2</sup>	4'99 4'98 5'00 5'01	'1 '2 '3 '4	500 1000 1490 1980	—.001 —.002 —.001 correct	and fresh floats have been added from time to time. I recommended that a new one should be placed near it, and the result is that the old one records nearly 25 per cent. too little. Sheltered on the E. by a row of elms about 35 ft. distant, and perhaps 50 ft. high. All else clear.	185.
186.	Dec. 4.	Sussex .....	Buxted Park, Col. Harcourt, Mr. Huggate.	IV.	Dixey .....	9 a.m.	3 0	104	M 4'995 11'22 11'25 11'00 11'32	'09 '18 '27	2480 2500 5000 7500	—.011 —.021 —.031	Good position in kitchen-garden. When visited, was found on a pedestal, so that the funnel was 6 ft. above the ground, from which pedestal it had more than once been blown down; suggested that it should be placed on the ground; agreed to.	186.
187.	Dec. 4.	Sussex .....	Uckfield Observatory, C. L. Prince, Esq.	IV.	Dixey .....	9 a.m.	6 0	149	11'25 11'21 11'28 11'20	'10 '20 '25	2500 5000 6250	correct correct correct	Good position, in centre of town. Gauge on a pedestal like No. 186, but securely fastened. Would be rather sheltered if lower.	187.
188.	Dec. 6.	Sussex .....	Maresfield, Forest Lodge, Capt. Noble.	X.	Negretti & Zambra .....	.....	1 2	263	M 11'235	'1 '2 '3 '4	1290 2550 3850 5100	—.002 —.001 —.003 —.002	In a railed enclosure around the Observatory, the nearest angle of which is only 7 ft. distant in N.W. and 14 ft. high.	188.
189.	Dec. 6.	Sussex .....	Maresfield, The Rectory, Rev. E. Turner.	X.	Negretti & Zambra	9 a.m.	1 3	172	M 8'002	'5 7'97 7'93 7'98 7'93	6390 1260 2510 3740 6320	—.003 correct correct + .002 —.004	On lawn, rather sheltered by shrubs in S. and S.S.W., about 6 ft. high and 6 ft. distant.	189.
190.	Dec. 7.	Sussex .....	Uckfield, Moulsay Gore, F. Brdic, Esq.	X.	Negretti & Zambra	9 a.m.	0 6	112	M 7'953	'1 '2 '3 '4	1300 2620 3800 5010	—.002 —.006 + .001 + .006	Very near to No. 187, in an open field nearer to the railway.	190.
191.	Dec. 7.	Sussex .....	Newick, Ketches, Miss Shifner ...	X.	Negretti & Zambra	9 a.m.	0 8	192	M 8'003	'5 8'03 8'03 7'97 7'98	6280 1330 2550 3900 5080	+ .006 —.005 —.001 —.007 correct	On lawn, clear of trees, and with a level tract for some distance round.	191.
192.	Dec. 7.	Sussex .....	Newick, Beechlands, W. Blaaw, Esq.	III.	Casella .....	9 a.m.	0 10	210	M 8'002	'5 4'98 5'03 5'00	6360 510 1030 1490	—.001 —.003 —.007 correct	In a sunk garden, surrounded by hedges and the house and trees, but none are very close.	192.
193.	1867. May 29.	Sussex .....	Pevensy, M. Vidler, Esq. ....	X.	Negretti & Zambra	9 a.m.	4 0	10	M 5'003	'5 8'00 8'02 8'02 7'92	2500 1300 2550 3800 5050	—.004 —.003 —.002 —.001 + .001	On the beach, in a very exposed position. Gauge fastened to a short post, and enclosed by a palisade 6 ft. square and 3 ft. 6 in. high.	193.
194.	May 30.	Sussex .....	Beachy Head, Miss W. L. Hall.	XII.	Casella .....	monthly.	1 4	570	M 7'985	'5	6300	+ .002	On the top of Beachy Head, about 100 yards W. of the Coast-guard	194.

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (those marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.		Scale-point.	Grains.			
	1867.						ft. in.	feet.	in.	in.				
195.	May 31.	Sussex .....	Lewes, Glynde Place, Mr. McLeod.	III.	Bate, Poultry .....	9 a.m.	3 0	59	4'97 5'02 M 4'993	'1 '2 '3 '4 '5	500 1020 1540 2020 2510	—.001 —.006 —.011 —.007 —.006	station, and under the care of the men on duty. Glass believed to be the same as No. 196; if so, gauge must be practically correct.	195.
196.	May 31.	Sussex .....	Eastbourne, Miss W. L. Hall .....	XII.	Casella .....		4 3	30	4'98 4'99 5'02 4'99 4'99 M 5'000	'1 '2 '3 '4 '5	500 1000 1480 1980 2470	—.001 —.002 +.001 correct +.001	On a post in kitchen-garden, an espalier 5 ft. high 4 ft. off in N.E., N., and N.W., all else clear; suggested removal to a more open spot: found observer's books badly cast, checked them all through, and took copies.	196.
197.	June 1.	Sussex .....	Brighton, Upper Brunswick Place, Dr. Kebbel.	VII.			2 6	45	10'10 10'00 10'05 10'05 M 4'995	.....	.....	.....	In the best practicable position in a rather sheltered garden; probably nothing is more than 45° above the gauge, and the results may be accepted.	197.
198.	June 1.	Sussex .....	Brighton Water-works, W. Blaber, Esq.	VI.	Crosley .....		5 6	90	M 10'050	10'00 10'00 10'00	2525	—.010	No use at all. The gauge was right underneath a sycamore tree, in most ridiculous proximity to the stem. No further observations will be made.	198.
199.	June 1.	Sussex .....	Brighton Water-works, W. Blaber, Esq.	XII.	Casella .....		0 7	90	M 10'000	5'00 5'00 4'99 M 4'997	'01 '10 '20 '30 '40 '50 2480	correct —.001 —.002 —.001 correct —.001	Near to No. 198, and in an equally good position.	199.
200.	June 1.	Sussex .....	Brighton, Richmond Terrace, O. Smith, Esq.	XII.	Private .....		3 0	58	M 6'200	6'20 6'20 6'20 6'20 1'2	2500 5000 7500 10000	—.028 —.056 —.084 —.112	Clear position, gauge (as usual with privately made ones) very incorrect. Returns have never been published, except under a pseudonym in a local paper; hope they never will be.	200.
201.	June 1.	Sussex .....	Brighton, St James Street, E. Rowley, Esq.	III.		9 a.m.	1 0	40	M 6'200	5'00 4'95 5'04 5'00	500 1510 2000 2505	—.001 —.005 —.004 —.006	Very much sheltered. Houses in N.W. 40 ft. high and 40 ft. off, and in S.E. 40 ft. high and 27 ft. off.	201.
202.	June 1.	Sussex .....	Brighton, Eaton Place, Dr. Barker.	X.	Browning .....	9 a.m.	0 3	98	M 4'997	8'00 8'00 7'95 8'04 5'00	1300 2570 3800 5010 6300	—.002 —.003 correct +-.005 —.006	Good position, except from S.W., where the house, 45 ft. high, is only 30 ft. distant.	202.
203.	June 1.	Sussex .....	Brighton Gas-works .....	VI.	Crosley .....		4 0	72	M 7'998	10'00 9'98 10'02	.....	.....	On a post in a good open position.	203.
204.	June 8.	Kent .....	Beckenham, C. O. F. Cator, Esq.	X.	Negretti & Zambra	9 a.m.	0 6	142	M 10'000	8'01 7'97 7'97 7'96 M 7'977	1240 2525 3810 5050 6305	+.002 correct —.002 correct	On lawn, rather near its sloping edge, but otherwise unexceptionable position.	204.

## EXAMINATION OF

#### RAIN-GAUGES (continued).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (those marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference
							Above ground.	Above sea-level.		Scale-point.	Grains.			
205.	June 8. 1867.	Kent .....	Beckenham, C. O. F. Cator, Esq.	XII.	Apps .....	.....	ft. in. o 6	feet. 142	in. 5'00 4'99 4'98 5'01	in. '1 '2 '3 '4 '5	500 1000 1500 1990 2490	-'001 -'002 -'003 -'002 -'003	Close to No. 204.	205.
206.	June 10.	Sussex .....	Farnhurst, Hawksfold, Miss E. A. Salvin.	X.	Negretti & Zambra	9 a.m.	i o .....	.....	M 4'995 8'03 8'00 7'98 7'99 5'01	'1 '2 '3 '4 '5	1300 2600 3950 5200 6600	-'002 -'005 -'011 -'010 -'020	On lawn facing S.W., and quite open, rather high ground overlooking Midhurst, &c.	206.
207.	June 10.	Surrey .....	Guildford, Commercial Road, Capt. James, R.E.	XI.	Negretti & Zambra	9 a.m.	i o .....	120	M 8'000 4'98 5'03 5'02 5'01	.....	.....	.....	In an open garden, a very good position. Equivalents not entered on the examination form, but think the glass was tested and found correct.	207.
208.	June 10.	Surrey .....	Guildford School, Dr. Merriman.	XI.	Negretti & Zambra	.....	i 4 .....	200	M 5'010 5'00 5'01 4'99 5'00	'1 '3 '4 '5	496 1490 1985 2500	correct. correct. -'004	On lawn in a very good position.	208.
209.	June 11.	Sussex .....	Chichester, Chilgrove, W. L. Woods, Esq.	III.	Knight .....	9 a.m.	i 8 .....	.....	M 5'000 5'00 4'98 4'97 4'97	'1 '2 '3 '4 '5	500 1020 1520 2010 2500	-'002 -'007 -'009 -'009 -'008	Very good position; bottle neck rather small, and funnel therefore shaky. Rim of gauge rather flat, which will probably correct the errors of the glass.	209.
210.	June 11.	Sussex .....	Chilgrove, Bepton Hill, W. L. Woods, Esq.	III.	Knight .....	monthly.	i 6 .....	.....	M 4'980 5'00 4'99 5'00 5'00	'1 '2 '3 '4 '5	510 1010 1500 2000 2500	-'003 -'004 -'003 -'004 -'003	Quite open, in a hollow near the top of the hill, on the east side, but about 200 ft. below it.	210.
211.	June 11.	Sussex .....	Chichester Infirmary, W. Hills, Esq.	III.	Knight .....	.....	i 50 .....	.....	M 4'998 4'95 5'03 5'02 5'00	'1 '2 '3 '4 '5	2490 500 1000 1500 1980	-'003 -'001 -'002 -'003 +'001	Has usually been in an open part of the lawn in front of the Infirmary, and will be replaced there as soon as alterations, in progress at time of visit, are completed. Gauge was temporarily carefully placed in a tolerably good position.	211.
212.	June 11.	Sussex .....	Chichester, West Dean, H. Paxton, Esq.	X.	Negretti & Zambra	.....	3 250 .....	.....	8'02 7'98 8'00 8'01	'1 '2 '3 '4	1300 2550 3780 5050	-'002 -'001 +'002 +'003	On the slope of the valley facing S.E., not very far from the Church; fairly exposed.	212.
213.	June 12.	Sussex .....	Chichester, West Gate, Dr. Tyacke.	III.	Knight .....	9 a.m.	6 40 .....	.....	M 8'003 4'92 5'09 5'10 5'00	'1 '2 '3 '4	530 1040 1540 2040 2540	-'006 -'007 -'007 -'007 -'007	In a very open position, on a large level lawn.	213.
214.	June 14.	Sussex .....	Chichester, Shopwike House, Rev. G. H. Woods.	X.	Negretti & Zambra	monthly.	3 61 .....	.....	M 5'028 8'00 7'98 8'02 8'00	'1 '2 '3 '4	1300 2600 3850 5050 6300	-'002 -'005 -'003 +'002 +'004	In a large vase, on the lawn, good open position.	214.
215.	June 20.	Sussex .....	Bognor, Aldwick, Mr. Upton ...	III.	Knight .....	.....	i 50 .....	.....	M 8'000 4'98 4'97	'1 '2	500 1020	-'002 -'007	Found very close to a gooseberry-bush, had it moved to a clear spot.	215.

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (those marked M = mean).		Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.	
							Above ground.	Above sea-level.	ft. in.	feet.	in.	in.	Scale-point.	Grains.		
1867.																
216.	June 21.	Sussex .....	Littlehampton, Yapton, R. Redford, Esq.	XII.	Casella .....		1 3	45	4'99 M 4'980	'3 '4 '5	1540 2000 2510	500 1000 1490	—.013 —.007 —.010	In a garden well exposed, clear level country.	216.	
217.	June 24.	Sussex .....	Horsham, St. Leonards Lodge, W. E. Hubbard, Esq.	III.	Casella .....		1 6	301	5'00 M 5'003	'1 '2 '3 '4 '5	498 1000 1490 1975 2480	500 1000 1490 1975 2480	—.001 —.001 —.001 +.'002 correct.	At S.E. angle of a terrace, in a bed of cut heath; the gauge is 1 ft. 6 in. above the terrace, and about 6 ft. above the next lower one.	217.	
218.	June 24.	Sussex .....	Horsham, St. Leonard's Lodge, The Gardens, Mr. S. Ford.	III.	Casella .....		1 6	273	4'98 5'02 5'00 5'00 M 5'000	'1 '2 '3 '4 '5	500 1000 1490 1980 2480	500 1000 1490 1980 2480	—.001 —.002 —.001 —.001 correct.	The house 30 ft. off in S.W. is about 25 ft. high, all else is clear. About a $\frac{1}{2}$ of a mile from No. 217.	218.	
219.	June 24.	Sussex .....	Crawley, The Hyde, E. S. Biggs, Esq.	VIII.	Private .....		1 6	370	5'00 M 5'000	'1 '2 '3 '4 '5	1830 3600 5500 7450 9630	500 1000 1490 1980 2480	+.'008 +.'014 +.'023 +.'024 +.'014	A very roughly made flat-funnelled gauge, placed about 4 ft. from the base of a large hot-house facing S. I have no doubt in rough weather both rain and snow unduly shoot into the gauge.	219.	
220.	June 24.	Sussex .....	Petworth Rectory, Rev. C. Holland.	III.	Gould.....		1 6	170	5'06 5'06 5'06 5'06 M 10'000	'1 '2 '3 '4 '5	540 1040 1590 2100 2480	540 1040 1590 2100 2480	—.007 —.005 —.014 —.014 —.003	On lawn sloping to E., slightly but not injuriously sheltered.	220.	
221.	June 25.	Sussex .....	Petworth Gardens, Mr. Jones...	XII.	Casella .....		1 6	180	5'00 M 5'053	'1 '2 '3 '4 '5	1500 2550 3000 1000 2480	500 2550 3000 1000 2480	—.001 —.004 —.003 —.002 —.003	In the kitchen-gardens, level, and very open position.	221.	
222.	June 25.	Sussex .....	Arundel, Dale Park, J.C. Fletcher, Esq., Mr. Wilson.	IV.	.....		3 0	316	4'98 M 4'987	'1 '2 '3 '4 '5	1000 5050 7580 9950 12950	1000 5050 7580 9950 12950	—.003 —.005 —.005 —.001 —.021	In kitchen-gardens on slope to S., belt of trees in N., but not near enough to affect gauge. Rim of funnel very flat.	222.	
223.	June 26.	Sussex .....	Worthing, Bedford Row, W. J. Harris, Esq.	XI.	Negretti & Zambra	9 a.m.	1 0	21	5'02 M 11'193	'09 '1	500 12950	500 12950	—.010 —.021	In garden in front of Bedford Row, sheltered to the W. by houses 40 ft. high and 50 ft. distant.	223.	
224.	June 26.	Sussex .....	Worthing, Dr. Barker .....	X.	Private .....	9 a.m.	1 0	18	4'98 M 5'010	'2 '3 '4 '5	1000 1490 1980 2480	1000 1490 1980 2480	—.001 +.'001 +.'002 +.'002	A very roughly made gauge, in an indifferent position.	224.	
225.	June 27.	Sussex .....	Worthing, Findon, Rev. Dr. Cholmelly.	III.	Casella .....		1 0	167	5'02 M 13'125	'1 '2 '3 '4 '5	1490 17504 1980 2480 2510	510 2020 1500 2000 2510	—.004 —.007 —.005 —.007 —.010	Fair exposure on lawn, some elms, about 50 ft. high, 100 ft. distant in S.W. Gauge had been indented considerably at one point. The mean diameter as given is believed	225.	

## EXAMINATION OF

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	ON THE RAINFALL IN THE BRITISH ISLES.					Reference number.			
							Above ground.	Above sea-level.	Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.			
							ft. in.	feet.	in.	in.	Scale-point.	Grains.			
	1867.														
226.	June 28.	Sussex .....	Steyning, Rev. H. Ingram .....	XII.	Casella .....		1 0	50	5'02 4'98 5'00 5'00	'1 '2 '3 '4	500 1000 1500 2000	—.001 —.002 —.003 —.004		to indicate the true area of the gauge.	
227.	Sept. 13.	Forfar .....	Dundee, Eastern Cemetery, Mr. M <sup>c</sup> Kelvie.	I.	Adie .....	9 a.m.	0 4	164	M 5'000 3'000 3'00 3'00 3'00	'5 '30 '100 '1800	2500 2350 1490 1980	—.004 —.016 —.008		Some trees in S.W., about 30 ft. off and 20 ft. high; the gauge is rather sheltered, but any injurious effect can hardly arise.	226.
228.	Sept. 14.	Forfar .....	Dundee, Barry, Mr. J. Procter.	III.	Casella .....	9 a.m.	0 3	55	M 3'000 5'02 4'98 5'01 5'00	'1 '2 '3 '4 '5	500 1000 1490 1980 2480	—.001 —.002 correct. + .001 correct.		In an open part of the Cemetery, which is on a very gentle slope towards the Tay.	227.
229.	Sept. 14.	Forfar .....	Dundee, Crombie, Dundee Water-works.	VIII.			0 3	522	11'22 11'32 11'28 11'31	'1 '2 '3 '4	..... ..... ..... .....	+ .001 + .002 + .002 + .003		In garden rather sheltered, but probably not so much so as to vitiate the results.	228.
230.	Sept. 14.	Forfar .....	Dundee, Barry, Mr. J. Procter	VIII.	Mr. Procter .....	9 a.m.	0 3	55	M 11'283 11'72 11'67 11'68 11'77	'085 '18 '277 1'0	2525 5050 7576	—.008 —.006 —.002		Close to No. 228.	229.
231.	Sept. 14.	Forfar .....	Dundee, Craigton Reservoir, Dundee Water-works.	VIII.			0 3	481	M 11'710 11'20 11'45 11'50 11'32	'1 '5 '0 1'0	..... ..... ..... .....	+ .002 + .004 + .005		Very good position on open lawn. There is also a gauge, pattern No. V., but with a very flat rim.	231.
232.	Sept. 14.	Forfar .....	Dundee, Hill Head, Dundee Water-works.	VIII.			0 3	570	M 11'367 11'06 11'40 11'13 11'32	'1 '5 '0 1'0	..... ..... ..... .....	correct. correct. + .002		Trees in N.E. 50 ft. distant and 30 ft. high. Pipe into receiver nearly 1·5 in. in diameter; will be reduced to 1 in.	232.
233.	Sept. 14.	Forfar .....	Dundee, Hermon Hill, R. Adamson, Esq.	VIII.		monthly.	level	109	M 11'227 11'30 11'32 11'30 11'32	..... ..... ..... .....	..... ..... ..... .....			In garden, fully exposed; measuring-jar not accessible.	233.
234.	Sept. 14.	Forfar .....	Dundee, Westfield Cottage, E. Clark, Esq.	XII.	Lowden .....	9 a.m.	5 6	56	M 11'310 5'00 5'00 5'00 5'04	'01 '1 '2 '3 '4	50 1000 1490 1980 2480	correct. correct. —.001 + .001 + .002		On the top of the thermometer stand; rain drawn off by a tap. In a garden sloping to river.	234.
235.	Sept. 24.	Hampshire .....	Ryde, C. Scholefield, Esq., R.N.	XII.	Casella .....		3 0	40	M 5'010 5'03 5'01 5'02 5'00	'5 '2 '3 '4	500 1000 1490 1980 2480	correct. correct. + .001 + .003 + .003		On a post in garden at E. end of Ryde.	235.
236.	Sept. 24.	Hampshire .....	Ryde, Esplanade, R. Taylor, Esq.	VIII.	Local .....	9 a.m.	6 0	20	M 5'015 12'1	'5	2480	+ .003		In small yard at back of house and	236.

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	County.	Name of station, owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.				Equivalents of water.	Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number.
							Above ground.	Above sea-level.	Diameters (that marked M = mean).	Scale-point.				
	1867.													
237.	Sept. 24.	Hampshire .....	Ryde, Esplanade, R. Taylor, Esq.	XII.	Casella .....	9 a.m.	6 0	20	M 12'000	in.			sheltered both by buildings and a tree due S. 16 ft. high and only 8 ft. distant.	Close to No. 236. 237.
238.	Sept. 27.	Hampshire .....	Osborne, J. R. Mann, Esq. ....	X.	Negretti & Zambra	monthly.	0 8	172	5'00 11'9 12'0 12'0	'1 '2 '3 '4	490 990 1490 2000	+·001 correct. -·002 -·005 -·002	On grass plot; a hedge 5 ft. high was only 4 ft. distant in E.	238.
239.	Sept. 27.	Hampshire .....	Osborne, J. R. Mann, Esq. ....	IV.	Negretti & Zambra	9 a.m.	3 0	172	M 7'970 12'10 11'90 12'00 12'01	'065 '150 '240 '325	2500 5000 7500 10000	-·035 -·038 -·034 -·038	Close to No. 238. 239.	
240.	Sept. 28.	Hampshire .....	Newport, Chapel St., Mr. E. G. Aldridge.	XI.	Negretti & Zambra	9 a.m.	8 8	53	M 12'003	'415 '500	12500 15000	-·034 -·025	On apex of small outhouse, much sheltered by trees. 240.	
241.	Sept. 30.	Hampshire .....	St. Lawrence, The Rectory, Rev. C. Malden.	XII.	Casella .....	9 a.m.	1 0	85	M 5'013	'1 '2 '3 '4	510 1010 1500 1985	-·002 -·003 -·001 +·002	Quite clear on lawn; ground sloping to S. 241.	
242.	Oct. 1.	Hampshire .....	Ventnor, Belgrave House, Dr. Martin.	II.	Newman .....	9 a.m.	3 7	100	M 5'000 12'00 12'00 12'02 12'02	'5 '05 '1 '15	2490 500 1000 1490 3000 4260	-·001 -·002 -·001 +·001	Clear except in N., where the house (three stories) is only 40 ft. distant. 242.	
									M 12'010					

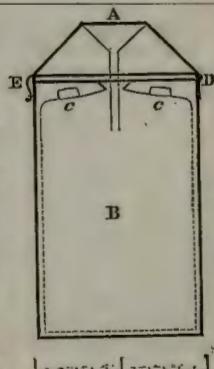
*Note.*—The preceding Tables are similar in every respect to those contained in the British Association Report for 1866; and in order that the present one may be complete in itself, part of the explanation there given is here repeated; as is also the Plate representing the various forms of gauge most generally used.

The present Tables contain the results of Mr. Symons's personal examination of gauges on the dates specified in the second column, and at the localities stated in the third and fourth columns. The pattern of the gauge is indicated by the Roman numerals which refer to the accompanying Plate; the next four columns are self-explanatory; then, as few gauges are true circles, four diameters (*i.e.* at intervals of  $45^\circ$ ) are taken, and their mean is assumed as the mean diameter of the gauge and marked M; from this the area, and weight of an inch of water over that area, is readily obtained, and the difference between the computed value and that which the gauge showed

when tested is the error of the gauge given in the last column but two; the last columns are self-explanatory.

A section is given of Gange No. 172, it being of a type not represented on the Plate, yet of considerable importance, inasmuch as it is the pattern employed by Mr. Fletcher, F.R.S., on the Cumberland Mountains. The orifice is small, only 4 inches, in order to keep the volume of water within manageable limits; they are constructed with very thick double-lapped copper vessels dropped into stout iron cans provided with lock and hinges; the amount is measured with a glass like No. III.

c, c are handles, D is a hinge, and A E D falls down close on the body B.



## EXAMINATION OF

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point, specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position, &c.	Reference number.
								Scale-point.	Grains.				
243.	1868. Apr. 16.	MIDDLESEX. Upper Holloway. <i>W. B. KESTEVEN, ESQ.</i> <i>W. B. Kesteven, Esq.</i>	XII.	Casella .....	9 a.m.	1 3      95					E.N.E. House 42°. S.W. Trees 30°.	On lawn, clear except as noted; no better position available. Gauge had been tested before erection.	243.
244.	Apr. 18.	KENT. Foxgrove, Beckenham. <i>P. BICKNELL, ESQ.</i> <i>P. Bicknell, Esq.</i>	XI.	Negretti & Zambra .....	9 a.m.	0 5      142						Clear good position; grounds level and not very much wooded.	244.
245.	May 1.	MIDDLESEX. Beaulieu, Winchmore Hill. <i>T. PAULIN, ESQ.</i> <i>T. Paulin, Esq.</i>	X.	Negretti & Zambra .....	9 a.m. 9 p.m.	0 11      .....					S.W. Trees 31°. S. Fir 35°. N.E. House 18°. E. Trees 30°.	On level lawn, but rather sheltered by trees, especially in E.	245.
246.	July 13.	SURREY. West Hill, Wandsworth. <i>J. E. RICHARD, ESQ.</i> <i>J. E. Richard, Esq.</i>	III.	Casella .....	5 p.m.	0 10      86					N.N.E. Tree 60°. N.E. Tree 45°. W.S.W. Tree 42°.	On a slope to S.S.E., in a garden containing and surrounded by a good many trees.	246.
247.	Aug. 7.	HAMPSHIRE. Bramshill House, Reading. <i>REV. SIR W. COPE, BART.</i> <i>Rev. Sir W. Cope, Bart.</i>	XI.	Negretti & Zambra .....	9 a.m.	1 3      301					W.S.W. House 57°. N.W. House 55°. N.E. House 45°.	On the edge of the South Terrace, from which the fall is about 7 ft.; the gauge is therefore open to the full sweep of the southerly winds, and sheltered from all northerly ones. The house stands on an eminence, commanding all the surrounding country.	247.
248.	Aug. 10.	HAMPSHIRE. The Vyne, Basingstoke. <i>W. L. WIGGETT CHUTE, ESQ.</i> <i>W. L. Wiggett Chute, Esq.</i>	X.	Negretti & Zambra .....	9 a.m.	1 3      236	8·02 7·96 8·02 7·98	1 1380 2 2550 3 3850 4 5100	—'009 —'001 —'004 —'002			These two gauges stand close together on the lawn in front of the Vyne, but so distant from it as to be quite uninfluenced by the house, or, indeed, by anything, as there are neither trees nor buildings near. Surrounding country gently undulating.	248.
249.	Aug. 10.	HAMPSHIRE. The Vyne, Basingstoke. <i>W. L. WIGGETT CHUTE, ESQ.</i> <i>W. L. Wiggett Chute, Esq.</i>	III.	Casella .....	9 a.m.	0 10      236	7·995 3·00 3·01 3·00 2·99	5 6550 1 160 2 350 3 530 4 700	—'017 + '011 + '010 + '003 + '008				249.
250.	Aug. 10.	HAMPSHIRE. Sherborn, St. John, Basingstoke. <i>THE REV. D. CHUTE.</i>	XI.	Negretti & Zambra .....	9 a.m.	1 6      276	3·005 5·02 5·00 5·00 3·00 5·01 5·008 2·04 2·95 2·08 2·94	5 920 1 500 2 1000 3 1490 4 1980 5 2480 1 1145 1 11425 1 17140 2 22850	—'014 —'001 —'001 correct. + '009 —'014 correct. correct. —'001 —'001	W. Tree 46°.	In gently undulating country near the banks of a stream; position fair, except as noted in previous column.	250.	
251.	Aug. 11.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>COL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	X.	Casella .....	9 a.m.	1 0      209	2·995 1·00 2·02 1·05 1·08 1·94	1 2850 2 5780 3 8568 4 11435 5 14280	correct. —'002 correct. correct. correct.		This and the subsequent eleven gauges are in portion of grass land containing 400 square feet, inclosed only by an iron two-rail fence. There is not even a bush within 30 feet, and no tree within 100 feet. The ground is quite level. The enclosure is marked N. on the plan given at page 434.	251.	
252.	Aug. 11.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>COL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	X.	Casella .....	9 a.m.	1 0      209	1·00 1·02 1·05 1·08 1·94 1·997	1 2850 2 5780 3 8568 4 11435 5 14280	correct. —'002 correct. correct. correct.			252.	

## ON THE RAINFALL IN THE BRITISH ISLES.

## EXAMINATION OF

### **EXAMINATION OF**

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.	Diameters (that marked M = mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							Above ground.	Above sea-level.	Scale-point.	Grains.				
264.	Sept. 4.	NORFOLK. Thorpe Hamlet Parsonage, Norwich. <i>MRS. COOKE.</i> <i>Mrs. Cooke.</i>	XI	Negretti & Zambra	9 a.m.	ft. in. 1 0	feet. 33					E. House 40°.	On lawn, sloping slightly to W., good position.	264.
265.	Sept. 4.	NORFOLK. Thorpe, Norwich. <i>W. BIRKBECK, ESQ.</i> <i>W. Birkbeck, Esq.</i>	III	Casella .....	9 a.m.	1 0	137					S.S.W. Fir 25°.	On crest of hill, sloping gently to the Yare in S.	265.
266.	Sept. 4.	NORFOLK. St. Catherine's Close, Norwich. <i>C. EVANS, ESQ.</i> <i>C. Evans, Esq.</i>	XII	Casella .....	10 a.m.	2 2	123					S.W. Tree 25°.	On dwarf post on large lawn.	266.
267.	Sept. 5.	NORFOLK. East Dereham. <i>G. H. COOPER, ESQ.</i> <i>G. H. Cooper, Esq.</i>	X	Negretti & Zambra	week- ly.	1 3	161					N.E. Fir 32°.	On slight mound on lawn; ground level. Observer absent and measuring-glass not accessible.	267.
268.	Sept. 5.	NORFOLK. Honingham. <i>THE LADY BAYNING.</i> <i>The Lady Bayning.</i>	III	Knight .....	9 a.m.	0 9	88					N.W. Angle of House 55°.	On edge of flower-bed; ground level.	268.
269.	Sept. 7.	NORFOLK. Mattishall Vicarage. <i>THE REV. J. M. DU PORT.</i> <i>The Rev. J. M. Du Port.</i>	X	Negretti & Zambra	9 a.m.	1 3	165					E. Trees 45°. S.E. , 45°. S.W. , 25°.	In kitchen garden, somewhat sheltered; ground level.	269.
270.	Sept. 7.	NORFOLK. Hockering. <i>THE REV. M. J. ANDERSON.</i> <i>The Rev. M. J. Anderson.</i>	X	Negretti & Zambra	9 a.m.	1 3	140					N. Trees 60°. N.E. , 60°. E. , 60°. S.W. , 40°.	On lawn, surrounded by trees; to be moved to another position where nothing will rise 30° above gauge except one tree in S.E.	270.
271.	Sept. 8.	SUFFOLK. Gisleham, Lowestoft. <i>THE REV. H. JODRELL.</i> <i>The Rev. H. Jodrell.</i>	III	Casella .....	9 a.m.	1 3	36					N.E. Trees 40°. S.W. , 22°. N.W. , 40°.	In kitchen garden, and rather sheltered.	271.
272.	Sept. 11.	SUFFOLK. Carlton Colville, Lowestoft. <i>G. EDWARDS, ESQ.</i> <i>G. Edwards, Esq.</i>	X	Negretti & Zambra	month- ly.	0 8	6					S.W. Rose-bush 50°.	Open position, except as noted; ground level, and as noted in other columns; gauge only 6 ft. above mean sea-level, and therefore only 3 ft. above high-water mark.	272.
273.	Sept. 12.	NORFOLK. Geldstone, Beccles. <i>E. T. DOWSON, ESQ.</i> <i>E. T. Dowson, Esq.</i>	XII	Casella .....	9 a.m.	1 1	30					Very good open position in terrace garden.	Very good open position in terrace garden.	273.
274.	Sept. 14.	SUFFOLK. Somerleyton Hall, Lowestoft. <i>SIR F. CROSSLEY, BART.</i>	X	Negretti & Zambra	7 a.m.	3 0	60					Gauge fixed on a stool in centre of large lawn; quite open.	274.	

## EXAMINATION OF

#### RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference
							Scale-point.	Grains.	in.	in.				
275.	1868. Sept. 14.	SUFFOLK. Somerleyton Rectory, Lowestoft. <i>THE REV. C. J. STEWARD.</i> <i>The Rev. C. J. Steward.</i>	III	Cary .....	9 a.m.	ft. in. o 3	feet. 56	in. 5'00 5'01 5'02 5'00 M 5'008 8'00 8'00 7'08 8'00	'1 '2 '3 '4 '5 1290 2600 3940	500 1000 1500 2000 2500 --- --- --- ---	--- --- --- --- --- --- --- ---	.....	In kitchen garden, open position; suggested its being raised a little to avoid in-splashing.	27
276.	Sept. 14.	SUFFOLK. Hopton Hall, Lowestoft. <i>C. CORY, ESQ.</i>	X	Negretti & Zambra .....		o 3	47	M 7'995 8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'012 5'02 4'98 5'01 5'00 M 5'003 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	correct. --- --- --- --- --- +006 +012 +015 +014	N.E. Laburnum 55°. S.W. House 32°.	S.E. Tree 32°.	Sunk in a large pot, on lawn; quite clear, except as noted.	27
277.	Sept. 15.	SUFFOLK. Acle, Yarmouth. <i>THE REV. R. W. KENNION.</i> <i>The Rev. R. W. Kennion.</i>	X	Negretti & Zambra .....		o 7	40	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'012 5'02 4'98 5'01 5'00 M 5'003 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	correct. --- --- --- --- --- +006 +012 +015 +014	N.E. Laburnum 55°. S.W. House 32°.	On edge of carriage drive, and near a light iron railing.	27	
278.	Sept. 16.	NORFOLK. Runham. <i>THE REV. E. GILLETT.</i> <i>The Rev. E. Gillett.</i>	See Fig. p. 390	Sawyer .....	9 a.m.	6 3	31	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'012 5'02 4'98 5'01 5'00 M 5'003 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	correct. --- --- --- --- --- +006 +012 +015 +014	N.E. Trees 50°. S.W. " 28°. N.W. " 50°.	In garden, position not the best available; suggested removal on January 1, 1869.	278	
279.	Sept. 17.	NORFOLK. Filby, Yarmouth. <i>MR. G. CRISP.</i> <i>Mr. G. Crisp.</i>	XI	Negretti & Zambra .....	9 a.m.	2 4	11	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'012 5'02 4'98 5'01 5'00 M 5'003 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	correct. --- --- --- --- --- +006 +012 +015 +014	N. House 54°. S.E. Trees 30°. N.W. " 47°.	Very much sheltered; to be raised 3 ft., which will make it nearly clear.	279	
280.	Oct. 27.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>G. J. SYMONS, ESQ.</i> <i>The Rev. C. H. Griffith.</i>	XII	Casella .....	9 a.m.	1 0	209	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'012 5'02 4'98 5'01 5'00 M 5'003 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	correct. --- --- --- --- --- +006 +012 +015 +014	.....	In experimental rain-gauge enclosure; clear of everything.	280	
281.	Oct. 27.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>G. J. SYMONS, ESQ.</i> <i>The Rev. C. H. Griffith.</i>	III	Bryson .....	9 a.m.	1 0	209	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'012 5'02 4'98 5'01 5'00 M 5'003 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	correct. --- --- --- --- --- +006 +012 +015 +014	.....	Close to No. 280.	281	
282.	Nov. 2.	NOTTINGHAM. Highfield House, Nottingham. <i>E. J. LOWE, Esq., F.R.S.</i>	X	Negretti & Zambra .....	10 a.m.	25 0	.....	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'012 5'02 4'98 5'01 5'00 M 5'003 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	.....	.....	On N.E. parapet of house. Glass not measured.	282	
283.	1869. Mar. 27.	HAMPSHIRE. Wote Street, Basingstoke. <i>T. SWEETING, ESQ.</i> <i>T. Sweeting, Esq.</i>	XII	Apps .....	9 a.m.	1 0	265	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'012 5'02 4'98 5'01 5'00 M 5'003 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	.....	.....	Part of pear-tree will be cut off; position will then be very good.	283	
284.	Mar. 27.	HAMPSHIRE. Eastlands, Basingstoke. <i>G. STEPHENS, ESQ.</i> <i>G. Stephens, Esq.</i>	III	Wheeler.....	9 a.m.	1 0	300	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'017 5'02 4'98 5'01 5'00 M 5'005 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	.....	.....	W. House 32°.	In kitchen garden; ground level, and position good.	284
285.	April 7.	YORKSHIRE. Saddletown Station. <i>L. &amp; N.-W. RAILWAY.</i> <i>The Station Master.</i>	VI	Crosley .....	monthly.	5 0	640	8'00 8'01 7'90 8'03 M 7'985 4'03 4'02 4'00 4'00 M 4'017 5'02 4'98 5'01 5'00 M 5'005 3'01 3'00 3'00 2'99 M 3'000 4'69 4'65 4'68 4'66 M 4'670 7'87 8'02 7'83 7'96 M 7'920 5'02 5'00 5'01 5'04 M 5'017 5'00 5'00 5'02 5'00 M 5'005 9'97 9'97 9'93 9'96 M 9'970	'1 '2 '3 '4 '5 1260 2580 3850 5150 6380 300 600 1550 3150	.....	.....	.....	On a stone column on the top of a railway-cutting; nearly level with the chimneys of the station.	285

## EXAMINATION OF

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.			Diameters (that marked M = mean).	Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							Above ground.	Above sea-level.						
286.	1869. April 7.	YORKSHIRE. Friesland Vicarage, Greenfield. <i>THE REV. G. VENABLES.</i> <i>The Rev. G. Venables.</i>	XI	Negretti & Zambra	9 a.m.	ft. in. 3 6	feet. 550	in. 5'02 5'02 5'00 5'04 M 5'020 8'05 8'03 8'05 7'98 M 8'028 7'96 8'02 7'99 8'01	in. '1 '2 '3 '4 '5 ..... ..... ..... ..... ..... ..... .....	490 +·006 1460 +·008 1955 2460 ..... ..... ..... ..... ..... ..... .....	E. Church 42°. S. House 28°. W. Trees 30°.	Fixed on dwarf post in the garden, which is somewhat shut in by the railway embankment; ground hilly.	286.	
287.	April 7.	YORKSHIRE. Standedge. <i>L. &amp; N.W. RAILWAY.</i>	I	.....	monthly.	2 0	1150	M 5'020 8'05 8'03 8'05 7'98 M 8'028 7'96 8'02 7'99 8'01	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	Very exposed position on a slight slope, but nothing rises more than 5° above the gauge, which is very much weather-worn.	287.
288.	April 8.	YORKSHIRE. Harden Moss, Meltham. <i>HUDDERSFIELD WATER WORKS.</i>	X	Negretti & Zambra	.....	1 0	1200	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	On level piece of moor, quite exposed, but surrounded by a 5-ft. iron hurdle fence 6 ft. square. Glass not accessible.	288.	
289.	April 8.	YORKSHIRE. Bilberry Reservoir, Holmfirth.	I	.....	monthly.	1 6	800	M 7'995 8'02 7'98 8'01 7'99 M 8'000 6'92 6'97 6'95 6'94 M 6'945 7'00 6'80 6'92 6'62	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	correct	N.E. Wall and rising ground 21°.	289.	
290.	April 8.	YORKSHIRE. Boshaw Whams.	I	.....	monthly.	1 9	950	M 8'000 6'92 6'97 6'95 6'94 M 6'945 7'00 6'80 6'92 6'62	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	correct	In a flat field E. of the reservoir; very open. When visited the top was not properly on the cylinder, and much loss must have resulted.	290.	
291.	April 8.	YORKSHIRE. Holme Styes Reservoir, Holmfirth.	I	.....	.....	2 0	850	M 6'835 11'81 12'02 11'93 12'01	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	correct	In a box made of inch-wood, the sides of which being level with the rim of the gauge produce in-splashing. The orifice of the gauge being very large will compensate for this error. Hilly ground.	291.	
292.	April 8.	YORKSHIRE. Dunford Bridge Reservoir. <i>DEWSBURY WATER WORKS.</i> <i>Mr. G. Whitfield.</i>	II	Newman ?	.....	2 0	1100	M 11'943 11'81 12'02 11'93 12'01	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	correct	On west end of embankment, very exposed position.	292.	
293.	April 8.	YORKSHIRE. Dunford Bridge Station. <i>M. S. &amp; L. RAILWAY.</i>	VIII	Casartelli	8½ A.M.	3 2	954	M 11'943 8'48 8'50 8'46 8'50 M 8'485 8'55 8'40 8'42 8'48 M 8'478 7'83 8'02 7'98 8'10	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	1400- +·002 2760 +·007 4200 +·006 5550 +·011 7000 +·010 1430 correct 2780 +·005 4150 +·009 5570 +·009 7050 +·005	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	A short distance E. of station, on flattish ground. Hills rise to a considerable height in N.E.	293.	
294.	April 8.	YORKSHIRE. Carlcotes. <i>M. S. &amp; L. RAILWAY.</i>	VIII	Casartelli	9 a.m.	3 0	1075	M 8'485 8'55 8'40 8'42 8'48 M 8'478 8'50 8'51 8'48 8'50	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	1430 2780 +·005 4150 +·009 5570 +·009 7050 +·005	N.N.E. Tree 33°.	In field. The box holding this gauge was tilted nearly 5° to S.W., and had been so for some little time; had it levelled.	294.	
295.	April 9.	YORKSHIRE. Meltham Grange. <i>HUDDERSFIELD WATER WORKS.</i>	X	Negretti & Zambra	.....	1 1	925	M 7'982 8'50 8'51 8'48 8'50	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	1460 2900 4310 5700 5700	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	Good position in large flat field. Glass not accessible.	295.	
296.	April 9.	YORKSHIRE. Scope, Meltham. <i>E. C. GOODDY, ESQ.</i> <i>Mr. J. Taylor.</i>	VIII	Casartelli	Var.	3 8	1125	M 7'982 8'50 8'51 8'48 8'50 M 8'498 7'83 8'02 7'98 8'10 M 8'498 8'50 8'51 8'48 8'50	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	1460 2900 4310 5700 5700 7050 +·002 -·003 -·001 +·002 +·008	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	Near the centre of the moor, slight ridge in W.S.W., but its elevation only 10°. Position good.	296.	

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).			Equivalents of water. Scale-point. in.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							in.	in.	Grains.					
297.	1869. April 9.	YORKSHIRE. Broadstone Reservoir. DEWSBURY WATER WORKS.	II			ft. in. 2 0	feet. 1065						Gauge leaky, and not in use, level with reservoir bank.	297.
298.	April 9.	YORKSHIRE. Ingbirchworth. BARNSTABLE LOCAL BOARD. Mr. Brown.	X	Negretti & Zambra		1 0	950						In cottage garden N. of reservoir; country gently undulating.	298.
299.	April 9.	YORKSHIRE. Penistone Station. M. S. & L. RAILWAY.	VIII	Casartelli	9 a.m.	3 6	717						Gauge tilted $\frac{3}{4}$ of an inch to S.E.; position bad, being close to the top corner of a wall which drops 25 ft. abruptly below the gauge.	299.
300.	April 14.	YORKSHIRE. Redmires. SHEFFIELD WATER WORKS CO.	X	Negretti & Zambra		4 3	1100						In garden on N. bank of reservoir, rather exposed.	300.
301.	April 14.	YORKSHIRE. Redmires. SHEFFIELD WATER WORKS CO.	VI	Watkins & Hill		4 3	1100						15 ft. E. of No. 300.	301.
302.	April 15.	LANCASHIRE. Blackstone Edge. ROCHDALE CANAL COMPANY.	I		monthly.	2 6	1200						On west side of the Edge, in a very exposed part of the moor. Measuring-rod absent; apparently a good gauge.	302.
303.	April 15.	YORKSHIRE. Longwood Reservoir. HUDDERSFIELD WATER WORKS.	VI			4 11	600						At S.E. corner of lower reservoir bank; rapid fall to E. and S.	303.
304.	April 16.	YORKSHIRE. Fartown, Huddersfield. CAPT. CHICHESTER. Capt. Chichester.	III	Casella	9 a.m.	0 8	300						In garden N.E. of house, open position, undulating ground.	304.
305.	April 16.	YORKSHIRE. Dalton, Huddersfield. J. W. ROBSON, ESQ. J. W. Robson, Esq.	XI	Negretti & Zambra	9 a.m.	0 3	350						In level and rather sheltered garden.	305.
306.	April 16.	YORKSHIRE. Dalton, Huddersfield. J. W. ROBSON, ESQ. J. W. Robson, Esq.	X	Negretti & Zambra	9 a.m.	0 3	350						Close to No. 305.	306.
307.	April 19.	MIDDLESEX. Grove House, Tottenham. C. ASHFORD, ESQ. C. Ashford, Esq.	III	Smith & Beck	9 a.m.	2 0	.....						In large garden rather full of trees; no better position. Testing-glass broken. To be revisited.	307.

### EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked, M = mean).	Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.		
						Above ground.	Above sea-level.								
308.	1869, May 3.	DERBYSHIRE. Woodhead Station. <i>M. S. &amp; L. RAILWAY.</i> <i>Station Porter.</i>	VIII	Casartelli .....	9 a.m.	ft. in. 3 6	feet. 878	in. 8'50 8'50 8'50 8'50 M 8'500	in. '1 '2 '3 '4 '45 5'02 4'94 5'00 4'98 M 4'985	1450 2850 4250 5650 6450 470 980 1490 1990 2460	-.001 +.001 +.003 +.006 correct. +.005 +.001 -.002 -.004 +.001	.....	On slight mound, in gorge, 300 yards W. of W. entrance to the Woodhead Tunnel.	308.	
309.	May 3.	CHESHIRE. Woodhead Reservoir. <i>MANCHESTER WATER WORKS.</i>	XII	.....	9 & 9	o 6	850	11'95 12'05 12'00 11'93 M 11'983	.....	.....	.....	Near keeper's house, Woodhead reservoir; on ground sloping to S.W.	309.		
310.	May 3.	CHESHIRE. Woodhead Reservoir. <i>MANCHESTER WATER WORKS.</i>	II	Newman .....	6 a.m.	o 10	680	12'02 12'01 12'02 12'02	.....	.....	nearly correct, but see remarks.	In valley near the reservoir; quite open; rod attached.	310.		
311.	May 4.	CHESHIRE. Torrside. <i>MANCHESTER WATER WORKS.</i>	II	Newman .....	7 a.m.	1 6	600	12'01 12'02 12'01 12'02 12'02	.....	.....	correct.	In valley near keeper's house; good position.	311.		
312.	May 4.	CHESHIRE. Rhodes Wood Reservoir. <i>MANCHESTER WATER WORKS.</i>	II	Newman .....	6 a.m.	1 o	520	12'01 12'02 11'94 12'00 12'01	.....	.....	nearly correct.	Open situation in valley, running E.W.; rod attached, and rim curved.	312.		
313.	May 17.	MIDDLESEX. Squires Mount, Hampstead. <i>R. FIELD, ESQ.</i> <i>R. Field, Esq.</i>	III	Private .....	9 a.m.	1 o	380	11'993	5'00 5'00 5'02 4'98 M 5'000	'1 '2 '3 '4 '5	498 990 1500 1990 2480	correct. correct. -.003 -.001 correct.	N. Bush 40°. E. Trees 73°. W. Trees 38°.	The grounds being much wooded, this and the two following gauges are so arranged that from whatever point the rain has fallen, one of the gauges will be uninfluenced thereby, and the observations are tabulated accordingly.	313.
314.	May 17.	MIDDLESEX. Squires Mount, Hampstead. <i>R. FIELD, ESQ.</i> <i>R. Field, Esq.</i>	III	Casella .....	9 a.m.	1 o	380	5'00 5'02 4'98 5'03 4'98	'1 '2 '3 '4 '5	498 990 1500 1990 2480	correct. correct. correct. -.002 correct.	N. Bushes 49°. N.E. Elms 58°. W. Poplars 46°.	.....	314.	
315.	May 17.	MIDDLESEX. Squires Mount, Hampstead. <i>R. FIELD, ESQ.</i> <i>R. Field, Esq.</i>	III	Casella .....	9 a.m.	1 o	380	5'002 5'00 5'00 5'00 4'98 M 5'000	'1 '2 '3 '4 '5 '5	498 990 1500 1990 2480 498	correct. correct. -.003 -.001 correct.	N. Trees 58°. E. Elms 42°. S.W. Poplars 88°.	.....	315.	
316.	May 17.	MIDDLESEX. The Grove, Hampstead. <i>H. SHARPE, ESQ.</i> <i>H. Sharpe, Esq.</i>	XII	Casella .....	9 a.m.	50 o	470	5'00 5'00 5'00 5'00 4'96 M 5'000	'1 '2 '3 '4 '5 '5	498 998 1500 1990 2480 498	-.001 -.001 -.003 -.001 correct.	.....	On corner of gallery surrounding tower of house; very exposed position.	316.	
317.	May 17.	MIDDLESEX. The Grove, Hampstead. <i>H. SHARPE, ESQ.</i> <i>H. Sharpe, Esq.</i>	XII	Apps .....	9 a.m.	2 o	440	4'998 5'00 5'00 5'00 5'00 4'96 M 4'998	'1 '2 '3 '4 '5 '5	2470 498 998 1500 2000 2470 498	+.002 -.001 -.003 -.003 correct.	N.E. Wall 28°. S.E. Tree 40°. S. Shed 32°.	In small garden, rather shut in by walls and trees.	317.	
318.	July 5.	HAMPSHIRE. Highfield Park, Winchfield. <i>H. MARSON, ESQ.</i> <i>H. Marson, Esq.</i>	XII	Apps .....	9 a.m.	1 6	250	5'00 5'00 5'00 5'00 5'00 M 5'000	'1 '2 '3 '4 '5 '5	495 1000 1500 2005 2480 2500	+.001 correct. -.001 -.002 correct.	S.W. Apple 41°.	In level garden; very good position except as noted.	318.	

## EXAMINATION OF

ON THE FLOW AND ACTION OF WATER CONTAINING SOLID MATTER. 403

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).		Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
							Scale-point.	Grains.						
319.	1869. July 8.	BERKSHIRE. Forbury Gardens, Reading. BOARD OF HEALTH. Mr. Davis.	XI	Negretti & Zambra	9 a.m.	1 1 150	in. 4'98 5'01 5'00 5'00 5'00 M 4'997 4'98 5'02 4'98 5'01 M 4'998	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5 '5	500 1000 1480 1975 2480 500 1010 1505 2020 2505	—'001 —'002 + '001 + '001 —'001 —'001 —'002 —'004 —'008 —'006	S. Wellingtonia 38°.	In the gardens near the station; good position.	319.	
320.	July 8.	BERKSHIRE. Russell Street, Reading. DR. WORKMAN. Dr. Workman.	III	Knight .....	9 a.m.	1 6 150	Diameters (that marked M = mean).		Equivalents of water.		Error at scale-point specified in previous column.		Remarks on position &c.	

*Interim Report of the Committee on the Laws of the Flow and Action of Water containing Solid Matter in Suspension, consisting of T. HAWKSLEY, Professor RANKINE, F.R.S., R. B. GRANTHAM, Sir A. S. WAUGH, F.R.S., and T. LOGIN.*

YOUR Committee considered, in the first place, what experiments would be necessary in order to furnish the data required for the determination of the laws of the flow and action of water containing solid matter in suspension, and what would be the probable cost of these experiments. Their estimate of that cost was £5000, and they came to the conclusion that this was beyond the means of the Association. They had no authority to apply to the Government in the name of the British Association; but in their individual capacity they addressed a memorial to Her Majesty's Secretary of State for India, representing the practical value of such experiments, and especially their importance to the interests of India. That memorial was accompanied by a general description of the experiments required, and an estimate of their cost; and copies of all these documents are appended hereto. The Government, however, declined to accede to the application.

Your Committee beg leave to represent that, if reappointed, and invested with power to apply to the Government in the name of the British Association, their future application might meet with better success.

## APPENDIX.

## I. Flow of Water with Solid Matter in Suspension.

*Sketch of proposed Course of Experiments.*—1. It is proposed to apply for the temporary use of a piece of ground near London, and, if possible, in the neighbourhood of the Kew Observatory.

2. A canal to be constructed with a smooth bottom and sides of plate glass about 500 feet long, 5 feet broad, and 3 feet deep, and capable of being covered when required.

3. At one end of the canal will be a reservoir supplied with water by means

of a small pumping steam-engine, and containing mechanism for diffusing solid matter of different kinds in the water.

4. The water will be made to flow along the canal at first pure, and then with different proportions of different kinds of solid matter in suspension, and with different depths of current.

5. Observations will be made of:—

- A. The declivity of the surface of the water.
- B. The velocity of the current at the surface, bottom, sides, and intermediate points, also the mean velocity.
- C. The mode of motion of the particles as seen through the plate-glass sides of the trough.
- D. The rate at which solid matter is either deposited or swept away by the current under various circumstances.
- E. The temperature of the water.
- F. The direction and velocity of the wind when the trough is exposed to it.

6. Experiments to be made to determine the quantities of solid matter contained in samples of water taken from different points in the length, breadth, and depth of the trough.

7. Observations and experiments to be made with the inner surface of the trough roughened in various ways.

8. Also with weirs and other obstacles of different forms and in different positions.

9. The results of the observations and experiments to be compared with those of observations (so far as these have been recorded) made upon actual rivers and on the great scale.

10. The whole results to be submitted to mathematical analysis, in order to deduce general laws and practical rules from them.

11. The rough estimate of the outlay required for materials, work, and pay of assistants and workmen till the next Meeting of the British Association is £1500.

This is exclusive of the pay of the engineer from the Public Works De-

### EXAMINATION OF

**RAIN-GAUGES** (*continued from last Report*).

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY STATION. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).		Equivalents of water. Scale-point. Grains.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							in.	in.					
332.	1869. Aug. 28.	DEVON. Exeter Institution. THE INSTITUTION. Mr. Parfitt.	II.		9 a.m.	13 7 155	6·18 6·13 6·12 M 6·143					Previously examined in 1863 (see No. 88). This gauge is getting past work, and if the record is to be continued, a new one is required.	332.
333.	Aug. 30.	DEVON. Landscore, Teignmouth. MRS. CLARKE. Mrs. Clarke.	III.	Local .....	9 a.m.	0 3 125	5·05 5·03 5·02 M 5·025	'1 '2 '3 '4	500 980 1500 2000 2500	correct. +·004 correct. +·001		On lawn, in the best position the grounds afford.	333.
334.	Aug. 31.	DEVON. Chagford, Moreton Hampstead. R. L. BERRY, ESQ. R. L. Berry, Esq.	III.	Private .....	monthly.	0 7 575	4·98 4·98 5·01 4·99 M 4·990	'1 '2 '3 '4 '5	400 780 1135 1500 1960 2380	+·019 +·042 +·070 +·096 +·103 +·118	N.W. Tree 52°. Observer said he knew his gauge was wrong, and divided by 1·16, which brought it right, but it does not; e.g. $5 \div 1\cdot16 = 4\cdot31 = 2125$ grn.; but the glass holds only 1960, therefore there is still an error of ·031. A new and correct glass has been substituted.	334.	
335.	Aug. 31.	DEVON. Bishopsteignton. THE REV. S. M. SCROGGS. The Rev. S. M. Scroggs.	III.	Elliot .....	9 a.m.	6 0 120	5·03 5·05 5·03 5·05 M 5·040	'1 '2 '3 '4 '5	500 1020 1500 2000 2500	+·001 −·002 +·002 +·003 +·004		On a post in kitchen garden; if nearer ground it would be sheltered by trees and shrubs; a few hundred yards W. of the church.	335.
336.	Sept. 1.	DEVON. Druid House, Ashburton. F. AMERY, ESQ. F. Amery, Esq.	.....	Private .....	9 a.m.	Level.	2·60 2·50 2·55 2·55	'2 '5 '0 '5	234 580 1200 1800	+·018 +·048 +·066 +·098		A privately constructed gauge placed close to a shelving bank. A new gauge has since been placed on level ground.	336.
337.	Sept. 1.	DEVON. Middlecote House, Ilsington. A. LYON, ESQ. A. Lyon, Esq.	VIII.	Casartelli .....	3 6	639	8·40 8·55 8·50 8·50 M 8·488	'10 '18 '39	1445 2600 5600	−·001 −·002 −·002	N. House 28°.	Near a hedge which was about 10° above the gauge; observer said he had intended to have it clipped, and it should be done at once.	337.
338.	Sept. 2.	DEVON. Rose Hill Cottage, Newton Bushell. MRS. HARRIS. Mrs. Harris.	III.	Funnel, Anon. Glass, Pastorelli.	9 a.m.	1 0 64	5·05 5·08 5·08 5·05 M 5·058	'1 '2 '3 '4 '5	500 970 1480 2000 2480	+·001 +·009 +·008 +·006 +·011		In garden but not at work; observations to be resumed forthwith.	338.
339.	Sept. 2.	DEVON. Lamorna, Torquay. BRITISH ASSOCIATION. W. Penkelly, Esq., F.R.S.	III	Casella .....	9 a.m.	0 9 205	5·00 5·00 5·01 4·99 M 5·000	'2 '3 '3 '4 '5	990 1490 1680 1870 2480	correct. correct. +·001	S. Trees 48°. S.E. Trees 45°.	On lawn, in best position possible.	339.
340.	Sept. 2.	DEVON. Lupton, Brixham. Mr. G. Erskine.	IV	.....	3 0	200	12·05 11·98 12·01 12·00 M 12·010	'1 '3 '5 '2	2870 8580 14780	correct. correct. −·017	S.E. Pear 32°.	In gardens very well placed.	340.
341.	Sept. 3.	DEVON. Fore Street, Kingsbridge. G. FOX. G. Fox.	III	Glass, Casella. Funnel, Private.	.....	0 6 68	5·00 5·00 5·00 5·00 M 5·000	'1 '2 '3 '4 '5	500 970 1480 1970 2460	−·001 +·004 +·001 +·003 +·004	S.W. Laburn. 70°. N. House 52°.	Very flat rim; position obviously very bad. Recommended that this gauge should remain in its position till the end of the year.	341.

### **EXAMINATION OF**

### RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	
						Above ground.	Above sea-level.		Scale-point.	Grains.				
342.	Sept. 3.	DEVON. Fore Street, Kingsbridge. <i>G. FOX.</i> <i>G. Fox.</i>	III		ft. in. o 6	feet. 68	in. 4'96 5'01 4'98 5'03	M 4'995	in. .1 500 1000 1480 2000 2490	—.001 —.002 +.001 —.004 —.002		Close to 342, but not in use. Recommended that it be moved to another and more open part of the garden and compared with No. 341.	342.	
343.	Sept.	DEVON. Burton, Kingsbridge. <i>W. BALKWILL, ESQ.</i> <i>W. Balkwill, Esq.</i>	XII	Burrow .....	weekly & 1st of month.	5 6	200	5'00 5'03 4'99 4'98 M 5'000	.2 1000 1460 2000 .5	—.001 —.002 +.001 —.004 —.002		Gauge stands about 1 foot above a bank running S. to N., and is fully exposed.	343.	
344.	Sept. 3.	DEVON. Bolt Tail, Kingsbridge. <i>W. BALKWILL, ESQ.</i> <i>W. Balkwill, Esq.</i>	III			1 0	297	5'03 5'02 5'05 5'07	.1 2 1480 .4	490 980 1480 1970	+.003 +.004 +.010 +.010		Gauge in open moorland quite exposed, but concealed from view by loose stones, among which it is placed.	344.
345.	Sept. 6.	DEVON. Prison Reservoir, Dartmoor. <i>MR. WATTS.</i> <i>Mr. Watts.</i>	III	Casella .....	9 a.m.	o 2	1400	M 5'042 5'000 5'01 5'01 4'99	.5 1 2 3 .47	500 1000 1480 2300	—.001 —.002 +.002 +.006	N. Trees 20°. E.N.E. Trees 70°. S. Trees 72°.	Trees have grown considerably round this gauge since my former visit in 1863 (see No. 70). Mr. Watts promised to speak to the Governor on the subject.	345.
346.	Sept. 6.	DEVON. North Hessary Tor, Dartmoor. <i>MR. WATTS.</i> <i>Mr. Watts.</i>	VIII			o 6	1596	M 5'002 4'97 5'01 4'98 5'02	.1 2 3 .47	500 1000 1480 2300	—.001 —.002 +.001 +.005		New gauge in the same position as No. 71. Quite open.	346.
347.	Sept. 7.	DEVON. Powder Mills, Dartmoor. <i>BRITISH ASSOCIATION.</i> <i>Mr. Henwood.</i>	XII	Casella .....	9 a.m.	1 0	1200	M 4'995					Gauge not erected at time of visit, but site was selected, where it will be very well situated and daily observations are promised.	347.
348.	Sept. 8.	DEVON. Mount Tavy, Tavistock. <i>MISS CARPENTER.</i>	III	Casella .....		1 0	316	5'00 5'00 5'00 5'00 5'00	.1 2 3 4 .5	500 990 1490 1980 2470	—.001 correct. correct. +.001 +.002	N.N.E. Beech 55°. E. Trees 50°.	In small garden S. of a small cottage by the side of the road to Dartmoor, about $\frac{1}{4}$ of a mile from Mount Tavy.	348.
349.	Sept. 8.	DEVON. West Street, Tavistock. <i>T. WINDEATT, ESQ.</i> <i>T. Windatt, Esq.</i>	.....	Anon .....	monthly.	4 6	236	M 5'000 1'00 sq. 1'00 1'01 1'02	.5 1'00 1'00 1'01 1'02	25 250 1250 2510	+.002 +.002 +.120 +.200		A unique gauge 1 square inch in area, mounted on a post in a rather sheltered garden.	349.
350.	Sept. 8.	DEVON. Old Town Street, Plymouth. <i>A. P. BALKWILL, ESQ.</i> <i>A. P. Balkwill, Esq.</i>	III	Anon .....	weekly.	35 o	150	M 1'003 5'00 5'06 5'02 5'03	.3 1'00 1'01 1'02 1'00	500 990 1495 1975 2455	correct. +.003 +.002 +.006 +.010		Gauge passes through, and its orifice is about 6 inches above the flat lead roof of a large warehouse; the bottle is supported by a small shelf beneath. Position very exposed.	350.
351.	Sept. 9.	CORNWALL. Port Eliot, St. Germans. <i>RT. HON. EARL ST. GERMANS.</i> <i>Mr. Lynch.</i>	IV	Dixey .....	9 a.m.	4 o	81	M 5'023 12'23 11'72 12'10 11'84	.5 .1 .2 .3 .4	3000 5630 8610 11370	—.005 +.002 —.003 correct.	N. Trees 55°.	Good position in the gardens.	351.
352.	Sept. 10.	CORNWALL. Regent's Parade, Penzance. <i>W. H. RICHARDS, ESQ.</i> <i>W. H. Richards, Esq.</i>	IV	Negretti & Zambra	irregular & 1st of month.	3 o	94	M 11'973 12'00 11'93 12'00 12'00	.5 .1 .2 5810	14280 3250 5810	—.002 —.014 —.004	S.E. Workshop 25°. S. Flagstaff 80°.	In small grass enclosure, rather shut in by walls; however, nothing but the flagstaff rises 30°.	352.

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground, Above sea-level.	Diameters (that marked M=mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							in.	ft. in.	feet.	in.	Scale-point.	Grains.		
353.	1869. Sept. 10.	CORNWALL. Penalverne, Penzance. <i>T. S. BOLITHO, ESQ.</i>	VII	Casella .....	*	ft. in. o 6	in.	150	in. 10'00 sq. 10'00 " 10'00 " 10'00 "	.....	.....	.....	On lawn, very good position, glass not accessible.	353.
354.	Sept. 11.	CORNWALL. Sawah, Penzance. <i>MR. J. SAUNDRY.</i> <i>Mr. J. Saundry.</i>	X	Whitley .....	4 o?	320?	M	11'3?	'10 '145	2510 3580	—'001 —'002	.....	Altitude uncertain, barometer falling rapidly, and great gale blowing. Funnel lost and gauge dismantled.	354.
355.	Sept. 11.	CORNWALL. St. Senen, Land's End. <i>REV. G. L. WOOLLCOMBE.</i> <i>Rev. G. L. Woolcombe.</i>	III	Casella .....	weekly & 1st of month.	4 o	290?	5'00 4'98 5'02 5'00	'1 '2 '4 '5	500 1000 1980 2460	+ '001 + '004 + '007	.....	Altitude uncertain; see above. Gauge partly sunk in a bank E. of the house, within a short distance of the Land's End.	355.
356.	Sept. 13.	CORNWALL. St. Ruan Rectory, Helstone. <i>THE REV. F. C. JACKSON.</i> <i>The Rev. F. C. Jackson.</i>	II	Liddell .....	9 a.m.	2 8	110	M 5'00 8'20 8'05 8'13 8'07 M 8'13	'10 '1-2 '2-3 '3-4 '4-5 '5-6	4920 1300 1270 1310 1230 1270	correct.	S. Trees 43°. W. House 30°.	In garden, rather sheltered and below the level of the surrounding country.	356.
357.	Sept. 13.	CORNWALL. Helstone. <i>M. P. MOYLE, ESQ.</i> <i>M. P. Moyle, Esq.</i>	III	Knight .....	5 o	115	4'77 5'27 4'85 5'13	'2 '3 '4 '5	970 1450 1940 2400	+ '005 + '008 + '009 + '017	.....	In a garden sloping to S.E. so rapidly that though the gauge is on the ridge of an outhouse, it is only 5 ft. above the garden close to it. The funnel was loose, and much knocked about by (I suppose) having been often blown away.	357.	
358.	Sept. 13.	CORNWALL. Antron Lodge, Helstone. <i>THE REV. H. J. A. FOTHERGILL.</i> <i>The Rev. H. J. A. Fothergill.</i>	III	Anon .....	9 a.m.	6 o	235	M 5'00 5'08 5'07 5'00	'1 '2 '3 '4	2910 880 1320 1750	+ '014 + '025 + '038 + '053	.....	Gauge in orchard, attached to a dwarf post.	358.
359.	Sept. 13.	CORNWALL. Antron Lodge (Orchard). <i>THE REV. H. J. A. FOTHERGILL.</i> <i>The Rev. H. J. A. Fothergill.</i>	III	Anon .....	1 1	234	M 5'03 5'00 4'97 5'00	'1 '2 '3 '4	440 850 1300 1710	+ '011 + '028 + '036 + '054	.....	In field, near 358, clear of all objects. [Note.—I believe Mr. Fothergill makes some mental correction to the readings of his gauges, the nature of which I could not understand. Recommended to procure gauges of the ordinary construction.]	359.	
360.	Sept. 14.	CORNWALL. Penzance. <i>THE REV. PREBENDARY HEDGELAND.</i>	IV	Negretti & Zambra preceding.	9 a.m.	3 6	185	M 4'993 12'04 11'98 11'90 12'04	'1 '1 '45 13'460	2970 13460	—'004 + '022	E. House 28°. S. Trees 35°. W. " 32°.	This and No. 361 had not been regularly observed for some time; fresh positions were selected for them, and observations will be recommended forthwith.	360.
361.	Sept. 14.	CORNWALL. Penzance. <i>THE REV. PREBENDARY HEDGELAND.</i>	III	Whitley .....	not in use.	1 o	180	M 1'990 5'08 5'10 5'03 5'05	'0-5 '5-10 '0-15 '5-20	2650 2500 2550 2440	—'021 + '009 —'021 + '021	.....	361.	
362.	Sept. 17.	CORNWALL. Tresco Abbey, Scilly Islands. <i>AUGUSTUS SMITH, ESQ.</i> <i>Mr. Hawkins.</i>	X	Whitley .....	9 a.m.	2 8	50	M 5'05 11'42 11'21 11'30 11'30	'1 '2 '3 8000	2550 6000 + '013 —'015	N.E. Bank 15°.	In gardens, very good position, but very flimsy and indifferent gauge.	362.	
363.	Sept. 17.	CORNWALL. Parade, St. Mary's, Scilly Islands. <i>J. G. MOYLE, ESQ.</i> <i>J. G. Moyle, Esq.</i>	X	Whitley .....	1 o?	20	M 1'308 M 1'3?	'1 '0 '3	230 2500 3220	.....	S. Gable end 30°.	Observations discontinued. Funnel lost. A new gauge has since been purchased by Mr. Moyle, and erected on the site of the old one in small garden in rear of house. No obstruction except as noted.	363.	

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.	Diameters (that marked M = mean).		Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							Scale-point.	Grains.					
364.	1869. Sept. 20.	CORNWALL. The Battery, Penzance. METEOROLOG. COMMITTEE. Mr. Senior.	X	Negretti & Zambra	8 a.m.	ft. in. 1 2	feet. 60	in. 7'98 7'95 7'92 7'98	in. 1300 6380	— <sup>003</sup> — <sup>003</sup>	.....	Standing on gravel in the battery of the Penzance Artillery Corps; an open position, but the gauge has to be moved whenever drill is going on.	364
365.	Sept. 21.	CORNWALL. Tehidy Gardens, Redruth. CAPT. BASSET. Mr. Mills.	III	Anon .....	9 a.m. 1st of month.	o 4	160	M 7'958 5'04 5'03 5'10 5'09	520 2040 5630 8080	— <sup>002</sup> + <sup>020</sup> + <sup>024</sup> + <sup>012</sup>	S.E. Beans 58°. S.W. , 54°.	Gauge standing loosely on funnel, not level, and shut in on the south by rows of beans; the old observer had left, and the new gardener was not aware of the importance of accuracy.	365.
366.	Sept. 21.	CORNWALL. Kimberley Place, Falmouth. LOVEL SQUIRE, ESQ. Lovel Squire, Esq.	III	Anon .....	10 a.m.	40	o 223	M 5'065 10'20 sq. 10'06 10'00 10'20	1210 2160 2510	+ <sup>003</sup> + <sup>006</sup> + <sup>003</sup>	.....	This gauge is a very old one inserted in the masonry of the new observatory tower built by the Meteorological Committee. It will not give even the rainfall on the tower correctly, as its rim is only an inch or two above the masonry, and therefore insplashing is inevitable.	366.
367.	Sept. 22.	CORNWALL. Coast-Guard House, New Quay. MR. TREGIDGO. Mr. Tregidgo.	II	Liddell .....	9 a.m.	1 9	90	M 10'115 6'00 6'00 6'02 6'00	690 680 700 730	— <sup>003</sup> — <sup>005</sup> — <sup>002</sup> + <sup>002</sup>	W. II house 20°.	Very good position in the large garden of the station.	367.
368.	Sept. 23.	CORNWALL. Penarth, Truro. N. WHITLEY, ESQ. N. Whitley, Esq.	X	Whitley .....	9 a.m.	1 0	190	M 6'005 11'30 11'27 11'30 11'41	700 2550 5150 7530	— <sup>002</sup> correct. — <sup>003</sup> + <sup>004</sup>	S.W. Tree 52°. N. House 48°.	Funnel fits loosely on can, and is prevented from being blown away by a large stone placed in it. Position not good, but no better available.	368.
369.	Sept. 23.	CORNWALL. Royal Institution, Truro. THE INSTITUTION. Mr. W. Newcombe.	VII	.....	9 a.m.	40	o 56	M 11'320 10'10 sq. 10'12 10'34 10'15	2500 5050 7480	+ <sup>004</sup> + <sup>006</sup> + <sup>013</sup>	.....	Funnel very old, had been previously repaired many times, but was coming to pieces; recommended that it should be repaired once more, and recorded simultaneously with a new gauge to be placed by its side on the roof.	369.
370.	Sept. 23.	CORNWALL. St. Agnes. MR. J. OPIE. Mr. J. Opie.	X	Whitley .....	1 0	278	M 10'178 11'16 11'15 11'30 11'06	2450 3655	+ <sup>001</sup> + <sup>002</sup>	S.W. Trees 28°.	In garden, E.S.E. of St. Agnes' church; fair position, but very rough gauge. The measuring-glass had been broken, and mended with sealing-wax and a cork. Good gauge, in good position.	370.	
371.	Sept. 23.	CORNWALL. Strangeway's Terrace, Truro. C. BARHAM, ESQ., M.D. C. Barham, Esq., M.D.	II	Liddell .....	9 a.m.	2 6	71	M 11'168 8'05 8'00 7'98 8'03	1300 2530 2580 1300	— <sup>002</sup> + <sup>001</sup> — <sup>003</sup> — <sup>002</sup>	.....	.....	371.
372.	Sept. 24.	CORNWALL. Trevarna, St. Austell. W. COODE, ESQ. W. Coode, Esq.	III	Casella .....	9 a.m.	o 6	300	M 8'015 4'93 5'03 4'90 5'08	495 990 1490 1970	correct. — <sup>001</sup> — <sup>002</sup> correct.	N.W. Trees 38°. S.W. , 27°.	Gauge not a true circle, but otherwise correct. Mr. Coode, however, decided on having a new one as a check.	372.
373.	Sept. 24.	CORNWALL. Castle Street, Bodmin. CAPT. LIDDELL, R.N. Capt. Liddell, R.N.	II	Liddell .....	2 6	338	M 4'955 8'05 8'00 8'04 8'02	2460 1230 2550 3710 6540	+ <sup>001</sup> + <sup>004</sup> + <sup>001</sup> + <sup>010</sup> — <sup>011</sup>	W.N.W. Walnut 49°. E.S.E. II house 48°.	In garden, in rear of house, fair position, and the best obtainable.	373.	
374.	Sept. 24.	CORNWALL. Castle Street, Bodmin. CAPT. LIDDELL, R.N. Capt. Liddell, R.N.	XII	.....	o 1	338	M 8'028 5'00 5'02 5'04 5'02	500 1000 1500 2000	correct. correct. correct. correct.	.....	Close to No. 373, upright rim, and zinc receiver.	374.	

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M=mean).			Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							ft. in.	feet.	in.					
375.	Sept. 24.	CORNWALL. Castle Street, Bodmin. CAPT. LIDDELL, R.N. Capt. Liddell, R.N.	III	Casella .....		ft. in. 1 0	feet. 333	5'02	'1	500	in. correct.	.....	Close to No. 373.	375.
376.	Sept. 24.	CORNWALL. Fore Street, Bodmin. A. HAMBLY, ESQ. A. Hambly, Esq.	II	Liddell .....	9 a.m.	2 6	336	5'02	'2	1000	correct.	.....	.....	376.
377.	Sept. 25.	CORNWALL. Trebarrock House. F. B. HAMBLY, ESQ. F. B. Hambly, Esq.	II			4 0	303	5'00	'3	1500	-'001	.....	.....	377.
378.	Sept. 25.	CORNWALL. Trebarrock House. F. B. HAMBLY, ESQ. F. B. Hambly, Esq.	XI	Negretti & Zambra .....		2 9	303	5'02	'4	2000	-'001	.....	.....	378.
379.	Sept. 25.	CORNWALL. Park Villa, Endellion. MISS GUY. Miss Guy.	II	Liddell .....		3 0	277	5'00	'5	2500	-'001	S.W. Tree 22°.	In garden, sloping to N. Rim of funnel very round, and difficult to measure.	379.
380.	Sept. 25.	CORNWALL. Trezlines, St. Minver. MR. T. LIDDELL. Mr. T. Liddell.	II	Liddell .....		3 0	140	4'99	'6	7880	-'014	N. House 40°. W. Trees 32°.	On lawn, ground undulating.	380.
381.	Sept. 25.	CORNWALL. Guinea Port, Wadebridge. MR. JORDAN. Mr. Jordan.	II	Liddell .....	8 a.m.	2 6	23	5'00	'7	1320	-'003	N. House 33°.	Near No. 377, but further from the house; glass inaccessible.	381.
382.	Sept. 27.	CORNWALL. Warleggan, Bodmin. THE REV. D. CLEMENTS. The Rev. D. Clements.	II	Liddell .....		2 6	550	5'00	'8	2590	-'001	E.N.E. House 32°. S.S.E. " 21°. W.S.W. " 32°.	This gauge was used at Roscarrock (about 2 miles hence) for several years. It is now well placed at corner of carriage drive.	382.
383.	Sept. 27.	CORNWALL. Trevalga Rectory, Boscastle. THE REV. W. H. JAMES. The Rev. W. H. James.	X	Negretti & Zambra .....	irregular.	0 6	540	5'00	'9	10210	correct.	.....	On grass plot in centre of small quadrangle.	383.
384.	Sept. 28.	CORNWALL. Lanteglos Rectory, Camelford. THE REV. J. T. WILKINSON.	II	Skinner .....		2 6	403	5'00	'10	12810	correct.	S.W. House 40°.	In small front garden, close to terminus of the Wadebridge railway.	384.
385.	Sept. 28.	CORNWALL. Altarnum, Launceston. C. U. TRIPP, ESQ.			9 a.m.	0 10	570	5'00	'11	12625	-'002	N. House 42°.	Observer absent, gauge had been upset, and no observations taken; the float (a bung) was saturated and would not act; corrected it, and it read as per previous column.	385.
								5'02	'12	5085	+'003	.....	.....	
								5'00	'13	7620	+'005	.....	.....	
								5'00	'14	12550	+'015	.....	.....	
								5'00	'15	12550	-'015	.....	.....	
								5'00	'16	12550	-'015	.....	.....	
								5'00	'17	12550	-'015	.....	.....	
								5'00	'18	12550	-'015	.....	.....	
								5'00	'19	12550	-'015	.....	.....	
								5'00	'20	12550	-'015	.....	.....	
								5'00	'21	12550	-'015	.....	.....	
								5'00	'22	12550	-'015	.....	.....	
								5'00	'23	12550	-'015	.....	.....	
								5'00	'24	12550	-'015	.....	.....	
								5'00	'25	12550	-'015	.....	.....	
								5'00	'26	12550	-'015	.....	.....	
								5'00	'27	12550	-'015	.....	.....	
								5'00	'28	12550	-'015	.....	.....	
								5'00	'29	12550	-'015	.....	.....	
								5'00	'30	12550	-'015	.....	.....	
								5'00	'31	12550	-'015	.....	.....	
								5'00	'32	12550	-'015	.....	.....	
								5'00	'33	12550	-'015	.....	.....	
								5'00	'34	12550	-'015	.....	.....	
								5'00	'35	12550	-'015	.....	.....	
								5'00	'36	12550	-'015	.....	.....	
								5'00	'37	12550	-'015	.....	.....	
								5'00	'38	12550	-'015	.....	.....	
								5'00	'39	12550	-'015	.....	.....	
								5'00	'40	12550	-'015	.....	.....	
								5'00	'41	12550	-'015	.....	.....	
								5'00	'42	12550	-'015	.....	.....	
								5'00	'43	12550	-'015	.....	.....	
								5'00	'44	12550	-'015	.....	.....	
								5'00	'45	12550	-'015	.....	.....	
								5'00	'46	12550	-'015	.....	.....	
								5'00	'47	12550	-'015	.....	.....	
								5'00	'48	12550	-'015	.....	.....	
								5'00	'49	12550	-'015	.....	.....	
								5'00	'50	12550	-'015	.....	.....	
								5'00	'51	12550	-'015	.....	.....	
								5'00	'52	12550	-'015	.....	.....	
								5'00	'53	12550	-'015	.....	.....	
								5'00	'54	12550	-'015	.....	.....	
								5'00	'55	12550	-'015	.....	.....	
								5'00	'56	12550	-'015	.....	.....	
								5'00	'57	12550	-'015	.....	.....	
								5'00	'58	12550	-'015	.....	.....	
								5'00	'59	12550	-'015	.....	.....	
								5'00	'60	12550	-'015	.....	.....	
								5'00	'61	12550	-'015	.....	.....	
								5'00	'62	12550	-'015	.....	.....	
								5'00	'63	12550	-'015	.....	.....	
								5'00	'64	12550	-'015	.....	.....	
								5'00	'65	12550	-'015	.....	.....	
								5'00	'66	12550	-'015	.....	.....	
								5'00	'67	12550	-'015	.....	.....	
								5'00	'68	12550	-'015	.....	.....	
								5'00	'69	12550	-'015	.....	.....	
								5'00	'70	12550	-'015	.....	.....	
								5'00	'71	12550	-'015	.....	.....	
								5'00	'72	12550	-'015	.....	.....	
								5'00	'73	12550	-'015	.....	.....	
								5'00	'74	12550	-'015	.....	.....	
								5'00	'75	12550	-'015	.....	.....	
								5'00	'76	12550	-'015	.....	.....	
								5'00	'77	12550	-'015	.....	.....	
								5'00	'78	12550	-'015	.....	.....	
								5'00	'79	12550	-'015	.....	.....	
								5'00	'80	12550	-'015	.....	.....	
								5'00	'81	12550	-'015	.....	.....	
								5'00	'82	12550	-'015	.....	.....	
								5'00	'83	12550	-'015	.....	.....	
								5'00	'84	12550	-'015	.....	.....	
								5'00	'85	12550	-'015	.....	.....	
								5'00	'86	12550	-'015	.....	.....	
								5'00	'87	12550	-'015	.....	.....	
								5'00	'88	12550	-'015	.....	.....	
								5'00	'89	12550	-'015	.....	.....	
								5'00	'90	12550	-'015	.....	.....	
								5'00	'91	12550	-'015	.....	.....	
								5'00	'92	12550	-'015	.....	.....	
								5'00	'93	12550	-'015	.....	.....	
								5'00	'94	12550	-'015	.....	.....	
								5'00	'95	12550	-'015	.....	.....	
								5'00	'96	12550	-'015	.....	.....	
								5'00	'97	12550	-'015	.....	.....	
								5'00	'98	12550	-'015	.....	.....	
								5'00	'99	12550	-'015	.....	.....	
								5'00	'00	12550	-'015	.....	.....	
								5'00	'01	12550	-'015	.....	.....	
								5'00	'02	12550	-'015	.....	.....	
								5'00	'03	12550	-'015	.....	.....	
								5'00	'04	12550	-'015	.....	.....	
								5'00	'05	12550	-'015	.....	.....	
								5'0						

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
								Scale-point.	Grains.					
386.	1869. Sept. 28.	CORNWALL. Hexworthy, Launceston. H. M. HARVEY, ESQ. H. M. Harvey, Esq.	XI	Negretti & Zambra	ft. in.	feet.	in.	'1	498	in. correct.	W.S.W. Greenhouse 18°.	On lawn, very good position; glass broken, only 0·20 of it left.	386.	
387.	Sept. 29.	CORNWALL. Coryton, Lew Down. MR. T. SYMONS. Mr. T. Symons.	IV	Carter, Exeter	8 a.m.	6 0	445	5'00 5'01 5'02 5'03 M 5'008	'2 '3 '4 '5 '6	990	+·001	.....	Very good gauge, very firmly fixed in an open garden.	387.
388.	Sept. 29.	DEVON. Sheepstor, Dartmoor. PLYMOUTH WATER WORKS. Mr. Shillabeer.	III	Anon	9 a.m.	0 10	693	4'95 5'05 4'98 5'03 M 5'003	'1 '2 '3 '4 '5	490 980 1460 1990 2450	+·001 +·002 +·006 -·001 +·006	S.W. Tree 40°.	In garden, in a valley about $\frac{1}{2}$ mile N.W. of Sheepstor church.	388.
389.	Sept. 30.	CORNWALL. White Rock, Hingston Down. CAPT. RICHARDS. Capt. Richards.	X	Whitley	9 a.m.	1 0	760	11'23 11'20 11'28 11'38 M 11'297	'1 '2 '3 '25	2530 5100 6280	-·001 +·002	.....	In a garden, near the crest of the hill; exposed position.	389.
390.	Sept. 30.	CORNWALL. Church Street, Callington. DR. KEMPTHORNE. Mr. Brown.	III	Casella	9 a.m., pre- ceding.	3 0	490	4'99 5'00 5'00 4'99 M 4'995	'1 '2 '3 '4 '5	480 970 1480 1970 2480	+·003 +·004 +·001 +·002 -·001	.....	In a small rockery, in garden, near the church; position good.	390.
391.	Sept. 30.	CORNWALL. Pentillie Gardens, Saltash. COL. CORYTON. Mr. Edwards.	III	Casella	9 a.m., pre- ceding.	1 3	162	5'00 5'01 5'00 4'99 M 5'000	'2 '3 '4 '5	495 980 1480 1950 2490	+·002 +·001 +·007 -·002	.....	In kitchen gardens, which slope towards S.W.; gauge is in the flattest part of them, and unsheltered.	391.
392.	Sept. 30.	CORNWALL. Pentillie Castle, Saltash. MISS CORYTON. Miss Coryton.	III	Anon	.....	1 6	.....	5'00 5'00 5'00 4'99 M 4'998	'5 '55	295	-·004	.....	Old gauge, no longer used. The funnel has a very round rim; only the bottom of the measuring-glass remains.	392.
393.	Oct. 1.	CORNWALL. Liskeard. S. JENKIN, ESQ., C.E. S. Jenkin, Esq., C.E.	XI	Negretti & Zambra	9 a.m.	1 1	375	5'00 5'01 4'99 5'00 M 5'000	'1 '2 '3 '4 '5	480 950 1460 1970 2460	+·003 +·008 +·005 +·003 +·004	N. Tree 31°. S. Tree 42°.	In garden, clear except as noted.	393.
394.	Oct. 1.	CORNWALL. Liskeard. S. JENKIN, ESQ., C.E. S. Jenkin, Esq., C.E.	II	Liddell	.....	2 6	377	8'00 8'10 7'97 8'15	'-1 '-2 '-3 '-4	1310 1250 1290 1300	-·002 +·003 correct -·001	N.E. Trees 70°. S.W. Trees 52°.	In kitchen garden, no better position available.	394.
395.	Oct. 1.	CORNWALL. Catchfrench, St. Germans. MISS GLANVILLE. Miss Glanville.	X	Negretti & Zambra	10 a.m.	0 7	270	7'98 8'00 7'98 8'00 M 7'990	'1 '2 '3 '4 '5	1290 2560 3840 5100 6330	-·002 -·002 -·003 -·003 correct	N.E. House 30°. S. Trees 22°.	On large lawn in front of house; good position.	395.
396.	Oct. 1.	DEVON. Gaseorne Place, Plymouth. J. MERRIFIELD, ESQ., F.R.A.S. J. Merrifield, Esq., F.R.A.S.	X	Negretti & Zambra	8 a.m.	26 6	100	8'00 8'00 8'00 8'00 M 8'000	'2 '3 '4 '5	1280 2580 3860 5100 6300	-·001 -·003 -·004 -·002 +·004	S.W. House 50°. W. House 50°. N.W. House 50°.	Very bad position, on a roof quite commanded by others. No better position on the premises.	396.

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.*	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							Scale-point.	Grains.	in.	in.				
397.	1869. Oct. 1.	DEVON. Ivy Bridge. DR. LIDDELL. Dr. Liddell.	II	Liddell .....		ft. in.      feet.	10'00 sq.	'0—'1	2560	—'001	W.N.W. Apple 50°	Good position except as noted. Have been informed the tree has been removed.	397.	
							10'03	'1—'2	2560	—'001				
							10'00	'2—'3	2540	correct.				
							10'05	M 10'020						
398.	1870. May 5.	KENT. Heathfield Lodge, Chislehurst. F. NUNES, ESQ. F. Nunes, Esq.	XI	Negretti & Zambra	9 a.m. daily.	2 0      295	5'00	'1	500	—'001				398.
							5'01	'2	980	—'003				
							5'00	'3	1450	+ '008				
							5'01	'4	1950	+ '007				
							M 5'005	'5	2450	+ '007				
							8'00	'1	1250	+ '001				
							8'00	'2	2540	correct.				
							7'98	'3	3750	+ '005				
							8'02	'4	5050	+ '002				
							M 8'000	'5	6360	—'001				
							5'02	'1	510	—'002	S.W. Cedar 48°		400.	
							5'00	'2	1000	correct.				
							5'00	'3	1480	+ '004				
							5'03	'4	1980	+ '004				
							M 5'018	'5	2500	—'001				
400.	May 5.	KENT. Sidecup, Foot's Cray. MISS BERENS. Miss Berens.	III	Knight .....	weekly & 1st of month.	0 7      231					E. House 58°.	Good position except as noted; to be moved about 100 ft. to N.; will then be slightly sheltered from N.E., but quite open to S.W.	400.	
401.	May 5.	KENT. Bickley. G. F. CHAMBERS, ESQ., F.R.A.S. G. F. Chambers, Esq., F.R.A.S.	III	Casella .....		1 0      240	5'05					Gauge in garden border, funnel not level, glass inaccessible, as observer was absent.	401.	
							4'96							
							4'98							
							5'01							
							M 5'000							
402.	May 5.	KENT. West Wickbam. REV. J. T. AUSTEN. Rev. J. T. Austen.	X	Anon .....		1 3      257	12'30					In kitchen garden on western slope, and near the top of a small hill. Observer absent, and measuring-apparatus inaccessible.	402.	
							12'20							
							12'20							
							12'25							
							M 12'238							
403.	May 5.	KENT. Bromley Common. REV. A. RAWSON. Rev. A. Rawson.	X	Negretti & Zambra	9 a.m.	1 0      250	8'00	'1	1300	—'003			Well placed in large kitchen garden.	403.
							7'98	'2	2515	+ '002				
							8'00	'3	3750	+ '004				
							8'00	'4	5050	+ '002				
							M 7'995	'5	6350	—'001				
							8'03	'1	1255	+ '001				
							7'93	'2	2550	—'002	S.E. Fir 55°.		404.	
							8'03	'3	3800	—'001	N.W. Yew 40°.			
							7'92	'4	5050	correct.				
							M 7'978	'5	6310	correct.				
							5'02	'1	495	correct.				
							4'99	'2	1000	—'002				
							5'01	'3	1500	—'003				
							4'97	'4	1980	correct				
							M 4'998	'5	2460	+ '003				
							8'03	'1	1270	correct.				
							7'98	'2	2550	—'001				
							8'00	'3	3820	—'001				
							M 7'98	'4	5100	—'002				
							7'98	'5	6310	+ '003				
							5'00	'1	495	correct.				
							4'99	'2	990	correct.				
							5'00	'3	1490	—'001				
							5'01	'4	1980	+ '001				
							M 5'000	'5	2480	correct.				
406.	June 10.	HAMPSHIRE. Nitton, Isle of Wight. REV. R. C. KEMPE. Rev. R. C. Kempe.	X	Negretti & Zambra		0 6      130						Fair position in small grass enclosure.	406.	
407.	July 25.	RADNORSHIRE. Heyhope Rectory. REV. W. W. GRIFFITH. Rev. W. W. Griffith.	XII	Casella .....	9 a.m.	1 0      690						In excellent position in the Rectory grounds.	407.	

## EXAMINATION OF RAIN-GAUGES (continued).

Reference number.	Date of examination	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.	Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
								Scale-point.	Grains.					
408.	1870. July 26.	RADNORSHIRE. Cefnfaes, Rhayader. MRS. JONES. Mrs. Jones.	III	Anon .....	9 a.m.	ft. in. 1 0	feet. 885	in. 4'98 4'98 4'98 5'01 M 4'988	in. "1 "2 "3 "4 "5	520 1020 1500 2050 2480	—005 —007 —004 —015 —003	E. Tree 35°. W. Tree 38°.	In garden sloping from the house towards the S., perfectly open from E.S.E. to W.S.W., and fairly so from other points.	408.
409.	July 26.	MONTGOMERYSHIRE. Ystrad-olwyn-fawr, Llanidloes. BRITISH ASSOCIATION. Mr. J. Jones.	I	Anon .....	9 a.m. 1st	1 0	950	M 8'020	8'03 8'00 8'05 8'00	.....	.....	cylinder true and rod correct.	In field about one mile E. of Llangurig Church; very good position.	409.
410.	July 26.	MONTGOMERYSHIRE. Dolenog, Llanidloes. T. F. ROBERTS, ESQ. T. F. Roberts, Esq.	III	Casella .....	a.m.	1 0	522	M 4'998	5'02 4'98 5'00 4'99	500 970 1470 1990	—001 +004 +004 —002 +002	.....	Gauge recently removed here from Broomcliff. Its future position will be on flat ground at the bottom of a rather narrow valley.	410.
411.	July 26	MONTGOMERYSHIRE. Dylive, Head of River Clywedog. BRITISH ASSOCIATION. Mr. Isaac Jones.	I	Anon .....	9 a.m. 1st of month.	.....	1400	.....	.....	.....	.....	Rod correct.	Gauge could not be found in the absence of the observer, who failed to meet me. The ground is, however, level table land well suited for a gauge, and as it and the four following gauges were all made together, I have no doubt it is correct.	411.
412.	July 27.	MONTGOMERYSHIRE. Capel Carno. BRITISH ASSOCIATION. Mr. T. Ibound.	I	Anon .....	9 a.m. 1st of month.	1 0	550	7'98	8'03 8'02 8'02	.....	.....	Rod correct and gauge a true cylinder.	In field near Carno railway station; good position.	412.
413.	July 27.	MONTGOMERYSHIRE. Llwest fawr, Garthbibio. BRITISH ASSOCIATION. Mr. Joseph Jones.	I	Anon .....	9 a.m. 1st of month.	1 0	990	M 8'013	8'00 7'95 8'05 7'99	.....	.....	Rod correct and gauge a true cylinder.	On summit of hill above Garthbibio. It is stuck in a bank, giving it rather an extreme exposure for so elevated a station.	413.
414.	July 28.	MONTGOMERYSHIRE. Head of River Vyrnwy, Llanwddyn. BRITISH ASSOCIATION. Mr. John Gittens.	I	Anon .....	9 a.m. 1st of month.	0 8	1740	M 7'998	8'01 8'15 8'00 7'99	.....	.....	Rod correct and gauge a true cylinder.	On the flat top of a moor above Ennant, 4 miles W.N.W. of Llanwddyn, and $\frac{1}{2}$ mile N. of Y. Gadfa.	414.
415.	July 28.	MONTGOMERYSHIRE. Llanwddyn. BRITISH ASSOCIATION. Mr. David Pugh.	I	Anon .....	9 a.m. 1st of month.	0 7	750	M 8'038	8'04 8'06 8'10 8'02	.....	.....	Rod correct and gauge a true cylinder.	In field a few hundred yards E. from Llanwddyn church, quite open. Doubt if observer is always reliable.	415.
416.	Aug. 2.	SUFFOLK. Barton Hall, Bury St. Edmunds. SIR CHARLES BUNBURY. Mr. Allan.	III	Casella .....	9 a.m.	1 0	200	M 8'055	4'99 5'00 5'02 5'00 5'00	495 1000 1500 1990 2490	correct. —001 —002 —001 —002	N. Sycamore 38°.	Previously examined in 1862 (see No. 27). Gauge in same position and carefully attended to. Owing to the absence of Ordnance bench-marks, the altitudes in this neighbourhood are still uncertain.	416.
417.	Aug. 2.	SUFFOLK. Ixworth, Bury St. Edmunds. REV. W. STEGGALL. Rev. W. Steggall.	XII	Casella .....	9 a.m.	1 6	125	.....	4'97 5'02 5'02 5'00 5'003	500 980 1460 1950 2450	—001 +002 +005 +006 +005	W.N.W. Laurel 35°.	Good position at junction of roads north end of village.	417.
418.	Aug. 2.	SUFFOLK. Barningham, Bury St. Edmunds. J. FISON, ESQ. J. Fison, Esq.	X	Negretti & Zambra Irregular.	o 8	125	1	4'998 8'03 7'94 7'98 8'01 I 7'990	1350 2570 3750 5040 6300	+005 —007 —003 +004 +002 +003	W.S.W. House 55° S.E. Poplars 60°.	Very sheltered position, observer agreed to move it to a more suitable one.	418.	

## EXAMINATION OF

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.	RAIN-GAUGES (continued).			Remarks on position &c.	Reference number.			
							Diameters (that marked M=mean).	Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.				
							in.	in.	Grains.	in.				
419.	1870. Aug. 3.	SUFFOLK. Dickleburgh, Diss. <i>F. Dix.</i> <i>F. Dix.</i>	II	Anon .....		ft. in.	feet.			S.W. Trees 58°. N.E. Trees 55°.	Very old and dilapidated gauge in a very indifferent position; has been burst and mended many times, and is so out of repair that observer adds a variable correction to make it what he thinks it should be.	419.		
420.	Aug. 3.	SUFFOLK. Yaxley, Eye. <i>REV. W. H. SEWELL.</i> <i>Rev. W. H. Sewell.</i>	X	Negretti & Zambra .....	9 a.m.	0 10	108	7'98 8'01 7'98 8'00 M 7'993 2'85sq.	.1 .2 .3 .4 .5 1'0	1290 2580 3860 5060 6300 1000 2020 3000	-.002 -.004 -.005 +.001 +.003 +.019 +.028 +.047		On Lawn near the church; good position.	420.
421.	Aug. 3.	SUFFOLK. Thwaite, Meudlesham. <i>MR. O. WHISTLECRAFT.</i> <i>Mr. O. Whistlecraft.</i>	.....	Anon .....	Irregular.	2 8	117	2'85 2'90 2'85 2'87 M 2'863	.4 1'49			N. Trees 43°.	An extraordinary gauge, consisting simply of a cubical leaden box, into which the rain falls; the depth is ascertained by dipping in a slate scale; the bottom thereof is now worn away; hence the large error, which, however, is partly corrected by the great loss which must arise from the absence of any provision against evaporation.	421.
422.	Aug. 3.	SUFFOLK. Walsham-Le-Willows. <i>MISS MARTINEAU.</i> <i>Miss Martineau.</i>	III	Casella .....	9 a.m.	0 11	100	5'00 4'98 4'99 5'00 M 4'993	.1 .2 .3 .4 .5	490 990 1470 1960 2470	+.001 correct. +.003 +.004 correct.	N.W. Fir 54°.	On lawn, rather sheltered as noted; was moved to centre of lawn quite free.	422.
423.	Aug. 8.	NORFOLK. West Tofts, Brandon. <i>BRITISH ASSOCIATION.</i> <i>Mr. R. Martin.</i>	XII	Casella .....	9 a.m.	1 1	91	5'03 4'98 4'94 5'05 M 5'000	.1 .2 .3 .4 .5	510 995 1490 2000 2500	-.003 -.001 -.001 -.003 -.004	N.W. Tree 52°. W. Tree 52°. S.W. Tree 58°.	In small garden E. of West Tofts church; no better position available.	423.
424.	Aug. 31.	KENT. Heathfield Lodge, Chisichurst. <i>F. NUNES, Esq.</i> <i>F. Nunes, Esq.</i>	XII	Casella .....		1 0	295	4'95 4'99 5'00 5'00 M 4'985	.1 .2 .3 .4 .5	500 980 1450 1950 2450	-.001 +.001 +.006 +.004 +.003		Close to No. 398.	424.

Report on the Heat generated in the Blood in the process of Arterialization. By ARTHUR GAMGEE, M.D., F.R.S.E., Lecturer on Physiology in the Medical School, Surgeons' Hall, Edinburgh.

So much has lately been done to extend our knowledge of the gases contained in the blood, of the blood-colouring-matter, and of its combinations with oxygen, that it seems strange that we should not yet possess reliable information on a matter which has long been the subject of speculation, and which assuredly admits of a positive solution, viz. on the changes in the temperature of blood during arterialization.

In this first and strictly preliminary Report it may be useful to ascertain the methods of investigation which have been employed by those observers who have hitherto attempted to throw light upon this matter.

These methods have been two, of which the one may be said to be indirect and the other direct; each, if properly carried out, should lead to most valuable results.

The first method which suggests itself is to determine the temperature of the blood in the right and left ventricles of the heart of a living animal. If our mode of experimenting were free from fallacy, and it resulted that the left side of the heart contained blood warmer than that of the right side, there would be no doubt as to the evolution of heat during the absorption of oxygen in the lungs; if, on the other hand, the temperature of the left side were the same as that of the right side, or lower, the question would still remain an open one, for heat might be evolved by the condensation and combination of oxygen in the lungs, yet the quantity might not be sufficient to counterbalance the loss of heat due to the evolution of large quantities of

## EXAMINATION OF

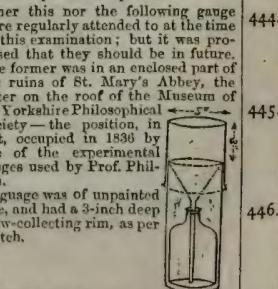
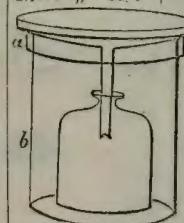
RAIN-GAUGES (continued from *Brit. Assoc. Rep.* 1870, p. 228).

Reference number.	Date of examination.	COUNTY. Station, OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked. M=mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
							in.	in.	Scale-point.	Grains.					
425.	1870. Sept. 21.	CHESHIRE. Bidstone Observatory, <i>MERSEY HARBOUR BOARD.</i> <i>J. Hartnup, Esq.</i>	X.	Negrètti & Zambrini	9 a.m.	ft. in. o 6	feet. 182					S.W. Observatory 30°.	Good position on the side of Bidstone Hill, near summit, and N.E. of the Observatory.	425.	
426.	Sept. 21.	CHESHIRE. Bidstone Observatory, <i>MERSEY HARBOUR BOARD.</i> <i>J. Hartnup, Esq.</i>	I.	Adie .....	monthly.	o 8	182					Observatory Dome S.W. 30°.	CLOSE to No. 425. Testing not completed, but measuring-scale correct, and cylinder believed to be true.	426.	
427.	Sept. 22.	DERBYSHIRE. Willersley Gardens, Matlock. <i>P. ARKWRIGHT, ESQ.</i> <i>Mr. Tissington.</i>	III.	Horne & Thorne-thwaite.	9 a.m.	i o	440						In kitchen garden, clear open space, ground level for some distance.	427.	
428.	Sept. 22.	DERBYSHIRE. Matlock Bath. <i>R. CHADWICK, ESQ.</i> <i>R. Chadwick, Esq.</i>	III.	Anon. ....		2 o	500						Clear from W through S. to E. Trees E. by N. to W. 75°.	This station is on the N. side of the hill known as the Heights of Abraham; the garden and grounds rise in rapid terraces and are thickly wooded. I could not see any better position.	428.
429.	Sept. 26.	DERBYSHIRE. Alderwasley Hall. <i>A. F. HURST, ESQ.</i> <i>Mr. Greenwood.</i>	III.	Anon. ....	9 a.m. preceding.	5 o	530						S. Apple 30°.	In garden west of the hall.	429.
430.	Sept. 27.	DERBYSHIRE. Stansfield Hall. <i>SIR J. WHITWORTH, F.R.S.</i> <i>Mr. Dawson.</i>	III.	Anon. ....	monthly.	i 6	488						Quite clear.	This gauge was fixed in a wooden frame which surrounded the funnel, and was not sufficiently below it to be free from liability to produce in splashing. I left instructions that it should be lowered 4 inches. On large lawn N.W. of Hall.	430.
431.	Sept. 30.	DERBYSHIRE. Axe Edge. <i>E. J. SYKES, ESQ.</i> <i>E. J. Sykes, Esq.</i>	X.	Casella .....	1st each month.	i o	1620						Quite clear.	On the level surface of the moor, about 600 feet above Buxton, and 3 miles S.W. of it. The position is extremely exposed.	431.
432.	Sept. 30.	DERBYSHIRE. Devonshire Hospital, Buxton. <i>E. J. SYKES, ESQ.</i> <i>E. J. Sykes, Esq.</i>	X.	Casella .....	9 a.m.	5 o	1005						Hospital N.W. 26°. Clear in all other directions.	On dwarf post in an open part of the Hospital grounds, near the centre of Buxton. Position good, and gauge in good order.	432.
433.	Sept. 30.	DERBYSHIRE. Devonshire Hospital. <i>E. J. SYKES, ESQ.</i> <i>E. J. Sykes, Esq.</i>	VIII.	Marshall .....		.....	.....							An old gauge, out of order at date of inspection, but subsequently repaired and used at Poole's Cavern, Buxton.	433.
434.	Oct. 4.	DERBYSHIRE. Chatsworth, The Gardens. <i>THE DUKE OF DEVONSHIRE.</i> <i>Mr. Speed.</i>	VIII.	Marshall .....	9 a.m.	6 3	404	8'00	'1	1240	+003		Quite open.	On post in kitchen garden. This gauge was examined 1863 Sept. 21 (No. 123); but as the glass was not initialised, and the funnel had been rendered more nearly circular, I retested it. I find on comparison that of the five scale-points two errors are absolutely identical; one differs by 0'001 in., one by 0'002, and one by 0'004 in. On the top of dwarf stand in garden, which slopes from W. to E., and has a wall running N.N.W.—S.S.E., at about 8 ft from the gauge. Mr. Smith states that his place is so exposed and windy that this partial shelter is beneficial, which seems probable.	434.
435.	Oct. 4.	DERBYSHIRE. Stoney Middleton. <i>REV. URBAN SMITH.</i> <i>Rev. Urban Smith.</i>	III.	Anon. ....	9 a.m.	4 o	692	5'03	'1	480	+003				435.
								4'98	'2	970	+004				
								5'02	'3	1470	+004				
								4'98	'4	1970	+003				
								M 5'002	'5	2470	+002				

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.		
							Scale-point.	Grains.	in.	in.						
436.	1870. Oct. 11.	MIDDLESEX. Camden Square. G. J. SYMONS, Esq. G. J. Symons, Esq.	VI.	Crosley .....	9 a.m. 1st	ft. in. 4 0	feet. 115					E.N.E. House 30°.	A second, or check-gauge, not found reliable, although accurate in construction.	436.		
437.	1871. Aug. 10.	EDINBURGH. Dalkeith Gardens. DUKE OF BUCLEUCH. Mr. Dunn.	I.	Bryson .....	9 a.m.	0 6	183							This is not the old Dalkeith gauge, of which the fate is unknown, but a comparatively modern one, on a grass-plot, which at the above date had been allowed to grow too long; level ground and good position.	437.	
438.	Aug. 17.	PERTHSHIRE. Bolfracks, Aberfeldy. J. F. WYLLIE, ESQ. J. F. Wyllie, Esq.	I.	Anon. ....	1st each month.	0 6	.....							A very bad gauge, wofully out of order, very unsteady, not level, and so generally unsatisfactory, that it was not thought worth while to test its precise error.	438.	
439.	Aug. 23.	INVERNESS. Culloden House. A. FORBES, ESQ. A. Forbes, Esq.	IV.	Adie .....	8 a.m.	3 0	82							This position, though good, was not that which it was intended should eventually be occupied by the principal gauge at this station, as Mr. Forbes contemplated railing off a portion of the park expressly for meteorological apparatus.	439.	
440.	Aug. 29.	YORKSHIRE. Scarborough Crystal Garden. DR. FOX. Mr. Walsham.	XII.	Casella .....	10 a.m.	1 0	102							In nursery garden sloping to south. I urged that the gauge should be shifted a little to N.E. to get more away from the trees, which was agreed to.	440.	
441.	Aug. 30.	DURHAM. Darlington, Southend Gardens. J. PEASE, ESQ. Mr. Richardson.	X.	Negretti & Zambra	9 a.m.	0 0	140							Fair position, near the bottom of a rather flat valley.	441.	
442.	Aug. 30.	DURHAM. Darlington, Southend Gardens. J. PEASE, ESQ. Mr. Richardson.	XII.	Casella .....	9 a.m.	0 8	140							Close to No. 441. This gauge has a very flat rim.	442.	
443.	Aug. 30.	DURHAM. Darlington, Southend Gardens. J. PEASE, ESQ. Mr. Richardson.	See Fig.	Anon. ....	9 a.m.	0 6	140							Close to 441 and 442. This is an experimental gauge, of the remarkable pattern shown in the annexed figure. Funnel, 8 in. diameter, circular, rim vertical and $\frac{1}{2}$ in. deep; funnel scarcely falling at all to centre, not more than $\frac{1}{2}$ inch: a, a rim falling loosely over; b, a tin cylinder to keep funnel in place.	443.	
444.	Aug. 31.	YORKSHIRE. York, St. Mary's Abbey. YORKSHIRE PHIL. SOC. Mr. Wakefield.	VII.	Anon. ....	10 a.m.	0 6	30							Neither this nor the following gauge were regularly attended to at the time of this examination; but it was promised that they should be future. The former was in an enclosed part of the ruins of St. Mary's Abbey, the latter on the roof of the Museum of the Yorkshire Philosophical Society—the position, in fact, occupied in 1836 by one of the experimental gauges used by Prof. Phillips.	444.	
445.	Aug. 31.	YORKSHIRE. York Museum Roof. YORKSHIRE PHIL. SOC. Mr. Wakefield.	VII.	Anon. ....	10 a.m.	43 6	73							This gauge was of unpainted sime, and had a 3-inch deep snow-collecting rim, as per sketch.	445.	
446.	Sept. 1.	YORKSHIRE. Hawsker Garden, Whitby. REV. F. W. STOW. Rev. F. W. Stow.	See fig.	Casella .....	9 a.m.	1 0	340									446.



## EXAMINATION OF

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge: Above ground. Abv sea-level.	Diameters (that marked M=mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							Scale-point.	Grains.	in.	in.				
447.	Sept. 1.	YORKSHIRE. Hawsker Garden. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	IV.		9 a.m.	ft. in. 2 3	feet. 340	in. 11'86 12'12 12'00 12'00	2850 5780 8568 11435	'1 '2 '3 '4	correct. —'003 correct. —'001	.....	This gauge was formerly used at Red Hall, near Leeds, and subsequently at the Knoll, Ripon. Its present position, near No. 446, was rather too sheltered.	447.
448.	Sept. 1.	YORKSHIRE. Hawsker Paddock. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	See No. 446.	Casella .....	9 a.m.	1 0	335	M 1'995 5'01 5'00 5'01 5'00 5'00	14280 495 975 1460 1980 2460	'1 '2 '3 '4	correct. +-'004 +-'006 +-'001	All objects under 20°.	Similar to No. 446, but in a more open position.	448.
449.	Sept. 1.	YORKSHIRE. Hawsker Paddock. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	See No. 446.	Casella .....	Monthly.	1 0	335	M 5'005 5'01 4'98 5'01 5'00	495 975 1460 1980 2460	'1 '2 '3 '4	correct. +-'003 +-'005 correct.	Close to, and similar to No. 448; but read monthly instead of daily.	449.	
450.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	See No. 446.	Casella .....	9 a.m.	1 0	428	M 5'000 5'01 5'00 5'00 4'99	495 975 1460 1980 2460	'1 '2 '3 '4	correct. +-'004 +-'003 +-'005 correct.	.....	Similar to No. 446, except that the snow-funnel is 6 inches deep. This and the following gauges, Nos. 450 to 457 inclusive, were in a raised enclosure in a high and exposed field, along with a large number of previously tested gauges. A ground-plan of the arrangements, general view of the same, and detailed engravings of the instruments have been published in 'British Rainfall,' 1871.	450.
451.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field. <i>COLONEL WARD.</i> <i>Rev. F. W. Stow.</i>	III.	Casella .....	9 a.m.	1 0	428	M 5'000 1'00 1'00 1'01 1'01	20 39 58 78	'1 '2 '3 '4	correct. +-'005 +-'010 +-'010	.....	A ground-plan of the arrangements, general view of the same, and detailed engravings of the instruments have been published in 'British Rainfall,' 1871.	451.
452.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	See Remarks.	Anon.....	9 a.m.	10 0	438	M 1'005 3'00 3'00 3'01 3'00	180 358 539 718	'1 '2 '3 '4	correct. correct. —'001 —'001	.....	This and No. 453 formed the pair of gauges, the former with the orifice horizontal, and the latter with it vertical and rotated by a vane, for determining the angle of rain falling at 10 feet above the surface.	452.
453.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	See Remarks.	Anon.....	9 a.m.	10 0	438	M 3'003 3'00 2'99 3'02 3'00	894 180 358 539 718	'1 '2 '3 '4	correct. correct. —'001 —'001	.....	.....	453.
454.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	See Remarks.	Anon.....	9 a.m.	5 0	433	M 3'003 3'02 2'98 3'00 3'00	894 180 358 539 718	'1 '2 '3 '4	correct. correct. —'001 —'002	The vertical-mouthed portion of the two-mouthed gauge at 5 feet.	454.	
455.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	XII.	Casella .....	9 a.m.	1 0	428	M 3'000 3'00 3'00 3'00 3'00	894 180 358 539 718	'1 '2 '3 '4	—'001 —'001 correct. —'002 —'002	.....	.....	455.
456.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	X.	Casella .....	9 a.m.	1 0	428	M 3'000 8'00 8'01 8'00 7'99	894 180 358 539 718	'1 '2 '3 '4	—'001 —'002 —'002 —'002	.....	.....	456.
457.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	See Remarks.	Anon.....	9 a.m.	1 0	428	M 8'000 3'00 2'99 3'00 3'00 M 3'000	5050 180 358 539 718 894	'1 '2 '3 '4 '5	+-'002 —'001 correct. —'002 —'002	The vertical-mouthed portion of the two-mouthed gauge at 1 ft.	457.	

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean). M 4'993	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
						Above ground.	Above sea-level.		Scale-point.	Grains.				
458.	1872. Aug. 19.	SUSSEX. Brighton, Goldstone Bottom. <i>BRIGHTON CORPORATION.</i> <i>Mr. Barker.</i>	XII.	Casella .....	9 a.m. preceding.	ft. in. 0 10	feet. 140	in. 4'98 5'00 4'97 5'02	'1 '2 '3 '4	495 990 1490 1970 2480	in. correct. correct. —'001 —'002	.....	In a very open position on the N. corner of the reservoir-bank, entirely unsheltered.	458.
459.	Aug. 20.	SUSSEX. Brighton, Buckingham Place. <i>F. E. SAWYER, ESQ.</i> <i>F. E. Sawyer, Esq.</i>	III.	Rowley .....	9 a.m. preceding.	i 2	200	M 4'993 4'98 5'00 4'99 5'00	'2 '3 '4 '5	1000 1490 2000 2510	S. Trees 62°. W. House 52°. N. Wall 13°. E. Wall 33°.	Position not good, but the best available. In E. at a distance of a few feet, the ground falls precipitously to the yard of the railway-station.	459.	
460.	Aug. 24.	SUSSEX. Beachy Head. <i>MISS W. L. HALL.</i> <i>Miss W. L. Hall.</i>	XII.	Casella .....		i 6	530	M 4'993 5'00 4'98 4'99 5'00	'1 '2 '3 '4 '5	500 1000 1480 1980 2470	.....	At the time of visiting this and the following gauge they were near together, and in the position described in No. 194. Subsequently No. 461 has been removed further inland, in order to obtain a less exposed position and freedom from the up-draught produced by the steep face of the cliff.	460.	
461.	Aug. 24.	SUSSEX. Beachy Head. <i>MISS W. L. HALL.</i> <i>Miss W. L. Hall.</i>	XII.	Casella .....		i 6	530	M 4'993 5'01 5'01 4'99 M 5'000	'1 '2 '3 '4 '5	500 1000 1480 1980 2470	.....	.....	461.	
462.	Aug. 26.	SUSSEX. Cemetery, Eastbourne. <i>MISS W. L. HALL.</i>	XII.	Casella .....	9 a.m. preceding.	4 0	170	M 5'000 5'00 4'99 5'01	'1 '2 '3 '4	495 995 1500 1960	E.N.E. Beans 50°. N.W. Elder 20°. S. Chapel 10°.	Gauge fixed on a post, in order to obtain better exposure. On pointing out the injurious effect of the beans they were removed.	462.	
463.	Aug. 27.	SUSSEX. Pevensy Road, Eastbourne. <i>MISS W. L. HALL.</i> <i>Miss W. L. Hall.</i>	XI.	Negretti & Zambra .....	10 a.m.	3 0	25	M 5'000 5'00 5'00 5'01	'1 '2 '3 '4	500 1000 1480 1980	S.W. Houses 36°. N. Houses 48°.	See No. 196.	463.	
464.	Aug. 27.	SUSSEX. The Hollies, Hastings. <i>A. H. WOOD, ESQ.</i> <i>A. H. Wood, Esq.</i>	X.	Negretti & Zambra .....	9 a.m. preceding.	3 0	100	M 5'003 8'00 8'01 8'02	'1 '2 '3 '4	2470 1300 2570 3810	S. Laurels 65°. E. Laurels 60°. W. Laurels 55°.	On a dwarf post in a bed of laurels, which had been cut away from time to time to secure sufficient exposure. On showing that this had not been obtained, observer agreed to remove the gauge to a thoroughly clear spot.	464.	
465.	Aug. 28.	SUSSEX. Wallsend Cottage, Pevensy. <i>M. VIDLER, ESQ.</i> <i>M. Vidler, Esq.</i>	X.	Negretti & Zambra .....		4 0	10	M 8'003 7'98 8'01 8'02	'1 '2 '3 '4	6320 1300 2570 3800	.....	See No. 193. It appears, from long-continued observation, that the extremely exposed position of this gauge prevents its indications being correct.	465.	
466.	Aug. 28.	SUSSEX. Pevensy Vicarage. <i>REV. H. BROWN.</i> <i>Rev. H. Brown.</i>	X.	Negretti & Zambra .....	9 a.m. preceding.	i 0	15	M 7'985 7'98 8'01 8'02	'1 '2 '3 '4	6300 1300 2550 3800	S. House 45°. E. Trees 60°. W. Trees 50°.	In the garden of the Vicarage, and in the best position obtainable.	466.	
467.	Aug. 29.	SUSSEX. Court Farm, Falmer. <i>R. R. VERRALL, ESQ.</i> <i>R. R. Verrall, Esq.</i>	XII.	Anon. ....	Irregular.	3 6	312	M 7'997 5'00 5'00 4'99 M 4'93 M 4'980	'1 '2 '3 '4 '5	6250 520 1020 1530 2050 2550	S. Houses 30°. E. Trees 55°. W. Trees 48°.	This gauge being very much in error, the observer at once decided on having a new one. This was specially desirable, for two reasons:—(1) because the locality is an important one; (2) because, in addition to the scale-error of the old gauge, the funnel did not rest firmly on the receiver.	467.	
468.	Sept. 9.	SUSSEX. Heron's Ghyll, Buxted. <i>C. PATMORE, ESQ.</i> <i>C. Patmore, Esq.</i>	X.	Negretti & Zambra .....	9 a.m. preceding.	i 0	405	M 7'998	'1 '2 '3 '4 '5	1250 2570 3800 5050 6300	W.N.W. House 28°. N. Wall 32°. E. Firs 30°.	Gauge temporarily placed on a terrace-walk. The above angles are for the position selected.	468.	

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked $\Delta$ =mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.
							Sextal-point.	Grains.	in.	in.			
469.	Sept. 9.	SUSSEX. Crowborough, Beacon Observatory. C. L. PRINCE, ESQ., F.R.A.S. C. L. Prince, Esq., F.R.A.S.	X.	Negretti & Zambrini	9 a.m. preceding.	ft. in. 1 0	feet. 777					W. House 20°.	Very open position, on almost the highest ground in the county.
470.	Sept. 24.	NORFOLK. Bexwell Rectory. REV. E. J. HOWMAN. Rev. E. J. Howman.	XII.	Casella .....	9 a.m. preceding.	1 0	120	M 7'953	'5 5'08 4'90 4'98 5'01	6290 498 990 1500 1980	-'001 -'001 correct. -'001 correct.	N. Beech 40°. N.E. Church 25°.	On the east side of the rectory lawn, in a very good position.
471.	Sept. 25.	NORFOLK. West Dereham. REV. E. J. HOWMAN. Mr. C. Blanchfield.	III.	Casella .....	9 a.m. preceding.	1 0	20	M 4'993	'5 4'98 5'03 4'98 5'03	2470 495 990 1470 1980	correct. correct. +'001 +'004 +'001	N.W. House 22°. N. Barn 18°.	In small paddock; flat country, and quite open.
472.	Sept. 25.	NORFOLK. White House, Weremham. F. R. H. MASON, ESQ. F. R. H. Mason, Esq.	X.	Negretti & Zambrini	9 a.m. preceding.	0 5	60	M 5'000	'5 7'98 8'02 8'00 8'00	2470 1280 2550 3820 5090	+'003 -'001 -'001 -'001 -'001	S.W. Trees 35°. N.E. , 30°.	In garden, near to, but not influenced by, house.
473.	Sept. 25.	NORFOLK. White House, Weremham. F. R. H. MASON, ESQ. F. R. H. Mason, Esq.	XI.	Negretti & Zambrini	9 a.m. preceding.	6 0	66	M 8'000	'5 5'00 5'00 5'00 5'01	6370 495 990 1490 1970	-'002 correct. +'002 correct. +'003 +'002	.....	In same garden as No. 472, but much further from house, and quite open.
474.	Sept. 25.	NORFOLK. Fincham Rectory. REV. W. BLYTHE. Rev. W. Blythe,	See fig. 2. Br. Ass. Report, 1851, p. 590.	Spencer .....	9 a.m. preceding.	4 0	50	M 5'003	'5 3'00 3'00 3'00 3'02	2470 490 990 1480 1990	..... -'014 -'025 -'032 -'041	N.W. Pear 60°. S.E. Acacia 52°.	A very shaky gauge, mounted on a stone pillar, but so loosely fixed that it could be blown from side to side. The gauge itself is also very incorrect, and the position bad. As observations have been made for many years and with regularity this is to be regretted.
475.	Sept. 25.	NORFOLK. Outwell Sluice. MID LEVEL COMMISSIONERS. Mr. W. Bond.	VIII.	.....	9 a.m. 6 p.m.	3 0	.....	M 3'005	1'07 9'02 8'98 8'98 8'96	1990 810 1630 2430 3200	..... correct. -'002 -'002 correct.	.....	A very good gauge, in a good position, but most wofully out of order. It was in a wooden box with what had been a flat top, through which the funnel only rose half an inch; and even this was reduced by the warping of the split wood. It is impossible to form any opinion of the probable error due to this arrangement.
476.	Sept. 26.	CAMBRIDGE. Victoria Road, Wisbeach. S. H. MILLER, ESQ. S. H. Miller, Esq.	XI.	Negretti & Zambrini	9 a.m.	0 6	10	M 8'985	'25 4'99 5'00 4'99 5'00	4000 510 1040 1530 2050	correct. -'003 -'010 -'011 -'014	N. Trees 33°. N.W. , 25°.	Nos. 476 and 477 were close together in a small garden much shut in by trees; the observer said that he had cut down several, and promised to make a further clearance.
477.	Sept. 26.	CAMBRIDGE. Victoria Road, Wisbeach. S. H. MILLER, ESQ. S. H. Miller, Esq.	X.	Negretti & Zambrini	9 a.m. preceding.	0 6	10	M 4'995	'5 8'00 7'98 7'98 8'00	2530 1250 2480 3720 5040	-'011 +'001 +'004 +'006 +'002	N. Trees 33°. N.W. , 25°.	477
478.	Sept. 26.	CAMBRIDGE. Victoria Road, Wisbeach. S. H. MILLER, ESQ. S. H. Miller, Esq.	X.	Negretti & Zambrini	.....	8 0	18	M 7'990	'5 7'98 7'92 7'98 8'00	6290 1250 2480 3720 5040	+'003 +'001 +'002 +'006 +'002	.....	On the roof of thermometer-stand, about 15 ft. from No. 477. Unsheltered.
479.	Dec. 4.	OXFORDSHIRE. Banbury. * T. BEESLEY, ESQ. T. Beesley, Esq.	VIII.	Anon.....	9 a.m. preceding.	7 0	350	M 7'958	'5 6'09 6'00 6'12 5'98	6290 700 1410 2170 2830	-'001 +'004 +'006 +'001 +'003	S. Birch 30°. E. , 32°. W. , 42°. N. House 53°.	On roof of outhouse, in the best position on the premises.

## EXAMINATION OF

## ON THE RAINFALL OF THE BRITISH ISLES.

RAIN-GAUGES (*continued from Brit. Assoc. Rep. 1873, p. 303.*)

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.								
							Above ground.	Above sea-level.	Diameters (that marked M = mean).	Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	
							in.	in.	in.	in.				
480.	Dec. 4.	OXFORDSHIRE. Banbury, Parson Street. <i>J. JARVIS, ESQ.</i> <i>J. Jarvis, Esq.</i>	II.		9 a.m.	ft. in. 4 6	feet. 350		9'92 10'06 10'02 9'92 M 9'980 10'10 10'15 10'00 10'03 M 10'070 4'93 4'98 4'98 5'01	'1 '2 '3 '4 '5 '1 '2 '3 '4 '5 '1 '2 '3 '4 '5 2265 4550 6825 9100 11375 2450 4940 7300 9720	+.012 +.024 +.037 +.049 +.061 +.002 +.003 +.005 +.007 +.009		In garden in centre of town, fair exposure.	480.
481.	Dec. 4.	OXFORDSHIRE. Banbury, Parson Street. <i>J. JARVIS, ESQ.</i> <i>J. Jarvis, Esq.</i>	II.			4 0	350						Close to 480.	481.
482.	Dec. 5.	HERTFORDSHIRE. Rothamsted. <i>J. B. LAWES, ESQ., F.R.S.</i>	XI.		9 a.m. and 4:30 p.m.	2 0	420						Gauge in large experimental field. Measuring-glass not accessible; said to have been verified in the laboratory.	482.
483.	1873. July 13.	KENT. Harefield, Seling. <i>E. NEAME, ESQ.</i> <i>E. Neame, Esq.</i>	XII.	Casella	9 a.m.	2 6	217		M 4'975 5'02 4'98 4'99 5'01 M 5'000 5'00 4'95 5'09 4'92	'1 '2 '3 '4 '5 '1 '2 '3 '4 '5 2265 4550 6825 9100 2470	correct. correct. +.003 +.003 +.006 +.001	S. Tree, 46°. S.E. , 35°.	Position not good, but no better available for daily observations. Establishment of a monthly gauge at a little distance suggested.	483.
484.	July 13.	KENT. Sheldwich Vicarage. <i>REV. B. S. MALDEN.</i> <i>Rev. B. S. Melden.</i>	III.	Casella	9 a.m.	1 0	259		M 5'000 5'00 4'95 5'09 4'92	'1 '2 '3 '4 '5 2265 4550 6825 9100 2470	+.001	All clear, S.E. of church and within 100 yards of it.	484.	
485.	Aug. 14.	SUSSEX. Crowborough Beacon Observatory. <i>C. L. PRINCE, ESQ.</i> <i>C. L. Prince, Esq.</i>	VI.		9 a.m.	6 0	777		M 4'990 1'1:20 1'1:28 1'1:32 1'1:22	'1 '2 '3 '4 '5 2265 4550 6825 9100 2470	correct.		This gauge not in use, being considered incorrect.	485.
486.	Aug. 15.	SUSSEX. Uckfield Observatory. <i>C. L. PRINCE, ESQ.</i> <i>C. L. Prince, Esq.</i>	VI.		9 a.m.	6 3	149		M 1'1:255 1'1:28 1'1:21 1'1:23 1'1:19	'1 '2 '3 '4 '5 2265 4550 6825 9100 2470	+.007 +.002 +.002 +.008 +.011	N.W. Chestnut, 25°. S.E. Apple, 24°.		486.
487.	Aug. 15.	SUSSEX. The Grange, Framfield. <i>CAPT. DRAKE.</i> <i>Capt. Drake.</i>	X.	Negretti & Zambra		1 2	185		M 1'1:228 7'88 8'13 7'96 8'02 8'02	'1 '2 '3 '4 '5 1280 2500 3790 5100 6330	-.001 +.003 +.001 -.002 +.001	W.N.W. Tree, 15°. N.W.-N.N.W. Ho, 45°. N. Trees, 30°.	On lawn; no better position available.	487.
488.	Aug. 15.	SUSSEX. Buxted Park. <i>COL. HARCOURT.</i> <i>Mr. J. Edmeads.</i>	X.	Negretti & Zambra	9 a.m.	1 0	193		M 7'998 8'04 8'03 8'00 7'92	'1 '2 '3 '4 '5 1360 2550 3800 5040 6250	-.007 -.001 correct. +.003 +.007	S.W. Tree, 48°. N.E. Fir, 31°.	Gauge to be moved further northwards; on lawn N. of house.	488.
489.	Sept. 29.	WESTMORELAND. Mardale Green. <i>BRITISH ASSOCIATION.</i> <i>Mr. Heeson.</i>	I.	Casella	9 a.m. 1st of month.	1 0	800		M 7'998 8'00 7'98 8'03 8'00 7'92	'1 '2 '3 '4 '5 1360 2550 3800 5040 6250	-.001 -.001 correct. +.003 +.007	E.S.E. Hill, 31°. S.S.E. Firs, 36°.	Else clear. Rod and gauge correct.	489.
490.	Sept. 29.	WESTMORELAND. Measandbecks, Haweswater. <i>BRITISH ASSOCIATION.</i> <i>Mr. J. Rigg.</i>	I.	Casella	9 a.m. 1st of month.	1 2	1200		M 8'002 7'92 8'07 8'00 7'98	'1 '2 '3 '4 '5 1360 2550 3800 5040 6250	-.001 -.001 correct. +.003 +.007		The gauge was moved two years ago; rod correct and gauge true.	490.

## EXAMINATION OF

## RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (dust marked M = mean).			Equivalents of water. Scale-point.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							in.	in.	Grains.					
491.	1873. Sept. 30.	WESTMORELAND. Crosby Ravensworth. REV. G. F. WESTON. Rev. G. F. Weston.	X.	Baker .....		ft. in. 1 0	feet. 600	7'92 8'00 8'02 8'00 M 7'95	'1 '2 '3 '4 '5	1250 2550 3780 5030 6300	+·001 -·002 +·001 +·002 +·002	S.E. Stables, 23°. W.N.W. Belt of trees, 25°.	S.E. of church ; gauge in garden, clear except as noted.	491.
492.	Sept. 30.	WESTMORELAND. Reagill. MR. W. WILKINSON. Mr. W. Wilkinson.	X.	Baker .....	9 a.m.	0 10	890	7'98 8'00 8'00 8'00 M 7'995	'1 '2 '3 '4 '5	1310 2550 3780 5100 6340	-·003 -·001 +·002 -·002 correct.	S. House, 20°.	In field, quite clear except as noted.	492.
493.	Oct. 3.	WESTMORELAND. Belsfield, Windermere. H. W. SCHNEIDER, ESQ. Mr. Chaplin.	XII.	Casella .....	9 a.m.	4 6	160	5'00 5'00 5'00 5'00 M 5'000	'1 '2 '3 '4 '5	500 1000 1490 2000 2470	-·001 -·002 -·001 -·003 +·002	.....	In gardens, quite clear.	493.
494.	Oct. 3.	LANCASHIRE. Backbarrow, Cartmell. MAJOR AINSWORTH.	IV.	Hartley .....		3 2	70	12'10 12'05 12'05 11'90 M 12'025	'082 '110 '138	780 1650 2570	+·056 +·052 +·047	E. Fir, 54°. S. " 34°. W. " 0°. N.W. Trees, 58°. N. House, 10°.	In garden, very much shut in by trees. Gauge out of order, and believed to have been subsequently abandoned.	494.
495.	Oct. 4.	LANCASHIRE. Lanehead, Coniston. R. T. BYWATER, ESQ. R. T. Bywater, Esq.	XI.	Negretti & Zambra .....		1 0	287	4'98 5'00 5'02 5'04 M 5'010	'1 '2 '3 '4 '5	490 990 1470 1960 2470	+·002 +·001 +·005 +·006 +·004	.....	Quite open, on lawn.	495.
496.	Oct. 4.	LANCASHIRE. Lanehead, Coniston. R. T. BYWATER, ESQ. R. T. Bywater, Esq.	X.	Negretti & Zambra .....	9 a.m.	1 0	287	7'98 8'02 8'03 7'97 M 8'000	'1 '2 '3 '4 '5	1290 2560 4730 6250	-·002 -·002 -·001 -·008	.....	Close to 495.	496.
497.	Oct. 9.	WESTMORELAND. Greenside Mines. MR. TAYLOR. Mr. Taylor.	X.	Casella .....	1st of month.	1 0	1000	7'00 6'99 7'02 7'00 M 7'002	'1 '2 '3 '4 '5	1090 2000 3000 3900 4900	-·012 -·006 -·008 -·001 -·003	.....	On N. slope of valley, but near its bottom ; unsheltered except by the ground, which runs up at perhaps 45° to between 1500 and 2000 feet.	497.
498.	Oct. 11.	CUMBERLAND. Barrow House. S. Z. LANGTON, ESQ.	X.	Negretti & Zambra .....	9 a.m.	0 6	282	7'98 8'02 7'98 8'02 M 8'000	'1 '2 '3 '4 '5	1260 2540 3800 5048 6300	+·001 correct. +·001 +·002 +·004	E. Shrubbery, 53°. S. Oak, 48°.	Position not good, but no better available near the house.	498.
499.	Oct. 13.	CUMBERLAND. Brow Top, Keswick. W. SHERWIN, ESQ. Mr. J. Barker.	III.	Cook .....	8 a.m.	0 8	407	5'01 5'05 5'01 5'05 M 5'030	'1 '2 '3 '4 '5	490 970 1480 1980 2470	+·002 +·007 +·005 +·005 +·008	.....	Clear ; on N. corner of lawn.	499.
500.		CUMBERLAND. Shu-le-Crow, Keswick. H. DAWSON, ESQ. H. Dawson, Esq.	IV.	Chadburn .....	9 a.m.	3 0	278	12'00 12'00 11'99 12'01 M 12'000	'09 '19 '295 '406 '51	3000 6000 9000 12000 15000	-·015 -·020 -·020 -·014 -·015	.....	In garden on bank of Derwent, quite clear.	500.
501.	Oct. 20.	CUMBERLAND. The Styne. ISAAC FLETCHER, ESQ., M.P. Mr. J. Wilson.		Cook .....	1st of month.	1 0	1077	4'00 4'00 3'99 4'01 M 4'000	.....	.....	.....	Measuring-glass not accessible. Gauge concealed among rocks on the eastern slope of the Styne Head Pass.	501.	

## EXAMINATION OF

## EXAMINATION OF RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M=mean).			Equivalents of water. Scale-point. Grains.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							in.	in.	in.					
513.	1874. Apr. 1.	YORKSHIRE. Border Hill, Swinden. WAKEFIELD NEW WATER Co.	III.	Negretti & Zambra	9 a.m.	ft. in.							Site only of gauge inspected, the gauge having been broken and removed. Very open tableland, good position.	513.
514.	Apr. 1.	YORKSHIRE. Swinden Lodge. WAKEFIELD NEW WATER Co.	III.	Negretti & Zambra	8 a.m.	1 1	.....	5'04 5'04 5'04 5'04 M 5'040	'1 '2 '3 '4 '5	490 1020 1500 2000 2500	+.003 -.002 +.002 +.003 +.004	.....	Rim of gauge rather flat. Gauge well exposed in open field.	514.
515.	Apr. 1.	YORKSHIRE. Langsett. WAKEFIELD NEW WATER Co.	III.	Negretti & Zambra	.....	1 1	.....						N.W.-N.E. Wall, 40°.	515.
516.	June 16.	YORKSHIRE. Gibbet, Halifax. HALIFAX CORPORATION. J. E. Lambert, Esq.	XII.	Guest & Chrimes	9 a.m.	5 0	568	4'98 5'00 4'97 5'01 M 4'990	'1 '2 '3 '4 '5	490 960 1450 1948 2450	+.001 +.006 +.006 +.005 +.004	S. House, 33°. S.W. House, 52°. N. Buildings, 12°. W. Buildings, 25°.	Gauge erected on the base of the old Gibbet; site bad, but no better available.	516.
517.	June 16.	YORKSHIRE. Victoria Reservoir, Halifax. HALIFAX CORPORATION. Mr. G. Moore.	XII.	Guest & Chrimes	9 a.m.	1 0	795	5'00 5'00 5'00 4'98 M 4'995	'1 '2 '3 '4 '5	460 950 1450 1950 2435	+.007 +.008 +.007 +.006 +.004	.....	Very open position on side of reservoir.	517.
518.	June 16.	YORKSHIRE. Ramsden Wood, Halifax. HALIFAX CORPORATION. Mr. E. Dennis.	X.	Negretti & Zambra	9 a.m.	1 2	805	7'96 8'02 8'04 8'00 M 8'005	'1 '2 '3 '4 '5	1275 2550 3820 5040 6320	correct. -.001 -.001 -.001 +.003	S. House, 33°. W. Reservoir bank, 25°.	Clear except as noted.	518.
519.	June 16.	YORKSHIRE. Ogden Reservoir, Halifax. HALIFAX CORPORATION. Mr. John Smith.	X.	.....	9 a.m.	1 3	990	8'02 8'00 7'98 8'03 M 8'007	'1 '2 '3 '39	1280 2520 3750 4900	-.001 +.002 +.005 +.005	.....	Very open position.	519.
520.	June 16.	YORKSHIRE. Stansfield Hall, Todmorden. J. FIELDEN, ESQ., M.P. Mr. W. Fielden.	X.	Negretti & Zambra	9 a.m.	2 0	.....	7'98 8'05 7'92 8'10 M 8'012	'1 '2 '3 '4	1320 2590 3760 5050	-.004 -.003 +.005 +.003	.....	In garden, quite unsheltered. Gauge old, and measuring-glass broken off at '41.	520.
521.	June 17.	YORKSHIRE. Walshaw Dean. HALIFAX CORPORATION. J. Midgeley.	I.	.....	Mondays and 1st of month.	0 3	1380	8'08 8'10 8'10 8'00 M 8'07	.....	.....	.....	.....	Gauge sunk in a box which was nearly level with the rim; put in sods to raise it 2 in. above the wood. Site quite open, and gauge correct.	521.
522.	June 17.	YORKSHIRE. Midgeley Moor. HALIFAX CORPORATION. Mr. N. Greenwood.	I.	.....	Mondays and 1st of month.	0 6	1350	6'76 6'97 6'86 6'66 M 6'888	.....	.....	.....	.....	Gauge correct, and site very good.	522.
523.	June 17.	YORKSHIRE. Warley Moor. HALIFAX CORPORATION. Mr. N. Greenwood.	I.	.....	Mondays and 1st of month.	0 6	1425	7'12 7'06 7'00 7'00 M 7'045	.....	correct.	.....	On open moor.	523.	

## EXAMINATION OF

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M=mean).	Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
						Above ground.	Above sea-level.							
524.	1874. June 17.	YORKSHIRE. Ovenden Moor, HALIFAX CORPORATION. Mr. N. Greenwood.	I.		Mondays and 1st of month.	ft. in. o 6	feet. 1375						On open flat moorland.	524.
525.	July 30.	HAMPSHIRE. Ashdell, Alton. F. CROWLEY, ESQ. F. Crowley, Esq.	X.	Smith & Beck	9 a.m.	3 3	396						In garden, quite clear; ground level, but falling rapidly at a short distance.	525.
526.	July 30.	HAMPSHIRE. East Tisted Rectory, Alton. REV. F. HOWLETT. Rev. F. Howlett.	III.	Casella		1 3	420						S.E. Church-tower, 28°.	526.
527.	July 30.	HAMPSHIRE. The Wakes, Selborne. T. BELL, ESQ., F.R.S. Mr. W. Binnie.	Square V.	Anon.	9 a.m.	4 7	400						N.E. Yew, 38°. S.W. Hill wooded, 10°.	527.
528.	July 30.	HAMPSHIRE. Chawton House, Alton. MR. FRANCES. Mr. Frances.	III.	Casella	9 a.m.	1 0	445						Gauge not in use, but to be restarted August 1st, 1874. Fair position in garden.	528.
529.	July 31.	HAMPSHIRE. Wester Court, Alresford. T. P. MAY, ESQ. T. P. May, Esq.	X.	Negretti & Zambra	9 a.m.	0 9	253						On N. side of a sunk fence, and about 3 ft. from the edge; otherwise good position.	529.
530.	July 31.	HAMPSHIRE. Arlebury, Alresford. F. MARX, ESQ. Mr. Kinge.	III.	Casella	9 a.m.	1 4	308						S.E. Limes, 42°.	530.
531.	July 31.	HAMPSHIRE. Otterbourne, Winchester. J. B. YONGE, ESQ. J. B. Yonge, Esq.	XII.	Casella		1 0	115						In kitchen-garden; clear, except as noted.	531.
532.	July 31.	HAMPSHIRE. Otterbourne, Winchester. J. B. YONGE, ESQ.	III.	Casella		1 3	115						Open position in kitchen-garden.	531.
533.	Aug. 1.	HAMPSHIRE. Red Lodge, Southampton. R. C. HANKINSON, ESQ. R. C. Hankinson, Esq.	XII.	Casella	9 a.m.	0 5	200						Close to 531.	532.
534.	Aug. 1.	HAMPSHIRE. Red Lodge, Southampton. (Plantation Gauge.) R. C. HANKINSON, ESQ. R. C. Hankinson, Esq.	III.	Davis	9 a.m.	4 0	194						In plantation, S.W. of house; clear at present.	534.

## ON THE RAINFALL OF THE BRITISH ISLES.

## RAIN-GAUGES (continued).

Diameters (that marked M=mean).	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
M 7'06	7'10	7'00	7'06	7'10	7'98	'1	1290	—'002						
	8'00	'2	2550		8'01	'3	3800	+001						
	4'99	'1	495		7'98	'4	5400	+001						
	5'00	'2	980		7'99	'5	6340	+001						
	4'97	'3	1480		7'99	'6	7270	+001						
	5'02	'4	1980		7'99	'7	8200	+001						
M 4'995	5'00	5'02	2470		7'99	'8	9130	+001						
	6'0009	'028	200		7'99	'9	10000	+001						
	5'9509	'139	1320		7'99	'10	10900	+001						
	6'0409	'278	2740		7'99	'11	11800	+001						
M 6'0039	'017	4050	+001		7'99	'12	12700	+001						
	3'00	'1	5210		7'99	'13	13600	+001						
	2'99	'2	340		7'99	'14	14500	+001						
	3'01	'3	520		7'99	'15	15400	+001						
	3'00	'4	692		7'99	'16	16300	+001						
M 3'000	'5	805	+001		7'99	'17	17200	+001						
	8'00	'1	1248		7'99	'18	18100	+001						
	7'98	'2	2500		7'99	'19	19000	+001						
	7'99	'3	3750		7'99	'20	20000	+001						
	8'00	'4	5010		7'99	'21	20900	+001						
M 7'993	'5	6280	+001		7'99	'22	21800	+001						
	5'01	'1	470		7'99	'23	22700	+001						
	4'99	'2	980		7'99	'24	23600	+001						
	5'00	'3	1480		7'99	'25	24500	+001						
M 5'000	'4	1950	+001		7'99	'26	25400	+001						
	5'00	'5	2450		7'99	'27	26300	+001						
	5'00	'1	500		7'99	'28	27200	+001						
	5'01	'2	1000		7'99	'29	28100	+001						
	5'00	'3	1500		7'99	'30	29000	+001						
M 5'000	'4	2000	+001		7'99	'31	29900	+001						
	5'00	'5	2500		7'99	'32	30800	+001						
M 4'983	'1	480	+001		7'99	'33	31700	+001						
	4'94	'2	1000		7'99	'34	32600	+001						
	5'00	'3	1470		7'99	'35	33500	+001						
	5'02	'4	1960		7'99	'36	34400	+001						
M 4'97	'4	2460	+001		7'99	'37	35300	+001						
	5'03	'1	490		7'99	'38	36200	+001						
	4'94	'2	1000		7'99	'39	37100	+001						
	4'98	'3	1470		7'99	'40	38000	+001						
	5'04	'4	1960		7'99	'41	38900	+001						
M 4'998	'5	2460	+001		7'99	'42	39800	+001						
	5'03	'1	490		7'99	'43	40700	+001						
	4'96	'2	1000		7'99	'44	41600	+001						
	4'99	'3	1460		7'99	'45	42500	+001						
	4'98	'4	1970		7'99	'46	43400	+001						
M 4'990	'5	2450	+001		7'99	'47	44300	+001						

### **EXAMINATION OF**

#### RAIN-GAUGES (*continued*).

## EXAMINATION OF

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.		Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
						Above ground.	Above sea-level.		ft. in.	in.	in.				
546.	1874—Aug. 6.	DEVONSHIRE. Rundlesone, Dartmoor. G. J. SYMONS, ESQ.	XII.	Casella .....		ft. in.	1 0	feet.	1450			S.E. House, 30°.	Gauge removed; site very good, in small garden.	546.	
547.	Aug. 6.	DEVONSHIRE. Prison Garden, Dartmoor. G. J. SYMONS, ESQ. B. E. Power, Esq., M.D.	XII.	Casella .....	9 a.m.	0 10	1381		5'00 5'00 5'00 4'99 M 4'998	'1 '2 '3 '4 '5	490 975 1470 1975 2460	+·001 +·003 +·003 +·001 +·003		In garden, quite open; good position.	547.
548.	Aug. 6.	DEVONSHIRE. Kilworthy Hill, Tavistock. W. MERRIFIELD, ESQ. W. Merrifield, Esq.	XII.	Casella .....	9 a.m.	0 8	362		5'01 5'00 5'00 5'00 M 5'002	'1 '2 '3 '4 '5	500 990 1480 1950 2490	-·001 correct. +·002 +·007 -·002	N.N.W. Wall and trees, 35°.	In small garden; clear, except as noted.	548.
549.	Aug. 7.	DEVONSHIRE. Oaklands, Okehampton. W. H. HOLLEY, ESQ. W. H. Holley, Esq.	XII.	Casella .....	9 a.m.	1 0	521		5'02 4'98 5'00 5'02 M 5'005	'1 '2 '3 '4 '5	490 970 1470 1960 2470	+·001 +·005 +·005 +·003 +·003		Excellent position in very large garden.	549.
550.	Aug. 7.	DEVONSHIRE. Lit. and Sci. Instit., Barnstaple. LIT. AND SCI. INSTITUTION. Mr. Knill.	X.	Negretti & Zambra	9 a.m.	0 8	31		8'00 7'98 8'01 M 7'998	'1 '2 '3 '4 '5	1270 3760 5050 6100	+·003 +·004 +·002 +·003	S. Pear, 41°.	In small garden, and rather too sheltered.	550.
551.	Aug. 8.	DEVONSHIRE. Northam, Bideford. REV. J. D. CHURCHWARD. Rev. J. D. Churchward.	XII.	Casella .....	9 a.m.	1 1	173		5'00 5'00 4'98 5'00 M 7'998	'1 '2 '3 '4 '5	500 990 1490 1980 2480	-·001 core et. -·001 correct. -·001		Quite clear, in large level garden, near the church.	551.
552.	Aug. 8.	DEVONSHIRE. Horwood, Bideford. REV. J. DENE. Rev. J. Dene.	III.	Pastorelli .....	9 a.m.	1 0	304		5'01 5'00 5'00 5'00 4'99	'1 '2 '3 '4 '5	490 980 1490 1490 2480	+·001 +·002 +·001 +·001	N. Firs, 52°. S.W. Tree, 28°.	On edge of lawn. Position good, ground nearly level.	552.
553.	Aug. 8.	DEVONSHIRE. Great Torrington. REV. S. BUCKLAND. Rev. S. Buckland.	XII.	Apps .....	Noon.	1 0	330		4'98 5'04 5'01 5'03 M 5'000	'1 '2 '3 '4 '5	500 995 1450 1960 2455	correct. +·001 +·009 +·007 correct.	S.S.E. Trees, 40°. N. Trees, 28°.	On lawn in Rectory garden.	553.
554.	Aug. 8.	DEVONSHIRE. Langtree Wick (daily). MISS NUNES. Miss Nunes.	XII.	Pastorelli .....	9 a.m. daily.	1 0	451		5'01 5'00 5'01 5'00 M 5'015	'1 '2 '3 '4 '5	475 980 1480 1970 2455	+·004 +·003 +·002 +·003 +·008		Good position in large garden.	554.
555.	Aug. 8.	DEVONSHIRE. Langtree Wick (monthly). MISS NUNES. Miss Nunes.	XII.	Casella .....		1 0	451		4'98 5'00 5'02 5'03 M 5'005	'1 '2 '3 '4 '5	475 980 1480 1970 2460	+·004 +·003 +·002 +·003 +·005		Close to No. 554.	555.
556.	Aug. 10.	SOMERSET. Gay Street, Bath. C. S. LARTER, ESQ., M.B. C. S. Larter, Esq., M.B.	XI.		9 a.m.	1 3	.....		4'95 4'85 4'95 4'84 M 4'898	'1 '2 '3 '4 '5	490 980 1480 1950 2440	+·001 +·002 +·001 +·006 +·006	E. House, 32°. W. Tree, 35°.	Position not good, but no better available.	556.

## ON THE RAINFALL OF THE BRITISH ISLES.

EXAMINATION OF RAIN-GAUGES (*continued from Brit. Assoc. Rep. 1874, p. 117.*)

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge.	Diameters (that marked M=mean).	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
								Above ground.	Above sea-level.	Scale-point	Grains.			
557.	1874. Aug. 10.	SOMERSET. Literary Institution, Bath. <i>THE INSTITUTION.</i> <i>Mr. Russell.</i>	VIII.	Anon. ....	9 a.m.	ft. in. 8 7	feet. 75	in. 6'00 6'00 6'00 6'00 M 6'000	in. '1 '2 '3 '4 '5	710 1420 2100 2780 3450	correct. +001 +006 +011 +017	.....	On thermometer-stand in grounds of Institution; corrected glass has been supplied.	557
558.	1873. Aug. 19.	WILTSHIRE. Tytherton, Chippenham. <i>MAJOR GRITTON.</i> <i>Major Gritton.</i>	XII.	Casella ....	9 a.m.	i o	157	4'95 5'00 4'98 5'00 M 4'983	'1 '2 '3 '4 '5	490 970 1460 1960 2460	correct. +003 +003 +002 correct.	N.E. Shrubs, 32°. N.W. Fir, 28°. W. Apple, 44°. S.&S.S.E. Trees, 32°. N.N.W. House, 22°.	On lawn; best position available.	558
559.	Aug. 20.	WILTSHIRE. Sunnyside, Trowbridge. <i>W. J. MANN, ESQ.</i> <i>W. J. Mann, Esq.</i>	XII.	Casella ....	9 a.m.	i o	190	4'97 5'00 5'00 5'00 M 4'993	'1 '2 '3 '4 '5	490 970 1470 1950 2450	+001 +004 +003 +006 +004	N.N.E. Trees, 25°. E.S.E. " 25°.	In strawberry-bed, good open position.	559
560.	Aug. 21.	WILTSHIRE. Alderbury, Salisbury. <i>REV. R. S. HUTCHINGS.</i> <i>Rev. R. S. Hutchings.</i>	XII.	Casella ....	9 a.m.	o s	263	4'96 4'98 4'96 5'00 M 4'993	'1 '2 '3 '4 '5	470 970 1460 1970 2450	+004 +002 +002 -001 +004	W.S.W. House, 40°. W. Tree, 30°. N.E. Trees, 30°. E. " 36°.	.....	560
561.	Aug. 22.	WILTSHIRE. Lower Woodford, Salisbury. <i>H. HINXMAN, ESQ.</i> <i>H. Hinckman, Esq.</i>	III.	Knight ....	i 2	150	4'98 4'95 4'98 4'98 M 4'975	'1 '2 '3 '4 '5	500 1000 1495 2000 2476	-002 -004 -005 -007 -004	S.S.E. Trees, 38°. E.N.E. House, 20°. E. Tree, 18°. W.S.W. Tree, 30°. S. Trees, 20°.	Surrounded by vegetables and not firmly fixed; observer promised that this should be carefully done.	561	
562.	Aug. 23.	WILTSHIRE. West Dean, Salisbury. <i>R. V. W. EYRE.</i> <i>Mr. J. Moodie.</i>	XIII.	Casella ....	9 a.m.	i o	140	4'97 5'02 4'99 5'00 M 4'973	'1 '2 '3 '4 '5	490 970 1460 1950 2500	-001 +004 +005 +006 -010	N. Tree, 40°. N.E. " 35°. E.N.E. & E. Tree, 25°. S.W. Tree, 35°. N.W. " 38°.	.....	562
563.	Aug. 26.	KENT. Eltham Green (Field). <i>E. J. C. SMITH, ESQ.</i> <i>E. J. C. Smith, Esq.</i>	III.	Negretti ....	9 a.m.	i o	80	4'95 4'93 5'04 4'95 4'96 M 4'995	'1 '1 '2 '3 '4 '5	445 950 950 1450 1950 2460	+009 +006 +006 +004 +002 +003	.....	In a field, quite clear and open ...	563
564.	Sept. 6.	KENT. Darford (The Downs). <i>R. F. JARVIS, ESQ.</i> <i>R. F. Jarvis, Esq.</i>	XII.	Apps ....	9 a.m.	2 4	162	4'98 5'01 5'00 5'00 M 4'970	'1 '2 '3 '4 '5	450 1000 1480 1970 2440	+009 -002 +001 +002 +002	N.N.E. House, 25°. S.&S.S.E. Trees, 34°. S.W. & W.S.W. Tr. 30°. N.W. Trees, 25°.	Fixed on lawn, in the stump of a tree.	564
565.	1874. Aug. 17.	CUMBERLAND. Scotby, Carlisle. <i>A. SUTTON, ESQ.</i> <i>A. Sutton, Esq.</i>	VIII.	Marshall ....	9 a.m.	5 6	140	4'998 8'00 7'86 7'90 M 7'923	'5 '1 '92 '25 '93	2480 1255 2400 3100	correct. -001 -001 +001	E. Low Trees, 20°.	In garden, quite clear except as noted.	565
566.	Aug. 17.	CUMBERLAND. Cemetery, Carlisle. <i>J. CARTMEL, ESQ.</i> <i>Mr. Bell.</i>	X.	Negretti & Zambra	9 a.m.	o s	114	7'99 8'02 8'00 8'00 M 8'002	'1 '08 '108 '108 '93	1280 1390	-001 -001	E. Ther.-stand, 48°. N. Railings, 22°. W. " 50°. S. " 58°.	A piece of ground 9 ft. x 13 ft. is surrounded by an iron railing 5 ft. high, within which are all the instruments.	566
567.	Aug. 25.	ANTRIM. Linen Hall, Belfast. <i>Mr. Maitland.</i>	II.	Anon. ....	9 a.m.	4 8	30	11'30 11'26 11'30 11'23 M 11'273	'05 '1 '2520 '2520 '273	1260 2520	correct. correct.	.....	In garden in centre of Linen Hall Buildings; quite clear.	567

### **EXAMINATION OF**

#### RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station, OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).			Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference
							ft. in.	feet.	in.	in.	Grains.				
568.	1874. Aug. 26.	ANTRIM. The Manse, Antrim. REV. J. H. ORR. Rev. J. H. Orr.	III.	Casella .....			1 2	150	5'00 4'98 5'03 4'98	'1 '2 '3 120 1130 1130 1128	500 980 1490	—.001 —.002 —.001		In a field east of the town; very open position.	568.
569.	Aug. 28.	ANTRIM. Queens College, Belfast. THE COLLEGE. W. Taylor.	IV.	Anon. ....	9 a.m.	7 0	63		M 4'998 M 1'270 6'66 6'68 6'72 6'66 M 6'680	'05	1260	correct.		On the lawn south-west of the College; quite unsheltered.	569.
570.	Aug. 28.	ANTRIM. Antrim Road, Belfast. THE CORPORATION. W. J. Smith, Esq.	IV.	Anon. ....	9 a.m.	7 0	144		2'5 — 2'3 2'0 — 1'75 1'25 — 1'0 1'0 — 0'5	1870 2210 2320 4520	—.004 +.001 —.004 —.001		Gauge has a very much rounded rim; position good.	570.	
571.	Aug. 28.	ANTRIM. Old Park. W. GIRDWOOD, ESQ. Mr. Armstrong.	XII.	Casella .....	10 a.m.	4 0	224		4'98 5'03 4'98 5'03	'1 194 500 980	4540 broken.	—.001 —.001 —.003		On a post on the east side of a hedge, and south of the works.	571.
572.	Aug. 29.	DOWN. Milltown, Banbridge. J. SMYTH, JUN., ESQ., C.E. J. Smyth, Jun., Esq., C.E.	X.	Negretti & Zambra	9 a.m.	0 6	200		M 5'005 8'02 7'97 8'03 7'97	'1 '2 '3 '4 '5	1270 2550 3780 5120 6350	correct. —.001 +.002 —.004	N. Acacia, 28°. E. Laurel, 12°. S.E. Ash, 35°. W. Trees, under 20°	On lawn with many trees, but none rising to higher angles than those noted.	572.
573.	Aug. 29.	DOWN. Milltown, Banbridge. J. SMYTH, JUN., ESQ., C.E. J. Smyth, Jun., Esq., C.E.	VIII.	Anon. ....		40 0	220		M 7'998 10'00sq.	'1 '2 '3 '4 '5	2370 4870 7410 9940 12490	+.006 +.006 +.006 +.006 +.005	N. Trees, 15°.	On post 5 ft. above top of roof of laboratory.	573.
574.	Aug. 29.	DOWN. Corbet Reservoir. BANN RES. COMPANY. W. Sprott.	IV.	Mason, Dublin ...		3 3	234		M 9'995 10'10sq.	'15 '27 '38 '40 '51	3000 6000 9000 12000 15000	+.035 +.040 +.043 +.050 +.055	S.E. Tree, 22°.	On north bank of river Bann; open position except as noted.	574.
575.	Aug. 29.	DOWN. Bann Reservoir. J. SMYTH, JUN., ESQ., C.E. Mr. J. Burn.	I.	Anon. ....	noon.	0 2	440		M 10'165 8'02	'26 '38 '40 '43 '63	.....	.....	N.E.R.-gauge, 25°.	Quite exposed, but gauge No. 576 rather too near; rod correct, but inner cylinder slightly too large.	575.
576.	Aug. 29.	DOWN. Bann Reservoir. BANN RES. COMPANY. Mr. J. Burn.	IV.	Mason, Dublin ...		3 3	443		10'12sq. 10'18 10'11 10'16	'14 '26 '38 '48	3000 6000 9000 11710	+.024 +.029 +.034 +.030		Close to No. 575.	576.
577.	Aug. 31.	DOWN. Waringstown. MAJOR WARING. Major Waring.	X.	Negretti & Zambra	9 a.m.	0 5	190		M 10'142 8'00	'58 '1 '2 '3 '4	14710 1270 2480 3740 5040	+.015 correct. +.004 +.005 +.002	E. Trees, 25°.	On large lawn, very good position.	577.
578.	Aug. 31.	DOWN. Waringstown. MAJOR WARING. Major Waring.	I.	Bryson .....		0 3	190		M 7'995 3'00 2'98 3'00 3'00 M 2'995	'27 — 2'01 2'01 — 3'76 3'76 — 5'57 5'57 — 7'34 7'34 — 9'15	3000 6000 9000 12000 15000	+.005 +.006 +.12 +.08 +.12		Close to No. 577; gauge not in use.	578.

## EXAMINATION OF RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Dimensions (that marked M = mean).			Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							in.	in.	Grains.					
579.	1874. Sept. 2.	DUBLIN. Fitzwilliam Square W., Dublin. DR. J. W. MOORE. Dr. J. W. Moore.	III.	Anon.....	9 a.m.	ft. in. 3 6 54	5'00 5'00 5'00 5'00 M 5'000	'1 '2 '3 '4 '5	490 980 1450 1960 2470	+·001 +·002 +·007 +·005 +·002	S.E. Poplar, 56°. E. House, 40°. N. Wall, 10°. W. " 33°.	In small garden in rear of house; bad position, but no better available.	579.	
580.	Sept. 2.	WICKLOW. Fassaroe, Bray. R. BARRINGTON, ESQ. R. Barrington, Esq.	IV.	Yeates .....	9 a.m.	5 0	10'02 10'00 10'00 10'00 M 10'005	'1 '2 '3 '4 '5	2520 4970 7470 9970 12220	- +·003 +·004 +·005 +·015	S.E. Firs, 30°. W. Wood, 10°.	In garden; good position, but ground undulating.	580.	
581.	Sept. 2.	DUBLIN. Fitzwilliam Square, Dublin. DR. J. W. MOORE. Dr. J. W. Moore.	XII.	Casella .....		0 10	54	5'00 5'04 5'06 5'08 M 5'045	'1 '2 '3 '4 '5	480 980 1480 1980 490	+·005 +·006 +·007 +·008 +·002	E. House, 39°. N. Wall, 48°. W. Trees, 38°. S. Wall, 28°.	Close to No. 579.	581.
582.	Sept. 14.	BERKSHIRE. Wantage. E. C. DAVEY, ESQ. E. C. Davey, Esq.	XI.	Negretti & Zambra .....		7 5	280	4'96 5'04 5'00 5'04 M 5'010	'1 '2 '3 '4 '5	990 1480 2000 2460 490	+·002 +·001 +·002 +·002 +·006	.....	On post in kitchen-garden; all clear.	582.
583.	Sept. 14.	BERKSHIRE. Long Wittenham, Abingdon. REV. J. C. CLUTTERBUCK. Rev. J. C. Clutterbuck.	III.	Braham .....		1 0	170	5'00 5'00 4'94 5'00 M 4'985	'1 '2 '3 '4 '5	995 1500 1970 2480 475	- +·004 - +·004 +·004	S.E. Birch, 57°. S. Elm, 44°. N.W. Tree, 41°.	In kitchen-garden, east of vicarage and church.	583.
584.	Sept. 14.	BERKSHIRE. Ock Street, Abingdon. W. BELCHER, ESQ. W. Belcher, Esq.	XI.	Negretti & Zambra	9 a.m.	1 0	176	5'00 5'02 5'03 4'99 M 5'010	'1 '2 '3 '4 '5	980 1455 1960 2460 490	+·002 +·003 +·008 +·006 +·006	S. Rose-bush, 35°.	Level garden; position good except as noted.	584.
585.	Sept. 15.	OXFORD. Magdalen Coll. Laboratory. MAGDALEN COLLEGE. J. Harris, Esq.	XII.	Casella .....		0 8	192	4'98 4'97 5'00 4'97 M 4'988	'1 '2 '3 '4 '5	980 1470 1960 2450 495	+·001 +·002 +·003 +·003 correct.	S. Elms, 35°.	In the botanical gardens; clear except as noted.	585.
586.	Sept. 15.	BUCKINGHAM. Addington Manor, Winslow. E. HUBBARD, ESQ., M.P. Mr. J. Mathison.	XII.	Casella .....	9 a.m.	0 9	309	5'02 4'98 4'99 4'98 M 4'993	'1 '2 '3 '4 '5	980 1490 1990 2480 495	+·001 +·002 +·002 +·002 correct.	E. Apple, 41°.	In kitchen-garden, well exposed.	586.
587.	Sept. 15.	BUCKINGHAM. Addington Manor, Winslow. E. HUBBARD, ESQ., M.P. Mr. J. Mathison.	X.	Negretti & Zambra	9 a.m.	0 9	309	8'00 8'00 8'00 8'00 M 8'000	'1 '2 '3 '4 '5	1200 2500 3780 5050 6310	+·005 +·003 +·002 +·002 +·003	E. Apple, 41°.	Close to No. 586.	587.
588.	Sept. 15.	BUCKINGHAM. Adstock Fields, Buckingham. E. HUBBARD, ESQ., M.P. Mr. W. Weston.	XII.	Casella .....	9 a.m.	0 6	350	5'00 4'98 5'00 4'98 M 8'000	'1 '2 '3 '4 '5	490 990 1490 1990 2500	+·001 +·002 - +·003 +·002	N.W. Trees, 35°. E. House, 20°. S.S.W. Trees, 25°.	On small lawn in front of house; owing to the number of trees, no better position obtainable.	588.
589.	Sept. 15.	BUCKINGHAM. School Lane, Buckingham. MR. W. WALKER. Mr. W. Walker.	X.	Negretti & Zambra	9.30 a.m.	1 10	269	7'99 8'02 8'00 8'01 M 8'005	'1 '2 '3 '4 '5	1255 2560 3770 5050 6300	+·001 - +·003 +·003 +·004	W. Tree, 48°. S. House, 40°.	Gauge loosely placed in an old tub, and position not good.	589.

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
								Scale-point.	Grains.					
590.	1874-Sept. 15.	BUCKINGHAM. Castle Fields, Buckingham. <i>C. PARROTT, ESQ.</i> <i>Mr. J. Richards.</i>	XII.	Casella .....	8.30 a.m.	ft. in. 1 6	feet. 318	M in. 5'00 5'00 5'00 5'01 5'02 4'99 5'00 5'00	in. '1 '2 '3 '4 '5 '1 '2 '3	500 1010 1490 2000 2490 500 1000 1480	—'001 —'004 correct. —'003 —'002 —'001	.....	Very good position in rear of house; grounds level.	590.
591.	Sept. 21.	HAMPSHIRE. Park Corner, Heckfield. <i>J. MARTINEAU, ESQ.</i> <i>J. Martincau, Esq.</i>	III.	Casella .....	9 a.m.	1 3	257	M 4'998 7'90 7'98 7'97 7'94 M 7'948 8'00 8'00 7'99 8'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	1260 2530 3760 5040 6290 1300 2530 3800 5010 6310	—'001 —'002 correct. —'002 —'002	S.S.W. Tree, 33°.	In flower-garden; clear except as noted.	591.
592.	Sept. 30.	KENT. Culverlands Grove, Tunbridge Wells. — MILLER, ESQ. <i>Mr. Townsend.</i>	X.	Negretti & Zambra .....	9 a.m.	0 2	403	M 4'998 7'90 7'98 7'97 7'94 M 7'948 8'00 8'00 7'99 8'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	1260 2530 3760 5040 6290 1300 2530 3800 5010 6310	—'001 —'002 correct. —'002 —'002	E. Trees, 27°.	On large lawn sloping to S.W.	592.
593.	Oct. 3.	SUSSEX. Crowborough Beacon Observatory. <i>C. L. PRINCE, ESQ.</i> <i>C. L. Prince, Esq.</i>	X.	Casella .....	9 a.m.	0 7	777	M 7'948 8'00 8'00 7'99 8'00	in. '1 '2 '3 '4 '5	1260 2530 3760 5040 6290	—'001 —'002 correct. —'002 —'002	.....	In meteorological enclosure south of observatory; very open position.	593.
594.	Oct. 12.	SUSSEX. The Steyne, Brighton. BRIGHTON CORPORATION. <i>Dr. Taaffe.</i>	XII.	Rowley .....	.....	.....	.....	M 7'998 5'00 4'95 5'02 4'92 M 4'973 5'00 4'99 5'01 5'00 5'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	490 950 1440 1950 2450 495 1000 1480 2000 2490	correct. +·006 +·006 +·003 correct. correct.	.....	Gauge tested before actual erection; it was to be placed in a place selected by myself in the Steyne gardens with other meteorological apparatus.	594.
595.	Oct. 13.	SUSSEX. The Dyke, Poyning. BRITISH ASSOCIATION. <i>Mr. W. Thacker.</i>	XII.	Casella .....	9 a.m.	1 3	690	M 4'973 5'00 4'99 5'01 5'00 M 5'000 5'00 5'02 5'00 5'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	495 1000 1480 2000 2490 500 990 1480 1960 2480	—'002 +·002 +·002 —'003 —'002	N. Bushes, 20°.	In garden E. of house; good position.	595.
596.	Oct. 20.	ESSEX. The Gardens, Audley End. <i>MR. J. BRYAN.</i> <i>Mr. J. Bryan.</i>	XII.	Casella .....	9 a.m.	1 0	163	M 5'000 5'00 4'98 5'00 4'98 M 5'000 5'00 5'02 5'00 5'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	500 990 1480 1960 2480 495 490 970 1450 1970	—'001 correct. +·001 +·005 correct. .....	S.S.W. Apple, 33°.	In garden near Mr. Bryan's house; clear except as noted.	596.
597.	Oct. 20.	ESSEX. Riverside, Audley End. <i>MR. J. BRYAN.</i> <i>Mr. J. Bryan.</i>	XII.	Casella .....	9 a.m. 1st.	1 0	151	M 5'000 5'00 5'02 4'98 5'00 M 5'000 5'00 5'02 5'00 5'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	495 950 1470 1950 2450 495 490 970 1450 1970	+·003 +·004 +·007 +·003 +·006	.....	Very exposed position on bank of river.	597.
598.	Oct. 21.	LEICESTERSHIRE. Town Museum, Leicester. LEICESTER CORPORATION. <i>W. J. Harrison, Esq.</i>	XII.	Casella .....	9 a.m.	1 0	238	M 5'000 5'00 5'00 5'00 5'00 M 5'000 5'00 5'02 5'00 5'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	495 950 1470 1950 2450 495 950 1470 1950 2450	+·003 +·004 +·007 +·003 +·006	.....	Open garden in centre of town.	598.
599.	Oct. 21.	WARWICK. St. Mary's College, Oscott. THE COLLEGE. <i>Rev. S. Whitty.</i>	XII.	Casella .....	9 a.m.	0 6	461	M 5'000 5'00 4'98 4'98 5'02 5'00 M 4'995 5'00 5'00 4'97 5'01 M 4'995 5'00 5'00 4'97 5'01 M 4'995 5'00 5'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	490 980 1480 2000 2470 498 975 1480 1950 2480	+·001 +·002 +·003 +·003 +·006 —'001 +·003 +·001 +·006 —'004 +·001 +·003 +·002 +·001 —'001	.....	Clear position, S.W. of the college.	599.
600.	Oct. 22.	STAFFORD. The Heath House, Chaddle. <i>J. C. PHILLIPS, ESQ.</i> <i>J. C. Phillips, Esq.</i>	XII.	Casella .....	9 a.m.	1 0	647	M 4'995 5'00 5'00 4'97 5'01 M 4'995 5'00 5'00 4'97 5'01 M 4'995 5'00 5'00	in. '1 '2 '3 '4 '5 '1 '2 '3 '4 '5 '1 '2 '3 '4 '5	498 980 1480 2000 2470 498 975 1480 1950 2480	—'001 +·003 +·001 +·006 —'001	S.E. Araucaria, 30° N.W. House, 28°.	On sloping ground, W. of house.	600.

EXAMINATION OF RAIN-GAUGES (*continued*).

\* This mark denotes that the gauge has a deep Snowdonian rim.

## EXAMINATION OF RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground.      Above sea-level.	Diameters (that marked M = mean). in.	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
								Scale-point.	Grains.					
612.	1874. Dec. 17.	WILTSHIRE. Marlborough College. REV. T. A. PRESTON. Rev. T. A. Preston.	X.	Negretti & Zambra	9 a.m.	ft. in. o 8	feet. 456	8'00 7'99 8'01 8'00 M 8'000	.1 .2 .3 .4 .5	1280 2560 3820 5050 6320	—'001 —'002 —'001 +.'002 +.'002	N.W.-N.E. Chapel, 30° S. Mound, 18°.	On grass in college grounds, S. of chapel.	612.
613.	Dec. 17.	WILTSHIRE. Marlborough College. REV. T. A. PRESTON. Rev. T. A. Preston.	XII.	Casella .....	9 a.m.	i o	456	4'99 5'00 5'00 5'00 M 4'998	.1 .2 .3 .4 .5	500 990 1490 1960 2450	—'001 —'001 +.'004 +.'006	.....	Close to No. 612.	613.
614.	Dec. 17.	WILTSHIRE. Marlborough College. REV. T. A. PRESTON. Rev. T. A. Preston.	III.	Ladd .....	9 a.m.	i 3	456	5'00 5'02 4'99 5'00 M 5'002	.1 .2 .3 .4 .5	485 980 1490 1975 2470	+.'002 +.'002 correct. +.'002 +.'002	N.W.-N.E. Chapel, 35°	Near No. 612, but rather further from the chapel.	614.
615.	Dec. 19.	CARMARTHEN. Asylum, Carmarthen. G. J. HEARDER, ESQ., M.D. G. J. Hearder, Esq., M.D.	X.	Negretti & Zambra	9 a.m.	o 6	180	7'98 8'02 7'84 8'12 M 7'990	.1 .2 .3 .4 .5	1260 2550 3790 5040 6350	—'001 +.'001 +.'001 +.'002 +.'001	.....	Good gauge in very excellent position.	615.
616.	Dec. 19.	CARMARTHEN. Goal, Carmarthen. MR. G. STEPHENS. Mr. G. Stephens.	X.	Negretti & Zambra	9 a.m.	o 6	92	8'00 7'94 7'96 8'02 M 7'980	.....	2590	—'005	S.W. Trees, 27°.	On a large round tower, the centre of which is occupied by a garden. Position unusual, but, I think, unobjectionable.	616.
617.	Dec. 21.	GLAMORGAN. Tynant, Radyr. F. G. EVANS, ESQ. F. G. Evans, Esq.	XII.	Casella .....	9 a.m.	i o	100	4'98 5'01 5'00 5'00 M 4'998	.1 .2 .3 .4 .5	495 1000 1490 2000 2490	—'003 —'002 —'001 —'004 —'003	N.N.W. Laburn., 55° N.W.-N.E. House, 40°	Best position available. The laburnum will be cut back; and the observer states that rain usually falls very nearly vertically at Tynant.	617.
618.	Dec. 21.	GLAMORGAN. Crockherbtown, Cardiff. W. ADAMS, ESQ., C.E. W. Adams, Esq., C.E.	XII.	Casella .....	9 a.m.	i o	35	4'97 5'03 4'98 4'99 M 4'993	.1 .2 .3 .4 .5	500 990 1480 1980 2490	—'001 correct. +.'001 correct. —'004	S.W. Tree, 65°. S.E. " 50°. N.E. Wall, 35°.	No better position to be had. Observer did not like to cut tree.	618.
619.	1875. June 14.	HERTFORD. Tyler Street, Hitchin. W. LUCAS, ESQ. Mr. W. Anderson.	XII.	Apps .....	9 a.m.	i 3	238	5'00 5'01 5'03 5'01 M 4'993	.1 .2 .3 .4 .5	500 995 1500 2000 2490	—'004 correct. correct. —'001 —'004	W. Elm, 33°.	In garden, quite open.	619.
620.	July 28.	BEDFORD. Oaklands, Aspley Guise. E. E. DYMOND, ESQ. E. E. Dymond, Esq.	XII.	Casella .....	9 a.m.	i o	433	4'98 5'02 5'00 5'00 M 5'012	.1 .2 .3 .4 .5	490 990 1480 1970 2500	+.'001 correct. +.'001 +.'003 —'002	N. House, 20°.	On lawn, south of house.	620.
621.	July 28.	BEDFORD. Oaklands, Aspley Guise. E. E. DYMOND, ESQ. E. E. Dymond, Esq.	XII.	Casella .....	9:30 a.m.	i 3	433	4'98 4'99 4'99 5'00 M 5'000	.2 .3 .4 .5 .5	990 1480 1970 2470 490	+.'001 correct. +.'001 +.'002 +.'001	N. House, 20°.	12 ft. N. of No. 620.	621.
622.	Aug. 12.	CARDIGAN. Gogerddan, Aberystwith. SIR PRYSE PRYSE, BART. Sir Pryse Pryse, Bart.	XI.	Negretti & Zambra	.....	i 1½	80	5'03 5'00 5'00 5'00 M 5'007	.1 .2 .3 .4 .5	500 1010 1480 1980 2470	—'001 —'003 +.'002 +.'002 +.'003	W.S.W. House, 3°	On large lawn in broad valley running E.-W.; quite unsheltered.	622.

EXAMINATION OF RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground.      Above sea-level.	Diameters (that marked M = mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.	
							in.	in.	Scale-point.	Grains.					
623.	1875. Aug. 12.	CARDIGAN. Great Dark Street, Aberystwith. <i>MORRIS JONES, ESQ.</i> <i>Morris Jones, Esq.</i>	XII.*	Casella .....	9 a.m.	ft. in. 1 6	feet. 46							Very bad position; to be removed to an open part of the castle grounds.	623.
624.	Aug. 14.	MERIONETH. Brithdir, Dolgelly. BRITISH ASSOCIATION. <i>J. H. Hill, Esq.</i>	III.	Casella .....	9 a.m.	1 0	465	M 8'002	'5	6350	correct.			Clear open position in garden.	624.
625.	Aug. 14.	MERIONETH. Brithdir, Dolgelly (Field). <i>J. H. Hill, Esq.</i> <i>J. H. Hill, Esq.</i>	XII.	Casella .....			447	M 5'000	'5	2470	+002			This gauge was not in use. I advised its erection in an adjacent field, rather higher than No. 624.	625.
626.	Aug. 14.	MERIONETH. National School, Dolgelly. <i>MAJOR MATTHEW.</i> <i>Mr. Orm Williams,</i>	III.	Casella .....	9 a.m.	1 0	43	M 5'000	'5	2470	+002			Good position in private garden of school.	626.
627.	Aug. 16.	MONTGOMERY. Plas, Machynlleth. <i>MR. J. JOHNSTONE.</i> <i>Mr. J. Johnstone,</i>	XII.	Apps .....		1 0	47	M 4'998	'5	2470	+001			In kitchen gardens, S. of the town and unsheltered.	627.
628.	Aug. 16.	MONTGOMERY. Llanwrin, Machynlleth. <i>REV. D. EVANS.</i> <i>Rev. D. Evans.</i>	III.	Casella .....		1 0	57	M 5'012	'5	2500	-002			Gauge not in use, but site chosen, and its erection promised. Quite clear.	628.
629.	Aug. 16.	MERIONETH. Peniarth. <i>W. W. E. WYNNE, ESQ.</i> <i>The Gardener.</i>	V.	Anon.....		1 6	11	M 5'000	'5	2480	correct.			In gardens, rather too near greenhouse; recommended its removal to an unsheltered site.	629.

## EXAMINATION OF

RAIN-GAUGES (*continued from Brit. Assoc. Rep. 1875, p. 111.*)

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground, feet. M = mean).	Diameters (that marked)		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							in.	in.	Scale-point.	Grains.				
630.	1875. Aug. 31.	GLOUCESTERSHIRE. South Parade, Clifton. DR. G. F. BURDER. Dr. Burder.	X.	Negretti & Zambra	9 a.m.	ft. in. 0 6	feet. 192	in. 8'00 8'00 8'00 7'94 M 7'985	'1 '2 '3 '4	1250 2510 3750 5010 in.	+·001 +·002 +·003 +·004	S.E. Tree, 65°. S.-S.W. House, 45°. N.E. Tree, 40°.	In garden at back of house, and much sheltered.	630.
631.	Sept. 10.	DEVONSHIRE. Martinhoe. REV. C. SCRIVEN. Rev. C. Scriven.	XII.	Casella ..... Glass anony.	Irregular.	ft. in. 1 0	feet. 825	5'00 4'98 5'00 4'98 M 4'990	'1 '2 '3 '4 '5	500 1040 1520 2000 2470	—·001 —·010 —·008 —·005 correct.	Nothing injurious	Gauge only emptied at intervals, and monthly total recorded. Observer had an 8-in. Howard's tube-gauge fairly correct; suggested its erection and daily record.	631.
632.	Sept. 11.	DEVONSHIRE. Ilfracombe Hotel. ILFRACOMBE HOTEL COMP. Mr. Tatham.	Merely funnel discharging into tube.	Anon. ....	9 a.m.	ft. in. 12 6	feet. 34	12'00 12'00 12'00 12'00 M 12'000	'1 '2 '3	2850 5700 8460 in.	correct. correct. +·004	.....	On apex of a summerhouse-like thermometer-staud, in grounds of hotel.	632.
633.	Oct. 7.	DURHAM. Raby Castle. G. J. SYMONS, ESQ. Mr. Westcott.	X.*	Casella .....	9 a.m.	ft. in. 1 0	feet. 460	8'01 7'98 8'03 8'02 M 8'002	'1 '2 '3 '4 '5	1300 2550 3810 5050 6350	—·003 —·001 correct. +·003 correct.	N.E. Greenhouse, 22°	In garden N. of Castle; clear, except as noted.	633.
634.	Oct. 7.	DURHAM. Whorlton. REV. A. W. HEADLAM. Rev. A. W. Headlam.	III.	Anon. ....		ft. in. 0 10	feet. 400	5'08 5'05 5'07 5'05 M 5'062	'1 '2 '3 '4 '5	480 990 1450 1960 2450	+·006 +·006 +·015 +·015 +·018	Quite clear, in garden E. of church.	This is evidently a 5-in. glass applied to a gauge 5·06 in. diameter; hence the recorded fall is too large.	634.
635.	Sept. 27.	YORKSHIRE. Great Ayton, Middlesborough. MR. DIXON.	III.	Anon. ....		ft. in. 4 8	feet. 300	5'02 4'98 5'00 5'00 M 5'000	'1 '2 '3 '4 '5	460 960 1460 1950 2450	+·007 +·006 +·005 +·006 +·006	N.W. Trees, 30°.	Gauge on a pedestal, very rickety and not well attended to.	635.
636.	Oct. 26.	KENT. St. Augustine's Monastery, Ramsgate. REV. FATHER QUÉLCH. Rev. Father Quelch.	X.	Negretti & Zambra	9 a.m.	ft. in. 0 6	feet. .....	8'01 8'00 7'99 8'01 M 8'002	'1 '2 '3 '4 '5	1248 2500 3760 5050 6300	+·002 +·003 +·004 +·003 +·004	N. angle of Monastery, 32°.	Good position in garden of Monastery.	636.
637.	Sept. 25.	DURHAM. Egglescliffe. REV. J. HULL. The Gardener.	XII.	Casella .....	9 a.m.	ft. in. 1 0	feet. 80	5'03 4'96 4'98 4'98 M 4'988	'1 '2 '3 '4 '5	520 1020 1480 1980 2500	—·005 —·006 correct. —·001 —·006	S. one Poplar, 30°. S.W. Acacias, 41°. N.N.W. House, 30°. E. Lilacs, 45°. S.E. Acacia, 35°.	Gauge on lawn. Trees rather too close, but probably not sensibly injurious.	637.

\* This mark denotes that the gauge has a deep Snowdonian rim.

## EXAMINATION OF RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground.      Above sea-level.	Diameters (that marked M = mean).		Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							Scale-point.	Grains.	in.	feet.				
638. Nov. 1.	1875.	WILTSHIRE. The Green, Marlborough. REV. T. A. PRESTON. Rev. T. A. Preston.	XII.*	Casella .....	9 a.m.	ft. in.      1 0      472	4'98 5'02 4'97 5'08	'1 '2 '3 '4 M 5'012	500 990 1480 1980 2470	+ '001 + '003 + '002 + '004	in. correct.	Clear .....	In meteorological enclosure, 30 feet from nearest (low) building.	638.
639. Nov. 3.		GLOUCESTERSHIRE. County Asylum, Gloucester. DR. TOLLER.	X.	Negretti & Zambra	9 a.m.	0 6 .....	7'75 8'02 7'98 8'03	'1 '2 '3 '4 M 7'945	1350 2600 3850 5040 broken.	- '007 - '007 - '006 - '003	Fair exposure ...	Gauge had been struck by a mowing machine and very much indented.	639.	
640. Nov. 5.		HEREFORDSHIRE. Richmond Place, Hereford. E. J. ISBELL, ESQ. E. J. Isbell, Esq.	X.	.....	9 a.m.	6 0      188	8'01 7'99 7'99 8'01 M 8'000	'1 '2 '3 '4 '5	1290 2540 3790 5020 6300	- '002 correct. + '001 + '004 + '004	W.N.W. House, 22° S.E. Tree, 33°.	In small garden in rear of house. Gauge fixed in a box upon a post.	640.	
641. Nov. 5.		HEREFORDSHIRE. The Asylum, Hereford. T. A. CHAPMAN, ESQ., M.D. T. A. Chapman, Esq., M.D.	III.	Anon. ....	9 a.m.	1 3 .....	4'92 5'00 5'02 4'92 M 4'965	'1 '2 '3 '4 '5	490 980 1480 1980 2470	correct. correct. - '003 - '005 - '005	.....	Perfectly clear on open lawn .....	641.	
642. Nov. 4.		HEREFORDSHIRE. The Graig, Ross. H. SOUTHALL, ESQ. H. Southall, Esq.	III.	Anon. ....	9 a.m.	1 0      200	5'02 5'00 4'99 5'00 M 5'002	'1 '2 '3 '4 '5	500 970 1470 1980 2460	- '001 + '004 + '004 + '001 + '004	N. Tree, 34°. N.W. Tree, 38°.	On lawn; good exposure except as noted.	642.	
643. Nov. 8.		MERIONETH. Rhiwbrifdir, MAJOR MATHEW, Mr. O. Jones.	III.	Casella .....	9 a.m.	10 0      1100	5'06 4'98 5'00 4'97 M 5'002	'1 '2 '3 '4 '5	500 990 1480 1980 2480	- '001 correct. + '002 + '001 correct.	Clear .....	In angle of a stack of slates, in the best position the works afford.	643.	
644. Nov. 9.		CARNARVON. Warwick House, Llandudno. DR. NICOL. Dr. Nicol.	X.	Negretti & Zambra	9 a.m.	1 0 .....	7'93 7'95 8'03 8'08 M 7'998	'1 '2 '3 '4 '5	1300 2540 3790 5060 6310	- '002 correct. + '001 + '001 + '003	N. Tree, 50°. S. " 35°. N.W. House, 35°.	In garden in front of house, rather sheltered.	644.	
645. Dec. 20.		NORFOLK. Hillington School. REV. H. FFOLKES. Rev. H. Ffolkes.	XI.	Negretti & Zambra	9 a.m.	3 6 .....	4'99 5'02 5'00 5'00 M 5'002	'1 '2 '3 '4 '5	480 970 1465 1970 2470	+ '003 + '004 + '005 + '003 + '002	W. School, 22°. N.E. Tree, 33°.	In garden in front of school, on a short post.	645.	
646. Dec. 20.		NORFOLK. Hillington Rectory. REV. H. FFOLKES. Rev. H. Ffolkes.	X.	Negretti & Zambra	9 a.m.	1 0 .....	8'01 8'00 8'00 8'01 M 8'005	.....	.....	Clear .....	On lawn near Rectory .....	646.		

\* This mark denotes that the gauge has a deep Snowdonian rim.

## EXAMINATION OF RAIN-GAUGES (continued).

Reference number.	Date of examination.	COUNTY. Station. OWNER. Observer.	Construction of gauge.	Maker's name.	Time of reading.	Height of gauge. Above ground. Above sea-level.	Diameters (that marked M = mean).			Equivalents of water.	Error at scale-point specified in previous column.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.
							in.	in.	Grains.					
647.	1875. Dec. 21.	CAMBRIDGESHIRE. The Observatory, Cambridge. <i>THE OBSERVATORY.</i> <i>Mr. Todd.</i>	III.	Casella .....	8 a.m.	ft. in. 1 0	feet. 85	4'98 5'02 5'01 4'99 M 5'000	'1 '2 '3 '4 '5	500 980 1480 1950 2450	—'001 +'002 +'001 +'006 +'006	E. Tree, 30°. S.E. " 30°. S.W. Trees, 25°. W. Apple Tree, 30°.	Gauge in garden of the Observatory; fair position.	647.
648.	1876. Mar. 16.	WESTMORELAND. Kirby Stephen. <i>T. MASON, ESQ.</i> <i>T. Mason, Esq.</i>	XII.	Casella .....	9 a.m.	1 0	574	5'02 5'00 5'00 5'00 M 5'005	'1 '2 '3 '4 '5	480 950 1460 1960	+'003 +'008 +'006 +'005	E. Wall, 30°. N. Tree, 62°. S.W. " 28°.	On edge of path in garden; no better position available.	648.
649.	Mar. 16.	WESTMORELAND. Appleby. <i>DR. ARMSTRONG.</i> <i>Dr. Armstrong.</i>	III.	Anon.....	9 a.m.	1 0	442	8'08 7'92 8'00 8'01 M 8'002	'1 '2 '3 '4 '5	1250 2550 3780 5120 6300	+'002 +'001 +'002 —'003 +'004	Clear .....	Gauge in garden E. of house. It appears to have been made by Mr. Marshall of Kendal; the receptacle being broken, a new gauge was supplied.	649.
650.	Mar. 17.	YORKSHIRE. Mickleton. <i>G. J. SYMONS, ESQ.</i> <i>Mr. Wade.</i>	.....	Casella .....	9 a.m.	1 0	775	7'95 8'02 7'98 8'00 M 7'988	'1 '2 '3 '4 '5	1250 2540 3770 5050 6320	+'001 —'001 +'002 +'001 +'001	Quite clear .. ....	In small enclosed paddock near the middle of the village.	650.
651.	Mar. 17.	DURHAM. Gainford. <i>A. ATKINSON, ESQ.</i> <i>A. Atkinson, Esq.</i>	XII.	Casella .....	9 a.m.	1 0	250	4'98 5'01 5'00 5'00 M 4'998	'1 '2 '3 '4 '5	500 1000 1460 1950 2470	—'001 —'002 +'005 +'006 +'001	E. Building, 38°	Mr. Atkinson has recently started a new verified 5-in. Snowdon-pattern rain-gauge 3 feet N. of the above.	651.
652.	Mar. 17.	YORKSHIRE. Barningham Park. <i>A. SUSSEX MILLBANK, ESQ.</i>	V.	Anon.....		1 1	650	5'03 5'00 4'98 5'00 M 5'002	'1 '2 '3 '4 '5	480 950 1450 1980 2440	+'003 +'008 +'008 +'001 +'008	Quite clear .. ....	On lawn, S.S.W. of house .. ....	652.
653.	Mar. 17.	YORKSHIRE. Rokeyb Rectory. <i>REV. H. CLARKE.</i> <i>Rev. H. Clarke.</i>	.....	Casella .....	9 a.m.	1 0	575	8'00 8'00 8'00 8'00 M 8'000	'1 '2 '3 '4 '5	1270 2540 3780 5080 6350	correct. correct. +'002 correct. correct.	Clear .. ....	In Rectory garden, near corner of lawn.	653.
654.	Mar. 18.	DURHAM. Wolsingham. <i>MR. A. MITCHELL.</i> <i>Mr. A. Mitchell.</i>	III.	Anon.....	9 a.m.	1 0	464	4'98 5'03 5'00 5'01 M 5'005	'1 '2 '3 '4 '5	475 970 1470 1970 2490	+'004 +'005 +'004 +'003 —'001	Nothing over 20°	In garden N. of house; fairly open.	654.
655.	Mar. 20.	NORTHUMBERLAND. Allenheads. <i>W. B. BEAUMONT, ESQ.</i> <i>Mr. Kidd.</i>	X.	Negretti & Zambra	9 a.m.	0 6	1350	7'98 8'07 7'99 7'98 M 8'005	'118 '244 '5 '118	1530 3140 6410	—'001 —'003 —'005 —'001	S.W. Chimneys of house, 35°. S. Wall, 20°.	In small yard at rear of mining offices.	655.