

***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.		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.					
1.	1862. Aug. 5.	Westmoreland ...	Kendal, S. Marshall, Esq. ....	VIII.	Mr. S. Marshall...	9 a.m.	ft. in. 4 6	feet. 149	in. 7'95 8'44 M 7'995	in. '1 '2 2520	1260 +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 M 8'010	'1 '2 2510	1255 +001	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	8'00 8'00 8'07 8'00 M 8'018	'1 '2 2500 '3 '4	1240 +003 2500 3750 5000	Stands in the garden; quite unsheltered.	3.
4.	Aug. 7.	Lancashire.....	Alithwaite, Cartmel, Mr. Nash	III.	Casella .....	8 p.m.	1 0	88	5'00 5'00 4'99 M 4'997	'2 '3 '5 2520	1030 1540 2520 -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 a 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 10'08 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 M 7'998	'1 '2 2510	1250 +001	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	8'04 8'06 8'02 8'01 M 8'032	'24 '469 '708 '942	3000 6000 9000 12000	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, T. Fletcher, Esq.	III.	Potter.....	9 a.m.	1 0	422	5'04 4'97 5'03 5'09 M 5'007	'1 '2 '3 '4 '5	490 980 1500 1990 2480	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	8'04 7'64 8'30 7'87 M 7'962	'1 '2 '3 '4 '5	1230 2490 3760 5000 6320	Gauge very old, and received 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	'1 '2 '3 '4	510 1030 1510 2510	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.

EXAMINATON 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 round.	Above sea-level.		Scale-point.	Grains.			
11.	1862. Aug. 22.	Lancashire.....	Hest Bank, R. B. Peacock, Esq.	II.	.....	9 a.m.	t. in. 8 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.	4	120	4'99 4'99 4'99 M 4'990	1'1 2 3 4	—.005 —.008 —.012 —.011	On S.S.W. slope of a small hill, there are at present a few small fruit-trees near it, but they will be moved in the winter.	12.	
13.	Aug. 24.	Middlesex .....	Finchley Road, G. J. Symons, Esq., G. W. Moon, Esq.	X.	Negretti & Zambra	9 a.m.	4	270	7'95 7'96 7'95 7'94	1'1 2 3 4	—.004 —.004 —.004 correct.	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.	4	306	7'950 7'97 7'95 7'94 M 7'950	1'1 2 3 4 5	—.004 +.001 —.002 correct.	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	1'1 2 3 4 5	—.005 —.008 —.007 —.012 —.014	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	1'1 2 3 4 5	—.006 —.009 —.009 —.014 —.017	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 4 5 6 7	415 830	+.067 +134	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	1'1 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 <i>emptied</i> , 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.				
	1862.						ft. in.	feet.	in.	in.					
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	.625 .1875 .25	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. Turrier, Esq.	III.	.....	daily.	0 9	136 ?	M 6.005 6.00 6.01 5.99	.....	.....	.....	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 ?	M 6.000 6.02 6.02 6.00	.0625 .1875 .25	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 ?	M 6.010 4.98 4.99 5.00 4.98	.5 .1 .2 .3 .4	2510 520 1020 1510 2020	-.009 -.005 -.007 -.006 -.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 ?	M 4.987 5.00 5.00 5.00 5.00	.5 .1 .2 .3 .4	510 1010 1510 2010	-.003 -.004 -.004 -.005 -.005	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 ?	M 5.000 5.00 5.00 5.00 5.00	.5 .1 .2 .3 .4	2520 500 1000 1500 2000	-.008 -.001 -.002 -.003 -.004	Gauge perfectly exposed in a very large garden.	27.	
28.	Oct. 9.	Suffolk .....	Nether Hall, Thurston, Bury St. Edmunds, W. C. Basset, Esq.	V.	Horne & Thorn-thwaite.	monthly.	2 6	55 ?	M 4.998 6.05 6.05 6.05 6.05	.5 .1 .2 .3 .4	2500 920 1800 2740 3620	-.005 correct +.005 +.003 +.008	Gauge fastened on short stump of a tree in the centre of the kitchen-garden, quite freely exposed.	28.	
29.	Oct. 9.	Suffolk .....	Nether Hall, Thurston, W. C. Basset, Esq.	III.	Watkins and Hill .....	.....	1 0?	53 ?	M 6.050 5.00 5.00 5.00 5.00	.5 .1 .2 .3 .4	4550 500 1000 1500	-.008 -.001 -.002 -.003	This gauge has been removed and supplanted by a new one because measuring-glass broken off at 0.30 in.	29.	
30.	Oct. 9.	Suffolk .....	Thurston Vicarage, Bury St. Edmunds, Rev. W. Steggall.	VI.	Watkins and Hill .....	.....	3 0	163 ?	M 5.000 10.00 10.00 10.00	.....	.....	.....	Well placed on lawn, very good exposure. On December 31st each year is taken to pieces by a watch-	30.	

## 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.			
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 M 5'050				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				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 a 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-tree, 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.	Negrotti 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 8'02 8'00 M 8'005	'302 '56	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.	Oct. 17.	York .....	Holme on Spalding Moor, G. Dunn, Esq.	III.	Davis, of Leeds ...	9 p.m.	7 ft. 6 in.	32 feet.	in.	in.	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 in.	96	M 5'000	5' 7'97 7'95 7'90 8'00	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 in.	61	M 7'955	10'00 10'08 9'92 10'00	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 in.	50	M 10'000	5'00 5'01 5'00 5'00	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 in.	420	M 5'002	8'00 8'02 7'97 7'95	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 in.	127	M 7'985	9'95 9'93 10'05 10'00	.....	.....	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	.....	.....	.....	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 in.	496	M 10'000	8'00 8'01 7'96 8'00	.....	.....	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 in.	487	M 7'993	11'95 11'90 11'95 12'05	.....	.....	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 in.	115	M 11'962	10'00 <sup>10</sup> 10'00 <sup>11</sup> , 10'02 <sup>12</sup> ,	2530 5070	correct. —.001	In the garden of the prison; very well placed.	47.

EXAMINATION OF RAIN-GAUGES (*continued*).

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								in.	feet.	Scale-point.	Grains.			
	1862.													
48.	Oct. 27.	York .....	Huggate, Pocklington, Rev. T. Rankine.	VII.				c 10	550	M 10'018 10'038 9'98,, 10'00,, 9'98,, M 9'997				
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	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 overhung it, and about 15 feet to E. there was a tree 20 feet high. Observations useless.	48.
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.	1863. 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.	Susscx .....	Eleak 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 12'15 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 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.				
58.	July 27.	Kent .....	Chartwell, Westerham, J. C. Colquhoun, Esq.	III.	Casella .....	Saturdays.	1 0	5 00?	M 7'990	.4 5 5'02 4'98 5'00	5040 6300 500 1000 1510 1980	—.002 —.002 —.001 —.002 —.004 +.001	15 ft. higher than the gauge. Gauge about 1 ft. above slates.	58.	
59.	July 27.	Kent .....	River Hill, Sevenoaks, J. Rogers, Esq.	.....	Knight .....	daily.	9 7	520	M 5'000	.4 4'98 4'99	1000? 1440 2460	—.003 +.008 correct.	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	M 4'985	11'28 11'29 11'35	.05 .1 2500	1250 2500	correct. +.002 +.001	Quite unsheltered.	60.
61.	Aug. 4.	Antrim .....	Queen's College, Belfast, Mr. J. Bell	IV.	.....	.....	7 1	58	M 11'285	11'29 11'35 11'24	.05 .1	1240 2500	+.001 +.001	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.	61.
62.	Aug. 31.	Northumberland.	Rosella Place, N. Shields, R. Spence, Esq.	X.	Negretti & Zambra	9 a.m.	1 0	124	M 7'978	7'98 8'02 7'95 7'96 7'97	.1 2 3 4 5	1200 2480 3760 5100 6280	+.005 +.004 +.002 —.004 +.003	In vegetable garden, more sheltered by fruit-trees than is desirable.	62.
63.	Sept. 2.	Durham .....	Sunderland, West Hendon, T. W. Backhouse, Esq.	.....	Dr. Ogden .....	.....	3 6	126?	M 2'100	2'1 2'1	.5 1'0	440 880	—.003 —.006	An extraordinary gauge, consisting of a stout glass tube, about a foot long and half an inch internal diameter, opened out at the top 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.
64.	Sept. 2.	Durham .....	Hendon Hill, Sunderland, J. W. Mounsey, Esq.	III.	.....	8 a.m.	0 6	150	M 4'968	4'97 4'95 4'98 4'97	.1 .2 .5	510 1010 2540	—.004 —.006 —.019	Very near to No. 63 (the grounds adjoin). Position very good.	64.
65.	Sept. 2.	Durham .....	Field House, Sunderland, Rev. G. Holf.	VII.	Private .....	8 a.m.	1 5	98	M 9'925	9'95 10'00 9'85 9'90	.05 .1	1260 2520	—.001 —.001	In kitchen-garden of Field House, subsequently called "The Hall."	65.
66.	Sept. 9.	Devon .....	Plymouth, Saltram Gardens, Mr. J. Snow.	III.	.....	weekly.	0 4	96	M 4'990	5'00 4'97 4'99 5'00	.1 .3 .4 .5	500 1500 1980 2490	—.001 —.004 —.001 —.004	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	M 5'01	5'01 4'99 5'03 5'02	.1 .2 .3 .5	510 1000 1500 2480	—.002 —.001 —.001 +.002	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.	0 2	580	ft. in. in. M 5'012	.6 2950	+.008	In grass plot, in kitchen-garden; very well placed.	68.	
									.1 500	-.001		The second set of readings are from a large glass, not generally used.		
									.2 1000	-.002				
									.3 1490	correct.				
									.5 2480	correct.				
									.6 2950	+.005				
									.1 500	-.001				
									.2 960	+.006				
									.3 1420	+.015				
									.4 1920	+.013				
									.5 2500	-.004				
									.6 2900	+.015				
									.8 3950	+.004				
									1'0 4950	+.002				
									.1 500	correct.				
									.2 1000	-.001				
									.5 2430	+.011				
									1'0 4850	+.024				
69.	Sept. 10.	Devon.....	Dartmoor, Morley Clay Works, W. Martin, Esq.	III.	.....	0 2	900	5'03	ft. in. in. M 5'000	.1 500	correct.	On lawn, fully exposed, except to N.W., where the house, 20 feet high, is nearly 50 feet distant.	69.	
								4'98	.2 1000	-.001				
								5'00	.5 2430	+.011				
								5'02	1'0 4850	+.024				
70.	Sept. 10.	Devon.....	Dartmoor, Prison Reservoir, Mr. H. Watts.	III.	.....	9 a.m.	0 2	1400	ft. in. in. M 5'007	.1 495	correct.	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.	
								5'00	.3 1440	+.010				
								5'02	.5 2480	correct.				
								4'98	1'0 4940	+.004				
								5'01	5'00					
								5'02	1'0 4940	+.004				
71.	Sept. 10.	Devon.....	Dartmoor, North Hessary Tor, Mr. H. Watts.	III.	monthly.	1 0	1596	5'00	ft. in. in. M 5'010	.1 495	+.001	Nearly at the top of the hill, about $\frac{1}{2}$ of a mile N.W. of No. 70.	71.	
								5'00	.3 1440	+.011				
								5'04	.5 2480	+.002				
								5'00	1'0 4940	+.008				
72.	Sept. 11.	Devon.....	Milton Abbot, Edgecumbe, H. Clarke, Esq.	III.	weekly.	0 10	160?	5'00	ft. in. in. M 5'010	.1 500	-.001	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.	
								5'00	.2 1000	-.002				
								5'00	.3 1500	-.003				
								5'01	.4 2000	-.003				
								5'01	.5 2500	-.004				
								5'00	.1 500	-.001				
								4'99	.2 1000	-.002				
								5'01	.3 1500	-.003				
								5'00	.4 2000	-.003				
								5'00	.5 2500	-.004				
								6'75	.1 1200	-.035				
								6'70	.2 2050	-.030				
								6'70	.3 2900	-.026				
								6'65	.4 3900	-.038				
74.	Sept. 12.	Devon .....	Plymouth, Ham, Rev. C. Trelawny.	See remarks.	daily.	3 0	94	ft. in. in. M 6'700				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 M 5'000	'1 '2 '3 '4 '5	510 1020 1580 2080 2580	—'003 —'006 —'019 —'020 —'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	8'00 7'81 8'16 8'02 M 7'998	'09 '2 '465 '5	1230 2640 6000	—'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.	i 6	250?	5'008 5'02 5'00 4'98 M 5'000	1 c. in. '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	5'05 5'05 5'05 M 5'050	.....	.....	.....	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	7'98 7'98 7'98 8'00 M 7'987	'1 '2 '3 '5	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	5'00 5'05 5'02 5'00 M 5'017	'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	5'05 5'04 5'00 5'02 M 5'027	'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	4'95 5'01 5'05 5'03 M 5'010	'1 '2 '3 '4 '5	550 1030 1550 2030 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	5'03 5'04 5'04 5'05 M 5'040	'1 '2 '3 '5 '0	410 820 1120 1930 3930	+ '019 + '038 + '078 + '118 + '222	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	7'95 8'02 8'02 7'97 M 5'040	'1 '2 '3 '5	1260 2510 3830 6310	correct. + '002 + '003 + '002	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	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.					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.	Grains.				
	1836.														
86.	Sept. 16.	Devon .....	Exeter, Albert Terrace, R. Dy-mond, Esq.	III.		9 a.m.			7'97 8'00 M 7'972	'1 '2 '3 '4 '5	3830 6310	—'004 —'001	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 '4 '5	500 990 1460 2460 10330	—'001 + '001 + '006 + '005 —'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 ? 6'22 ? 6'16				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.	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 M 5'050	'1 '2 '3 '4 '5	520 1000 1500 2020 2520	—'003 + '002 + '003 + '001 + '002	On a raised part of the roof, near its centre, and perhaps 20 ft. from the nearest side.	89.	
90.	Sept. 17.	Devon .....	Exeter, St. Thomas's Hospital	II.			3 0	50?					Very old and roughly made, much sheltered by trees, especially by a wall-like row of lofty poplars.	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	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.	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	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.	92.	
93.	June 8.	Wilts.....	Calne, Castle House, Col. Ward.	III.	Casella .....	9 a.m.	32 0	282	M 4'999 5'01 4'97 5'00	'1 '2 '3 '4	500 1100 1520 2020	—'001 —'004 —'007 —'008	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.	93.	
94.	Sept. 26.	Kent .....	Dover Castle Keep, H. J. Poul-ter, Esq.	III.			99 0	512	M 4'993 5'03 5'01 4'94 4'97 M 4'988	'1 '2 '3 '4 '5	500 1000 1520 2020 2520	—'001 —'003 —'008 —'012 —'011	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.	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	Funnel made by a local workman as "exactly 5 inches!" A new funnel, 5'03 in. in diameter, was sent to re-	95.	

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.	in.	feet.	in.	feet.	Scale-point.	Grains.	
1864.									4'83	'5	2520		—·048	place this one. Position rather sheltered, but the best available.	
96.	Jan. 4.	Surrey .....	Cobham Lodge, Miss Molesworth.	III.	Knight .....		o 6	100	M 4'797	5'00	'1	500	—·001	Fir-tree 30 feet high, 50 feet N. of gauge, and house 40 feet high, 30 feet S. of it, the former having grown since the gauge was placed there.	96.
97.	Apr. 25.	Leicestershire ...	Thornton Reservoir, Leicester Water-works, Mr. Allen.	IV.	Troughton .....	8 a.m.	2 8	374	M 5'007	5'02	'2	1000	—·001	Gauge only holds 1·54 inch, a decided fault. Position E. of the reservoir embankment and below it, but so far to the E. that nothing rises 10° above the gauge. In a valley running E. and W.	97.
98.	May 2.	Leicestershire ...	Fleckney, Mr. Putt. ....	III.	Negretti & Zambra .....	8 a.m.	o 8	452	M 10'142	10'15	'1	2550	—·025	Hedge 2 feet high, 6 feet S.W.; some trees in W. rise to 32° above gauge. Sun in garden. Glass wrongly divided, being one division short at the bottom. [Fresh glass supplied.] Rather surrounded by vegetables; suggested a removal, about 10 feet.	98.
99.	May 5.	Leicestershire ...	Leicester, Wigston, T. Burgess, Esq.	X.	Negretti & Zambra .....		o 8	280:	M 5'020	5'02	'2	450	+·010		99.
100.	May 5.	Leicestershire ...	Leicester, H. Billson, Esq. ....	X.	Negretti & Zambra .....		1 o	230:	M 7'997	5'02	'3	950	+·010		10.
101.	Sept. 5.	Kent .....	Margate Royal Sea-Bathing Infirmary, British Association.	III.	Casella .....		1 o	25	M 7'998	5'00	'4	1480	+·004	About 100 yards from the sea-shore in garden of principal medical officer; quite exposed.	101.
102.	Sept. 10.	Lancashire.....	Royton, Oldham, Mr. Heap. ....	IV.	.....	9 a.m.	4 o	484	M 5'000	5'00	'5	2000	+·003	[Reexamined June 2nd, 1866, and found in good order.] On side of slight valley, sufficiently open. 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.
103.	Sept. 12.	Lancashire.....	Manchester, Piccadilly, Manchester, Sheffield, and Lincoln Railway Company.	VIII.	Casartelli .....	9 a.m.	o o	194	M 10'052	8'67	'1	1420	+·001	Box fastened to a plank between two ridges of the roof; quite exposed.	103.
104.	Sept. 12.	Lancashire.....	Manchester, Old Trafford, G. V. Vernon, Esq.	X.	Negretti & Zambra .....		2 7	106	M 8'510	8'55	'2	2840	+·002	In garden at back of Osborne Place, rather sheltered, especially by a tree 20 feet high, 10 feet N.E. of gauge.	104.
105.	Sept. 13.	Lancashire.....	Manchester, Castleton Moor, Rev. J. C. Bates.	III.	Casella .....	9 a.m.	1 o	475	M 7'993	8'26	'4	5720	+·002	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.

## 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.	Scale-point.	Grains.			
106.	Sept. 13.	Lancashire.....	Manchester, Castleton Moor, Rev. J. C. Bates.	X.	Casella .....	9 a.m.	1 0	475	M 3'005	7'99 7'98 7'95 8'00	'1 '2 '3 '4	1260 2540 3800 5050	correct. —'001 —'001 correct.	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	M 7'930	10'00 <sup>sq</sup> 10'00, 10'00, 10'00,	'1 '2 '3 '4	2560 5120 7630 10160	—'001 —'003 —'002		107.
108.	Sept. 13.	Lancashire.....	Manchester, Castleton Moor, Rev. J. C. Bates.	III.	.....	9 a.m.	1 0	475	M 10'000	5'00 5'00 5'02 4'98	'1 '2 '3 '4	506 1020 1500 2000	—'002 —'006 —'002 —'003		108.
109.	Sept. 13.	Lancashire.....	Manchester, Castleton Moor, Rev. J. C. Bates.	III.	.....	9 a.m.	5 0	479	M 5'000	5'00 4'98 5'00 4'98	'1 '2 '3 '4	500 980 1480 1975	—'001 + '002 correct. correct.		109.
110.	Sept. 13.	Lancashire.....	Manchester Castleton Moor, Rev. J. C. Bates.	XII.	.....	9 a.m.	20 0	494	M 4'990	5'00 4'98 5'00 5'00	'1 '2 '3 '4	2474 506 1020 1500	—'001 —'002 —'006 —'003		110.
111.	Sept. 13.	Lancashire.....	Manchester, Castleton Moor, Rev. J. C. Bates.	X.	Negretti & Zambra	9 a.m.	1 0	475	M 4'995	7'99 7'97 8'00 8'00	'1 '2 '3 '4	1260 2510 3750 5020	correct. + '002 + '004 + '004		111.
112.	Sept. 13.	Lancashire.....	Manchester, Castleton Moor, Rev. J. C. Bates.	X.	Negretti & Zambra	9 a.m.	5 0	479	M 7'990	7'98 8'00 7'98 8'03	'1 '2 '3 '4	1260 2510 3750 5020	+ '001 + '002 + '004 + '004		112.
113.	Sept. 13.	Lancashire.....	Castleton Moor, Rev. J. C. Bates.	X.	Negretti & Zambra	9 a.m.	20 0	494	M 7'998	8'00 8'02 7'97 8'00	'1 '2 '3 '4	1260 2510 3750 5020	+ '001 + '002 + '004 + '004		113.
114.	Sept. 24.	Leicestershire ...	Owston, British Association, Miss Gilford.	III.	Casella .....	8 a.m.	1 0	580	M 7'993	5'00 4'99 5'00 5'01	'1 '2 '3 '4	500 990 1490 1980	—'001 correct. —'001 + '001	East end of village, on gentle slope to N. and near the crest of the hill; ground undulates in all directions; gauge well placed.	114.
115.	Nov. 26.	Middlesex .....	Highgate Nurseries, J. Cutbush, Esq.	III.	Casella .....	9 a.m.	1 0	394	M 5'000	5'00 5'00 4'98 5'02	'1 '2 '3 '4	500 1000 1500 2010	—'001 —'002 —'003 —'005	Houses 20 feet high, 50 feet N. of gauge, all else free. Hill drops rather abruptly to S.	115.
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	M 5'000	5'95 5'99	'1 '3	640 199c	+ '010 + '020	Trees 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.			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.	Grains.			
	1865.													
117.	Mar. 22.	Surrey .....	Kew, Kew Committee, B. Baker, Esq.	VII.		10 a.m.	1 ft. 3 in.	19 feet.	in. 5'96 5'95 M 5'962 10'00 10'00 10'01 10'00	'1 '2 2570 5100	—'002 —'002	house at foot of slope to S. Ground generally level in the neighbourhood.	117.	
118.	July 1.	Kent .....	Acol, Margate, British Association, E. S. Lendon, Esq.	III.	Casella .....	9 a.m.	1 ft. 0 in.	60	M 10'002 5'00 4'99 5'01 5'00	'1 '2 '3 '5 495 990 1495 2485	correct. correct. correct. —'001	In Observatory enclosure, but quite freely exposed. Ground level for some distance, especially towards the Thames.	118.	
119.	July 2.	Kent .....	Ramsgate, R. Cramp, Esq. ....	VIII.	Casella .....	9, 12, 3, 9	7 ft. 6 in.	78	M 5'000 11'7 12'2 12'0 12'0	'1 '2 '3 '4 2970 5850 8670 11700	—'004 —'006 —'005 —'011 —'011	South end of the village, in a field clear of all obstructions. About 2 miles from sea. Ground gently undulating.	119.	
120.	Sept. 13.	Warwickshire ...	Calthorpe Street, Birmingham, W. Southall, Esq.	X.	Negretti & Zambra	9 a.m.	1 ft. 3 in.	510	M 11'975 8'00 8'01 7'99 8'00	'10 '21 '05 14550 1120 2510 520	+.'012 +.'012 +.'009	Gauge mounted on top of thermometer stand, in the centre of a kitchen-garden and quite exposed.	120.	
121.	Sept. 14.	Warwickshire ...	63 Bloomsbury Street, Birmingham, D. Smith, Esq.	X.	Negretti & Zambra	9 a.m.	0 ft. 10 in.	340	M 8'000 8'06 7'97 8'03 8'03	'11 '20 '40 1400 2500 4980	correct. +.'004 +.'010	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.	121.	
122.	Sept. 16.	Bedfordshire .....	Bedford, Dr. Barker.....	II.			5 ft. 10 in.	112	M 8'022 12'1 12'2 12'5 M 12'267	.....	.....	Internal diameter of cylinder 4·1, and each 0·1 of scale = .895, therefore gauge very nearly correct; sheltered, however, on all sides by houses and trees.	122.	
123.	Sept. 21.	Derbyshire.....	Chatsworth, Duke of Devonshire, Mr. Taplin.	VIII.	Mr. S. Marshall...	8 a.m.	6 ft. 0 in.	360?	8'05 8'00 8'03 8'00 8'00	'1 '2 '3 '4 1240 2470 3700 4970	+'003 +'006 +'010 +'010	Gauge on pedestal in kitchen-garden, quite open.	123.	
124.	Sept. 25.	Flintshire .....	Hawarden, Dr. Moffat.....	X.	Negretti & Zambra	10 a.m.	0 ft. 5 in.	270	M 8'020 7'99 7'95 7'94 8'00	'5 '1 '2 6250 1280 2480	+'010 —'002 +'003	At west end of the village, in large garden; position satisfactory in every respect.	124.	
125.	Sept. 27.	Denbighshire.....	Llandudno, Dr. Nicol .....	X.	Negretti & Zambra	9 a.m.	0 ft. 9 in.	99	M 7'972 8'02 8'05 7'99 7'96 8'07	'40 '15 '095 4900 1900 1230	+'014 correct. —'002	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.	
126.	Sept. 27.	Carnarvon .....	Llanfairfechan, R. Luck, Esq....	III.	Casella .....		0 ft. 8 in.	150	M 8'000 5'00 5'00 5'00 4'95 M 4'987	'1 '2 '3 '4 500 1000 1480 1940 2490	—'001 —'003 correct. +.'006 —'005	Freely exposed on the E. side of a hill, half a mile S.E. of Llanfairfechan railway station.	126.	

## 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.	1865. Sept. 27.	Carnarvon .....	Bangor, Rev. Canon Purvis.....	X.	Negretti & Zambra	9 a.m.	4 ft.	105 in.	7'98 8'00 8'00 8'00 M 7'995 5'00 4'99 5'01 5'00 M 5'000	'1 '2 '3 '4 '5 '1 '2 '3 '4 '5	1250 2550 3800 4950 6120 500 990 1490 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 ft.	370	5'00 4'99 5'01 5'00 M 5'000	'1 '2 '3 '4 '5	500 990 1490 1980 2480	-·001 correct. -·001 +·002 +·001	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 ft.	330	5'00 5'01 4'99 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 ft.	20	5'00 5'00 4'99 5'02 M 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 ft.	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, Bartropp, W. F. Harrison, Esq.	X.	Negretti & Zambra		0 ft.	150	8'00 8'02 7'99 8'01 M 8'015	.....	.....	.....	In kitchen-garden of Bartropp, on the northern slope of a rising ground $\frac{1}{4}$ 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.	1866. May 23.	Kent .....	Nelson Crescent, Ramsgate, Dr. Smiles.	XI.	Negretti & Zambra	9 a.m.	1 ft.	90	5'00 5'00 5'00 5'02 M 5'005	'1 '2 '3 '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 ft.	40	8'05 7'95 7'96 8'02 M 7'995	'01 '1 '2 '4 '5	130 1330 2550 5050 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.	ft.	in.	'01	50	correct.	In flower-garden, quite clear except in the W., where there are elms 50 ft. distant and 70 ft. high.	136.
							0 9	140	4'96 5'02 4'99 5'01 M 4'995	'1 '2 '3 '4 '5	504 1000 1490 1980 2480	—'002 —'002 —'001 correct. —'001		
137.	May 29.	Kent .....	New Place, Hartlip, W. Bland, Esq.	VII.	Private .....	9 a.m. preceding.	3 0	169	4'00 sq. 4'00 4'05 4'10 M 4'038	'031 '063 '125 '188 '25	100 250 500 720 980 1900	+.'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 0	2	5'00 sq. 5'04 „ 5'02 „ 5'00 „ M 5'015,	'01 '1 '2 '3 '4 '5	.22 25 50 76 102 126	+'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 0	9	5'00 4'99 5'00 5'00 M 5'00	'01 '1 '2 '3 '4	50 500 1000 1500 1980	correct. —'001 —'002 —'003 +.'001	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	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 5'007	'1 '2 '3 '4 '5	502 1020 1540 2000 2500	correct. —'004 —'007 +.'001 —'003	In centre of large lawn, quite clear, very good position.	141.
142.	June 5.	Kent .....	Hythe, H. B. Mackeson, Esq....	X.	Negretti & Zambra .....		0 6	12	8'00 7'96 8'05 8'00 M 8'027	'1 '2 '3 '4 '5	1270 2540 3900 5170 6300	correct. correct. —'007 —'007 +.'001	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 .....	9 a.m.	0 6	325	8'02 7'98 7'98 8'03 M 8'002	'01 '1 '2 '3 '4	1300 1300 2550 3900 5100	correct. correct. —'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 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

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.				
							ft. in.	feet.		in.	in.				
145.	1866, June 7.	Kent .....	Rolvenden, Maytham Hall, R. Appach, Esq.	X.	Negretti & Zambra	9 a.m.	1	3	171	7'97 8'00 8'00 8'01 8'01	1'1 2'2 3'3 4'4 5'5	1270 2550 3800 5100 6360	correct. —'001 correct. —'002 correct.	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	1'5 '01 .50 1'000 1'500	1980	correct. —'001 —'002 —'003 correct.	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	M 4'992 5'00 5'00 5'00 5'00 5'00	1'1 2'2 3'3 4'4 5'5	2480 510 1000 1500 2020	—'001 —'003 —'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	M 5'000 8'00 7'98 7'97 8'00	1'5 .05 1'1 2'2 3'3	2500 640 1320 2550 3900	—'004 —'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 .....		1	6	500	M 7'988 5'02 5'04 4'96 5'08	1'5 .....	.....	.....	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	1'01 .1 1'1 2'2 3'3	50 1030 1530 1530 2030	correct. —'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	.....	M 4'993 4'93 5'04 5'00 5'03	1'4 1'1 2'2 3'3 4'4	2030 2530 510 1010 1510	—'012 —'003 —'004 —'005 —'010	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	.....	M 5'000 5'00 5'02 5'02 5'03	1'1 1'1 2'2 3'3 4'4	510 1010 1520 1520 2020	—'004 —'003 —'003 —'006 —'008	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	1'5 1'1 1'1 3'3 4'4	2500 540 1050 1550 2010	—'003 —'007 —'008 —'007 + '002	At angle of the castle terrace, quite open.	153.	
154.	June 13.	Sussex .....	Lamberhurst, Court Lodge, W. C. Morland, Esq.	III.	.....		1	90	M 5'045 5'04 5'08 5'03 5'08	1'5 1'1 2'2 3'3 4'4	2560 550 1050 1530 2030	—'007 —'009 —'007 —'002 correct.	Not in operation, but to be started January 1st, 1867.	154.	
									M 5'057	1'5	2550	—'003			

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## EXAMINATION OF

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

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## 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.	ft. in.	feet.	in.	in.				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 4	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 3 ft. 6 in. 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.	Casartelli .....	9 a.m.	2 6	965	8'48 8'49 8'50 8'48 M 8'488	'1 '2 '3 '4 '1	1460 2870 4280 5630 496	-·002 -·001 correct +·006 correct	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 0	240	5'02 4'98 5'01 5'00 M 5'003	'1 '2 '3 '4 '5	990 1500 1990 2480	+·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 9	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 8	422	4'03 4'03 4'03 4'02 M 4'027	'1 '5 '0 ft.	320 1585 3160	+·008 +·008 +·018	Scawfell Pike ... 3200 Sprinkling Tarn 1985 Esk Hause ..... 2550 Mosedale ..... 624 Great End ..... 2982 Styhead Tarn ..... 1472 Wasdale Head ..... 247 The Styte ..... 1077 Brant Rigg ..... 695 Stonethwaite ... 330	2.	
173.	Sept. 19.	Cumberland .....	Keswick, Greta Bank, T. S. Spedding, Esq.	III.	Dixey .....	.....	0 6	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 correct +·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 6	490	7'00 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. Barningham.	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*).

## 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.				
176.	Sept. 25.	Cumberland .....	Ullswater, Hallsteads, A. Marshall, Esq.	IX.	Marshall & Co. ....	monthly.	4 6	490	9'99 10'00 10'00 10'02	M 10'002 10'02 10'00 9'98 10'00	.....	.....	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	.....	.....	.....	.....	.....	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	7'97 8'01 8'02 8'00 7'99	M 10'00 '5	1300 2620 3800 5080 1490	—'002 —'006 +'001 correct —'002	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	4'98 5'03 5'00 5'02 M 5'007	M 8'000 '5 '01 '10 '20 '30 '40	50 500 1000 1490 1980 2480 110 1254 2520 3800	correct correct —'001 —'001 correct +'002 +001	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 ...	Troutbeck, The Howe, Admiral Wilson.	VIII.	Marshall, Kendal	.....	1 6	470	8'03 7'99 8'00 7'97	.....	.....	.....	.....	On the south side of the valley, $\frac{1}{4}$ 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	7'97 8'02 8'03 7'97 7'94	M 7'998 '3 '1 '2 '3 M 7'990 '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 4'98	.....	500 1000 1490 1990 1000	—'001 —'001 correct —'001 —'001	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	5'003 5'03 4'98 5'02 5'00	M 5'003 '5 '1 '2 '3 M 5'008 '4 '5	2490 500 1000 1490 1980 2490	—'002 —'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.
							in.	in.	in.	in.	Scale-point.	Grains.			
							ft. in.	feet.							
1866.															
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	'5 '9 '18 '27	2480 2500 5000 7500	—'001 —'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 7'99 8'00 8'00 8'02	'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 7'97 7'93 7'98 7'93	'1 '2 '3 '4 '5	1260 2510 3740 5080 6320	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. Brdicic, Esq.	X.	Negretti & Zambra	9 a.m.	0 6	112	M 7'953 7'98 8'02 8'03 7'98	'1 '2 '3 '4 '5	1300 2620 3800 5010 6280	—'002 —'006 + '001 + '006 + '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 8'03 8'03 7'97 7'98	'1 '2 '3 '4 '5	1330 2550 3900 5080 6280	—'005 —'001 —'007 —'007 + '006	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 4'98 5'03 5'00 5'00	'1 '2 '3 '4 '5	510 1030 1490 2000 2500	—'003 —'007 correct —'003 —'004	In a sunk garden, surrounded by hedges and the house and trees, but none are very close.	192.	
1867. 193.	May 29.	Sussex .....	Pevensey, M. Vidler, Esq.....	X.	Negretti & Zambra	9 a.m.	4 0	10	M 5'003 8'00 8'00 8'02 7'92	'1 '2 '3 '4 '5	1300 2550 3800 5050 6300	—'003 —'002 —'001 + '001 + '002	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 4'99 4'99	.....	.....	.....	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.
							ft. in.	feet.		in.	in.	Scale-point.	Grains.	
	1867.													
195.	May 31.	Sussex .....	Lewes, Glynde Place, Mr. M'Leod.	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 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 10'050	.....	.....	.....	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	10'00 10'00 10'00 10'00 M 10'050	'09	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	5'00 5'00 4'99 M 4'997	'01 '10 '20 '30 '40	50 500 1000 1490 1980	correct —'001 —'002 —'001 correct	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	6'20 6'20 6'20 6'20 M 6'200	'3 .6 .9 '12	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	5'00 4'95 5'04 5'00 M 6'200	'1 '3 '4 '5	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	8'00 8'00 7'95 8'04 M 4'997	'1 '2 '3 '4 .....	1300 2570 3800 5010 6300	—'002 —'003 correct + '005 + '004	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	10'00 9'98 10'02 M 7'998	.....	.....	.....	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	8'01 7'97 7'97 7'96 M 7'977	'1 '2 '3 '4 '5	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.		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.			
205.	1867. June 8.	Kent .....	Beckenham, C. O. F. Cator, Esq.	XII.	Apps .....		t. in. o 6	feet. 142	in. 5'00 4'99 4'98 5'01	'1 '2 '3 '4	500 1000 1500 1990	—'001 —'002 —'003 —'002	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 M 8'000	'5 '1 '2 '3 '4 '5	2490 1300 2600 3950 5200 6600	—'003 —'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	4'98 5'03 5'02 5'01 M 5'010	.....	.....	.....	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	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	.....	5'00 4'98 4'97 4'97 M 5'000	'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 —'008	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 .....	.....	o 50	.....	M 4'998 4'95 5'03 5'02 M 5'000	'1 '2 '3 '4 '5	2490 500 1000 1500 2480	—'003 —'001 —'002 —'003 correct.	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	—'006 —'007 —'007 —'007	In a very open position, on a large level lawn.	213.
214.	June 14.	Sussex .....	Chichester, Shopwyke House, Rev. G. H. Woods.	X.	Negretti & Zambra	monthly.	3 61	.....	M 5'028 8'00 7'98 8'02 8'00	'5 '1 '2 '3 '4	2540 1300 2600 3850 5050	—'007 —'002 —'005 —'003 + '002	In a large vase, on the lawn, good open position.	214.
215.	June 20.	Sussex .....	Bognor, Aldwick, Mr. Upton ...	III.	Knight .....	.....	o 50	.....	M 8'000 4'98 4'97	'5 '1 '2	6300 500 1020	+ '004 —'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.	
							ft.	in.	in.	in.	Scale-point.	Grains.				
1867.																
216.	June 21.	Sussex .....	Littlehampton, Yapton, R. Redford, Esq.	XII.	Casella .....		1	3	45	4'98 M 4'980	'3 '4 '5	1540 2000 2510	—.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	4'98 5'00 5'02 5'03 5'04 M 5'003	'1 '2 '3 '4	500 1000 1490 1980 2480	—.001 —.001 —.001 +-.001 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 5'03 5'04 M 5'000	'1 '2 '3 '4	500 1000 1490 1980 2480	—.001 —.002 —.001 +-.002 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	10'00 10'00 10'10 9'90 M 10'000	'1 '2 '3 '4 '5	1830 3660 5500 7450 9630	+-.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 5'053	'1 '2 '3 '4 '5	540 1040 1590 2100 2550	—.007 —.005 —.014 —.014 —.004	On lawn sloping to E., slightly but not injuriously sheltered.	220.	
221.	June 25.	Sussex .....	Petworth Gardens, Mr. Jones...	XII.	Casella .....		1	6	180	4'98 4'99 4'98 4'98 M 4'987	'2 '3 '4 '5	1000 1490 1980 2480	—.001 —.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	11'22 11'18 11'23 11'14 M 11'193	'1 '2 '3 '4 '5	2600 5050 7580 9950 12950	—.005 —.003 —.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 4'98 5'01 5'03 M 5'010	'09 '2 '3 '4 '5	500 1000 1490 1980 2480	—.010 —.001 +-.001 +-.002 —.002	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	13'2 13'2 12'9 13'2 M 13'125	'135 '265 '526 '1060	4376 8752 17504 35008	+-.007 +-.009 +-.014 +-.036	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 4'80 5'00 5'00 M 4'98?	'1 '2 '3 '4 '5	510 1020 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.	RAIN-GAUGES ( <i>continued</i> ).					Remarks on position, &c.	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 5'00 3'00 3'00 3'00 3'00	'1 '2 '3 '4 '5 2500 2350 1800	500 1000 1500 2000 2500 — — — —	—.001 —.002 —.003 —.004 —.004 —.016 —.008	to indicate the true area of the gauge. 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.	
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 3'00	5'000 3'00 3'00 3'00 3'00 3'00	1'30 2350 1800	—.016 —.008	In an open part of the Cemetery, which is on a very gentle slope towards the Tay.	227.	
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 5'00 5'00	3'000 5'02 4'98 5'01 5'00 5'00 5'00	'1 '2 '3 '4 '5 500 1000 1490 1980 2480	—.001 —.002 correct. + .001 correct. + .003	In garden rather sheltered, but probably not so much so as to vitiate the results.	228.	
229.	Sept. 14.	Forfar .....	Dundee, Crombie, Dundee Water-works.	VIII.	.....		0 3	522	M 5'002 11'22 11'32 11'28 11'31 11'77	5'002 11'22 11'32 11'28 11'31 11'77	'1 '2 '3 '4 .....	+ .001 + .002 + .002 + .003	In a railed enclosure, perfectly open in all directions.	229.	
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	11'283 11'72 11'67 11'68 11'77	'085 '18 5050 '277 7576	—.008 —.006 —.002	Close to No. 228.	230.	
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	11'710 11'20 11'45 11'50 11'32	'1 '5 '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	11'367 11'06 11'40 11'13 11'32	'1 '5 '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	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 5'04	11'310 5'00 5'00 5'00 5'04 5'04	'01 '1 '2 '3 '4 '5	50 500 1000 1490 1980 2480	correct. correct. —.001 + .001 + .002 + .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	5'010 5'03 5'01 5'02 5'00	'1 '2 '3 '4 '5	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	5'015 12'1	'5	2480	+ .003	In small yard at back of house and	236.

## EXAMINATION OF

Reference number.	Date of examination.	County.	Name of station; owner, and observer.	Construction of gauge.	Maker's name.	Time of reading.
	1867.					
237.	Sept. 24.	Hampshire .....	Ryde, Esplanade, R. Taylor, Esq.	XII.	Casella .....	9 a.m.
238.	Sept. 27.	Hampshire .....	Osborne, J. R. Mann, Esq. ....	X.	Negretti & Zambra	monthly.
239.	Sept. 27.	Hampshire .....	Osborne, J. R. Mann, Esq. ....	IV.	Negretti & Zambra	9 a.m.
240.	Sept. 28.	Hampshire .....	Newport, Chapel St., Mr. E. G. Aldridge.	XI.	Negretti & Zambra	9 a.m.
241.	Sept. 30.	Hampshire .....	St. Lawrence, The Rectory, Rev. C. Malden.	XII.	Casella .....	9 a.m.
242.	Oct. 1.	Hampshire .....	Ventnor, Belgrave House, Dr. Martin.	II.	Newman .....	9 a.m.

*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°) 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

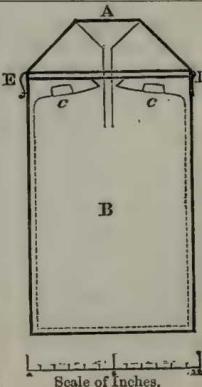
RAIN-GAUGES (*continued*).

Height of gauge. Above ground. ft. in. feet.	Above sea-level. ft. in. feet.	Diameters (that marked M = mean). in.	Equivalents of water.		Error at scale-point, specified in previous column.	Remarks on position, &c.	Reference number	
			Scale-point.	Grains.				
			in.	in.				
237.	6 0	20	M 12'000 5'00 4'98 5'00 4'98 M 4'990 7'98 7'97 7'97 7'96	'1 '2 '3 '4 '5 '1 '2	490 990 1490 2000 2480 1290 2500	+·001 correct. -·002 -·005 -·002 +·002	sheltered both by buildings and a tree due S. 16 ft. high and only 8 ft. distant. Close to No. 236.	237.
238.	0 8	172	M 7'970 12'10 11'90 12'00 12'01 M 12'003 5'01 5'00 5'00 5'04 M 5'013 5'00 4'98 5'02 5'00 5'00 M 5'000 12'00 12'00 12'02 12'02 M 12'010	'065 '150 '240 '325 '415 '5 '1 '2 '3 '4 '5 '1 '2 '3 '4 '5 '1 '2 '3 '4 '5 '15 510 1010 1500 1980 2490 500 1000 1490 1980 2480 1490 3000 4260	-·035 -·038 -·034 -·038 -·034 -·025 -·002 -·003 -·001 +·002 correct. -·001 -·002 -·001 +·001 +·002 -·001 -·005 +·001	On grass plot; a hedge 5 ft. high was only 4 ft. distant in E. Close to No. 238.	238.	
239.	3 0	172	M 5'013 5'00 4'98 5'02 5'00 5'00 M 5'000 12'00 12'00 12'02 12'02 M 12'010	'065 '150 '240 '325 '415 '5 '1 '2 '3 '4 '5 '1 '2 '3 '4 '5 '15 510 1010 1500 1980 2490 500 1000 1490 1980 2480 1490 3000 4260	-·035 -·038 -·034 -·038 -·034 -·025 -·002 -·003 -·001 +·002 correct. -·001 -·002 -·001 +·001 +·002 -·001 -·005 +·001	On apex of small outhouse, much sheltered by trees. Quite clear on lawn; ground sloping to S.	239.	
240.	8 8	53	M 5'013 5'00 4'98 5'02 5'00 5'00 M 5'000 12'00 12'00 12'02 12'02 M 12'010	'065 '150 '240 '325 '415 '5 '1 '2 '3 '4 '5 '1 '2 '3 '4 '5 '15 510 1010 1500 1980 2490 500 1000 1490 1980 2480 1490 3000 4260	-·035 -·038 -·034 -·038 -·034 -·025 -·002 -·003 -·001 +·002 correct. -·001 -·002 -·001 +·001 +·002 -·001 -·005 +·001	Clear except in N., where the house (three stories) is only 40 ft. distant.	240.	
241.	1 0	85						
242.	3 7	100						

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 Gauge 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.



212 Scale of Inches.

## 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 '2 '3 '4	1380 2550 3850 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							249.
250.	Aug. 10.	HAMPSHIRE. Sherborn, St. John, Basingstoke. <i>THE REV. D. CHUTE.</i>	XI.	Negretti & Zambra .....	1 6	276					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						This and the subsequent eleven gauges are in a 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							252.

## ON THE RAINFALL IN THE BRITISH ISLES.

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. <i>OWNER.</i> <i>Observer.</i>	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.					
253.	Aug. 12.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	VII.	Casella .....	9 a.m.	ft. in. 1 0	feet. 209	10'00 9'98 10'02 10'00 M 10'00	'1 '2 '3 '4 '5	2525 5050 7575 10100 12650	correct. correct. correct. correct. —'001			253.
254.	Aug. 12.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	X.	Casella .....	9 a.m.	1 0	209	8'00 8'00 8'01 7'99 M 8'00	'1 '2 '3 '4 '5	1270 2540 3810 5075 6350	correct. correct. correct. correct. correct.			254.
255.	Aug. 12.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	X. with flange.	Negretti & Zambra	9 a.m.	1 0	209	8'01 7'99 8'00 8'00 M 8'00	'1 '2 '3 '4 '5	1270 2540 3810 5075 6350	correct. correct. correct. correct. correct.		The same glass is used for both No. 255 and No. 254.	255.
256.	Aug. 12.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	VII.	Casella .....	9 a.m.	1 0	209	5'02 sq. 5'03 5'04 5'02 M 5'02	'1 '2 '3 '4 '5	640 1275 1915 2555 3190	correct. correct. correct. correct. correct.			256.
257.	Aug. 12.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	XII.	Casella .....	9 a.m.	1 0	209	6'00 6'02 5'99 5'99 M 6'00	'1 '2 '3 '4 '5	715 1430 2140 2860 3580	correct. correct. correct. correct. correct.			257.
258.	Aug. 12.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	XII.	Casella .....	9 a.m.	1 0	209	5'01 5'00 4'99 5'00 M 5'00	'1 '2 '3 '4 '5	495 990 1490 1985 2480	correct. correct. correct. correct. correct.			258.
259.	Aug. 13.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	XII. with deep flange.	Casella .....	9 a.m.	1 0	209	4'99 5'00 5'00 5'00 M 5'00	'2 '3 '4 '5 '1	990 1490 1985 2480 495	correct. correct. correct. correct. correct.		The same glass is used for both No. 259 and No. 258.	259.
260.	Aug. 13.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	XII.	Casella .....	9 a.m.	1 0	209	4'01 4'01 3'99 3'99 M 5'00	'1 '2 '3 '4 '5	320 635 955 1270 1590	—'001 correct. —'001 correct. —'001			260.
261.	Aug. 13.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	XII.	Casella .....	9 a.m.	1 0	209	2'00 2'00 2'00 2'00 M 4'00	'1 '2 '3 '4 '5	79 160 238 318 1590	correct. correct. + '001 + '002 —'001			261.
262.	Aug. 13.	HAMPSHIRE. Strathfield Turgis Rectory, Winchfield. <i>CÖL. WARD.</i> <i>The Rev. C. H. Griffith.</i>	XII.	Casella .....	9 a.m.	1 0	209	1'00 1'00 1'00 1'00 M 2'00	'1 '2 '3 '4 '5	20 39 58 78 400	—'001 + '003 + '007 + '008 + '002			262.
263.	Aug. 25.	HAMPSHIRE. Strathfieldsaye. <i>DUKE OF WELLINGTON.</i> <i>Mr. Bell.</i>	X.	Anonymous .....	6 p.m.	0 11	183	1'00 1'00 1'00 1'00 M 1'00	'01 '1 '2 '3 '5	130 1280 3810 6320 98	correct. —'001 correct. + '002 + '007	E.S.E. Wall 18°. In the gardens at Strathfieldsaye — a good position.		263.

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

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

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.	in.	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 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.	ft. in. 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.	ft. in. 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	weekly.	ft. in. 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. Honningham. <i>THE LADY BAYNING.</i> <i>The Lady Bayning.</i>	III	Knight .....	9 a.m.	ft. in. 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.	ft. in. 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.	ft. in. 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.	ft. in. 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	monthly.	ft. in. 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. Geldiston, Beccles. <i>E. T. DOWSON, ESQ.</i> <i>E. T. Dowson, Esq.</i>	XII	Casella .....	9 a.m.	ft. in. 1 1 30						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.	ft. in. 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.	Equivalents of water.			Azimuth and angular elevation of objects above mouth of rain-gauge.	Remarks on position &c.	Reference number.		
							Diameters (that marked M = mean).	Scale-point.	Grains.					
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 7'98 8'00	'1 '2 '3 '4 '5 '1 '2 '3 5'00	500 1000 1500 2000 2500 1290 2600 3940	—'001 —'001 —'002 —'002 —'003 —'001 —'005 —'011	.....	In kitchen garden, open position; suggested its being raised a little to avoid in-splashing.	275.
276.	Sept. 14.	SUFFOLK. Hopton Hall, Lowestoft. <i>C. CORY, ESQ.</i>	X	Negretti & Zambra .....		o 3	47				S.E. Tree 32°.	Sunk in a large pot, on lawn; quite clear, except as noted.	276.	
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				N.E. Laburnum 55°. S.W. House 32°.	On edge of carriage drive, and near a light iron railing.	277.	
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				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				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 o	209				.....	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 o	209				.....	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 o	.....				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 o	265				S.E. Pear 55°.	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 o	300				W. House 32°.	In kitchen garden; ground level, and position good.	284.	
285.	April 7.	YORKSHIRE. Saddleworth Station. <i>L. &amp; N.W. RAILWAY.</i> <i>The Station Master.</i>	VI	Crosley .....	monthly.	5 o	640				.....	On a stone column on the top of a railway-cutting; nearly level with the chimneys of the station.	285.	

## EXAMINATION OF

## ON THE RAINFALL IN THE BRITISH ISLES.

RAIN-GAUGES (*continued*).

Reference number.	Date of examination.	COUNTY. Station. <i>OWNER.</i> <i>Observer.</i>	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.	Scale-point.					
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 55°	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	'1 '2 '3 '4 '5 ..... ..... ..... ..... ..... ..... ..... ..... .....	490 970 1460 1955 2460 ..... ..... ..... ..... ..... ..... ..... .....	+·002 +·006 +·008 +·009 +·008 nearly correct.	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	..... .....	..... .....	..... .....	.....	.....	.....	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	..... .....	..... .....	..... .....	..... .....	..... .....	correct	N.E. Wall and rising ground 21°.	289.	
290.	April 8.	YORKSHIRE. Boshaw Whams.	I	.....	monthly.	1 9 950	..... .....	..... .....	..... .....	..... .....	..... .....	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	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	.....	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	..... .....	..... .....	..... .....	..... .....	..... .....	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	..... 8'48 8'50 8'46 8'50 M 8'435 11'81 12'02 11'93 12'01	'1 '2 '3 '4 5 ..... ..... ..... ..... ..... ..... ..... .....	1400 2760 4200 5550 7000 ..... ..... ..... ..... ..... ..... ..... .....	+·002 +·007 +·006 +·011 +·010 ..... ..... ..... ..... ..... ..... ..... .....	.....	A short distance E. of station, on flattish ground. Hills rise to a considerable height in N.E.	293.		
294.	April 8.	YORKSHIRE. Carlcoates. <i>M. S. &amp; L. RAILWAY.</i>	VIII	Casartelli	9 a.m.	3 0 1075	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	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	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	.....	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	..... 8'50 8'51 8'48 8'50 M 8'498	'1 '2 '3 '4 '5 ..... ..... ..... ..... ..... ..... ..... .....	1460 2900 4310 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

## 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. feet.      in. 1065      2      0	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.
							Diameters (that marked M = mean), in.	Scale-point, in.	Grains.	in.				
297.	1869. April 9.	YORKSHIRE. Broadstone Reservoir. DEWSBURY WATER WORKS.	II										Gauge leaky, and not in use, level with reservoir bank.	297.
298.	April 9.	YORKSHIRE. Ingbirchworth. BARNSLEY 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.

## 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.	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.						
308.	1869. May 3.	DERBYSHIRE. Woodhead Station. <i>M. S. &amp; L. RAILWAY.</i> Station Porter.	VIII	Casartelli .....	9 a.m.	ft. in. 3 6	feet. 878	8·50 8·50 8·50 8·50 M 8·50	'1 '2 '3 '4 '45	1450 2850 4250 5650 6450	—·001 +·001 +·003 +·006 correct.	.....	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	0 6	850	5·02 4·94 5·00 5·00 M 4·985	'1 '2 '3 '4 '5	470 980 1490 1990 2460	+·005 +·001 —·002 —·004 +·001	.....	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.	0 10	680	11·95 12·05 12·00 11·93	.....	.....	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	11·93 12·02 12·01 12·02 M 12·017	.....	.....	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 0	520	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 0	380	5·00 5·00 5·02 4·98	'1 '2 '3 '4	498 990 1500 1990	correct. correct. —·003 —·001	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 0	380	5·000 5·02 4·98 5·03 4·98	'5 '1 '2 '3 '4	2480 498 990 1500 1990	correct. correct. —·002 —·001	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 0	380	5·000 5·00 5·00 5·00 5·00	'5 '1 '2 '3 '4	2480 498 990 1500 1990	correct. correct. —·003 —·001	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 0	470	5·000 5·00 5·00 5·03 4·96	'5 '1 '2 '3 '4	2480 498 998 1500 1980	correct. —·001 —·001 —·003 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 0	440	4·998 5·00 5·00 5·00 5·00	'5 '1 '2 '3 '4	2470 498 998 1500 2000	+·002 —·001 —·001 —·003 —·003	N.E. Wall 23°. 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	5·000 5·03 5·00 5·03 5·00 M 5·015	'5 '1 '2 '3 '4 '5	2480 495 1000 1500 2005 2500	correct. +·001 correct. —·001 —·002 —·001	S.W. Apple 41°.	In level garden; very good position except as noted.	318.	

## 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
319.	1869. July 8.	BERKSHIRE. Forbury Gardens, Reading. BOARD OF HEALTH. Mr. Davis.	XI	Negretti & Zambra	9 a.m.	ft. in. 1 1 150
320.	July 8.	BERKSHIRE. Russell Street, Reading. DR. WORKMAN. Dr. Workman.	III	Knight .....	9 a.m.	ft. in. 1 6 150

RAIN-GAUGES (*continued*).

Reference number.	Remarks on position &c.	Azimuth and angular elevation of objects above mouth of rain-gauge.	Error at scale-point specified in previous column.	Equivalents of water.		Diameters (that marked M=mean).
				Scale-point.	Grains.	
		S. Wellingtonia 38°.	in.	in.	in.	
			—'001	500		4'98
			—'002	1000		5'01
			+ '001	1480		5'00
			+ '001	1975		5'00
			—'001	2480		M 4'997
			—'001	500		4'98
			—'002	1010		5'02
			—'004	1505		4'98
			—'008	2020		5'01
			—'006	2505		M 4'998

*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

## 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.		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.				
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. Landcore, Teignmouth. MRS. CLARKE. Mrs. Clarke.	III.	Local	9 a.m.	0 3 125	5·05 5·03 5·02 5·00 M 5·025	'1 '2 '3 '4 '5	500 980 1500 2000 2500	correct. +·004 correct. +·001 +·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 '6	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. $5\frac{1}{2} \times 1\frac{1}{16} = 4\frac{3}{16} = 2125$ grs.; but the glass holds only 1960, therefore there is still an error of ·034. 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.	570	2·60 2·50 2·55 2·55	'2 '5 1·0 1·5	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, Ilisington. A. LYON, ESQ. A. Lyon, Esq.	VIII.	Casartelli		3 6 639	2·55 2·55 2·50 M 2·550	'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 5·05 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. Penelly, 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 '4 '5 '1	990 1490 1980 2480 500	correct. correct. +·001 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 '1	2870 8580 14780	correct. 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*).

## 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.		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.					
353.	Sept. 10.	CORNWALL. Penalverne, Penzance. <i>T. S. BOLITHO, ESQ.</i>	VII	Casella .....	*	ft. in. o 6	feet. 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. Sennen, 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 5'000 8'20 8'05 8'13 8'07 M 8'113	'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	M 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 5'005 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 5'058	5'00 5'00 4'97 5'00	'1 2 '3 '4	440 850 1300 1710	+.011 +.018 +.016 +.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 .....	9 a.m. preceding.	3 6	185	M 4'993 12'04 11'98 11'90 12'04	'1 '1 '45 13460	2970 ..... 13460	—.004 +.022	E. House 28°. S. Trees 35°. W. " 32°.	.....	360.
361.	Sept. 14.	CORNWALL. Penzance. <i>THE REV. PREBENDARY HEDGELAND.</i>	III	Whitley .....	not in use.	1 o	180	M 11'990 5'08 5'10 5'03 5'05	'0-5 '5-10 '0-15 '5-20	2650 2500 2550 2440	—.021 +.009 —.001 +.021	.....	This and No. 361 had not been regularly observed for some time; fresh positions were selected for them, and observations will be recommended forthwith.	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 5'065 11'42 11'21 11'30 11'30	'1 '25 '3	2550 6000 8000	—.001 +.013 —.015	N.E. Bank 15°.	In gardens, very good position, but very flimsy and indifferent gauge.	362.
363.	Sept. 18.	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 11'38	'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

## 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.					
364.	1869. Sept. 20.	CORNWALL. The Battery, Penzance. METEOROLOGICAL COMMITTEE. Mr. Senior.	X	Negretti & Zambra	8 a.m.	ft. in. 1 2 60	7'98 7'95 7'92 M 7'98 5'04 5'03 5'10 5'09	'1 '5 '13 '160	1300 6380 5630 8080	—'003 —'008 +'024 —'012	.....	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.	0 4 160	.....	.....	.....	S.E. Beans 58°. S.W. , 54°.	.....	Gauge standing loosely on funnel, not level, and shut in 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	0 223	.....	.....	.....	.....	.....	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	.....	6'00 6'00 6'02 6'00 M 6'005 10'20 sq.	'1-0 '2-1 '3-2 '4-3 '5-4	690 680 700 730 700	—'003 —'005 —'002 +'002 —'002	W. 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	.....	11'30 11'27 11'30 11'41 M 11'320	'1 '2 '3	2550 5150 7530	correct. —'003 +'004	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 0 56	.....	10'10 sq. 10'12 10'34 10'15 M 10'178	'1 '2 '3	2500 5050 7480	+'004 +'006 +'013	.....	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	.....	11'16 11'15 11'30 11'06 M 11'168	'10 '15	2450 3655	+'001 +'002	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.	370.
371.	Sept. 23.	CORNWALL. Strangeway's Terrace, Truro. C. BARHAM, ESQ., M.D. C. Barkham, Esq., M.D.	II	Liddell .....	9 a.m.	2 6 71	.....	8'05 8'00 7'98 8'03 M 8'015	'0-1 '1-3 '3-5 '5-6 '6-7	1300 2530 2580 1300 1320	—'002 +'001 —'003 —'002 —'004	.....	Good gauge, in good position.	371.
372.	Sept. 24.	CORNWALL. Trevarna, St. Austell. W. COODE, ESQ. W. Coode, Esq.	III	Casella .....	9 a.m.	0 6 300	.....	4'93 5'03 4'90 5'08 M 4'935	'1 '2 '3 '4	495 990 1490 1970 2460	correct. —'001 —'002 correct. +'001	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	.....	.....	8'05 8'00 8'04 8'02 M 8'028	'1 '2 '3 '4 '5	1230 2550 3710 6540 500	+'004 +'001 +'010 —'011	W.N.W. Walnut 49°. E.S.E. 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	.....	0 1 338	.....	.....	5'00 5'02 5'04 5'02 M 5'020	'1 '2 '3 '4 '5	500 1000 1500 2000 2500	correct. 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.	1869. Sept. 24.	CORNWALL. Castle Street, Bodmin. CAPT. LIDDELL, R.N. <i>Capt. Liddell, R.N.</i>	III	Casella .....		ft. in. 1 0	feet. 338	.02	.1	500	correct.	.....	Close to No. 373.	375.
376.	Sept. 24.	CORNWALL. Fore Street, Bodmin. A. HAMBLY, ESQ. <i>A. Hambly, Esq.</i>	II	Liddell .....	9 a.m.	2 6	feet. 336	.02	.2	1000	correct.	.....	In garden, sloping to N. Rim of funnel very round, and difficult to measure.	376.
377.	Sept. 25.	CORNWALL. Trebarrock House. F. B. HAMBLY, ESQ. <i>F. B. Hambly, Esq.</i>	II	.....		4 0	feet. 303	.02	.3	1500	—.001	.....	N. House 40°. W. Trees 32°.	377.
378.	Sept. 25.	CORNWALL. Trebarrock House. F. B. HAMBLY, ESQ. <i>F. B. Hambly, Esq.</i>	XI	Negretti & Zambra .....		2 9	feet. 303	.02	.4	2000	—.001	.....	N. House 33°.	378.
379.	Sept. 25.	CORNWALL. Park Villa, Endellion. MISS GUY. <i>Miss Guy.</i>	II	Liddell .....		3 0	feet. 277	.02	.5	2500	—.001	N. House 35°.	This gauge was used at Rosecarrock (about 2 miles hence) for several years. It is now well placed at corner of carriage drive.	379.
380.	Sept. 25.	CORNWALL. Treglines, St. Minver. MR. T. LIDDELL. <i>Mr. T. Liddell.</i>	II	Liddell .....		3 0	feet. 140	.02	.6	3080	+.001	E.N.E. House 32°. S.S.E. " 21°. W.S.W. " 32°.	On grass plot in centre of small quadrangle.	380.
381.	Sept. 25.	CORNWALL. Guinea Port, Wadebridge. MR. JORDAN. <i>Mr. Jordan.</i>	II	Liddell .....	8 a.m.	2 6	feet. 23	.02	.7	3210	—.003	S.W. House 40°.	In small front garden, close to terminus of the Wadebridge railway.	381.
382.	Sept. 27.	CORNWALL. Warleggan, Bodmin. THE REV. D. CLEMENTS. <i>The Rev. D. Clements.</i>	II	Liddell .....		2 6	feet. 550	.02	.8	3630	+.002	N. House 25°.	On lawn, capital position; round-edged funnel.	382.
383.	Sept. 27.	CORNWALL. Trevalga Rectory, Boscastle. THE REV. W. H. JAMES. <i>The Rev. W. H. James.</i>	X	Negretti & Zambra .....	irregular.	0 6	feet. 540	.02	.9	4020	+.003	.....	In small enclosure, in slightly raised part of large field; capital situation.	383.
384.	Sept. 28.	CORNWALL. Lanteglos Rectory, Camelford. THE REV. J. T. WILKINSON.	II	Skinner .....		2 6	feet. 403	.02	.0	4210	+.001	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.	384.
385.	Sept. 28.	CORNWALL. Altarnum, Launceston. C. U. TRIPP, ESQ.	.....	.....	9 a.m.	0 10	feet. 570	.02	.1	4400	+.001	N.W. House 30°. S.E. Tree 25°.	In garden, near the church; good position.	385.
								.02	.2	475	+.003			
								.02	.3	1490	—.001			
								.02	.4	1990	—.002			
								.02	.5	2470	+.001			

## 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.					
386.	Sept. 28.	CORNWALL. Hexworthy, Launceston. <i>H. M. HARVEY, ESQ.</i> <i>H. M. Harvey, Esq.</i>	XI	Negretti & Zambra	.....	ft. in.      feet. 1      410	5'00 5'01 5'02 5'00 M 5'008	'1 '2 '3 '4-5 M 12'00	498 990 2850 2845 2845 2840 2890 in.	correct. +·001 correct. correct. +·001 correct. +·001 in.	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. <i>MR. T. SYMONS.</i> <i>Mr. T. Symons.</i>	IV	Carter, Exeter	8 a.m.	6    0      445	.....	12'00 12'00 12'00 12'00 M 12'00	'1-2 '2-3 '3-4 '4-5 '5-6	2850 2845 2845 2840 2890	correct. correct. correct. +·001 —·001	.....	Very good gauge, very firmly fixed in an open garden.	387.
388.	Sept. 29.	DEVON. Sheepstor, Dartmoor. PLYMOUTH WATER WORKS. <i>Mr. Shillabeer.</i>	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, Hington Down. <i>CAPT. RICHARDS.</i> <i>Capt. Richards.</i>	X	Whitley	9 a.m.	1    0      760	.....	11'23 11'20 11'38 11'38 M 11'297	'1 '2 '25	2530 5100 6280	correct. —·001 +·002	.....	In a garden, near the crest of the hill; exposed position.	389.
390.	Sept. 30.	CORNWALL. Church Street, Callington. <i>DR. KEMPTHORNE.</i> <i>Mr. Brown.</i>	III	Casella	9 a.m. preceding.	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. <i>COL. CORYTON.</i> <i>Mr. Edwards.</i>	III	Casella	9 a.m. preceding.	1    3      162	.....	5'00 5'01 5'00 4'99	'1 '2 '3 '4	495 980 1480 1950	correct. +·002 +·001 +·007	.....	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. <i>MISS CORYTON.</i> <i>Miss Coryton.</i>	III	Anon	.....	1    6      .....	.....	5'00 5'00 5'00 4'99 M 4'998	'055	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. <i>S. JENKIN, ESQ., C.E.</i> <i>S. Jenkin, Esq., C.E.</i>	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. <i>S. JENKIN, ESQ., C.E.</i> <i>S. Jenkin, Esq., C.E.</i>	II	Liddell	.....	2    6      377	.....	8'00 8'10 7'97 8'15 M 8'055	'1-2 '1-2 '2-3 '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. <i>MISS GLANVILLE.</i> <i>Miss Glanville.</i>	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. Gascoyne Place, Plymouth. <i>J. MERRIFIELD, ESQ., F.R.A.S.</i> <i>J. Merrifield, Esq., F.R.A.S.</i>	X	Negretti & Zambra	8 a.m.	26    6      100	.....	8'00 8'00 8'00 8'00 M 8'000	'1 '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.	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.											
397.	1869. Oct. 1.	DEVON. Ivy Bridge. <i>DR. LIDDELL.</i> <i>Dr. Liddell.</i>	II	Liddell .....		ft. in.      feet.	10'00 sq. 10'03 10'00 10'05 M 10'020	'0—'1 '1—'2 '2—'3 5'00 5'01 5'02 5'03 5'04 5'05 5'06 5'07 5'08 5'09 5'10 5'11 5'12 5'13 5'14 5'15 5'16 5'17 5'18 5'19 5'20 5'21 5'22 5'23 5'24 5'25 5'26 5'27 5'28 5'29 5'30 5'31 5'32 5'33 5'34 5'35 5'36 5'37 5'38 5'39 5'40 5'41 5'42 5'43 5'44 5'45 5'46 5'47 5'48 5'49 5'50 5'51 5'52 5'53 5'54 5'55 5'56 5'57 5'58 5'59 5'60 5'61 5'62 5'63 5'64 5'65 5'66 5'67 5'68 5'69 5'70 5'71 5'72 5'73 5'74 5'75 5'76 5'77 5'78 5'79 5'80 5'81 5'82 5'83 5'84 5'85 5'86 5'87 5'88 5'89 5'90 5'91 5'92 5'93 5'94 5'95 5'96 5'97 5'98 5'99 5'100 5'101 5'102 5'103 5'104 5'105 5'106 5'107 5'108 5'109 5'110 5'111 5'112 5'113 5'114 5'115 5'116 5'117 5'118 5'119 5'120 5'121 5'122 5'123 5'124 5'125 5'126 5'127 5'128 5'129 5'130 5'131 5'132 5'133 5'134 5'135 5'136 5'137 5'138 5'139 5'140 5'141 5'142 5'143 5'144 5'145 5'146 5'147 5'148 5'149 5'150 5'151 5'152 5'153 5'154 5'155 5'156 5'157 5'158 5'159 5'160 5'161 5'162 5'163 5'164 5'165 5'166 5'167 5'168 5'169 5'170 5'171 5'172 5'173 5'174 5'175 5'176 5'177 5'178 5'179 5'180 5'181 5'182 5'183 5'184 5'185 5'186 5'187 5'188 5'189 5'190 5'191 5'192 5'193 5'194 5'195 5'196 5'197 5'198 5'199 5'200 5'201 5'202 5'203 5'204 5'205 5'206 5'207 5'208 5'209 5'210 5'211 5'212 5'213 5'214 5'215 5'216 5'217 5'218 5'219 5'220 5'221 5'222 5'223 5'224 5'225 5'226 5'227 5'228 5'229 5'230 5'231 5'232 5'233 5'234 5'235 5'236 5'237 5'238 5'239 5'240 5'241 5'242 5'243 5'244 5'245 5'246 5'247 5'248 5'249 5'250 5'251 5'252 5'253 5'254 5'255 5'256 5'257 5'258 5'259 5'260 5'261 5'262 5'263 5'264 5'265 5'266 5'267 5'268 5'269 5'270 5'271 5'272 5'273 5'274 5'275 5'276 5'277 5'278 5'279 5'280 5'281 5'282 5'283 5'284 5'285 5'286 5'287 5'288 5'289 5'290 5'291 5'292 5'293 5'294 5'295 5'296 5'297 5'298 5'299 5'300 5'301 5'302 5'303 5'304 5'305 5'306 5'307 5'308 5'309 5'310 5'311 5'312 5'313 5'314 5'315 5'316 5'317 5'318 5'319 5'320 5'321 5'322 5'323 5'324 5'325 5'326 5'327 5'328 5'329 5'330 5'331 5'332 5'333 5'334 5'335 5'336 5'337 5'338 5'339 5'340 5'341 5'342 5'343 5'344 5'345 5'346 5'347 5'348 5'349 5'350 5'351 5'352 5'353 5'354 5'355 5'356 5'357 5'358 5'359 5'360 5'361 5'362 5'363 5'364 5'365 5'366 5'367 5'368 5'369 5'370 5'371 5'372 5'373 5'374 5'375 5'376 5'377 5'378 5'379 5'380 5'381 5'382 5'383 5'384 5'385 5'386 5'387 5'388 5'389 5'390 5'391 5'392 5'393 5'394 5'395 5'396 5'397 5'398 5'399 5'399 5'400 5'401 5'402 5'403 5'404 5'405 5'406 5'407	in.	in.										
397.	1869. Oct. 1.	DEVON. Ivy Bridge. <i>DR. LIDDELL.</i> <i>Dr. Liddell.</i>	II	Liddell .....		ft. in.      feet.	3 0	145												
398.	1870. May 5.	KENT. Heathfield Lodge, Chislehurst. <i>F. NUNES, ESQ.</i> <i>F. Nunes, Esq.</i>	XI	Negretti & Zambra	9 a.m. daily.		2 0	295												
399.	May 5.	KENT. Heathfield Lodge, Chislehurst. <i>F. NUNES, ESQ.</i> <i>F. Nunes, Esq.</i>	X	Pastorelli .....	9 a.m. daily		1 0	295												
400.	May 5.	KENT. Sideup, Foot's Cray. <i>MISSES BERENS.</i> <i>Miss Berens.</i>	III	Knight .....	weekly & 1st of month.		0 7	231												
401.	May 5.	KENT. Bickley. <i>G. F. CHAMBERS, ESQ., F.R.A.S.</i> <i>G. F. Chambers, Esq., F.R.A.S.</i>	III	Casella .....			1 0	240												
402.	May 5.	KENT. West Wickham. <i>REV. J. T. AUSTEN.</i> <i>Rev. J. T. Austen.</i>	X	Anon .....			1 3	257												
403.	May 5.	KENT. Bromley Common. <i>REV. A. RAWSON.</i> <i>Rev. A. Rawson.</i>	X	Negretti & Zambra	9 a.m.		1 0	250												
404.	May 19.	SURREY. Pyports, Cobham. <i>G. DINES, ESQ.</i> <i>G. Dines, Esq.</i>	X	Negretti & Zambra	9 a.m.		1 0	65												
405.	May 19.	SURREY. Pyports, Cobham. <i>G. DINES, ESQ.</i> <i>G. Dines, Esq.</i>	XII	Casella .....	9 a.m.		1 0	65												
406.	June 10.	HAMPSHIRE. Nitton, Isle of Wight. <i>REV. R. C. KEMPE.</i> <i>Rev. R. C. Kempe.</i>	X	Negretti & Zambra	.....		0 6	130												
407.	July 25.	RADNORSHIRE. Heyhope Rectory. <i>REV. W. W. GRIFFITH.</i> <i>Rev. W. W. Griffith.</i>	XII	Casella .....	9 a.m.		1 0	690												

## 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	8'03 8'00 8'05 8'00 M 8'020	.....	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	5'02 4'98 5'00 4'99 M 4'998	'1 '2 '3 '4 '5	500 970 1470 1990 2470	—'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 Clwyedog. BRITISH ASSOCIATION. Mr. Isaac Jones.	I	Anon .....	9 a.m. 1st of month.	.....	1400	.....	.....	.....	.....	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. Round.	I	Anon .....	9 a.m. 1st of month.	1 0	550	7'03 8'03 8'02 8'02 M 8'013	.....	.....	.....	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	8'00 7'95 8'05 7'99 M 7'998	.....	.....	.....	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	8'01 8'15 8'00 7'99 M 8'038	.....	.....	.....	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	8'04 8'06 8'10 8'02 M 8'055	.....	.....	.....	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	4'99 5'00 5'02 5'00 5'003 I 4'998	'1 '2 '3 '4 '5 '1	495 1000 1500 1990 2490 500	correct. —'001 —'002 —'001 —'002 —'001	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. STEG GALL. Rev. W. Steggall.	XII	Casella .....	9 a.m.	1 6	125	5'02 5'02 5'02 4'98 I 4'998	'2 '3 '4 '5 '1	980 1460 1950 2450 1350	+'002 +'003 +'006 +'005 —'007	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.	.....	0 8	125	7'94 7'98 8'01 I 7'990	'2 '3 '4 '5	2570 3750 5040 6300	—'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. Above ground Above sea-level.	RAIN-GAUGES (continued).					
							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.		Reference number.	
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.	
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 2'8'8sqd.	1290 2580 3860 5060 6300 1000 2020 3000	—.002 —.004 —.005 +.001 +.003 +.019 +.028 +.047		On Lawn near the church; good position.
421.	Aug. 3.	SUFFOLK. Thwaite, Mendlesham. <i>MR. O. WHISTLECRAFT.</i> <i>Mr. O. Whistlecraft.</i>	.....	Anon .....	Irregular.	2 8	117	4'99 4'99 4'99 5'00 M 4'993 2'8'8sqd.	490 990 1470 1960 2470 510 995 1490 2000 2500 500 980 1450 1950 2450	+.001 correct. +.003 +.004 correct. —.003 —.001 —.001 —.003 —.004 —.001 +.001 +.006 +.004 +.003	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.
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 5'03 4'98 4'94 5'05 M 5'000 4'95 4'99 5'00 M 4'985	490 990 1470 1960 2470 510 995 1490 2000 2500 500 980 1450 1950 2450	+.001 correct. +.003 +.004 correct. —.003 —.001 —.001 —.003 —.004 —.001 +.001 +.006 +.004 +.003	N.W. Fir 54°.	On lawn, rather sheltered as noted; was moved to centre of lawn quite free.
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 4'95 4'99 5'00 M 4'985	510 995 1490 2000 2500 500 980 1450 1950 2450	—.003 —.001 —.001 —.003 —.004 —.001 +.001 +.006 +.004 +.003	N.W. Tree 52°. W. Tree 52°. S.W. Tree 58°.	In small garden E. of West Tofts church; no better position available.
424.	Aug. 31.	KENT. Heathfield Lodge, Chislehurst. <i>F. NUNES, Esq.</i> <i>F. Nunes, Esq.</i>	XII	Casella .....	1 0	295					Close to No. 398.	

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.

## 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.	RAIN-GAUGES (continued).					
							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.		Reference number.	
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.	
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 2'8'8sqd.	1290 2580 3860 5060 6300 1000 2020 3000	—.002 —.004 —.005 +.001 +.003 +.019 +.028 +.047		On Lawn near the church; good position.
421.	Aug. 3.	SUFFOLK. Thwaite, Mendlesham. <i>MR. O. WHISTLECRAFT.</i> <i>Mr. O. Whistlecraft.</i>	.....	Anon .....	Irregular.	2 8	117	4'99 4'99 4'99 5'00 M 4'993 2'8'8sqd.	490 990 1470 1960 2470 510 995 1490 2000 2500 500 980 1450 1950 2450	+.001 correct. +.003 +.004 correct. —.003 —.001 —.001 —.003 —.004 —.001 +.001 +.006 +.004 +.003	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.
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 5'03 4'98 4'94 5'05 M 5'000 4'95 4'99 5'00 M 4'985	490 990 1470 1960 2470 510 995 1490 2000 2500 500 980 1450 1950 2450	+.001 correct. +.003 +.004 correct. —.003 —.001 —.001 —.003 —.004 —.001 +.001 +.006 +.004 +.003	N.W. Fir 54°.	On lawn, rather sheltered as noted; was moved to centre of lawn quite free.
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 4'95 4'99 5'00 M 4'985	510 995 1490 2000 2500 500 980 1450 1950 2450	—.003 —.001 —.001 —.003 —.004 —.001 +.001 +.006 +.004 +.003	N.W. Tree 52°. W. Tree 52°. S.W. Tree 58°.	In small garden E. of West Tofts church; no better position available.
424.	Aug. 31.	KENT. Heathfield Lodge, Chislehurst. <i>F. NUNES, Esq.</i> <i>F. Nunes, Esq.</i>	XII	Casella .....	1 0	295					Close to No. 398.	

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

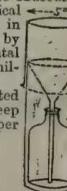
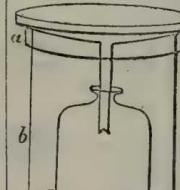
RAIN-GAUGES (continued from *Brit. Assoc. Rep.* 1870, p. 228).

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.							
425.	1870. Sept. 21.	CHESHIRE. Bidstone Observatory, MERSEY HARBOUR BOARD. <i>J. Hartnup, Esq.</i>	X.	Negretti & Zambra	9 a.m.	ft. in. o 6	feet. 182					S.W. Observatory 30°.	Good position on the side of Bidston Hill, near summit, and N.E. of the Observatory.	425.	
426.	Sept. 21.	CHESHIRE. Bidstone Observatory, MERSEY HARBOUR BOARD. <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						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. Alderwasly 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. Stancliffe 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 insplashing. 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 8'03 8'00 8'00 8'00	i 2 3 4	1240 2500 3750 4960 6250	+003 +004 +005 +010 +009	Quite open.	On post in kitchen garden. This gauge was examined 1865, Sept. 21 (No. 123); but as the glass was not initialed, 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.	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 4'98 5'02 4'98 5'002	i 2 3 4 5	480 970 1470 1970 2470	+003 +004 +004 +003 +002		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.	435.	

## 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.					
436.	1870. Oct. 11.	MIDDLESEX. Camden Square. <i>G. J. SYMONS, Esq.</i> <i>G. J. Symons, Esq.</i>	VI.	Crosley .....	9 a.m. 1st	ft. in. 4 0	feet. 115	in. '1 '2 '3 '4 M 10'000 '5	2525 5050 7570 10000 12500 +005	in. correct. correct. correct. +004	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. <i>Mr. Dunn.</i>	I.	Bryson .....	9 a.m.	0 6	183	3'12 3'15 3'13 3'16 M 3'140 13'00 13'25 13'25 13'12 M 3'155 6'72 6'71 6'76 6'71	2000 3000 4000 5000 3'09 9000 +021 +018 +033 +024 +025 +013	W. Trees 38°. S.W. " 22°. S. " 5°.	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. <i>J. F. WYLLIE, ESQ.</i> <i>J. F. Wyllie, Esq.</i>	I.	Anon.....	1st each month.	0 6	.....	1'00 1'55 2'06 2'58 M 3'140 13'00 13'25 13'25 13'12 M 3'155 6'72 6'71 6'76 6'71	2000 3000 4000 5000 3'09 9000 +021 +018 +033 +024 +025 +013	W.S.W. Apple 20°. N.E. " 32°.	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. <i>A. FORBES, ESQ.</i> <i>A. Forbes, Esq.</i>	IV.	Adie .....	8 a.m.	3 0	82	1'25 1'92 2'43 1'98 M 6'725 4'98 5'00 5'02 4'98 M 4'995 8'00 8'00 8'00 8'00 M 8'000 5'00 4'98 4'98 4'93 M 4'973 8'04 8'10 8'10 8'08 M 8'080 10'09 10'31 9'98 10'22 M 10'150 9'98 10'05 10'00 9'97 M 10'000 5'00 5'01 5'00 5'00 M 5'003	1110 1660 2160 2660 2480 -001 1250 3000 5000 6270 505 1020 1515 2010 2510 -012 1250 3000 5000 6270 -003 -008 -009 -010 -012 -004 -002 -006 -016 -005 -005 -011 -002 -010 -020 -003 -004 -005 -005 -004	N. House 30°. S.W. Trees 43°.	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. <i>DR. FOX.</i> <i>Mr. Walsham.</i>	XII.	Casella .....	10 a.m.	1 0	102	4'98 5'00 5'02 4'98 M 4'995 8'00 8'00 8'00 8'00 M 8'000 5'00 4'98 4'98 4'93 M 4'973 8'04 8'10 8'10 8'08 M 8'080 10'09 10'31 9'98 10'22 M 10'150 9'98 10'05 10'00 9'97 M 10'000 5'00 5'01 5'00 5'00 M 5'003	490 980 1480 1980 -001 1250 3000 5000 6270 505 1020 1515 2010 2510 -012 1250 3000 5000 6270 -003 -008 -009 -010 -012 -004 -002 -006 -016 -005 -005 -011 -002 -010 -020 -003 -004 -005 -005 -004	N. Elm 40°. N.E. " 28°. N.W. " 33°.	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. <i>J. PEASE, ESQ.</i> <i>Mr. Richardson.</i>	X.	Negretti & Zambra .....	9 a.m.	0 0	140	1'00 1'24 1'24 1'00 M 4'995 8'00 8'00 8'00 8'00 M 8'000 5'00 4'98 4'98 4'93 M 4'973 8'04 8'10 8'10 8'08 M 8'080 10'09 10'31 9'98 10'22 M 10'150 9'98 10'05 10'00 9'97 M 10'000 5'00 5'01 5'00 5'00 M 5'003	1250 3000 5000 6270 505 1020 1515 2010 2510 -012 1250 3000 5000 6270 -003 -008 -009 -010 -012 -004 -002 -006 -016 -005 -005 -011 -002 -010 -020 -003 -004 -005 -005 -004	N. Elm 40°. N.E. " 28°. N.W. " 33°.	Fair position, near the bottom of a rather flat valley.	441.	
442.	Aug. 30.	DURHAM. Darlington, Southend Gardens. <i>J. PEASE, ESQ.</i> <i>Mr. Richardson.</i>	XII.	Casella .....	9 a.m.	0 8	140	1'00 1'24 1'24 1'00 M 4'995 8'00 8'00 8'00 8'00 M 8'000 5'00 4'98 4'98 4'93 M 4'973 8'04 8'10 8'10 8'08 M 8'080 10'09 10'31 9'98 10'22 M 10'150 9'98 10'05 10'00 9'97 M 10'000 5'00 5'01 5'00 5'00 M 5'003	1250 3000 5000 6270 505 1020 1515 2010 2510 -012 1250 3000 5000 6270 -003 -008 -009 -010 -012 -004 -002 -006 -016 -005 -005 -011 -002 -010 -020 -003 -004 -005 -005 -004	Close to No. 441. This gauge has a very flat rim.	442.		
443.	Aug. 30.	DURHAM. Darlington, Southend Gardens. <i>J. PEASE, ESQ.</i> <i>Mr. Richardson.</i>	See Fig.	Anon.....	9 a.m.	0 6	140	1'00 1'24 1'24 1'00 M 4'973 8'04 8'10 8'10 8'08 M 8'080 10'09 10'31 9'98 10'22 M 10'150 9'98 10'05 10'00 9'97 M 10'000 5'00 5'01 5'00 5'00 M 5'003	1250 3000 5000 6270 505 1020 1515 2010 2510 -012 1250 3000 5000 6270 -003 -008 -009 -010 -012 -004 -002 -006 -016 -005 -005 -011 -002 -010 -020 -003 -004 -005 -005 -004	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. <i>Mr. Wakefield.</i>	VII.	Anon.....	10 a.m.	0 6	30	1'00 1'24 1'24 1'00 M 8'080 10'09 10'31 9'98 10'22 M 10'150 9'98 10'05 10'00 9'97 M 10'000 5'00 5'01 5'00 5'00 M 5'003	2600 5050 7575 10100 12625 2600 5050 7575 10100 12625 -003 -003 -009 -002 -005 -020 -003 -004 -005 -005 -004	S.W. Sycamore 44°. N. Chestnut 46°.	Neither this nor the following gauge were regularly attended to at the time of this examination; but it was promised that they should be in future. The former was in an enclosed part of the ruins 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. <i>Mr. Wakefield.</i>	VII.	Anon.....	10 a.m.	43 6	73	1'00 1'24 1'24 1'00 M 8'080 10'09 10'31 9'98 10'22 M 10'150 9'98 10'05 10'00 9'97 M 10'000 5'00 5'01 5'00 5'00 M 5'003	2600 5050 7575 10100 12625 2600 5050 7575 10100 12625 -003 -003 -009 -002 -005 -020 -003 -004 -005 -005 -004	.....	.....	445.	
446.	Sept. 1.	YORKSHIRE. Hawsker Garden, Whitby. <i>REV. F. W. STOW.</i> <i>Rev. F. W. Stow.</i>	See fig.	Casella .....	9 a.m.	1 0	340	1'00 1'24 1'24 1'00 M 8'080 10'09 10'31 9'98 10'22 M 10'150 9'98 10'05 10'00 9'97 M 10'000 5'00 5'01 5'00 5'00 M 5'003	495 975 1460 1980 2460 -003 -004 -005 -005 -004	W. House 48°. S.S.W. Trees 30°. S.S.E. Trees 25°. N. Trees 25°.	This gauge was of unpainted sime, and had a 3-inch deep snow-collecting rim, as per sketch.	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. 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.				
447.	Sept. 1.	YORKSHIRE. Hawsker Garden, REV. F. W. STOW. Rev. F. W. Stow.	IV.	.....	9 a.m.	ft. in. 2 3	feet. 340	in. 11'86	'1	2850	correct.	.....	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, REV. F. W. STOW. Rev. F. W. Stow.	See No. 446.	Casella .....	9 a.m.	1 0	335	12'12	'2	5780	—'003	.....	All objects under 20°.	448.
449.	Sept. 1.	YORKSHIRE. Hawsker Paddock, REV. F. W. STOW. Rev. F. W. Stow.	See No. 446.	Casella .....	Monthly.	1 0	335	12'00	'3	8568	correct.	.....	Similar to No. 446, but in a more open position.	449.
450.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field, REV. F. W. STOW. Rev. F. W. Stow.	See No. 446.	Casella .....	9 a.m.	1 0	428	M 11'995	'4	11435	—'001	.....	Close to, and similar to No. 448; but read monthly instead of daily.	449.
451.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field, COLONEL WARD. Rev. F. W. Stow.	III.	Casella .....	9 a.m.	1 0	428	M 5'005	'5	14280	—'001	.....	.....	450.
452.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field, REV. F. W. STOW. Rev. F. W. Stow.	See Re- marks.	Anon. ....	9 a.m.	10 0	438	M 5'000	'5	2460	+ '004	.....	.....	451.
453.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field, REV. F. W. STOW. Rev. F. W. Stow.	See Re- marks.	Anon. ....	9 a.m.	10 0	438	M 1'005	'1	495	correct.	.....	.....	452.
454.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field, REV. F. W. STOW. Rev. F. W. Stow.	See Re- marks.	Anon. ....	9 a.m.	5 0	433	M 3'003	'2	975	+ '004	.....	.....	453.
455.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field, REV. F. W. STOW. Rev. F. W. Stow.	XII.	Casella .....	9 a.m.	1 0	428	M 3'003	'3	1460	+ '005	.....	.....	454.
456.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field, REV. F. W. STOW. Rev. F. W. Stow.	X.	Casella .....	9 a.m.	1 0	428	M 3'000	'4	1980	correct.	.....	The vertical-mouthed portion of the two-mouthed gauge at 5 feet.	455.
457.	Sept. 1.	YORKSHIRE. Hawsker Exp. Field, REV. F. W. STOW. Rev. F. W. Stow.	See Re- marks.	Anon. ....	9 a.m.	1 0	428	M 8'000	'5	14280	+ '002	.....	.....	456.
								3'00	'1	180	—'001	.....	.....	457.
								2'99	'2	358	correct.	.....	.....	
								3'02	'3	539	—'001	.....	.....	
								3'00	'4	718	—'001	.....	.....	
								M 3'000	'5	894	correct.	.....	.....	
								3'00	'1	180	correct.	.....	.....	
								2'99	'2	358	correct.	.....	.....	
								3'02	'3	539	—'001	.....	.....	
								3'00	'4	718	—'001	.....	.....	
								3'00	'5	894	correct.	.....	.....	
								2'98	'1	180	—'001	.....	.....	
								2'98	'2	358	correct.	.....	.....	
								3'00	'3	539	—'002	.....	.....	
								3'00	'4	718	—'002	.....	.....	
								3'00	'5	894	—'001	.....	.....	
								8'00	'1	180	—'001	.....	.....	
								8'01	'2	2560	—'002	.....	.....	
								8'00	'3	539	—'002	.....	.....	
								7'99	'4	5050	+ '002	.....	.....	
								M 3'000	'5	894	—'001	.....	.....	
								3'00	'1	180	—'001	.....	.....	
								2'99	'2	358	correct.	.....	.....	
								3'00	'3	539	—'002	.....	.....	
								3'01	'4	718	—'002	.....	.....	
								M 3'000	'5	894	—'001	.....	.....	

## 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. 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.	
							ft. in.	feet.	in.	Grains.				
458.	1872. Aug. 19.	SUSSEX. Brighton, Goldstone Bottom. <i>BRIGHTON CORPORATION.</i> <i>Mr. Barker.</i>	XII.	Casella .....	9 a.m. preceding.	0 10	140	4'98 5'00 4'97 5'02	.1 .2 .3 .4	495 990 1490 1970	—'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.	1 2	200	M 4'993 4'98 5'00 4'99 5'00	.5 .2 .3 .4 .5	2480 1000 1490 2000 2510	—'002 —'001 —'004 —'007	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 .....		1 6	530	M 4'993 5'00 4'98 4'98 5'00	.1 .2 .3 .4	500 1000 1480 1980	—'001 —'002 correct. —'001	.....	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 .....		1 6	530	M 4'990 4'99 5'01 5'01 4'99	.5 .1 .2 .3 .4	2470 500 1000 1480 1980	correct. —'001 —'002 +001 +001	.....	.....	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 5'00 5'01 5'00	.1 .2 .3 .4 .5	495 995 1500 1960 2470	correct. —'001 —'002 —'002 +005 +002	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 5'00	.1 .2 .3 .4 .5	500 1000 1480 1980 2480	—'001 —'002 +002 +001 correct.	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 7'98	.1 .1 .2 .3 .4	1300 2570 3810 5100 2470	—'002 —'002 correct. —'002 +002	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 7'93	.5 .5 .1 .2 .4	6320 1300 2550 3800 5050	—'002 —'003 —'002 —'001 +001	.....	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.	1 0	15	M 7'985 7'99 8'01 8'02 7'93	.5 .5 .1 .2 .4	6300 1300 2550 3800 5050	—'002 —'003 —'002 —'001 +001	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 4'93 M 4'980	.1 .1 .2 .3 .4 .5	520 1020 1530 2050 2550 1250	—'006 —'007 —'011 —'017 —'018 +001	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.	1 0	405	M 7'998	.2 .3 .4 .5	2570 3800 5050 6300	—'002 correct. +002 +004	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.	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.			
469.	Sept. 9.	SUSSEX. Crowborough, Beacon Observatory. <i>C. L. PRINCE, ESQ., F.R.A.S.</i> <i>C. L. Prince, Esq., F.R.A.S.</i>	X.	Negretti & Zambra	9 a.m. preceding.	ft. in. 1 0	feet. 777	in. 7'94 8'00 7'93 7'94 5'03	in. '1 .2 .3 '4 '5	1270 2530 3750 5025 6290	-'001 -'002 -'001 -'001 -'001	W. House 20°.	Very open position, on almost the highest ground in the county.
470.	Sept. 24.	NORFOLK. Bewell Rectory. <i>REV. E. J. HOWMAN.</i> <i>Rev. E. J. Howman.</i>	XII.	Casella .....	9 a.m. preceding.	1 0	120	M 7'953	'5	498	-'001	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. <i>REV. E. J. HOWMAN.</i> <i>Mr. C. Blanchfield.</i>	III.	Casella .....	9 a.m. preceding.	1 0	20	M 4'993	'5	990	correct.	N.W. House 22°. N. Barn 18°.	In small paddock; flat country, and quite open.
472.	Sept. 25.	NORFOLK. White House, Wereham. <i>F. R. H. MASON, ESQ.</i> <i>F. R. H. Mason, Esq.</i>	X.	Negretti & Zambra	9 a.m. preceding.	0 5	60	M 5'005	'5	1500 1980	correct. correct.	S.W. Trees 35°. N.E. , 30°.	In garden, near to, but not influenced by, house.
473.	Sept. 25.	NORFOLK. White House, Wereham. <i>F. R. H. MASON, ESQ.</i> <i>F. R. H. Mason, Esq.</i>	XI.	Negretti & Zambra	9 a.m. preceding.	6 0	66	M 8'000	'5	2470 1280 2550 3820 5090 6370	+'003 -'001 -'001 -'001 -'001	.....	In same garden as No. 472, but much further from house, and quite open.
474.	Sept. 25.	NORFOLK. Fincham Rectory. <i>REV. W. BLYTHE.</i> <i>Rev. W. Blythe.</i>	See fig. 2, Br. Ass. Report, 1869, p. 390.	Spencer .....	9 a.m. preceding.	4 0	50	M 5'003	'5	495 980 1490 1970 2470	correct. +'002 correct. +'003 +'002	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. <i>MID LEVEL COMMISSIONERS.</i> <i>Mr. W. Bond.</i>	VIII.	.....	9 a.m. 6 p.m.	3 0	.....	M 3'005	1'07	1480 1990 810	-'041 -'041 correct.	.....	A very good gauge in a good position, but most woefully 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. <i>S. H. MILLER, ESQ.</i> <i>S. H. Miller, Esq.</i>	XI.	Negretti & Zambra	9 a.m.	0 6	10	M 8'985	'25	4000	correct.	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. <i>S. H. MILLER, ESQ.</i> <i>S. H. Miller, Esq.</i>	X.	Negretti & Zambra	9 a.m. preceding.	0 6	10	M 4'995	'5	2530 510	-'011 -'003	N. Trees 33°. N.W. , 25°.	477.
478.	Sept. 26.	CAMBRIDGE. Victoria Road, Wisbeach. <i>S. H. MILLER, ESQ.</i> <i>S. H. Miller, Esq.</i>	X.	Negretti & Zambra	.....	8 0	18	M 8'000	'2	1040	-'010	.....	On the roof of thermometer-stand, about 15 ft. from No. 477. Unsheltered.
479.	Dec. 4.	OXFORDSHIRE. Banbury. <i>* T. BEESLEY, ESQ.</i> <i>T. Beesley, Esq.</i>	VIII.	Anon.....	9 a.m. preceding.	7 0	350	M 7'958	'5	1250 2480 3720 5040 6290	+'001 +'002 +'004 +'002 -'001	S. Birch 30°. E. " 32°. W. " 42°. N. House 53°.	On roof of outhouse, in the best position on the premises.

## 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.
480.	1872. 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
481.	Dec. 4.	OXFORDSHIRE. Banbury, Parson Street. <i>J. JARVIS, ESQ.</i> <i>J. Jarvis, Esq.</i>	II.	.....		4 0	350
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
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
484.	July 13.	KENT. Sheldwich Vicarage. <i>REV. B. S. MALDEN.</i> <i>Rev. B. S. Malden.</i>	III.	Casella .....	9 a.m.	1 0	259
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
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
487.	Aug. 15.	SUSSEX. The Grange, Framfield. <i>CAPT. DRAKE.</i> <i>Capt. Drake.</i>	X.	Negretti & Zambra .....		1 2	185
488.	Aug. 15.	SUSSEX. Buxted Park. <i>COL. HARCOURT.</i> <i>Mr. J. Edmeads.</i>	X.	Negretti & Zambra .....	9 a.m.	1 0	193
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
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

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

Diameters (that marked).  M = mean).	Equivalents of water.		Error at scale-point specified in previous column.	Azimuth and an- gular elevation of objects above mouth of rain- gauge.	Remarks on position &c.	Reference number.
	Scale- point.	Grains.				
in.	in.		in.			
9'92	'1	1760	+.012		In garden in centre of town, fair exposure.	480
10'06	'2	3523	+.024			
10'02	'3	5283	+.037			
9'92	'4	7045	+.049			
M 9'980	'5	8805	+.061			
10'10	'1	1980	+.002		Close to 480.	481
10'15	'2	3954	+.003			
10'00	'3	5930	+.005			
10'03	'4	7908	+.007			
M 10'070	'5	9885	+.009			
4'93					Gauge in large experimental field.	482
4'98					Measuring-glass not accessible; said to have been verified in the laboratory.	
4'98						
5'01						
M 4'975						
5'02	'1	495	correct.	S. Tree, 46°.		483
4'98	'2	990	correct.	S.E. , 35°.		
4'99	'3	1470	+.003			
5'01	'4	1970	+.003			
M 5'000	'5	2450	+.006			
5'00	'1	490	+.001		Position not good, but no better available for daily observations.	
4'95	'2	980	+.002		Establishment of a monthly gauge at a little distance suggested.	
5'09	'3	1470	+.002			
4'92	'4	1970	+.001		All clear, S.E. of church and within 100 yards of it.	484
M 4'990	'5	2470	correct.			
11'20	'1	2265	+.010			
11'28	'2	4550	+.019			
11'32	'3	6825	+.028			
11'22	'4	9100	+.038			
M 11'255	'5	11375	+.047			
11'28	'1	2450	+.002	N.W. Chestnut, 25°		485
11'21	'2	4940	+.002	S.E. Apple, 24°.		
11'23	'3	7300	+.008			
11'19	'4	9720	+.011			
M 11'228						
7'88	'1	1280	-.001	W.N.W. Tree, 15°.		
8'13	'2	2500	+.003	N.W.-N.N.W. Ho. 45°		
7'96	'3	3790	+.001	N. Trees, 30°.		
8'02	'4	5100	-.002			
M 7'998	'5	6330	+.001			
8'04	'1	1360	-.007	S.W. Tree, 48°.		488
8'03	'2	2550	-.001	N.E. Fir, 31°.		
8'00	'3	3800	correct.			
7'92	'4	5040	+.003			
M 7'998	'5	6250	+.007			
8'00				E.S.E. Hill, 31°.		
7'98				S.S.E. Firs, 36°.		
8'03						
8'00						
M 8'002						
7'92					The gauge was moved two years ago; rod correct and gauge true.	490
8'07						
8'00						
7'98						
M 7'993						

## 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.					
491.	1873. Sept. 30.	WESTMORELAND. Crosby Ravensworth. REV. G. F. WESTON, Rev. G. F. Weston.	X.	Baker .....		ft. in. 1 0	feet. 600						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						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							In gardens, quite clear.	493.
494.	Oct. 3.	LANCASHIRE. Backbarrow, Cartmell. MAJOR AINSWORTH.	IV.	Hartley .....		3 2	70						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							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						Close to 495.	496.	
497.	Oct. 9.	WESTMORELAND. Greenside Mines. MR. TAYLOR. Mr. Taylor.	X.	Casella .....	1st of month.	1 0	1000						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						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						Clear; on N. corner of lawn.	499.	
500.		CUMBERLAND. Shul-le-Crow, Keswick. H. DAWSON, ESQ. H. Dawson, Esq.	IV.	Chadburn .....	9 a.m.	3 0	278						In garden on bank of Derwent, quite clear.	500.	
501.	Oct. 20.	CUMBERLAND. The Sty. ISAAC FLETCHER, ESQ., M.P. Mr. J. Wilson.		Cook .....	1st of month.	1 0	1077						Measuring-glass not accessible. Gauge concealed among rocks on the eastern slope of the Sty Head Pass.	501.	

## 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. feet. Above sea-level.					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.			
502.	Oct. 22.	CUMBERLAND. Deer Close, Keswick. <i>H. C. MARSHALL, ESQ.</i>	XII.	Casella .....	9 a.m.	ft. in. 1 8	feet. 300				N.E. House, 32°.	502.
503.	Oct. 23.	YORKSHIRE. Moorside, Halifax. <i>L. J. CROSSLEY, ESQ.</i> <i>Mr. Page.</i>	X.	.....	9 a.m.	ft. in. 1 0	feet. 429				Good position in front of house. Set on a large stone, which had sunk towards S.W.: requested that it might be rendered level. On edge of lawn, quite clear.	503.
504.	Oct. 24.	YORKSHIRE. Settle.	III.	.....		ft. in. 8 0	feet. 519				On a bracket from west eaves of cottage. Gauge was tipping one inch to the west. Believed to belong to contractor of Settle and Carlisle Railway.	504.
505.	Oct. 24.	YORKSHIRE. Langcliffe, Settle. <i>MISS SEDGWICK.</i> <i>Miss Sedgwick.</i>	X.	Negretti & Zambra .....		ft. in. 1 6	feet. 623				N. House, 22°. S.E. Laburnum, 16° W. Tree, 13°.	505.
506.	Oct. 25.	YORKSHIRE. Cherry Hill, York. <i>H. RICHARDSON, ESQ.</i>	III.	.....	9 a.m.	ft. in. 1 6	feet. 40				Gauge in dwarf stump. Good position in garden.	506.
507.	Oct. 25.	YORKSHIRE. Cherry Hill, York. Second gauge. <i>H. RICHARDSON, ESQ.</i> <i>H. Richardson, Esq.</i>	III.	.....	9 a.m.	ft. in. 2 0	feet. 40				In garden, too much sheltered by trees; better spot selected.	507.
508.	Nov. 1.	NOTTINGHAM. Southwell. <i>W. W. P. CLAY, ESQ.</i> <i>W. W. P. Clay, Esq.</i>	III.	Davis .....							Close to 506.	508.
509.	1874. Mar. 31.	YORKSHIRE. Penistone. <i>M. S. &amp; L. R. Co.</i>	VIII.	Casartelli .....	8 a.m.	ft. in. 3 6	feet. 717				The measure supplied with the gauge was broken shortly after, and a memorandum was made previously that 0·25 in. in measure = 5 oz. in the large graduated measure, which holds 8 oz. The memorandum probably should have been that 0·25 in.=4 oz., instead of 5 oz., a most serious error.	509.
510.	Mar. 31.	YORKSHIRE. Carlcotes. <i>M. S. &amp; L. R. Co.</i>	VIII.	Casartelli .....		ft. in. 2 11	feet. 1075				E.N.E. of church, in the yard of the old station.	510.
511.	Mar. 31.	YORKSHIRE. Dunford Bridge Reservoir. <i>DEWSBURY WATER CO.</i> <i>Mr. G. Whitfield.</i>	II.	.....	9 a.m.	ft. in. 2 0	feet. 1100				Same gauge and in same position as when visited April 5th, 1869. See No. 299.	511.
512.	Apr. 1.	YORKSHIRE. Dunford Bridge Station. <i>M. S. &amp; L. R. Co.</i>	VIII.	Casartelli .....	9 a.m.	ft. in. 3 6	feet. 954				Since previous testing (No. 293) a new glass has been provided, and the funnel either bent or renewed.	512.

## 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. ft. in. Above sea-level. feet.	Diameters (that marked M=mean).			Equivalents of water. Scale-point. in. Grains.	Error at scale-point specified in previous column. in.	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.	.....							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	'1 490 '2 1020 '3 1500 '4 2000 '5 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	'1 490 '2 960 '3 1450 '4 1948 '5 2450	+.001 +.006 +.006 +.005 +.004	S. House, 33°. S.W. House, 52°. N. Buildings, 12°. W. Buildings, 23°.	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	'1 460 '2 950 '3 1450 '4 1950 '5 2435	+.007 +.008 +.007 +.006 +.008		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 1275 '2 2550 '3 3820 '4 5040 '5 6320	correct. -.001 -.001 +.003 +.003	S. House, 33°. W. Reservoirbank, 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 1280 '2 2520 '3 3750 '4 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 1320 '2 2590 '3 3760 '4 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.	.....	Mon-days 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.	.....	Mon-days and 1st of month.	0 6	1350			6'76 6'07 6'36 6'96 M 6'888				Gauge correct, and site very good.	522.
523.	June 17.	YORKSHIRE. Warley Moor. HALIFAX CORPORATION. Mr. N. Greenwood.	I.	.....	Mon-days 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. <i>Mr. N. Greenwood.</i>	I.		Mondays and 1st of month.	ft. 0	in. 6	feet. 1375				On open flat moorland.	524.
525.	July 30.	HAMPSHIRE. Ashdell, Alton. <i>F. CROWLEY, ESQ.</i> <i>F. Crowley, Esq.</i>	X.	Smith & Beck	9 a.m.	3	3	396	M 7'065	7'98 1' 1290 —'002	S.S.W. Peas, 20°.	In garden, quite clear; ground level, but falling rapidly at a short distance.	525.
526.	July 30.	HAMPSHIRE. East Tisted Rectory, Alton. <i>REV. F. HOWLETT.</i> <i>Rev. F. Howlett.</i>	III.	Casella		1	3	420	M 7'993	7'98 1' 1290 —'002	S.E. Church-tower, 28°.	On lawn N.W. of church.	526.
527.	July 30.	HAMPSHIRE. The Wakes, Selborne. <i>T. BELL, ESQ., F.R.S.</i> <i>Mr. W. Binnie.</i>	Square V.	Anon.	9 a.m.	4	7	400	M 4'995	4'99 1' 495 —'002	N.E. Yew, 38°.	Position good, but glass very incorrect; a new one supplied.	527.
528.	July 30.	HAMPSHIRE. Chawton House, Alton. <i>MR. FRANCES.</i> <i>Mr. Frances.</i>	III.	Casella	9 a.m.	1	0	445	M 6'009	5'00 1' 200 —'003	S.W. Hill wooded, 10°.	Gauge not in use, but to be restarted August 1st, 1874. Fair position in garden.	528.
529.	July 31.	HAMPSHIRE. Wester Court, Alresford. <i>T. P. MAY, ESQ.</i> <i>T. P. May, Esq.</i>	X.	Negretti & Zambra	9 a.m.	0	9	253	M 3'000	5'950 1' 1320 —'024	S.E. Firs, 48°.	On N. side of a sunk fence, and about 3 ft. from the edge; otherwise good position.	529.
530.	July 31.	HAMPSHIRE. Arle Bury, Alresford. <i>F. MARX, ESQ.</i> <i>Mr. Kinge.</i>	III.	Casella	9 a.m.	1	4	308	M 7'993	7'98 1' 2500 +'003	S.E. Limes, 42°.	In kitchen-garden; clear, except as noted.	530.
531.	July 31.	HAMPSHIRE. Otterbourne, Winchester. <i>J. B. YONGE, ESQ.</i> <i>J. B. Yonge, Esq.</i>	XII.	Casella		1	0	115	M 5'000	5'00 1' 3750 +'004	S.W. Trees, 32°. E.N.E. Peas, 30°.	Open position in kitchen-garden.	531.
532.	July 31.	HAMPSHIRE. Otterbourne, Winchester. <i>J. B. YONGE, ESQ.</i>	III.	Casella		1	3	115	M 5'002	5'00 1' 5010 +'005		Close to 531.	532.
533.	Aug. 1.	HAMPSHIRE. Red Lodge, Southampton. <i>R. C. HANKINSON, ESQ.</i> <i>R. C. Hankinson, Esq.</i>	XII.	Casella	9 a.m.	0	5	200	M 4'983	4'94 1' 500 —'001	N.E. House, 25°.	On lawn; clear, except as noted.	533.
534.	Aug. 1.	HAMPSHIRE. Red Lodge, Southampton. (Plantation Gauge.) <i>R. C. HANKINSON, ESQ.</i> <i>R. C. Hankinson, Esq.</i>	III.	Davis	9 a.m.	4	0	194	M 4'998	5'02 1' 1000 —'002		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).	Scale-point.	Grains.	in.	in. correct.				
in.								
7'10								
7'00								
7'06								
7'10								
M 7'065								
7'98	1'	1290	—'002					
8'00	2'	2550	—'001					
8'01	3'	3800	correct.					
7'98	4'	5400	—'026					
M 7'993	5'	6340	correct.					
4'99	1'	495	correct.					
5'00	2'	980	+ '002					
4'97	3'	1480	+ '001					
5'02	4'	1980	correct.					
M 4'995	5'	2470	+ '001					
6'009	0'28	200	—'003					
5'950	1'39	1320	—'024					
6'0409	2'78	2740	—'061					
6'0109	4'17	4050	—'083					
M 6'0039	5'56	5210	—'087					
3'00	1'	180	correct.					
2'99	2'	340	+ '010					
3'01	3'	520	+ '010					
3'00	4'	692	+ '013					
M 3'000	5'	865	+ '017					
8'00	1'	1248	+ '001					
7'98	2'	2500	+ '003					
7'99	3'	3750	+ '004					
8'00	4'	5010	+ '005					
M 7'993	5'	6280	+ '004					
5'01	1'	470	+ '005					
4'99	2'	980	+ '002					
5'00	3'	1480	+ '001					
5'00	4'	1950	+ '007					
M 5'000	5'	2450	+ '006					
5'00	1'	500	—'001					
5'01	2'	1000	—'002					
5'00	3'	1500	—'002					
5'00	4'	2000	—'003					
M 5'002	5'	2500	—'004					
4'94								
5'00								
5'02								
4'97								
M 4'983								
5'03	1'	480	+ '003					
4'94	2'	1000	—'002					
4'98	3'	1470	+ '003					
5'04	4'	1960	+ '004					
M 4'998	5'	2460	+ '003					
5'03	1'	490	+ '001					
4'96	2'	1000	—'002					
4'99	3'	1460	+ '004					
4'98	4'	1970	+ '001					
M 4'990	5'	2450	+ '004					

## EXAMINATION OF

## ON THE RAINFALL OF 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.	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.	in.	in.					
535.	1874. Aug. 1.	DORSETSHIRE. Upwey. <i>J. MILLER, ESQ.</i> <i>J. Miller, Esq.</i>	III.	Casella .....	9 a.m.	1 3 70						E. Thorn bush, 43°.	On lawn in rear of house; good position.	535.
536.	Aug. 3.	DORSETSHIRE. Osmington Lodge, Weymouth. <i>MAJOR HALL.</i> <i>Major Hall.</i>	XII.	Casella .....	9 a.m.	1 0 270						N.W. House, 25°. N.W. Pear-tree, 27°.		536.
537.	Aug. 3.	DORSETSHIRE. Abbotsbury. <i>EARL OF ILCHESTER.</i> <i>Mr. Dight.</i>	XII.	Casella .....	9 a.m.	3 0 140						S.E. Oak and mulberry, 42°.	Gauge to be moved 40 ft. N., when all will be under 20°.	537.
538.	Aug. 4.	DORSETSHIRE. St. Andrew's Villas, Bridport. <i>A. STEPHENS, ESQ.</i> <i>A. Stephens, Esq.</i>	X.	Negretti & Zambra	9 a.m.	1 3 60						E. Elms, 52°. N.W. House, 42°. N.E. Elms, 30°.	Position not good, but no better available.	538.
539.	Aug. 4.	DORSETSHIRE. Bridport. <i>A. STEPHENS, ESQ.</i> <i>Mr. H. Hoare.</i>	X.	Negretti & Zambra	9 a.m. 1st.	1 3 45							Very good position in field; kept as a check on 538.	539.
540.	Aug. 4.	DORSETSHIRE. Spring Cottage, Lyme Regis. <i>H. TUCKER, ESQ.</i> <i>H. Tucker, Esq.</i>	XI.	Negretti & Zambra	.....	4 6 270						S.W. Trees, 38°.	On N.E. slope of hill, at side of road. Position not good, but no better on the premises.	540.
541.	Aug. 4.	DEVONSHIRE. Clevelands [Lyme Regis]. <i>E. L. AMES, ESQ.</i>	XI.	Negretti & Zambra	9 a.m.	1 0 463						E.N.E. Pear, 33°. N.N.W. Tree, 41°.	Very good position in kitchen-garden.	541.
542.	Aug. 4.	DEVONSHIRE. White Cliff Glen, Seaton. <i>T. F. A. BYLES, ESQ.</i> <i>T. F. A. Byles, Esq.</i>	XI.	Negretti & Zambra	10 a.m.	2 0 160						S. Hill, 32°.	On a rapid slope, in the best position available.	542.
543.	Aug. 4.	DEVONSHIRE. Sidmount, Sidmouth. <i>DR. RADFORD.</i> <i>Dr. Radford.</i>	III.	Casella .....	9 a.m.	1 0 149						S.E. & S.W. Elms 40°.	On lawn; open, except as noted.	543.
544.	Aug. 4.	DEVONSHIRE. Sidmount, Sidmouth. <i>DR. RADFORD.</i> <i>Dr. Radford.</i>	.....	.....	.....	3 7 195						S.E. Elms, 20°.	Very good position.	544.
545.	Aug. 6.	DEVONSHIRE. Mount Tavy, Tavistock. <i>H. CLARK, ESQ.</i>	III.	Casella .....	.....	1 3 316						N. Beech, 72°.	Gauge to be moved 40 ft. S., where tree = 40°, and all else clear.	545.

## 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.									
546.	1874. Aug. 6.	DEVONSHIRE. Rundlesone, Dartmoor. G. J. SYMONS, ESQ.	XII.	Casella .....		ft. in.	feet.				S.E. House, 30°.	Gauge removed; site very good, in small garden.	546.			
547.	Aug. 6.	DEVONSHIRE. Prison Garden, Dartmoor. G. J. SYMONS, ESQ. R. E. Power, Esq., M.D.	XII.	Casella .....	9 a.m.	0 10	1381	5'00 5'00 5'00 4'99 M 4'998 5'01 5'00 5'00 5'00 M 5'002 5'02 4'98 5'00 5'02 M 5'005 8'00 8'00 7'98 8'01 M 7'998 5'00 5'00 4'98 5'00 5'00 M 4'995 5'01 5'00 5'00 4'99 M 5'000 4'98 5'04 5'01 5'03 M 5'015 5'01 5'00 5'01 5'00 M 5'005 4'98 5'00 5'02 5'01 5'00 M 4'993 4'95 4'85 4'95 4'84 M 4'898							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				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					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				S. Pear, 44°.	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					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				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				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					Good position in large garden.	554.			
555.	Aug. 8.	DEVONSHIRE. Langtree Wick (monthly). MISS NUNES. Miss Nunes.	XII.	Casella .....		1 0	451					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	.....				E. House, 32°. W. Tree, 35°.	Position not good, but no better available.	556.			

## ON THE RAINFALL OF THE BRITISH ISLES.

## RAIN-GAUGES (continued).

## EXAMINATION OF

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

Reference number.	Date of examination.	COUNTY. Station. <i>OWNER.</i> <i>Observer.</i>	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.			
557.	1874. Aug. 10.	SOMERSET. Literary Institution, Bath. <i>THE INSTITUTION.</i> <i>Mr. Russell.</i>	VIII.	Anon. ....	9 a.m.	8 7 75		6'00 6'00 6'00 6'00 M 6'000	'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.	WILTS. Tylerton, Chippenham. <i>MAJOR GRITTON.</i> <i>Major Gritton.</i>	XII.	Casella ....	9 a.m.	1 0 157		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.E. Trees, 32°. N.N.W. House, 22°.	On lawn; best position available.	558.
559.	Aug. 20.	WILTS. Sunnyside, Trowbridge. <i>W. J. MANN, ESQ.</i> <i>W. J. Mann, Esq.</i>	XII.	Casella ....	9 a.m.	1 0 190		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.E. Trees, 25°. E.S.E., 25°.	In strawberry-bed, good open position.	559.
560.	Aug. 21.	WILTS. Alderbury, Salisbury. <i>REV. R. S. HUTCHINGS.</i> <i>Rev. R. S. Hutchings.</i>	XII.	Casella ....	9 a.m.	0 8 263		4'96 4'98 4'96 5'00 M 4'975	'1 '2 '3 '4 '5	470 970 1460 1970 2476	+·004 +·002 +·002 +·001 +·004	W.S.W. House, 40°. W. Tree, 30°. N.E. Trees, 30°. E., 36°.	.....	560.
561.	Aug. 22.	WILTS. Lower Woodford, Salisbury. <i>H. HINXMAN, ESQ.</i> <i>H. Hinman, Esq.</i>	III.	Knight ....	1 2	150		4'98 4'95 4'98 4'98 M 4'973	'1 '2 '3 '4 '5	500 1000 1495 2000 2500	-·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.	WILTS. West Dean, Salisbury. <i>R. V. W. EYRE.</i> <i>Mr. J. Moodie.</i>	XII.	Casella ....	9 a.m.	1 0 140		4'97 5'02 4'99 5'00 M 4'973	'1 '2 '3 '4 '5	490 970 1460 1950 2460	-·001 +·004 +·005 +·006 +·003	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.	1 0 80		4'93 5'04 4'95 4'96 M 4'995	'1 '2 '3 '4 '5	445 950 1450 1950 2460	+·009 +·006 +·004 +·002 +·002	.....	In a field, quite clear and open ...	563.
564.	Sept. 6.	KENT. Dartford (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.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 7'93 M 7'923	'1 '2 '3 '4 '5 '1 '2 '3 '4 '5 M 8'002	1255 2400 3100 2480 1280 1390	-·001 -·001 +·001 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 & Zambla	9 a.m.	0 8 114		7'99 8'02 8'00 8'00 M 7'923	'1 '2 '3 '4 '5 '1 '2 '3 '4 '5 M 8'002	1280 1390	-·001 -·001	E. Ther.-stand, 48°. N. Railings, 22°. W., 50°. S., 58°.	A piece of ground 9 ft. × 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. Mailland.</i>	II.	Anon. ....	9 a.m.	4 8 30		11'30 11'26 11'30 11'23 M 11'273	'05 '1 1260 2520	correct. correct.	.....	In garden in centre of Linen Hall Buildings; quite clear.	6.	

## EXAMINATION OF

## ON THE RAINFALL OF 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. feet. in. ft. in.	Above sea-level. feet.	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.					
568.	1874. Aug. 26.	ANTRIM. The Manse, Antrim. REV. J. H. ORR. Rev. J. H. Orr.	III.	Casella .....			150	in. 5'00 4'98 5'03 4'98	in. '1 '2 '3	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	68	M 4'998 11'20 11'30 11'30 11'28 M 11'270	'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	6'66 6'68 6'72 6'66 5'03 4'98 5'03	2'5 — 2'3 2'0 — 1'75 1'25 — 1'0 1'0 — 0'5 '1 '194	1870 2210 2320 4520 4540 500 980	+ '004 + '001 — '004 — '001 — '001 broken.		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	M 6'680 4'98 5'03 4'98 5'03	'05 — 0'0 '1 '194				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	1270 2550 3780 5120	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	6350 2370 4370 7410	correct. + '006 + '006 + '006	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.	'5 '15 '27 '38 '51	12490 3000 6000 9000 12000	+ '005 + '035 + '040 + '043 + '050	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 8'00 8'04 8'03	'63	15000	+ '055		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	M 8'022 10'12sq.	'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 7'98 8'00 8'00	'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	'27 — 2'01 2'01 — 3'76 3'76 — 5'57 5'57 — 7'34	3000 6000 9000 12000	+ '05 + '06 + '12 + '08		Close to No. 577; gauge not in use.	578.	
								M 2'995	7'34 — 9'15	15000	+ '12				

## EXAMINATION OF

## ON THE RAINFALL OF 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.	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.
							Diameters (that marked M = mean), in.	Scale-point.	Grains.	in.				
579.	Sept. 2.	DUBLIN. Fitzwilliam Square W., Dublin. <i>DR. J. W. MOORE.</i> <i>Dr. J. W. Moore.</i>	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. <i>R. BARRINGTON, ESQ.</i> <i>R. Barrington, Esq.</i>	IV.	Yeates .....	9 a.m.	ft. in. 5 0 -----	10'02 10'00 10'00 10'00 M 10'005	'1 '2 '3 '4 '5	2520 4970 7470 9970 12220	correct. +·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. <i>DR. J. W. MOORE.</i> <i>Dr. J. W. Moore.</i>	XII.	Casella .....	9 a.m.	ft. in. 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. <i>E. C. DAVEY, ESQ.</i> <i>E. C. Davey, Esq.</i>	XI.	Negretti & Zambra .....	9 a.m.	ft. in. 7 5 280	4'96 5'04 5'00 5'04 M 5'045	'1 '2 '3 '4 '5	990 1480 2000 2460 490	+·001 +·002 +·002 +·006 +·002	.....	On post in kitchen-garden; all clear.	582.	
583.	Sept. 14.	BERKSHIRE. Long Wittenham, Abingdon. <i>REV. J. C. CLUTTERBUCK.</i> <i>Rev. J. C. Clutterbuck.</i>	III.	Braham .....	9 a.m.	ft. in. 1 0 170	5'00 5'00 4'94 5'00 M 5'010	'1 '2 '3 '4 '5	475 995 1500 1970 2460	+·004 +·002 +·004 correct. +·006	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. <i>W. BELCHER, ESQ.</i> <i>W. Belcher, Esq.</i>	XI.	Negretti & Zambra .....	9 a.m.	ft. in. 1 0 176	5'00 5'02 5'03 4'99 M 4'985	'1 '2 '3 '4 '5	980 1455 1960 2480 490	+·003 +·003 +·008 +·006 +·002	S. Rose-bush, 35°.	Level garden; position good except as noted.	584.	
585.	Sept. 15.	OXFORD. Magdalen Coll. Laboratory. <i>MAGDALEN COLLEGE.</i> <i>J. Harris, Esq.</i>	XII.	Casella .....	9 a.m.	ft. in. 0 8 192	5'00 4'98 4'97 5'00 M 5'010	'1 '2 '3 '4 '5	495 980 1470 1960 495	correct. +·001 +·002 +·003 +·006	S. Elms, 35°.	In the botanical gardens; clear except as noted.	585.	
586.	Sept. 15.	BUCKINGHAM. Addington Manor, Winslow. <i>E. HUBBARD, ESQ., M.P.</i> <i>Mr. J. Mathison.</i>	XII.	Casella .....	9 a.m.	ft. in. 0 9 309	5'02 4'98 4'99 4'98 M 4'988	'1 '2 '3 '4 '5	495 990 1490 1990 2450	correct. correct. +·001 +·002 +·003	E. Apple, 41°.	In kitchen-garden, well exposed.	586.	
587.	Sept. 15.	BUCKINGHAM. Addington Manor, Winslow. <i>E. HUBBARD, ESQ., M.P.</i> <i>Mr. J. Mathison.</i>	X.	Negretti & Zambra .....	9 a.m.	ft. in. 0 9 309	5'00 5'00 5'00 5'00 M 4'993	'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. <i>E. HUBBARD, ESQ., M.P.</i> <i>Mr. W. Weston.</i>	XII.	Casella .....	9 a.m.	ft. in. 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 correct. +·002 +·003 +·003	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. <i>MR. W. WALKER.</i> <i>Mr. W. Walker.</i>	X.	Negretti & Zambra .....	9.30 a.m.	ft. in. 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 +·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*).

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.	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.			
612.	1874. Dec. 17.	WILTSHIRE. Marlborough College. REV. T. A. PRESTON. Rev. T. A. Preston.	X.	Negretti & Zambra	9 a.m.	ft. in. 0 8	feet. 456	in. 8'00 7'99 8'01 8'00	.1 .2 .3 .4	1280 2560 3820 5050	—.001 —.002 —.001 +.002	N.W. & N.E. Chapel, 39° 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	M 8'000 M 4'998	.5 .5 .6 .7 .8 .9 .9	6320 500 990 1490 1960 2450 1975	—.001 correct.	.....	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	M 5'002	.5	2470	+.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 7'92 8'02 7'84 8'12	.1 .2 .3 .4	1260 2550 3790 5040	—.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	.....	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	M 7'980 M 4'998	.5 .5 .6 .7 .8 .9	6350 495 1000 1490 2000 2490	—.003 correct. —.002 —.001 —.004 —.003	N.N.W. Laburnum, 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	M 4'993 M 4'97 M 4'98 M 4'99	.5 .1 .3 .4	500 990 1480 1980	—.001 correct. +.001 correct.	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	M 4'993 M 5'000 M 5'002	.5 .5 .5	2490 500 995	—.004 correct. correct.	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. 1st.	i o	433	M 5'002 M 5'000 M 5'002	.5 .5 .5	2500 490 990	—.001 +.001 correct.	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	M 5'000 M 4'998 M 5'002	.5 .5 .5	2470 490 990	—.002 correct. +.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	M 5'007 M 4'998	.5 .5 .6 .7 .8 .9	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.		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.				
623.	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	in. 7'98 8'03 7'98 8'02	in. '1 3790	in. -001	W. House, 36°. N.W. , 42°. N. , 30°. S. , 35°.	Very bad position; to be removed to an open part of the castle grounds.	623	
624.	Aug. 14.	MERIONETH. Brittdir, Dolgelly. <i>BRITISH ASSOCIATION.</i> <i>J. H. Hill, Esq.</i>	III.	Casella .....	9 a.m.	1 0	465	M 8'002 5'00 4'99 5'01 5'00	'5 '1 2 '3 '4	6350 490 980 1470 1980	correct.	Clear open position in garden.	624	
625.	Aug. 14.	MERIONETH. Brittdir, Dolgelly (Field). <i>J. H. HILL, ESQ.</i> <i>J. H. Hill, Esq.</i>	XII.	Casella .....			447	M 5'000 5'00 5'01 5'01	'5 '1 '2 '3 '4	2470 490 980 1470 1980	+002 +001 +002 +003 +001	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. Orn Williams,</i>	III.	Casella .....	9 a.m.	1 0	43	M 5'000 5'00 5'01 4'99	'5 '1 '2 '3 '4	2470 500 980 1480 1980	+002 -001 +002 +001 correct.	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 5'00 5'03 5'01	'5 '1 '2 '3 '4	2470 510 1020 1500 2010	+001 -002 -005 -001 -003	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 4'98 5'02 5'00	'5 '1 '2 '3 '4	2500 500 990 1490 1980	-002 -001 correct. -001 +001	Gauge not in use, but site chosen, and its erection promised. Quite clear.	628	
629.	Aug. 16.	MERIONETH. Peniarth. <i>W. E. WYNNE, ESQ.</i> <i>The Gardener.</i>	V.	Anon.....		1 6	11	M 5'000 5'04 4'98 5'06 4'98	'5 '1 '2 '3 '4	2480 530 1030 1510 2000	correct. -006 -006 -003 -001	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. 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.						
630.	1875. Aug. 31.	GLOUCESTERSHIRE. South Parade, Clifton. DR. G. F. BURDER. Dr. Burder.	X.	Negretti & Zambra	9 a.m.	ft. in. o 6	feet. 192	8'00 8'00 8'00 7'94 M 7'985	'1 '2 '3 '4	1250 2510 3750 5010	+·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 anon.	Irregular.	i o	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.	12 6	34	12'00 12'00 12'00 12'00 M 12'000	'1 '2 '3	2850 5700 8460	correct. correct. +·004	.....	On apex of a summerhouse-like thermometer-stand, in grounds of hotel.	632.
633.	Oct. 7.	DURHAM. Raby Castle. G. J. SYMONS, ESQ. Mr. Westcott.	X.*	Casella .....	9 a.m.	i o	460	8'01 7'98 8'00 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. ....	.....	o 10	400	5'03 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. ....	.....	4 8	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 Quélech.	X.	Negretti & Zambra	9 a.m.	o 6	.....	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.	i o	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. 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.					
638. Nov. 1.	1875.	WILTSHIRE. The Green, Marlborough. <i>REV. T. A. PRESTON.</i> <i>Rev. T. A. Preston.</i>	XII.*	Casella .....	9 a.m.	ft. in.      feet. 1    0      472	4'98 5'02 4'97 5'08 M 5'012	'1      500 '2      990 '3      1480 '4      1980 '5      2470	correct. +·001 +·003 +·002 +·004	Clear .....	In meteorological enclosure, 30 feet from nearest (low) building.	638.	
639. Nov. 3.		GLOUCESTERSHIRE. County Asylum, Gloucester. <i>DR. TOLLER.</i>	X.	Negretti & Zambra .....	9 a.m.	0    6 .....	7'75 8'02 7'98 8'03 M 7'945	'1      1350 '2      2600 '3      3850 '4      5040 '5      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. <i>E. J. ISBELL, ESQ.</i> <i>E. J. Isbell, Esq.</i>	X.	.....	9 a.m.	6    0      188	8'01 7'99 7'99 8'01 M 8'000	'1      1290 '2      2540 '3      3790 '4      5220 '5      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. <i>T. A. CHAPMAN, ESQ., M.D.</i> <i>T. A. Chapman, Esq., M.D.</i>	III.	Anon. ....	9 a.m.	1    3 .....	4'92 5'00 5'02 4'92 M 4'965	'1      490 '2      980 '3      1480 '4      1980 '5      2470	correct. correct. -·003 -·005 -·005	.....	Perfectly clear on open lawn .....	641.	
642. Nov. 4.		HEREFORDSHIRE. The Graig, Ross. <i>H. SOUTHALL, ESQ.</i> <i>H. Southall, Esq.</i>	III.	Anon. ....	9 a.m.	1    0      200	5'02 5'00 4'99 5'00 M 5'002	'1      500 '2      970 '3      1470 '4      1980 '5      2460	-·001 +·004 +·004 +·001 +·004	N. Tree, 34°. N.W. Tree, 38°.	On lawn; good exposure except as noted.	642.	
643. Nov. 8.		MERIONETHI. Rhiwbrifdir. <i>MAJOR MATHEW.</i> <i>Mr. O. Jones.</i>	III.	Casella .....	9 a.m.	10    0      1100	5'06 4'98 5'00 4'97 M 5'002	'1      500 '2      990 '3      1480 '4      1980 '5      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. <i>DR. NICOL.</i> <i>Dr. Nicol.</i>	X.	Negretti & Zambra .....	9 a.m.	1    0 .....	7'93 7'95 8'03 8'08 M 7'998	'1      1300 '2      2540 '3      3790 '4      5060 '5      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. <i>REV. H. FFOLKES.</i> <i>Rev. H. Ffolkes.</i>	XI.	Negretti & Zambra .....	9 a.m.	3    6 .....	4'99 5'02 5'00 5'00 M 5'002	'1      480 '2      970 '3      1465 '4      1970 '5      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. <i>REV. H. FFOLKES.</i> <i>Rev. H. Ffolkes.</i>	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.	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.
							Diameters (that marked M = mean),	Scale-point.	Grains.				
647.	1875. Dec. 21.	CAMBRIDGEESHIRE. The Observatory, Cambridge. <i>THE OBSERVATORY.</i> <i>Mr. Todd.</i>	III.	Casella .....	8 a.m.	ft. in. 1 0 85	in. 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. AppleTree, 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	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. Gainsford. <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. Rokeby 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	1530 3140 6410	—'001 —'003 —'005	S.W. Chimneys of house, 35°. S. Wall, 20°.	In small yard at rear of mining offices.	655.